

# **DIXIE ROAD / LAKESHORE ROAD EAST 1345 LAKESHORE ROAD EAST PROPOSED MIXED-USE DEVELOPMENT**

Urban Transportation Considerations

City of Mississauga

18.05.11 - OPA ZBA Submission 1

Prepared For: Vandyk Group of Companies

May 11, 2018



**MOVEMENT  
IN URBAN  
ENVIRONMENTS**

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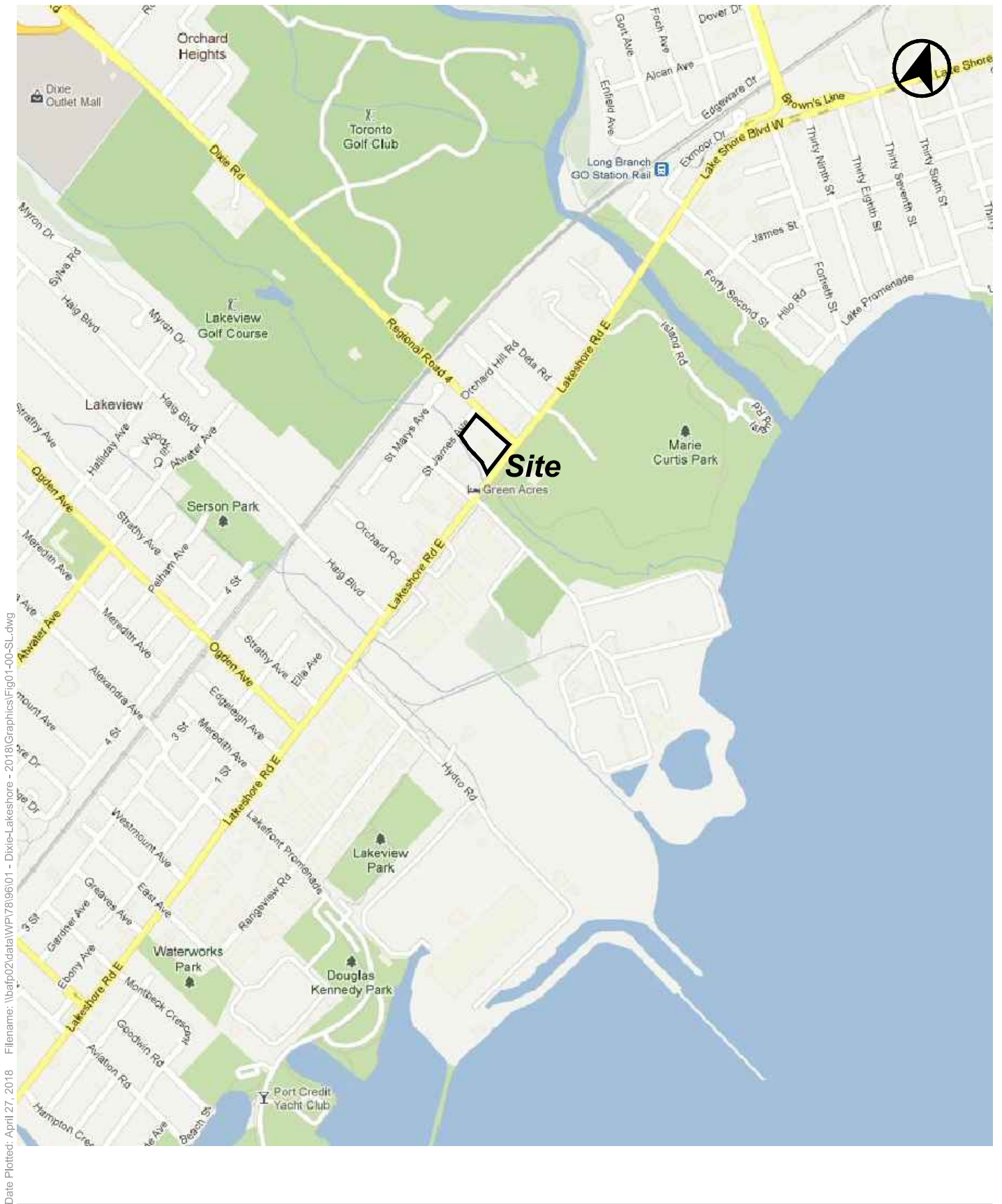
## 1.0 INTRODUCTION

BA Group has been retained by Vandyk Group of Companies to provide transportation advisory services regarding their development application for the northwest corner of Dixie Road and Lakeshore Road East in the City of Mississauga, municipally known as 1345 Lakeshore Road East (herein also referred to as 'The Site').

The Site was originally a car dealership that had access onto both Lakeshore Road East and Dixie Road. The Site location is graphically illustrated in **Figure 1**.

The development concept involves redeveloping the existing lands to residential uses. The development would contain approximately 397 residential condominium units (including 6 townhouse units at-grade) contained within an 8 and 12 storey building connected at-grade and approximately 310 m<sup>2</sup> of commercial / retail GFA fronting onto Lakeshore Road East.

This report documents BA Group's review of the transportation-related elements of the proposed development, including parking, loading, site access provisions, existing transportation context, and future traffic operations as a part of the Official Plan Amendment and Re-Zoning Application to the City of Mississauga.



## SITE LOCATION



**BA Group**

*Dixie-Lakeshore Condominiums, Mississauga*  
7896-01 April 2018

**Figure 1**

## 2.0 PROPOSED DEVELOPMENT PLAN

An Official Plan Amendment and Re-Zoning Application is being made to the City of Mississauga to permit the redevelopment of the 1345 Lakeshore Road East property.

### 2.1 DEVELOPMENT PROPOSAL

The proposal incorporates approximately 397 residential condominium units (including 6 townhouse units at-grade) contained within a 8 storey (Building A) and 12 storey (Building B) building connected at-grade and approximately 310 m<sup>2</sup> of commercial / retail GFA fronting onto Lakeshore Road East.

A summary of the development program is provided in **Table 1**.

**TABLE 1 DEVELOPMENT PROGRAM**

| Development Components                |                               | Development Proposal                                                                                                     |                                                                   |
|---------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Residential Uses                      | 1-Bedroom Units               | 162 units                                                                                                                |                                                                   |
|                                       | 2-Bedroom Units               | 223 units                                                                                                                |                                                                   |
|                                       | 3+ Bedroom Units <sup>1</sup> | 12 units                                                                                                                 |                                                                   |
|                                       | Total                         | 397 units                                                                                                                |                                                                   |
| Commercial / Retail Uses <sup>2</sup> |                               | 310 m <sup>2</sup>                                                                                                       |                                                                   |
| Parking Supply                        | Residential Tenant            | 537 spaces                                                                                                               | Provided within a 3 level at-grade and underground parking garage |
|                                       | Residential Visitor           | 79 spaces                                                                                                                |                                                                   |
|                                       | Commercial / Retail           | 13 spaces                                                                                                                |                                                                   |
|                                       | Short-Term Pick-up / Drop-off | 1 space                                                                                                                  |                                                                   |
|                                       | Total                         | 630 spaces                                                                                                               |                                                                   |
| Loading Space Supply                  |                               | 1 residential / refuse loading space                                                                                     | 2 formal loading spaces and 1 informal loading area               |
|                                       |                               | 1 commercial loading space                                                                                               |                                                                   |
|                                       |                               | 1 informal loading area                                                                                                  |                                                                   |
| Bicycle Parking Supply                | Short-Term                    | 35 spaces                                                                                                                | Provided at-grade and P1 level of the parking garage.             |
|                                       | Long-Term                     | 278 spaces                                                                                                               |                                                                   |
|                                       | Total                         | 313 spaces                                                                                                               |                                                                   |
| Proposed Access Locations             | Pedestrian Access             | Access is provided via Dixie Road, Lake Shore Road East and St. James Avenue                                             |                                                                   |
|                                       | Bicycle Access                |                                                                                                                          |                                                                   |
|                                       | Vehicle Parking Access        | Access is provided via a right-in / right-out driveway along Dixie Road and a full moves driveway along St. James Avenue |                                                                   |
|                                       | Vehicle Loading Area Access   | Access to the loading area is provided via Dixie Road and St. James Avenue                                               |                                                                   |

Notes:

1. Includes 6 townhouse units located at-grade.
2. Commercial / Retail GFA rounded to the nearest 5 m<sup>2</sup>.
3. Reduced scale architectural plans of the proposed development are provided in **Appendix A**.

## **2.2 PARKING SUPPLY**

A total of 630 parking spaces (including 537 residential occupant and 92 residential visitor / commercial parking spaces and 1 short-term pick-up / drop-off space) are proposed within a three level at-grade and underground parking garage (one level at-grade and two levels underground). Residential visitor / commercial parking is provided at-grade within the parking structure. Residential occupant parking is provided at-grade (P1) and on levels P2 and P3 of the garage.

Access to the parking facilities is provided via St. James Avenue and Dixie Road.

## **2.3 LOADING**

A total of three (3) loading areas (including 1 garbage / refuse collection space, 1 formal moving / loading space and 1 informal moving / loading area) are provided within with loading areas located on the site.

Access to the proposed refuse space is provided from a shared truck / parking right-in / right-out access along Dixie Road located along the eastern property boundary.

Access to the formal moving / loading space is provided from a shared truck / parking full moves access along St. James Avenue located along the northern property boundary.

Access to the informal moving / loading area is provided via both the St. James Avenue and Dixie Road driveways and is limited to smaller low clearance vehicles (ie. passenger cars, cube vans and pick-up trucks).

## **2.4 BICYCLE PARKING**

A total of 313 bicycle parking spaces are provided at-grade and on the P1 level of the parking garage. A total of 278 long term and 35 short term bicycle parking spaces are proposed.

## **2.5 SITE ACCESS ARRANGEMENTS**

### **2.5.1 Vehicular Access Arrangements**

A total of two (2) vehicular site accesses are proposed to service the development as planned.

The northern driveway is located off St. James Avenue, located approximately 50 metres east of Dixie Road. This driveway is proposed as a full moves access and will provide access to parking garage and the moving needs of Building B.

The eastern driveway is provided along Dixie Road approximately 80 metres north of Lakeshore Road East and is proposed as a right-in / right-out access. This driveway will provide access to the parking garage, service the garbage / refuse collection needs and the moving needs of Building A and the site.

Pick-up / drop-up activity is proposed within a short-term parking space located on the ground floor (P1) level of the site.

### **2.5.2 Bicycle Access Arrangements**

Long-term bicycle parking facilities are accessed from both driveways and are located in a secure bicycle room located on the ground floor (P1) parking garage level. Short-term bicycle parking facilities are located near entry point of the building along Lake Shore Road East and Dixie Road.

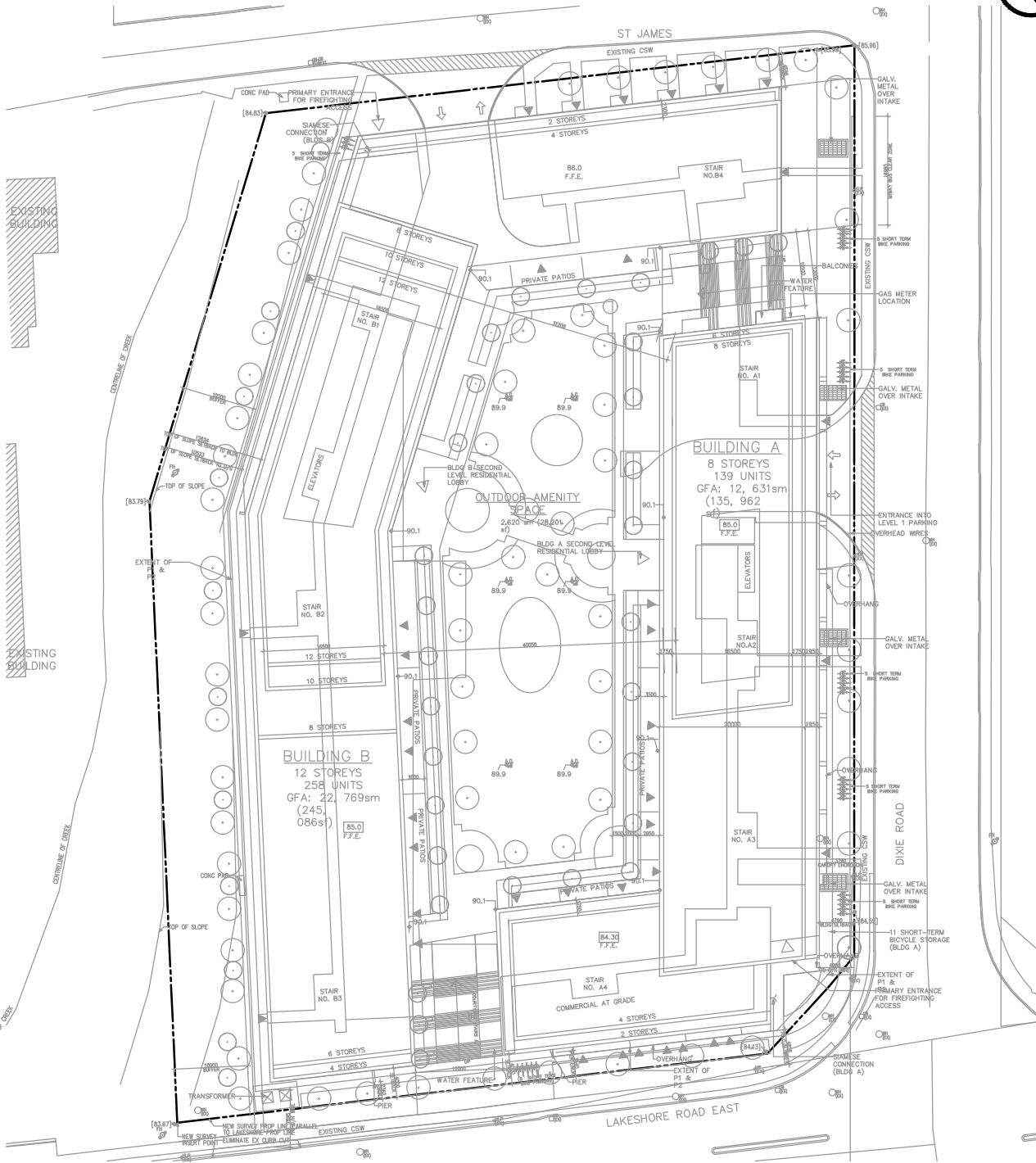
### **2.5.3 Pedestrian Access Arrangements**

Pedestrian access to the site to / from the area public road network is provided at-grade via a multitude of entrances along Lakeshore Road East, Dixie Road and St. James Avenue. Access to the two residential towers is provided via two lobbies located for each building.

The proposed development program is illustrated in **Figure 2** and **Figure 3**.



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## SITE PLAN



**BA Group**

*Dixie-Lakeshore Condominiums, Mississauga*  
7896-01 May 2018

**Figure 2**



Moving / Loading Space
  Refuge / Collection and Moving Space
  Informal Moving / Loading Area

## GROUND FLOOR PLAN (P1 LEVEL)

## 3.0 TRANSPORTATION CONTEXT

### 3.1 AREA ROAD NETWORK

**Dixie Road** is an arterial road under the jurisdiction of the Region of Peel. Dixie Road north of the QEW is classified as a major road in both the Region of Peel and City of Mississauga Official Plans. South of the QEW and in the vicinity of the subject site, the Official Plans indicate that Dixie Road is classified as a non-major road that reflects the environmental context of the area and the relatively low traffic volumes compared to typical major arterial roads in the Region of Peel.

The Region has recently converted Dixie Road from a four-lane cross-section to a three lane (centre left turn lane) cross-section with bicycle lanes on each side.

**Lakeshore Road East** is classified as a major arterial road in both the City of Mississauga and Region of Peel Official Plans and exhibits a more commercial and mixed-use character context with much higher traffic volumes compared to Dixie Road adjacent to the site.

Lakeshore Road East has a four-lane cross-section with dedicated left turning lanes within the vicinity of the site.

**St. James Avenue** is a local road in the jurisdiction of the City of Mississauga. St. James Avenue extends approximately 330 metres to the west of Dixie Road with a typical two-lane cross-section.

**Fergus Avenue** is a local road in the jurisdiction of the City of Mississauga. Fergus Avenue extends approximately 300 metres to the north of Lakeshore Road East with a typical two-lane cross-section.

The existing lane configurations and traffic control features adjacent to the site are illustrated on **Figure 4**.

### 3.2 TRANSIT FACILITIES

The proposed development site is currently served by the following bus routes:

**Route 5 – Dixie** travels between Cardiff Boulevard in the north and the Long Branch GO station in the south via Columbus Road, Mid-Way Boulevard, Dixie Road, South Service Road, Ogden Avenue and Lakeshore Road East. It operates with approximate 8 to 10 minute headways during the weekday peak commuter periods

**Route 23 – Lakeshore** travels along Lakeshore Road East between Southdown Road and the Long Branch GO station and streetcar loop in the east (approximately 975 metres from the site). It operates with approximate 15 minute headways during the weekday peak commuter periods.

An illustration of area transit routes is shown in **Figure 5**.

### 3.3 PEDESTRIAN AND CYCLING FACILITIES

**The Waterfront Trail** extends from the Town of Oakville border in the west at Lakeshore Road by Lakeview Park to Etobicoke Creek and Toronto in the east. Within the City of Mississauga, approximately 19 kilometres of the Waterfront Trail stretch over 11 major parks providing walking, jogging and cycling connections.

**Dixie Road Bike Lanes** have recently been constructed north / south along Dixie Road. The newly constructed bicycle lanes extend from Lakeshore Road East in the south along the site's eastern frontage to the area of Dixie Outlet Mall in the north. Under the Proposed Mississauga Cycling Route Network the Dixie Road bike lanes would extend further north towards Queensway East.

**Lakeshore Road Bike Lanes** are planned under the Proposed Mississauga Cycling Route Network. The proposed Lakeshore Road bike lanes would extend from Southdown Road (Erin Mills Parkway) in the west to past Dixie Road (into the City of Toronto) in the east.

### 3.4 EXISTING AREA TRANSPORTATION CHARACTERISTICS

BA Group has undertaken a review of travel characteristics for the site vicinity, using information provided by the 2016 Transportation Tomorrow Survey (TTS). Modal choice travel characteristics for residential land uses in the area for peak period inbound and outbound directions are summarized in **Table 2**.

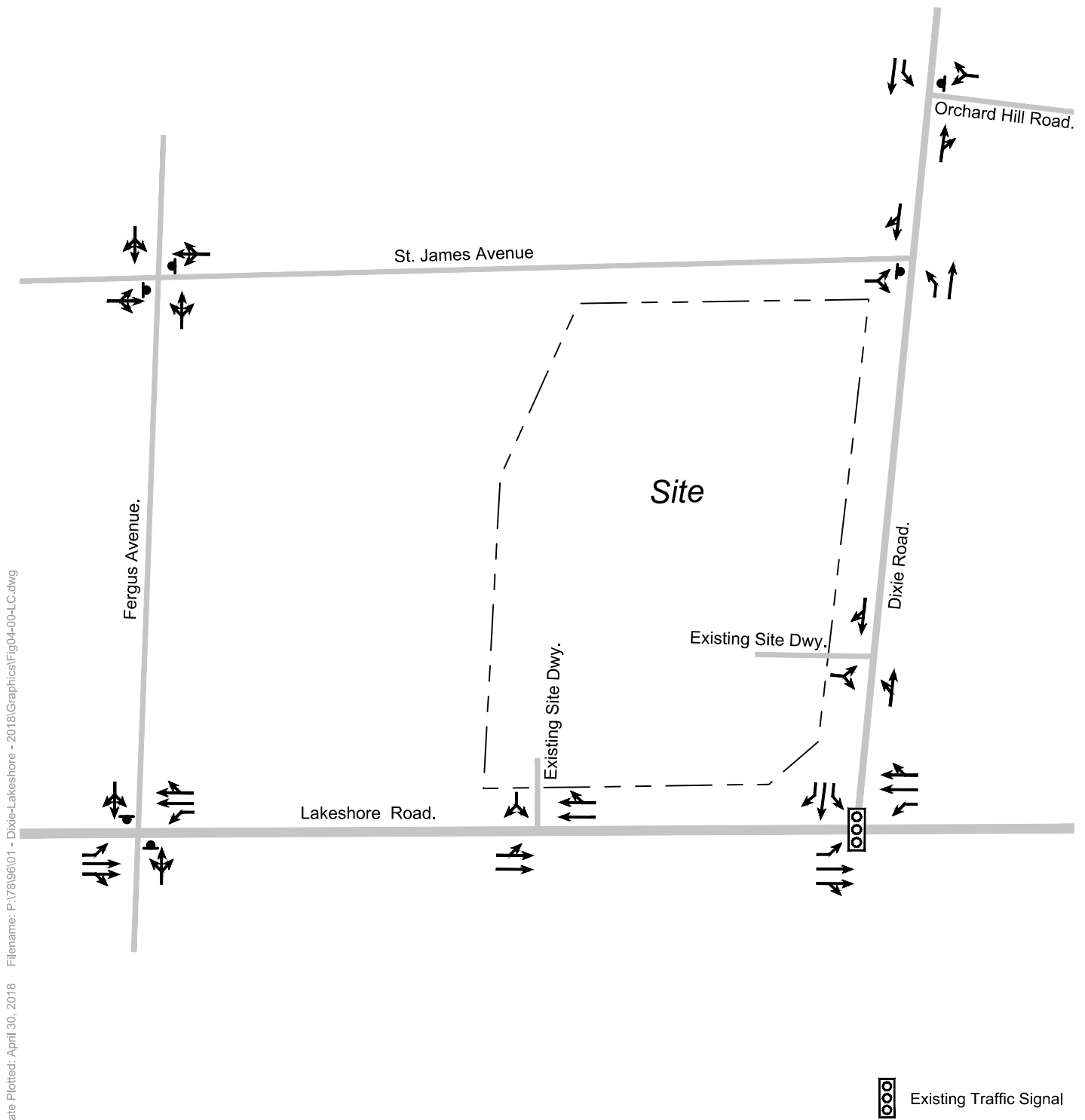
**TABLE 2 EXISTING AREA TRAVEL MODE SPLIT**

| Existing Travel Modes       | Inbound     | Outbound    |
|-----------------------------|-------------|-------------|
| Auto Driver                 | 68%         | 67%         |
| Auto Passenger <sup>2</sup> | 9%          | 12%         |
| Transit <sup>3</sup>        | 16%         | 13%         |
| Cycle                       | 0%          | 0%          |
| Walk                        | 7%          | 8%          |
| <b>Total</b>                | <b>100%</b> | <b>100%</b> |

Notes:

1. Reflects all trips made to/from residential land uses within 2006 TTS Zones 3643 and 3649.
2. Includes auto passenger, taxi, school bus and motorcycle.
3. Includes local transit exclusive, GO transit exclusive, and joint local and GO transit.

Based on the most recent 2016 TTS data, in the order of approximately 65% to 70% of residents living in the area regularly drive during the peak travel periods, which is fairly typical for a suburban area of Peel Region. TTS queries for mode splits are provided in **Appendix B**.



## EXISTING LANE CONFIGURATION



## AREA TRANSIT NETWORK

## 4.0 TRANSPORTATION DEMAND MANAGEMENT FRAMEWORK

Transportation Demand Management (TDM) measures will be incorporated in all aspects of the proposed development to minimize the need for vehicle travel to and from the site and encourage and facilitate use of transit and active transportation modes. As part of the overall strategy to create sustainable transportation options for residents and visitors of the proposed development, the proposed framework includes a broad array of TDM measures.

One of the primary objectives of the TDM plan is to reduce/reinforce a low “vehicular trip generation” characteristic of the proposed development and emphasize the alternative modes of travel that can satisfy day to day mobility needs. This key objective is specifically addressed through several of the TDM measures that are being adopted as part of the proposed development; measures that are intended to take a multi-pronged approach to reducing and reinforcing the use of alternative modes of travel on a daily basis.

### 4.1 IMPLEMENTATION

#### **TDM Framework**

This TDM Framework will serve as an initial guide for the design, development and implementation of the proposed development, as well as the ultimate operation of the facilities over time to maximize the travel demand sustainability of the project and allow the development to fully leverage its location relative to the amenities and non-automobile travel options that are provided in this environment.

#### **Site Plan Related Detailed TDM Plans**

Further refined TDM implementation plan will be provided during the Site Plan process of the development. This will build upon the initial framework, strategies and concepts that have been established as part of this report, identifying which measures and initiatives are to be implemented and how they would be deployed and operated in the context of the final design for each building within the development plan.

### 4.2 POTENTIAL TDM FRAMEWORK STRATEGIES

#### 4.2.1 Vehicle Ownership and Usage Management

The proposed development can incorporate convenient alternatives to private car ownership and usage to reduce the need for residents to own a vehicle and use a vehicle for their day to day travel.

Reducing car ownership amongst residents can be achieved through the introduction of a number of strategies to be considered through the development application process and may include:

- on site communication items / information regarding non-automobile transportation options including transit, taxi, Uber, and other ride-sharing services; and
- incentive programs designed to encourage the use of near-site services such as car share locations, transit, cycling facilities and walking.

### **4.2.2 Transit Strategy**

The proposed development to numerous surface transit options, including the 5 – Dixie Road bus, 23 Lake Shore bus and the Long Branch GO station and streetcar loop in the east (approximately 975 metres from the site).

In order to encourage transit usage for residents and visitors of the site some strategies to be considered include:

- provide new residents with a transit information package; and
- installation of a TransitScreen or similar communication item regarding transit arrivals, departures and status.

### **4.2.3 Pedestrian Strategy**

The intent of pedestrian strategy is to develop a high-quality, safe, accessible, and convenient network of pedestrian linkages to enhance local pedestrian connections to the site and within the site. Implementing a pedestrian strategy is fundamental to ensuring residents and visitors of the development have a viable and attractive condition for walking and accessing transit-based travel, thus facilitating non-vehicular travel.

A pedestrian network has been designed as a part of the proposed site plan to provide improved pedestrian access across the development. Some pedestrian strategies incorporated into the site design include:

- removal of the existing surface parking lot, which will create a more attractive and safer environment for pedestrians;
- proposed pedestrian realm / outdoor amenity space located within the core the site; and
- pedestrian paths on the sidewalks around the perimeter of the site.

### **4.2.4 Bicycle Strategy**

The proposed development will include bicycle parking facilities to promote cycling to the residents and residential visitors of the development. Some cycling strategies incorporated into the site design include:

- provision of long-term and short-term bicycle parking supply on-site that meets and exceeds the Mississauga Cycling Master Plan requirements; and
- potential to provide an on-site bicycle repair / maintenance station to be provided at grade.

## 5.0 VEHICLE PARKING CONSIDERATIONS

### 5.1 ZONING BY-LAW 0225-2007

The site is currently subject to the requirements of Zoning By-law 0225-2007. The minimum parking supply standards that apply to the site are outlined in **Table 3**.

**TABLE 3 PARKING SUPPLY REQUIREMENTS- BY-LAW 0225-2007**

| Use                       |                                       | Rate               | Units/<br>m² | Spaces     |
|---------------------------|---------------------------------------|--------------------|--------------|------------|
| Residents                 | 1 Bed                                 | 1.25 spaces / unit | 162 units    | 203 spaces |
|                           | 2 Bed                                 | 1.40 spaces / unit | 223 units    | 312 spaces |
|                           | 3+ Bed                                | 1.75 spaces / unit | 12 units     | 21 spaces  |
|                           | Total Resident                        |                    | 397 units    | 536 spaces |
| Non-Resident              | Visitor                               | 0.20 spaces / unit | 397 units    | 79 spaces  |
|                           | Commercial /Retail³                   | 4.3 spaces /100 m² | 310 m²       | 13 spaces  |
|                           | Total Before Sharing                  |                    | --           | 628 spaces |
|                           | Total After Sharing (Section 3.1.2.3) |                    |              | 627 spaces |
| Total Parking Requirement |                                       |                    | --           | 627 spaces |

Notes:

1. Fractions of less than 0.5 shall be rounded down to the nearest whole number.
2. Fractions equal to or greater than 0.5 shall be rounded to the nearest whole number.
3. Commercial / Retail GFA rounded to the nearest 5 m<sup>2</sup>.

Application of the supply requirements of Zoning By-law 0225-2007 to the proposed development would require the provision of a minimum of 627 parking spaces (including 536 residential spaces and 91 residential visitor spaces after sharing).

## 5.2 PROPOSED PARKING SUPPLY

### 5.2.1 Residential Parking Supply

It is proposed to meet the Zoning By-law 0225-2007 minimum parking standards and provide a total of 537 residential parking spaces on a portion of the ground floor P1 level, and on the P2 to P3 levels of the underground parking garage. The proposed residential parking supply of 537 spaces meets and exceeds the Zoning By-law minimum parking standard of 536 spaces.

A total of 8 accessible parking spaces are incorporated into the residential parking supply. These spaces are located in close proximity to the elevator cores and meet the dimensional requirements of the Zoning By-law.

### **5.2.2 Residential Visitor and Commercial / Retail Parking Supply**

It is proposed to meet the Zoning By-law 0225-2007 minimum parking standards and provide a total of 92 residential visitor and commercial / retail parking spaces on a portion of both the ground floor and P1 parking level to accommodate the parking demands for residential visitors and commercial / retail uses on the site. The proposed residential visitor parking supply of 92 spaces meets and exceeds the Zoning By-law minimum parking standard of 91 spaces.

Additionally, pick-up / drop-up activity is proposed within an additional (1) short-term parking space located on the ground floor (P1) level of the site.

A total of 7 accessible parking spaces are incorporated into the residential visitor and commercial / retail parking supply. These spaces are located in close proximity to the elevator cores on the ground floor and P1 parking level, and meet the dimensional requirements outlined in the Zoning By-law.

## **5.3 PARKING CIRCULATION**

Physical separations are provided between the visitor / commercial /retail parking area and the resident parking area on the P2 underground parking level. Access to the residential parking area is proposed via a transponder or key fob system.

It should also be noted that four (4) residential parking spaces are proposed on the ground floor (P1) parking level within the 'pool' of visitor and commercial / retail spaces. These four (4) spaces will be signed and reserved for the residential units located at-grade.

## **5.4 PARKING SUMMARY**

The proposed parking supply of 630 parking spaces (including 537 residential and 92 non-residential parking spaces and 1 short-term pick-up / drop-off space) meets and exceeds the minimum Zoning By-law 0225-2007 parking standards of 627 spaces.

**Based upon the above, the proposed parking supply and arrangements of the current proposal can accommodate the parking demands of the site.**

## 6.0 BICYCLE PARKING CONSIDERATIONS

### 6.1 BICYCLE REQUIREMENTS

#### 6.1.1 Mississauga Cycling Master Plan

The minimum bicycle parking requirements of the Mississauga Cycling Master Plan is summarized in **Table 4**.

**TABLE 4 MISSISSAUGA CYCLING MASTER PLAN BICYCLE PARKING REQUIREMENTS**

| Use                          |                   | Units/IFA          | Minimum Parking Rate             | Minimum Parking Required |
|------------------------------|-------------------|--------------------|----------------------------------|--------------------------|
| Residential                  | Long-term         | 397 units          | 0.70 sps / unit                  | 278 spaces               |
|                              | Short-Term        |                    | 0.08 sps / unit                  | 32 spaces                |
|                              | <i>Sub-Total</i>  | 397 units          | -                                | 310 spaces               |
| Non-Residential <sup>3</sup> | Retail Long-term  | 310 m <sup>2</sup> | 0.10 spaces / 100 m <sup>2</sup> | 0 spaces                 |
|                              | Retail Short-Term |                    | 0.25 spaces / 100 m <sup>2</sup> | 1 spaces                 |
|                              | <i>Sub-Total</i>  | --                 | --                               | 0 spaces                 |
| <b>Long-Term</b>             |                   | --                 | --                               | <b>278 spaces</b>        |
| <b>Short-Term</b>            |                   | --                 | --                               | <b>33 spaces</b>         |
| <b>Total</b>                 |                   | --                 | --                               | <b>311 spaces</b>        |

Notes:

1. Fractions of less than 0.5 rounded down to the nearest whole number.
2. Fractions equal to or greater than 0.5 rounded to the nearest whole number.
3. Commercial / Retail GFA rounded to the nearest 5 m<sup>2</sup>.

Application of the Mississauga Cycling Master Plan to the proposed development would require the provision of a total of 311 bicycle parking spaces, including 33 short-term spaces and 278 long-term spaces.

### 6.2 PROPOSED BICYCLE PARKING SUPPLY AND FACILITIES

The proposed development incorporates a total of 313 bicycle parking spaces (including 35 short-term and 278 long-term spaces), which meets the minimum supply requirements of the Mississauga Cycling Master Plan.

Residential bicycle parking spaces are generally located in close proximity to both towers on the ground level (P1) level of the parking garage. All long-term bicycle parking facilities are provided within secure and weather protected facilities.

Visitor bicycle parking spaces are generally located in close proximity to building entrances and access points within the site boundaries.

## 6.3 BICYCLE PARKING SUMMARY

The proposed bicycle parking supply of 313 spaces (including 35 short-term and 278 long-term spaces) meets and exceeds the minimum requirements of the Mississauga Cycling Master Plan.

**Based on the above, the proposed bicycle parking supply and facilities and supporting access arrangements are, appropriate and will adequately support the proposed development as planned.**

## 7.0 LOADING CONSIDERATIONS

### 7.1 ZONING BY-LAW 0225-2007

Application of Zoning By-law 0225-2007 loading standards require the provision of two (2) loading spaces.

**Table 5** outline the loading requirements for the site.

**TABLE 5      LOADING REQUIREMENTS - BY-LAW 0225-2007**

| Use                       | Gross Floor Area                  | Minimum Number of Spaces | Required Spaces |
|---------------------------|-----------------------------------|--------------------------|-----------------|
| Residential               | 1 loading space/<br>min. 30 units | 1                        | 1               |
| Commercial / Retail       | >250 ≤ 2,350 m <sup>2</sup>       | 1                        | 1               |
| Total Loading Requirement |                                   |                          | 2               |

Loading spaces shall have an unobstructed rectangular area with a minimum width of 3.5 metres and a minimum length of 9.0 metres. Residential loading spaces shall have a height clearance of 7.5 metres at the collection point (within the space itself) and 4.4 metres height clearance within the access path.

## 7.2 PROPOSED LOADING FACILITIES

### 7.2.1 Loading Supply / Servicing Arrangements

A total of three (3) loading areas (2 formal spaces and 1 informal area) are proposed on the ground floor (P1) parking level. These spaces are provided to support the loading / unloading, moving, delivery and refuse collection needs of the proposed development.

Access to the proposed refuse space is provided from a shared truck / parking access along Dixie Road located along the east property boundary.

Access to the formal moving / loading space is provided from a shared truck / parking access along St. James Avenue located along the north property boundary.

Access to the informal moving / loading area is provided via both the St. James Avenue and Dixie Road driveways and is limited to smaller (under 4.4 metres height clearance) vehicles (ie. passenger cars, cube vans and pick-up trucks).

This loading supply will satisfy the requirements of the Zoning By-law.

### 7.2.2 Residential Garbage and Recycling Facilities

Residential refuse / recycling collection for the building will occur within the proposed loading space provided within the eastern loading facility on the ground floor P1 parking level. Appropriate bin staging provisions are provided in front of the loading space in accordance with the design provisions outlined in the *“Region of Peel Waste Collection Design Standards Manual, Dated December 2015”*.

Provision for a minimum bin staging area to accommodate 12 bins (6 garbage and 6 recycling) within the allocated area (including 1 bin bulky items area of 10 m<sup>2</sup>).

The residential garbage rooms for each of the two towers are provided on the P2 level of the underground garage. Garbage bins will be transferred entirely within the site between the residential garbage rooms and the bin staging area.

### 7.2.3 Operations and Manoeuvring

Vehicular Maneuvering Diagrams (VMD's) have been developed which demonstrate the ability of service and delivery vehicles to maneuver within the site when entering / exiting each of the loading spaces in the loading area. Each of the vehicles enters and leaves the site in a forward motion.

The design vehicles utilized in assessing the configuration of the proposed loading spaces are as follows:

- Formal refuse / collection loading space – Peel Region front loader garbage truck, single unit vehicles (TAC SU);
- Formal moving / loading space– single unit (TAC SU); and
- Informal moving / loading area – cube van.

Vehicular maneuvering diagrams are provided in **Appendix C** and illustrate the turning movements for the design vehicles entering / exiting each of the proposed loading spaces.

These vehicle maneuvering diagrams confirm that the proposed loading arrangements are appropriate and will facilitate the maneuvering requirements of the vehicles that are expected to access the site.

### 7.2.4 Height Clearances

A minimum height clearance of 4.4 metres is maintained throughout the entire loading area, meeting the minimum height clearance requirements of the Region of Peel design policies (i.e. 4.4 metres). A minimum height clearance of 7.5 metres is provided above the formal refuse / collection loading space at the collection point as noted in Region of Peel design policies.

### 7.3      **LOADING SUMMARY**

A total of three (3) loading areas (2 formal spaces and 1 informal area) are proposed on the ground floor (P1) parking level. These spaces are provided to support the loading / unloading, moving, delivery and refuse collection needs of the proposed development.

**Based on the above, the proposed loading supply and arrangements can accommodate the servicing needs of the current proposal.**

## 8.0 TRAFFIC VOLUME FORECASTS

### 8.1 EXISTING TRAFFIC VOLUMES

Existing public street intersection peak hour traffic volumes have been established based upon a review of recent traffic counts undertaken by Spectrum Traffic Data Inc. on behalf of BA Group on Thursday, March 8<sup>th</sup>, 2018. A listing of the count dates and sources is summarized in **Table 6**.

**TABLE 6 EXISTING TRAFFIC DATA SOURCES**

| Intersections                       | Time Periods                           | Source                        | Date                   |
|-------------------------------------|----------------------------------------|-------------------------------|------------------------|
| Dixie Road / Orchard Hill Road      | 7:00 to 9:00 a.m.<br>4:00 to 6:00 p.m. | Spectrum Traffic<br>Data Inc. | Tuesday, March 8, 2018 |
| Dixie Road / St. James Avenue       |                                        |                               |                        |
| Dixie Road / Lakeshore Road East    |                                        |                               |                        |
| Lakeshore Road East / Fergus Avenue |                                        |                               |                        |
| Fergus Avenue / St. James Avenue    |                                        |                               |                        |

The existing turning movement counts were reviewed in detail to ensure general consistency in the traffic volumes on links between intersections. Where necessary, minor volume adjustments were made to balance traffic volumes between intersections to provide a representative traffic volume base for the purposes of the traffic operations analyses undertaken as part of this assessment.

The existing turning movement counts are provided in **Appendix D**.

Existing, balanced baseline area traffic volumes for the weekday morning and afternoon peak hours are summarized in **Figure 6**.

### 8.2 FUTURE BACKGROUND TRAFFIC VOLUMES

#### 8.2.1 General Corridor Traffic Growth

In consultation with a City staff from the Transportation Planning Department, an annual corridor traffic growth rate of 0.5% and 2.0% (compounded) was adopted in the eastbound direction along Lakeshore Road East for the weekday morning and afternoon peak hour, respectively. Similarly, a growth rate of 4.0% and 0.0% (compounded) per annum was adopted in the westbound direction along Lakeshore Road East for the weekday morning and afternoon peak hour, respectively.

For the purposes of this traffic analysis, it was anticipated that the proposed development would reach full build-out in a 5-year study horizon for a 2023 horizon year. As such, growth rates were applied to the east-west through movements along Lakeshore Road East at the Dixie Road / Lakeshore Road East intersection for 5 years.

### 8.2.2 Background Development Traffic Growth

Traffic allowances were made for other area specific proposed developments in the area based on a review of the City of Mississauga's list of current development projects as of April 2018. These sites represent development in the order of 43 residential units and 139 m<sup>2</sup> GFA of retail space.

Area developments that have been considered are summarized in **Table 7** together with a description of the key development programme for each. Traffic allowances made for each development were based upon traffic impact studies submitted to the City of Mississauga as part of the development application process.

**TABLE 7 AREA BACKGROUND DEVELOPMENTS**

| Site Location / Name     | Development Statistics                                         | Trip Generation Notes / Sources                                                                             |
|--------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 1107 Lakeshore Road East | 19 residential units                                           | Traffic volumes were determined based on trip generation and distribution discussed in <b>Section 8.3</b> . |
| 1407 Lakeshore Road East | 24 residential units<br>139 m <sup>2</sup> GFA of retail space | Traffic volumes were determined based on trip generation and distribution discussed in <b>Section 8.3</b> . |

**Figure 7** summarizes the future background traffic volumes for the weekday morning and afternoon peak hours, which were developed by adding the abovementioned allowances for general corridor traffic growth and area specific background developments to base existing traffic volumes.

## 8.3 SITE TRAFFIC

### 8.3.1 Site Trip Generation

Vehicular trip generation rates assumed for the proposed residential buildings were based on a review of data contained within the ITE Trip Generation Manual (10<sup>th</sup> Edition).

For the purpose of establishing site related trip generation rates for the site, Building A and Building B were reviewed independently and the following land-use codes were adopted:

**Building A:** Land Use Code 231 – *Mid-Rise Residential with 1<sup>st</sup> Floor Commercial are mixed-use multifamily housing buildings that have between three and 10 levels (floors) and include retail space on the first level.*

**Building B:** Land Use Code 222 – *High-Rise multifamily housing including apartments, townhouses, and condominiums that have more than 10 levels (floors).*

Site trip generation rates are summarized in **Table 8**.

**TABLE 8 SITE TRIP GENERATION**

| Trip Generation Rates Source                                                          | AM Peak Hour |           |            | PM Peak Hour |           |            |
|---------------------------------------------------------------------------------------|--------------|-----------|------------|--------------|-----------|------------|
|                                                                                       | In           | Out       | 2-Way      | In           | Out       | 2-Way      |
| ITE Land Use Code 231<br>(Mid-Rise Residential with 1 <sup>st</sup> Floor Commercial) | 0.08         | 0.22      | 0.30       | 0.25         | 0.11      | 0.36       |
| <b>Building A Number of Trips (139 units)</b>                                         | <b>10</b>    | <b>30</b> | <b>40</b>  | <b>35</b>    | <b>15</b> | <b>50</b>  |
| ITE Land Use Code 222<br>(Multifamily Housing – High-Rise)                            | 0.07         | 0.24      | 0.31       | 0.22         | 0.14      | 0.36       |
| <b>Building B Number of Trips (258 units)</b>                                         | <b>20</b>    | <b>60</b> | <b>80</b>  | <b>60</b>    | <b>35</b> | <b>95</b>  |
| <b>Total Number of Trips (397 units)</b>                                              | <b>30</b>    | <b>90</b> | <b>120</b> | <b>95</b>    | <b>50</b> | <b>145</b> |

Notes:

1. Trips are rounded to the nearest 5 vehicles.

The site is anticipated to generate approximately 120 and 145 two-way vehicle trips during the weekday morning and afternoon peak hours, respectively.

### 8.3.2 Trip Distribution

The trip distribution pattern for site traffic was established based upon a review of 2016 Transportation Tomorrow Survey (TTS) data for home-based vehicle trips to and from the study area during the weekday morning and afternoon peak hour periods. The distribution of inbound and outbound traffic adopted for the proposed development is outlined in **Table 9**. Detailed TTS queries are provided in **Appendix E**. Site traffic volumes assigned onto the area road network are illustrated in **Figure 8**.

**TABLE 9      SITE TRAFFIC DISTRIBUTION**

| To / From                   | Inbound     | Outbound    |
|-----------------------------|-------------|-------------|
| North on Dixie Road         | 65%         | 65%         |
| East on Lakeshore Road East | 10%         | 10%         |
| West on Lakeshore Road East | 25%         | 25%         |
| <b>Total</b>                | <b>100%</b> | <b>100%</b> |

Notes:

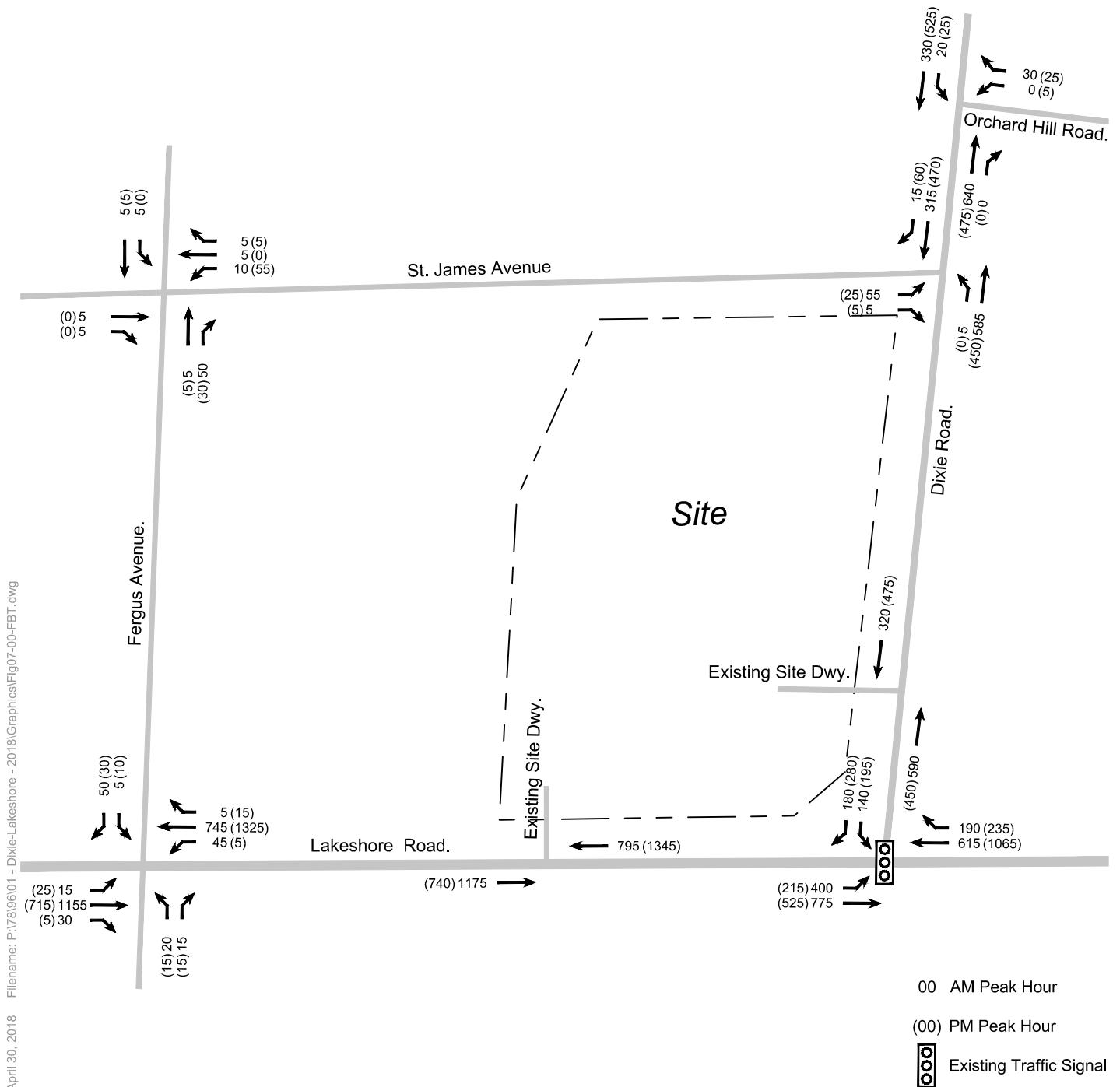
1. Based on a review of 2016 TTS data for home-based trips to and from 3643 and 3649 during weekday morning and afternoon peak periods.

## **8.4      FUTURE TOTAL TRAFFIC**

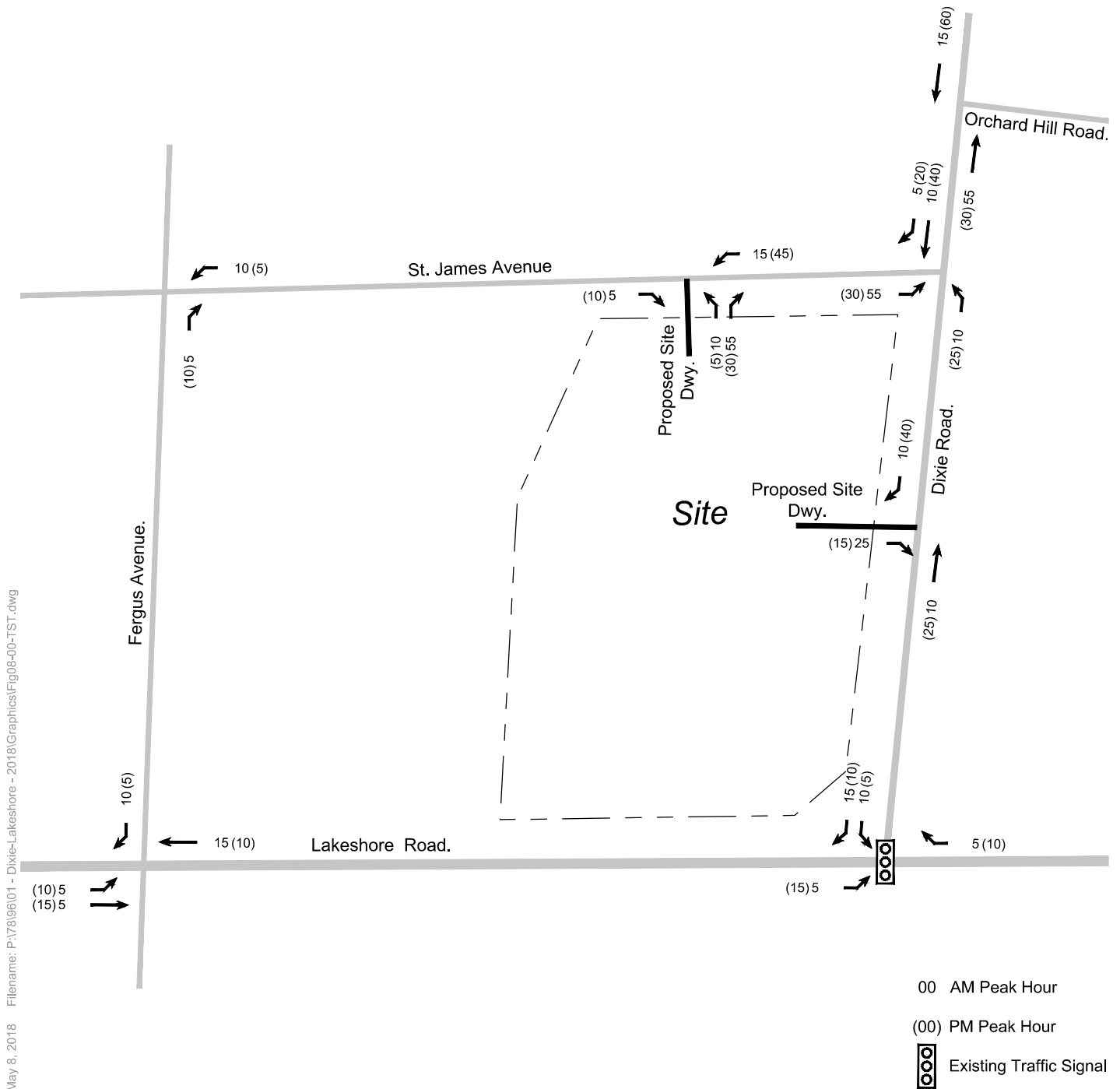
Future total traffic volumes were developed by adding site-generated traffic to future background traffic volumes. **Figure 9** illustrates future total traffic volumes for the weekday morning and afternoon peak hours.



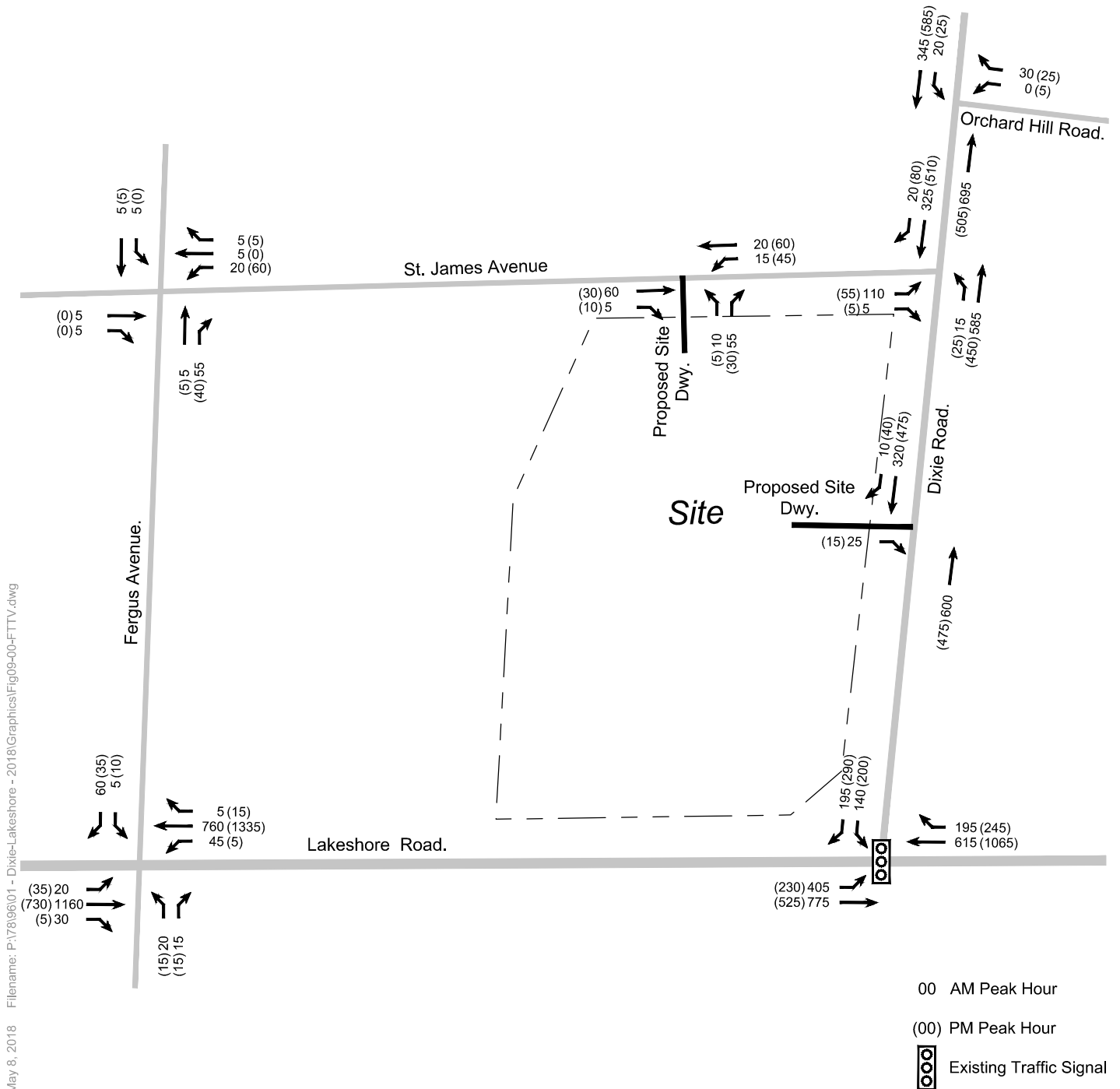
## EXISTING TRAFFIC VOLUMES



## FUTURE BACKGROUND TRAFFIC VOLUMES



## TOTAL SITE TRAFFIC VOLUMES



## FUTURE TOTAL TRAFFIC VOLUMES



**BA Group**

Dixie-Lakeshore Condominiums, Mississauga  
7896-01 May 2018

Figure 9

## 9.0 CAPACITY OPERATIONS ANALYSIS

### 9.1 ANALYSIS SCENARIOS

Traffic operations analyses were undertaken at the study area intersections for the weekday morning and afternoon peak travel hours under the following traffic conditions:

- existing traffic conditions;
- future background traffic conditions, which include allowances for general corridor traffic growth and area specific background developments and;
- future total traffic conditions, which take into consideration future background traffic volumes plus site-generated traffic volumes.

### 9.2 ANALYSIS METHODOLOGY

Traffic operations analyses have been completed using the Synchro (Version 9.2) capacity analysis software in accordance with the methodologies outlined in the *Highway Capacity Manual* (HCM) and the City of Mississauga's *Transportation Impact Study Guidelines*.

The key performance indicator of the signalized intersection evaluation is an intersection performance index (volume to capacity ratio, or v/c), where a v/c index of 1.00 indicates 'at or near capacity' conditions.

The key performance indicator of the unsignalized intersection / driveway analyses is an average delay per vehicle (in seconds) and a level of service (LOS) designation, where the LOS A (little delay) to LOS F (extended delay) range provides an understanding of the relative time a motorist may have to wait to complete a turn at an intersection or driveway.

Synchro analysis worksheets are included in **Appendix F**.

#### Signal Timing Plans

Existing traffic signal timing plans for all signalized intersections within the study area were obtained from the Regional Municipality of Peel. Analyses were undertaken using this signal timing plan for existing, future background and future total traffic conditions.

The existing signal timing plans are provided in **Appendix G**.

#### Road Network Assumptions

Existing lane configurations in the area road network have been assumed in the analysis for the existing and future background traffic scenarios.

Under future total conditions, it was assumed that two (2) new driveways will intersect with Dixie Road and St. James Avenue at STOP controlled intersections. The site driveways are assumed to be two-way with single lane approaches.

The existing and future road network intersection lane configurations are shown in **Figure 4**.

### Heavy Vehicle Assumptions

Heavy and medium truck percentages incorporated into the analyses were based upon information obtained from observations made during existing intersection turning movement counts.

The relative proportion of heavy vehicles within the general traffic stream was used as the basis for the heavy vehicle adjustment factor inputs adopted within the Synchro analysis for both existing and future scenarios.

### Peak Hour Factors

Peak hour factors at the area intersections incorporated into the analyses were calculated based upon information obtained from observations made during existing intersection turning movement counts. The calculated peak hour factors are shown in **Table 10**.

Where intersections / driveways do not exist under existing conditions, a default peak hour factor of 0.92 was utilized for the movements during the weekday morning and afternoon peak hours

**TABLE 10 SUMMARY OF CALCULATED PEAK HOUR FACTORS**

| Intersections                       | Morning Peak Hour | Afternoon Peak Hour |
|-------------------------------------|-------------------|---------------------|
| <b>Signalized Intersections</b>     |                   |                     |
| Dixie Road / Lakeshore Road East    | 0.92              | 0.96                |
| <b>Unsignalized Intersections</b>   |                   |                     |
| Dixie Road / Orchard Hill Road      | 0.87              | 0.97                |
| Dixie Road / St. James Avenue       | 0.88              | 0.94                |
| Fergus Avenue / St. James Avenue    | 0.93              | 0.78                |
| Lakeshore Road East / Fergus Avenue | 0.94              | 0.94                |
| <b>Future Site Driveways</b>        |                   |                     |
| Dixie Road / Site Driveway          | 0.92              | 0.92                |
| St. James Avenue / Site Driveway    | 0.92              | 0.92                |

## 9.3 ANALYSIS RESULTS

### 9.3.1 Dixie Road / Lakeshore Road East

The Dixie Road / Lakeshore Road East intersection operates under traffic signal control with cycle length of 120 seconds in the weekday morning and afternoon peak periods. The existing cycle length was maintained in all analysis scenarios. A summary of traffic analysis results for this intersection is shown in

**TABLE 11 DIXIE ROAD / LAKESHORE ROAD EAST CAPACITY ANALYSIS SUMMARY**

| Key Movements  | Existing Traffic Conditions |              | Future Background Traffic Conditions |              | Future Total Traffic Conditions |              |
|----------------|-----------------------------|--------------|--------------------------------------|--------------|---------------------------------|--------------|
|                | v/c                         | LOS          | v/c                                  | LOS          | v/c                             | LOS          |
| EBL            | 0.66 (0.65)                 | A (B)        | 0.72 (0.66)                          | B (B)        | 0.74 (0.70)                     | B (B)        |
| EBTR           | 0.29 (0.19)                 | A (A)        | 0.30 (0.21)                          | A (A)        | 0.30 (0.21)                     | A (A)        |
| WBTR           | 0.33 (0.61)                 | B (B)        | 0.39 (0.62)                          | B (B)        | 0.40 (0.63)                     | B (B)        |
| SBL            | 0.69 (0.77)                 | E (E)        | 0.69 (0.77)                          | E (E)        | 0.71 (0.78)                     | E (E)        |
| SBTR           | 0.12 (0.17)                 | D (D)        | 0.12 (0.17)                          | D (D)        | 0.13 (0.21)                     | D (D)        |
| <b>Overall</b> | <b>0.68 (0.69)</b>          | <b>B (C)</b> | <b>0.73 (0.70)</b>                   | <b>B (C)</b> | <b>0.75 (0.73)</b>              | <b>B (C)</b> |

Notes:

1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour)

Under existing, future background and future total traffic conditions, the intersection operates at an acceptable level of service during the weekday morning and afternoon peak traffic hours with overall v/c ratios of 0.75 or less.

Based on the foregoing, the traffic generated by the proposed development can be acceptably accommodated at the Dixie Road / Lakeshore Road East intersection. No mitigation measures or improvements are recommended at this intersection.

### 9.3.2 Unsignalized Intersection Analysis

Traffic operations at all unsignalized intersections within the study area are acceptable under all scenarios without any need for road improvements or mitigation measures. All movements will function at LOS A to LOS E in the future total scenarios, with consideration of site-generated traffic. The results of the capacity analysis undertaken at the unsignalized intersections within the study area are summarized in **Table 12**.

Vehicular access to the site will be provided via two (2) driveways located on Dixie Road and St. James Avenue. These driveways will provide convenient two-way vehicular access to the parking spaces and operates under STOP control. These driveways operate at good level of service (LOS B) under future total scenario.

**TABLE 12 UNSIGNALIZED INTERSECTION ANALYSIS SUMMARY**

| Intersection / Key Movements               | Existing Traffic Conditions |         | Future Background Traffic Conditions |         | Future Total Traffic Conditions |       |
|--------------------------------------------|-----------------------------|---------|--------------------------------------|---------|---------------------------------|-------|
|                                            | v/c                         | LOS     | v/c                                  | LOS     | v/c                             | LOS   |
| <b>Dixie Road / St. James Avenue</b>       |                             |         |                                      |         |                                 |       |
| EBLR                                       | 13.0 (12.3)                 | B (B)   | 13.1 (12.4)                          | B (B)   | 14.8 (13.8)                     | B (B) |
| NBLT                                       | 9.0 (0.0)                   | A (A)   | 9.0 (0.0)                            | A (A)   | 9.1 (8.7)                       | A (A) |
| <b>Lakeshore Road East / Fergus Avenue</b> |                             |         |                                      |         |                                 |       |
| EBL                                        | 8.9 (11.4)                  | A (B)   | 9.1 (11.4)                           | A (B)   | 9.2 (11.5)                      | A (B) |
| WBL                                        | 14.9 (8.9)                  | B (A)   | 15.2 (9.1)                           | C (A)   | 15.3 (9.1)                      | C (A) |
| NBLTR                                      | 34.7 (13.5)                 | D (B)   | 36.0 (14.1)                          | E (B)   | 37.2 (14.5)                     | E (B) |
| SBLTR                                      | 11.4 (12.9)                 | B (B)   | 11.1 (13.0)                          | B (B)   | 11.1 (12.6)                     | B (B) |
| <b>Fergus Avenue / St. James Avenue</b>    |                             |         |                                      |         |                                 |       |
| EBLTR                                      | 8.9 (0.0)                   | A (A)   | 8.9 (0.0)                            | A (A)   | 8.9 (0.0)                       | A (A) |
| WBLTR                                      | 9.1 (8.8)                   | A (A)   | 9.1 (8.8)                            | A (A)   | 9.2 (8.9)                       | A (A) |
| SBLTR                                      | 3.7 (0.0)                   | A (A)   | 3.7 (0.0)                            | A (A)   | 3.7 (0.0)                       | A (A) |
| <b>Dixie Road / Orchard Hill Road</b>      |                             |         |                                      |         |                                 |       |
| WBLR                                       | 12.8 (11.6)                 | B (B)   | 12.9 (11.7)                          | B (B)   | 13.6 (12.0)                     | B (B) |
| SBL                                        | 9.1 (8.5)                   | A (A)   | 9.1 (8.5)                            | A (A)   | 9.4 (8.6)                       | A (A) |
| <b>St. James Avenue / Site Access</b>      |                             |         |                                      |         |                                 |       |
| WBLT                                       | -- (--)                     | -- (--) | -- (--)                              | -- (--) | 3.2 (3.3)                       | A (A) |
| NBLR                                       | -- (--)                     | -- (--) | -- (--)                              | -- (--) | 8.9 (8.7)                       | A (A) |
| <b>Dixie Road / Site Access</b>            |                             |         |                                      |         |                                 |       |
| EBR                                        | -- (--)                     | -- (--) | -- (--)                              | -- (--) | 10.2 (11.4)                     | B (B) |

Notes:

1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour)

A queuing analysis was conducted at the Dixie Road / Lakeshore Road East and Dixie Road / St. James Avenue intersections to confirm that the proposed site access driveways will not be obstructed on a regular basis by traffic approaching these intersections. A summary of the average and 95<sup>th</sup> percentile queue lengths at these intersections for the southbound and eastbound movements under future total scenario is summarized in **Table 13**.

**TABLE 13 SUMMARY OF FUTURE TOTAL QUEUE LENGTHS**

| Intersection                     | Movement | Queue Length – 95 <sup>th</sup> Percentile (m) | Queue Length – Average (m) | Link Distance (m) |
|----------------------------------|----------|------------------------------------------------|----------------------------|-------------------|
| Dixie Road / St. James Avenue    | EBLR     | 25.0 (19.5)                                    | 12.8 (10.2)                | 50 <sup>(1)</sup> |
| Dixie Road / St. James Avenue    | NBL      | 11.8 (9.6)                                     | 2.5 (2.8)                  | 60 <sup>(2)</sup> |
| Dixie Road / Lakeshore Road East | SBL      | 57.0 (68.8)                                    | 34.6 (42.9)                | 80 <sup>(3)</sup> |
| Dixie Road / Lakeshore Road East | SBTR     | 41.2 (67.2)                                    | 21.3 (32.9)                | 80 <sup>(3)</sup> |

Notes:

1. Approximate distance between the site driveway on St. James Avenue and the Dixie Road / St. James Avenue intersection STOP bar.
2. Approximate distance between the site driveway on Dixie Road and the Dixie Road / St. James Avenue intersection STOP bar.
3. Approximate distance between the site driveway on Dixie Road and the Dixie Road / Lakeshore Road East intersection STOP bar.

Based on the analysis conducted as part of this study, the 95<sup>th</sup> percentile queue lengths are in the order of 68.8 metres or less at the Dixie Road / Lakeshore Road East intersection during the weekday morning and afternoon peak hour periods. It is noteworthy that the site driveway along Dixie Road is located approximately 80 metres north of the Dixie Road / Lakeshore Road East intersection STOP bar. Analysis results indicate that the 95<sup>th</sup> percentile southbound queue at the Dixie Road / Lakeshore Road East intersection will not block the proposed STOP-controlled east site driveway on Dixie Road during peak traffic periods.

Similarly, the 95<sup>th</sup> percentile queue lengths are in the order of 25.0 metres or less at the Dixie Road / St. James Avenue intersection during the weekday morning and afternoon peak hour periods. It is noteworthy that the site driveway along St. James Avenue is located approximately 50 metres west of the Dixie Road / St. James Avenue intersection STOP bar. Analysis results indicate that the 95<sup>th</sup> percentile eastbound queue at the Dixie Road / St. James Avenue intersection will not block the proposed STOP-controlled north site driveway on St. James Avenue during peak traffic periods.

The results show that the site driveways are located a suitable distance from the Dixie Road / Lakeshore Road East and Dixie Road / St. James Avenue intersections, and 95<sup>th</sup> percentile queues will not extend beyond the site driveways. Therefore, the site driveway locations identified in the Site Plan are appropriate in this regard.

**Based on the foregoing review, the site related impacts are minimal and will not noticeably affect traffic operations at the intersections within the study area.**

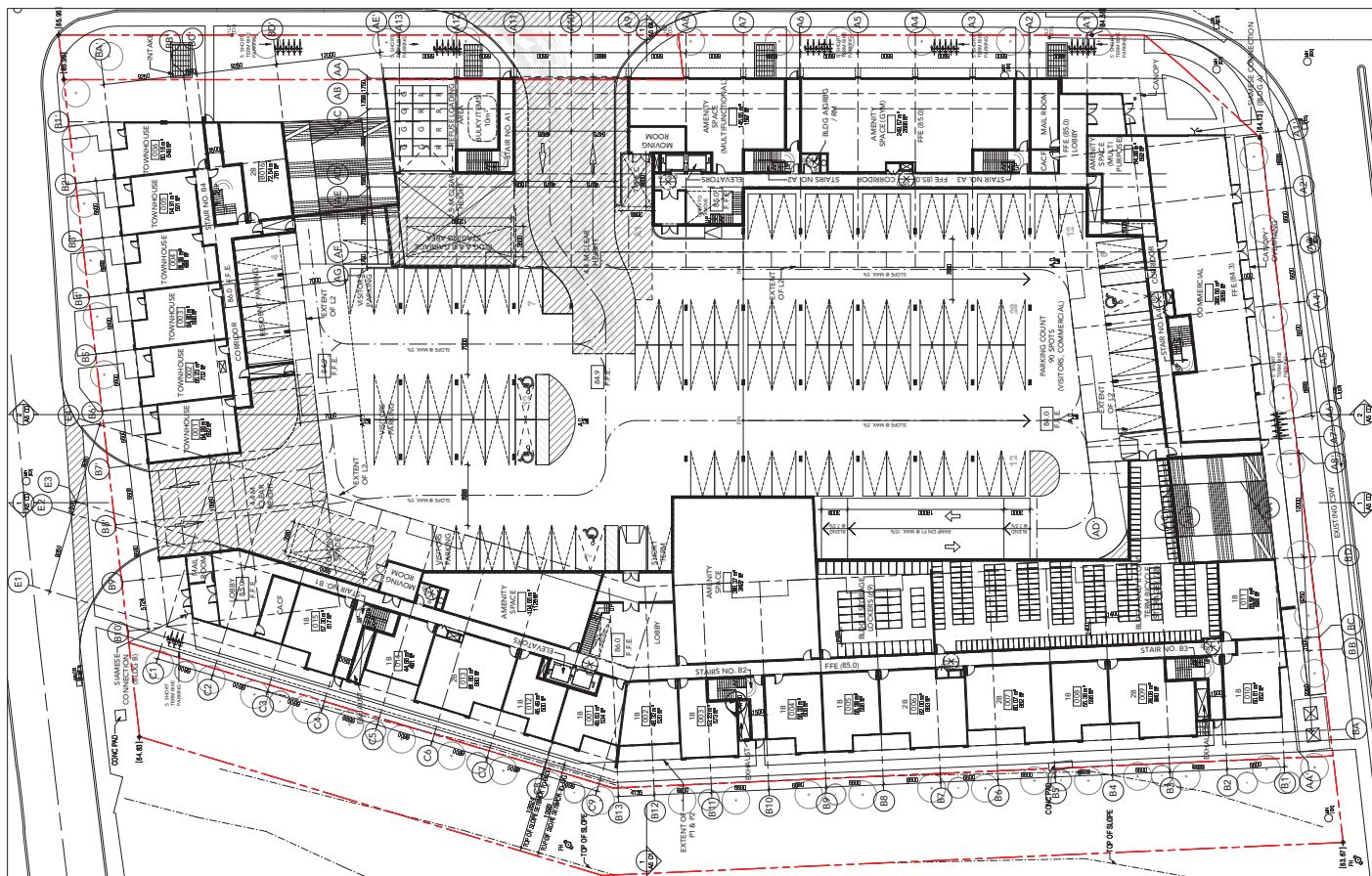
## 10.0 SUMMARY AND CONCLUSIONS

The following outlines key findings from our transportation review of the proposed development for the Dixie-Lakeshore Condo Development.

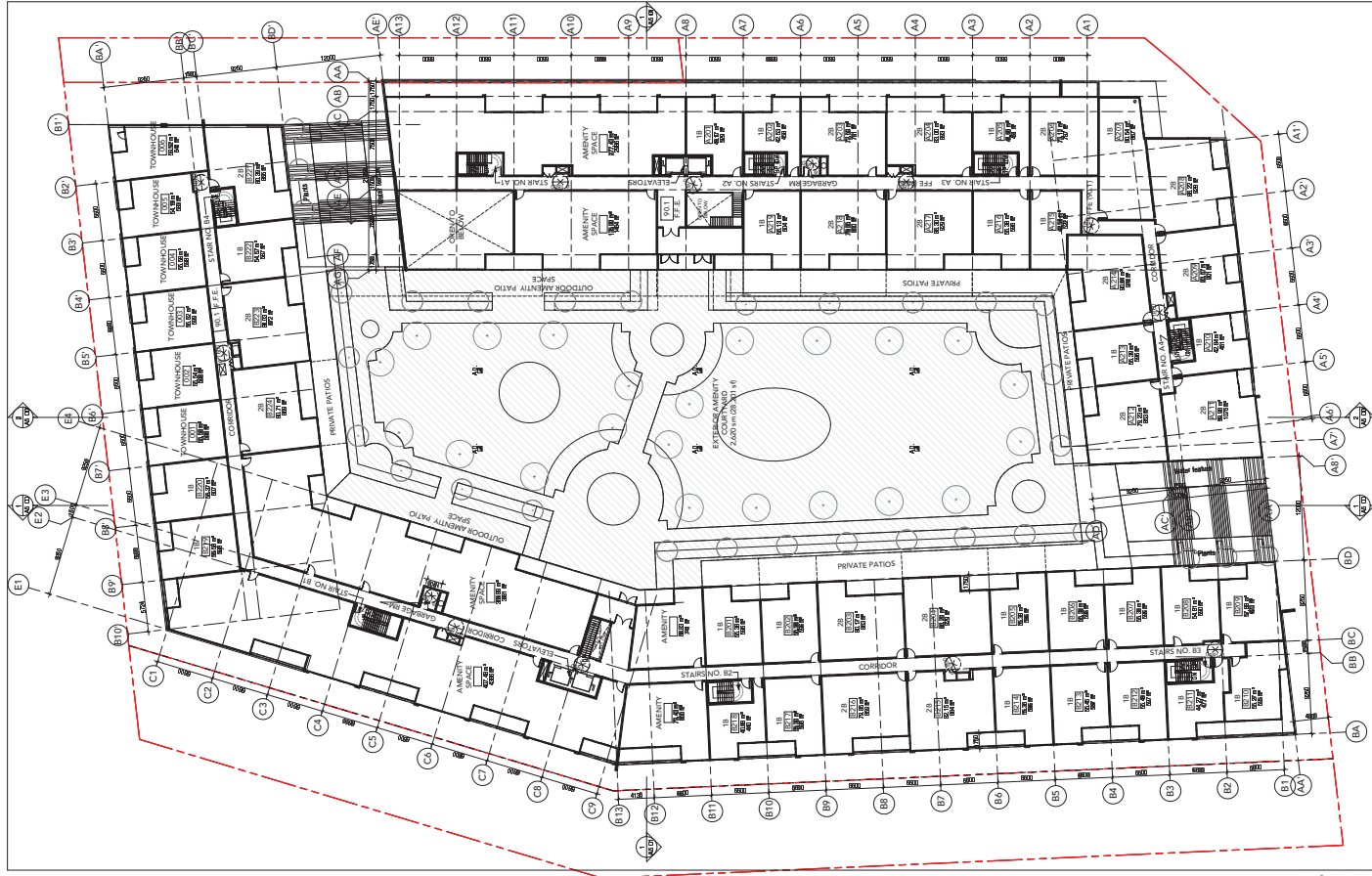
- The proposed development would include approximately 397 dwelling units, 6 of which are at-grade townhouse units.
- A total of 630 parking spaces are proposed (537 resident spaces and 92 visitor / commercial retail spaces and 1 short-term pick-up / drop-off space). This meets and exceeds the minimum Zoning By-law 0225-2007 parking requirements.
- The proposed bicycle parking supply of 313 spaces (including 35 short-term and 278 long-term spaces) meets and exceeds the minimum bicycle parking requirements of the Mississauga Cycling Master Plan and is supportive of Low Impact Development (LID) initiatives by the Region.
- A total of three (3) loading areas (2 formal spaces and 1 informal area) are proposed on the ground floor (P1) parking level and meets the minimum Zoning By-law 0225-2007 requirements. The proposed loading supply and arrangements can accommodate the servicing needs of the current proposal.
- The site development is forecast to generate in the order of 120 to 145 two-way trips during the weekday morning and afternoon peak hours.
- Site access driveways are proposed on Dixie Road (right-in / right-out) and St. James Avenue (full moves).
- The Dixie Road site driveway is located approximately 80 metres north of the Dixie Road / Lakeshore Road East intersection.
- The St. James Avenue site driveway is located approximately 50 metres west of the Dixie Road / Lakeshore Road East intersection.
- Both site access locations are forecast to operate satisfactorily, and STOP controlled approaches will operate at in the Level of Service 'A' to 'B' range during the weekday morning and afternoon peak hours.
- The Site access locations are well removed from forecast queuing activity at the Dixie Road / Lakeshore Road East intersection and are beyond the 95<sup>th</sup> percentile queues.
- Capacity analysis results indicate that the area road network can reasonably accommodate forecast site traffic demands.

## **APPENDIX A: Reduced Architectural Plans**

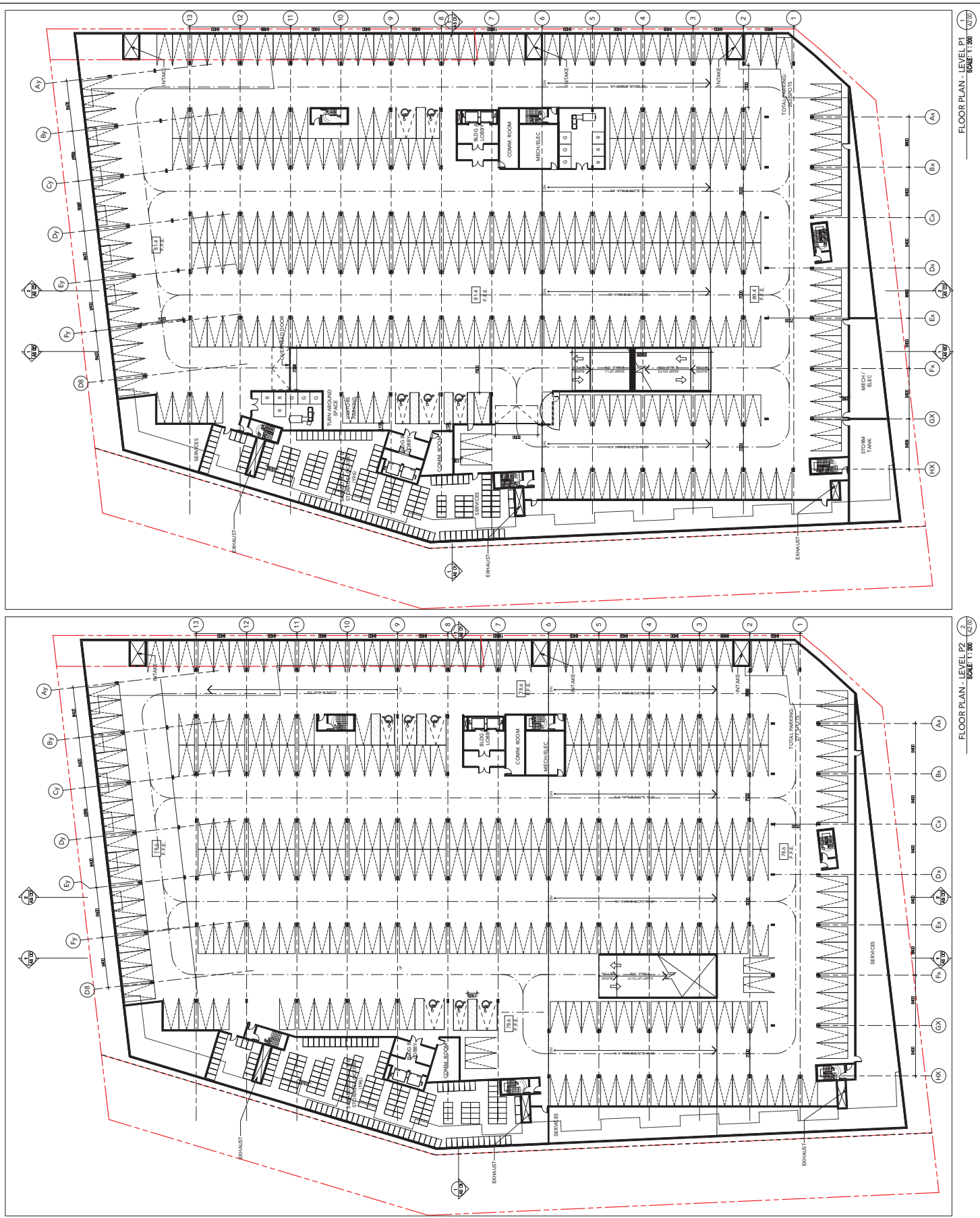




FLOOR PLAN - LEVEL 1



FLOOR PLAN - LEVEL 2



## **APPENDIX B: 2016 TTS Mode Split**



## Mode Split - Residential

Project 1345 Lakeshore Road East  
Project No 7896-01  
Date 2018-04-30

### AM Outbound

Mon Apr 30 2018 15:52:49 GMT-0400 (Eastern Daylight Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode\_prime

Filters:

(Start time of trip - start\_time In 600-859

and

Trip purpose of origin - purp\_orig In H

and

2006 GTA zone of origin - gta06\_orig In 3643, 3649)

Table: Trip 2016

| Row:          | Count: | Expanded: | Total |
|---------------|--------|-----------|-------|
| Transit exclu | 13     | 308       | 5%    |
| Auto driver   | 172    | 3778      | 67%   |
| GO rail only  | 19     | 285       | 5%    |
| Joint GO rail | 8      | 139       | 2%    |
| Auto passen   | 26     | 626       | 11%   |
| School bus    | 4      | 55        | 1%    |
| Taxi passen   | 1      | 12        | 0%    |
| Walk          | 22     | 457       | 8%    |
| Total:        | 265    | 5660      | 100%  |

### PM Inbound

Mon Apr 30 2018 15:53:53 GMT-0400 (Eastern Daylight Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode\_prime

Filters:

(Start time of trip - start\_time In 1500-1759

and

Trip purpose of destination - purp\_dest In H

and

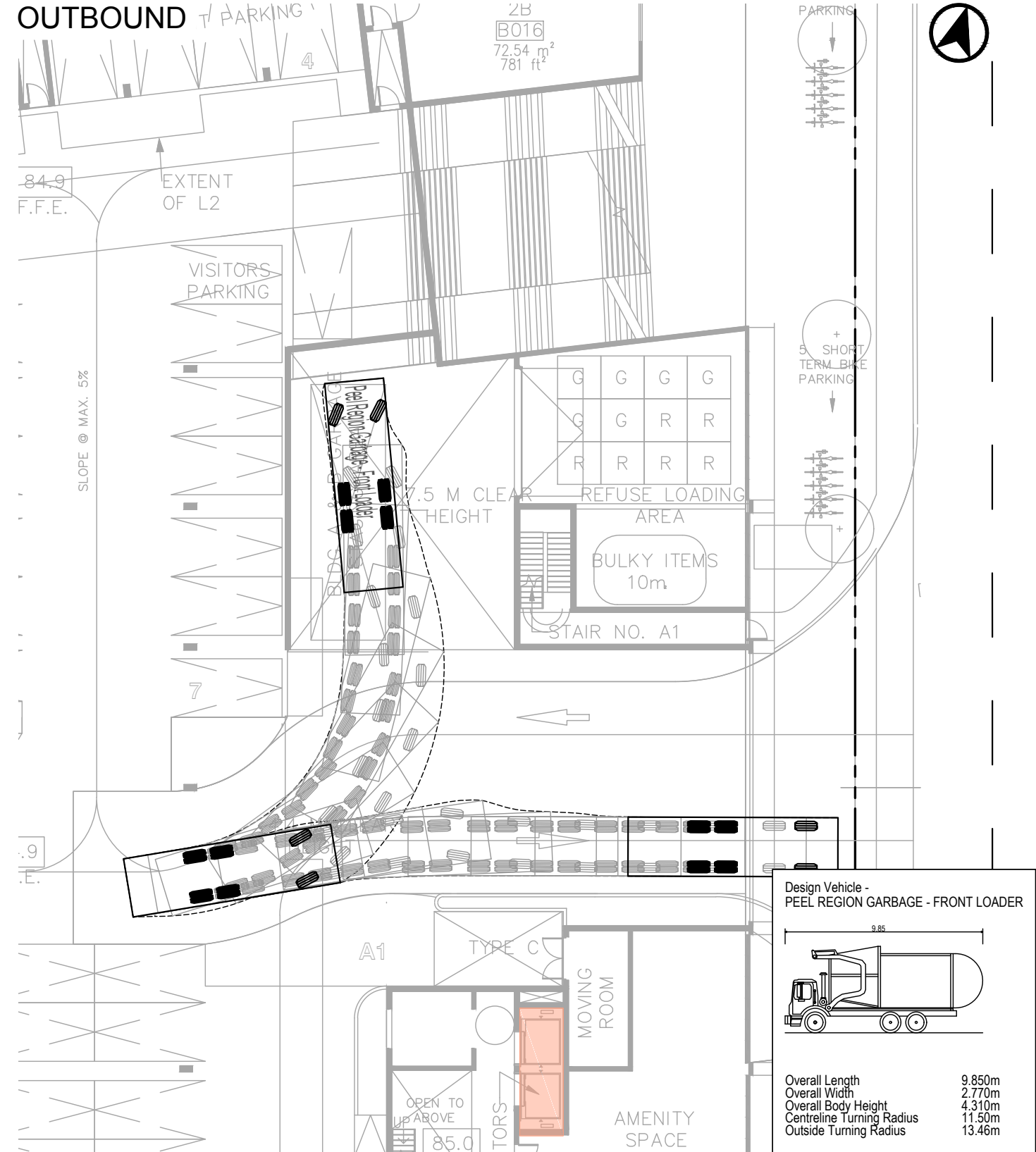
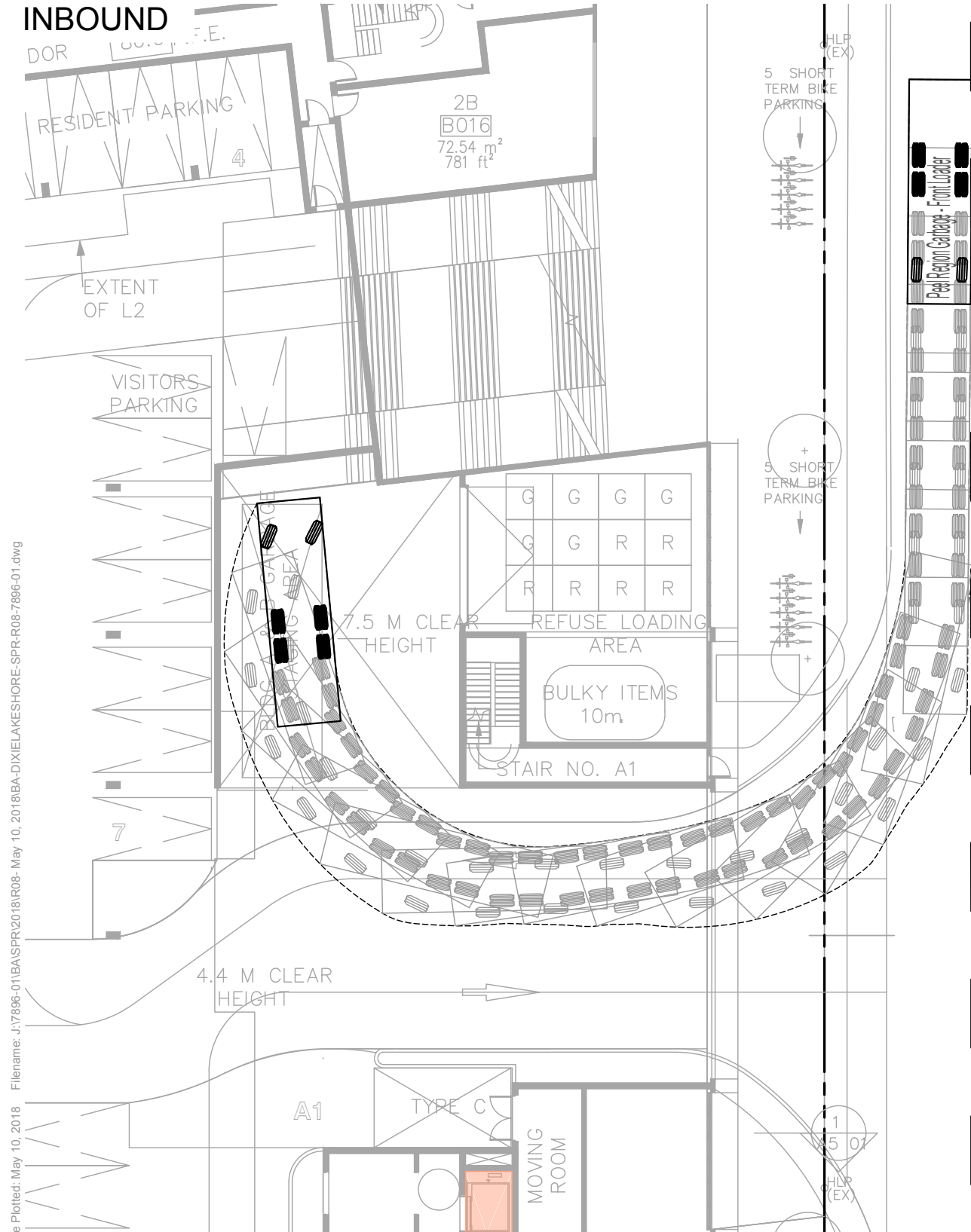
2006 GTA zone of destination - gta06\_dest In 3643, 3649)

Table: Trip 2016

| Row:          | Count: | Expanded: | Total |
|---------------|--------|-----------|-------|
| Transit exclu | 14     | 391       | 8%    |
| Auto driver   | 166    | 3468      | 68%   |
| GO rail only  | 19     | 320       | 6%    |
| Joint GO rail | 6      | 97        | 2%    |
| Auto passen   | 18     | 407       | 8%    |
| School bus    | 2      | 23        | 0%    |
| Taxi passen   | 1      | 12        | 0%    |
| Walk          | 19     | 373       | 7%    |
| Total:        | 245    | 5090      | 100%  |

## **APPENDIX C: Vehicle Manoeuvring Diagrams (VMDs)**





Design Vehicle -  
PEEL REGION GARBAGE - FRONT LOADER

|                           |        |
|---------------------------|--------|
| Overall Length            | 9.850m |
| Overall Width             | 2.770m |
| Overall Body Height       | 4.310m |
| Centreline Turning Radius | 11.50m |
| Outside Turning Radius    | 13.46m |

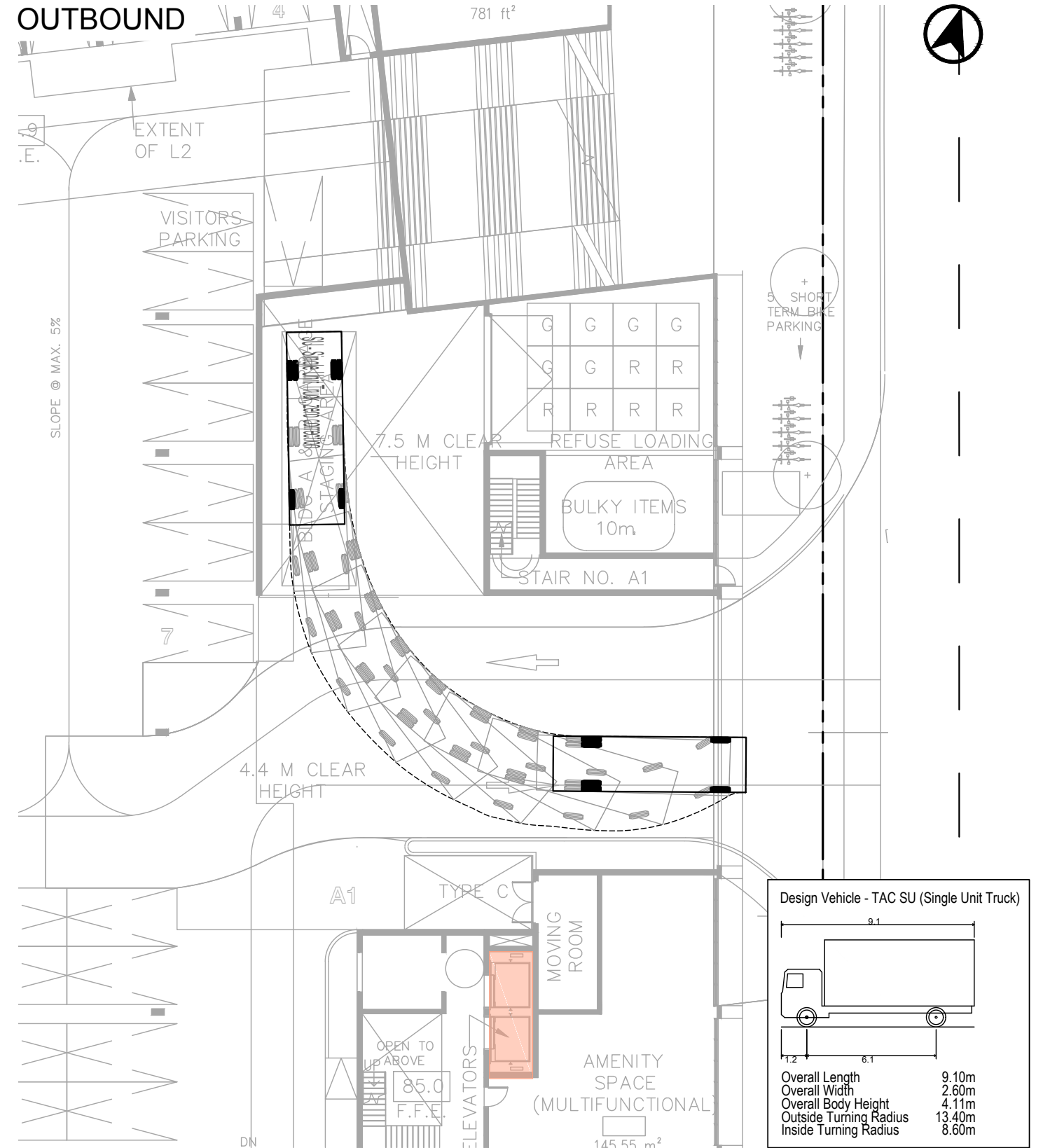
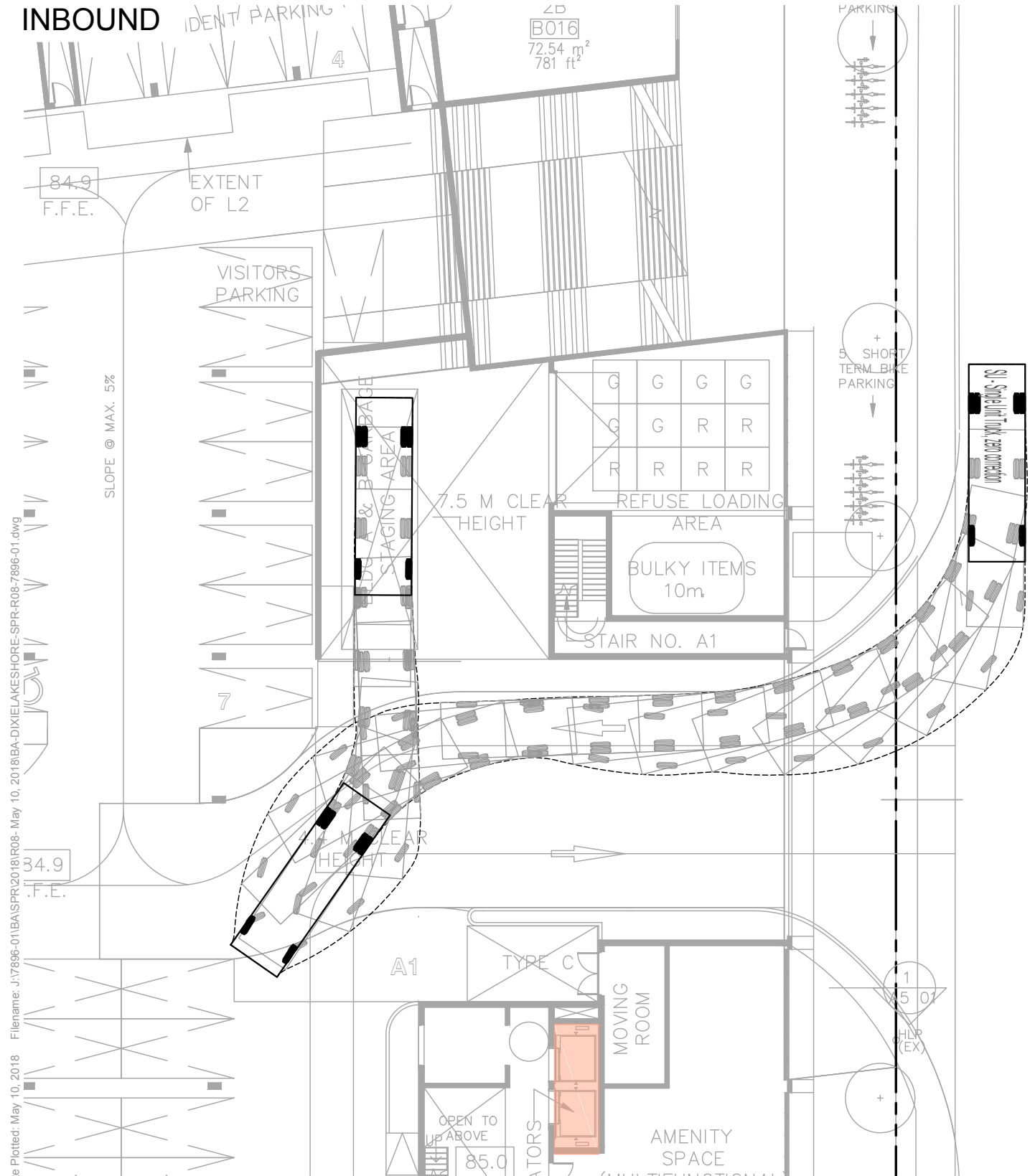


**DIXIE AND LAKESHORE**  
**VEHICLE MANOEUVRING DIAGRAM**  
**PEEL REGION GARBAGE - FRONT LOADER**

Project: DIXIE/ LAKESHORE  
 Project No. 7896-01  
 Date: MAY 10, 2018  
 Revised: --

Scale 1:250

Drawing No. **VMD-01**



## DIXIE AND LAKESHORE

### VEHICLE MANOEUVRING DIAGRAM

#### TAC SU (SINGLE UNIT TRUCK)

Project: DIXIE/ LAKESHORE

Project No. 7896-01

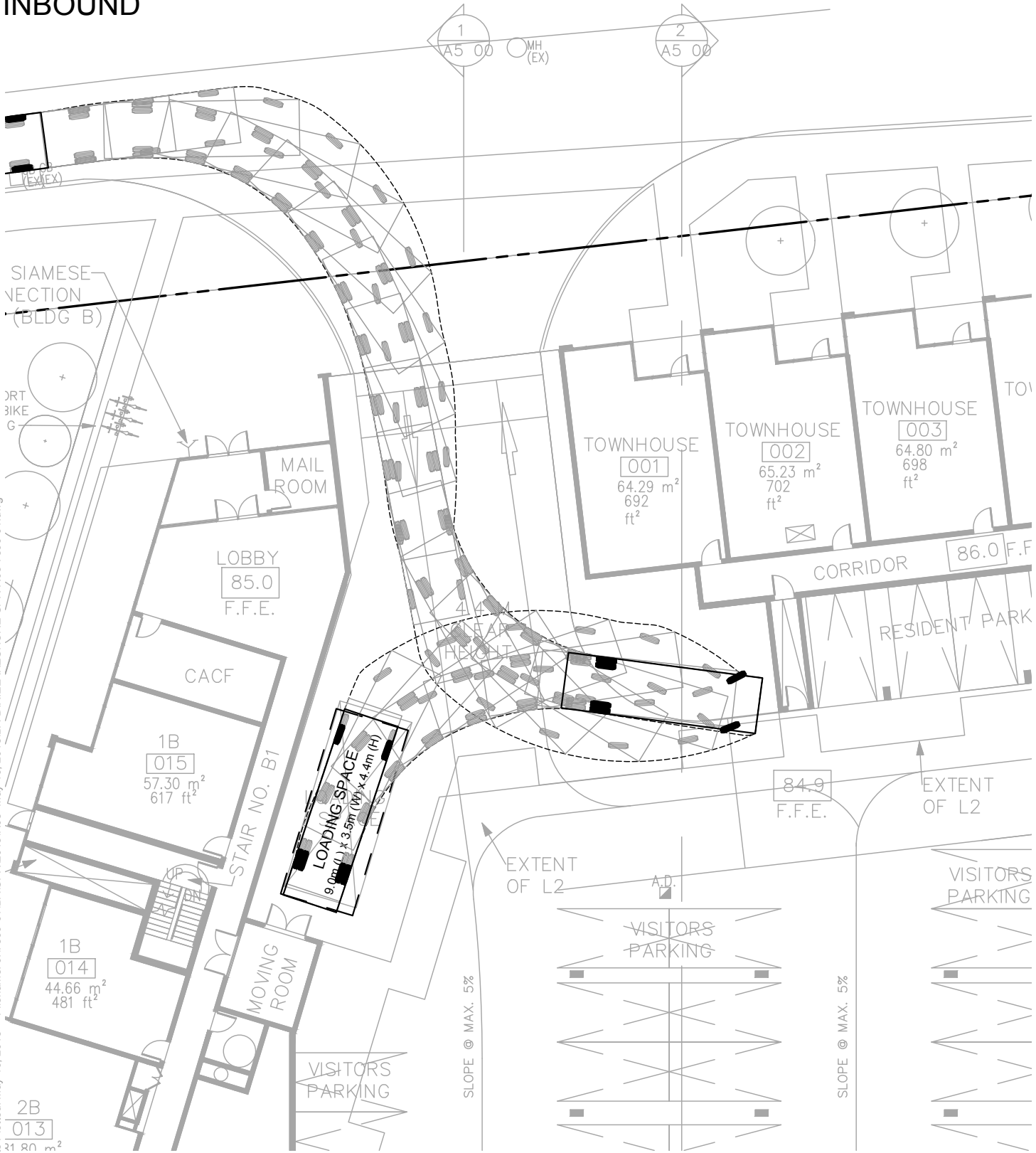
Date: MAY 10, 2018

Revised: --

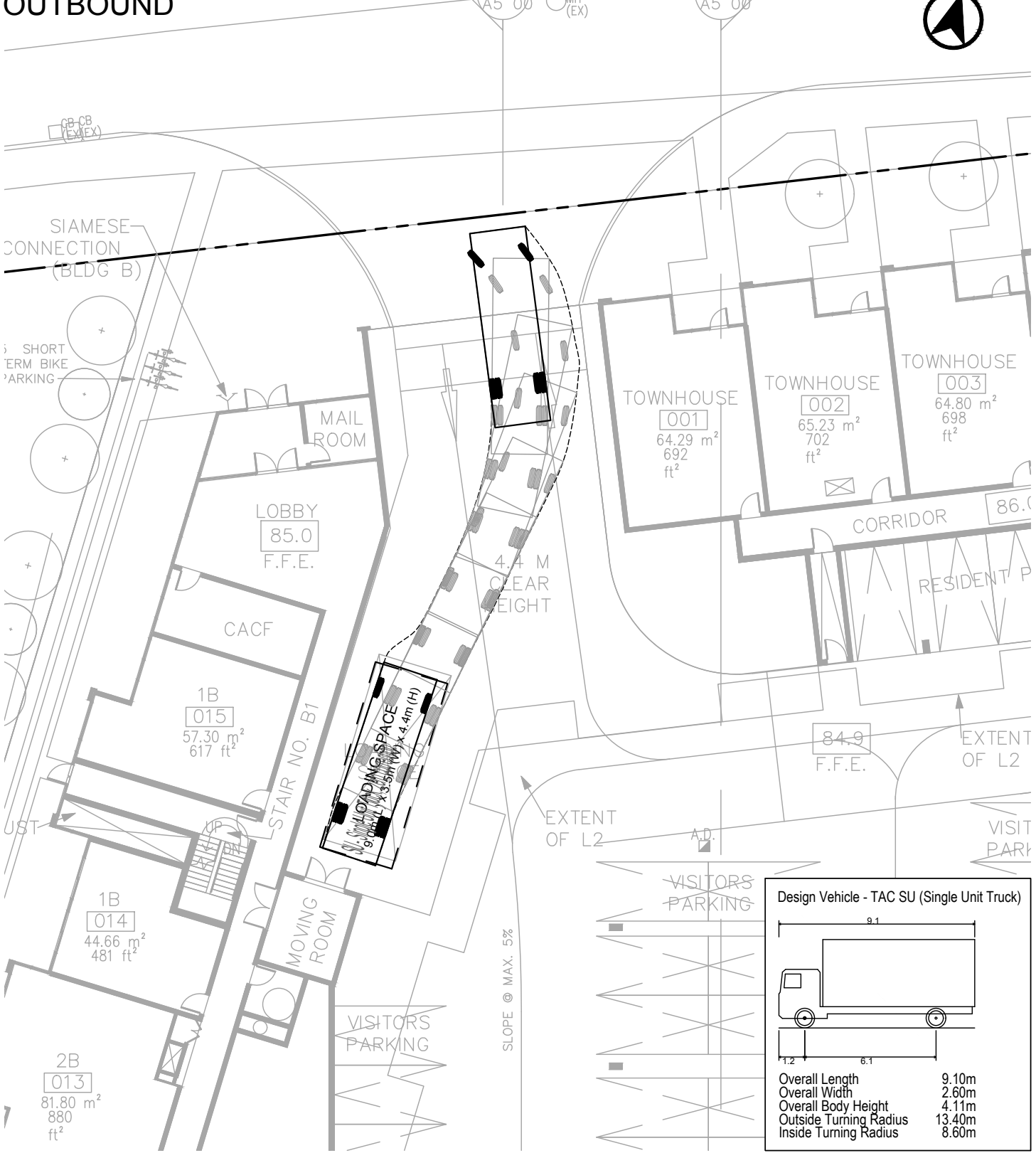
Scale  
 1:250

Drawing No. VMD-02

INBOUND



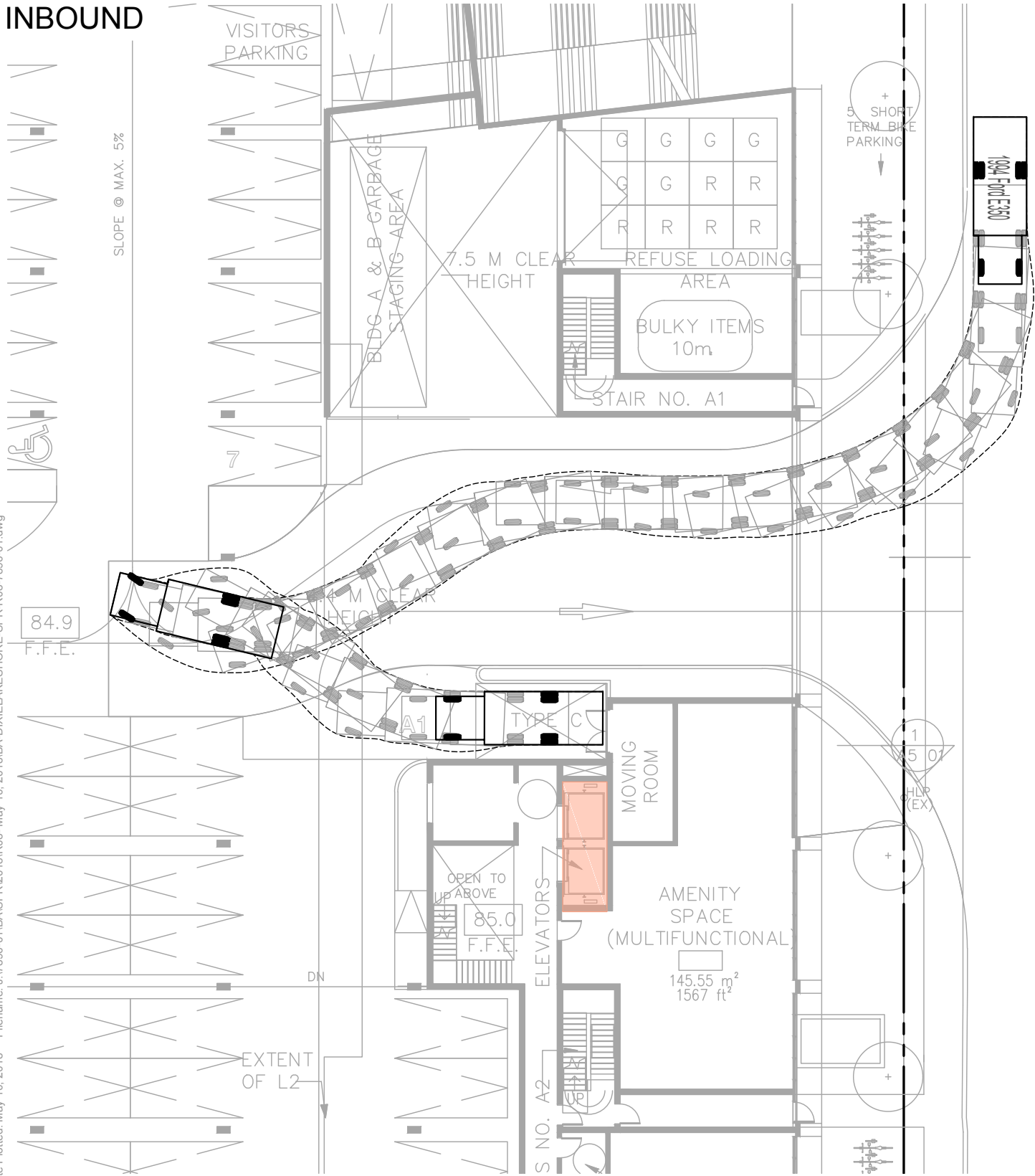
OUTBOUND



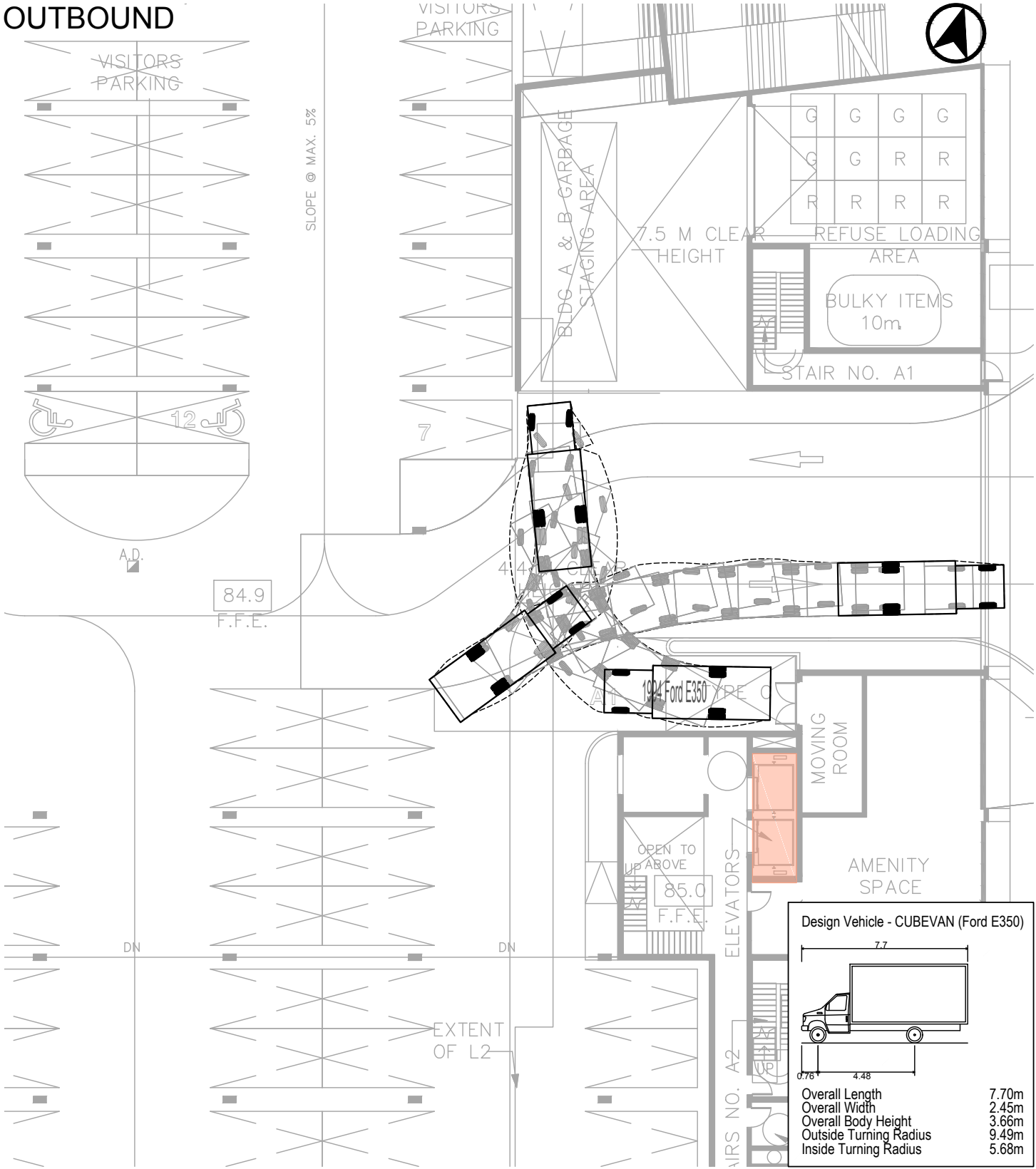
Design Vehicle - TAC SU (Single Unit Truck)

|                        |        |
|------------------------|--------|
| Overall Length         | 9.10m  |
| Overall Width          | 2.60m  |
| Overall Body Height    | 4.11m  |
| Outside Turning Radius | 13.40m |
| Inside Turning Radius  | 8.60m  |

INBOUND



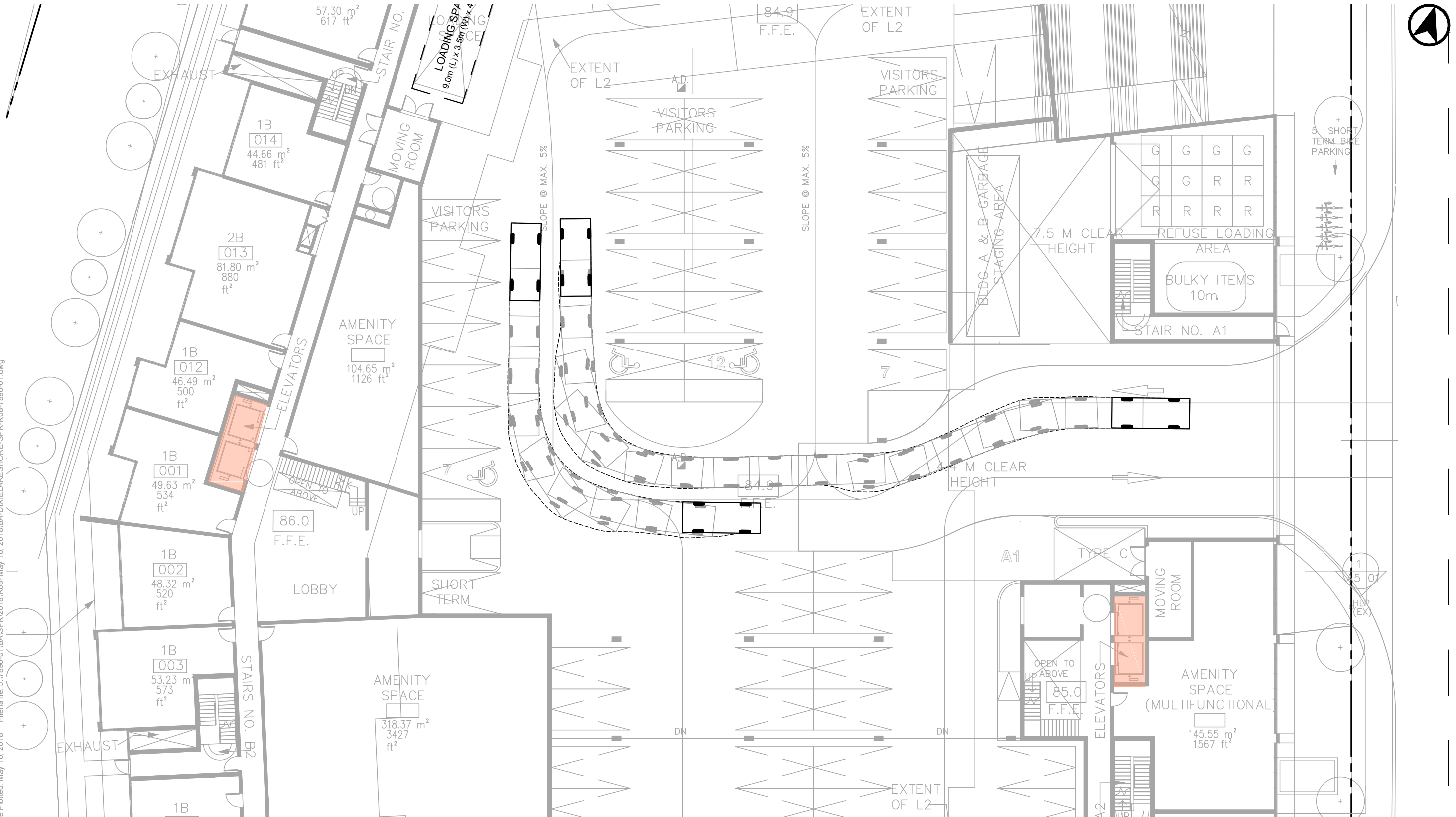
OUTBOUND



Design Vehicle - CUBEVAN (Ford E350)

|                        |       |
|------------------------|-------|
| Overall Length         | 7.70m |
| Overall Width          | 2.45m |
| Overall Body Height    | 3.66m |
| Outside Turning Radius | 9.49m |
| Inside Turning Radius  | 5.68m |

Date Plotted: May 10, 2018    Filename: J:\7896-01\BAS\PR2018\R08-May 10, 2018\BA-DIXIELAKESHORE-SPR-R08-7896-01.dwg

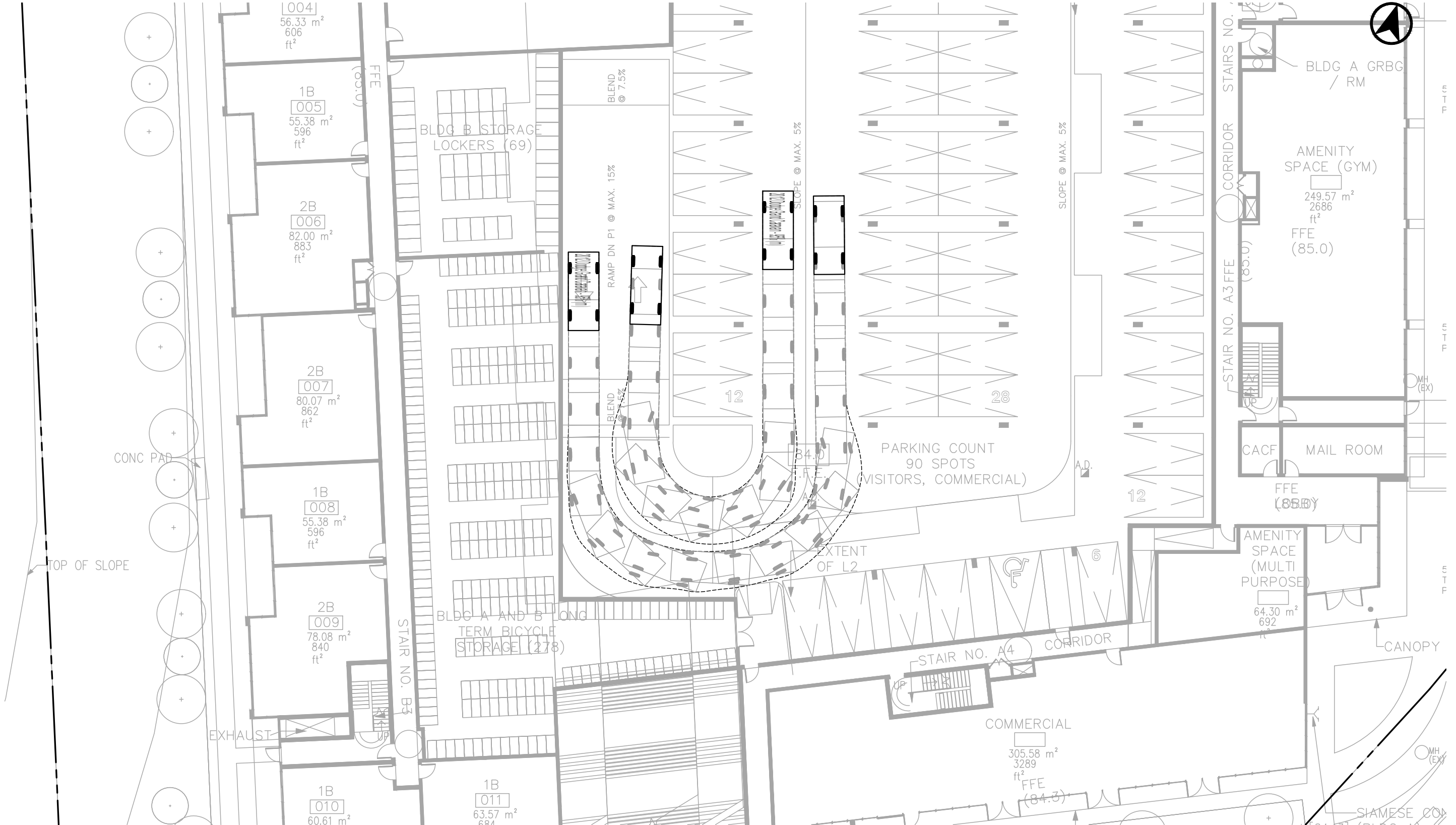


**DIXIE AND LAKESHORE**  
**VEHICLE MANOEUVRING DIAGRAM**  
**2012 DODGE GRAND CARAVAN**  
**PICK UP/ DROP OFF AREA**

Project: DIXIE/ LAKESHORE  
Project No. 7896-01  
Date: MAY 10, 2018  
Revised: --

Scale 0 5 10m  
1:250  
Drawing No. **VMD-05**

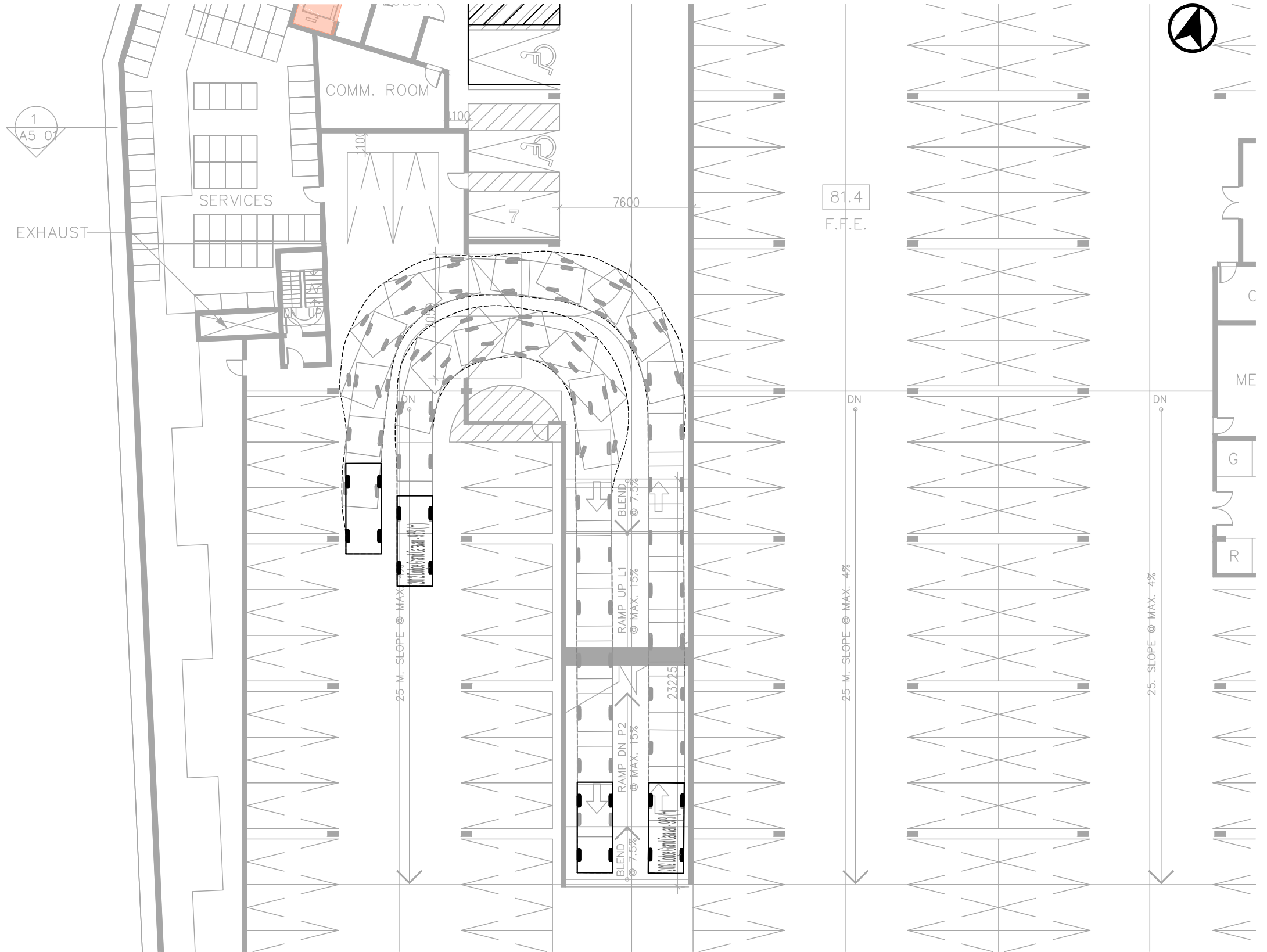
Date Plotted: May 10, 2018    Filename: J:\7896-01\BAS\PR2018\R08- May 10, 2018\BA-DIXIELAKESHORE-SPR-R08-7896-01.dwg



**DIXIE AND LAKESHORE**  
**VEHICLE MANOEUVRING DIAGRAM**  
**2012 DODGE GRAND CARAVAN**  
**GROUND FLOOR - INBOUND/ OUTBOUND RAMP**

Project: DIXIE/ LAKESHORE  
Project No. 7896-01  
Date: MAY 10, 2018  
Revised: --

Scale  
1:250  
0 5 10m  
Drawing No. **VMD-06**



DIXIE AND LAKESHORE  
VEHICLE MANOEUVRING DIAGRAM  
2012 DODGE GRAND CARAVAN  
P1 LEVEL - INBOUND/ OUTBOUND RAMP

Project: DIXIE/ LAKESHORE  
Project No. 7896-01  
Date: MAY 10, 2018  
Revised: --

Scale  
1:250  
0 5 10m  
Drawing No.  
VMD-07

## **APPENDIX D: Turning Movement Counts (TMCs)**





Turning Movement Count (5 . DIXIE RD & LAKESHORE RD E)

| Start Time  | N Approach<br>DIXIE RD |             |             |               |            |                | E Approach<br>LAKESHORE RD E |             |             |               |            |                | S Approach<br>DIXIE RD |             |             |               |            |                | W Approach<br>LAKESHORE RD E |             |             |               |            |                | Int. Total<br>(15 min) | Int. Total<br>(1 hr) |  |
|-------------|------------------------|-------------|-------------|---------------|------------|----------------|------------------------------|-------------|-------------|---------------|------------|----------------|------------------------|-------------|-------------|---------------|------------|----------------|------------------------------|-------------|-------------|---------------|------------|----------------|------------------------|----------------------|--|
|             | Right<br>N-W           | Thru<br>N-S | Left<br>N-E | U-Turn<br>N-N | Peds:<br>N | Approach Total | Right<br>E-N                 | Thru<br>E-W | Left<br>E-S | U-Turn<br>E-E | Peds:<br>E | Approach Total | Right<br>S-E           | Thru<br>S-N | Left<br>S-W | U-Turn<br>S-S | Peds:<br>S | Approach Total | Right<br>W-S                 | Thru<br>W-E | Left<br>W-N | U-Turn<br>W-W | Peds:<br>W | Approach Total |                        |                      |  |
| 07:00:00    | 42                     | 0           | 13          | 0             | 1          | 55             | 20                           | 74          | 0           | 0             | 0          | 94             | 0                      | 0           | 0           | 0             | 1          | 0              | 0                            | 121         | 48          | 0             | 1          | 171            | 320                    |                      |  |
| 07:15:00    | 32                     | 1           | 23          | 0             | 3          | 56             | 29                           | 83          | 0           | 0             | 0          | 112            | 0                      | 0           | 0           | 0             | 0          | 0              | 0                            | 177         | 79          | 0             | 0          | 256            | 424                    |                      |  |
| 07:30:00    | 25                     | 0           | 42          | 0             | 2          | 67             | 36                           | 91          | 0           | 0             | 0          | 127            | 0                      | 0           | 0           | 0             | 2          | 0              | 0                            | 175         | 73          | 0             | 0          | 248            | 442                    |                      |  |
| 07:45:00    | 31                     | 0           | 41          | 0             | 4          | 72             | 52                           | 132         | 0           | 0             | 0          | 184            | 0                      | 0           | 0           | 0             | 1          | 0              | 1                            | 237         | 94          | 0             | 1          | 332            | 588                    | 1774                 |  |
| 08:00:00    | 54                     | 0           | 36          | 0             | 2          | 90             | 48                           | 112         | 0           | 0             | 1          | 160            | 0                      | 0           | 0           | 0             | 0          | 0              | 0                            | 176         | 116         | 0             | 0          | 292            | 542                    | 1996                 |  |
| 08:15:00    | 48                     | 0           | 25          | 0             | 3          | 73             | 45                           | 149         | 0           | 0             | 0          | 194            | 0                      | 0           | 0           | 0             | 0          | 0              | 0                            | 186         | 93          | 0             | 0          | 279            | 546                    | 2118                 |  |
| 08:30:00    | 48                     | 0           | 31          | 0             | 1          | 79             | 38                           | 112         | 0           | 0             | 0          | 150            | 0                      | 0           | 0           | 0             | 1          | 0              | 0                            | 158         | 93          | 0             | 0          | 251            | 480                    | 2156                 |  |
| 08:45:00    | 42                     | 0           | 21          | 0             | 2          | 63             | 32                           | 106         | 1           | 0             | 0          | 139            | 0                      | 0           | 1           | 0             | 0          | 1              | 0                            | 170         | 84          | 0             | 1          | 254            | 457                    | 2025                 |  |
| ***BREAK*** |                        |             |             |               |            |                |                              |             |             |               |            |                |                        |             |             |               |            |                |                              |             |             |               |            |                |                        |                      |  |
| 16:00:00    | 56                     | 0           | 45          | 0             | 1          | 101            | 43                           | 212         | 0           | 0             | 0          | 255            | 0                      | 0           | 0           | 0             | 1          | 0              | 0                            | 114         | 80          | 0             | 3          | 194            | 550                    |                      |  |
| 16:15:00    | 41                     | 0           | 40          | 0             | 5          | 81             | 49                           | 254         | 1           | 0             | 0          | 304            | 1                      | 0           | 0           | 0             | 0          | 1              | 0                            | 87          | 43          | 1             | 0          | 131            | 517                    |                      |  |
| 16:30:00    | 55                     | 0           | 40          | 0             | 5          | 95             | 60                           | 276         | 1           | 0             | 0          | 337            | 2                      | 0           | 0           | 0             | 1          | 2              | 1                            | 92          | 51          | 0             | 1          | 144            | 578                    |                      |  |
| 16:45:00    | 79                     | 0           | 48          | 0             | 1          | 127            | 57                           | 254         | 0           | 0             | 0          | 311            | 1                      | 0           | 0           | 0             | 0          | 1              | 1                            | 131         | 62          | 0             | 0          | 194            | 633                    | 2278                 |  |
| 17:00:00    | 71                     | 0           | 40          | 0             | 2          | 111            | 59                           | 272         | 0           | 0             | 0          | 331            | 0                      | 0           | 0           | 0             | 0          | 0              | 0                            | 118         | 55          | 0             | 1          | 173            | 615                    | 2343                 |  |
| 17:15:00    | 59                     | 0           | 59          | 0             | 2          | 118            | 45                           | 266         | 0           | 0             | 1          | 311            | 0                      | 0           | 0           | 0             | 3          | 0              | 0                            | 118         | 50          | 0             | 1          | 168            | 597                    | 2423                 |  |
| 17:30:00    | 65                     | 0           | 45          | 0             | 4          | 110            | 58                           | 272         | 0           | 0             | 0          | 330            | 0                      | 0           | 0           | 0             | 1          | 0              | 0                            | 107         | 50          | 0             | 1          | 157            | 597                    | 2442                 |  |
| 17:45:00    | 64                     | 0           | 41          | 0             | 2          | 105            | 46                           | 175         | 0           | 0             | 0          | 221            | 0                      | 0           | 0           | 0             | 0          | 0              | 0                            | 105         | 52          | 0             | 1          | 157            | 483                    | 2292                 |  |
| Grand Total | 812                    | 1           | 590         | 0             | 40         | 1403           | 717                          | 2840        | 3           | 0             | 2          | 3560           | 4                      | 0           | 1           | 0             | 11         | 5              | 5                            | 2272        | 1123        | 1             | 11         | 3401           | 8369                   | -                    |  |
| Approach%   | 57.9%                  | 0.1%        | 42.1%       | 0%            | -          | -              | 20.1%                        | 79.8%       | 0.1%        | 0%            | -          | -              | 80%                    | 0%          | 20%         | 0%            | -          | -              | 0.1%                         | 66.8%       | 33%         | 0%            | -          | -              | -                      | -                    |  |
| Totals %    | 9.7%                   | 0%          | 7%          | 0%            | -          | 16.8%          | 8.6%                         | 33.9%       | 0%          | 0%            | -          | 42.5%          | 0%                     | 0%          | 0%          | 0%            | 0.1%       | 0.1%           | 27.1%                        | 13.4%       | 0%          | -             | -          | 40.6%          | -                      | -                    |  |
| Heavy       | 42                     | 0           | 5           | 0             | 0          | -              | 16                           | 95          | 0           | 0             | 0          | -              | 0                      | 0           | 0           | 0             | 0          | -              | 0                            | 100         | 26          | 0             | -          | -              | -                      | -                    |  |
| Heavy %     | 5.2%                   | 0%          | 0.8%        | 0%            | -          | -              | 2.2%                         | 3.3%        | 0%          | 0%            | -          | -              | 0%                     | 0%          | 0%          | 0%            | -          | -              | 0%                           | 4.4%        | 2.3%        | 0%            | -          | -              | -                      | -                    |  |
| Bicycles    | 0                      | 0           | 0           | 0             | -          | -              | 0                            | 0           | 0           | 0             | -          | -              | 0                      | 0           | 0           | 0             | -          | -              | 0                            | 1           | 0           | 0             | -          | -              | -                      | -                    |  |
| Bicycle %   | 0%                     | 0%          | 0%          | 0%            | -          | -              | 0%                           | 0%          | 0%          | 0%            | -          | -              | 0%                     | 0%          | 0%          | 0%            | -          | -              | 0%                           | 0%          | 0%          | 0%            | -          | -              | -                      | -                    |  |



Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast (-3.4 °C)

| Start Time             | N Approach<br>DIXIE RD |      |       |        |       |                | E Approach<br>LAKESHORE RD E |       |      |        |      |                | S Approach<br>DIXIE RD |      |      |        |      |                | W Approach<br>LAKESHORE RD E |       |       |        |      |                | Int. Total<br>(15 min) |
|------------------------|------------------------|------|-------|--------|-------|----------------|------------------------------|-------|------|--------|------|----------------|------------------------|------|------|--------|------|----------------|------------------------------|-------|-------|--------|------|----------------|------------------------|
|                        | Right                  | Thru | Left  | U-Turn | Peds  | Approach Total | Right                        | Thru  | Left | U-Turn | Peds | Approach Total | Right                  | Thru | Left | U-Turn | Peds | Approach Total | Right                        | Thru  | Left  | U-Turn | Peds | Approach Total |                        |
| 07:45:00               | 31                     | 0    | 41    | 0      | 4     | 72             | 52                           | 132   | 0    | 0      | 0    | 184            | 0                      | 0    | 0    | 0      | 1    | 0              | 1                            | 237   | 94    | 0      | 1    | 332            | 588                    |
| 08:00:00               | 54                     | 0    | 36    | 0      | 2     | 90             | 48                           | 112   | 0    | 0      | 1    | 160            | 0                      | 0    | 0    | 0      | 0    | 0              | 0                            | 176   | 116   | 0      | 0    | 292            | 542                    |
| 08:15:00               | 48                     | 0    | 25    | 0      | 3     | 73             | 45                           | 149   | 0    | 0      | 0    | 194            | 0                      | 0    | 0    | 0      | 0    | 0              | 0                            | 186   | 93    | 0      | 0    | 279            | 546                    |
| 08:30:00               | 48                     | 0    | 31    | 0      | 1     | 79             | 38                           | 112   | 0    | 0      | 0    | 150            | 0                      | 0    | 0    | 0      | 1    | 0              | 0                            | 158   | 93    | 0      | 0    | 251            | 480                    |
| Grand Total            | 181                    | 0    | 133   | 0      | 10    | 314            | 183                          | 505   | 0    | 0      | 1    | 688            | 0                      | 0    | 0    | 0      | 2    | 0              | 1                            | 757   | 396   | 0      | 1    | 1154           | 2156                   |
| Approach%              | 57.6%                  | 0%   | 42.4% | 0%     | -     | -              | 26.6%                        | 73.4% | 0%   | 0%     | -    | -              | 0%                     | 0%   | 0%   | 0%     | -    | -              | 0.1%                         | 65.6% | 34.3% | 0%     | -    | -              | -                      |
| Totals %               | 8.4%                   | 0%   | 6.2%  | 0%     | -     | 14.6%          | 8.5%                         | 23.4% | 0%   | 0%     | -    | 31.9%          | 0%                     | 0%   | 0%   | 0%     | 0%   | 0%             | 0%                           | 35.1% | 18.4% | 0%     | -    | 53.5%          | -                      |
| PHF                    | 0.84                   | 0    | 0.81  | 0      | -     | 0.87           | 0.88                         | 0.85  | 0    | 0      | -    | 0.89           | 0                      | 0    | 0    | 0      | -    | -              | 0                            | 0.25  | 0.8   | 0.85   | 0    | 0.87           | -                      |
| Heavy                  | 22                     | 0    | 0     | 0      | -     | 22             | 6                            | 35    | 0    | 0      | -    | 41             | 0                      | 0    | 0    | 0      | -    | -              | 0                            | 34    | 13    | 0      | -    | 47             | -                      |
| Heavy %                | 12.2%                  | 0%   | 0%    | 0%     | -     | 7%             | 3.3%                         | 6.9%  | 0%   | 0%     | -    | 6%             | 0%                     | 0%   | 0%   | 0%     | -    | -              | 0%                           | 4.5%  | 3.3%  | 0%     | -    | 4.1%           | -                      |
| Lights                 | 159                    | 0    | 133   | 0      | -     | 292            | 177                          | 470   | 0    | 0      | -    | 647            | 0                      | 0    | 0    | 0      | -    | -              | 1                            | 723   | 393   | 0      | -    | 1107           | -                      |
| Lights %               | 87.8%                  | 0%   | 100%  | 0%     | -     | 93%            | 96.7%                        | 93.1% | 0%   | 0%     | -    | 94%            | 0%                     | 0%   | 0%   | 0%     | -    | -              | 100%                         | 95.5% | 96.7% | 0%     | -    | 95.9%          | -                      |
| Single-Unit Trucks     | 18                     | 0    | 0     | 0      | -     | 18             | 1                            | 20    | 0    | 0      | -    | 21             | 0                      | 0    | 0    | 0      | -    | -              | 0                            | 19    | 9     | 0      | -    | 28             | -                      |
| Single-Unit Trucks %   | 9.9%                   | 0%   | 0%    | 0%     | -     | 5.7%           | 0.5%                         | 4%    | 0%   | 0%     | -    | 3.1%           | 0%                     | 0%   | 0%   | 0%     | -    | -              | 0%                           | 2.5%  | 2.3%  | 0%     | -    | 2.4%           | -                      |
| Buses                  | 3                      | 0    | 0     | 0      | -     | 3              | 4                            | 14    | 0    | 0      | -    | 18             | 0                      | 0    | 0    | 0      | -    | -              | 0                            | 13    | 3     | 0      | -    | 16             | -                      |
| Buses %                | 1.7%                   | 0%   | 0%    | 0%     | -     | 1%             | 2.2%                         | 2.8%  | 0%   | 0%     | -    | 2.6%           | 0%                     | 0%   | 0%   | 0%     | -    | -              | 0%                           | 1.7%  | 0.8%  | 0%     | -    | 1.4%           | -                      |
| Articulated Trucks     | 1                      | 0    | 0     | 0      | -     | 1              | 1                            | 1     | 0    | 0      | -    | 2              | 0                      | 0    | 0    | 0      | -    | -              | 0                            | 2     | 1     | 0      | -    | 3              | -                      |
| Articulated Trucks %   | 0.6%                   | 0%   | 0%    | 0%     | -     | 0.3%           | 0.5%                         | 0.2%  | 0%   | 0%     | -    | 0.3%           | 0%                     | 0%   | 0%   | 0%     | -    | -              | 0%                           | 0.3%  | 0.3%  | 0%     | -    | 0.3%           | -                      |
| Pedestrians            | -                      | -    | -     | -      | 10    | -              | -                            | -     | -    | -      | 0    | -              | -                      | -    | -    | -      | 1    | -              | -                            | -     | -     | -      | 1    | -              | -                      |
| Pedestrians%           | -                      | -    | -     | -      | 71.4% | -              | -                            | -     | -    | -      | 0%   | -              | -                      | -    | -    | -      | 7.1% | -              | -                            | -     | -     | -      | 7.1% | -              | -                      |
| Bicycles on Crosswalk  | -                      | -    | -     | -      | 0     | -              | -                            | -     | -    | -      | 1    | -              | -                      | -    | -    | -      | 1    | -              | -                            | -     | -     | -      | 0    | -              | -                      |
| Bicycles on Crosswalk% | -                      | -    | -     | -      | 0%    | -              | -                            | -     | -    | -      | 7.1% | -              | -                      | -    | -    | -      | 7.1% | -              | -                            | -     | -     | -      | 0%   | -              | -                      |
| Bicycles on Road       | 0                      | 0    | 0     | 0      | 0     | -              | 0                            | 0     | 0    | 0      | 0    | -              | 0                      | 0    | 0    | 0      | 0    | -              | 0                            | 1     | 0     | 0      | 0    | -              | -                      |
| Bicycles on Road%      | -                      | -    | -     | -      | 0%    | -              | -                            | -     | -    | -      | 0%   | -              | -                      | -    | -    | -      | 0%   | -              | -                            | -     | -     | -      | 0%   | -              | -                      |

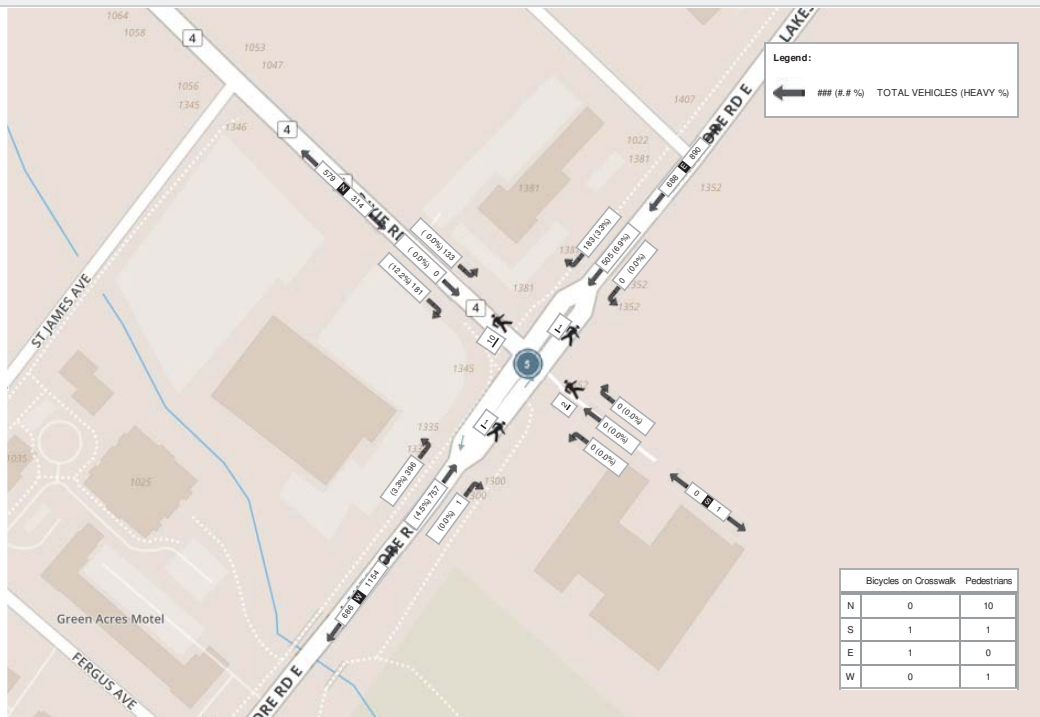


Peak Hour: 04:45 PM - 05:45 PM Weather: Snow (-0.4 °C)

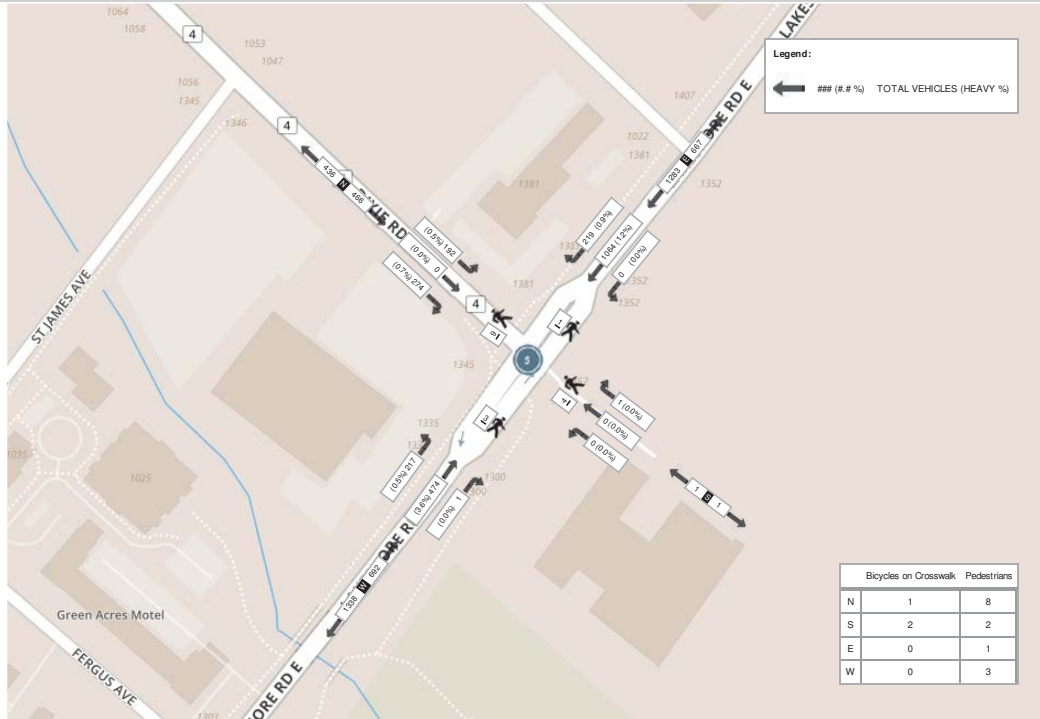
| Start Time             | N Approach<br>DIXIE RD |      |       |        |       |                | E Approach<br>LAKESHORE RD E |       |      |        |      |                | S Approach<br>DIXIE RD |      |      |        |       |                | W Approach<br>LAKESHORE RD E |       |       |        |       |                | Int. Total<br>(15 min) |
|------------------------|------------------------|------|-------|--------|-------|----------------|------------------------------|-------|------|--------|------|----------------|------------------------|------|------|--------|-------|----------------|------------------------------|-------|-------|--------|-------|----------------|------------------------|
|                        | Right                  | Thru | Left  | U-Turn | Peds  | Approach Total | Right                        | Thru  | Left | U-Turn | Peds | Approach Total | Right                  | Thru | Left | U-Turn | Peds  | Approach Total | Right                        | Thru  | Left  | U-Turn | Peds  | Approach Total |                        |
| 16:45:00               | 79                     | 0    | 48    | 0      | 1     | 127            | 57                           | 254   | 0    | 0      | 0    | 311            | 1                      | 0    | 0    | 0      | 0     | 1              | 1                            | 131   | 62    | 0      | 0     | 194            | 633                    |
| 17:00:00               | 71                     | 0    | 40    | 0      | 2     | 111            | 59                           | 272   | 0    | 0      | 0    | 331            | 0                      | 0    | 0    | 0      | 0     | 0              | 0                            | 118   | 55    | 0      | 1     | 173            | 615                    |
| 17:15:00               | 59                     | 0    | 59    | 0      | 2     | 118            | 45                           | 266   | 0    | 0      | 1    | 311            | 0                      | 0    | 0    | 0      | 3     | 0              | 0                            | 118   | 50    | 0      | 1     | 168            | 597                    |
| 17:30:00               | 65                     | 0    | 45    | 0      | 4     | 110            | 58                           | 272   | 0    | 0      | 0    | 330            | 0                      | 0    | 0    | 0      | 1     | 0              | 0                            | 107   | 50    | 0      | 1     | 157            | 597                    |
| Grand Total            | 274                    | 0    | 192   | 0      | 9     | 466            | 219                          | 1064  | 0    | 0      | 1    | 1283           | 1                      | 0    | 0    | 0      | 4     | 1              | 1                            | 474   | 217   | 0      | 3     | 692            | 2442                   |
| Approach%              | 58.8%                  | 0%   | 41.2% | 0%     | -     | -              | 17.1%                        | 82.9% | 0%   | 0%     | -    | -              | 100%                   | 0%   | 0%   | 0%     | -     | -              | 0.1%                         | 68.5% | 31.4% | 0%     | -     | -              | -                      |
| Totals %               | 11.2%                  | 0%   | 7.9%  | 0%     | -     | 19.1%          | 9%                           | 43.6% | 0%   | 0%     | -    | 52.5%          | 0%                     | 0%   | 0%   | 0%     | -     | 0%             | 0%                           | 19.4% | 8.9%  | 0%     | -     | 28.3%          | -                      |
| PHF                    | 0.87                   | 0    | 0.81  | 0      | -     | 0.92           | 0.93                         | 0.98  | 0    | 0      | -    | 0.97           | 0.25                   | 0    | 0    | 0      | -     | 0.25           | 0.25                         | 0.9   | 0.88  | 0      | -     | 0.89           | -                      |
| Heavy                  | 2                      | 0    | 1     | 0      | -     | 3              | 2                            | 13    | 0    | 0      | -    | 15             | 0                      | 0    | 0    | 0      | -     | 0              | 0                            | 17    | 1     | 0      | -     | 18             | -                      |
| Heavy %                | 0.7%                   | 0%   | 0.5%  | 0%     | -     | 0.6%           | 0.9%                         | 1.2%  | 0%   | 0%     | -    | 1.2%           | 0%                     | 0%   | 0%   | 0%     | -     | 0%             | 0%                           | 3.6%  | 0.5%  | 0%     | -     | 2.6%           | -                      |
| Lights                 | 272                    | 0    | 191   | 0      | -     | 463            | 217                          | 1051  | 0    | 0      | -    | 1268           | 1                      | 0    | 0    | 0      | -     | 1              | 1                            | 457   | 216   | 0      | -     | 674            | -                      |
| Lights %               | 99.3%                  | 0%   | 99.5% | 0%     | -     | 99.4%          | 99.1%                        | 98.8% | 0%   | 0%     | -    | 98.8%          | 100%                   | 0%   | 0%   | 0%     | -     | 100%           | 100%                         | 96.4% | 99.5% | 0%     | -     | 97.4%          | -                      |
| Single-Unit Trucks     | 2                      | 0    | 0     | 0      | -     | 2              | 0                            | 4     | 0    | 0      | -    | 4              | 0                      | 0    | 0    | 0      | -     | 0              | 0                            | 6     | 0     | 0      | -     | 6              | -                      |
| Single-Unit Trucks %   | 0.7%                   | 0%   | 0%    | 0%     | -     | 0.4%           | 0%                           | 0.4%  | 0%   | 0%     | -    | 0.3%           | 0%                     | 0%   | 0%   | 0%     | -     | 0%             | 0%                           | 1.3%  | 0%    | 0%     | -     | 0.9%           | -                      |
| Buses                  | 0                      | 0    | 1     | 0      | -     | 1              | 0                            | 9     | 0    | 0      | -    | 9              | 0                      | 0    | 0    | 0      | -     | 0              | 0                            | 11    | 0     | 0      | -     | 11             | -                      |
| Buses %                | 0%                     | 0%   | 0.5%  | 0%     | -     | 0.2%           | 0%                           | 0.8%  | 0%   | 0%     | -    | 0.7%           | 0%                     | 0%   | 0%   | 0%     | -     | 0%             | 0%                           | 2.3%  | 0%    | 0%     | -     | 1.6%           | -                      |
| Articulated Trucks     | 0                      | 0    | 0     | 0      | -     | 0              | 2                            | 0     | 0    | 0      | -    | 2              | 0                      | 0    | 0    | 0      | -     | 0              | 0                            | 0     | 1     | 0      | -     | 1              | -                      |
| Articulated Trucks %   | 0%                     | 0%   | 0%    | 0%     | -     | 0%             | 0.9%                         | 0%    | 0%   | 0%     | -    | 0.2%           | 0%                     | 0%   | 0%   | 0%     | -     | 0%             | 0%                           | 0%    | 0.5%  | 0%     | -     | 0.1%           | -                      |
| Pedestrians            | -                      | -    | -     | -      | 8     | -              | -                            | -     | -    | -      | 1    | -              | -                      | -    | -    | -      | 2     | -              | -                            | -     | -     | -      | 3     | -              | -                      |
| Pedestrians%           | -                      | -    | -     | -      | 47.1% | -              | -                            | -     | -    | -      | 5.9% | -              | -                      | -    | -    | -      | 11.8% | -              | -                            | -     | -     | -      | 17.6% | -              | -                      |
| Bicycles on Crosswalk  | -                      | -    | -     | -      | 1     | -              | -                            | -     | -    | -      | 0    | -              | -                      | -    | -    | -      | 2     | -              | -                            | -     | -     | -      | 0     | -              | -                      |
| Bicycles on Crosswalk% | -                      | -    | -     | -      | 5.9%  | -              | -                            | -     | -    | -      | 0%   | -              | -                      | -    | -    | -      | 11.8% | -              | -                            | -     | -     | -      | 0%    | -              | -                      |
| Bicycles on Road       | 0                      | 0    | 0     | 0      | 0     | -              | 0                            | 0     | 0    | 0      | 0    | -              | 0                      | 0    | 0    | 0      | 0     | -              | 0                            | 0     | 0     | 0      | 0     | -              | -                      |
| Bicycles on Road%      | -                      | -    | -     | -      | 0%    | -              | -                            | -     | -    | -      | 0%   | -              | -                      | -    | -    | -      | 0%    | -              | -                            | -     | -     | -      | 0%    | -              | -                      |



Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast (-3.4 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Snow (-0.4 °C)



Turning Movement Count (1 . DIXIE RD & ORCHARD HILL RD) CustID: SPEC\_INSTRUC MioID: 501027

| Start Time  | N Approach<br>DIXIE RD |             |               |            |                | E Approach<br>ORCHARD HILL RD |             |               |            |                | S Approach<br>DIXIE RD |             |               |            |                | Int. Total<br>(15 min) | Int. Total<br>(1 hr) |
|-------------|------------------------|-------------|---------------|------------|----------------|-------------------------------|-------------|---------------|------------|----------------|------------------------|-------------|---------------|------------|----------------|------------------------|----------------------|
|             | Thru<br>N:S            | Left<br>N:E | U-Turn<br>N:N | Peds<br>N: | Approach Total | Right<br>E:N                  | Left<br>E:S | U-Turn<br>E:E | Peds<br>E: | Approach Total | Right<br>S:E           | Thru<br>S:N | U-Turn<br>S:S | Peds<br>S: | Approach Total |                        |                      |
| 07:00:00    | 61                     | 5           | 0             | 0          | 66             | 7                             | 0           | 0             | 0          | 7              | 0                      | 74          | 0             | 0          | 74             | 147                    |                      |
| 07:15:00    | 64                     | 5           | 0             | 0          | 69             | 8                             | 0           | 0             | 0          | 8              | 0                      | 118         | 0             | 0          | 118            | 195                    |                      |
| 07:30:00    | 61                     | 3           | 0             | 0          | 64             | 3                             | 0           | 0             | 0          | 3              | 1                      | 116         | 0             | 0          | 117            | 184                    |                      |
| 07:45:00    | 75                     | 5           | 0             | 0          | 80             | 6                             | 0           | 0             | 0          | 6              | 0                      | 148         | 0             | 0          | 148            | 234                    | 760                  |
| 08:00:00    | 91                     | 7           | 0             | 0          | 98             | 11                            | 0           | 0             | 0          | 11             | 0                      | 177         | 0             | 0          | 177            | 286                    | 899                  |
| 08:15:00    | 81                     | 6           | 0             | 0          | 87             | 4                             | 1           | 0             | 0          | 5              | 1                      | 150         | 0             | 0          | 151            | 243                    | 947                  |
| 08:30:00    | 83                     | 1           | 0             | 0          | 84             | 7                             | 0           | 0             | 0          | 7              | 0                      | 139         | 0             | 0          | 139            | 230                    | 993                  |
| 08:45:00    | 63                     | 7           | 0             | 0          | 70             | 5                             | 2           | 0             | 0          | 7              | 1                      | 129         | 0             | 0          | 130            | 207                    | 966                  |
| ***BREAK*** |                        |             |               |            |                |                               |             |               |            |                |                        |             |               |            |                |                        |                      |
| 16:00:00    | 108                    | 3           | 0             | 0          | 111            | 8                             | 0           | 0             | 0          | 8              | 0                      | 128         | 0             | 0          | 128            | 247                    |                      |
| 16:15:00    | 88                     | 5           | 0             | 0          | 93             | 4                             | 0           | 0             | 0          | 4              | 0                      | 97          | 0             | 1          | 97             | 194                    |                      |
| 16:30:00    | 116                    | 9           | 0             | 0          | 125            | 7                             | 0           | 0             | 0          | 7              | 0                      | 119         | 0             | 0          | 119            | 251                    |                      |
| 16:45:00    | 129                    | 5           | 0             | 0          | 134            | 2                             | 1           | 0             | 0          | 3              | 0                      | 126         | 0             | 0          | 126            | 263                    | 955                  |
| 17:00:00    | 123                    | 5           | 0             | 0          | 128            | 11                            | 1           | 0             | 0          | 12             | 0                      | 121         | 0             | 0          | 121            | 261                    | 969                  |
| 17:15:00    | 129                    | 5           | 0             | 0          | 134            | 5                             | 1           | 0             | 0          | 6              | 0                      | 103         | 0             | 0          | 103            | 243                    | 1018                 |
| 17:30:00    | 120                    | 6           | 0             | 0          | 126            | 8                             | 0           | 0             | 2          | 8              | 0                      | 110         | 0             | 0          | 110            | 244                    | 1011                 |
| 17:45:00    | 135                    | 4           | 0             | 0          | 139            | 5                             | 0           | 0             | 2          | 5              | 0                      | 108         | 0             | 0          | 108            | 252                    | 1000                 |
| Grand Total | 1527                   | 81          | 0             | 0          | 1608           | 101                           | 6           | 0             | 4          | 107            | 3                      | 1963        | 0             | 1          | 1966           | 3681                   | -                    |
| Approach%   | 95%                    | 5%          | 0%            | -          | -              | 94.4%                         | 5.6%        | 0%            | -          | -              | 0.2%                   | 99.8%       | 0%            | -          | -              | -                      | -                    |
| Totals %    | 41.5%                  | 2.2%        | 0%            | -          | 43.7%          | 2.7%                          | 0.2%        | 0%            | -          | 2.9%           | 0.1%                   | 53.3%       | 0%            | -          | 53.4%          | -                      | -                    |
| Heavy       | 49                     | 8           | 0             | -          | -              | 0                             | 0           | 0             | -          | -              | 0                      | 39          | 0             | -          | -              | -                      | -                    |
| Heavy %     | 3.2%                   | 9.9%        | 0%            | -          | -              | 0%                            | 0%          | 0%            | -          | -              | 0%                     | 2%          | 0%            | -          | -              | -                      | -                    |
| Bicycles    | -                      | -           | -             | -          | -              | -                             | -           | -             | -          | -              | -                      | -           | -             | -          | -              | -                      | -                    |
| Bicycle %   | -                      | -           | -             | -          | -              | -                             | -           | -             | -          | -              | -                      | -           | -             | -          | -              | -                      | -                    |



Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast (-3.4 °C)

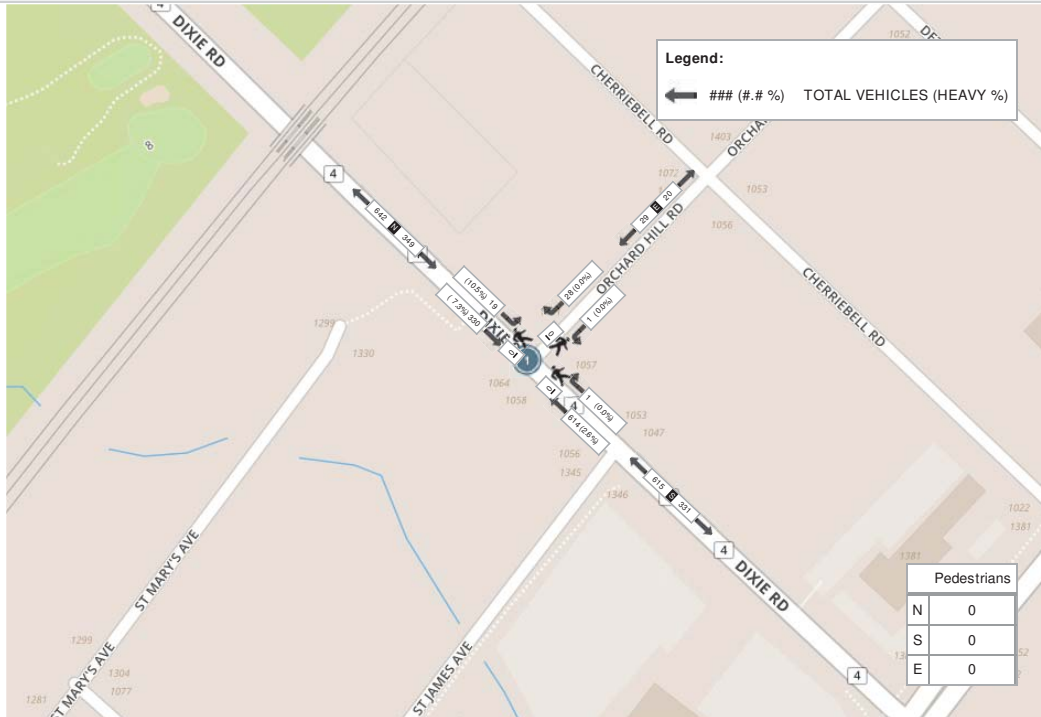
| Start Time           | N Approach<br>DIXIE RD |       |        |      |                | E Approach<br>ORCHARD HILL RD |      |        |      |                | S Approach<br>DIXIE RD |       |        |      |                | Int. Total<br>(15 min) |
|----------------------|------------------------|-------|--------|------|----------------|-------------------------------|------|--------|------|----------------|------------------------|-------|--------|------|----------------|------------------------|
|                      | Thru                   | Left  | U-Turn | Peds | Approach Total | Right                         | Left | U-Turn | Peds | Approach Total | Right                  | Thru  | U-Turn | Peds | Approach Total |                        |
| 07:45:00             | 75                     | 5     | 0      | 0    | 80             | 6                             | 0    | 0      | 0    | 6              | 0                      | 148   | 0      | 0    | 148            | 234                    |
| 08:00:00             | 91                     | 7     | 0      | 0    | 98             | 11                            | 0    | 0      | 0    | 11             | 0                      | 177   | 0      | 0    | 177            | 286                    |
| 08:15:00             | 81                     | 6     | 0      | 0    | 87             | 4                             | 1    | 0      | 0    | 5              | 1                      | 150   | 0      | 0    | 151            | 243                    |
| 08:30:00             | 83                     | 1     | 0      | 0    | 84             | 7                             | 0    | 0      | 0    | 7              | 0                      | 139   | 0      | 0    | 139            | 230                    |
| Grand Total          | 330                    | 19    | 0      | 0    | 349            | 28                            | 1    | 0      | 0    | 29             | 1                      | 614   | 0      | 0    | 615            | 993                    |
| Approach%            | 94.6%                  | 5.4%  | 0%     |      | -              | 96.6%                         | 3.4% | 0%     |      | -              | 0.2%                   | 99.8% | 0%     |      | -              | -                      |
| Totals %             | 33.2%                  | 1.9%  | 0%     |      | 35.1%          | 2.8%                          | 0.1% | 0%     |      | 2.9%           | 0.1%                   | 61.8% | 0%     |      | 61.9%          | -                      |
| PHF                  | 0.91                   | 0.68  | 0      |      | 0.89           | 0.64                          | 0.25 | 0      |      | 0.66           | 0.25                   | 0.87  | 0      |      | 0.87           | -                      |
| Heavy                | 24                     | 2     | 0      |      | 26             | 0                             | 0    | 0      |      | 0              | 0                      | 16    | 0      |      | 16             | -                      |
| Heavy %              | 7.3%                   | 10.5% | 0%     |      | 7.4%           | 0%                            | 0%   | 0%     |      | 0%             | 0%                     | 2.6%  | 0%     |      | 2.6%           | -                      |
| Lights               | 306                    | 17    | 0      |      | 323            | 28                            | 1    | 0      |      | 29             | 1                      | 598   | 0      |      | 599            | -                      |
| Lights %             | 92.7%                  | 89.5% | 0%     |      | 92.6%          | 100%                          | 100% | 0%     |      | 100%           | 100%                   | 97.4% | 0%     |      | 97.4%          | -                      |
| Single-Unit Trucks   | 14                     | 0     | 0      |      | 14             | 0                             | 0    | 0      |      | 0              | 0                      | 10    | 0      |      | 10             | -                      |
| Single-Unit Trucks % | 4.2%                   | 0%    | 0%     |      | 4%             | 0%                            | 0%   | 0%     |      | 0%             | 0%                     | 1.6%  | 0%     |      | 1.6%           | -                      |
| Buses                | 5                      | 2     | 0      |      | 7              | 0                             | 0    | 0      |      | 0              | 0                      | 4     | 0      |      | 4              | -                      |
| Buses %              | 1.5%                   | 10.5% | 0%     |      | 2%             | 0%                            | 0%   | 0%     |      | 0%             | 0%                     | 0.7%  | 0%     |      | 0.7%           | -                      |
| Articulated Trucks   | 5                      | 0     | 0      |      | 5              | 0                             | 0    | 0      |      | 0              | 0                      | 2     | 0      |      | 2              | -                      |
| Articulated Trucks % | 1.5%                   | 0%    | 0%     |      | 1.4%           | 0%                            | 0%   | 0%     |      | 0%             | 0%                     | 0.3%  | 0%     |      | 0.3%           | -                      |
| Pedestrians          | -                      | -     | -      | 0    | -              | -                             | -    | -      | 0    | -              | -                      | -     | -      | 0    | -              | -                      |
| Pedestrians%         | -                      | -     | -      | 0%   | -              | -                             | -    | -      | 0%   | -              | -                      | -     | -      | 0%   | -              | -                      |



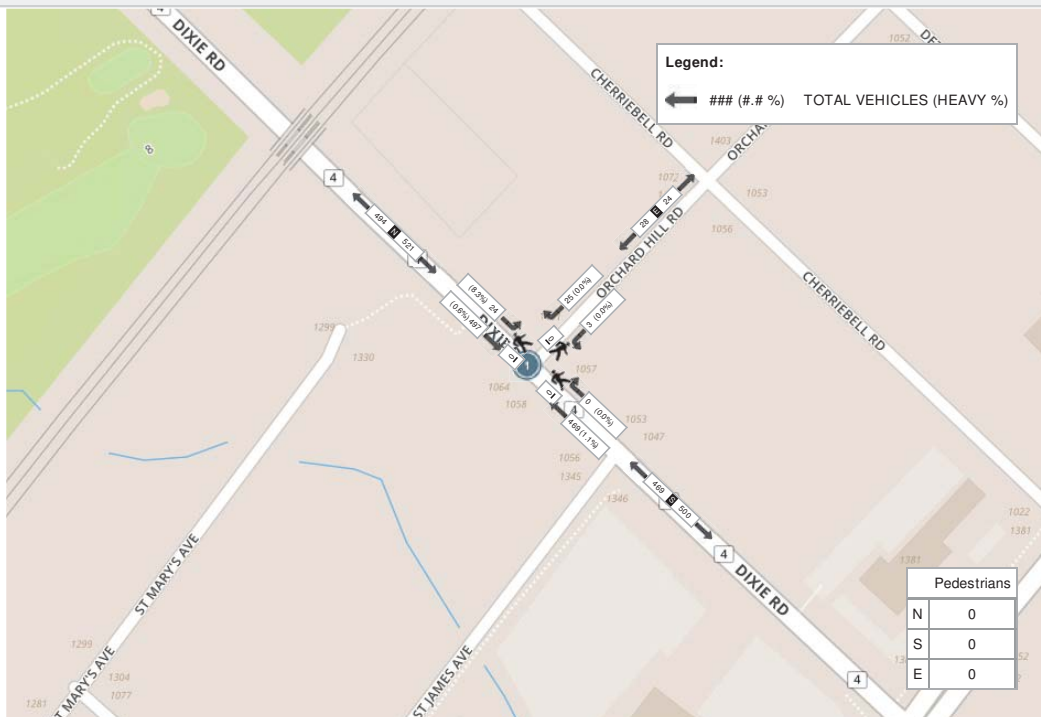
Peak Hour: 04:30 PM - 05:30 PM Weather: Snow (-0.4 °C)

| Start Time           | N Approach<br>DIXIE RD |       |        |      |                | E Approach<br>ORCHARD HILL RD |       |        |      |                | S Approach<br>DIXIE RD |       |        |      |                | Int. Total<br>(15 min) |
|----------------------|------------------------|-------|--------|------|----------------|-------------------------------|-------|--------|------|----------------|------------------------|-------|--------|------|----------------|------------------------|
|                      | Thru                   | Left  | U-Turn | Peds | Approach Total | Right                         | Left  | U-Turn | Peds | Approach Total | Right                  | Thru  | U-Turn | Peds | Approach Total |                        |
| 16:30:00             | 116                    | 9     | 0      | 0    | 125            | 7                             | 0     | 0      | 0    | 7              | 0                      | 119   | 0      | 0    | 119            | 251                    |
| 16:45:00             | 129                    | 5     | 0      | 0    | 134            | 2                             | 1     | 0      | 0    | 3              | 0                      | 126   | 0      | 0    | 126            | 263                    |
| 17:00:00             | 123                    | 5     | 0      | 0    | 128            | 11                            | 1     | 0      | 0    | 12             | 0                      | 121   | 0      | 0    | 121            | 261                    |
| 17:15:00             | 129                    | 5     | 0      | 0    | 134            | 5                             | 1     | 0      | 0    | 6              | 0                      | 103   | 0      | 0    | 103            | 243                    |
| Grand Total          | 497                    | 24    | 0      | 0    | 521            | 25                            | 3     | 0      | 0    | 28             | 0                      | 469   | 0      | 0    | 469            | 1018                   |
| Approach%            | 95.4%                  | 4.6%  | 0%     |      | -              | 89.3%                         | 10.7% | 0%     |      | -              | 0%                     | 100%  | 0%     |      | -              | -                      |
| Totals %             | 48.8%                  | 2.4%  | 0%     |      | 51.2%          | 2.5%                          | 0.3%  | 0%     |      | 2.8%           | 0%                     | 46.1% | 0%     |      | 46.1%          | -                      |
| PHF                  | 0.96                   | 0.67  | 0      |      | 0.97           | 0.57                          | 0.75  | 0      |      | 0.58           | 0                      | 0.93  | 0      |      | 0.93           | -                      |
| Heavy                | 3                      | 2     | 0      |      | 5              | 0                             | 0     | 0      |      | 0              | 0                      | 5     | 0      |      | 5              | -                      |
| Heavy %              | 0.6%                   | 8.3%  | 0%     |      | 1%             | 0%                            | 0%    | 0%     |      | 0%             | 0%                     | 1.1%  | 0%     |      | 1.1%           | -                      |
| Lights               | 494                    | 22    | 0      |      | 516            | 25                            | 3     | 0      |      | 28             | 0                      | 464   | 0      |      | 464            | -                      |
| Lights %             | 99.4%                  | 91.7% | 0%     |      | 99%            | 100%                          | 100%  | 0%     |      | 100%           | 0%                     | 98.9% | 0%     |      | 98.9%          | -                      |
| Single-Unit Trucks   | 2                      | 0     | 0      |      | 2              | 0                             | 0     | 0      |      | 0              | 0                      | 1     | 0      |      | 1              | -                      |
| Single-Unit Trucks % | 0.4%                   | 0%    | 0%     |      | 0.4%           | 0%                            | 0%    | 0%     |      | 0%             | 0%                     | 0.2%  | 0%     |      | 0.2%           | -                      |
| Buses                | 1                      | 2     | 0      |      | 3              | 0                             | 0     | 0      |      | 0              | 0                      | 1     | 0      |      | 1              | -                      |
| Buses %              | 0.2%                   | 8.3%  | 0%     |      | 0.6%           | 0%                            | 0%    | 0%     |      | 0%             | 0%                     | 0.2%  | 0%     |      | 0.2%           | -                      |
| Articulated Trucks   | 0                      | 0     | 0      |      | 0              | 0                             | 0     | 0      |      | 0              | 0                      | 3     | 0      |      | 3              | -                      |
| Articulated Trucks % | 0%                     | 0%    | 0%     |      | 0%             | 0%                            | 0%    | 0%     |      | 0%             | 0%                     | 0.6%  | 0%     |      | 0.6%           | -                      |
| Pedestrians          | -                      | -     | -      | 0    | -              | -                             | -     | -      | 0    | -              | -                      | -     | -      | 0    | -              | -                      |
| Pedestrians%         | -                      | -     | -      | 0%   | -              | -                             | -     | -      | 0%   | -              | -                      | -     | -      | 0%   | -              | -                      |

Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast (-3.4 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Snow (-0.4 °C)





Turning Movement Count (3 . DIXIE RD & ST JAMES AVE) CustID: SPEC\_INSTRUC MIOID: 501036

| Start Time  | N Approach<br>DIXIE RD |             |               |            |                | S Approach<br>DIXIE RD |             |               |            |                | W Approach<br>ST JAMES AVE |             |               |            |                | Int. Total<br>(15 min) | Int. Total<br>(1 hr) |
|-------------|------------------------|-------------|---------------|------------|----------------|------------------------|-------------|---------------|------------|----------------|----------------------------|-------------|---------------|------------|----------------|------------------------|----------------------|
|             | Right<br>N:W           | Thru<br>N:S | U-Turn<br>N:N | Peds<br>N: | Approach Total | Thru<br>S:N            | Left<br>S:W | U-Turn<br>S:S | Peds<br>S: | Approach Total | Right<br>W:S               | Left<br>W:N | U-Turn<br>W:W | Peds<br>W: | Approach Total |                        |                      |
| 07:00:00    | 6                      | 53          | 0             | 0          | 59             | 69                     | 0           | 0             | 0          | 69             | 0                          | 9           | 0             | 0          | 9              | 137                    |                      |
| 07:15:00    | 1                      | 59          | 0             | 0          | 60             | 109                    | 0           | 0             | 0          | 109            | 0                          | 15          | 0             | 0          | 15             | 184                    |                      |
| 07:30:00    | 3                      | 56          | 0             | 0          | 59             | 105                    | 0           | 0             | 0          | 105            | 2                          | 13          | 0             | 0          | 15             | 179                    |                      |
| 07:45:00    | 4                      | 69          | 0             | 0          | 73             | 141                    | 0           | 0             | 0          | 141            | 4                          | 13          | 0             | 0          | 17             | 231                    | 731                  |
| 08:00:00    | 5                      | 87          | 0             | 0          | 92             | 166                    | 2           | 0             | 0          | 168            | 0                          | 12          | 0             | 0          | 12             | 272                    | 866                  |
| 08:15:00    | 2                      | 78          | 0             | 0          | 80             | 137                    | 0           | 0             | 0          | 137            | 0                          | 15          | 0             | 0          | 15             | 232                    | 914                  |
| 08:30:00    | 6                      | 79          | 0             | 0          | 85             | 128                    | 2           | 1             | 0          | 131            | 1                          | 10          | 0             | 0          | 11             | 227                    | 962                  |
| 08:45:00    | 6                      | 59          | 0             | 0          | 65             | 120                    | 1           | 0             | 0          | 121            | 1                          | 11          | 0             | 0          | 12             | 198                    | 929                  |
| ***BREAK*** |                        |             |               |            |                |                        |             |               |            |                |                            |             |               |            |                |                        |                      |
| 16:00:00    | 9                      | 99          | 0             | 0          | 108            | 122                    | 2           | 0             | 0          | 124            | 1                          | 7           | 0             | 0          | 8              | 240                    |                      |
| 16:15:00    | 6                      | 81          | 0             | 0          | 87             | 91                     | 1           | 0             | 0          | 92             | 1                          | 4           | 0             | 1          | 5              | 184                    |                      |
| 16:30:00    | 10                     | 105         | 0             | 0          | 115            | 110                    | 0           | 0             | 0          | 110            | 0                          | 8           | 0             | 0          | 8              | 233                    |                      |
| 16:45:00    | 9                      | 120         | 0             | 0          | 129            | 122                    | 1           | 0             | 0          | 123            | 2                          | 4           | 0             | 0          | 6              | 258                    | 915                  |
| 17:00:00    | 14                     | 111         | 0             | 0          | 125            | 113                    | 0           | 0             | 0          | 113            | 1                          | 5           | 0             | 0          | 6              | 244                    | 919                  |
| 17:15:00    | 11                     | 119         | 0             | 0          | 130            | 94                     | 0           | 0             | 0          | 94             | 1                          | 10          | 0             | 0          | 11             | 235                    | 970                  |
| 17:30:00    | 12                     | 108         | 0             | 0          | 120            | 105                    | 1           | 0             | 0          | 106            | 0                          | 5           | 0             | 1          | 5              | 231                    | 968                  |
| 17:45:00    | 22                     | 114         | 0             | 1          | 136            | 99                     | 1           | 0             | 0          | 100            | 0                          | 8           | 0             | 0          | 8              | 244                    | 954                  |
| Grand Total | 126                    | 1397        | 0             | 1          | 1523           | 1831                   | 11          | 1             | 0          | 1843           | 14                         | 149         | 0             | 2          | 163            | 3529                   | -                    |
| Approach%   | 8.3%                   | 91.7%       | 0%            | -          | -              | 99.3%                  | 0.6%        | 0.1%          | -          | -              | 8.6%                       | 91.4%       | 0%            | -          | -              | -                      | -                    |
| Totals %    | 3.6%                   | 39.6%       | 0%            | -          | 43.2%          | 51.9%                  | 0.3%        | 0%            | -          | 52.2%          | 0.4%                       | 4.2%        | 0%            | -          | 4.6%           | -                      | -                    |
| Heavy       | 1                      | 48          | 0             | -          | -              | 41                     | 4           | 0             | -          | -              | 1                          | 1           | 0             | -          | -              | -                      | -                    |
| Heavy %     | 0.8%                   | 3.4%        | 0%            | -          | -              | 2.2%                   | 36.4%       | 0%            | -          | -              | 7.1%                       | 0.7%        | 0%            | -          | -              | -                      | -                    |
| Bicycles    | -                      | -           | -             | -          | -              | -                      | -           | -             | -          | -              | -                          | -           | -             | -          | -              | -                      | -                    |
| Bicycle %   | -                      | -           | -             | -          | -              | -                      | -           | -             | -          | -              | -                          | -           | -             | -          | -              | -                      | -                    |

Turning Movement Count

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BAC18L5R



Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast (-3.4 °C)

| Start Time           | N Approach<br>DIXIE RD |       |        |      |                | S Approach<br>DIXIE RD |      |        |      |                | W Approach<br>ST JAMES AVE |       |        |      |                | Int. Total<br>(15 min) |
|----------------------|------------------------|-------|--------|------|----------------|------------------------|------|--------|------|----------------|----------------------------|-------|--------|------|----------------|------------------------|
|                      | Right                  | Thru  | U-Turn | Peds | Approach Total | Thru                   | Left | U-Turn | Peds | Approach Total | Right                      | Left  | U-Turn | Peds | Approach Total |                        |
| 07:45:00             | 4                      | 69    | 0      | 0    | 73             | 141                    | 0    | 0      | 0    | 141            | 4                          | 13    | 0      | 0    | 17             | 231                    |
| 08:00:00             | 5                      | 87    | 0      | 0    | 92             | 166                    | 2    | 0      | 0    | 168            | 0                          | 12    | 0      | 0    | 12             | 272                    |
| 08:15:00             | 2                      | 78    | 0      | 0    | 80             | 137                    | 0    | 0      | 0    | 137            | 0                          | 15    | 0      | 0    | 15             | 232                    |
| 08:30:00             | 6                      | 79    | 0      | 0    | 85             | 128                    | 2    | 1      | 0    | 131            | 1                          | 10    | 0      | 0    | 11             | 227                    |
| Grand Total          | 17                     | 313   | 0      | 0    | 330            | 572                    | 4    | 1      | 0    | 577            | 5                          | 50    | 0      | 0    | 55             | 962                    |
| Approach%            | 5.2%                   | 94.8% | 0%     | -    | -              | 99.1%                  | 0.7% | 0.2%   | -    | -              | 9.1%                       | 90.9% | 0%     | -    | -              | -                      |
| Totals %             | 1.8%                   | 32.5% | 0%     | -    | 34.3%          | 59.5%                  | 0.4% | 0.1%   | -    | 60%            | 0.5%                       | 5.2%  | 0%     | -    | 5.7%           | -                      |
| PHF                  | 0.71                   | 0.9   | 0      | -    | 0.9            | 0.86                   | 0.5  | 0.25   | -    | 0.86           | 0.31                       | 0.83  | 0      | -    | 0.81           | -                      |
| Heavy                | 0                      | 24    | 0      | -    | 24             | 15                     | 3    | 0      | -    | 18             | 0                          | 1     | 0      | -    | 1              | -                      |
| Heavy %              | 0%                     | 7.7%  | 0%     | -    | 7.3%           | 2.6%                   | 75%  | 0%     | -    | 3.1%           | 0%                         | 2%    | 0%     | -    | 1.8%           | -                      |
| Lights               | 17                     | 289   | 0      | -    | 306            | 557                    | 1    | 1      | -    | 559            | 5                          | 49    | 0      | -    | 54             | -                      |
| Lights %             | 100%                   | 92.3% | 0%     | -    | 92.7%          | 97.4%                  | 25%  | 100%   | -    | 96.9%          | 100%                       | 98%   | 0%     | -    | 98.2%          | -                      |
| Single-Unit Trucks   | 0                      | 19    | 0      | -    | 19             | 7                      | 0    | 0      | -    | 7              | 0                          | 0     | 0      | -    | 0              | -                      |
| Single-Unit Trucks % | 0%                     | 6.1%  | 0%     | -    | 5.8%           | 1.2%                   | 0%   | 0%     | -    | 1.2%           | 0%                         | 0%    | 0%     | -    | 0%             | -                      |
| Buses                | 0                      | 4     | 0      | -    | 4              | 3                      | 3    | 0      | -    | 6              | 0                          | 1     | 0      | -    | 1              | -                      |
| Buses %              | 0%                     | 1.3%  | 0%     | -    | 1.2%           | 0.5%                   | 75%  | 0%     | -    | 1%             | 0%                         | 2%    | 0%     | -    | 1.8%           | -                      |
| Articulated Trucks   | 0                      | 1     | 0      | -    | 1              | 5                      | 0    | 0      | -    | 5              | 0                          | 0     | 0      | -    | 0              | -                      |
| Articulated Trucks % | 0%                     | 0.3%  | 0%     | -    | 0.3%           | 0.9%                   | 0%   | 0%     | -    | 0.9%           | 0%                         | 0%    | 0%     | -    | 0%             | -                      |
| Pedestrians          | -                      | -     | -      | 0    | -              | -                      | -    | -      | 0    | -              | -                          | -     | -      | 0    | -              | -                      |
| Pedestrians%         | -                      | -     | -      | 0%   | -              | -                      | -    | -      | 0%   | -              | -                          | -     | -      | 0%   | -              | -                      |

Turning Movement Count

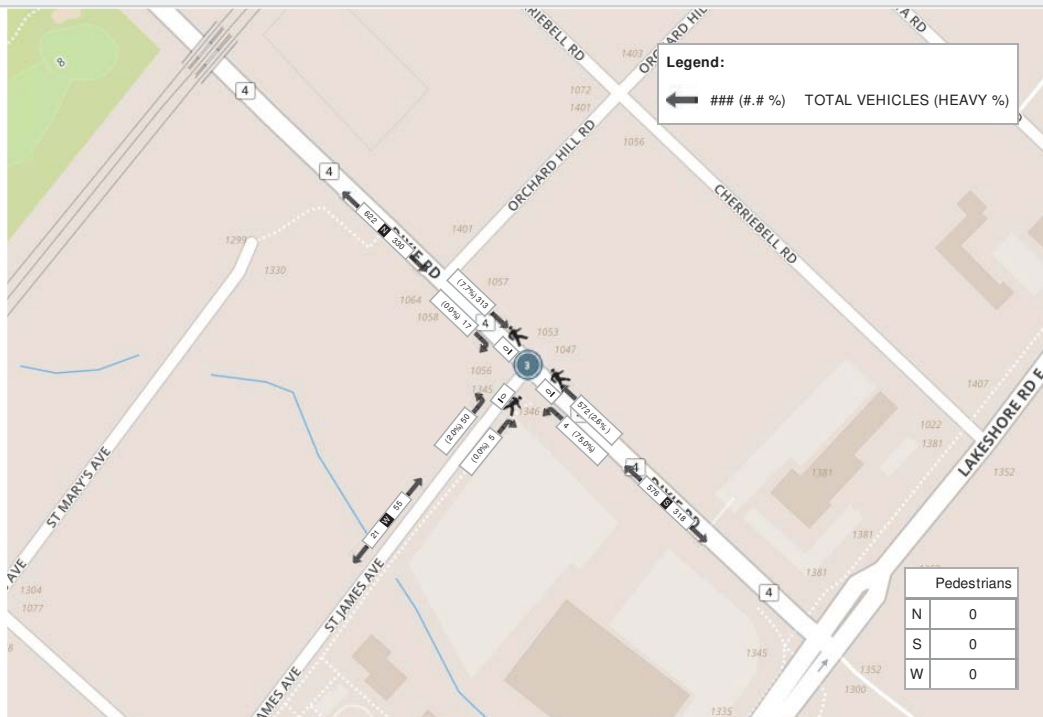
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BAC18L5R

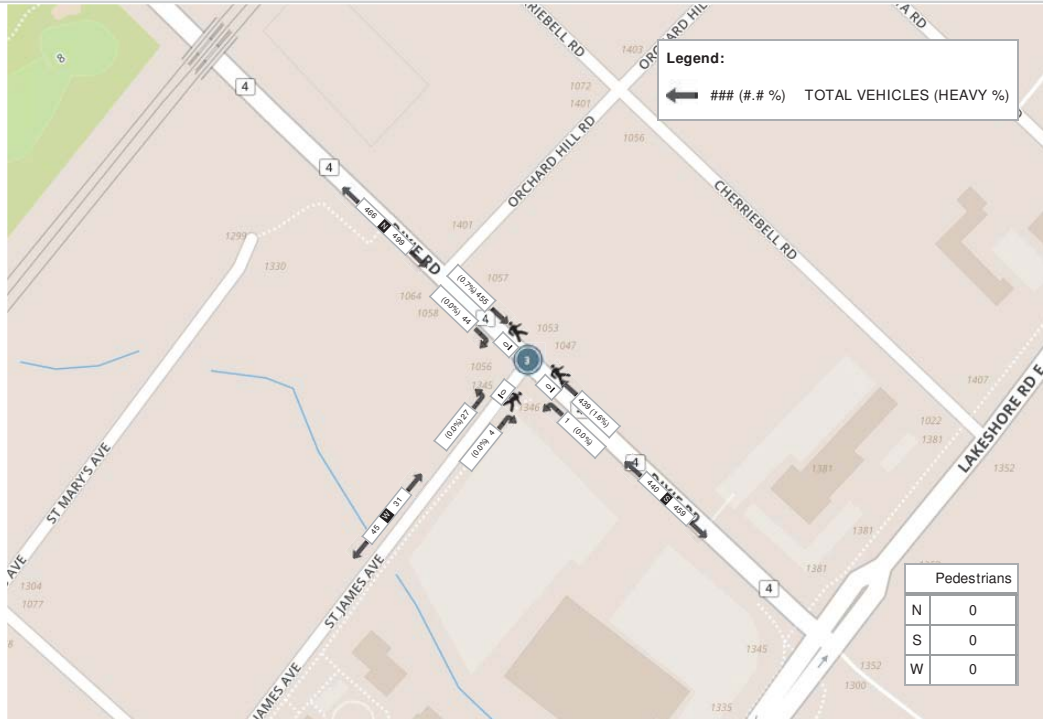
Peak Hour: 04:30 PM - 05:30 PM Weather: Snow (-0.4 °C)

| Start Time                  | N Approach<br>DIXIE RD |            |          |          |                | S Approach<br>DIXIE RD |          |          |          |                | W Approach<br>ST JAMES AVE |           |          |          |                | Int. Total<br>(15 min) |
|-----------------------------|------------------------|------------|----------|----------|----------------|------------------------|----------|----------|----------|----------------|----------------------------|-----------|----------|----------|----------------|------------------------|
|                             | Right                  | Thru       | U-Turn   | Peds     | Approach Total | Thru                   | Left     | U-Turn   | Peds     | Approach Total | Right                      | Left      | U-Turn   | Peds     | Approach Total |                        |
| 16:30:00                    | 10                     | 105        | 0        | 0        | 115            | 110                    | 0        | 0        | 0        | 110            | 0                          | 8         | 0        | 0        | 8              | 233                    |
| 16:45:00                    | 9                      | 120        | 0        | 0        | 129            | 122                    | 1        | 0        | 0        | 123            | 2                          | 4         | 0        | 0        | 6              | 258                    |
| 17:00:00                    | 14                     | 111        | 0        | 0        | 125            | 113                    | 0        | 0        | 0        | 113            | 1                          | 5         | 0        | 0        | 6              | 244                    |
| 17:15:00                    | 11                     | 119        | 0        | 0        | 130            | 94                     | 0        | 0        | 0        | 94             | 1                          | 10        | 0        | 0        | 11             | 235                    |
| <b>Grand Total</b>          | <b>44</b>              | <b>455</b> | <b>0</b> | <b>0</b> | <b>499</b>     | <b>439</b>             | <b>1</b> | <b>0</b> | <b>0</b> | <b>440</b>     | <b>4</b>                   | <b>27</b> | <b>0</b> | <b>0</b> | <b>31</b>      | <b>970</b>             |
| <b>Approach%</b>            | 8.8%                   | 91.2%      | 0%       | -        | -              | 99.8%                  | 0.2%     | 0%       | -        | -              | 12.9%                      | 87.1%     | 0%       | -        | -              | -                      |
| <b>Totals %</b>             | 4.5%                   | 46.9%      | 0%       | -        | 51.4%          | 45.3%                  | 0.1%     | 0%       | -        | 45.4%          | 0.4%                       | 2.8%      | 0%       | -        | 3.2%           | -                      |
| <b>PHF</b>                  | 0.79                   | 0.95       | 0        | -        | 0.96           | 0.9                    | 0.25     | 0        | -        | 0.89           | 0.5                        | 0.68      | 0        | -        | 0.7            | -                      |
| <b>Heavy</b>                | 0                      | 3          | 0        | -        | 3              | 7                      | 0        | 0        | -        | 7              | 0                          | 0         | 0        | -        | 0              | -                      |
| <b>Heavy %</b>              | 0%                     | 0.7%       | 0%       | -        | 0.6%           | 1.6%                   | 0%       | 0%       | -        | 1.6%           | 0%                         | 0%        | 0%       | -        | 0%             | -                      |
| <b>Lights</b>               | 44                     | 452        | 0        | -        | 496            | 432                    | 1        | 0        | -        | 433            | 4                          | 27        | 0        | -        | 31             | -                      |
| <b>Lights %</b>             | 100%                   | 99.3%      | 0%       | -        | 99.4%          | 98.4%                  | 100%     | 0%       | -        | 98.4%          | 100%                       | 100%      | 0%       | -        | 100%           | -                      |
| <b>Single-Unit Trucks</b>   | 0                      | 2          | 0        | -        | 2              | 3                      | 0        | 0        | -        | 3              | 0                          | 0         | 0        | -        | 0              | -                      |
| <b>Single-Unit Trucks %</b> | 0%                     | 0.4%       | 0%       | -        | 0.4%           | 0.7%                   | 0%       | 0%       | -        | 0.7%           | 0%                         | 0%        | 0%       | -        | 0%             | -                      |
| <b>Buses</b>                | 0                      | 1          | 0        | -        | 1              | 1                      | 0        | 0        | -        | 1              | 0                          | 0         | 0        | -        | 0              | -                      |
| <b>Buses %</b>              | 0%                     | 0.2%       | 0%       | -        | 0.2%           | 0.2%                   | 0%       | 0%       | -        | 0.2%           | 0%                         | 0%        | 0%       | -        | 0%             | -                      |
| <b>Articulated Trucks</b>   | 0                      | 0          | 0        | -        | 0              | 3                      | 0        | 0        | -        | 3              | 0                          | 0         | 0        | -        | 0              | -                      |
| <b>Articulated Trucks %</b> | 0%                     | 0%         | 0%       | -        | 0%             | 0.7%                   | 0%       | 0%       | -        | 0.7%           | 0%                         | 0%        | 0%       | -        | 0%             | -                      |
| <b>Pedestrians</b>          | -                      | -          | -        | 0        | -              | -                      | -        | -        | 0        | -              | -                          | -         | -        | 0        | -              | -                      |
| <b>Pedestrians%</b>         | -                      | -          | -        | 0%       | -              | -                      | -        | -        | 0%       | -              | -                          | -         | -        | 0%       | -              | -                      |

Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast (-3.4 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Snow (-0.4 °C)



Turning Movement Count (4 . FERGUS AVE & LAKESHORE RD E) CustID: SPEC\_INSTRUC MioID: 501039

| Start Time  | N Approach<br>FERGUS AVE |             |             |               |           |                | E Approach<br>LAKESHORE RD E |             |             |               |           |                | S Approach<br>FERGUS AVE |             |             |               |           |                | W Approach<br>LAKESHORE RD E |             |             |               |           |                | Int. Total<br>(15 min) | Int. Total<br>(1 hr) |  |
|-------------|--------------------------|-------------|-------------|---------------|-----------|----------------|------------------------------|-------------|-------------|---------------|-----------|----------------|--------------------------|-------------|-------------|---------------|-----------|----------------|------------------------------|-------------|-------------|---------------|-----------|----------------|------------------------|----------------------|--|
|             | Right<br>N-W             | Thru<br>N-S | Left<br>N-E | U-Turn<br>N-N | Peds<br>N | Approach Total | Right<br>E-N                 | Thru<br>E-W | Left<br>E-S | U-Turn<br>E-E | Peds<br>E | Approach Total | Right<br>S-E             | Thru<br>S-N | Left<br>S-W | U-Turn<br>S-S | Peds<br>S | Approach Total | Right<br>W-S                 | Thru<br>W-E | Left<br>W-N | U-Turn<br>W-W | Peds<br>W | Approach Total |                        |                      |  |
| 07:00:00    | 7                        | 0           | 2           | 0             | 0         | 9              | 3                            | 101         | 6           | 0             | 0         | 110            | 0                        | 0           | 3           | 0             | 0         | 3              | 4                            | 177         | 2           | 0             | 0         | 183            | 305                    |                      |  |
| 07:15:00    | 3                        | 0           | 3           | 0             | 2         | 6              | 0                            | 114         | 6           | 0             | 0         | 120            | 1                        | 0           | 2           | 0             | 0         | 3              | 5                            | 243         | 3           | 0             | 0         | 251            | 380                    |                      |  |
| 07:30:00    | 9                        | 0           | 2           | 0             | 2         | 11             | 1                            | 109         | 3           | 0             | 0         | 113            | 1                        | 0           | 2           | 0             | 0         | 3              | 13                           | 264         | 2           | 0             | 0         | 279            | 406                    |                      |  |
| 07:45:00    | 12                       | 0           | 0           | 0             | 3         | 12             | 1                            | 140         | 12          | 0             | 0         | 153            | 4                        | 0           | 3           | 0             | 0         | 7              | 9                            | 314         | 4           | 0             | 0         | 327            | 499                    | 1590                 |  |
| 08:00:00    | 17                       | 0           | 2           | 0             | 2         | 19             | 1                            | 146         | 14          | 0             | 0         | 161            | 3                        | 0           | 3           | 0             | 0         | 6              | 9                            | 288         | 3           | 0             | 0         | 300            | 486                    | 1771                 |  |
| 08:15:00    | 10                       | 0           | 3           | 0             | 0         | 13             | 1                            | 197         | 9           | 0             | 0         | 207            | 5                        | 0           | 6           | 0             | 0         | 11             | 7                            | 280         | 4           | 0             | 1         | 291            | 522                    | 1913                 |  |
| 08:30:00    | 12                       | 0           | 1           | 0             | 1         | 13             | 4                            | 150         | 11          | 0             | 0         | 165            | 5                        | 0           | 7           | 0             | 0         | 12             | 5                            | 248         | 6           | 0             | 0         | 259            | 449                    | 1956                 |  |
| 08:45:00    | 19                       | 0           | 4           | 0             | 0         | 23             | 1                            | 136         | 8           | 0             | 0         | 145            | 8                        | 0           | 8           | 0             | 1         | 16             | 10                           | 241         | 5           | 0             | 0         | 256            | 440                    | 1897                 |  |
| ***BREAK*** |                          |             |             |               |           |                |                              |             |             |               |           |                |                          |             |             |               |           |                |                              |             |             |               |           |                |                        |                      |  |
| 16:00:00    | 3                        | 0           | 0           | 0             | 1         | 3              | 3                            | 264         | 0           | 0             | 1         | 267            | 9                        | 0           | 9           | 0             | 0         | 18             | 6                            | 182         | 11          | 0             | 1         | 199            | 487                    |                      |  |
| 16:15:00    | 1                        | 0           | 0           | 0             | 4         | 1              | 6                            | 298         | 4           | 0             | 0         | 308            | 9                        | 0           | 5           | 0             | 0         | 14             | 2                            | 129         | 5           | 0             | 0         | 136            | 459                    |                      |  |
| 16:30:00    | 11                       | 0           | 2           | 0             | 3         | 13             | 6                            | 310         | 0           | 0             | 0         | 316            | 10                       | 0           | 6           | 0             | 0         | 16             | 2                            | 132         | 11          | 0             | 0         | 145            | 490                    |                      |  |
| 16:45:00    | 6                        | 0           | 1           | 0             | 1         | 7              | 2                            | 321         | 0           | 1             | 0         | 324            | 8                        | 0           | 1           | 0             | 0         | 9              | 4                            | 176         | 4           | 0             | 1         | 184            | 524                    | 1960                 |  |
| 17:00:00    | 10                       | 0           | 3           | 0             | 0         | 13             | 4                            | 353         | 1           | 0             | 0         | 358            | 4                        | 0           | 8           | 0             | 0         | 12             | 0                            | 165         | 9           | 0             | 0         | 174            | 557                    | 2030                 |  |
| 17:15:00    | 10                       | 0           | 3           | 0             | 3         | 13             | 4                            | 314         | 1           | 0             | 0         | 319            | 4                        | 0           | 3           | 0             | 0         | 7              | 1                            | 164         | 6           | 0             | 1         | 171            | 510                    | 2081                 |  |
| 17:30:00    | 6                        | 0           | 1           | 0             | 2         | 7              | 4                            | 328         | 1           | 0             | 0         | 333            | 0                        | 0           | 2           | 0             | 0         | 2              | 2                            | 161         | 7           | 0             | 0         | 170            | 512                    | 2103                 |  |
| 17:45:00    | 8                        | 0           | 3           | 0             | 3         | 11             | 3                            | 252         | 1           | 0             | 0         | 256            | 1                        | 0           | 2           | 0             | 0         | 3              | 0                            | 148         | 6           | 0             | 0         | 154            | 424                    | 2003                 |  |
| Grand Total | 144                      | 0           | 30          | 0             | 27        | 174            | 44                           | 3533        | 77          | 1             | 1         | 3655           | 72                       | 0           | 70          | 0             | 1         | 142            | 79                           | 3312        | 88          | 0             | 4         | 3479           | 7450                   | -                    |  |
| Approach%   | 82.8%                    | 0%          | 17.2%       | 0%            | -         | -              | 1.2%                         | 96.7%       | 2.1%        | 0%            | -         | -              | 50.7%                    | 0%          | 49.3%       | 0%            | -         | -              | 2.3%                         | 95.2%       | 2.5%        | 0%            | -         | -              | -                      | -                    |  |
| Totals %    | 1.9%                     | 0%          | 0.4%        | 0%            | -         | 2.3%           | 0.6%                         | 47.4%       | 1%          | 0%            | -         | 49.1%          | 1%                       | 0%          | 0.9%        | 0%            | -         | 1.9%           | 1.1%                         | 44.5%       | 1.2%        | 0%            | -         | 46.7%          | -                      | -                    |  |
| Heavy       | 8                        | 0           | 0           | 0             | -         | -              | 1                            | 103         | 31          | 0             | -         | -              | 27                       | 0           | 26          | 0             | -         | -              | 28                           | 100         | 3           | 0             | -         | -              | -                      | -                    |  |
| Heavy %     | 5.6%                     | 0%          | 0%          | 0%            | -         | -              | 2.3%                         | 2.9%        | 40.3%       | 0%            | -         | -              | 37.5%                    | 0%          | 37.1%       | 0%            | -         | -              | 35.4%                        | 3%          | 3.4%        | 0%            | -         | -              | -                      | -                    |  |
| Bicycles    | 0                        | 0           | 0           | 0             | -         | -              | 0                            | 0           | 0           | 0             | -         | -              | 0                        | 0           | 0           | 0             | -         | -              | 0                            | 1           | 0           | 0             | -         | -              | -                      | -                    |  |
| Bicycle %   | 0%                       | 0%          | 0%          | 0%            | -         | -              | 0%                           | 0%          | 0%          | 0%            | -         | -              | 0%                       | 0%          | 0%          | 0%            | -         | -              | 0%                           | 0%          | 0%          | 0%            | -         | -              | -                      | -                    |  |



Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast (-3.4 °C)

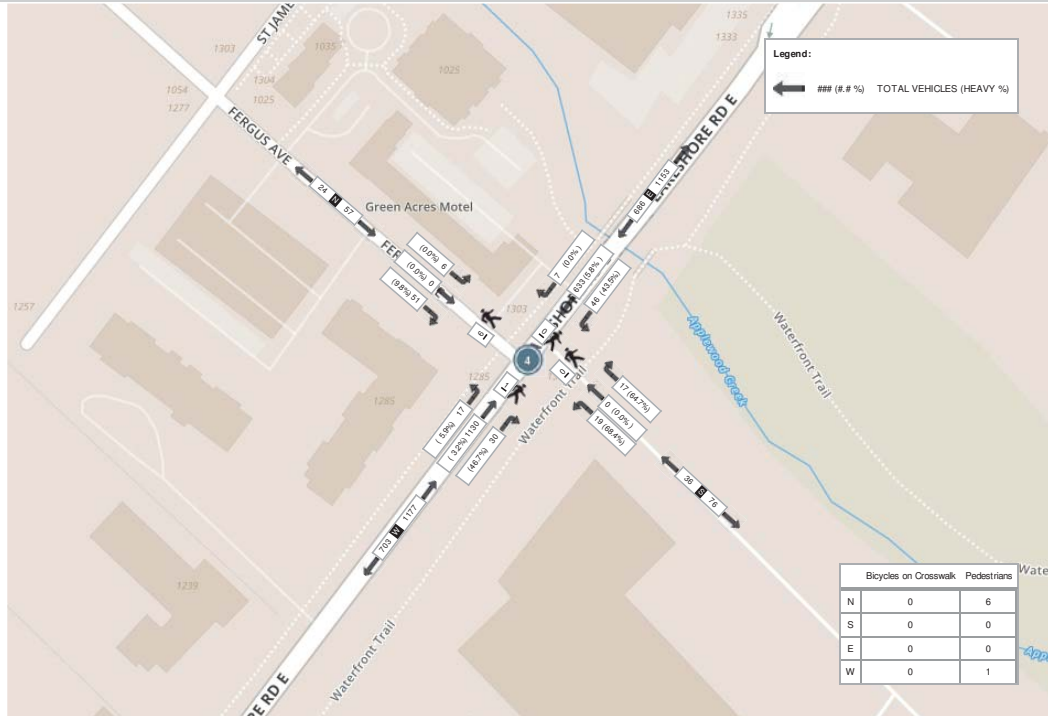
| Start Time             | N Approach<br>FERGUS AVE |      |       |        |       |                | E Approach<br>LAKESHORE RD E |       |      |        |       |                | S Approach<br>FERGUS AVE |      |       |        |       |                | W Approach<br>LAKESHORE RD E |       |      |        |      |                | Int. Total<br>(15 min) |
|------------------------|--------------------------|------|-------|--------|-------|----------------|------------------------------|-------|------|--------|-------|----------------|--------------------------|------|-------|--------|-------|----------------|------------------------------|-------|------|--------|------|----------------|------------------------|
|                        | Right                    | Thru | Left  | U-Turn | Peds  | Approach Total | Right                        | Thru  | Left | U-Turn | Peds  | Approach Total | Right                    | Thru | Left  | U-Turn | Peds  | Approach Total | Right                        | Thru  | Left | U-Turn | Peds | Approach Total |                        |
| 07:45:00               | 12                       | 0    | 0     | 0      | 3     | 12             | 1                            | 140   | 12   | 0      | 0     | 153            | 4                        | 0    | 3     | 0      | 0     | 7              | 9                            | 314   | 4    | 0      | 0    | 327            | 499                    |
| 08:00:00               | 17                       | 0    | 2     | 0      | 2     | 19             | 1                            | 146   | 14   | 0      | 0     | 161            | 3                        | 0    | 3     | 0      | 0     | 6              | 9                            | 288   | 3    | 0      | 0    | 300            | 486                    |
| 08:15:00               | 10                       | 0    | 3     | 0      | 0     | 13             | 1                            | 197   | 9    | 0      | 0     | 207            | 5                        | 0    | 6     | 0      | 0     | 11             | 7                            | 280   | 4    | 0      | 1    | 291            | 522                    |
| 08:30:00               | 12                       | 0    | 1     | 0      | 1     | 13             | 4                            | 150   | 11   | 0      | 0     | 165            | 5                        | 0    | 7     | 0      | 0     | 12             | 5                            | 248   | 6    | 0      | 0    | 259            | 449                    |
| Grand Total            | 51                       | 0    | 6     | 0      | 6     | 57             | 7                            | 633   | 46   | 0      | 0     | 686            | 17                       | 0    | 19    | 0      | 0     | 36             | 30                           | 1130  | 17   | 0      | 1    | 1177           | 1956                   |
| Approach%              | 89.5%                    | 0%   | 10.5% | 0%     | -     | -              | 1%                           | 92.3% | 6.7% | 0%     | -     | -              | 47.2%                    | 0%   | 52.8% | 0%     | -     | -              | 2.5%                         | 96%   | 1.4% | 0%     | -    | -              | -                      |
| Totals %               | 2.6%                     | 0%   | 0.3%  | 0%     | 2.9%  | 0.4%           | 32.4%                        | 2.4%  | 0%   | 35.1%  | 0.9%  | 0%             | 1%                       | 0%   | 1.8%  | 1.5%   | 57.8% | 0.9%           | 0%                           | 60.2% | -    | -      | -    | -              | -                      |
| PHF                    | 0.75                     | 0    | 0.5   | 0      | 0.75  | 0.44           | 0.8                          | 0.82  | 0    | 0.83   | 0.85  | 0              | 0.68                     | 0    | 0.75  | 0.83   | 0.9   | 0.71           | 0                            | 0.9   | -    | -      | -    | -              | -                      |
| Heavy                  | 5                        | 0    | 0     | 0      | 5     | 0              | 37                           | 20    | 0    | 57     | 11    | 0              | 13                       | 0    | 24    | 14     | 36    | 1              | 0                            | 51    | -    | -      | -    | -              | -                      |
| Heavy %                | 9.8%                     | 0%   | 0%    | 0%     | 8.8%  | 0%             | 5.8%                         | 43.5% | 0%   | 8.3%   | 64.7% | 0%             | 68.4%                    | 0%   | 66.7% | 46.7%  | 3.2%  | 5.9%           | 0%                           | 4.3%  | -    | -      | -    | -              | -                      |
| Lights                 | 46                       | 0    | 6     | 0      | 52    | 7              | 596                          | 26    | 0    | 629    | 6     | 0              | 6                        | 0    | 12    | 16     | 1094  | 16             | 0                            | 1126  | -    | -      | -    | -              | -                      |
| Lights %               | 90.2%                    | 0%   | 100%  | 0%     | 91.2% | 100%           | 94.2%                        | 56.5% | 0%   | 91.7%  | 35.3% | 0%             | 31.6%                    | 0%   | 33.3% | 53.3%  | 96.8% | 94.1%          | 0%                           | 95.7% | -    | -      | -    | -              | -                      |
| Single-Unit Trucks     | 1                        | 0    | 0     | 0      | 1     | 0              | 20                           | 20    | 0    | 40     | 11    | 0              | 13                       | 0    | 24    | 12     | 17    | 0              | 0                            | 29    | -    | -      | -    | -              | -                      |
| Single-Unit Trucks %   | 2%                       | 0%   | 0%    | 0%     | 1.8%  | 0%             | 3.2%                         | 43.5% | 0%   | 5.8%   | 64.7% | 0%             | 68.4%                    | 0%   | 66.7% | 40%    | 1.5%  | 0%             | 0%                           | 2.5%  | -    | -      | -    | -              | -                      |
| Buses                  | 4                        | 0    | 0     | 0      | 4     | 0              | 16                           | 0     | 0    | 16     | 0     | 0              | 0                        | 0    | 0     | 0      | 15    | 1              | 0                            | 16    | -    | -      | -    | -              | -                      |
| Buses %                | 7.8%                     | 0%   | 0%    | 0%     | 7%    | 0%             | 2.5%                         | 0%    | 0%   | 2.3%   | 0%    | 0%             | 0%                       | 0%   | 0%    | 0%     | 1.3%  | 5.9%           | 0%                           | 1.4%  | -    | -      | -    | -              | -                      |
| Articulated Trucks     | 0                        | 0    | 0     | 0      | 0     | 0              | 1                            | 0     | 0    | 1      | 0     | 0              | 0                        | 0    | 0     | 2      | 4     | 0              | 0                            | 6     | -    | -      | -    | -              | -                      |
| Articulated Trucks %   | 0%                       | 0%   | 0%    | 0%     | 0%    | 0%             | 0.2%                         | 0%    | 0%   | 0.1%   | 0%    | 0%             | 0%                       | 0%   | 0%    | 6.7%   | 0.4%  | 0%             | 0%                           | 0.5%  | -    | -      | -    | -              | -                      |
| Pedestrians            | -                        | -    | -     | -      | 6     | -              | -                            | -     | -    | 0      | -     | -              | -                        | -    | 0     | -      | -     | -              | -                            | 1     | -    | -      | -    | -              | -                      |
| Pedestrians%           | -                        | -    | -     | -      | 85.7% | -              | -                            | -     | -    | 0%     | -     | -              | -                        | -    | 0%    | -      | -     | -              | -                            | 14.3% | -    | -      | -    | -              | -                      |
| Bicycles on Crosswalk  | -                        | -    | -     | -      | 0     | -              | -                            | -     | -    | 0      | -     | -              | -                        | -    | 0     | -      | -     | -              | -                            | 0     | -    | -      | -    | -              | -                      |
| Bicycles on Crosswalk% | -                        | -    | -     | -      | 0%    | -              | -                            | -     | -    | 0%     | -     | -              | -                        | -    | 0%    | -      | -     | -              | -                            | 0%    | -    | -      | -    | -              | -                      |
| Bicycles on Road       | 0                        | 0    | 0     | 0      | 0     | -              | 0                            | 0     | 0    | 0      | -     | 0              | 0                        | 0    | 0     | -      | 0     | 1              | 0                            | 0     | -    | -      | -    | -              | -                      |
| Bicycles on Road%      | -                        | -    | -     | -      | 0%    | -              | -                            | -     | -    | 0%     | -     | -              | -                        | -    | 0%    | -      | -     | -              | -                            | 0%    | -    | -      | -    | -              | -                      |



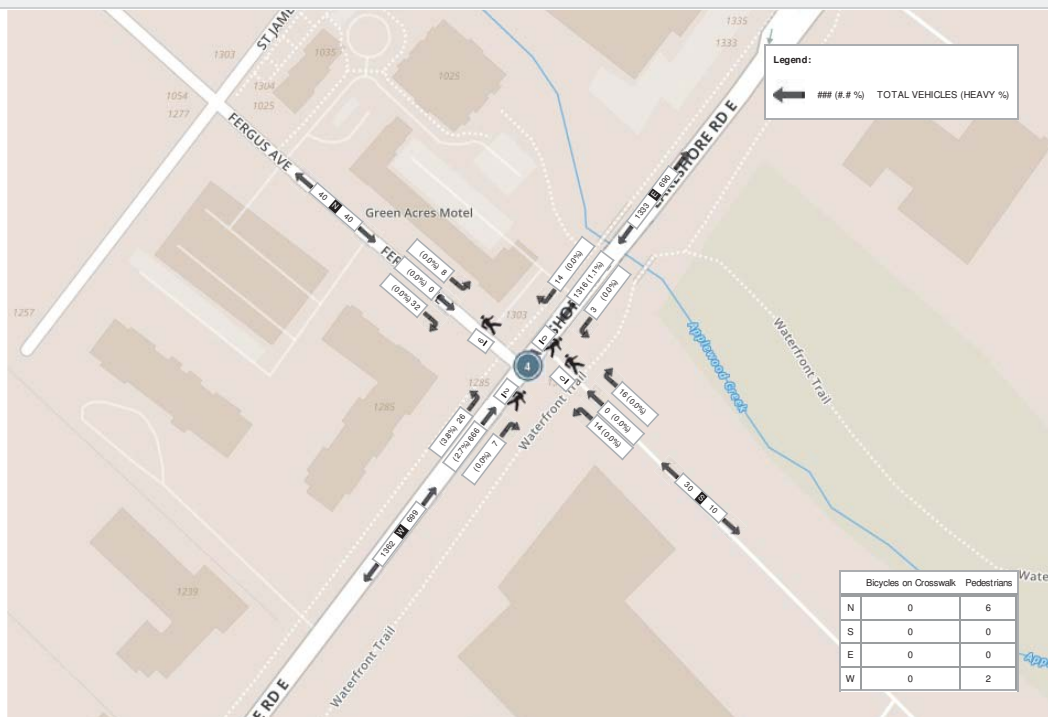
Peak Hour: 04:45 PM - 05:45 PM Weather: Snow (-0.4 °C)

| Start Time             | N Approach<br>FERGUS AVE |      |      |        |      |                | E Approach<br>LAKESHORE RD E |       |      |        |      |                | S Approach<br>FERGUS AVE |      |       |        |      |                | W Approach<br>LAKESHORE RD E |       |       |        |      |                | Int. Total<br>(15 min) |
|------------------------|--------------------------|------|------|--------|------|----------------|------------------------------|-------|------|--------|------|----------------|--------------------------|------|-------|--------|------|----------------|------------------------------|-------|-------|--------|------|----------------|------------------------|
|                        | Right                    | Thru | Left | U-Turn | Peds | Approach Total | Right                        | Thru  | Left | U-Turn | Peds | Approach Total | Right                    | Thru | Left  | U-Turn | Peds | Approach Total | Right                        | Thru  | Left  | U-Turn | Peds | Approach Total |                        |
| 16:45:00               | 6                        | 0    | 1    | 0      | 1    | 7              | 2                            | 321   | 0    | 1      | 0    | 324            | 8                        | 0    | 1     | 0      | 0    | 9              | 4                            | 176   | 4     | 0      | 1    | 184            | 524                    |
| 17:00:00               | 10                       | 0    | 3    | 0      | 0    | 13             | 4                            | 353   | 1    | 0      | 0    | 358            | 4                        | 0    | 8     | 0      | 0    | 12             | 0                            | 165   | 9     | 0      | 0    | 174            | 557                    |
| 17:15:00               | 10                       | 0    | 3    | 0      | 3    | 13             | 4                            | 314   | 1    | 0      | 0    | 319            | 4                        | 0    | 3     | 0      | 0    | 7              | 1                            | 164   | 6     | 0      | 1    | 171            | 510                    |
| 17:30:00               | 6                        | 0    | 1    | 0      | 2    | 7              | 4                            | 328   | 1    | 0      | 0    | 333            | 0                        | 0    | 2     | 0      | 0    | 2              | 2                            | 161   | 7     | 0      | 0    | 170            | 512                    |
| Grand Total            | 32                       | 0    | 8    | 0      | 6    | 40             | 14                           | 1316  | 3    | 1      | 0    | 1334           | 16                       | 0    | 14    | 0      | 0    | 30             | 7                            | 666   | 26    | 0      | 2    | 699            | 2103                   |
| Approach%              | 80%                      | 0%   | 20%  | 0%     |      |                | 1%                           | 98.7% | 0.2% | 0.1%   |      |                | 53.3%                    | 0%   | 46.7% | 0%     |      |                | 1%                           | 95.3% | 3.7%  | 0%     |      |                | -                      |
| Totals %               | 1.5%                     | 0%   | 0.4% | 0%     |      | 1.9%           | 0.7%                         | 62.6% | 0.1% | 0%     |      | 63.4%          | 0.8%                     | 0%   | 0.7%  | 0%     |      | 1.4%           | 0.3%                         | 31.7% | 1.2%  | 0%     |      |                | 33.2%                  |
| PHF                    | 0.8                      | 0    | 0.67 | 0      |      | 0.77           | 0.88                         | 0.93  | 0.75 | 0.25   |      | 0.93           | 0.5                      | 0    | 0.44  | 0      |      | 0.63           | 0.44                         | 0.95  | 0.72  | 0      |      |                | 0.95                   |
| Heavy                  | 0                        | 0    | 0    | 0      |      | 0              | 0                            | 14    | 0    | 0      |      | 14             | 0                        | 0    | 0     | 0      |      | 0              | 0                            | 18    | 1     | 0      |      |                | 19                     |
| Heavy %                | 0%                       | 0%   | 0%   | 0%     |      | 0%             | 0%                           | 1.1%  | 0%   | 0%     |      | 1%             | 0%                       | 0%   | 0%    | 0%     |      | 0%             | 0%                           | 2.7%  | 3.8%  | 0%     |      |                | 2.7%                   |
| Lights                 | 32                       | 0    | 8    | 0      |      | 40             | 14                           | 1302  | 3    | 1      |      | 1320           | 16                       | 0    | 14    | 0      |      | 30             | 7                            | 648   | 25    | 0      |      |                | 680                    |
| Lights %               | 100%                     | 0%   | 100% | 0%     |      | 100%           | 100%                         | 98.9% | 100% | 100%   |      | 99%            | 100%                     | 0%   | 100%  | 0%     |      | 100%           | 100%                         | 97.3% | 96.2% | 0%     |      |                | 97.3%                  |
| Single-Unit Trucks     | 0                        | 0    | 0    | 0      |      | 0              | 0                            | 5     | 0    | 0      |      | 5              | 0                        | 0    | 0     | 0      |      | 0              | 0                            | 6     | 1     | 0      |      |                | -                      |
| Single-Unit Trucks %   | 0%                       | 0%   | 0%   | 0%     |      | 0%             | 0%                           | 0.4%  | 0%   | 0%     |      | 0.4%           | 0%                       | 0%   | 0%    | 0%     |      | 0%             | 0%                           | 0.9%  | 3.8%  | 0%     |      |                | 1%                     |
| Buses                  | 0                        | 0    | 0    | 0      |      | 0              | 0                            | 9     | 0    | 0      |      | 9              | 0                        | 0    | 0     | 0      |      | 0              | 0                            | 11    | 0     | 0      |      |                | 11                     |
| Buses %                | 0%                       | 0%   | 0%   | 0%     |      | 0%             | 0%                           | 0.7%  | 0%   | 0%     |      | 0.7%           | 0%                       | 0%   | 0%    | 0%     |      | 0%             | 0%                           | 1.7%  | 0%    | 0%     |      |                | 1.6%                   |
| Articulated Trucks     | 0                        | 0    | 0    | 0      |      | 0              | 0                            | 0     | 0    | 0      |      | 0              | 0                        | 0    | 0     | 0      |      | 0              | 0                            | 1     | 0     | 0      |      |                | 1                      |
| Articulated Trucks %   | 0%                       | 0%   | 0%   | 0%     |      | 0%             | 0%                           | 0%    | 0%   | 0%     |      | 0%             | 0%                       | 0%   | 0%    | 0%     |      | 0%             | 0%                           | 0.2%  | 0%    | 0%     |      |                | 0.1%                   |
| Pedestrians            | -                        | -    | -    | -      | 6    | -              | -                            | -     | -    | 0      |      | -              | -                        | -    | -     | 0      |      | -              | -                            | -     | -     | 2      |      |                | -                      |
| Pedestrians%           | -                        | -    | -    | -      | 75%  | -              | -                            | -     | -    | 0%     |      | -              | -                        | -    | -     | 0%     |      | -              | -                            | -     | -     | 25%    |      |                | -                      |
| Bicycles on Crosswalk  | -                        | -    | -    | -      | 0    | -              | -                            | -     | -    | 0      |      | -              | -                        | -    | -     | 0      |      | -              | -                            | -     | -     | 0      |      |                | -                      |
| Bicycles on Crosswalk% | -                        | -    | -    | -      | 0%   | -              | -                            | -     | -    | 0%     |      | -              | -                        | -    | -     | 0%     |      | -              | -                            | -     | -     | 0%     |      |                | -                      |
| Bicycles on Road       | 0                        | 0    | 0    | 0      | 0    | -              | 0                            | 0     | 0    | 0      |      | 0              | 0                        | 0    | 0     | 0      |      | -              | 0                            | 0     | 0     | 0      | 0    |                | -                      |
| Bicycles on Road%      | -                        | -    | -    | -      | 0%   | -              | -                            | -     | -    | 0%     |      | -              | -                        | -    | -     | 0%     |      | -              | -                            | -     | -     | 0%     |      |                | -                      |

Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast (-3.4 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Snow (-0.4 °C)





Turning Movement Count (2 . FERGUS AVE & ST JAMES AVE)

| Start Time  | N Approach<br>FERGUS AVE |             |             |               |            |                | E Approach<br>ST JAMES AVE |             |             |               |            |                | S Approach<br>FERGUS AVE |             |             |               |            |                | W Approach<br>ST JAMES AVE |             |             |               |            |                | Int. Total<br>(15 min) | Int. Total<br>(1 hr) |  |
|-------------|--------------------------|-------------|-------------|---------------|------------|----------------|----------------------------|-------------|-------------|---------------|------------|----------------|--------------------------|-------------|-------------|---------------|------------|----------------|----------------------------|-------------|-------------|---------------|------------|----------------|------------------------|----------------------|--|
|             | Right<br>N-W             | Thru<br>N-S | Left<br>N-E | U-Turn<br>N-N | Peds<br>N- | Approach Total | Right<br>E-N               | Thru<br>E-W | Left<br>E-S | U-Turn<br>E-E | Peds<br>E- | Approach Total | Right<br>S-E             | Thru<br>S-N | Left<br>S-W | U-Turn<br>S-S | Peds<br>S- | Approach Total | Right<br>W-S               | Thru<br>W-E | Left<br>W-N | U-Turn<br>W-W | Peds<br>W- | Approach Total |                        |                      |  |
| 07:00:00    | 0                        | 0           | 0           | 0             | 0          | 0              | 1                          | 0           | 4           | 0             | 0          | 5              | 7                        | 0           | 0           | 0             | 0          | 7              | 0                          | 2           | 0           | 0             | 2          | 2              | 14                     |                      |  |
| 07:15:00    | 0                        | 2           | 1           | 0             | 0          | 3              | 0                          | 0           | 3           | 0             | 0          | 3              | 10                       | 0           | 0           | 0             | 0          | 10             | 0                          | 1           | 0           | 0             | 0          | 1              | 17                     |                      |  |
| 07:30:00    | 0                        | 2           | 3           | 0             | 0          | 5              | 0                          | 1           | 1           | 0             | 0          | 2              | 12                       | 2           | 0           | 0             | 1          | 14             | 3                          | 0           | 0           | 0             | 0          | 3              | 24                     |                      |  |
| 07:45:00    | 0                        | 1           | 0           | 0             | 0          | 1              | 2                          | 1           | 2           | 0             | 0          | 5              | 14                       | 2           | 0           | 0             | 2          | 16             | 0                          | 1           | 1           | 0             | 0          | 2              | 24                     | 79                   |  |
| 08:00:00    | 0                        | 0           | 0           | 0             | 0          | 0              | 3                          | 0           | 5           | 0             | 1          | 8              | 12                       | 0           | 0           | 0             | 1          | 12             | 0                          | 1           | 0           | 0             | 0          | 1              | 21                     | 86                   |  |
| 08:15:00    | 0                        | 3           | 1           | 0             | 0          | 4              | 0                          | 1           | 1           | 0             | 0          | 2              | 13                       | 0           | 0           | 0             | 1          | 13             | 0                          | 1           | 0           | 0             | 0          | 1              | 20                     | 89                   |  |
| 08:30:00    | 0                        | 2           | 1           | 0             | 0          | 3              | 0                          | 1           | 6           | 0             | 0          | 7              | 6                        | 0           | 1           | 0             | 5          | 7              | 0                          | 0           | 0           | 0             | 1          | 0              | 17                     | 82                   |  |
| 08:45:00    | 0                        | 4           | 1           | 0             | 0          | 5              | 2                          | 0           | 5           | 0             | 0          | 7              | 11                       | 0           | 0           | 0             | 3          | 11             | 0                          | 0           | 0           | 0             | 0          | 0              | 23                     | 81                   |  |
| ***BREAK*** |                          |             |             |               |            |                |                            |             |             |               |            |                |                          |             |             |               |            |                |                            |             |             |               |            |                |                        |                      |  |
| 16:00:00    | 0                        | 0           | 1           | 0             | 0          | 1              | 1                          | 0           | 10          | 0             | 0          | 11             | 9                        | 1           | 0           | 0             | 3          | 10             | 0                          | 0           | 0           | 0             | 0          | 0              | 22                     |                      |  |
| 16:15:00    | 0                        | 0           | 0           | 0             | 0          | 0              | 2                          | 0           | 5           | 0             | 0          | 7              | 4                        | 2           | 1           | 0             | 2          | 7              | 0                          | 0           | 0           | 0             | 0          | 0              | 14                     |                      |  |
| 16:30:00    | 0                        | 5           | 1           | 0             | 0          | 6              | 0                          | 0           | 10          | 0             | 0          | 10             | 9                        | 2           | 1           | 0             | 2          | 12             | 0                          | 0           | 0           | 0             | 1          | 0              | 28                     |                      |  |
| 16:45:00    | 0                        | 3           | 0           | 0             | 0          | 3              | 1                          | 2           | 7           | 0             | 0          | 10             | 4                        | 3           | 0           | 0             | 2          | 7              | 0                          | 0           | 1           | 0             | 0          | 1              | 21                     | 85                   |  |
| 17:00:00    | 0                        | 2           | 1           | 0             | 1          | 3              | 1                          | 0           | 12          | 0             | 1          | 13             | 6                        | 3           | 1           | 1             | 0          | 11             | 0                          | 1           | 0           | 0             | 0          | 1              | 28                     | 91                   |  |
| 17:15:00    | 0                        | 1           | 0           | 0             | 0          | 1              | 0                          | 1           | 11          | 0             | 0          | 12             | 7                        | 2           | 0           | 1             | 0          | 10             | 0                          | 1           | 0           | 0             | 0          | 1              | 24                     | 101                  |  |
| 17:30:00    | 0                        | 1           | 1           | 0             | 0          | 2              | 1                          | 0           | 9           | 1             | 0          | 11             | 4                        | 2           | 1           | 0             | 0          | 7              | 0                          | 0           | 0           | 0             | 1          | 0              | 20                     | 93                   |  |
| 17:45:00    | 0                        | 2           | 0           | 0             | 0          | 2              | 2                          | 0           | 22          | 0             | 0          | 24             | 8                        | 0           | 0           | 0             | 1          | 8              | 0                          | 0           | 0           | 0             | 0          | 0              | 34                     | 106                  |  |
| Grand Total | 0                        | 28          | 11          | 0             | 1          | 39             | 16                         | 7           | 113         | 1             | 2          | 137            | 136                      | 19          | 5           | 2             | 23         | 162            | 3                          | 8           | 2           | 0             | 5          | 13             | 351                    | -                    |  |
| Approach%   | 0%                       | 71.8%       | 28.2%       | 0%            | -          | -              | 11.7%                      | 5.1%        | 82.5%       | 0.7%          | -          | -              | 84%                      | 11.7%       | 3.1%        | 1.2%          | -          | -              | 23.1%                      | 61.5%       | 15.4%       | 0%            | -          | -              | -                      | -                    |  |
| Totals %    | 0                        | 8%          | 3.1%        | 0%            | 11.1%      | 4.6%           | 2%                         | 32.2%       | 0.3%        | 39%           | 38.7%      | 5.4%           | 1.4%                     | 0.6%        | 46.2%       | 0.9%          | 2.3%       | 0.6%           | 0%                         | 3.7%        | -           | -             | -          | -              | -                      |                      |  |
| Heavy       | 0                        | 2           | 0           | 0             | -          | 0              | 0                          | 0           | 5           | 0             | -          | 2              | 2                        | 0           | 0           | -             | 0          | 0              | 0                          | 0           | 0           | 0             | 0          | -              | -                      |                      |  |
| Heavy %     | 0%                       | 7.1%        | 0%          | 0%            | -          | 0%             | 0%                         | 4.4%        | 0%          | -             | 1.5%       | 10.5%          | 0%                       | 0%          | -           | -             | 0%         | 0%             | 0%                         | 0%          | -           | -             | -          | -              | -                      |                      |  |
| Bicycles    | 0                        | 0           | 0           | 0             | -          | 1              | 0                          | 0           | 0           | 0             | -          | 0              | 0                        | 0           | 0           | 0             | -          | 0              | 0                          | 0           | 0           | 0             | -          | -              | -                      |                      |  |
| Bicycle %   | 0%                       | 0%          | 0%          | 0%            | -          | 6.3%           | 0%                         | 0%          | 0%          | 0%            | -          | 0%             | 0%                       | 0%          | 0%          | 0%            | -          | 0%             | 0%                         | 0%          | 0%          | -             | -          | -              | -                      |                      |  |



Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast (-3.4 °C)

| Start Time           | N Approach<br>FERGUS AVE |       |      |        |       |                | E Approach<br>ST JAMES AVE |       |       |        |       |                | S Approach<br>FERGUS AVE |      |       |        |      |                | W Approach<br>ST JAMES AVE |       |       |        |      |                | Int. Total<br>(15 min) |
|----------------------|--------------------------|-------|------|--------|-------|----------------|----------------------------|-------|-------|--------|-------|----------------|--------------------------|------|-------|--------|------|----------------|----------------------------|-------|-------|--------|------|----------------|------------------------|
|                      | Right                    | Thru  | Left | U-Turn | Peds  | Approach Total | Right                      | Thru  | Left  | U-Turn | Peds  | Approach Total | Right                    | Thru | Left  | U-Turn | Peds | Approach Total | Right                      | Thru  | Left  | U-Turn | Peds | Approach Total |                        |
| 07:30:00             | 0                        | 2     | 3    | 0      | 0     | 5              | 0                          | 1     | 1     | 0      | 0     | 2              | 12                       | 2    | 0     | 0      | 1    | 14             | 3                          | 0     | 0     | 0      | 0    | 3              | 24                     |
| 07:45:00             | 0                        | 1     | 0    | 0      | 0     | 1              | 2                          | 1     | 2     | 0      | 0     | 5              | 14                       | 2    | 0     | 0      | 2    | 16             | 0                          | 1     | 1     | 0      | 0    | 2              | 24                     |
| 08:00:00             | 0                        | 0     | 0    | 0      | 0     | 0              | 3                          | 0     | 5     | 0      | 1     | 8              | 12                       | 0    | 0     | 0      | 1    | 12             | 0                          | 1     | 0     | 0      | 0    | 1              | 21                     |
| 08:15:00             | 0                        | 3     | 1    | 0      | 0     | 4              | 0                          | 1     | 1     | 0      | 0     | 2              | 13                       | 0    | 0     | 0      | 1    | 13             | 0                          | 1     | 0     | 0      | 0    | 1              | 20                     |
| Grand Total          | 0                        | 6     | 4    | 0      | 0     | 10             | 5                          | 3     | 9     | 0      | 1     | 17             | 51                       | 4    | 0     | 0      | 5    | 55             | 3                          | 3     | 1     | 0      | 0    | 7              | 89                     |
| Approach%            | 0%                       | 60%   | 40%  | 0%     | -     | -              | 29.4%                      | 17.6% | 52.9% | 0%     | -     | -              | 92.7%                    | 7.3% | 0%    | 0%     | -    | -              | 42.9%                      | 42.9% | 14.3% | 0%     | -    | -              | -                      |
| Totals %             | 0%                       | 6.7%  | 4.5% | 0%     | 11.2% | 5.6%           | 3.4%                       | 10.1% | 0%    | 19.1%  | 57.3% | 4.5%           | 0%                       | 0%   | 61.8% | 3.4%   | 3.4% | 1.1%           | 0%                         | 7.9%  | -     | -      | -    | -              |                        |
| PHF                  | 0                        | 0.5   | 0.33 | 0      | 0.5   | 0.42           | 0.75                       | 0.45  | 0     | 0.53   | 0.91  | 0.5            | 0                        | 0    | 0.86  | 0.25   | 0.75 | 0.25           | 0                          | 0.58  | -     | -      | -    | -              |                        |
| Heavy                | 0                        | 1     | 0    | 0      | 1     | 0              | 0                          | 3     | 0     | 3      | 1     | 1              | 0                        | 0    | 2     | 0      | 0    | 0              | 0                          | 0     | -     | -      | -    | -              |                        |
| Heavy %              | 0%                       | 16.7% | 0%   | 0%     | 10%   | 0%             | 0%                         | 33.3% | 0%    | 17.6%  | 2%    | 25%            | 0%                       | 0%   | 3.6%  | 0%     | 0%   | 0%             | 0%                         | 0%    | -     | -      | -    | -              |                        |
| Lights               | 0                        | 5     | 4    | 0      | 9     | 5              | 3                          | 6     | 0     | 14     | 50    | 3              | 0                        | 0    | 53    | 3      | 3    | 1              | 0                          | 7     | -     | -      | -    | -              |                        |
| Lights %             | 0%                       | 83.3% | 100% | 0%     | 90%   | 100%           | 100%                       | 66.7% | 0%    | 82.4%  | 98%   | 75%            | 0%                       | 0%   | 96.4% | 100%   | 100% | 100%           | 0%                         | 100%  | -     | -      | -    | -              |                        |
| Single-Unit Trucks   | 0                        | 0     | 0    | 0      | 0     | 0              | 0                          | 0     | 0     | 0      | 0     | 0              | 0                        | 0    | 0     | 0      | 0    | 0              | 0                          | 0     | -     | -      | -    | -              |                        |
| Single-Unit Trucks % | 0%                       | 0%    | 0%   | 0%     | 0%    | 0%             | 0%                         | 0%    | 0%    | 0%     | 0%    | 0%             | 0%                       | 0%   | 0%    | 0%     | 0%   | 0%             | 0%                         | 0%    | -     | -      | -    | -              |                        |
| Buses                | 0                        | 1     | 0    | 0      | 1     | 0              | 0                          | 3     | 0     | 3      | 1     | 1              | 0                        | 0    | 2     | 0      | 0    | 0              | 0                          | 0     | -     | -      | -    | -              |                        |
| Buses %              | 0%                       | 16.7% | 0%   | 0%     | 10%   | 0%             | 0%                         | 33.3% | 0%    | 17.6%  | 2%    | 25%            | 0%                       | 0%   | 3.6%  | 0%     | 0%   | 0%             | 0%                         | 0%    | -     | -      | -    | -              |                        |
| Pedestrians          | -                        | -     | -    | -      | 0     | -              | -                          | -     | -     | 1      | -     | -              | -                        | -    | 5     | -      | -    | -              | -                          | 0     | -     | -      | -    | -              |                        |
| Pedestrians%         | -                        | -     | -    | -      | 0%    | -              | -                          | -     | -     | 16.7%  | -     | -              | -                        | -    | 83.3% | -      | -    | -              | -                          | 0%    | -     | -      | -    | -              |                        |
| Bicycles on Road     | 0                        | 0     | 0    | 0      | 0     | -              | 1                          | 0     | 0     | 0      | 0     | -              | 0                        | 0    | 0     | 0      | 0    | -              | 0                          | 0     | 0     | 0      | 0    | -              | -                      |
| Bicycles on Road %   | -                        | -     | -    | -      | 0%    | -              | -                          | -     | -     | 0%     | -     | -              | -                        | -    | 0%    | -      | -    | -              | -                          | 0%    | -     | -      | -    | -              | -                      |

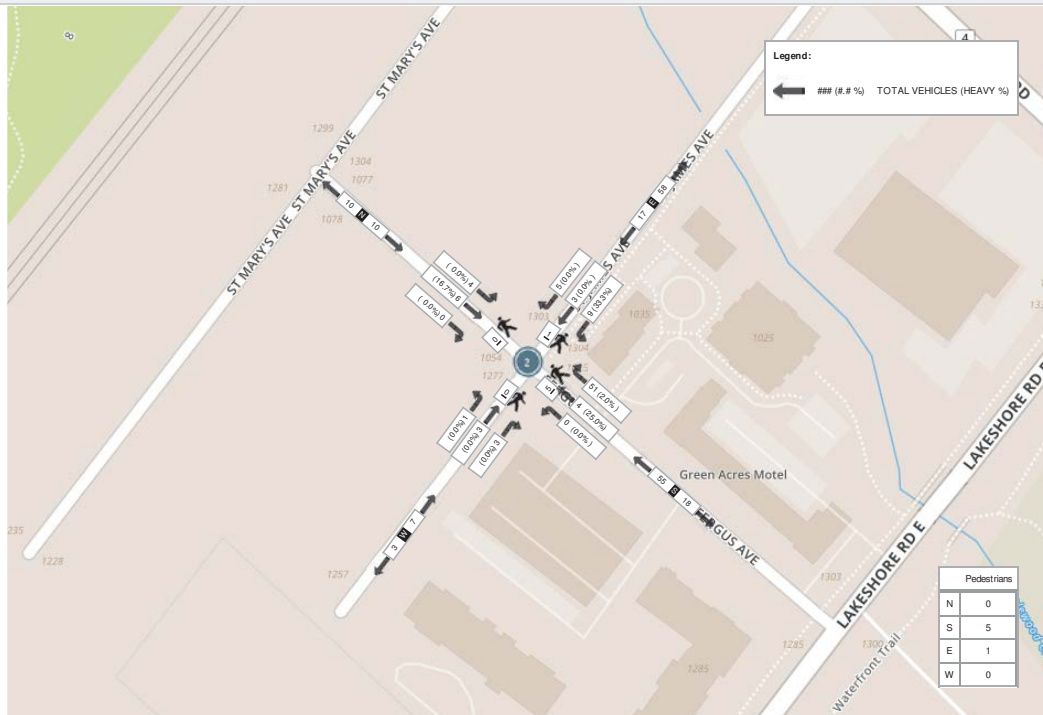


Peak Hour: 05:00 PM - 06:00 PM Weather: Snow (-0.4 °C)

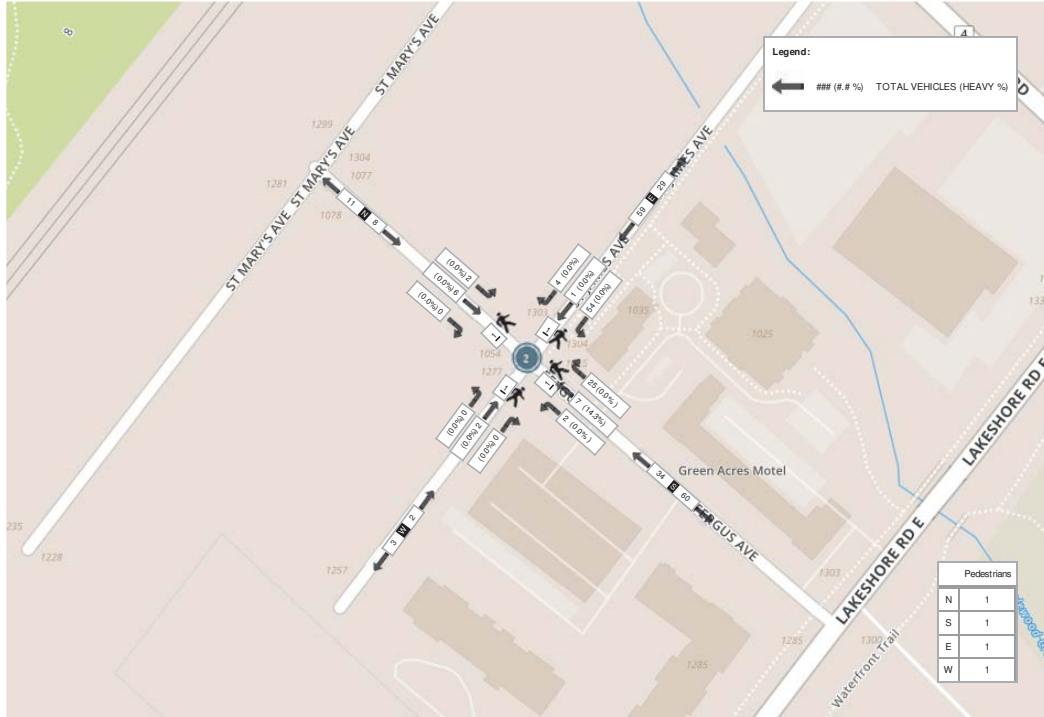
| Start Time           | N Approach<br>FERGUS AVE |      |      |        |      |                | E Approach<br>ST JAMES AVE |       |      |        |       |                | S Approach<br>FERGUS AVE |       |       |        |      |                | W Approach<br>ST JAMES AVE |      |      |        |      |                | Int. Total<br>(15 min) |
|----------------------|--------------------------|------|------|--------|------|----------------|----------------------------|-------|------|--------|-------|----------------|--------------------------|-------|-------|--------|------|----------------|----------------------------|------|------|--------|------|----------------|------------------------|
|                      | Right                    | Thru | Left | U-Turn | Peds | Approach Total | Right                      | Thru  | Left | U-Turn | Peds  | Approach Total | Right                    | Thru  | Left  | U-Turn | Peds | Approach Total | Right                      | Thru | Left | U-Turn | Peds | Approach Total |                        |
| 17:00:00             | 0                        | 2    | 1    | 0      | 1    | 3              | 1                          | 0     | 12   | 0      | 1     | 13             | 6                        | 3     | 1     | 1      | 0    | 11             | 0                          | 1    | 0    | 0      | 0    | 1              | 28                     |
| 17:15:00             | 0                        | 1    | 0    | 0      | 0    | 1              | 0                          | 1     | 11   | 0      | 0     | 12             | 7                        | 2     | 0     | 1      | 0    | 10             | 0                          | 1    | 0    | 0      | 0    | 1              | 24                     |
| 17:30:00             | 0                        | 1    | 1    | 0      | 0    | 2              | 1                          | 0     | 9    | 1      | 0     | 11             | 4                        | 2     | 1     | 0      | 0    | 7              | 0                          | 0    | 0    | 0      | 1    | 0              | 20                     |
| 17:45:00             | 0                        | 2    | 0    | 0      | 0    | 2              | 2                          | 0     | 22   | 0      | 0     | 24             | 8                        | 0     | 0     | 0      | 1    | 8              | 0                          | 0    | 0    | 0      | 0    | 0              | 34                     |
| Grand Total          | 0                        | 6    | 2    | 0      | 1    | 8              | 4                          | 1     | 54   | 1      | 1     | 60             | 25                       | 7     | 2     | 2      | 1    | 36             | 0                          | 2    | 0    | 0      | 1    | 2              | 106                    |
| Approach%            | 0%                       | 75%  | 25%  | 0%     | -    | -              | 6.7%                       | 1.7%  | 90%  | 1.7%   | -     | -              | 69.4%                    | 19.4% | 5.6%  | 5.6%   | -    | -              | 0%                         | 100% | 0%   | 0%     | -    | -              | -                      |
| Totals %             | 0%                       | 5.7% | 1.9% | 0%     | 7.5% | 3.8%           | 0.9%                       | 50.9% | 0.9% | 56.6%  | 23.6% | 6.6%           | 1.9%                     | 1.9%  | 34%   | 0%     | 1.9% | 0%             | 0%                         | 1.9% | -    | -      | -    | -              | -                      |
| PHF                  | 0                        | 0.75 | 0.5  | 0      | 0.67 | 0.5            | 0.25                       | 0.61  | 0.25 | 0.63   | 0.78  | 0.58           | 0.5                      | 0.5   | 0.82  | 0      | 0.5  | 0              | 0                          | 0.5  | -    | -      | -    | -              | -                      |
| Heavy                | 0                        | 0    | 0    | 0      | 0    | 0              | 0                          | 0     | 0    | 0      | 0     | 0              | 1                        | 0     | 0     | 0      | 0    | 1              | 0                          | 0    | 0    | 0      | 0    | 0              | -                      |
| Heavy %              | 0%                       | 0%   | 0%   | 0%     | 0%   | 0%             | 0%                         | 0%    | 0%   | 0%     | 0%    | 0%             | 14.3%                    | 0%    | 0%    | 0%     | 0%   | 2.8%           | 0%                         | 0%   | 0%   | 0%     | 0%   | 0%             | -                      |
| Lights               | 0                        | 6    | 2    | 0      | 8    | 4              | 1                          | 54    | 1    | 60     | 25    | 6              | 2                        | 2     | 35    | 0      | 2    | 0              | 0                          | 2    | -    | -      | -    | -              | -                      |
| Lights %             | 0%                       | 100% | 100% | 0%     | 100% | 100%           | 100%                       | 100%  | 100% | 100%   | 100%  | 85.7%          | 100%                     | 100%  | 97.2% | 0%     | 100% | 0%             | 0%                         | 100% | -    | -      | -    | -              | -                      |
| Single-Unit Trucks   | 0                        | 0    | 0    | 0      | 0    | 0              | 0                          | 0     | 0    | 0      | 0     | 1              | 0                        | 0     | 1     | 0      | 0    | 1              | 0                          | 0    | 0    | 0      | 0    | 0              | -                      |
| Single-Unit Trucks % | 0%                       | 0%   | 0%   | 0%     | 0%   | 0%             | 0%                         | 0%    | 0%   | 0%     | 0%    | 14.3%          | 0%                       | 0%    | 2.8%  | 0%     | 0%   | 0%             | 0%                         | 0%   | -    | -      | -    | -              | -                      |
| Buses                | 0                        | 0    | 0    | 0      | 0    | 0              | 0                          | 0     | 0    | 0      | 0     | 0              | 0                        | 0     | 0     | 0      | 0    | 0              | 0                          | 0    | 0    | 0      | 0    | 0              | -                      |
| Buses %              | 0%                       | 0%   | 0%   | 0%     | 0%   | 0%             | 0%                         | 0%    | 0%   | 0%     | 0%    | 0%             | 0%                       | 0%    | 0%    | 0%     | 0%   | 0%             | 0%                         | 0%   | -    | -      | -    | -              | -                      |
| Pedestrians          | -                        | -    | -    | -      | 1    | -              | -                          | -     | -    | 1      | -     | -              | -                        | -     | 1     | -      | -    | -              | -                          | 1    | -    | -      | -    | -              | -                      |
| Pedestrians %        | -                        | -    | -    | -      | 25%  | -              | -                          | -     | -    | 25%    | -     | -              | -                        | -     | 25%   | -      | -    | -              | -                          | 25%  | -    | -      | -    | -              | -                      |
| Bicycles on Road     | 0                        | 0    | 0    | 0      | 0    | -              | 0                          | 0     | 0    | 0      | -     | 0              | 0                        | 0     | 0     | -      | 0    | 0              | 0                          | 0    | -    | -      | -    | -              | -                      |
| Bicycles on Road %   | -                        | -    | -    | -      | 0%   | -              | -                          | -     | -    | 0%     | -     | -              | -                        | -     | 0%    | -      | -    | -              | -                          | 0%   | -    | -      | -    | -              | -                      |



Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast (-3.4 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Snow (-0.4 °C)



## **APPENDIX E: 2016 TTS DOA**



AM Peak Hour  
Outbound  
2018-04-30

|                     |       |      | Traffic Volume Allocation |                |                |         | Route Split Totals |                |                |        |
|---------------------|-------|------|---------------------------|----------------|----------------|---------|--------------------|----------------|----------------|--------|
| Zone                | Trips | %    | NORTH                     | EAST           | WEST           | TOTAL   | NORTH              | EAST           | WEST           | TOTAL  |
|                     |       |      | Dixie Road                | Lakeshore Rd E | Lakeshore Rd E |         | Dixie Road         | Lakeshore Rd E | Lakeshore Rd E |        |
| PD 1 of Toronto     | 546   | 12%  | 100%                      |                |                | 100.00% | 12.38%             | 0.00%          | 0.00%          | 12.4%  |
| PD 2 of Toronto     | 72    | 2%   | 100%                      |                |                | 100.00% | 1.63%              | 0.00%          | 0.00%          | 1.6%   |
| PD 3 of Toronto     | 37    | 1%   | 100%                      |                |                | 100.00% | 0.84%              | 0.00%          | 0.00%          | 0.8%   |
| PD 4 of Toronto     | 109   | 2%   | 100%                      |                |                | 100.00% | 2.47%              | 0.00%          | 0.00%          | 2.5%   |
| PD 5 of Toronto     | 45    | 1%   | 100%                      |                |                | 100.00% | 1.02%              | 0.00%          | 0.00%          | 1.0%   |
| PD 6 of Toronto     | 27    | 1%   | 100%                      |                |                | 100.00% | 0.61%              | 0.00%          | 0.00%          | 0.6%   |
| PD 7 of Toronto     | 316   | 7%   | 25%                       | 75%            |                | 100.00% | 1.79%              | 5.37%          | 0.00%          | 7.2%   |
| PD 8 of Toronto     | 353   | 8%   | 80%                       | 20%            |                | 100.00% | 6.40%              | 1.60%          | 0.00%          | 8.0%   |
| PD 9 of Toronto     | 98    | 2%   | 100%                      |                |                | 100.00% | 2.22%              | 0.00%          | 0.00%          | 2.2%   |
| PD 11 of Toronto    | 46    | 1%   | 100%                      |                |                | 100.00% | 1.04%              | 0.00%          | 0.00%          | 1.0%   |
| PD 13 of Toronto    | 86    | 2%   | 100%                      |                |                | 100.00% | 1.95%              | 0.00%          | 0.00%          | 1.9%   |
| PD 14 of Toronto    | 9     | 0%   | 100%                      |                |                | 100.00% | 0.20%              | 0.00%          | 0.00%          | 0.2%   |
| Oshawa              | 69    | 2%   | 100%                      |                |                | 100.00% | 1.56%              | 0.00%          | 0.00%          | 1.6%   |
| King                | 23    | 1%   | 100%                      |                |                | 100.00% | 0.52%              | 0.00%          | 0.00%          | 0.5%   |
| Vaughan             | 113   | 3%   | 100%                      |                |                | 100.00% | 2.56%              | 0.00%          | 0.00%          | 2.6%   |
| Brampton            | 127   | 3%   | 100%                      |                |                | 100.00% | 2.88%              | 0.00%          | 0.00%          | 2.9%   |
| 3601                | 12    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.27%          | 0.3%   |
| 3604                | 15    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.34%          | 0.3%   |
| 3605                | 18    | 0%   | 100%                      |                |                | 100.00% | 0.41%              | 0.00%          | 0.00%          | 0.4%   |
| 3609                | 24    | 1%   | 100%                      |                |                | 100.00% | 0.54%              | 0.00%          | 0.00%          | 0.5%   |
| 3611                | 25    | 1%   | 50%                       |                | 50%            | 100.00% | 0.28%              | 0.00%          | 0.28%          | 0.6%   |
| 3612                | 11    | 0%   | 50%                       |                | 50%            | 100.00% | 0.12%              | 0.00%          | 0.12%          | 0.2%   |
| 3613                | 23    | 1%   | 30%                       |                | 70%            | 100.00% | 0.16%              | 0.00%          | 0.36%          | 0.5%   |
| 3618                | 11    | 0%   | 50%                       |                | 50%            | 100.00% | 0.12%              | 0.00%          | 0.12%          | 0.2%   |
| 3626                | 35    | 1%   | 100%                      |                |                | 100.00% | 0.79%              | 0.00%          | 0.00%          | 0.8%   |
| 3629                | 29    | 1%   | 100%                      |                |                | 100.00% | 0.66%              | 0.00%          | 0.00%          | 0.7%   |
| 3631                | 26    | 1%   | 30%                       |                | 70%            | 100.00% | 0.18%              | 0.00%          | 0.41%          | 0.6%   |
| 3632                | 20    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.45%          | 0.5%   |
| 3633                | 17    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.39%          | 0.4%   |
| 3634                | 27    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.61%          | 0.6%   |
| 3639                | 32    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.73%          | 0.7%   |
| 3640                | 15    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.34%          | 0.3%   |
| 3641                | 13    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.29%          | 0.3%   |
| 3642                | 49    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 1.11%          | 1.1%   |
| 3643                | 52    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 1.18%          | 1.2%   |
| 3645                | 8     | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.18%          | 0.2%   |
| 3647                | 32    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.73%          | 0.7%   |
| 3648                | 59    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 1.34%          | 1.3%   |
| 3649                | 593   | 13%  | 75%                       |                | 25%            | 100.00% | 10.08%             | 0.00%          | 3.36%          | 13.4%  |
| 3650                | 18    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.41%          | 0.4%   |
| 3652                | 27    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.61%          | 0.6%   |
| 3653                | 34    | 1%   | 50%                       |                | 50%            | 100.00% | 0.39%              | 0.00%          | 0.39%          | 0.8%   |
| 3654                | 31    | 1%   | 100%                      |                |                | 100.00% | 0.70%              | 0.00%          | 0.00%          | 0.7%   |
| 3655                | 20    | 0%   | 50%                       |                | 50%            | 100.00% | 0.23%              | 0.00%          | 0.23%          | 0.5%   |
| 3659                | 51    | 1%   | 50%                       |                | 50%            | 100.00% | 0.58%              | 0.00%          | 0.58%          | 1.2%   |
| 3660                | 12    | 0%   | 100%                      |                |                | 100.00% | 0.27%              | 0.00%          | 0.00%          | 0.3%   |
| 3669                | 27    | 1%   | 100%                      |                |                | 100.00% | 0.61%              | 0.00%          | 0.00%          | 0.6%   |
| 3671                | 43    | 1%   | 50%                       |                | 50%            | 100.00% | 0.49%              | 0.00%          | 0.49%          | 1.0%   |
| 3675                | 67    | 2%   | 100%                      |                |                | 100.00% | 1.52%              | 0.00%          | 0.00%          | 1.5%   |
| 3693                | 22    | 0%   | 50%                       |                | 50%            | 100.00% | 0.25%              | 0.00%          | 0.25%          | 0.5%   |
| 3695                | 15    | 0%   | 50%                       |                | 50%            | 100.00% | 0.17%              | 0.00%          | 0.17%          | 0.3%   |
| 3698                | 22    | 0%   | 75%                       |                | 25%            | 100.00% | 0.37%              | 0.00%          | 0.12%          | 0.5%   |
| 3699                | 82    | 2%   | 100%                      |                |                | 100.00% | 1.86%              | 0.00%          | 0.00%          | 1.9%   |
| 3700                | 21    | 0%   | 75%                       |                | 25%            | 100.00% | 0.36%              | 0.00%          | 0.12%          | 0.5%   |
| 3702                | 19    | 0%   | 100%                      |                |                | 100.00% | 0.43%              | 0.00%          | 0.00%          | 0.4%   |
| 3704                | 17    | 0%   | 100%                      |                |                | 100.00% | 0.39%              | 0.00%          | 0.00%          | 0.4%   |
| 3705                | 26    | 1%   | 100%                      |                |                | 100.00% | 0.59%              | 0.00%          | 0.00%          | 0.6%   |
| 3717                | 25    | 1%   | 50%                       |                | 50%            | 100.00% | 0.28%              | 0.00%          | 0.28%          | 0.6%   |
| 3816                | 17    | 0%   | 100%                      |                |                | 100.00% | 0.39%              | 0.00%          | 0.00%          | 0.4%   |
| 3818                | 17    | 0%   | 50%                       |                | 50%            | 100.00% | 0.19%              | 0.00%          | 0.19%          | 0.4%   |
| 3821                | 19    | 0%   | 50%                       |                | 50%            | 100.00% | 0.22%              | 0.00%          | 0.22%          | 0.4%   |
| 3822                | 24    | 1%   | 50%                       |                | 50%            | 100.00% | 0.27%              | 0.00%          | 0.27%          | 0.5%   |
| 3828                | 25    | 1%   | 100%                      |                |                | 100.00% | 0.57%              | 0.00%          | 0.00%          | 0.6%   |
| 3834                | 60    | 1%   | 50%                       |                | 50%            | 100.00% | 0.68%              | 0.00%          | 0.68%          | 1.4%   |
| 3835                | 27    | 1%   | 50%                       |                | 50%            | 100.00% | 0.31%              | 0.00%          | 0.31%          | 0.6%   |
| 3851                | 165   | 4%   | 50%                       |                | 50%            | 100.00% | 1.87%              | 0.00%          | 1.87%          | 3.7%   |
| 3870                | 52    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 1.18%          | 1.2%   |
| 3876                | 19    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.43%          | 0.4%   |
| 3877                | 7     | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.16%          | 0.2%   |
| Oakville            | 101   | 2%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 2.29%          | 2.3%   |
| Burlington          | 17    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.39%          | 0.4%   |
| Hamilton            | 27    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.61%          | 0.6%   |
| Niagara-on-the-Lake | 13    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.29%          | 0.3%   |
| St. Catharines      | 21    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.48%          | 0.5%   |
| TOTAL TRIPS         | 4412  | 100% |                           |                |                |         | 67%                | 7%             | 26%            | 100.0% |

Assumed Split

|        |        |        |         |
|--------|--------|--------|---------|
| 65.00% | 10.00% | 25.00% | 100.00% |
|--------|--------|--------|---------|

PM Peak Hour  
Inbound  
2018-04-30

|                  |       |      | Traffic Volume Allocation |                |                |         | Route Split Totals |                |                |         |
|------------------|-------|------|---------------------------|----------------|----------------|---------|--------------------|----------------|----------------|---------|
| Zone             | Trips | %    | NORTH                     | EAST           | WEST           | TOTAL   | NORTH              | EAST           | WEST           | TOTAL   |
|                  |       |      | Dixie Road                | Lakeshore Rd E | Lakeshore Rd E |         | Dixie Road         | Lakeshore Rd E | Lakeshore Rd E |         |
| PD 1 of Toronto  | 201   | 5%   | 100%                      |                |                | 100.00% | 5.17%              | 0.00%          | 0.00%          | 5.2%    |
| PD 2 of Toronto  | 43    | 1%   | 100%                      |                |                | 100.00% | 1.11%              | 0.00%          | 0.00%          | 1.1%    |
| PD 3 of Toronto  | 88    | 2%   | 100%                      |                |                | 100.00% | 2.27%              | 0.00%          | 0.00%          | 2.3%    |
| PD 4 of Toronto  | 76    | 2%   | 100%                      |                |                | 100.00% | 1.96%              | 0.00%          | 0.00%          | 2.0%    |
| PD 5 of Toronto  | 74    | 2%   | 100%                      |                |                | 100.00% | 1.90%              | 0.00%          | 0.00%          | 1.9%    |
| PD 6 of Toronto  | 27    | 1%   | 100%                      |                |                | 100.00% | 0.69%              | 0.00%          | 0.00%          | 0.7%    |
| PD 7 of Toronto  | 337   | 9%   | 25%                       | 75%            |                | 100.00% | 2.17%              | 6.51%          | 0.00%          | 8.7%    |
| PD 8 of Toronto  | 391   | 10%  | 80%                       | 20%            |                | 100.00% | 8.05%              | 2.01%          | 0.00%          | 10.1%   |
| PD 9 of Toronto  | 91    | 2%   | 100%                      |                |                | 100.00% | 2.34%              | 0.00%          | 0.00%          | 2.3%    |
| PD 11 of Toronto | 19    | 0%   | 100%                      |                |                | 100.00% | 0.49%              | 0.00%          | 0.00%          | 0.5%    |
| PD 13 of Toronto | 59    | 2%   | 100%                      |                |                | 100.00% | 1.52%              | 0.00%          | 0.00%          | 1.5%    |
| Vaughan          | 98    | 3%   | 100%                      |                |                | 100.00% | 2.52%              | 0.00%          | 0.00%          | 2.5%    |
| Brampton         | 112   | 3%   | 100%                      |                |                | 100.00% | 2.88%              | 0.00%          | 0.00%          | 2.9%    |
| 3605             | 21    | 1%   | 100%                      |                |                | 100.00% | 0.54%              | 0.00%          | 0.00%          | 0.5%    |
| 3609             | 12    | 0%   | 100%                      |                |                | 100.00% | 0.31%              | 0.00%          | 0.00%          | 0.3%    |
| 3611             | 25    | 1%   | 50%                       |                | 50%            | 100.00% | 0.32%              | 0.00%          | 0.32%          | 0.6%    |
| 3612             | 11    | 0%   | 50%                       |                | 50%            | 100.00% | 0.14%              | 0.00%          | 0.14%          | 0.3%    |
| 3613             | 23    | 1%   | 30%                       |                | 70%            | 100.00% | 0.18%              | 0.00%          | 0.41%          | 0.6%    |
| 3618             | 11    | 0%   | 50%                       |                | 50%            | 100.00% | 0.14%              | 0.00%          | 0.14%          | 0.3%    |
| 3629             | 29    | 1%   | 100%                      |                |                | 100.00% | 0.75%              | 0.00%          | 0.00%          | 0.7%    |
| 3631             | 44    | 1%   | 30%                       |                | 70%            | 100.00% | 0.34%              | 0.00%          | 0.79%          | 1.1%    |
| 3632             | 11    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.28%          | 0.3%    |
| 3633             | 17    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.44%          | 0.4%    |
| 3634             | 27    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.69%          | 0.7%    |
| 3640             | 15    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.39%          | 0.4%    |
| 3642             | 49    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 1.26%          | 1.3%    |
| 3643             | 8     | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.21%          | 0.2%    |
| 3647             | 32    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.82%          | 0.8%    |
| 3648             | 83    | 2%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 2.14%          | 2.1%    |
| 3649             | 394   | 10%  | 75%                       |                | 25%            | 100.00% | 7.61%              | 0.00%          | 2.54%          | 10.1%   |
| 3653             | 50    | 1%   | 50%                       |                | 50%            | 100.00% | 0.64%              | 0.00%          | 0.64%          | 1.3%    |
| 3654             | 166   | 4%   | 100%                      |                |                | 100.00% | 4.27%              | 0.00%          | 0.00%          | 4.3%    |
| 3655             | 20    | 1%   | 50%                       |                | 50%            | 100.00% | 0.26%              | 0.00%          | 0.26%          | 0.5%    |
| 3659             | 102   | 3%   | 50%                       |                | 50%            | 100.00% | 1.31%              | 0.00%          | 1.31%          | 2.6%    |
| 3660             | 71    | 2%   | 100%                      |                |                | 100.00% | 1.83%              | 0.00%          | 0.00%          | 1.8%    |
| 3662             | 12    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.31%          | 0.3%    |
| 3668             | 12    | 0%   | 50%                       |                | 50%            | 100.00% | 0.15%              | 0.00%          | 0.15%          | 0.3%    |
| 3669             | 13    | 0%   | 100%                      |                |                | 100.00% | 0.33%              | 0.00%          | 0.00%          | 0.3%    |
| 3671             | 15    | 0%   | 50%                       |                | 50%            | 100.00% | 0.19%              | 0.00%          | 0.19%          | 0.4%    |
| 3675             | 8     | 0%   | 100%                      |                |                | 100.00% | 0.21%              | 0.00%          | 0.00%          | 0.2%    |
| 3680             | 15    | 0%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.39%          | 0.4%    |
| 3693             | 22    | 1%   | 50%                       |                | 50%            | 100.00% | 0.28%              | 0.00%          | 0.28%          | 0.6%    |
| 3695             | 15    | 0%   | 50%                       |                | 50%            | 100.00% | 0.19%              | 0.00%          | 0.19%          | 0.4%    |
| 3699             | 82    | 2%   | 100%                      |                |                | 100.00% | 2.11%              | 0.00%          | 0.00%          | 2.1%    |
| 3700             | 21    | 1%   | 75%                       |                | 25%            | 100.00% | 0.41%              | 0.00%          | 0.14%          | 0.5%    |
| 3702             | 70    | 2%   | 100%                      |                |                | 100.00% | 1.80%              | 0.00%          | 0.00%          | 1.8%    |
| 3703             | 18    | 0%   | 100%                      |                |                | 100.00% | 0.46%              | 0.00%          | 0.00%          | 0.5%    |
| 3704             | 17    | 0%   | 100%                      |                |                | 100.00% | 0.44%              | 0.00%          | 0.00%          | 0.4%    |
| 3816             | 17    | 0%   | 100%                      |                |                | 100.00% | 0.44%              | 0.00%          | 0.00%          | 0.4%    |
| 3818             | 17    | 0%   | 50%                       |                | 50%            | 100.00% | 0.22%              | 0.00%          | 0.22%          | 0.4%    |
| 3821             | 47    | 1%   | 50%                       |                | 50%            | 100.00% | 0.60%              | 0.00%          | 0.60%          | 1.2%    |
| 3828             | 25    | 1%   | 100%                      |                |                | 100.00% | 0.64%              | 0.00%          | 0.00%          | 0.6%    |
| 3834             | 60    | 2%   | 50%                       |                | 50%            | 100.00% | 0.77%              | 0.00%          | 0.77%          | 1.5%    |
| 3851             | 96    | 2%   | 50%                       |                | 50%            | 100.00% | 1.24%              | 0.00%          | 1.24%          | 2.5%    |
| 3868             | 23    | 1%   | 50%                       |                | 50%            | 100.00% | 0.30%              | 0.00%          | 0.30%          | 0.6%    |
| 3870             | 52    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 1.34%          | 1.3%    |
| 3874             | 100   | 3%   | 100%                      |                |                | 100.00% | 2.57%              | 0.00%          | 0.00%          | 2.6%    |
| 3876             | 37    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.95%          | 1.0%    |
| 3879             | 25    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.64%          | 0.6%    |
| Halton Hills     | 34    | 1%   | 100%                      |                |                | 100.00% | 0.88%              | 0.00%          | 0.00%          | 0.9%    |
| Oakville         | 147   | 4%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 3.78%          | 3.8%    |
| Hamilton         | 27    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.69%          | 0.7%    |
| Niagara Falls    | 21    | 1%   |                           |                | 100%           | 100.00% | 0.00%              | 0.00%          | 0.54%          | 0.5%    |
| TOTAL TRIPS      | 3885  | 100% |                           |                |                |         | 66%                | 9%             | 26%            | 100.0%  |
| Assumed Split    |       |      |                           |                |                |         | 65.00%             | 10.00%         | 25.00%         | 100.00% |

## **APPENDIX F: Synchro Outputs**



### HCM Unsignalized Intersection Capacity Analysis 3: Dixie Road & St. James Avenue

Existing AM Peak Hour

| Movement                          | EBL  | EBR  | NBL   | NBT  | SBT                  | SBR  |
|-----------------------------------|------|------|-------|------|----------------------|------|
| Lane Configurations               | W    |      | W     | W    | W                    |      |
| Traffic Volume (veh/h)            | 55   | 5    | 5     | 575  | 315                  | 15   |
| Future Volume (Veh/h)             | 55   | 5    | 5     | 575  | 315                  | 15   |
| Sign Control                      | Stop |      |       | Free | Free                 |      |
| Grade                             | 0%   |      |       | 0%   | 0%                   |      |
| Peak Hour Factor                  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 |
| Hourly flow rate (vph)            | 55   | 5    | 5     | 575  | 315                  | 15   |
| Pedestrians                       |      |      |       |      |                      |      |
| Lane Width (m)                    |      |      |       |      |                      |      |
| Walking Speed (m/s)               |      |      |       |      |                      |      |
| Percent Blockage                  |      |      |       |      |                      |      |
| Right turn flare (veh)            |      |      |       |      |                      |      |
| Median type                       |      |      |       | TWLT | TWLT                 |      |
| Median storage (veh)              |      |      |       | 2    | 2                    |      |
| Upstream signal (m)               |      |      |       | 166  |                      |      |
| pX, platoon unblocked             | 0.93 |      |       |      |                      |      |
| vC, conflicting volume            | 908  | 322  | 330   |      |                      |      |
| vC1, stage 1 conf vol             | 322  |      |       |      |                      |      |
| vC2, stage 2 conf vol             | 585  |      |       |      |                      |      |
| vCu, unblocked vol                | 866  | 322  | 330   |      |                      |      |
| tC, single (s)                    | 6.4  | 6.2  | 4.8   |      |                      |      |
| tC, 2 stage (s)                   | 5.4  |      |       |      |                      |      |
| tF (s)                            | 3.5  | 3.3  | 2.9   |      |                      |      |
| p0 queue free %                   | 89   | 99   | 99    |      |                      |      |
| cM capacity (veh/h)               | 497  | 723  | 913   |      |                      |      |
| Direction, Lane #                 | EB 1 | NB 1 | NB 2  | SB 1 |                      |      |
| Volume Total                      | 60   | 5    | 575   | 330  |                      |      |
| Volume Left                       | 55   | 5    | 0     | 0    |                      |      |
| Volume Right                      | 5    | 0    | 0     | 15   |                      |      |
| cSH                               | 510  | 913  | 1700  | 1700 |                      |      |
| Volume to Capacity                | 0.12 | 0.01 | 0.34  | 0.19 |                      |      |
| Queue Length 95th (m)             | 3.2  | 0.1  | 0.0   | 0.0  |                      |      |
| Control Delay (s)                 | 13.0 | 9.0  | 0.0   | 0.0  |                      |      |
| Lane LOS                          | B    | A    |       |      |                      |      |
| Approach Delay (s)                | 13.0 | 0.1  |       | 0.0  |                      |      |
| Approach LOS                      | B    |      |       |      |                      |      |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |
| Average Delay                     |      |      | 0.8   |      |                      |      |
| Intersection Capacity Utilization |      |      | 40.3% |      | ICU Level of Service | A    |
| Analysis Period (min)             |      |      | 15    |      |                      |      |

1345 Lakeshore Road East  
BA Group - TCS

Synchro 9 Report  
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### Queues 6: Lakeshore Road East & Dixie Road

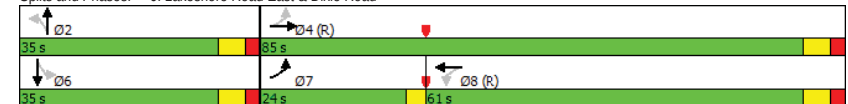
Existing AM Peak Hour

| Lane Group             | EBL   | EBT   | WBT   | SBL   | SBT   | Ø2   |
|------------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations    | W     | W     | W     | W     | W     |      |
| Traffic Volume (vph)   | 395   | 755   | 505   | 140   | 0     |      |
| Future Volume (vph)    | 395   | 755   | 505   | 140   | 0     |      |
| Lane Group Flow (vph)  | 395   | 755   | 690   | 140   | 180   |      |
| Turn Type              | pm+pt | NA    | NA    | Perm  | NA    |      |
| Protected Phases       | 7     | 4     | 8     |       | 6     | 2    |
| Permitted Phases       | 4     |       |       | 6     |       |      |
| Detector Phase         | 7     | 4     | 8     | 6     | 6     |      |
| Switch Phase           |       |       |       |       |       |      |
| Minimum Initial (s)    | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0  |
| Minimum Split (s)      | 9.5   | 31.3  | 31.3  | 29.3  | 29.3  | 24.3 |
| Total Split (s)        | 24.0  | 85.0  | 61.0  | 35.0  | 35.0  | 35.0 |
| Total Split (%)        | 20.0% | 70.8% | 50.8% | 29.2% | 29.2% | 29%  |
| Yellow Time (s)        | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0  |
| All-Red Time (s)       | 0.0   | 2.3   | 2.3   | 2.3   | 2.3   | 2.3  |
| Lost Time Adjust (s)   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  |
| Total Lost Time (s)    | 3.0   | 6.3   | 6.3   | 6.3   | 6.3   | 6.3  |
| Lead/Lag               | Lead  |       | Lag   |       |       |      |
| Lead-Lag Optimize?     | Yes   |       | Yes   |       |       |      |
| Recall Mode            | None  | C-Max | C-Max | None  | None  | None |
| v/c Ratio              | 0.64  | 0.29  | 0.34  | 0.69  | 0.29  |      |
| Control Delay          | 9.4   | 5.5   | 12.2  | 65.7  | 1.1   |      |
| Queue Delay            | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay            | 9.4   | 5.5   | 12.2  | 65.7  | 1.1   |      |
| Queue Length 50th (m)  | 23.2  | 26.7  | 36.7  | 33.5  | 0.0   |      |
| Queue Length 95th (m)  | 44.8  | 43.6  | 65.0  | 52.6  | 0.0   |      |
| Internal Link Dist (m) |       | 186.8 | 213.5 |       | 142.3 |      |
| Turn Bay Length (m)    | 30.0  |       |       | 90.0  |       |      |
| Base Capacity (vph)    | 684   | 2614  | 2046  | 340   | 720   |      |
| 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      | 0.58  | 0.29  | 0.34  | 0.41  | 0.25  |      |

#### Intersection Summary

Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 83 (69%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
Natural Cycle: 75  
Control Type: Actuated-Coordinated

Splits and Phases: 6: Lakeshore Road East & Dixie Road



1345 Lakeshore Road East  
BA Group - TCS

Synchro 9 Report  
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# HCM Signalized Intersection Capacity Analysis 6: Lakeshore Road East & Dixie Road

Existing AM Peak Hour

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|-------|------|------|---------------------------|------|------|------|------|-------|------|------|
| Lane Configurations               | ↰     | ↱     |      | ↰    | ↱                         |      |      | ↰    | ↱    | ↰     | ↱    |      |
| Traffic Volume (vph)              | 395   | 755   | 0    | 0    | 505                       | 185  | 0    | 0    | 0    | 140   | 0    | 180  |
| Future Volume (vph)               | 395   | 755   | 0    | 0    | 505                       | 185  | 0    | 0    | 0    | 140   | 0    | 180  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Lane Width                        | 3.5   | 3.7   | 3.7  | 3.5  | 3.7                       | 3.7  | 3.7  | 3.7  | 3.7  | 3.5   | 3.7  | 3.7  |
| Total Lost time (s)               | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Lane Util. Factor                 | 1.00  | 0.95  |      |      | 0.95                      |      |      |      |      | 1.00  | 1.00 |      |
| Frt                               | 1.00  | 1.00  |      |      | 0.96                      |      |      |      |      | 1.00  | 0.85 |      |
| Flt Protected                     | 0.95  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1733  | 3476  |      |      | 3307                      |      |      |      |      | 1785  | 1458 |      |
| Flt Permitted                     | 0.35  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.76  | 1.00 |      |
| Satd. Flow (perm)                 | 631   | 3476  |      |      | 3307                      |      |      |      |      | 1423  | 1458 |      |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 395   | 755   | 0    | 0    | 505                       | 185  | 0    | 0    | 0    | 140   | 0    | 180  |
| RTOR Reduction (vph)              | 0     | 0     | 0    | 0    | 22                        | 0    | 0    | 0    | 0    | 0     | 154  | 0    |
| Lane Group Flow (vph)             | 395   | 755   | 0    | 0    | 668                       | 0    | 0    | 0    | 0    | 140   | 26   | 0    |
| Heavy Vehicles (%)                | 3%    | 5%    | 0%   | 0%   | 7%                        | 3%   | 0%   | 0%   | 0%   | 0%    | 0%   | 12%  |
| Turn Type                         | pm+pt | NA    |      | Perm | NA                        |      |      |      |      | Perm  | NA   |      |
| Protected Phases                  | 7     | 4     |      |      | 8                         |      |      | 2    |      |       | 6    |      |
| Permitted Phases                  | 4     |       |      | 8    |                           |      | 2    |      |      | 6     |      |      |
| Actuated Green, G (s)             | 90.3  | 90.3  |      |      | 73.4                      |      |      |      |      | 17.1  | 17.1 |      |
| Effective Green, g (s)            | 90.3  | 90.3  |      |      | 73.4                      |      |      |      |      | 17.1  | 17.1 |      |
| Actuated g/C Ratio                | 0.75  | 0.75  |      |      | 0.61                      |      |      |      |      | 0.14  | 0.14 |      |
| Clearance Time (s)                | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Vehicle Extension (s)             | 3.0   | 3.0   |      |      | 3.0                       |      |      |      |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 602   | 2615  |      |      | 2022                      |      |      |      |      | 202   | 207  |      |
| v/s Ratio Prot                    | c0.08 | 0.22  |      |      | 0.20                      |      |      |      |      |       | 0.02 |      |
| v/s Ratio Perm                    | c0.42 |       |      |      |                           |      |      |      |      | c0.10 |      |      |
| v/c Ratio                         | 0.66  | 0.29  |      |      | 0.33                      |      |      |      |      | 0.69  | 0.12 |      |
| Uniform Delay, d1                 | 5.4   | 4.7   |      |      | 11.3                      |      |      |      |      | 49.0  | 44.9 |      |
| Progression Factor                | 1.00  | 1.00  |      |      | 1.00                      |      |      |      |      | 1.00  | 1.00 |      |
| Incremental Delay, d2             | 2.6   | 0.3   |      |      | 0.4                       |      |      |      |      | 9.8   | 0.3  |      |
| Delay (s)                         | 8.0   | 5.0   |      |      | 11.8                      |      |      |      |      | 58.8  | 45.2 |      |
| Level of Service                  | A     | A     |      |      | B                         |      |      |      |      | E     | D    |      |
| Approach Delay (s)                |       | 6.0   |      |      | 11.8                      |      |      | 0.0  |      |       | 51.1 |      |
| Approach LOS                      |       | A     |      |      | B                         |      |      | A    |      |       | D    |      |
| <b>Intersection Summary</b>       |       |       |      |      |                           |      |      |      |      |       |      |      |
| HCM 2000 Control Delay            |       | 14.5  |      |      | HCM 2000 Level of Service |      |      | B    |      |       |      |      |
| HCM 2000 Volume to Capacity ratio |       | 0.68  |      |      |                           |      |      |      |      |       |      |      |
| Actuated Cycle Length (s)         |       | 120.0 |      |      | Sum of lost time (s)      |      |      | 15.6 |      |       |      |      |
| Intersection Capacity Utilization |       | 66.7% |      |      | ICU Level of Service      |      |      | C    |      |       |      |      |
| Analysis Period (min)             |       | 15    |      |      |                           |      |      |      |      |       |      |      |
| c Critical Lane Group             |       |       |      |      |                           |      |      |      |      |       |      |      |

1345 Lakeshore Road East  
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# HCM Unsignalized Intersection Capacity Analysis 7: Lakeshore Road East & Fergus Avenue

Existing AM Peak Hour

| Movement                          | EBL                                                                                 | EBT                                                                                 | EBR  | WBL                                                                                 | WBT                                                                                 | WBR                  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |      |      |      |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|------|------|
| Lane Configurations               |  |  |      |  |  |                      |      |  |      |      |  |      |      |      |      |
| Traffic Volume (veh/h)            | 15                                                                                  | 1130                                                                                | 30   | 45                                                                                  | 635                                                                                 | 5                    | 20   | 0                                                                                   | 15   | 5    | 0                                                                                   | 50   |      |      |      |
| Future Volume (Veh/h)             | 15                                                                                  | 1130                                                                                | 30   | 45                                                                                  | 635                                                                                 | 5                    | 20   | 0                                                                                   | 15   | 5    | 0                                                                                   | 50   |      |      |      |
| Sign Control                      | Free                                                                                |                                                                                     |      | Free                                                                                |                                                                                     |                      | Stop |                                                                                     |      | Stop |                                                                                     |      |      |      |      |
| Grade                             | 0%                                                                                  |                                                                                     |      | 0%                                                                                  |                                                                                     |                      | 0%   |                                                                                     |      | 0%   |                                                                                     |      |      |      |      |
| 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 |      |      |      |
| Hourly flow rate (vph)            | 15                                                                                  | 1130                                                                                | 30   | 45                                                                                  | 635                                                                                 | 5                    | 20   | 0                                                                                   | 15   | 5    | 0                                                                                   | 50   |      |      |      |
| Pedestrians                       |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |
| Lane Width (m)                    |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |
| Walking Speed (m/s)               |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |
| Percent Blockage                  |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |
| Right turn flare (veh)            |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |
| Median type                       | TWLTL                                                                               |                                                                                     |      | None                                                                                |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |
| Median storage (veh)              | 2                                                                                   |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |
| Upstream signal (m)               |                                                                                     |                                                                                     |      | 211                                                                                 |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |
| pX, platoon unblocked             | 0.97                                                                                |                                                                                     |      |                                                                                     |                                                                                     |                      |      | 0.97                                                                                | 0.97 |      |                                                                                     | 0.97 | 0.97 | 0.97 |      |
| vC, conflicting volume            | 640                                                                                 |                                                                                     |      |                                                                                     | 1160                                                                                |                      |      |                                                                                     | 1632 | 1905 | 580                                                                                 | 1338 | 1918 | 320  |      |
| vC1, stage 1 conf vol             |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      | 1175 | 1175                                                                                |      |      | 728  | 728  |
| vC2, stage 2 conf vol             |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      | 458  | 730                                                                                 |      |      | 610  | 1190 |
| vCu, unblocked vol                | 578                                                                                 |                                                                                     |      |                                                                                     | 1160                                                                                |                      |      |                                                                                     | 1596 | 1876 | 580                                                                                 | 1294 | 1889 | 249  |      |
| tC, single (s)                    | 4.2                                                                                 |                                                                                     |      |                                                                                     | 5.0                                                                                 |                      |      |                                                                                     | 8.9  | 6.5  | 8.2                                                                                 | 7.5  | 6.5  | 7.1  |      |
| tC, 2 stage (s)                   |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      | 7.9  | 5.5                                                                                 |      |      | 6.5  | 5.5  |
| tF (s)                            | 2.3                                                                                 |                                                                                     |      |                                                                                     | 2.6                                                                                 |                      |      |                                                                                     | 4.2  | 4.0  | 3.9                                                                                 | 3.5  | 4.0  | 3.4  |      |
| p0 queue free %                   | 98                                                                                  |                                                                                     |      |                                                                                     | 89                                                                                  |                      |      |                                                                                     | 82   | 100  | 95                                                                                  | 98   | 100  | 93   |      |
| cM capacity (veh/h)               | 940                                                                                 |                                                                                     |      |                                                                                     | 407                                                                                 |                      |      |                                                                                     | 112  | 219  | 329                                                                                 | 275  | 190  | 708  |      |
| Direction, Lane #                 | EB 1                                                                                | EB 2                                                                                | EB 3 | WB 1                                                                                | WB 2                                                                                | WB 3                 | NB 1 | SB 1                                                                                |      |      |                                                                                     |      |      |      |      |
| Volume Total                      | 15                                                                                  | 753                                                                                 | 407  | 45                                                                                  | 423                                                                                 | 217                  | 35   | 55                                                                                  |      |      |                                                                                     |      |      |      |      |
| Volume Left                       | 15                                                                                  | 0                                                                                   | 0    | 45                                                                                  | 0                                                                                   | 0                    | 20   | 5                                                                                   |      |      |                                                                                     |      |      |      |      |
| Volume Right                      | 0                                                                                   | 0                                                                                   | 30   | 0                                                                                   | 0                                                                                   | 5                    | 15   | 50                                                                                  |      |      |                                                                                     |      |      |      |      |
| cSH                               | 940                                                                                 | 1700                                                                                | 1700 | 407                                                                                 | 1700                                                                                | 1700                 | 156  | 620                                                                                 |      |      |                                                                                     |      |      |      |      |
| Volume to Capacity                | 0.02                                                                                | 0.44                                                                                | 0.24 | 0.11                                                                                | 0.25                                                                                | 0.13                 | 0.22 | 0.09                                                                                |      |      |                                                                                     |      |      |      |      |
| Queue Length 95th (m)             | 0.4                                                                                 | 0.0                                                                                 | 0.0  | 3.0                                                                                 | 0.0                                                                                 | 0.0                  | 6.6  | 2.3                                                                                 |      |      |                                                                                     |      |      |      |      |
| Control Delay (s)                 | 8.9                                                                                 | 0.0                                                                                 | 0.0  | 14.9                                                                                | 0.0                                                                                 | 0.0                  | 34.7 | 11.4                                                                                |      |      |                                                                                     |      |      |      |      |
| Lane LOS                          | A                                                                                   |                                                                                     |      |                                                                                     | B                                                                                   |                      |      |                                                                                     | D    | B    |                                                                                     |      |      |      |      |
| Approach Delay (s)                | 0.1                                                                                 |                                                                                     |      |                                                                                     | 1.0                                                                                 |                      |      |                                                                                     | 34.7 | 11.4 |                                                                                     |      |      |      |      |
| Approach LOS                      |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      | D    |                                                                                     | B    |      |                                                                                     |      |      |      |      |
| Intersection Summary              |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |
| Average Delay                     |                                                                                     |                                                                                     |      | 1.4                                                                                 |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |
| Intersection Capacity Utilization |                                                                                     |                                                                                     |      | 51.9%                                                                               |                                                                                     | ICU Level of Service |      |                                                                                     | A    |      |                                                                                     |      |      |      |      |
| Analysis Period (min)             |                                                                                     |                                                                                     |      | 15                                                                                  |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |      |      |

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# HCM Unsignalized Intersection Capacity Analysis 8: Fergus Avenue & St. James Avenue

Existing AM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | SBR                                                                               |  |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 50                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 |  |
| Future Volume (Veh/h)             | 0                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 50                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 |  |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   |  |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |  |
| 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                                                                              |  |
| Hourly flow rate (vph)            | 0                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 50                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 |  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Lane Width (m)                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Walking Speed (m/s)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Median type                       | None                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                   |  |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Upstream signal (m)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| vC, conflicting volume            | 52                                                                                | 70                                                                                | 5                                                                                 | 52                                                                                | 45                                                                                | 30                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 55                                                                                |                                                                                   |                                                                                   |  |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| vCu, unblocked vol                | 52                                                                                | 70                                                                                | 5                                                                                 | 52                                                                                | 45                                                                                | 30                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 55                                                                                |                                                                                   |                                                                                   |  |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.4                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   |  |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.8                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   |  |
| p0 queue free %                   | 100                                                                               | 99                                                                                | 100                                                                               | 99                                                                                | 99                                                                                | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |                                                                                   |  |
| cM capacity (veh/h)               | 940                                                                               | 822                                                                               | 1084                                                                              | 864                                                                               | 848                                                                               | 1050                                                                              | 1630                                                                              |                                                                                   |                                                                                   | 1563                                                                              |                                                                                   |                                                                                   |  |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Volume Total                      | 10                                                                                | 20                                                                                | 55                                                                                | 10                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Volume Left                       | 0                                                                                 | 10                                                                                | 0                                                                                 | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Volume Right                      | 5                                                                                 | 5                                                                                 | 50                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| cSH                               | 935                                                                               | 900                                                                               | 1630                                                                              | 1563                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Volume to Capacity                | 0.01                                                                              | 0.02                                                                              | 0.00                                                                              | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Queue Length 95th (m)             | 0.3                                                                               | 0.5                                                                               | 0.0                                                                               | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Control Delay (s)                 | 8.9                                                                               | 9.1                                                                               | 0.0                                                                               | 3.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Approach Delay (s)                | 8.9                                                                               | 9.1                                                                               | 0.0                                                                               | 3.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Approach LOS                      | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 3.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | 19.2%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |

# HCM Unsignalized Intersection Capacity Analysis 11: Dixie Road & Orchard Hill Road

Existing AM Peak Hour

|                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |
| Movement                          | WBL                                                                                 | WBR                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Configurations               |  |                                                                                     |  |                                                                                     |  |  |
| Traffic Volume (veh/h)            | 0                                                                                   | 30                                                                                  | 630                                                                                 | 0                                                                                   | 20                                                                                  | 330                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                   | 30                                                                                  | 630                                                                                 | 0                                                                                   | 20                                                                                  | 330                                                                                 |
| Sign Control                      | Stop                                                                                |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Hourly flow rate (vph)            | 0                                                                                   | 30                                                                                  | 630                                                                                 | 0                                                                                   | 20                                                                                  | 330                                                                                 |
| Pedestrians                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (m)                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (m/s)               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       | TWLTL                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               | 220                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             | 0.94                                                                                | 0.94                                                                                |                                                                                     |                                                                                     | 0.94                                                                                |                                                                                     |
| vC, conflicting volume            | 1000                                                                                | 630                                                                                 |                                                                                     |                                                                                     | 630                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             | 630                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 370                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 969                                                                                 | 576                                                                                 |                                                                                     |                                                                                     | 576                                                                                 |                                                                                     |
| tC, single (s)                    | 6.4                                                                                 | 6.2                                                                                 |                                                                                     |                                                                                     | 4.2                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                                 | 3.3                                                                                 |                                                                                     |                                                                                     | 2.3                                                                                 |                                                                                     |
| p0 queue free %                   | 100                                                                                 | 94                                                                                  |                                                                                     |                                                                                     | 98                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 468                                                                                 | 490                                                                                 |                                                                                     |                                                                                     | 898                                                                                 |                                                                                     |
| Direction, Lane #                 | WB 1                                                                                | NB 1                                                                                | SB 1                                                                                | SB 2                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 30                                                                                  | 630                                                                                 | 20                                                                                  | 330                                                                                 |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                   | 0                                                                                   | 20                                                                                  | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 30                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 490                                                                                 | 1700                                                                                | 898                                                                                 | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.06                                                                                | 0.37                                                                                | 0.02                                                                                | 0.19                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 1.6                                                                                 | 0.0                                                                                 | 0.5                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Control Delay (s)                 | 12.8                                                                                | 0.0                                                                                 | 9.1                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | B                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 12.8                                                                                | 0.0                                                                                 | 0.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                     |                                                                                     |                                                                                     | 0.6                                                                                 |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                     |                                                                                     |                                                                                     | 43.2%                                                                               | ICU Level of Service                                                                | A                                                                                   |
| Analysis Period (min)             |                                                                                     |                                                                                     |                                                                                     | 15                                                                                  |                                                                                     |                                                                                     |

### HCM Unsignalized Intersection Capacity Analysis 3: Dixie Road & St. James Avenue

Existing PM Peak Hour

| Movement                          | EBL  | EBR  | NBL   | NBT  | SBT                  | SBR  |
|-----------------------------------|------|------|-------|------|----------------------|------|
| Lane Configurations               | W    |      | W     | W    | W                    |      |
| Traffic Volume (veh/h)            | 25   | 5    | 0     | 445  | 460                  | 60   |
| Future Volume (Veh/h)             | 25   | 5    | 0     | 445  | 460                  | 60   |
| Sign Control                      | Stop |      |       | Free | Free                 |      |
| Grade                             | 0%   |      |       | 0%   | 0%                   |      |
| Peak Hour Factor                  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 |
| Hourly flow rate (vph)            | 25   | 5    | 0     | 445  | 460                  | 60   |
| Pedestrians                       |      |      |       |      |                      |      |
| Lane Width (m)                    |      |      |       |      |                      |      |
| Walking Speed (m/s)               |      |      |       |      |                      |      |
| Percent Blockage                  |      |      |       |      |                      |      |
| Right turn flare (veh)            |      |      |       |      |                      |      |
| Median type                       |      |      |       | TWLT | TWLT                 |      |
| Median storage (veh)              |      |      |       | 2    | 2                    |      |
| Upstream signal (m)               |      |      |       | 166  |                      |      |
| pX, platoon unblocked             | 0.98 |      |       |      |                      |      |
| vC, conflicting volume            | 935  | 490  | 520   |      |                      |      |
| vC1, stage 1 conf vol             | 490  |      |       |      |                      |      |
| vC2, stage 2 conf vol             | 445  |      |       |      |                      |      |
| vCu, unblocked vol                | 923  | 490  | 520   |      |                      |      |
| tC, single (s)                    | 6.4  | 6.2  | 4.1   |      |                      |      |
| tC, 2 stage (s)                   | 5.4  |      |       |      |                      |      |
| tF (s)                            | 3.5  | 3.3  | 2.2   |      |                      |      |
| p0 queue free %                   | 95   | 99   | 100   |      |                      |      |
| cM capacity (veh/h)               | 509  | 582  | 1056  |      |                      |      |
| Direction, Lane #                 | EB 1 | NB 1 | NB 2  | SB 1 |                      |      |
| Volume Total                      | 30   | 0    | 445   | 520  |                      |      |
| Volume Left                       | 25   | 0    | 0     | 0    |                      |      |
| Volume Right                      | 5    | 0    | 0     | 60   |                      |      |
| cSH                               | 520  | 1700 | 1700  | 1700 |                      |      |
| Volume to Capacity                | 0.06 | 0.00 | 0.26  | 0.31 |                      |      |
| Queue Length 95th (m)             | 1.5  | 0.0  | 0.0   | 0.0  |                      |      |
| Control Delay (s)                 | 12.3 | 0.0  | 0.0   | 0.0  |                      |      |
| Lane LOS                          | B    |      |       |      |                      |      |
| Approach Delay (s)                | 12.3 | 0.0  |       | 0.0  |                      |      |
| Approach LOS                      | B    |      |       |      |                      |      |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |
| Average Delay                     |      |      | 0.4   |      |                      |      |
| Intersection Capacity Utilization |      |      | 37.9% |      | ICU Level of Service | A    |
| Analysis Period (min)             |      |      | 15    |      |                      |      |

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### Queues 6: Lakeshore Road East & Dixie Road

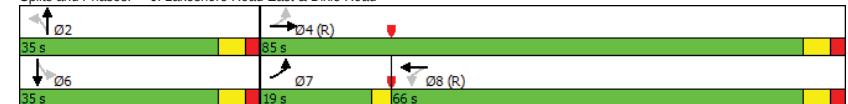
Existing PM Peak Hour

| Lane Group             | EBL   | EBT   | WBT   | SBL   | SBT   | Ø2   |
|------------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations    | W     | W     | W     | W     | W     |      |
| Traffic Volume (vph)   | 215   | 475   | 1065  | 190   | 0     |      |
| Future Volume (vph)    | 215   | 475   | 1065  | 190   | 0     |      |
| Lane Group Flow (vph)  | 215   | 475   | 1295  | 190   | 275   |      |
| Turn Type              | pm+pt | NA    | NA    | Perm  | NA    |      |
| Protected Phases       | 7     | 4     | 8     |       | 6     | 2    |
| Permitted Phases       | 4     |       |       | 6     |       |      |
| Detector Phase         | 7     | 4     | 8     | 6     | 6     |      |
| Switch Phase           |       |       |       |       |       |      |
| Minimum Initial (s)    | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0  |
| Minimum Split (s)      | 9.5   | 31.3  | 31.3  | 29.3  | 29.3  | 24.3 |
| Total Split (s)        | 19.0  | 85.0  | 66.0  | 35.0  | 35.0  | 35.0 |
| Total Split (%)        | 15.8% | 70.8% | 55.0% | 29.2% | 29.2% | 29%  |
| Yellow Time (s)        | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0  |
| All-Red Time (s)       | 0.0   | 2.3   | 2.3   | 2.3   | 2.3   | 2.3  |
| Lost Time Adjust (s)   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  |
| Total Lost Time (s)    | 3.0   | 6.3   | 6.3   | 6.3   | 6.3   | 6.3  |
| Lead/Lag               | Lead  |       | Lag   |       |       |      |
| Lead-Lag Optimize?     | Yes   |       | Yes   |       |       |      |
| Recall Mode            | None  | C-Max | C-Max | None  | None  | None |
| v/c Ratio              | 0.64  | 0.19  | 0.61  | 0.76  | 0.53  |      |
| Control Delay          | 16.6  | 6.3   | 18.1  | 65.8  | 8.2   |      |
| Queue Delay            | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay            | 16.6  | 6.3   | 18.1  | 65.8  | 8.2   |      |
| Queue Length 50th (m)  | 13.5  | 18.0  | 98.5  | 45.2  | 0.0   |      |
| Queue Length 95th (m)  | 36.4  | 30.1  | 154.4 | 67.1  | 20.6  |      |
| Internal Link Dist (m) |       | 186.8 | 213.5 |       | 142.3 |      |
| Turn Bay Length (m)    | 30.0  |       |       | 90.0  |       |      |
| Base Capacity (vph)    | 394   | 2520  | 2112  | 336   | 599   |      |
| 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      | 0.55  | 0.19  | 0.61  | 0.57  | 0.46  |      |

#### Intersection Summary

Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 83 (69%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
Natural Cycle: 80  
Control Type: Actuated-Coordinated

Splits and Phases: 6: Lakeshore Road East & Dixie Road



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# HCM Signalized Intersection Capacity Analysis 6: Lakeshore Road East & Dixie Road

Existing PM Peak Hour

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|-------|------|------|---------------------------|------|------|------|------|-------|------|------|
| Lane Configurations               | ↰     | ↱     |      | ↰    | ↱                         |      |      | ↰    | ↱    | ↰     | ↱    |      |
| Traffic Volume (vph)              | 215   | 475   | 0    | 0    | 1065                      | 230  | 0    | 0    | 0    | 190   | 0    | 275  |
| Future Volume (vph)               | 215   | 475   | 0    | 0    | 1065                      | 230  | 0    | 0    | 0    | 190   | 0    | 275  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Lane Width                        | 3.5   | 3.7   | 3.7  | 3.5  | 3.7                       | 3.7  | 3.7  | 3.7  | 3.7  | 3.5   | 3.7  | 3.7  |
| Total Lost time (s)               | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Lane Util. Factor                 | 1.00  | 0.95  |      |      | 0.95                      |      |      |      |      | 1.00  | 1.00 |      |
| Frt                               | 1.00  | 1.00  |      |      | 0.97                      |      |      |      |      | 1.00  | 0.85 |      |
| Flt Protected                     | 0.95  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1767  | 3510  |      |      | 3518                      |      |      |      |      | 1767  | 1617 |      |
| Flt Permitted                     | 0.14  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.76  | 1.00 |      |
| Satd. Flow (perm)                 | 258   | 3510  |      |      | 3518                      |      |      |      |      | 1409  | 1617 |      |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 215   | 475   | 0    | 0    | 1065                      | 230  | 0    | 0    | 0    | 190   | 0    | 275  |
| RTOR Reduction (vph)              | 0     | 0     | 0    | 0    | 12                        | 0    | 0    | 0    | 0    | 0     | 226  | 0    |
| Lane Group Flow (vph)             | 215   | 475   | 0    | 0    | 1283                      | 0    | 0    | 0    | 0    | 190   | 49   | 0    |
| Heavy Vehicles (%)                | 1%    | 4%    | 0%   | 0%   | 1%                        | 1%   | 0%   | 0%   | 0%   | 1%    | 0%   | 1%   |
| Turn Type                         | pm+pt | NA    |      | Perm | NA                        |      |      |      |      | Perm  | NA   |      |
| Protected Phases                  | 7     | 4     |      |      | 8                         |      |      | 2    |      |       | 6    |      |
| Permitted Phases                  | 4     |       |      | 8    |                           | 2    |      |      |      | 6     |      |      |
| Actuated Green, G (s)             | 86.2  | 86.2  |      |      | 71.7                      |      |      |      |      | 21.2  | 21.2 |      |
| Effective Green, g (s)            | 86.2  | 86.2  |      |      | 71.7                      |      |      |      |      | 21.2  | 21.2 |      |
| Actuated g/C Ratio                | 0.72  | 0.72  |      |      | 0.60                      |      |      |      |      | 0.18  | 0.18 |      |
| Clearance Time (s)                | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Vehicle Extension (s)             | 3.0   | 3.0   |      |      | 3.0                       |      |      |      |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 329   | 2521  |      |      | 2102                      |      |      |      |      | 248   | 285  |      |
| v/s Ratio Prot                    | c0.06 | 0.14  |      |      | 0.36                      |      |      |      |      |       | 0.03 |      |
| v/s Ratio Perm                    | c0.41 |       |      |      |                           |      |      |      |      | c0.13 |      |      |
| v/c Ratio                         | 0.65  | 0.19  |      |      | 0.61                      |      |      |      |      | 0.77  | 0.17 |      |
| Uniform Delay, d1                 | 11.6  | 5.5   |      |      | 15.3                      |      |      |      |      | 47.0  | 41.9 |      |
| Progression Factor                | 1.00  | 1.00  |      |      | 1.00                      |      |      |      |      | 1.00  | 1.00 |      |
| Incremental Delay, d2             | 4.6   | 0.2   |      |      | 1.3                       |      |      |      |      | 13.2  | 0.3  |      |
| Delay (s)                         | 16.2  | 5.7   |      |      | 16.6                      |      |      |      |      | 60.2  | 42.2 |      |
| Level of Service                  | B     | A     |      |      | B                         |      |      |      |      | E     | D    |      |
| Approach Delay (s)                |       | 9.0   |      |      | 16.6                      |      |      | 0.0  |      |       | 49.6 |      |
| Approach LOS                      |       | A     |      |      | B                         |      |      | A    |      |       | D    |      |
| <b>Intersection Summary</b>       |       |       |      |      |                           |      |      |      |      |       |      |      |
| HCM 2000 Control Delay            |       | 20.7  |      |      | HCM 2000 Level of Service |      |      | C    |      |       |      |      |
| HCM 2000 Volume to Capacity ratio |       | 0.69  |      |      |                           |      |      |      |      |       |      |      |
| Actuated Cycle Length (s)         |       | 120.0 |      |      | Sum of lost time (s)      |      |      | 15.6 |      |       |      |      |
| Intersection Capacity Utilization |       | 79.5% |      |      | ICU Level of Service      |      |      | D    |      |       |      |      |
| Analysis Period (min)             |       | 15    |      |      |                           |      |      |      |      |       |      |      |
| c Critical Lane Group             |       |       |      |      |                           |      |      |      |      |       |      |      |

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# HCM Unsignalized Intersection Capacity Analysis 7: Lakeshore Road East & Fergus Avenue

Existing PM Peak Hour

| Movement                          | EBL                                                                                 | EBT                                                                                 | EBR  | WBL                                                                                 | WBT                                                                                 | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |      |     |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-----|
| Lane Configurations               |  |  |      |  |  |      |      |  |      |      |  |      |      |     |
| Traffic Volume (veh/h)            | 25                                                                                  | 665                                                                                 | 5    | 5                                                                                   | 1320                                                                                | 15   | 15   | 0                                                                                   | 15   | 10   | 0                                                                                   | 30   |      |     |
| Future Volume (Veh/h)             | 25                                                                                  | 665                                                                                 | 5    | 5                                                                                   | 1320                                                                                | 15   | 15   | 0                                                                                   | 15   | 10   | 0                                                                                   | 30   |      |     |
| Sign Control                      | Free                                                                                |                                                                                     |      | Free                                                                                |                                                                                     |      | Stop |                                                                                     |      | Stop |                                                                                     |      |      |     |
| Grade                             | 0%                                                                                  |                                                                                     |      | 0%                                                                                  |                                                                                     |      | 0%   |                                                                                     |      | 0%   |                                                                                     |      |      |     |
| 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 |      |     |
| Hourly flow rate (vph)            | 25                                                                                  | 665                                                                                 | 5    | 5                                                                                   | 1320                                                                                | 15   | 15   | 0                                                                                   | 15   | 10   | 0                                                                                   | 30   |      |     |
| Pedestrians                       |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |      |     |
| Lane Width (m)                    |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |      |     |
| Walking Speed (m/s)               |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |      |     |
| Percent Blockage                  |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |      |     |
| Right turn flare (veh)            |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |      |     |
| Median type                       | TWLTL                                                                               |                                                                                     |      |                                                                                     | None                                                                                |      |      |                                                                                     |      |      |                                                                                     |      |      |     |
| Median storage (veh)              | 2                                                                                   |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |      |     |
| Upstream signal (m)               |                                                                                     |                                                                                     |      |                                                                                     | 211                                                                                 |      |      |                                                                                     |      |      |                                                                                     |      |      |     |
| pX, platoon unblocked             | 0.78                                                                                |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     | 0.78 | 0.78 | 0.78                                                                                | 0.78 | 0.78 |     |
| vC, conflicting volume            | 1335                                                                                | 670                                                                                 |      |                                                                                     |                                                                                     |      |      |                                                                                     | 1418 | 2062 | 335                                                                                 | 1735 | 2058 | 668 |
| vC1, stage 1 conf vol             |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      | 718                                                                                 | 718  | 1338 |                                                                                     |      | 1338 |     |
| vC2, stage 2 conf vol             |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      | 700                                                                                 | 1345 | 398  |                                                                                     |      | 720  |     |
| vCu, unblocked vol                | 878                                                                                 | 670                                                                                 |      |                                                                                     |                                                                                     | 983  |      |                                                                                     | 1805 | 335  | 1388                                                                                | 1799 | 28   |     |
| tC, single (s)                    | 4.2                                                                                 | 4.1                                                                                 |      |                                                                                     |                                                                                     | 7.5  |      |                                                                                     | 6.5  | 6.9  | 7.5                                                                                 | 6.5  | 6.9  |     |
| tC, 2 stage (s)                   |                                                                                     |                                                                                     |      |                                                                                     | 6.5                                                                                 |      |      | 5.5                                                                                 | 6.5  |      |                                                                                     | 5.5  |      |     |
| tF (s)                            | 2.2                                                                                 | 2.2                                                                                 |      |                                                                                     |                                                                                     | 3.5  |      |                                                                                     | 4.0  | 3.3  | 3.5                                                                                 | 4.0  | 3.3  |     |
| p0 queue free %                   | 96                                                                                  | 99                                                                                  |      |                                                                                     |                                                                                     | 96   |      |                                                                                     | 100  | 98   | 96                                                                                  | 100  | 96   |     |
| cM capacity (veh/h)               | 590                                                                                 | 930                                                                                 |      |                                                                                     |                                                                                     | 341  |      |                                                                                     | 220  | 667  | 224                                                                                 | 235  | 822  |     |
| Direction, Lane #                 | EB 1                                                                                | EB 2                                                                                | EB 3 | WB 1                                                                                | WB 2                                                                                | WB 3 | NB 1 | SB 1                                                                                |      |      |                                                                                     |      |      |     |
| Volume Total                      | 25                                                                                  | 443                                                                                 | 227  | 5                                                                                   | 880                                                                                 | 455  | 30   | 40                                                                                  |      |      |                                                                                     |      |      |     |
| Volume Left                       | 25                                                                                  | 0                                                                                   | 0    | 5                                                                                   | 0                                                                                   | 0    | 15   | 10                                                                                  |      |      |                                                                                     |      |      |     |
| Volume Right                      | 0                                                                                   | 0                                                                                   | 5    | 0                                                                                   | 0                                                                                   | 15   | 15   | 30                                                                                  |      |      |                                                                                     |      |      |     |
| cSH                               | 590                                                                                 | 1700                                                                                | 1700 | 930                                                                                 | 1700                                                                                | 1700 | 451  | 494                                                                                 |      |      |                                                                                     |      |      |     |
| Volume to Capacity                | 0.04                                                                                | 0.26                                                                                | 0.13 | 0.01                                                                                | 0.52                                                                                | 0.27 | 0.07 | 0.08                                                                                |      |      |                                                                                     |      |      |     |
| Queue Length 95th (m)             | 1.1                                                                                 | 0.0                                                                                 | 0.0  | 0.1                                                                                 | 0.0                                                                                 | 0.0  | 1.7  | 2.1                                                                                 |      |      |                                                                                     |      |      |     |
| Control Delay (s)                 | 11.4                                                                                | 0.0                                                                                 | 0.0  | 8.9                                                                                 | 0.0                                                                                 | 0.0  | 13.5 | 12.9                                                                                |      |      |                                                                                     |      |      |     |
| Lane LOS                          | B                                                                                   | A                                                                                   |      |                                                                                     |                                                                                     | B    |      |                                                                                     | B    |      |                                                                                     |      |      |     |
| Approach Delay (s)                | 0.4                                                                                 | 0.0                                                                                 |      |                                                                                     |                                                                                     | 13.5 |      |                                                                                     | 12.9 |      |                                                                                     |      |      |     |
| Approach LOS                      |                                                                                     |                                                                                     |      |                                                                                     | B                                                                                   |      |      | B                                                                                   |      |      |                                                                                     |      |      |     |
| Intersection Summary              |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |      |     |
| Average Delay                     | 0.6                                                                                 |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |      |     |
| Intersection Capacity Utilization | 47.0%                                                                               |                                                                                     |      |                                                                                     | ICU Level of Service                                                                |      |      |                                                                                     | A    |      |                                                                                     |      |      |     |
| Analysis Period (min)             | 15                                                                                  |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |      |     |

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# HCM Unsignalized Intersection Capacity Analysis 8: Fergus Avenue & St. James Avenue

Existing PM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 30                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 30                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |
| 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                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 30                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (m)                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (m/s)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       | None                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (m)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 30                                                                                | 40                                                                                | 5                                                                                 | 25                                                                                | 25                                                                                | 20                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 35                                                                                |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 30                                                                                | 40                                                                                | 5                                                                                 | 25                                                                                | 25                                                                                | 20                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 35                                                                                |                                                                                   |                                                                                   |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 94                                                                                | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 979                                                                               | 856                                                                               | 1084                                                                              | 991                                                                               | 872                                                                               | 1064                                                                              | 1630                                                                              |                                                                                   |                                                                                   | 1589                                                                              |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 0                                                                                 | 60                                                                                | 35                                                                                | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 0                                                                                 | 55                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 5                                                                                 | 30                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1700                                                                              | 997                                                                               | 1630                                                                              | 1589                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.06                                                                              | 0.00                                                                              | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (m)             | 0.0                                                                               | 1.5                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 0.0                                                                               | 8.8                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               | 8.8                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 5.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | 13.4%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis 11: Dixie Road & Orchard Hill Road

Existing PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | WBL                                                                                 | WBR                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Configurations               |  |                                                                                     |  |                                                                                     |  |  |
| Traffic Volume (veh/h)            | 5                                                                                   | 25                                                                                  | 470                                                                                 | 0                                                                                   | 25                                                                                  | 515                                                                                 |
| Future Volume (Veh/h)             | 5                                                                                   | 25                                                                                  | 470                                                                                 | 0                                                                                   | 25                                                                                  | 515                                                                                 |
| Sign Control                      | Stop                                                                                |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Hourly flow rate (vph)            | 5                                                                                   | 25                                                                                  | 470                                                                                 | 0                                                                                   | 25                                                                                  | 515                                                                                 |
| Pedestrians                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (m)                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (m/s)               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       | TWLTL                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               | 220                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             | 0.99                                                                                | 0.99                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| vC, conflicting volume            | 1035                                                                                | 470                                                                                 |                                                                                     |                                                                                     | 470                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             | 470                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 565                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 1031                                                                                | 462                                                                                 |                                                                                     |                                                                                     | 462                                                                                 |                                                                                     |
| tC, single (s)                    | 6.4                                                                                 | 6.2                                                                                 |                                                                                     |                                                                                     | 4.2                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                                 | 3.3                                                                                 |                                                                                     |                                                                                     | 2.3                                                                                 |                                                                                     |
| p0 queue free %                   | 99                                                                                  | 96                                                                                  |                                                                                     |                                                                                     | 98                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 467                                                                                 | 599                                                                                 |                                                                                     |                                                                                     | 1060                                                                                |                                                                                     |
| Direction, Lane #                 | WB 1                                                                                | NB 1                                                                                | SB 1                                                                                | SB 2                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 30                                                                                  | 470                                                                                 | 25                                                                                  | 515                                                                                 |                                                                                     |                                                                                     |
| Volume Left                       | 5                                                                                   | 0                                                                                   | 25                                                                                  | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 25                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 572                                                                                 | 1700                                                                                | 1060                                                                                | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.05                                                                                | 0.28                                                                                | 0.02                                                                                | 0.30                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 1.3                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Control Delay (s)                 | 11.6                                                                                | 0.0                                                                                 | 8.5                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | B                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 11.6                                                                                | 0.0                                                                                 | 0.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                     |                                                                                     | 0.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                     |                                                                                     | 37.1%                                                                               | ICU Level of Service                                                                | A                                                                                   |                                                                                     |
| Analysis Period (min)             |                                                                                     |                                                                                     | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     |

### HCM Unsignalized Intersection Capacity Analysis 3: Dixie Road & St. James Avenue

Future Background AM Peak Hour

| Movement                          | EBL  | EBR  | NBL   | NBT  | SBT                  | SBR  |
|-----------------------------------|------|------|-------|------|----------------------|------|
| Lane Configurations               | W    |      | W     | W    | W                    |      |
| Traffic Volume (veh/h)            | 55   | 5    | 5     | 585  | 315                  | 15   |
| Future Volume (Veh/h)             | 55   | 5    | 5     | 585  | 315                  | 15   |
| Sign Control                      | Stop |      |       | Free | Free                 |      |
| Grade                             | 0%   |      |       | 0%   | 0%                   |      |
| Peak Hour Factor                  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 |
| Hourly flow rate (vph)            | 55   | 5    | 5     | 585  | 315                  | 15   |
| Pedestrians                       |      |      |       |      |                      |      |
| Lane Width (m)                    |      |      |       |      |                      |      |
| Walking Speed (m/s)               |      |      |       |      |                      |      |
| Percent Blockage                  |      |      |       |      |                      |      |
| Right turn flare (veh)            |      |      |       |      |                      |      |
| Median type                       |      |      |       | TWLT | TWLT                 |      |
| Median storage (veh)              |      |      |       | 2    | 2                    |      |
| Upstream signal (m)               |      |      |       | 166  |                      |      |
| pX, platoon unblocked             | 0.93 |      |       |      |                      |      |
| vC, conflicting volume            | 918  | 322  | 330   |      |                      |      |
| vC1, stage 1 conf vol             | 322  |      |       |      |                      |      |
| vC2, stage 2 conf vol             | 595  |      |       |      |                      |      |
| vCu, unblocked vol                | 876  | 322  | 330   |      |                      |      |
| tC, single (s)                    | 6.4  | 6.2  | 4.8   |      |                      |      |
| tC, 2 stage (s)                   | 5.4  |      |       |      |                      |      |
| tF (s)                            | 3.5  | 3.3  | 2.9   |      |                      |      |
| p0 queue free %                   | 89   | 99   | 99    |      |                      |      |
| cM capacity (veh/h)               | 492  | 723  | 913   |      |                      |      |
| Direction, Lane #                 | EB 1 | NB 1 | NB 2  | SB 1 |                      |      |
| Volume Total                      | 60   | 5    | 585   | 330  |                      |      |
| Volume Left                       | 55   | 5    | 0     | 0    |                      |      |
| Volume Right                      | 5    | 0    | 0     | 15   |                      |      |
| cSH                               | 506  | 913  | 1700  | 1700 |                      |      |
| Volume to Capacity                | 0.12 | 0.01 | 0.34  | 0.19 |                      |      |
| Queue Length 95th (m)             | 3.2  | 0.1  | 0.0   | 0.0  |                      |      |
| Control Delay (s)                 | 13.1 | 9.0  | 0.0   | 0.0  |                      |      |
| Lane LOS                          | B    | A    |       |      |                      |      |
| Approach Delay (s)                | 13.1 | 0.1  |       | 0.0  |                      |      |
| Approach LOS                      | B    |      |       |      |                      |      |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |
| Average Delay                     |      |      | 0.8   |      |                      |      |
| Intersection Capacity Utilization |      |      | 40.8% |      | ICU Level of Service | A    |
| Analysis Period (min)             |      |      | 15    |      |                      |      |

1345 Lakeshore Road East  
BA Group - TCS

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### Queues 6: Lakeshore Road East & Dixie Road

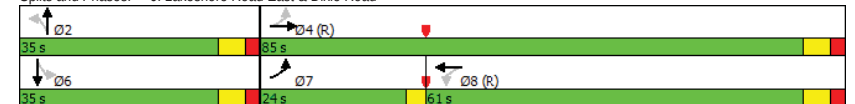
Future Background AM Peak Hour

| Lane Group             | EBL   | EBT   | WBT   | SBL   | SBT   | Ø2   |
|------------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations    | W     | W     | W     | W     | W     |      |
| Traffic Volume (vph)   | 400   | 775   | 615   | 140   | 0     |      |
| Future Volume (vph)    | 400   | 775   | 615   | 140   | 0     |      |
| Lane Group Flow (vph)  | 400   | 775   | 805   | 140   | 180   |      |
| Turn Type              | pm+pt | NA    | NA    | Perm  | NA    |      |
| Protected Phases       | 7     | 4     | 8     |       | 6     | 2    |
| Permitted Phases       | 4     |       |       | 6     |       |      |
| Detector Phase         | 7     | 4     | 8     | 6     | 6     |      |
| Switch Phase           |       |       |       |       |       |      |
| Minimum Initial (s)    | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0  |
| Minimum Split (s)      | 9.5   | 31.3  | 31.3  | 29.3  | 29.3  | 24.3 |
| Total Split (s)        | 24.0  | 85.0  | 61.0  | 35.0  | 35.0  | 35.0 |
| Total Split (%)        | 20.0% | 70.8% | 50.8% | 29.2% | 29.2% | 29%  |
| Yellow Time (s)        | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0  |
| All-Red Time (s)       | 0.0   | 2.3   | 2.3   | 2.3   | 2.3   | 2.3  |
| Lost Time Adjust (s)   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  |
| Total Lost Time (s)    | 3.0   | 6.3   | 6.3   | 6.3   | 6.3   | 6.3  |
| Lead/Lag               | Lead  |       | Lag   |       |       |      |
| Lead-Lag Optimize?     | Yes   |       | Yes   |       |       |      |
| Recall Mode            | None  | C-Max | C-Max | None  | None  | None |
| v/c Ratio              | 0.70  | 0.30  | 0.40  | 0.69  | 0.31  |      |
| Control Delay          | 11.5  | 5.5   | 14.3  | 65.7  | 1.4   |      |
| Queue Delay            | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay            | 11.5  | 5.5   | 14.3  | 65.7  | 1.4   |      |
| Queue Length 50th (m)  | 23.6  | 27.6  | 46.8  | 33.5  | 0.0   |      |
| Queue Length 95th (m)  | 45.3  | 45.1  | 87.7  | 52.6  | 0.0   |      |
| Internal Link Dist (m) |       | 186.8 | 213.5 |       | 142.3 |      |
| Turn Bay Length (m)    | 30.0  |       |       | 90.0  |       |      |
| Base Capacity (vph)    | 637   | 2614  | 2011  | 340   | 681   |      |
| 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      | 0.63  | 0.30  | 0.40  | 0.41  | 0.26  |      |

#### Intersection Summary

Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 83 (69%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
Natural Cycle: 80  
Control Type: Actuated-Coordinated

Splits and Phases: 6: Lakeshore Road East & Dixie Road



1345 Lakeshore Road East  
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# HCM Signalized Intersection Capacity Analysis 6: Lakeshore Road East & Dixie Road

Future Background AM Peak Hour

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|-------|------|------|---------------------------|------|------|------|------|-------|------|------|
| Lane Configurations               | ↰     | ↱     |      | ↰    | ↱                         |      |      | ↰    | ↱    | ↰     | ↱    |      |
| Traffic Volume (vph)              | 400   | 775   | 0    | 0    | 615                       | 190  | 0    | 0    | 0    | 140   | 0    | 180  |
| Future Volume (vph)               | 400   | 775   | 0    | 0    | 615                       | 190  | 0    | 0    | 0    | 140   | 0    | 180  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Lane Width                        | 3.5   | 3.7   | 3.7  | 3.5  | 3.7                       | 3.7  | 3.7  | 3.7  | 3.7  | 3.5   | 3.7  | 3.7  |
| Total Lost time (s)               | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Lane Util. Factor                 | 1.00  | 0.95  |      |      | 0.95                      |      |      |      |      | 1.00  | 1.00 |      |
| Frt                               | 1.00  | 1.00  |      |      | 0.96                      |      |      |      |      | 1.00  | 0.85 |      |
| Flt Protected                     | 0.95  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1733  | 3476  |      |      | 3320                      |      |      |      |      | 1785  | 1458 |      |
| Flt Permitted                     | 0.29  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.76  | 1.00 |      |
| Satd. Flow (perm)                 | 538   | 3476  |      |      | 3320                      |      |      |      |      | 1423  | 1458 |      |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 400   | 775   | 0    | 0    | 615                       | 190  | 0    | 0    | 0    | 140   | 0    | 180  |
| RTOR Reduction (vph)              | 0     | 0     | 0    | 0    | 18                        | 0    | 0    | 0    | 0    | 0     | 154  | 0    |
| Lane Group Flow (vph)             | 400   | 775   | 0    | 0    | 787                       | 0    | 0    | 0    | 0    | 140   | 26   | 0    |
| Heavy Vehicles (%)                | 3%    | 5%    | 0%   | 0%   | 7%                        | 3%   | 0%   | 0%   | 0%   | 0%    | 0%   | 12%  |
| Turn Type                         | pm+pt | NA    |      | Perm | NA                        |      |      |      |      | Perm  | NA   |      |
| Protected Phases                  | 7     | 4     |      |      | 8                         |      |      | 2    |      |       | 6    |      |
| Permitted Phases                  | 4     |       |      | 8    |                           |      | 2    |      |      | 6     |      |      |
| Actuated Green, G (s)             | 90.3  | 90.3  |      |      | 72.1                      |      |      |      |      | 17.1  | 17.1 |      |
| Effective Green, g (s)            | 90.3  | 90.3  |      |      | 72.1                      |      |      |      |      | 17.1  | 17.1 |      |
| Actuated g/C Ratio                | 0.75  | 0.75  |      |      | 0.60                      |      |      |      |      | 0.14  | 0.14 |      |
| Clearance Time (s)                | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Vehicle Extension (s)             | 3.0   | 3.0   |      |      | 3.0                       |      |      |      |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 556   | 2615  |      |      | 1994                      |      |      |      |      | 202   | 207  |      |
| v/s Ratio Prot                    | c0.09 | 0.22  |      |      | 0.24                      |      |      |      |      |       | 0.02 |      |
| v/s Ratio Perm                    | c0.45 |       |      |      |                           |      |      |      |      | c0.10 |      |      |
| v/c Ratio                         | 0.72  | 0.30  |      |      | 0.39                      |      |      |      |      | 0.69  | 0.12 |      |
| Uniform Delay, d1                 | 6.3   | 4.7   |      |      | 12.5                      |      |      |      |      | 49.0  | 44.9 |      |
| Progression Factor                | 1.00  | 1.00  |      |      | 1.00                      |      |      |      |      | 1.00  | 1.00 |      |
| Incremental Delay, d2             | 4.4   | 0.3   |      |      | 0.6                       |      |      |      |      | 9.8   | 0.3  |      |
| Delay (s)                         | 10.7  | 5.0   |      |      | 13.1                      |      |      |      |      | 58.8  | 45.2 |      |
| Level of Service                  | B     | A     |      |      | B                         |      |      |      |      | E     | D    |      |
| Approach Delay (s)                |       | 7.0   |      |      | 13.1                      |      |      | 0.0  |      |       | 51.1 |      |
| Approach LOS                      |       | A     |      |      | B                         |      |      | A    |      |       | D    |      |
| <b>Intersection Summary</b>       |       |       |      |      |                           |      |      |      |      |       |      |      |
| HCM 2000 Control Delay            |       | 15.3  |      |      | HCM 2000 Level of Service |      |      | B    |      |       |      |      |
| HCM 2000 Volume to Capacity ratio |       | 0.73  |      |      |                           |      |      |      |      |       |      |      |
| Actuated Cycle Length (s)         |       | 120.0 |      |      | Sum of lost time (s)      |      |      | 15.6 |      |       |      |      |
| Intersection Capacity Utilization |       | 70.2% |      |      | ICU Level of Service      |      |      | C    |      |       |      |      |
| Analysis Period (min)             |       | 15    |      |      |                           |      |      |      |      |       |      |      |
| c Critical Lane Group             |       |       |      |      |                           |      |      |      |      |       |      |      |

1345 Lakeshore Road East  
BA Group - TCS

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# HCM Unsignalized Intersection Capacity Analysis 7: Lakeshore Road East & Fergus Avenue

Future Background AM Peak Hour

| Movement                          | EBL   | EBT  | EBR   | WBL  | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|------|-------|------|------|----------------------|------|------|------|------|------|------|
| Lane Configurations               | ↰     | ↱    |       | ↰    | ↱    |                      |      | ↰    | ↱    | ↰    | ↱    |      |
| Traffic Volume (veh/h)            | 15    | 1155 | 30    | 45   | 745  | 5                    | 20   | 0    | 15   | 5    | 0    | 50   |
| Future Volume (Veh/h)             | 15    | 1155 | 30    | 45   | 745  | 5                    | 20   | 0    | 15   | 5    | 0    | 50   |
| Sign Control                      | Free  |      |       | Free |      |                      | Stop |      |      | Stop |      |      |
| Grade                             | 0%    |      |       | 0%   |      |                      | 0%   |      |      | 0%   |      |      |
| 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 |
| Hourly flow rate (vph)            | 15    | 1155 | 30    | 45   | 745  | 5                    | 20   | 0    | 15   | 5    | 0    | 50   |
| <b>Pedestrians</b>                |       |      |       |      |      |                      |      |      |      |      |      |      |
| Lane Width (m)                    |       |      |       |      |      |                      |      |      |      |      |      |      |
| Walking Speed (m/s)               |       |      |       |      |      |                      |      |      |      |      |      |      |
| Percent Blockage                  |       |      |       |      |      |                      |      |      |      |      |      |      |
| Right turn flare (veh)            |       |      |       |      |      |                      |      |      |      |      |      |      |
| Median type                       | TWLTL |      |       | None |      |                      |      |      |      |      |      |      |
| Median storage (veh)              | 2     |      |       |      |      |                      |      |      |      |      |      |      |
| Upstream signal (m)               |       |      |       | 211  |      |                      |      |      |      |      |      |      |
| pX, platoon unblocked             | 0.93  |      |       |      |      |                      | 0.93 | 0.93 |      | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume            | 750   |      |       | 1185 |      |                      | 1712 | 2040 | 592  | 1460 | 2052 | 375  |
| vC1, stage 1 conf vol             |       |      |       |      |      |                      | 1200 | 1200 |      | 838  | 838  |      |
| vC2, stage 2 conf vol             |       |      |       |      |      |                      | 512  | 840  |      | 622  | 1215 |      |
| vCu, unblocked vol                | 584   |      |       | 1185 |      |                      | 1618 | 1969 | 592  | 1346 | 1983 | 181  |
| tC, single (s)                    | 4.2   |      |       | 5.0  |      |                      | 8.9  | 6.5  | 8.2  | 7.5  | 6.5  | 7.1  |
| tC, 2 stage (s)                   |       |      |       |      |      |                      | 7.9  | 5.5  |      | 6.5  | 5.5  |      |
| tF (s)                            | 2.3   |      |       | 2.6  |      |                      | 4.2  | 4.0  | 3.9  | 3.5  | 4.0  | 3.4  |
| p0 queue free %                   | 98    |      |       | 89   |      |                      | 81   | 100  | 95   | 98   | 100  | 93   |
| cM capacity (veh/h)               | 894   |      |       | 396  |      |                      | 108  | 208  | 321  | 260  | 181  | 750  |
| <b>Direction, Lane #</b>          |       |      |       |      |      |                      |      |      |      |      |      |      |
| Volume Total                      | 15    | 770  | 415   | 45   | 497  | 253                  | 35   | 55   |      |      |      |      |
| Volume Left                       | 15    | 0    | 0     | 45   | 0    | 0                    | 20   | 5    |      |      |      |      |
| Volume Right                      | 0     | 0    | 30    | 0    | 0    | 5                    | 15   | 50   |      |      |      |      |
| cSH                               | 894   | 1700 | 1700  | 396  | 1700 | 1700                 | 150  | 641  |      |      |      |      |
| Volume to Capacity                | 0.02  | 0.45 | 0.24  | 0.11 | 0.29 | 0.15                 | 0.23 | 0.09 |      |      |      |      |
| Queue Length 95th (m)             | 0.4   | 0.0  | 0.0   | 3.0  | 0.0  | 0.0                  | 6.9  | 2.2  |      |      |      |      |
| Control Delay (s)                 | 9.1   | 0.0  | 0.0   | 15.2 | 0.0  | 0.0                  | 36.0 | 11.1 |      |      |      |      |
| Lane LOS                          | A     |      |       | C    |      |                      | E    | B    |      |      |      |      |
| Approach Delay (s)                | 0.1   |      |       | 0.9  |      |                      | 36.0 | 11.1 |      |      |      |      |
| Approach LOS                      |       |      |       |      |      |                      | E    | B    |      |      |      |      |
| <b>Intersection Summary</b>       |       |      |       |      |      |                      |      |      |      |      |      |      |
| Average Delay                     |       |      | 1.3   |      |      |                      |      |      |      |      |      |      |
| Intersection Capacity Utilization |       |      | 51.9% |      |      | ICU Level of Service |      |      | A    |      |      |      |
| Analysis Period (min)             |       |      | 15    |      |      |                      |      |      |      |      |      |      |

1345 Lakeshore Road East  
BA Group - TCS

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# HCM Unsignalized Intersection Capacity Analysis

## 8: Fergus Avenue & St. James Avenue

Future Background AM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 50                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 50                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |
| 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                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 50                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (m)                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (m/s)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       | None                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (m)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 52                                                                                | 70                                                                                | 5                                                                                 | 52                                                                                | 45                                                                                | 30                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 55                                                                                |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 52                                                                                | 70                                                                                | 5                                                                                 | 52                                                                                | 45                                                                                | 30                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 55                                                                                |                                                                                   |                                                                                   |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.4                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.8                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 99                                                                                | 100                                                                               | 99                                                                                | 99                                                                                | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 940                                                                               | 822                                                                               | 1084                                                                              | 864                                                                               | 848                                                                               | 1050                                                                              | 1630                                                                              |                                                                                   |                                                                                   | 1563                                                                              |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 10                                                                                | 20                                                                                | 55                                                                                | 10                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 0                                                                                 | 10                                                                                | 0                                                                                 | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 5                                                                                 | 5                                                                                 | 50                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 935                                                                               | 900                                                                               | 1630                                                                              | 1563                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.01                                                                              | 0.02                                                                              | 0.00                                                                              | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (m)             | 0.3                                                                               | 0.5                                                                               | 0.0                                                                               | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 8.9                                                                               | 9.1                                                                               | 0.0                                                                               | 3.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 8.9                                                                               | 9.1                                                                               | 0.0                                                                               | 3.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     | 3.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 19.2%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 11: Dixie Road & Orchard Hill Road

Future Background AM Peak Hour

|                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |
| Movement                          | WBL                                                                                 | WBR                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Configurations               |  |                                                                                     |  |                                                                                     |  |  |
| Traffic Volume (veh/h)            | 0                                                                                   | 30                                                                                  | 640                                                                                 | 0                                                                                   | 20                                                                                  | 330                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                   | 30                                                                                  | 640                                                                                 | 0                                                                                   | 20                                                                                  | 330                                                                                 |
| Sign Control                      | Stop                                                                                |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Hourly flow rate (vph)            | 0                                                                                   | 30                                                                                  | 640                                                                                 | 0                                                                                   | 20                                                                                  | 330                                                                                 |
| Pedestrians                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (m)                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (m/s)               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       | TWLTL                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               | 220                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             | 0.94                                                                                | 0.94                                                                                |                                                                                     |                                                                                     | 0.94                                                                                |                                                                                     |
| vC, conflicting volume            | 1010                                                                                | 640                                                                                 |                                                                                     |                                                                                     | 640                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             | 640                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 370                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 979                                                                                 | 585                                                                                 |                                                                                     |                                                                                     | 585                                                                                 |                                                                                     |
| tC, single (s)                    | 6.4                                                                                 | 6.2                                                                                 |                                                                                     |                                                                                     | 4.2                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                                 | 3.3                                                                                 |                                                                                     |                                                                                     | 2.3                                                                                 |                                                                                     |
| p0 queue free %                   | 100                                                                                 | 94                                                                                  |                                                                                     |                                                                                     | 98                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 463                                                                                 | 484                                                                                 |                                                                                     |                                                                                     | 890                                                                                 |                                                                                     |
| Direction, Lane #                 | WB 1                                                                                | NB 1                                                                                | SB 1                                                                                | SB 2                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 30                                                                                  | 640                                                                                 | 20                                                                                  | 330                                                                                 |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                   | 0                                                                                   | 20                                                                                  | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 30                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 484                                                                                 | 1700                                                                                | 890                                                                                 | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.06                                                                                | 0.38                                                                                | 0.02                                                                                | 0.19                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 1.6                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Control Delay (s)                 | 12.9                                                                                | 0.0                                                                                 | 9.1                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | B                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 12.9                                                                                | 0.0                                                                                 | 0.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     | 0.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 43.7%                                                                               |                                                                                     |                                                                                     | ICU Level of Service                                                                | A                                                                                   |                                                                                     |
| Analysis Period (min)             | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### HCM Unsignalized Intersection Capacity Analysis 3: Dixie Road & St. James Avenue

Future Background PM Peak Hour

| Movement                          | EBL  | EBR  | NBL   | NBT  | SBT                  | SBR  |
|-----------------------------------|------|------|-------|------|----------------------|------|
| Lane Configurations               | W    |      | W     | W    | W                    |      |
| Traffic Volume (veh/h)            | 25   | 5    | 0     | 450  | 470                  | 60   |
| Future Volume (Veh/h)             | 25   | 5    | 0     | 450  | 470                  | 60   |
| Sign Control                      | Stop |      |       | Free | Free                 |      |
| Grade                             | 0%   |      |       | 0%   | 0%                   |      |
| Peak Hour Factor                  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 |
| Hourly flow rate (vph)            | 25   | 5    | 0     | 450  | 470                  | 60   |
| Pedestrians                       |      |      |       |      |                      |      |
| Lane Width (m)                    |      |      |       |      |                      |      |
| Walking Speed (m/s)               |      |      |       |      |                      |      |
| Percent Blockage                  |      |      |       |      |                      |      |
| Right turn flare (veh)            |      |      |       |      |                      |      |
| Median type                       |      |      |       | TWLT | TWLT                 |      |
| Median storage (veh)              |      |      |       | 2    | 2                    |      |
| Upstream signal (m)               |      |      |       | 166  |                      |      |
| pX, platoon unblocked             | 0.98 |      |       |      |                      |      |
| vC, conflicting volume            | 950  | 500  | 530   |      |                      |      |
| vC1, stage 1 conf vol             | 500  |      |       |      |                      |      |
| vC2, stage 2 conf vol             | 450  |      |       |      |                      |      |
| vCu, unblocked vol                | 938  | 500  | 530   |      |                      |      |
| tC, single (s)                    | 6.4  | 6.2  | 4.1   |      |                      |      |
| tC, 2 stage (s)                   | 5.4  |      |       |      |                      |      |
| tF (s)                            | 3.5  | 3.3  | 2.2   |      |                      |      |
| p0 queue free %                   | 95   | 99   | 100   |      |                      |      |
| cM capacity (veh/h)               | 504  | 575  | 1048  |      |                      |      |
| Direction, Lane #                 | EB 1 | NB 1 | NB 2  | SB 1 |                      |      |
| Volume Total                      | 30   | 0    | 450   | 530  |                      |      |
| Volume Left                       | 25   | 0    | 0     | 0    |                      |      |
| Volume Right                      | 5    | 0    | 0     | 60   |                      |      |
| cSH                               | 515  | 1700 | 1700  | 1700 |                      |      |
| Volume to Capacity                | 0.06 | 0.00 | 0.26  | 0.31 |                      |      |
| Queue Length 95th (m)             | 1.5  | 0.0  | 0.0   | 0.0  |                      |      |
| Control Delay (s)                 | 12.4 | 0.0  | 0.0   | 0.0  |                      |      |
| Lane LOS                          | B    |      |       |      |                      |      |
| Approach Delay (s)                | 12.4 | 0.0  |       | 0.0  |                      |      |
| Approach LOS                      | B    |      |       |      |                      |      |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |
| Average Delay                     |      |      | 0.4   |      |                      |      |
| Intersection Capacity Utilization |      |      | 38.4% |      | ICU Level of Service | A    |
| Analysis Period (min)             |      |      | 15    |      |                      |      |

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### Queues 6: Lakeshore Road East & Dixie Road

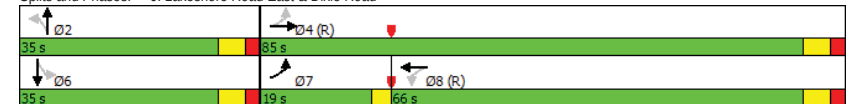
Future Background PM Peak Hour

| Lane Group             | EBL   | EBT   | WBT   | SBL   | SBT   | Ø2   |
|------------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations    | W     | W     | W     | W     | W     |      |
| Traffic Volume (vph)   | 215   | 525   | 1065  | 195   | 0     |      |
| Future Volume (vph)    | 215   | 525   | 1065  | 195   | 0     |      |
| Lane Group Flow (vph)  | 215   | 525   | 1300  | 195   | 280   |      |
| Turn Type              | pm+pt | NA    | NA    | Perm  | NA    |      |
| Protected Phases       | 7     | 4     | 8     |       | 6     | 2    |
| Permitted Phases       | 4     |       |       | 6     |       |      |
| Detector Phase         | 7     | 4     | 8     | 6     | 6     |      |
| Switch Phase           |       |       |       |       |       |      |
| Minimum Initial (s)    | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0  |
| Minimum Split (s)      | 9.5   | 31.3  | 31.3  | 29.3  | 29.3  | 24.3 |
| Total Split (s)        | 19.0  | 85.0  | 66.0  | 35.0  | 35.0  | 35.0 |
| Total Split (%)        | 15.8% | 70.8% | 55.0% | 29.2% | 29.2% | 29%  |
| Yellow Time (s)        | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0  |
| All-Red Time (s)       | 0.0   | 2.3   | 2.3   | 2.3   | 2.3   | 2.3  |
| Lost Time Adjust (s)   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  |
| Total Lost Time (s)    | 3.0   | 6.3   | 6.3   | 6.3   | 6.3   | 6.3  |
| Lead/Lag               | Lead  |       | Lag   |       |       |      |
| Lead-Lag Optimize?     | Yes   |       | Yes   |       |       |      |
| Recall Mode            | None  | C-Max | C-Max | None  | None  | None |
| v/c Ratio              | 0.64  | 0.21  | 0.62  | 0.77  | 0.54  |      |
| Control Delay          | 17.4  | 6.5   | 18.5  | 66.3  | 8.5   |      |
| Queue Delay            | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay            | 17.4  | 6.5   | 18.5  | 66.3  | 8.5   |      |
| Queue Length 50th (m)  | 13.7  | 20.5  | 100.7 | 46.4  | 0.0   |      |
| Queue Length 95th (m)  | 37.5  | 33.4  | 155.5 | 68.9  | 22.1  |      |
| Internal Link Dist (m) |       | 186.8 | 213.5 |       | 142.3 |      |
| Turn Bay Length (m)    | 30.0  |       |       | 90.0  |       |      |
| Base Capacity (vph)    | 389   | 2511  | 2100  | 336   | 599   |      |
| 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      | 0.55  | 0.21  | 0.62  | 0.58  | 0.47  |      |

#### Intersection Summary

Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 83 (69%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
Natural Cycle: 80  
Control Type: Actuated-Coordinated

Splits and Phases: 6: Lakeshore Road East & Dixie Road



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# HCM Signalized Intersection Capacity Analysis 6: Lakeshore Road East & Dixie Road

Future Background PM Peak Hour

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|-------|------|------|---------------------------|------|------|------|------|-------|------|------|
| Lane Configurations               | ↰     | ↰     |      | ↰    | ↰                         |      |      | ↰    |      | ↰     | ↰    |      |
| Traffic Volume (vph)              | 215   | 525   | 0    | 0    | 1065                      | 235  | 0    | 0    | 0    | 195   | 0    | 280  |
| Future Volume (vph)               | 215   | 525   | 0    | 0    | 1065                      | 235  | 0    | 0    | 0    | 195   | 0    | 280  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Lane Width                        | 3.5   | 3.7   | 3.7  | 3.5  | 3.7                       | 3.7  | 3.7  | 3.7  | 3.7  | 3.5   | 3.7  | 3.7  |
| Total Lost time (s)               | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Lane Util. Factor                 | 1.00  | 0.95  |      |      | 0.95                      |      |      |      |      | 1.00  | 1.00 |      |
| Frt                               | 1.00  | 1.00  |      |      | 0.97                      |      |      |      |      | 1.00  | 0.85 |      |
| Flt Protected                     | 0.95  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1767  | 3510  |      |      | 3516                      |      |      |      |      | 1767  | 1617 |      |
| Flt Permitted                     | 0.14  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.76  | 1.00 |      |
| Satd. Flow (perm)                 | 254   | 3510  |      |      | 3516                      |      |      |      |      | 1409  | 1617 |      |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 215   | 525   | 0    | 0    | 1065                      | 235  | 0    | 0    | 0    | 195   | 0    | 280  |
| RTOR Reduction (vph)              | 0     | 0     | 0    | 0    | 13                        | 0    | 0    | 0    | 0    | 0     | 230  | 0    |
| Lane Group Flow (vph)             | 215   | 525   | 0    | 0    | 1287                      | 0    | 0    | 0    | 0    | 195   | 50   | 0    |
| Heavy Vehicles (%)                | 1%    | 4%    | 0%   | 0%   | 1%                        | 1%   | 0%   | 0%   | 0%   | 1%    | 0%   | 1%   |
| Turn Type                         | pm+pt | NA    |      | Perm | NA                        |      |      |      |      | Perm  | NA   |      |
| Protected Phases                  | 7     | 4     |      |      | 8                         |      |      | 2    |      |       | 6    |      |
| Permitted Phases                  | 4     |       |      | 8    |                           |      | 2    |      |      | 6     |      |      |
| Actuated Green, G (s)             | 85.9  | 85.9  |      |      | 71.3                      |      |      |      |      | 21.5  | 21.5 |      |
| Effective Green, g (s)            | 85.9  | 85.9  |      |      | 71.3                      |      |      |      |      | 21.5  | 21.5 |      |
| Actuated g/C Ratio                | 0.72  | 0.72  |      |      | 0.59                      |      |      |      |      | 0.18  | 0.18 |      |
| Clearance Time (s)                | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Vehicle Extension (s)             | 3.0   | 3.0   |      |      | 3.0                       |      |      |      |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 328   | 2512  |      |      | 2089                      |      |      |      |      | 252   | 289  |      |
| v/s Ratio Prot                    | c0.06 | 0.15  |      |      | 0.37                      |      |      |      |      |       | 0.03 |      |
| v/s Ratio Perm                    | c0.41 |       |      |      |                           |      |      |      |      | c0.14 |      |      |
| v/c Ratio                         | 0.66  | 0.21  |      |      | 0.62                      |      |      |      |      | 0.77  | 0.17 |      |
| Uniform Delay, d1                 | 12.0  | 5.7   |      |      | 15.6                      |      |      |      |      | 46.9  | 41.7 |      |
| Progression Factor                | 1.00  | 1.00  |      |      | 1.00                      |      |      |      |      | 1.00  | 1.00 |      |
| Incremental Delay, d2             | 4.7   | 0.2   |      |      | 1.4                       |      |      |      |      | 13.7  | 0.3  |      |
| Delay (s)                         | 16.6  | 5.9   |      |      | 17.0                      |      |      |      |      | 60.7  | 42.0 |      |
| Level of Service                  | B     | A     |      |      | B                         |      |      |      |      | E     | D    |      |
| Approach Delay (s)                |       | 9.0   |      |      | 17.0                      |      |      | 0.0  |      |       | 49.7 |      |
| Approach LOS                      |       | A     |      |      | B                         |      |      | A    |      |       | D    |      |
| <b>Intersection Summary</b>       |       |       |      |      |                           |      |      |      |      |       |      |      |
| HCM 2000 Control Delay            |       | 20.8  |      |      | HCM 2000 Level of Service |      |      | C    |      |       |      |      |
| HCM 2000 Volume to Capacity ratio |       | 0.70  |      |      |                           |      |      |      |      |       |      |      |
| Actuated Cycle Length (s)         |       | 120.0 |      |      | Sum of lost time (s)      |      |      | 15.6 |      |       |      |      |
| Intersection Capacity Utilization |       | 80.0% |      |      | ICU Level of Service      |      |      | D    |      |       |      |      |
| Analysis Period (min)             |       | 15    |      |      |                           |      |      |      |      |       |      |      |
| c Critical Lane Group             |       |       |      |      |                           |      |      |      |      |       |      |      |

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# HCM Unsignalized Intersection Capacity Analysis 7: Lakeshore Road East & Fergus Avenue

Future Background PM Peak Hour

| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations               | ↰    | ↰     |      | ↰    | ↰                    |      |      | ↰    |      | ↰    | ↰    |      |
| Traffic Volume (veh/h)            | 25   | 715   | 5    | 5    | 1325                 | 15   | 15   | 0    | 15   | 10   | 0    | 30   |
| Future Volume (Veh/h)             | 25   | 715   | 5    | 5    | 1325                 | 15   | 15   | 0    | 15   | 10   | 0    | 30   |
| Sign Control                      |      | Free  |      |      | Free                 |      |      | Stop |      |      | Stop |      |
| Grade                             |      | 0%    |      |      | 0%                   |      |      | 0%   |      |      | 0%   |      |
| 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 |
| Hourly flow rate (vph)            | 25   | 715   | 5    | 5    | 1325                 | 15   | 15   | 0    | 15   | 10   | 0    | 30   |
| <b>Pedestrians</b>                |      |       |      |      |                      |      |      |      |      |      |      |      |
| Lane Width (m)                    |      |       |      |      |                      |      |      |      |      |      |      |      |
| Walking Speed (m/s)               |      |       |      |      |                      |      |      |      |      |      |      |      |
| Percent Blockage                  |      |       |      |      |                      |      |      |      |      |      |      |      |
| Right turn flare (veh)            |      |       |      |      |                      |      |      |      |      |      |      |      |
| Median type                       |      | TWLT  |      |      | None                 |      |      |      |      |      |      |      |
| Median storage (veh)              |      | 2     |      |      |                      |      |      |      |      |      |      |      |
| Upstream signal (m)               |      |       |      |      | 211                  |      |      |      |      |      |      |      |
| pX, platoon unblocked             | 0.78 |       |      |      |                      |      | 0.78 | 0.78 |      | 0.78 | 0.78 | 0.78 |
| vC, conflicting volume            | 1340 |       |      | 720  |                      |      | 1470 | 2118 | 360  | 1765 | 2112 | 670  |
| vC1, stage 1 conf vol             |      |       |      |      |                      |      | 768  | 768  |      | 1342 | 1342 |      |
| vC2, stage 2 conf vol             |      |       |      |      |                      |      | 702  | 1350 |      | 422  | 770  |      |
| vCu, unblocked vol                | 877  |       |      | 720  |                      |      | 1043 | 1871 | 360  | 1420 | 1865 | 20   |
| tC, single (s)                    | 4.2  |       |      | 4.1  |                      |      | 7.5  | 6.5  | 6.9  | 7.5  | 6.5  | 6.9  |
| tC, 2 stage (s)                   |      |       |      |      |                      |      | 6.5  | 5.5  |      | 6.5  | 5.5  |      |
| tF (s)                            | 2.2  |       |      | 2.2  |                      |      | 3.5  | 4.0  | 3.3  | 3.5  | 4.0  | 3.3  |
| p0 queue free %                   | 96   |       |      | 99   |                      |      | 95   | 100  | 98   | 96   | 100  | 96   |
| cM capacity (veh/h)               | 589  |       |      | 891  |                      |      | 321  | 216  | 642  | 222  | 230  | 829  |
| <b>Direction, Lane #</b>          |      |       |      |      |                      |      |      |      |      |      |      |      |
| Volume Total                      | 25   | 477   | 243  | 5    | 883                  | 457  | 30   | 40   |      |      |      |      |
| Volume Left                       | 25   | 0     | 0    | 5    | 0                    | 0    | 15   | 10   |      |      |      |      |
| Volume Right                      | 0    | 0     | 5    | 0    | 0                    | 15   | 15   | 30   |      |      |      |      |
| cSH                               | 589  | 1700  | 1700 | 891  | 1700                 | 1700 | 428  | 493  |      |      |      |      |
| Volume to Capacity                | 0.04 | 0.28  | 0.14 | 0.01 | 0.52                 | 0.27 | 0.07 | 0.08 |      |      |      |      |
| Queue Length 95th (m)             | 1.1  | 0.0   | 0.0  | 0.1  | 0.0                  | 0.0  | 1.8  | 2.1  |      |      |      |      |
| Control Delay (s)                 | 11.4 | 0.0   | 0.0  | 9.1  | 0.0                  | 0.0  | 14.0 | 12.9 |      |      |      |      |
| Lane LOS                          | B    |       |      | A    |                      |      | B    | B    |      |      |      |      |
| Approach Delay (s)                | 0.4  |       |      | 0.0  |                      |      | 14.0 | 12.9 |      |      |      |      |
| Approach LOS                      |      |       |      |      |                      |      | B    | B    |      |      |      |      |
| <b>Intersection Summary</b>       |      |       |      |      |                      |      |      |      |      |      |      |      |
| Average Delay                     |      | 0.6   |      |      |                      |      |      |      |      |      |      |      |
| Intersection Capacity Utilization |      | 47.1% |      |      | ICU Level of Service |      |      | A    |      |      |      |      |
| Analysis Period (min)             |      | 15    |      |      |                      |      |      |      |      |      |      |      |

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# HCM Unsignalized Intersection Capacity Analysis

8: Fergus Avenue & St. James Avenue

Future Background PM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 30                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 30                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |
| 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                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 30                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (m)                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (m/s)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       | None                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (m)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 30                                                                                | 40                                                                                | 5                                                                                 | 25                                                                                | 25                                                                                | 20                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 35                                                                                |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 30                                                                                | 40                                                                                | 5                                                                                 | 25                                                                                | 25                                                                                | 20                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 35                                                                                |                                                                                   |                                                                                   |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 94                                                                                | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 979                                                                               | 856                                                                               | 1084                                                                              | 991                                                                               | 872                                                                               | 1064                                                                              | 1630                                                                              |                                                                                   |                                                                                   | 1589                                                                              |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 0                                                                                 | 60                                                                                | 35                                                                                | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 0                                                                                 | 55                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 5                                                                                 | 30                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1700                                                                              | 997                                                                               | 1630                                                                              | 1589                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.06                                                                              | 0.00                                                                              | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (m)             | 0.0                                                                               | 1.5                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 0.0                                                                               | 8.8                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               | 8.8                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 5.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | 13.4%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

11: Dixie Road & Orchard Hill Road

Future Background PM Peak Hour

|                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |
| Movement                          | WBL                                                                                 | WBR                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Configurations               |  |                                                                                     |  |                                                                                     |  |  |
| Traffic Volume (veh/h)            | 5                                                                                   | 25                                                                                  | 475                                                                                 | 0                                                                                   | 25                                                                                  | 525                                                                                 |
| Future Volume (Veh/h)             | 5                                                                                   | 25                                                                                  | 475                                                                                 | 0                                                                                   | 25                                                                                  | 525                                                                                 |
| Sign Control                      | Stop                                                                                |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Hourly flow rate (vph)            | 5                                                                                   | 25                                                                                  | 475                                                                                 | 0                                                                                   | 25                                                                                  | 525                                                                                 |
| Pedestrians                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (m)                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (m/s)               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       | TWLTL                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               | 220                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             | 0.99                                                                                | 0.99                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| vC, conflicting volume            | 1050                                                                                | 475                                                                                 |                                                                                     |                                                                                     | 475                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             | 475                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 575                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 1046                                                                                | 466                                                                                 |                                                                                     |                                                                                     | 466                                                                                 |                                                                                     |
| tC, single (s)                    | 6.4                                                                                 | 6.2                                                                                 |                                                                                     |                                                                                     | 4.2                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                                 | 3.3                                                                                 |                                                                                     |                                                                                     | 2.3                                                                                 |                                                                                     |
| p0 queue free %                   | 99                                                                                  | 96                                                                                  |                                                                                     |                                                                                     | 98                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 462                                                                                 | 595                                                                                 |                                                                                     |                                                                                     | 1055                                                                                |                                                                                     |
| Direction, Lane #                 | WB 1                                                                                | NB 1                                                                                | SB 1                                                                                | SB 2                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 30                                                                                  | 475                                                                                 | 25                                                                                  | 525                                                                                 |                                                                                     |                                                                                     |
| Volume Left                       | 5                                                                                   | 0                                                                                   | 25                                                                                  | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 25                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 568                                                                                 | 1700                                                                                | 1055                                                                                | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.05                                                                                | 0.28                                                                                | 0.02                                                                                | 0.31                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 1.3                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Control Delay (s)                 | 11.7                                                                                | 0.0                                                                                 | 8.5                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | B                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 11.7                                                                                | 0.0                                                                                 | 0.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                     |                                                                                     |                                                                                     | 0.5                                                                                 |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                     |                                                                                     |                                                                                     | 37.6%                                                                               | ICU Level of Service                                                                | A                                                                                   |
| Analysis Period (min)             |                                                                                     |                                                                                     |                                                                                     | 15                                                                                  |                                                                                     |                                                                                     |

### HCM Unsignalized Intersection Capacity Analysis 3: Dixie Road & St. James Avenue

Future Total AM Peak Hour

| Movement                          | EBL  | EBR  | NBL   | NBT                  | SBT  | SBR  |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations               | W    |      | W     | W                    | W    |      |
| Traffic Volume (veh/h)            | 110  | 5    | 15    | 585                  | 325  | 20   |
| Future Volume (Veh/h)             | 110  | 5    | 15    | 585                  | 325  | 20   |
| Sign Control                      | Stop |      |       | Free                 | Free |      |
| Grade                             | 0%   |      |       | 0%                   | 0%   |      |
| Peak Hour Factor                  | 1.00 | 1.00 | 1.00  | 1.00                 | 1.00 | 1.00 |
| Hourly flow rate (vph)            | 110  | 5    | 15    | 585                  | 325  | 20   |
| Pedestrians                       |      |      |       |                      |      |      |
| Lane Width (m)                    |      |      |       |                      |      |      |
| Walking Speed (m/s)               |      |      |       |                      |      |      |
| Percent Blockage                  |      |      |       |                      |      |      |
| Right turn flare (veh)            |      |      |       |                      |      |      |
| Median type                       |      |      |       | TWLT                 | TWLT |      |
| Median storage (veh)              |      |      |       | 2                    | 2    |      |
| Upstream signal (m)               |      |      |       | 166                  |      |      |
| pX, platoon unblocked             | 0.93 |      |       |                      |      |      |
| vC, conflicting volume            | 950  | 335  | 345   |                      |      |      |
| vC1, stage 1 conf vol             | 335  |      |       |                      |      |      |
| vC2, stage 2 conf vol             | 615  |      |       |                      |      |      |
| vCu, unblocked vol                | 909  | 335  | 345   |                      |      |      |
| tC, single (s)                    | 6.4  | 6.2  | 4.8   |                      |      |      |
| tC, 2 stage (s)                   | 5.4  |      |       |                      |      |      |
| tF (s)                            | 3.5  | 3.3  | 2.9   |                      |      |      |
| p0 queue free %                   | 77   | 99   | 98    |                      |      |      |
| cM capacity (veh/h)               | 476  | 712  | 900   |                      |      |      |
| Direction, Lane #                 | EB 1 | NB 1 | NB 2  | SB 1                 |      |      |
| Volume Total                      | 115  | 15   | 585   | 345                  |      |      |
| Volume Left                       | 110  | 15   | 0     | 0                    |      |      |
| Volume Right                      | 5    | 0    | 0     | 20                   |      |      |
| cSH                               | 483  | 900  | 1700  | 1700                 |      |      |
| Volume to Capacity                | 0.24 | 0.02 | 0.34  | 0.20                 |      |      |
| Queue Length 95th (m)             | 7.4  | 0.4  | 0.0   | 0.0                  |      |      |
| Control Delay (s)                 | 14.8 | 9.1  | 0.0   | 0.0                  |      |      |
| Lane LOS                          | B    | A    |       |                      |      |      |
| Approach Delay (s)                | 14.8 | 0.2  |       | 0.0                  |      |      |
| Approach LOS                      | B    |      |       |                      |      |      |
| <b>Intersection Summary</b>       |      |      |       |                      |      |      |
| Average Delay                     |      |      | 1.7   |                      |      |      |
| Intersection Capacity Utilization |      |      | 43.9% | ICU Level of Service | A    |      |
| Analysis Period (min)             |      |      | 15    |                      |      |      |

1345 Lakeshore Road East  
BA Group - TCS

Synchro 9 Report  
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### Queues 6: Lakeshore Road East & Dixie Road

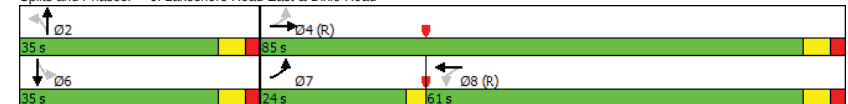
Future Total AM Peak Hour

| Lane Group             | EBL   | EBT   | WBT   | SBL   | SBT   | Ø2   |
|------------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations    | W     | W     | W     | W     | W     |      |
| Traffic Volume (vph)   | 405   | 775   | 615   | 150   | 0     |      |
| Future Volume (vph)    | 405   | 775   | 615   | 150   | 0     |      |
| Lane Group Flow (vph)  | 405   | 775   | 810   | 150   | 195   |      |
| Turn Type              | pm+pt | NA    | NA    | Perm  | NA    |      |
| Protected Phases       | 7     | 4     | 8     |       | 6     | 2    |
| Permitted Phases       | 4     |       |       | 6     |       |      |
| Detector Phase         | 7     | 4     | 8     | 6     | 6     |      |
| Switch Phase           |       |       |       |       |       |      |
| Minimum Initial (s)    | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0  |
| Minimum Split (s)      | 9.5   | 31.3  | 31.3  | 29.3  | 29.3  | 24.3 |
| Total Split (s)        | 24.0  | 85.0  | 61.0  | 35.0  | 35.0  | 35.0 |
| Total Split (%)        | 20.0% | 70.8% | 50.8% | 29.2% | 29.2% | 29%  |
| Yellow Time (s)        | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0  |
| All-Red Time (s)       | 0.0   | 2.3   | 2.3   | 2.3   | 2.3   | 2.3  |
| Lost Time Adjust (s)   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  |
| Total Lost Time (s)    | 3.0   | 6.3   | 6.3   | 6.3   | 6.3   | 6.3  |
| Lead/Lag               | Lead  |       | Lag   |       |       |      |
| Lead-Lag Optimize?     | Yes   |       | Yes   |       |       |      |
| Recall Mode            | None  | C-Max | C-Max | None  | None  | None |
| v/c Ratio              | 0.72  | 0.30  | 0.41  | 0.71  | 0.33  |      |
| Control Delay          | 12.7  | 5.8   | 14.9  | 65.6  | 1.5   |      |
| Queue Delay            | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay            | 12.7  | 5.8   | 14.9  | 65.6  | 1.5   |      |
| Queue Length 50th (m)  | 25.1  | 28.6  | 48.9  | 35.8  | 0.0   |      |
| Queue Length 95th (m)  | 47.6  | 46.4  | 88.5  | 55.4  | 0.0   |      |
| Internal Link Dist (m) |       | 186.8 | 213.5 |       | 71.0  |      |
| Turn Bay Length (m)    | 30.0  |       |       | 90.0  |       |      |
| Base Capacity (vph)    | 627   | 2591  | 1978  | 340   | 681   |      |
| 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      | 0.65  | 0.30  | 0.41  | 0.44  | 0.29  |      |

#### Intersection Summary

Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 83 (69%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
Natural Cycle: 80  
Control Type: Actuated-Coordinated

Splits and Phases: 6: Lakeshore Road East & Dixie Road



1345 Lakeshore Road East  
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# HCM Signalized Intersection Capacity Analysis 6: Lakeshore Road East & Dixie Road

Future Total AM Peak Hour

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|-------|------|------|---------------------------|------|------|------|------|-------|------|------|
| Lane Configurations               | ↰     | ↰     |      | ↰    | ↰                         |      |      | ↰    |      | ↰     | ↰    |      |
| Traffic Volume (vph)              | 405   | 775   | 0    | 0    | 615                       | 195  | 0    | 0    | 0    | 150   | 0    | 195  |
| Future Volume (vph)               | 405   | 775   | 0    | 0    | 615                       | 195  | 0    | 0    | 0    | 150   | 0    | 195  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Lane Width                        | 3.5   | 3.7   | 3.7  | 3.5  | 3.7                       | 3.7  | 3.7  | 3.7  | 3.7  | 3.5   | 3.7  | 3.7  |
| Total Lost time (s)               | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Lane Util. Factor                 | 1.00  | 0.95  |      |      | 0.95                      |      |      |      |      | 1.00  | 1.00 |      |
| Frt                               | 1.00  | 1.00  |      |      | 0.96                      |      |      |      |      | 1.00  | 0.85 |      |
| Flt Protected                     | 0.95  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1733  | 3476  |      |      | 3318                      |      |      |      |      | 1785  | 1458 |      |
| Flt Permitted                     | 0.29  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.76  | 1.00 |      |
| Satd. Flow (perm)                 | 529   | 3476  |      |      | 3318                      |      |      |      |      | 1423  | 1458 |      |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 405   | 775   | 0    | 0    | 615                       | 195  | 0    | 0    | 0    | 150   | 0    | 195  |
| RTOR Reduction (vph)              | 0     | 0     | 0    | 0    | 19                        | 0    | 0    | 0    | 0    | 0     | 166  | 0    |
| Lane Group Flow (vph)             | 405   | 775   | 0    | 0    | 791                       | 0    | 0    | 0    | 0    | 150   | 29   | 0    |
| Heavy Vehicles (%)                | 3%    | 5%    | 0%   | 0%   | 7%                        | 3%   | 0%   | 0%   | 0%   | 0%    | 0%   | 12%  |
| Turn Type                         | pm+pt | NA    |      | Perm | NA                        |      |      |      |      | Perm  | NA   |      |
| Protected Phases                  | 7     | 4     |      |      | 8                         |      |      | 2    |      |       | 6    |      |
| Permitted Phases                  | 4     |       |      | 8    |                           |      | 2    |      |      | 6     |      |      |
| Actuated Green, G (s)             | 89.5  | 89.5  |      |      | 70.9                      |      |      |      |      | 17.9  | 17.9 |      |
| Effective Green, g (s)            | 89.5  | 89.5  |      |      | 70.9                      |      |      |      |      | 17.9  | 17.9 |      |
| Actuated g/C Ratio                | 0.75  | 0.75  |      |      | 0.59                      |      |      |      |      | 0.15  | 0.15 |      |
| Clearance Time (s)                | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Vehicle Extension (s)             | 3.0   | 3.0   |      |      | 3.0                       |      |      |      |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 551   | 2592  |      |      | 1960                      |      |      |      |      | 212   | 217  |      |
| v/s Ratio Prot                    | c0.10 | 0.22  |      |      | 0.24                      |      |      |      |      |       | 0.02 |      |
| v/s Ratio Perm                    | c0.45 |       |      |      |                           |      |      |      |      | c0.11 |      |      |
| v/c Ratio                         | 0.74  | 0.30  |      |      | 0.40                      |      |      |      |      | 0.71  | 0.13 |      |
| Uniform Delay, d1                 | 6.7   | 5.0   |      |      | 13.2                      |      |      |      |      | 48.6  | 44.3 |      |
| Progression Factor                | 1.00  | 1.00  |      |      | 1.00                      |      |      |      |      | 1.00  | 1.00 |      |
| Incremental Delay, d2             | 5.1   | 0.3   |      |      | 0.6                       |      |      |      |      | 10.3  | 0.3  |      |
| Delay (s)                         | 11.8  | 5.3   |      |      | 13.8                      |      |      |      |      | 58.8  | 44.6 |      |
| Level of Service                  | B     | A     |      |      | B                         |      |      |      |      | E     | D    |      |
| Approach Delay (s)                |       | 7.5   |      |      | 13.8                      |      |      | 0.0  |      |       | 50.8 |      |
| Approach LOS                      |       | A     |      |      | B                         |      |      | A    |      |       | D    |      |
| <b>Intersection Summary</b>       |       |       |      |      |                           |      |      |      |      |       |      |      |
| HCM 2000 Control Delay            |       | 16.1  |      |      | HCM 2000 Level of Service |      |      | B    |      |       |      |      |
| HCM 2000 Volume to Capacity ratio |       | 0.75  |      |      |                           |      |      |      |      |       |      |      |
| Actuated Cycle Length (s)         |       | 120.0 |      |      | Sum of lost time (s)      |      |      | 15.6 |      |       |      |      |
| Intersection Capacity Utilization |       | 71.6% |      |      | ICU Level of Service      |      |      | C    |      |       |      |      |
| Analysis Period (min)             |       | 15    |      |      |                           |      |      |      |      |       |      |      |
| c Critical Lane Group             |       |       |      |      |                           |      |      |      |      |       |      |      |

1345 Lakeshore Road East  
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# HCM Unsignalized Intersection Capacity Analysis 7: Lakeshore Road East & Fergus Avenue

Future Total AM Peak Hour

| Movement                          | EBL                                                                                 | EBT                                                                                 | EBR  | WBL                                                                                 | WBT                                                                                 | WBR                  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |      |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|
| Lane Configurations               |  |  |      |  |  |                      |      |  |      |      |  |      |      |
| Traffic Volume (veh/h)            | 20                                                                                  | 1160                                                                                | 30   | 45                                                                                  | 760                                                                                 | 5                    | 20   | 0                                                                                   | 15   | 5    | 0                                                                                   | 60   |      |
| Future Volume (Veh/h)             | 20                                                                                  | 1160                                                                                | 30   | 45                                                                                  | 760                                                                                 | 5                    | 20   | 0                                                                                   | 15   | 5    | 0                                                                                   | 60   |      |
| Sign Control                      | Free                                                                                |                                                                                     |      | Free                                                                                |                                                                                     |                      | Stop |                                                                                     |      | Stop |                                                                                     |      |      |
| Grade                             | 0%                                                                                  |                                                                                     |      | 0%                                                                                  |                                                                                     |                      | 0%   |                                                                                     |      | 0%   |                                                                                     |      |      |
| 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 |      |
| Hourly flow rate (vph)            | 20                                                                                  | 1160                                                                                | 30   | 45                                                                                  | 760                                                                                 | 5                    | 20   | 0                                                                                   | 15   | 5    | 0                                                                                   | 60   |      |
| Pedestrians                       |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |
| Lane Width (m)                    |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |
| Walking Speed (m/s)               |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |
| Percent Blockage                  |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |
| Right turn flare (veh)            |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |
| Median type                       | TWLTL                                                                               |                                                                                     |      | None                                                                                |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |
| Median storage (veh)              | 2                                                                                   |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |
| Upstream signal (m)               |                                                                                     |                                                                                     |      | 211                                                                                 |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |
| pX, platoon unblocked             | 0.93                                                                                |                                                                                     |      |                                                                                     |                                                                                     |                      | 0.93 | 0.93                                                                                |      |      | 0.93                                                                                | 0.93 | 0.93 |
| vC, conflicting volume            | 765                                                                                 | 1190                                                                                |      |                                                                                     |                                                                                     |                      | 1745 | 2070                                                                                | 595  | 1488 | 2082                                                                                | 382  |      |
| vC1, stage 1 conf vol             |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     | 1215                 |      | 1215                                                                                | 852  |      | 852                                                                                 |      |      |
| vC2, stage 2 conf vol             |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     | 530                  |      | 855                                                                                 | 635  |      | 1230                                                                                |      |      |
| vCu, unblocked vol                | 592                                                                                 | 1190                                                                                |      |                                                                                     |                                                                                     |                      | 1648 | 1998                                                                                | 595  | 1370 | 2011                                                                                | 180  |      |
| tC, single (s)                    | 4.2                                                                                 | 5.0                                                                                 |      |                                                                                     |                                                                                     |                      | 8.9  | 6.5                                                                                 | 8.2  | 7.5  | 6.5                                                                                 | 7.1  |      |
| tC, 2 stage (s)                   |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     | 7.9                  |      | 5.5                                                                                 | 6.5  |      | 5.5                                                                                 |      |      |
| tF (s)                            | 2.3                                                                                 | 2.6                                                                                 |      |                                                                                     |                                                                                     |                      | 4.2  | 4.0                                                                                 | 3.9  | 3.5  | 4.0                                                                                 | 3.4  |      |
| p0 queue free %                   | 98                                                                                  | 89                                                                                  |      |                                                                                     |                                                                                     |                      | 81   | 100                                                                                 | 95   | 98   | 100                                                                                 | 92   |      |
| cM capacity (veh/h)               | 884                                                                                 | 394                                                                                 |      |                                                                                     |                                                                                     |                      | 104  | 203                                                                                 | 320  | 254  | 177                                                                                 | 749  |      |
| Direction, Lane #                 | EB 1                                                                                | EB 2                                                                                | EB 3 | WB 1                                                                                | WB 2                                                                                | WB 3                 | NB 1 | SB 1                                                                                |      |      |                                                                                     |      |      |
| Volume Total                      | 20                                                                                  | 773                                                                                 | 417  | 45                                                                                  | 507                                                                                 | 258                  | 35   | 65                                                                                  |      |      |                                                                                     |      |      |
| Volume Left                       | 20                                                                                  | 0                                                                                   | 0    | 45                                                                                  | 0                                                                                   | 0                    | 20   | 5                                                                                   |      |      |                                                                                     |      |      |
| Volume Right                      | 0                                                                                   | 0                                                                                   | 30   | 0                                                                                   | 0                                                                                   | 5                    | 15   | 60                                                                                  |      |      |                                                                                     |      |      |
| cSH                               | 884                                                                                 | 1700                                                                                | 1700 | 394                                                                                 | 1700                                                                                | 1700                 | 146  | 652                                                                                 |      |      |                                                                                     |      |      |
| Volume to Capacity                | 0.02                                                                                | 0.45                                                                                | 0.25 | 0.11                                                                                | 0.30                                                                                | 0.15                 | 0.24 | 0.10                                                                                |      |      |                                                                                     |      |      |
| Queue Length 95th (m)             | 0.6                                                                                 | 0.0                                                                                 | 0.0  | 3.1                                                                                 | 0.0                                                                                 | 0.0                  | 7.1  | 2.6                                                                                 |      |      |                                                                                     |      |      |
| Control Delay (s)                 | 9.2                                                                                 | 0.0                                                                                 | 0.0  | 15.3                                                                                | 0.0                                                                                 | 0.0                  | 37.2 | 11.1                                                                                |      |      |                                                                                     |      |      |
| Lane LOS                          | A                                                                                   |                                                                                     |      |                                                                                     | C                                                                                   |                      |      | E                                                                                   | B    |      |                                                                                     |      |      |
| Approach Delay (s)                | 0.2                                                                                 |                                                                                     |      |                                                                                     | 0.9                                                                                 |                      |      | 37.2                                                                                | 11.1 |      |                                                                                     |      |      |
| Approach LOS                      |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      | E                                                                                   | B    |      |                                                                                     |      |      |
| Intersection Summary              |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |
| Average Delay                     |                                                                                     |                                                                                     |      | 1.4                                                                                 |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |
| Intersection Capacity Utilization |                                                                                     |                                                                                     |      | 52.6%                                                                               |                                                                                     | ICU Level of Service |      | A                                                                                   |      |      |                                                                                     |      |      |
| Analysis Period (min)             |                                                                                     |                                                                                     |      | 15                                                                                  |                                                                                     |                      |      |                                                                                     |      |      |                                                                                     |      |      |

1345 Lakeshore Road East  
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# HCM Unsignalized Intersection Capacity Analysis

## 8: Fergus Avenue & St. James Avenue

Future Total AM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 5                                                                                 | 5                                                                                 | 20                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 55                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 5                                                                                 | 5                                                                                 | 20                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 55                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |
| 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                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 5                                                                                 | 5                                                                                 | 20                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 55                                                                                | 5                                                                                 | 5                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (m)                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (m/s)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       | None                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (m)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 55                                                                                | 75                                                                                | 5                                                                                 | 55                                                                                | 48                                                                                | 32                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 55                                                                                | 75                                                                                | 5                                                                                 | 55                                                                                | 48                                                                                | 32                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |                                                                                   |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.4                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.8                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 99                                                                                | 100                                                                               | 98                                                                                | 99                                                                                | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 937                                                                               | 817                                                                               | 1084                                                                              | 861                                                                               | 845                                                                               | 1047                                                                              | 1630                                                                              |                                                                                   |                                                                                   | 1556                                                                              |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 10                                                                                | 30                                                                                | 60                                                                                | 10                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 0                                                                                 | 20                                                                                | 0                                                                                 | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 5                                                                                 | 5                                                                                 | 55                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 931                                                                               | 884                                                                               | 1630                                                                              | 1556                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.01                                                                              | 0.03                                                                              | 0.00                                                                              | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (m)             | 0.3                                                                               | 0.8                                                                               | 0.0                                                                               | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 8.9                                                                               | 9.2                                                                               | 0.0                                                                               | 3.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 8.9                                                                               | 9.2                                                                               | 0.0                                                                               | 3.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 3.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | 19.7%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 11: Dixie Road & Orchard Hill Road

Future Total AM Peak Hour

| Movement                          | WBL                                                                                 | WBR                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Configurations               |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 0                                                                                   | 30                                                                                  | 695                                                                                 | 0                                                                                   | 20                                                                                  | 345                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                   | 30                                                                                  | 695                                                                                 | 0                                                                                   | 20                                                                                  | 345                                                                                 |
| Sign Control                      | Stop                                                                                |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Hourly flow rate (vph)            | 0                                                                                   | 30                                                                                  | 695                                                                                 | 0                                                                                   | 20                                                                                  | 345                                                                                 |
| Pedestrians                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (m)                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (m/s)               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       | TWLTL                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               | 220                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             | 0.94                                                                                | 0.94                                                                                |                                                                                     |                                                                                     | 0.94                                                                                |                                                                                     |
| vC, conflicting volume            | 1080                                                                                | 695                                                                                 |                                                                                     |                                                                                     | 695                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             | 695                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 385                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 1052                                                                                | 641                                                                                 |                                                                                     |                                                                                     | 641                                                                                 |                                                                                     |
| tC, single (s)                    | 6.4                                                                                 | 6.2                                                                                 |                                                                                     |                                                                                     | 4.2                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                                 | 3.3                                                                                 |                                                                                     |                                                                                     | 2.3                                                                                 |                                                                                     |
| p0 queue free %                   | 100                                                                                 | 93                                                                                  |                                                                                     |                                                                                     | 98                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 437                                                                                 | 448                                                                                 |                                                                                     |                                                                                     | 845                                                                                 |                                                                                     |
| Direction, Lane #                 | WB 1                                                                                | NB 1                                                                                | SB 1                                                                                | SB 2                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 30                                                                                  | 695                                                                                 | 20                                                                                  | 345                                                                                 |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                   | 0                                                                                   | 20                                                                                  | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 30                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 448                                                                                 | 1700                                                                                | 845                                                                                 | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.07                                                                                | 0.41                                                                                | 0.02                                                                                | 0.20                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 1.7                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Control Delay (s)                 | 13.6                                                                                | 0.0                                                                                 | 9.4                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | B                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 13.6                                                                                | 0.0                                                                                 | 0.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                     |                                                                                     | 0.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                     |                                                                                     | 46.6%                                                                               | ICU Level of Service                                                                | A                                                                                   |                                                                                     |
| Analysis Period (min)             |                                                                                     |                                                                                     | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis 14: Site Driveway & St. James Avenue

Future Total AM Peak Hour

| Movement                          | EBT  | EBR   | WBL  | WBT                  | NBL  | NBR  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               | ↩    |       |      | ↩                    | ↩    |      |
| Traffic Volume (veh/h)            | 60   | 5     | 15   | 20                   | 10   | 55   |
| Future Volume (Veh/h)             | 60   | 5     | 15   | 20                   | 10   | 55   |
| Sign Control                      | Free |       |      | Free                 | Stop |      |
| Grade                             | 0%   |       |      | 0%                   | 0%   |      |
| Peak Hour Factor                  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 |
| Hourly flow rate (vph)            | 60   | 5     | 15   | 20                   | 10   | 55   |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (m)                    |      |       |      |                      |      |      |
| Walking Speed (m/s)               |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      |       |      |                      |      |      |
| Median type                       | None |       |      | None                 |      |      |
| Median storage (veh)              |      |       |      |                      |      |      |
| Upstream signal (m)               |      |       |      |                      |      |      |
| pX, platoon unblocked             |      |       |      |                      |      |      |
| vC, conflicting volume            |      |       | 65   |                      | 112  | 62   |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                |      |       | 65   |                      | 112  | 62   |
| tC, single (s)                    |      |       | 4.1  |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            |      |       | 2.2  |                      | 3.5  | 3.3  |
| p0 queue free %                   |      |       | 99   |                      | 99   | 95   |
| cM capacity (veh/h)               |      |       | 1550 |                      | 880  | 1008 |
| Direction, Lane #                 | EB 1 | WB 1  | NB 1 |                      |      |      |
| Volume Total                      | 65   | 35    | 65   |                      |      |      |
| Volume Left                       | 0    | 15    | 10   |                      |      |      |
| Volume Right                      | 5    | 0     | 55   |                      |      |      |
| cSH                               | 1700 | 1550  | 986  |                      |      |      |
| Volume to Capacity                | 0.04 | 0.01  | 0.07 |                      |      |      |
| Queue Length 95th (m)             | 0.0  | 0.2   | 1.7  |                      |      |      |
| Control Delay (s)                 | 0.0  | 3.2   | 8.9  |                      |      |      |
| Lane LOS                          |      | A     | A    |                      |      |      |
| Approach Delay (s)                | 0.0  | 3.2   | 8.9  |                      |      |      |
| Approach LOS                      |      |       | A    |                      |      |      |
| Intersection Summary              |      |       |      |                      |      |      |
| Average Delay                     |      |       | 4.2  |                      |      |      |
| Intersection Capacity Utilization |      | 19.2% |      | ICU Level of Service | A    |      |
| Analysis Period (min)             |      | 15    |      |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis 16: Dixie Road & Site Driveway

Future Total AM Peak Hour

| Movement                          | EBL  | EBR   | NBL  | NBT                  | SBT   | SBR  |
|-----------------------------------|------|-------|------|----------------------|-------|------|
| Lane Configurations               |      | ↩     |      | ↩                    | ↩     |      |
| Traffic Volume (veh/h)            | 0    | 25    | 0    | 600                  | 320   | 10   |
| Future Volume (Veh/h)             | 0    | 25    | 0    | 600                  | 320   | 10   |
| Sign Control                      | Stop |       |      | Free                 | Free  |      |
| Grade                             | 0%   |       |      | 0%                   | 0%    |      |
| Peak Hour Factor                  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00  | 1.00 |
| Hourly flow rate (vph)            | 0    | 25    | 0    | 600                  | 320   | 10   |
| Pedestrians                       |      |       |      |                      |       |      |
| Lane Width (m)                    |      |       |      |                      |       |      |
| Walking Speed (m/s)               |      |       |      |                      |       |      |
| Percent Blockage                  |      |       |      |                      |       |      |
| Right turn flare (veh)            |      |       |      |                      |       |      |
| Median type                       |      |       |      | TWLTL                | TWLTL |      |
| Median storage (veh)              |      |       |      | 2                    | 2     |      |
| Upstream signal (m)               |      |       |      | 95                   |       |      |
| pX, platoon unblocked             | 0.92 |       |      |                      |       |      |
| vC, conflicting volume            | 925  | 325   | 330  |                      |       |      |
| vC1, stage 1 conf vol             | 325  |       |      |                      |       |      |
| vC2, stage 2 conf vol             | 600  |       |      |                      |       |      |
| vCu, unblocked vol                | 878  | 325   | 330  |                      |       |      |
| tC, single (s)                    | 6.4  | 6.2   | 4.1  |                      |       |      |
| tC, 2 stage (s)                   | 5.4  |       |      |                      |       |      |
| tF (s)                            | 3.5  | 3.3   | 2.2  |                      |       |      |
| p0 queue free %                   | 100  | 97    | 100  |                      |       |      |
| cM capacity (veh/h)               | 495  | 721   | 1241 |                      |       |      |
| Direction, Lane #                 | EB 1 | NB 1  | SB 1 |                      |       |      |
| Volume Total                      | 25   | 600   | 330  |                      |       |      |
| Volume Left                       | 0    | 0     | 0    |                      |       |      |
| Volume Right                      | 25   | 0     | 10   |                      |       |      |
| cSH                               | 721  | 1700  | 1700 |                      |       |      |
| Volume to Capacity                | 0.03 | 0.35  | 0.19 |                      |       |      |
| Queue Length 95th (m)             | 0.9  | 0.0   | 0.0  |                      |       |      |
| Control Delay (s)                 | 10.2 | 0.0   | 0.0  |                      |       |      |
| Lane LOS                          |      | B     |      |                      |       |      |
| Approach Delay (s)                | 10.2 | 0.0   | 0.0  |                      |       |      |
| Approach LOS                      |      |       |      |                      |       |      |
| Intersection Summary              |      |       |      |                      |       |      |
| Average Delay                     |      |       | 0.3  |                      |       |      |
| Intersection Capacity Utilization |      | 34.9% |      | ICU Level of Service | A     |      |
| Analysis Period (min)             |      | 15    |      |                      |       |      |

### HCM Unsignalized Intersection Capacity Analysis 3: Dixie Road & St. James Avenue

Future Total PM Peak Hour

| Movement                          | EBL  | EBR  | NBL   | NBT  | SBT                  | SBR  |
|-----------------------------------|------|------|-------|------|----------------------|------|
| Lane Configurations               | W    |      | W     | W    | W                    |      |
| Traffic Volume (veh/h)            | 55   | 5    | 25    | 450  | 510                  | 80   |
| Future Volume (Veh/h)             | 55   | 5    | 25    | 450  | 510                  | 80   |
| Sign Control                      | Stop |      |       | Free | Free                 |      |
| Grade                             | 0%   |      |       | 0%   | 0%                   |      |
| Peak Hour Factor                  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 |
| Hourly flow rate (vph)            | 55   | 5    | 25    | 450  | 510                  | 80   |
| Pedestrians                       |      |      |       |      |                      |      |
| Lane Width (m)                    |      |      |       |      |                      |      |
| Walking Speed (m/s)               |      |      |       |      |                      |      |
| Percent Blockage                  |      |      |       |      |                      |      |
| Right turn flare (veh)            |      |      |       |      |                      |      |
| Median type                       |      |      |       | TWLT | TWLT                 |      |
| Median storage (veh)              |      |      |       | 2    | 2                    |      |
| Upstream signal (m)               |      |      |       | 166  |                      |      |
| pX, platoon unblocked             | 0.98 |      |       |      |                      |      |
| vC, conflicting volume            | 1050 | 550  | 590   |      |                      |      |
| vC1, stage 1 conf vol             | 550  |      |       |      |                      |      |
| vC2, stage 2 conf vol             | 500  |      |       |      |                      |      |
| vCu, unblocked vol                | 1040 | 550  | 590   |      |                      |      |
| tC, single (s)                    | 6.4  | 6.2  | 4.1   |      |                      |      |
| tC, 2 stage (s)                   | 5.4  |      |       |      |                      |      |
| tF (s)                            | 3.5  | 3.3  | 2.2   |      |                      |      |
| p0 queue free %                   | 88   | 99   | 97    |      |                      |      |
| cM capacity (veh/h)               | 464  | 539  | 995   |      |                      |      |
| Direction, Lane #                 | EB 1 | NB 1 | NB 2  | SB 1 |                      |      |
| Volume Total                      | 60   | 25   | 450   | 590  |                      |      |
| Volume Left                       | 55   | 25   | 0     | 0    |                      |      |
| Volume Right                      | 5    | 0    | 0     | 80   |                      |      |
| cSH                               | 469  | 995  | 1700  | 1700 |                      |      |
| Volume to Capacity                | 0.13 | 0.03 | 0.26  | 0.35 |                      |      |
| Queue Length 95th (m)             | 3.5  | 0.6  | 0.0   | 0.0  |                      |      |
| Control Delay (s)                 | 13.8 | 8.7  | 0.0   | 0.0  |                      |      |
| Lane LOS                          | B    | A    |       |      |                      |      |
| Approach Delay (s)                | 13.8 | 0.5  |       | 0.0  |                      |      |
| Approach LOS                      | B    |      |       |      |                      |      |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |
| Average Delay                     |      |      | 0.9   |      |                      |      |
| Intersection Capacity Utilization |      |      | 41.7% |      | ICU Level of Service | A    |
| Analysis Period (min)             |      |      | 15    |      |                      |      |

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### Queues 6: Lakeshore Road East & Dixie Road

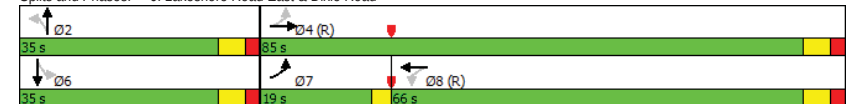
Future Total PM Peak Hour

| Lane Group             | EBL   | EBT   | WBT   | SBL   | SBT   | Ø2   |
|------------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations    | W     | W     | W     | W     | W     |      |
| Traffic Volume (vph)   | 230   | 525   | 1065  | 200   | 0     |      |
| Future Volume (vph)    | 230   | 525   | 1065  | 200   | 0     |      |
| Lane Group Flow (vph)  | 230   | 525   | 1310  | 200   | 290   |      |
| Turn Type              | pm+pt | NA    | NA    | Perm  | NA    |      |
| Protected Phases       | 7     | 4     | 8     |       | 6     | 2    |
| Permitted Phases       | 4     |       |       | 6     |       |      |
| Detector Phase         | 7     | 4     | 8     | 6     | 6     |      |
| Switch Phase           |       |       |       |       |       |      |
| Minimum Initial (s)    | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0  |
| Minimum Split (s)      | 9.5   | 31.3  | 31.3  | 29.3  | 29.3  | 24.3 |
| Total Split (s)        | 19.0  | 85.0  | 66.0  | 35.0  | 35.0  | 35.0 |
| Total Split (%)        | 15.8% | 70.8% | 55.0% | 29.2% | 29.2% | 29%  |
| Yellow Time (s)        | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0  |
| All-Red Time (s)       | 0.0   | 2.3   | 2.3   | 2.3   | 2.3   | 2.3  |
| Lost Time Adjust (s)   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  |
| Total Lost Time (s)    | 3.0   | 6.3   | 6.3   | 6.3   | 6.3   |      |
| Lead/Lag               | Lead  |       | Lag   |       |       |      |
| Lead-Lag Optimize?     | Yes   |       | Yes   |       |       |      |
| Recall Mode            | None  | C-Max | C-Max | None  | None  | None |
| v/c Ratio              | 0.68  | 0.21  | 0.63  | 0.78  | 0.55  |      |
| Control Delay          | 20.9  | 6.6   | 19.3  | 66.7  | 9.5   |      |
| Queue Delay            | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay            | 20.9  | 6.6   | 19.3  | 66.7  | 9.5   |      |
| Queue Length 50th (m)  | 15.1  | 20.8  | 106.1 | 47.5  | 2.1   |      |
| Queue Length 95th (m)  | 44.3  | 33.4  | 157.0 | 70.4  | 25.1  |      |
| Internal Link Dist (m) |       | 186.8 | 213.5 |       | 71.0  |      |
| Turn Bay Length (m)    | 30.0  |       |       | 90.0  |       |      |
| Base Capacity (vph)    | 384   | 2501  | 2069  | 336   | 599   |      |
| 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      | 0.60  | 0.21  | 0.63  | 0.60  | 0.48  |      |

#### Intersection Summary

Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 83 (69%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
Natural Cycle: 80  
Control Type: Actuated-Coordinated

Splits and Phases: 6: Lakeshore Road East & Dixie Road



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# HCM Signalized Intersection Capacity Analysis 6: Lakeshore Road East & Dixie Road

Future Total PM Peak Hour

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|-------|------|------|---------------------------|------|------|------|------|-------|------|------|
| Lane Configurations               | ↰     | ↰↱    |      | ↰    | ↰↱                        |      |      | ↰↱   |      | ↰     | ↰    |      |
| Traffic Volume (vph)              | 230   | 525   | 0    | 0    | 1065                      | 245  | 0    | 0    | 0    | 200   | 0    | 290  |
| Future Volume (vph)               | 230   | 525   | 0    | 0    | 1065                      | 245  | 0    | 0    | 0    | 200   | 0    | 290  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Lane Width                        | 3.5   | 3.7   | 3.7  | 3.5  | 3.7                       | 3.7  | 3.7  | 3.7  | 3.7  | 3.5   | 3.7  | 3.7  |
| Total Lost time (s)               | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Lane Util. Factor                 | 1.00  | 0.95  |      |      | 0.95                      |      |      |      |      | 1.00  | 1.00 |      |
| Frt                               | 1.00  | 1.00  |      |      | 0.97                      |      |      |      |      | 1.00  | 0.85 |      |
| Flt Protected                     | 0.95  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1767  | 3510  |      |      | 3513                      |      |      |      |      | 1767  | 1617 |      |
| Flt Permitted                     | 0.13  | 1.00  |      |      | 1.00                      |      |      |      |      | 0.76  | 1.00 |      |
| Satd. Flow (perm)                 | 243   | 3510  |      |      | 3513                      |      |      |      |      | 1409  | 1617 |      |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 230   | 525   | 0    | 0    | 1065                      | 245  | 0    | 0    | 0    | 200   | 0    | 290  |
| RTOR Reduction (vph)              | 0     | 0     | 0    | 0    | 14                        | 0    | 0    | 0    | 0    | 0     | 229  | 0    |
| Lane Group Flow (vph)             | 230   | 525   | 0    | 0    | 1296                      | 0    | 0    | 0    | 0    | 200   | 61   | 0    |
| Heavy Vehicles (%)                | 1%    | 4%    | 0%   | 0%   | 1%                        | 1%   | 0%   | 0%   | 0%   | 1%    | 0%   | 1%   |
| Turn Type                         | pm+pt | NA    |      | Perm | NA                        |      |      |      |      | Perm  | NA   |      |
| Protected Phases                  | 7     | 4     |      |      | 8                         |      |      | 2    |      |       | 6    |      |
| Permitted Phases                  | 4     |       |      | 8    |                           |      | 2    |      |      | 6     |      |      |
| Actuated Green, G (s)             | 85.5  | 85.5  |      |      | 70.2                      |      |      |      |      | 21.9  | 21.9 |      |
| Effective Green, g (s)            | 85.5  | 85.5  |      |      | 70.2                      |      |      |      |      | 21.9  | 21.9 |      |
| Actuated g/C Ratio                | 0.71  | 0.71  |      |      | 0.59                      |      |      |      |      | 0.18  | 0.18 |      |
| Clearance Time (s)                | 3.0   | 6.3   |      |      | 6.3                       |      |      |      |      | 6.3   | 6.3  |      |
| Vehicle Extension (s)             | 3.0   | 3.0   |      |      | 3.0                       |      |      |      |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 329   | 2500  |      |      | 2055                      |      |      |      |      | 257   | 295  |      |
| v/s Ratio Prot                    | c0.07 | 0.15  |      |      | 0.37                      |      |      |      |      |       | 0.04 |      |
| v/s Ratio Perm                    | c0.43 |       |      |      |                           |      |      |      |      | c0.14 |      |      |
| v/c Ratio                         | 0.70  | 0.21  |      |      | 0.63                      |      |      |      |      | 0.78  | 0.21 |      |
| Uniform Delay, d1                 | 13.4  | 5.8   |      |      | 16.4                      |      |      |      |      | 46.7  | 41.7 |      |
| Progression Factor                | 1.00  | 1.00  |      |      | 1.00                      |      |      |      |      | 1.00  | 1.00 |      |
| Incremental Delay, d2             | 6.4   | 0.2   |      |      | 1.5                       |      |      |      |      | 13.8  | 0.4  |      |
| Delay (s)                         | 19.8  | 6.0   |      |      | 17.9                      |      |      |      |      | 60.5  | 42.0 |      |
| Level of Service                  | B     | A     |      |      | B                         |      |      |      |      | E     | D    |      |
| Approach Delay (s)                |       | 10.2  |      |      | 17.9                      |      |      | 0.0  |      |       | 49.6 |      |
| Approach LOS                      |       | B     |      |      | B                         |      |      | A    |      |       | D    |      |
| <b>Intersection Summary</b>       |       |       |      |      |                           |      |      |      |      |       |      |      |
| HCM 2000 Control Delay            |       | 21.7  |      |      | HCM 2000 Level of Service |      |      | C    |      |       |      |      |
| HCM 2000 Volume to Capacity ratio |       | 0.73  |      |      |                           |      |      |      |      |       |      |      |
| Actuated Cycle Length (s)         |       | 120.0 |      |      | Sum of lost time (s)      |      |      | 15.6 |      |       |      |      |
| Intersection Capacity Utilization |       | 81.8% |      |      | ICU Level of Service      |      |      | D    |      |       |      |      |
| Analysis Period (min)             |       | 15    |      |      |                           |      |      |      |      |       |      |      |
| c Critical Lane Group             |       |       |      |      |                           |      |      |      |      |       |      |      |

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# HCM Unsignalized Intersection Capacity Analysis 7: Lakeshore Road East & Fergus Avenue

Future Total PM Peak Hour

| Movement                          | EBL                                                                                 | EBT                                                                                 | EBR  | WBL                                                                                 | WBT                                                                                 | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations               |  |  |      |  |  |      |      |  |      |      |  |      |
| Traffic Volume (veh/h)            | 35                                                                                  | 730                                                                                 | 5    | 5                                                                                   | 1335                                                                                | 15   | 15   | 0                                                                                   | 15   | 10   | 0                                                                                   | 35   |
| Future Volume (Veh/h)             | 35                                                                                  | 730                                                                                 | 5    | 5                                                                                   | 1335                                                                                | 15   | 15   | 0                                                                                   | 15   | 10   | 0                                                                                   | 35   |
| Sign Control                      | Free                                                                                |                                                                                     |      | Free                                                                                |                                                                                     |      | Stop |                                                                                     |      | Stop |                                                                                     |      |
| Grade                             | 0%                                                                                  |                                                                                     |      | 0%                                                                                  |                                                                                     |      | 0%   |                                                                                     |      | 0%   |                                                                                     |      |
| 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 |
| Hourly flow rate (vph)            | 35                                                                                  | 730                                                                                 | 5    | 5                                                                                   | 1335                                                                                | 15   | 15   | 0                                                                                   | 15   | 10   | 0                                                                                   | 35   |
| Pedestrians                       |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |
| Lane Width (m)                    |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |
| Walking Speed (m/s)               |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |
| Percent Blockage                  |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |
| Right turn flare (veh)            |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |
| Median type                       | TWLTL                                                                               |                                                                                     |      | None                                                                                |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |
| Median storage (veh)              | 2                                                                                   |                                                                                     |      | 211                                                                                 |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |
| Upstream signal (m)               |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |
| pX, platoon unblocked             | 0.77                                                                                |                                                                                     |      |                                                                                     |                                                                                     |      |      | 0.77                                                                                | 0.77 |      | 0.77                                                                                | 0.77 |
| vC, conflicting volume            | 1350                                                                                |                                                                                     |      |                                                                                     | 735                                                                                 |      |      |                                                                                     | 1515 | 2162 | 368                                                                                 | 1802 |
| vC1, stage 1 conf vol             |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      | 802  | 802                                                                                 | 1352 |
| vC2, stage 2 conf vol             |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      | 712  | 1360                                                                                | 450  |
| vCu, unblocked vol                | 869                                                                                 |                                                                                     |      |                                                                                     | 735                                                                                 |      |      |                                                                                     | 1082 | 1918 | 368                                                                                 | 1454 |
| tC, single (s)                    | 4.2                                                                                 |                                                                                     |      |                                                                                     | 4.1                                                                                 |      |      |                                                                                     | 7.5  | 6.5  | 6.9                                                                                 | 7.5  |
| tC, 2 stage (s)                   |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      | 6.5  | 5.5                                                                                 | 6.5  |
| tF (s)                            | 2.2                                                                                 |                                                                                     |      |                                                                                     | 2.2                                                                                 |      |      |                                                                                     | 3.5  | 4.0  | 3.3                                                                                 | 3.5  |
| p0 queue free %                   | 94                                                                                  |                                                                                     |      |                                                                                     | 99                                                                                  |      |      |                                                                                     | 95   | 100  | 98                                                                                  | 95   |
| cM capacity (veh/h)               | 587                                                                                 |                                                                                     |      |                                                                                     | 879                                                                                 |      |      |                                                                                     | 302  | 205  | 635                                                                                 | 220  |
| Direction, Lane #                 | EB 1                                                                                | EB 2                                                                                | EB 3 | WB 1                                                                                | WB 2                                                                                | WB 3 | NB 1 | SB 1                                                                                |      |      |                                                                                     |      |
| Volume Total                      | 35                                                                                  | 487                                                                                 | 248  | 5                                                                                   | 890                                                                                 | 460  | 30   | 45                                                                                  |      |      |                                                                                     |      |
| Volume Left                       | 35                                                                                  | 0                                                                                   | 0    | 5                                                                                   | 0                                                                                   | 0    | 15   | 10                                                                                  |      |      |                                                                                     |      |
| Volume Right                      | 0                                                                                   | 0                                                                                   | 5    | 0                                                                                   | 0                                                                                   | 15   | 15   | 35                                                                                  |      |      |                                                                                     |      |
| cSH                               | 587                                                                                 | 1700                                                                                | 1700 | 879                                                                                 | 1700                                                                                | 1700 | 409  | 518                                                                                 |      |      |                                                                                     |      |
| Volume to Capacity                | 0.06                                                                                | 0.29                                                                                | 0.15 | 0.01                                                                                | 0.52                                                                                | 0.27 | 0.07 | 0.09                                                                                |      |      |                                                                                     |      |
| Queue Length 95th (m)             | 1.5                                                                                 | 0.0                                                                                 | 0.0  | 0.1                                                                                 | 0.0                                                                                 | 0.0  | 1.9  | 2.3                                                                                 |      |      |                                                                                     |      |
| Control Delay (s)                 | 11.5                                                                                | 0.0                                                                                 | 0.0  | 9.1                                                                                 | 0.0                                                                                 | 0.0  | 14.5 | 12.6                                                                                |      |      |                                                                                     |      |
| Lane LOS                          | B                                                                                   |                                                                                     |      |                                                                                     | A                                                                                   |      |      |                                                                                     | B    | B    |                                                                                     |      |
| Approach Delay (s)                | 0.5                                                                                 |                                                                                     |      |                                                                                     | 0.0                                                                                 |      |      |                                                                                     | 14.5 | 12.6 |                                                                                     |      |
| Approach LOS                      |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      | B    | B                                                                                   |      |      |                                                                                     |      |
| Intersection Summary              |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |
| Average Delay                     |                                                                                     |                                                                                     |      | 0.7                                                                                 |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |
| Intersection Capacity Utilization |                                                                                     |                                                                                     |      | 47.6%                                                                               | ICU Level of Service                                                                |      |      |                                                                                     | A    |      |                                                                                     |      |
| Analysis Period (min)             |                                                                                     |                                                                                     |      | 15                                                                                  |                                                                                     |      |      |                                                                                     |      |      |                                                                                     |      |

1345 Lakeshore Road East  
BA Group - TCS

Synchro 9 Report  
P:\78\96\01 - Dixie-Lakeshore - 2018\Analysis\Synchro\Future Total\FT\_PM.syn

# HCM Unsignalized Intersection Capacity Analysis

## 8: Fergus Avenue & St. James Avenue

Future Total PM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 60                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 40                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 60                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 40                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |
| 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                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 60                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 5                                                                                 | 40                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (m)                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (m/s)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       | None                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (m)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 35                                                                                | 50                                                                                | 5                                                                                 | 30                                                                                | 30                                                                                | 25                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 45                                                                                |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 35                                                                                | 50                                                                                | 5                                                                                 | 30                                                                                | 30                                                                                | 25                                                                                | 5                                                                                 |                                                                                   |                                                                                   | 45                                                                                |                                                                                   |                                                                                   |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 94                                                                                | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 972                                                                               | 845                                                                               | 1084                                                                              | 984                                                                               | 867                                                                               | 1057                                                                              | 1630                                                                              |                                                                                   |                                                                                   | 1576                                                                              |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 0                                                                                 | 65                                                                                | 45                                                                                | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 0                                                                                 | 60                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 5                                                                                 | 40                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1700                                                                              | 989                                                                               | 1630                                                                              | 1576                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.07                                                                              | 0.00                                                                              | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (m)             | 0.0                                                                               | 1.7                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 0.0                                                                               | 8.9                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               | 8.9                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     | 5.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 13.6%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 11: Dixie Road & Orchard Hill Road

Future Total PM Peak Hour

| Movement                          | WBL                                                                                 | WBR                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Configurations               |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 5                                                                                   | 25                                                                                  | 505                                                                                 | 0                                                                                   | 25                                                                                  | 585                                                                                 |
| Future Volume (Veh/h)             | 5                                                                                   | 25                                                                                  | 505                                                                                 | 0                                                                                   | 25                                                                                  | 585                                                                                 |
| Sign Control                      | Stop                                                                                |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Hourly flow rate (vph)            | 5                                                                                   | 25                                                                                  | 505                                                                                 | 0                                                                                   | 25                                                                                  | 585                                                                                 |
| Pedestrians                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (m)                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (m/s)               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       | TWLTL                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               | 220                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             | 0.99                                                                                | 0.99                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| vC, conflicting volume            | 1140                                                                                | 505                                                                                 |                                                                                     |                                                                                     | 505                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             | 505                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 635                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 1137                                                                                | 496                                                                                 |                                                                                     |                                                                                     | 496                                                                                 |                                                                                     |
| tC, single (s)                    | 6.4                                                                                 | 6.2                                                                                 |                                                                                     |                                                                                     | 4.2                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                                 | 3.3                                                                                 |                                                                                     |                                                                                     | 2.3                                                                                 |                                                                                     |
| p0 queue free %                   | 99                                                                                  | 96                                                                                  |                                                                                     |                                                                                     | 98                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 433                                                                                 | 573                                                                                 |                                                                                     |                                                                                     | 1028                                                                                |                                                                                     |
| Direction, Lane #                 | WB 1                                                                                | NB 1                                                                                | SB 1                                                                                | SB 2                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 30                                                                                  | 505                                                                                 | 25                                                                                  | 585                                                                                 |                                                                                     |                                                                                     |
| Volume Left                       | 5                                                                                   | 0                                                                                   | 25                                                                                  | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 25                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 544                                                                                 | 1700                                                                                | 1028                                                                                | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.06                                                                                | 0.30                                                                                | 0.02                                                                                | 0.34                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 1.4                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Control Delay (s)                 | 12.0                                                                                | 0.0                                                                                 | 8.6                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | B                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 12.0                                                                                | 0.0                                                                                 | 0.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     | 0.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 40.8%                                                                               |                                                                                     |                                                                                     | ICU Level of Service                                                                |                                                                                     | A                                                                                   |
| Analysis Period (min)             | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis 14: Site Driveway & St. James Avenue

Future Total PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (veh/h)            | 30                                                                                | 10                                                                                | 45                                                                                | 60                                                                                | 5                                                                                 | 30                                                                                |
| Future Volume (Veh/h)             | 30                                                                                | 10                                                                                | 45                                                                                | 60                                                                                | 5                                                                                 | 30                                                                                |
| Sign Control                      | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              | Stop                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Hourly flow rate (vph)            | 30                                                                                | 10                                                                                | 45                                                                                | 60                                                                                | 5                                                                                 | 30                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (m)                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (m/s)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (m)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            |                                                                                   |                                                                                   | 40                                                                                |                                                                                   | 185                                                                               | 35                                                                                |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                |                                                                                   |                                                                                   | 40                                                                                |                                                                                   | 185                                                                               | 35                                                                                |
| tC, single (s)                    |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   | 6.4                                                                               | 6.2                                                                               |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   | 3.5                                                                               | 3.3                                                                               |
| p0 queue free %                   |                                                                                   |                                                                                   | 97                                                                                |                                                                                   | 99                                                                                | 97                                                                                |
| cM capacity (veh/h)               |                                                                                   |                                                                                   | 1583                                                                              |                                                                                   | 786                                                                               | 1044                                                                              |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 40                                                                                | 105                                                                               | 35                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 0                                                                                 | 45                                                                                | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 10                                                                                | 0                                                                                 | 30                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1700                                                                              | 1583                                                                              | 997                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.02                                                                              | 0.03                                                                              | 0.04                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (m)             | 0.0                                                                               | 0.7                                                                               | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 0.0                                                                               | 3.3                                                                               | 8.7                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          |                                                                                   | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               | 3.3                                                                               | 8.7                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 22.3%                                                                             | ICU Level of Service                                                              |                                                                                   | A                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis 16: Dixie Road & Site Driveway

Future Total PM Peak Hour

|                                   |      |       |      |                      |       |      |
|-----------------------------------|------|-------|------|----------------------|-------|------|
|                                   |      |       |      |                      |       |      |
| Movement                          | EBL  | EBR   | NBL  | NBT                  | SBT   | SBR  |
| Lane Configurations               |      |       |      |                      |       |      |
| Traffic Volume (veh/h)            | 0    | 15    | 0    | 475                  | 475   | 40   |
| Future Volume (Veh/h)             | 0    | 15    | 0    | 475                  | 475   | 40   |
| Sign Control                      | Stop |       |      | Free                 | Free  |      |
| Grade                             | 0%   |       |      | 0%                   | 0%    |      |
| Peak Hour Factor                  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00  | 1.00 |
| Hourly flow rate (vph)            | 0    | 15    | 0    | 475                  | 475   | 40   |
| Pedestrians                       |      |       |      |                      |       |      |
| Lane Width (m)                    |      |       |      |                      |       |      |
| Walking Speed (m/s)               |      |       |      |                      |       |      |
| Percent Blockage                  |      |       |      |                      |       |      |
| Right turn flare (veh)            |      |       |      |                      |       |      |
| Median type                       |      |       |      | TWLTL                | TWLTL |      |
| Median storage (veh)              |      |       |      | 2                    | 2     |      |
| Upstream signal (m)               |      |       |      | 95                   |       |      |
| pX, platoon unblocked             | 0.96 |       |      |                      |       |      |
| vC, conflicting volume            | 970  | 495   | 515  |                      |       |      |
| vC1, stage 1 conf vol             | 495  |       |      |                      |       |      |
| vC2, stage 2 conf vol             | 475  |       |      |                      |       |      |
| vCu, unblocked vol                | 950  | 495   | 515  |                      |       |      |
| tC, single (s)                    | 6.4  | 6.2   | 4.1  |                      |       |      |
| tC, 2 stage (s)                   | 5.4  |       |      |                      |       |      |
| tF (s)                            | 3.5  | 3.3   | 2.2  |                      |       |      |
| p0 queue free %                   | 100  | 97    | 100  |                      |       |      |
| cM capacity (veh/h)               | 497  | 579   | 1061 |                      |       |      |
| Direction, Lane #                 | EB 1 | NB 1  | SB 1 |                      |       |      |
| Volume Total                      | 15   | 475   | 515  |                      |       |      |
| Volume Left                       | 0    | 0     | 0    |                      |       |      |
| Volume Right                      | 15   | 0     | 40   |                      |       |      |
| cSH                               | 579  | 1700  | 1700 |                      |       |      |
| Volume to Capacity                | 0.03 | 0.28  | 0.30 |                      |       |      |
| Queue Length 95th (m)             | 0.6  | 0.0   | 0.0  |                      |       |      |
| Control Delay (s)                 | 11.4 | 0.0   | 0.0  |                      |       |      |
| Lane LOS                          | B    |       |      |                      |       |      |
| Approach Delay (s)                | 11.4 | 0.0   | 0.0  |                      |       |      |
| Approach LOS                      | B    |       |      |                      |       |      |
| Intersection Summary              |      |       |      |                      |       |      |
| Average Delay                     |      |       | 0.2  |                      |       |      |
| Intersection Capacity Utilization |      | 37.4% |      | ICU Level of Service |       | A    |
| Analysis Period (min)             |      |       | 15   |                      |       |      |

SimTraffic Performance Report  
Future Total AM Peak Hour

1345 Lakeshore Road East

3: Dixie Road & St. James Avenue Performance by movement

| Movement           | EBL  | EBT | EBR  | NBL | NBT | SBT | SBR | All |
|--------------------|------|-----|------|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.0  | 0.0 | 0.0  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Del/Veh (s)  | 19.6 | 0.6 | 19.0 | 3.5 | 0.4 | 0.3 | 0.1 | 1.9 |
| Stop Del/Veh (s)   | 18.1 | 0.2 | 19.3 | 1.7 | 0.0 | 0.0 | 0.0 | 1.5 |

6: Lakeshore Road East & Dixie Road Performance by movement

| Movement           | EBL  | EBT | WBT  | WBR  | SBL  | SBT | SBR | All  |
|--------------------|------|-----|------|------|------|-----|-----|------|
| Denied Del/Veh (s) | 0.0  | 0.0 | 0.1  | 0.3  | 0.0  | 0.0 | 0.0 | 0.1  |
| Total Del/Veh (s)  | 25.7 | 6.9 | 15.8 | 11.1 | 48.4 | 0.0 | 6.9 | 15.5 |
| Stop Del/Veh (s)   | 20.5 | 3.8 | 11.8 | 8.1  | 45.3 | 0.0 | 6.0 | 12.0 |

7: Lakeshore Road East & Fergus Avenue Performance by movement

| Movement           | EBL | EBT | EBR | WBL  | WBT | WBR | NBL  | NBR  | SBL  | SBT | SBR | All |
|--------------------|-----|-----|-----|------|-----|-----|------|------|------|-----|-----|-----|
| Denied Del/Veh (s) | 2.0 | 0.4 | 0.4 | 0.0  | 0.0 | 0.0 | 0.2  | 0.1  | 0.0  | 0.0 | 0.1 | 0.2 |
| Total Del/Veh (s)  | 5.7 | 0.7 | 0.5 | 12.3 | 1.9 | 1.4 | 44.6 | 16.4 | 12.3 | 1.0 | 7.9 | 2.2 |
| Stop Del/Veh (s)   | 3.8 | 0.0 | 0.0 | 8.4  | 0.3 | 0.5 | 42.4 | 16.1 | 10.4 | 0.2 | 7.2 | 1.1 |

8: Fergus Avenue & St. James Avenue Performance by movement

| Movement           | EBT | EBR | WBL | WBT | WBR | NBR | SBL | SBT | All |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| Total Del/Veh (s)  | 5.4 | 1.9 | 4.4 | 3.5 | 2.3 | 0.2 | 1.8 | 0.1 | 1.8 |
| Stop Del/Veh (s)   | 2.2 | 1.8 | 2.2 | 1.4 | 2.1 | 0.1 | 0.0 | 0.0 | 0.9 |

11: Dixie Road & Orchard Hill Road Performance by movement

| Movement           | WBR | NBT | SBL | SBT | All |
|--------------------|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.0 | 3.8 | 0.4 | 0.2 |
| Total Del/Veh (s)  | 5.7 | 0.4 | 5.4 | 0.3 | 0.7 |
| Stop Del/Veh (s)   | 5.1 | 0.1 | 3.5 | 0.0 | 0.3 |

14: Site Driveway & St. James Avenue Performance by movement

| Movement           | EBT | EBR | WBL | WBT | NBL | NBR | All |
|--------------------|-----|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 |
| Total Del/Veh (s)  | 0.5 | 0.2 | 1.5 | 0.5 | 4.0 | 2.7 | 1.4 |
| Stop Del/Veh (s)   | 0.0 | 0.0 | 0.2 | 0.2 | 2.8 | 2.4 | 0.8 |

SimTraffic Performance Report  
Future Total AM Peak Hour

1345 Lakeshore Road East

16: Dixie Road & Site Driveway Performance by movement

| Movement           | EBR | NBT | SBT | SBR | All |
|--------------------|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Del/Veh (s)  | 5.7 | 0.9 | 0.5 | 0.1 | 0.9 |
| Stop Del/Veh (s)   | 5.4 | 0.3 | 0.0 | 0.0 | 0.3 |

Total Network Performance

| Movement           | All  |
|--------------------|------|
| Denied Del/Veh (s) | 0.3  |
| Total Del/Veh (s)  | 17.5 |
| Stop Del/Veh (s)   | 12.4 |

Queuing and Blocking Report  
Future Total AM Peak Hour

1345 Lakeshore Road East

Intersection: 3: Dixie Road & St. James Avenue

| Movement              | EB   | NB   | SB   |
|-----------------------|------|------|------|
| Directions Served     | LR   | L    | TR   |
| Maximum Queue (m)     | 34.6 | 20.5 | 23.4 |
| Average Queue (m)     | 12.8 | 2.5  | 0.8  |
| 95th Queue (m)        | 25.0 | 11.8 | 8.0  |
| Link Distance (m)     | 47.2 |      | 33.7 |
| Upstream Blk Time (%) |      |      |      |
| Queuing Penalty (veh) |      |      |      |
| Storage Bay Dist (m)  |      | 36.0 |      |
| Storage Blk Time (%)  |      |      |      |
| Queuing Penalty (veh) |      |      |      |

Intersection: 6: Lakeshore Road East & Dixie Road

| Movement              | EB   | EB    | EB    | WB    | WB    | SB   | SB   |
|-----------------------|------|-------|-------|-------|-------|------|------|
| Directions Served     | L    | T     | TR    | T     | TR    | L    | TR   |
| Maximum Queue (m)     | 55.0 | 128.4 | 104.6 | 95.8  | 74.9  | 63.9 | 70.8 |
| Average Queue (m)     | 39.8 | 45.6  | 33.2  | 47.9  | 36.7  | 34.6 | 21.3 |
| 95th Queue (m)        | 60.1 | 106.6 | 73.1  | 74.7  | 67.5  | 57.0 | 41.2 |
| Link Distance (m)     |      | 191.8 | 191.8 | 225.1 | 225.1 |      | 69.7 |
| Upstream Blk Time (%) |      |       |       |       |       | 0    | 0    |
| Queuing Penalty (veh) |      |       |       |       |       | 0    | 0    |
| Storage Bay Dist (m)  | 30.0 |       |       |       |       | 90.0 |      |
| Storage Blk Time (%)  | 23   | 3     |       | 24    |       | 0    | 0    |
| Queuing Penalty (veh) | 90   | 13    |       | 0     |       | 0    | 0    |

Intersection: 7: Lakeshore Road East & Fergus Avenue

| Movement              | EB   | EB    | WB   | NB   | SB    |
|-----------------------|------|-------|------|------|-------|
| Directions Served     | L    | T     | L    | LTR  | LTR   |
| Maximum Queue (m)     | 8.6  | 6.4   | 23.2 | 26.7 | 21.4  |
| Average Queue (m)     | 1.2  | 0.7   | 10.8 | 14.7 | 10.3  |
| 95th Queue (m)        | 6.2  | 3.9   | 23.3 | 25.3 | 18.3  |
| Link Distance (m)     |      | 129.4 |      | 76.8 | 141.0 |
| Upstream Blk Time (%) |      |       |      |      |       |
| Queuing Penalty (veh) |      |       |      |      |       |
| Storage Bay Dist (m)  | 30.0 |       | 30.0 |      |       |
| Storage Blk Time (%)  |      |       |      |      |       |
| Queuing Penalty (veh) |      |       |      |      |       |

Queuing and Blocking Report  
Future Total AM Peak Hour

1345 Lakeshore Road East

Intersection: 8: Fergus Avenue & St. James Avenue

| Movement              | EB    | WB    |
|-----------------------|-------|-------|
| Directions Served     | LTR   | LTR   |
| Maximum Queue (m)     | 9.0   | 20.2  |
| Average Queue (m)     | 1.8   | 6.0   |
| 95th Queue (m)        | 7.6   | 14.8  |
| Link Distance (m)     | 111.7 | 134.4 |
| Upstream Blk Time (%) |       |       |
| Queuing Penalty (veh) |       |       |
| Storage Bay Dist (m)  |       |       |
| Storage Blk Time (%)  |       |       |
| Queuing Penalty (veh) |       |       |

Intersection: 11: Dixie Road & Orchard Hill Road

| Movement              | WB    | SB   |
|-----------------------|-------|------|
| Directions Served     | LR    | L    |
| Maximum Queue (m)     | 15.6  | 9.3  |
| Average Queue (m)     | 7.1   | 3.5  |
| 95th Queue (m)        | 13.7  | 10.7 |
| Link Distance (m)     | 199.9 |      |
| Upstream Blk Time (%) |       |      |
| Queuing Penalty (veh) |       |      |
| Storage Bay Dist (m)  | 50.0  |      |
| Storage Blk Time (%)  |       |      |
| Queuing Penalty (veh) |       |      |

Intersection: 14: Site Driveway & St. James Avenue

| Movement              | WB   | NB   |
|-----------------------|------|------|
| Directions Served     | LT   | LR   |
| Maximum Queue (m)     | 9.2  | 15.8 |
| Average Queue (m)     | 0.3  | 7.2  |
| 95th Queue (m)        | 3.1  | 14.4 |
| Link Distance (m)     | 47.2 | 36.1 |
| Upstream Blk Time (%) |      |      |
| Queuing Penalty (veh) |      |      |
| Storage Bay Dist (m)  |      |      |
| Storage Blk Time (%)  |      |      |
| Queuing Penalty (veh) |      |      |

Queuing and Blocking Report  
Future Total AM Peak Hour

1345 Lakeshore Road East

Intersection: 16: Dixie Road & Site Driveway

| Movement              | EB   |
|-----------------------|------|
| Directions Served     | R    |
| Maximum Queue (m)     | 15.4 |
| Average Queue (m)     | 5.4  |
| 95th Queue (m)        | 13.5 |
| Link Distance (m)     | 51.5 |
| Upstream Blk Time (%) |      |
| Queuing Penalty (veh) |      |
| Storage Bay Dist (m)  |      |
| Storage Blk Time (%)  |      |
| Queuing Penalty (veh) |      |

Network Summary

Network wide Queuing Penalty: 102

SimTraffic Performance Report  
Future Total PM Peak Hour

1345 Lakeshore Road East

3: Dixie Road & St. James Avenue Performance by movement

| Movement           | EBL  | EBR | NBL | NBT | SBT | SBR | All |
|--------------------|------|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.0  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Del/Veh (s)  | 14.7 | 2.5 | 4.8 | 0.3 | 0.8 | 0.2 | 1.4 |
| Stop Del/Veh (s)   | 13.2 | 2.1 | 3.0 | 0.0 | 0.0 | 0.0 | 0.8 |

6: Lakeshore Road East & Dixie Road Performance by movement

| Movement           | EBL  | EBT | WBT  | WBR  | SBL  | SBR  | All  |
|--------------------|------|-----|------|------|------|------|------|
| Denied Del/Veh (s) | 0.0  | 0.0 | 0.2  | 0.3  | 0.0  | 0.0  | 0.1  |
| Total Del/Veh (s)  | 38.0 | 8.2 | 18.0 | 14.3 | 51.4 | 14.2 | 19.4 |
| Stop Del/Veh (s)   | 34.1 | 5.6 | 11.7 | 9.7  | 47.5 | 13.1 | 15.0 |

7: Lakeshore Road East & Fergus Avenue Performance by movement

| Movement           | EBL  | EBT | EBR | WBL | WBT | WBR | NBL  | NBR | SBL  | SBT | SBR  | All |
|--------------------|------|-----|-----|-----|-----|-----|------|-----|------|-----|------|-----|
| Denied Del/Veh (s) | 3.2  | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2  | 0.1 | 0.0  | 0.0 | 0.0  | 0.1 |
| Total Del/Veh (s)  | 14.2 | 0.3 | 0.1 | 5.6 | 2.6 | 1.4 | 28.2 | 4.1 | 27.7 | 0.6 | 10.9 | 2.4 |
| Stop Del/Veh (s)   | 12.3 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 26.2 | 3.5 | 25.1 | 0.1 | 10.3 | 0.8 |

8: Fergus Avenue & St. James Avenue Performance by movement

| Movement           | WBL | WBR | NBT | NBR | SBT | All |
|--------------------|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Del/Veh (s)  | 4.3 | 2.0 | 0.5 | 0.6 | 0.0 | 2.6 |
| Stop Del/Veh (s)   | 2.2 | 1.8 | 0.2 | 0.3 | 0.0 | 1.3 |

11: Dixie Road & Orchard Hill Road Performance by movement

| Movement           | WBL  | WBR | NBT | SBL | SBT | All |
|--------------------|------|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1  | 0.1 | 0.0 | 3.1 | 0.6 | 0.4 |
| Total Del/Veh (s)  | 14.5 | 3.3 | 0.3 | 4.9 | 0.6 | 0.6 |
| Stop Del/Veh (s)   | 12.8 | 3.1 | 0.1 | 2.6 | 0.0 | 0.2 |

14: Site Driveway & St. James Avenue Performance by movement

| Movement           | EBT | EBR | WBL | WBT | NBL | NBR | All |
|--------------------|-----|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Total Del/Veh (s)  | 0.3 | 0.1 | 1.4 | 0.4 | 3.3 | 2.6 | 0.9 |
| Stop Del/Veh (s)   | 0.0 | 0.0 | 0.1 | 0.1 | 2.1 | 2.3 | 0.4 |

SimTraffic Performance Report  
Future Total PM Peak Hour

1345 Lakeshore Road East

16: Dixie Road & Site Driveway Performance by movement

| Movement           | EBR | NBT | SBT | SBR | All |
|--------------------|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Del/Veh (s)  | 3.4 | 0.8 | 1.4 | 1.2 | 1.1 |
| Stop Del/Veh (s)   | 3.2 | 0.2 | 0.3 | 0.7 | 0.3 |

Total Network Performance

| Movement           | EBR | NBT | SBT | SBR  | All |
|--------------------|-----|-----|-----|------|-----|
| Denied Del/Veh (s) |     |     |     | 0.4  |     |
| Total Del/Veh (s)  |     |     |     | 21.5 |     |
| Stop Del/Veh (s)   |     |     |     | 14.9 |     |

Queuing and Blocking Report  
Future Total PM Peak Hour

1345 Lakeshore Road East

Intersection: 3: Dixie Road & St. James Avenue

| Movement              | EB   | NB  |
|-----------------------|------|-----|
| Directions Served     | LR   | L   |
| Maximum Queue (m)     | 26.8 | 9.3 |
| Average Queue (m)     | 10.2 | 2.8 |
| 95th Queue (m)        | 19.5 | 9.6 |
| Link Distance (m)     | 47.2 |     |
| Upstream Blk Time (%) |      |     |
| Queuing Penalty (veh) |      |     |
| Storage Bay Dist (m)  | 36.0 |     |
| Storage Blk Time (%)  |      |     |
| Queuing Penalty (veh) |      |     |

Intersection: 6: Lakeshore Road East & Dixie Road

| Movement              | EB   | EB    | EB    | WB    | WB    | SB   | SB   |
|-----------------------|------|-------|-------|-------|-------|------|------|
| Directions Served     | L    | T     | TR    | T     | TR    | L    | TR   |
| Maximum Queue (m)     | 54.8 | 109.3 | 101.0 | 121.9 | 121.5 | 69.5 | 82.6 |
| Average Queue (m)     | 34.4 | 35.3  | 24.2  | 69.2  | 64.3  | 42.9 | 32.9 |
| 95th Queue (m)        | 57.2 | 77.0  | 55.9  | 115.7 | 108.6 | 68.8 | 67.2 |
| Link Distance (m)     |      | 191.8 | 191.8 | 225.1 | 225.1 |      | 69.7 |
| Upstream Blk Time (%) |      |       |       |       |       | 1    | 1    |
| Queuing Penalty (veh) |      |       |       |       |       | 0    | 7    |
| Storage Bay Dist (m)  | 30.0 |       |       |       |       | 90.0 |      |
| Storage Blk Time (%)  | 22   | 5     |       | 26    |       | 1    | 1    |
| Queuing Penalty (veh) | 58   | 10    |       | 0     |       | 3    | 3    |

Intersection: 7: Lakeshore Road East & Fergus Avenue

| Movement              | EB   | NB   | SB    |
|-----------------------|------|------|-------|
| Directions Served     | L    | LTR  | LTR   |
| Maximum Queue (m)     | 14.1 | 14.4 | 21.5  |
| Average Queue (m)     | 5.2  | 6.6  | 8.2   |
| 95th Queue (m)        | 13.0 | 13.2 | 15.7  |
| Link Distance (m)     |      | 76.8 | 141.0 |
| Upstream Blk Time (%) |      |      |       |
| Queuing Penalty (veh) |      |      |       |
| Storage Bay Dist (m)  | 30.0 |      |       |
| Storage Blk Time (%)  |      |      |       |
| Queuing Penalty (veh) |      |      |       |

Queuing and Blocking Report  
Future Total PM Peak Hour

1345 Lakeshore Road East

Intersection: 8: Fergus Avenue & St. James Avenue

| Movement              | WB    |
|-----------------------|-------|
| Directions Served     | LTR   |
| Maximum Queue (m)     | 9.2   |
| Average Queue (m)     | 8.3   |
| 95th Queue (m)        | 12.1  |
| Link Distance (m)     | 134.4 |
| Upstream Blk Time (%) |       |
| Queuing Penalty (veh) |       |
| Storage Bay Dist (m)  |       |
| Storage Blk Time (%)  |       |
| Queuing Penalty (veh) |       |

Intersection: 11: Dixie Road & Orchard Hill Road

| Movement              | WB    | SB  |
|-----------------------|-------|-----|
| Directions Served     | LR    | L   |
| Maximum Queue (m)     | 9.2   | 9.3 |
| Average Queue (m)     | 4.6   | 2.5 |
| 95th Queue (m)        | 11.7  | 9.0 |
| Link Distance (m)     | 199.9 |     |
| Upstream Blk Time (%) |       |     |
| Queuing Penalty (veh) |       |     |
| Storage Bay Dist (m)  | 50.0  |     |
| Storage Blk Time (%)  |       |     |
| Queuing Penalty (veh) |       |     |

Intersection: 14: Site Driveway & St. James Avenue

| Movement              | WB   | NB   |
|-----------------------|------|------|
| Directions Served     | LT   | LR   |
| Maximum Queue (m)     | 9.3  | 15.0 |
| Average Queue (m)     | 0.3  | 6.0  |
| 95th Queue (m)        | 3.2  | 13.4 |
| Link Distance (m)     | 47.2 | 36.1 |
| Upstream Blk Time (%) |      |      |
| Queuing Penalty (veh) |      |      |
| Storage Bay Dist (m)  |      |      |
| Storage Blk Time (%)  |      |      |
| Queuing Penalty (veh) |      |      |

Queuing and Blocking Report  
Future Total PM Peak Hour

1345 Lakeshore Road East

Intersection: 16: Dixie Road & Site Driveway

| Movement              | EB   | SB   |
|-----------------------|------|------|
| Directions Served     | R    | TR   |
| Maximum Queue (m)     | 8.8  | 46.7 |
| Average Queue (m)     | 3.4  | 3.1  |
| 95th Queue (m)        | 10.4 | 19.4 |
| Link Distance (m)     | 51.5 | 55.0 |
| Upstream Blk Time (%) |      |      |
| Queuing Penalty (veh) |      |      |
| Storage Bay Dist (m)  |      |      |
| Storage Blk Time (%)  |      |      |
| Queuing Penalty (veh) |      |      |

Network Summary

Network wide Queuing Penalty: 81

## **APPENDIX G: Existing Signal Timing Plans**



# REGIONAL MUNICIPALITY OF PEEL

## Traffic Signal Timing Parameters

| Database Date                 |                                   | April 5, 2018                  |                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |              | Prepared Date: |                                 | April 5, 2018 |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
|-------------------------------|-----------------------------------|--------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|---------------------------------|---------------|--------|------------|------|---------------------|---------------|---------------|----|-----|------|-------------------------------|-----|-----|------|---------------|----|-----|------|
| Database Rev                  |                                   | iNet                           |                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |              | Completed By:  |                                 | RS            |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| Timing Card / Field rev       |                                   | iNet                           |                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |              | Checked By:    |                                 | JA            |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| Location:                     |                                   | Cawthra Road at Lakeshore Road |                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                | TIME PERIOD                     |               |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| Phase #                       | Direction                         | Vehicle Minimum (sec.)         | Pedestrian Minimum (sec.) |                                                                                                                                                                                                                                                                                                                                                                                                                           | Amber (sec.) | All Red (sec.) | (sec.)<br>(Green+Amber+All Red) |               |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
|                               |                                   |                                | WALK                      | FDWALK                                                                                                                                                                                                                                                                                                                                                                                                                    |              |                | AM MAX                          | OFF MAX       | PM MAX |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 1                             | NIU                               |                                |                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                | 0.0                             | 0.0           | 0.0    |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 2                             | EB Green - Lakeshore Road         | 8.0                            | 10.0                      | 15.0                                                                                                                                                                                                                                                                                                                                                                                                                      | 4.0          | 2.3            | 85.0                            | 65.0          | 85.0   |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 3                             | NIU                               |                                |                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                | 0.0                             | 0.0           | 0.0    |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 4                             | NB Green - Dixie Road             | 8.0                            | -                         | -                                                                                                                                                                                                                                                                                                                                                                                                                         | 4.0          | 2.3            | 35.0                            | 35.0          | 35.0   |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 5                             | EB P.P. LT Arrow - Lakeshore Road | 5.0                            | -                         | -                                                                                                                                                                                                                                                                                                                                                                                                                         | 3.0          | -              | 24.0                            | 20.0          | 19.0   |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 6                             | WB Green - Lakeshore Road         | 8.0                            | 10.0                      | 15.0                                                                                                                                                                                                                                                                                                                                                                                                                      | 4.0          | 2.3            | 61.0                            | 45.0          | 66.0   |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 7                             | NIU                               |                                |                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                | 0.0                             | 0.0           | 0.0    |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 8                             | SB Green - Dixie Road             | 8.0                            | 9.0                       | 14.0                                                                                                                                                                                                                                                                                                                                                                                                                      | 4.0          | 2.3            | 35.0                            | 35.0          | 35.0   |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
|                               |                                   |                                |                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                |                                 |               |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| System Control                |                                   | Yes                            |                           | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>TIME (M-F)</th> <th>PEAK</th> <th>CYCLE LENGTH (sec.)</th> <th>OFFSET (sec.)</th> </tr> <tr> <td>06:00 - 09:30</td> <td>AM</td> <td>120</td> <td>83.0</td> </tr> <tr> <td>9:30 - 15:00<br/>19:30 - 00:00</td> <td>OFF</td> <td>100</td> <td>58.0</td> </tr> <tr> <td>15:00 - 19:30</td> <td>PM</td> <td>120</td> <td>83.0</td> </tr> </table> |              |                |                                 |               |        | TIME (M-F) | PEAK | CYCLE LENGTH (sec.) | OFFSET (sec.) | 06:00 - 09:30 | AM | 120 | 83.0 | 9:30 - 15:00<br>19:30 - 00:00 | OFF | 100 | 58.0 | 15:00 - 19:30 | PM | 120 | 83.0 |
| TIME (M-F)                    | PEAK                              | CYCLE LENGTH (sec.)            | OFFSET (sec.)             |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                |                                 |               |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 06:00 - 09:30                 | AM                                | 120                            | 83.0                      |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                |                                 |               |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 9:30 - 15:00<br>19:30 - 00:00 | OFF                               | 100                            | 58.0                      |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                |                                 |               |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| 15:00 - 19:30                 | PM                                | 120                            | 83.0                      |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                |                                 |               |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| Local Control                 |                                   | No                             |                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                |                                 |               |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |
| Semi-Actuated Mode            |                                   | Yes                            |                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                |                                 |               |        |            |      |                     |               |               |    |     |      |                               |     |     |      |               |    |     |      |