# 4099 Erin Mills Parkway
# Mississauga
# Proposed Mixed-Use Development

Urban Transportation Considerations

OPA and ZBA Application

Prepared For: QueensCorp (Erin Mills) Inc.

September 2022

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# 1.0 INTRODUCTION

BA Group has been retained by Queenscorp (Erin Mills) Inc. to provide transportation consulting services for a proposed mixed-use development located at 4099 Erin Mills Parkway (hereafter referred to as the “site”). The site is located at the southeast corner of the Erin Mills Parkway and Folkway Drive intersection in the City of Mississauga. The site is bounded by Folkway Drive in the north, Sawmill Valley Drive in the east, Farrier Circuit in the south, and Erin Mills Parkway in the west. This report has been prepared in relation to an Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) application being made to the City of Mississauga for the proposed redevelopment of the site.

A terms of reference (**Appendix J**) for the scope of work for the transportation report was approved by both the City of Mississauga and the Region of Peel.

## 1.1 EXISTING SITE

The site is currently occupied by a retail plaza with approximately 6,692 $m^2$ GFA, surrounded by surface parking inclusive of 328 spaces. Vehicle access to the existing site is provided by a right-in/right-out access on Erin Mills Parkway at the south end of the site and a full access at Folkway Drive, approximately 80 metres east of Erin Mills Parkway.

The site location and context are illustrated in **Figure 1** and **Figure 2** , respectfully.

## 1.2 PROPOSED DEVELOPMENT

### 1.2.1 Summary of Development Proposal

As part of the proposed development, the existing retail plaza on the site will be demolished and replaced with 5 buildings, with a total of 591 residential condominium units and 776 $m^2$ GFA of retail, and 7 stacked townhouses with 112 residential units. The total number of residential units proposed for the site (condominium units plus stacked townhouses) is 703 units.

Parking for the development will be located in a 2-level below-grade parking facility, with some at-grade parking for the retail component and visitors to the site.

### 1.2.2 Site Access and Circulation

Vehicle access to the site is proposed via the existing right-in/right out access on Erin Mills Parkway, the existing full access on Folkway Drive and a proposed new full access on Sawmill Valley Drive, approximately 82 metres south of Folkway Drive.

A summary of the development proposal is provided in **Table 1** and illustrated in **Figure 3**.

## TABLE 1 DEVELOPMENT PROPOSAL SUMMARY

| Use | | Development Proposal | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | | Building A | Building B | Building C | Building D | Building E | Townhome Apartments | |
| | Residential Units (Apartment Condos) | 197 | 142 | 80 | 95 | 77 | **112** | **703 units** |
| | | **591** | | | | | | |
| | Retail | 411 | | - | 365 | - | - | **776 m² GFA** |
| | | | | | | | | |
| | Vehicle Parking Spaces | Resident | | | 773 | | | **914 spaces** |
| | | Non-Resident | | | 141 | | | |
| | Bicycle Parking Spaces | Long-Term | | | 422 | | | **460 spaces** |
| | | Short-Term | | | 38 | | | |
| | Loading Spaces | 1 | 1 | 1 | 1 | 1 | -- | **5 spaces** |
| | Access | Access points are proposed at the existing right-in/right-out on Erin Mills Parkway, the existing full access on Folkway Drive and a new full access at Sawmill Valley Drive. | | | | | | |

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**FIGURE 1 SITE LOCATION**

BA GROUP 8143-01

4099 ERIN MILLS PARKWAY

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**FIGURE 2 SITE CONTEXT**

BA GROUP 8143-01

4099 ERIN MILLS PARKWAY

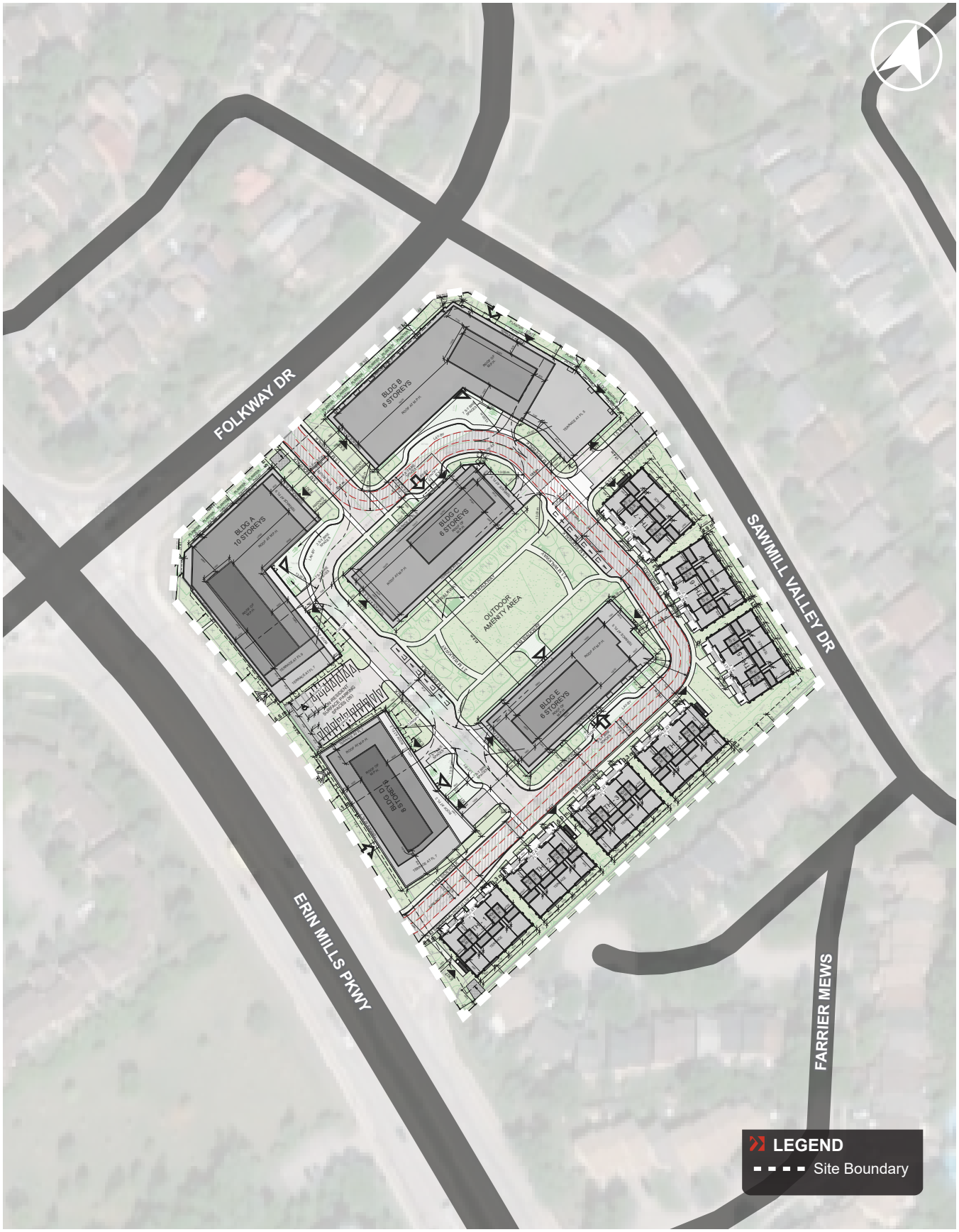


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**FIGURE 3 DEVELOPMENT PROPOSAL**

# 2.0 TRANSPORTATION CONTEXT

## 2.1 EXISTING AREA ROAD NETWORK

A description of the existing road network surrounding the site is provided below. The existing area road network is illustrated in **Figure 4**.

**Erin Mills Parkway** is a regional arterial road and extends from Mississauga Road in the north-west to Queen Elizabeth Way in the south-east where it then continues further south-east as Southdown Road. In the vicinity of the site, Erin Mills Parkway has a 6-lane cross section, with 3 lanes traveling in each direction. At its intersection with Folkway Drive, dedicated left-turn and right-turn lanes are provided. The posted speed limit on Erin Mills Parkway is 70 km/h.

**Folkway Drive** is a minor collector road and extends from Burnhamthorpe Road West in the west to Sawmill Valley Drive in the east. Folkway Drive is bounded by residential single-family homes. In the vicinity of the site, Folkway Drive has a 2-lane cross section, with 1 lane traveling in each direction. The posted speed limit on Folkway Drive is 40 km/h.

**Sawmill Valley Drive** is a minor collector and extends from Folkway Drive in the north to Mississauga Road in the south. Sawmill Valley Drive is bounded by residential single-family homes. In the vicinity of the site, Sawmill Valley Drive has a 2-lane cross section, with 1 lane traveling in each direction, and allows for curbside parking on the west side of the street. The posted speed limit on Sawmill Valley Drive is 40 km/h.

**Burnhamthorpe Road West** is an arterial road that extends from the western edge of Mississauga to Hurontario Street in the east where it then continues further as Burnhamthorpe Road East. The Burnhamthorpe Road West and Erin Mills Parkway intersection is located approximately 700 metres southwest of the site. In the vicinity of the site, Burnhamthorpe Road West has a 4-lane cross section, with 2 lanes traveling in each direction. At its intersection with Erin Mills Parkway, dedicated left-turn and right-turn lanes are provided. The posted speed limit on Burnhamthorpe Road East is 60 km/h.

Existing lane configurations and traffic control are illustrated on **Figure 5**. Future lane configurations and traffic control are illustrated on **Figure 6**.

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**FIGURE 4 EXISTING AREA ROAD NETWORK**

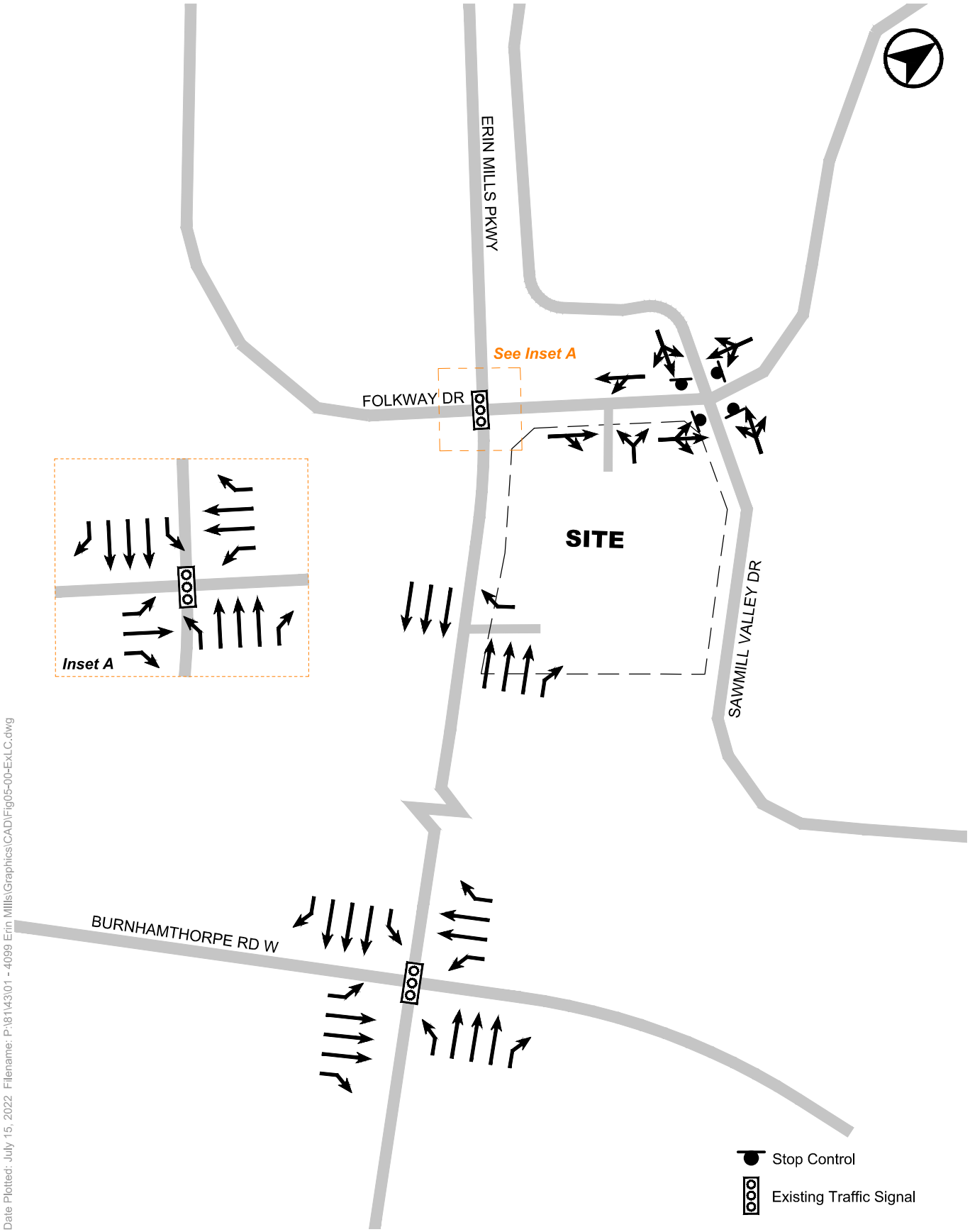


**FIGURE 5 EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL**

**FIGURE 6 FUTURE LANE CONFIGURATION AND TRAFFIC CONTROL**

## 2.2 AREA TRANSIT NETWORK

### 2.2.1 Existing Transit Network

The site is located in an area with a high level of transit accessibility with major bus routes operating on Erin Mills Parkway, Burnhamthorpe Road West and Highway 403. Existing bus stops in the area serve Mississauga Transitway (MiWay) Bus Route 1/1C (Dundas), Bus Route 29 (Park Royal-Homelands), Bus Route 48 (Erin Mills), and Bus Route 110 (University Express). The site is also located within proximity to two transit hubs, Erin Mills Transitway Station and South Common Centre Terminal. The closest bus stops to the site are located adjacent to the site at the corner of Erin Mills Parkway / Folkway Drive.

The existing transit context is provided in **Table 2** and illustrated in **Figure 7**.

## TABLE 2 EXISTING AREA TRANSIT

| | Service Name | Peak Period Headways | Closest Stop | Route Description |
|---|---|---|---|---|
| Bus Services | 29 Park Royal-Homelands | 25 to 30 minutes | Erin Mills Parkway / Folkway Dr (adjacent to site) | The 29 Park Royal-Homelands generally operates in a north-south direction along Erin Mills Parkway, and Glen Erin Drive between Erin Mills Transitway Station and the area of Clarkson GO Station. One single service is operated, which operates all day every day. |
| Bus Services | 48 Erin Mills | 27 minutes | Erin Mills Parkway / Folkway Dr (adjacent to site) | The 48 Erin Mills generally operates in a north-south direction along Erin Mills Parkway between Meadowvale Town Centre and South Common Centre. |
| Bus Services | 110 University Express | 15 to 17 minutes | Erin Mills Parkway / Folkway Dr (adjacent to site) | The 110 University Express generally operates in a north-south direction between Clarkson GO station and Erin Mills Transitway Station and in an east-west direction along Highway 403 to City Centre Transit Terminal. Two services are operated, the MiExpress Route (Clarkson Go to Erin Mills Station) operates on weekdays and the Mississauga Transit Way (Erin Mills Station to City Centre Transit Terminal) operates all day every day. |
| Bus Services | 1C Dundas-Collegeway | 10 to 15 minutes | Burnhamthope Rd W / Erin Mills Parkway (500 m) | The 1/1C Dundas generally operates in an east-west direction along Dundas Street. Route 1 (Dundas) operates between Lair Road/Ridgeway Drive to the west and Islington Subway Station on the Toronto Transit Commission (TTC) Subway Line 2 (Bloor-Danforth) to the east. Route 1C (Dundas-Collegeway operates between South Common Centre and Islington Subway Station. Buses operate during the weekday morning and afternoon peak hours |
| Transit Hubs | Erin Mills Transitway Station | - | Erin Mills Parkway / Highway 403 (1.4 km) | Erin Mills Station is part of the 18 km Mississauga Transitway. It's located northwest of the Erin Mills Parkway/Highway 403 interchange. Mississauga Transitway is a dedicated bus corridor which has 12 stations running from east to west across Mississauga. It begins from Winston Churchill Boulevard and ends at Renforth Drive. Available routes at this station include the 29,46,48,109,110 and GO transit connections. |
| Transit Hubs | South Common Centre Terminal | - | Burnhamthorpe Rd W / Erin Mills Parkway (1 km) | The South Common Centre terminal is located just outside of South Common Centre and the nearby South Common Community Centre.<br>Available routes at this terminal include the 1C, 13,26,29,36,48,101, 110 and Oakville transit connections. |

### 2.2.2 Planned Transit Improvements

**Dundas Street Bus Rapid Transit**

The Dundas Street Bus Rapid Transit (BRT) is a higher order rapid transit service that will operate along Dundas Street from Hamilton (Highway 6) to Kipling Transit Hub in the City of Toronto, linking Etobicoke and Mississauga city centres. More than 20 kilometres of the 48 kilometre transit project will operate in bus lanes or in a dedicated right-of-way, separate from other traffic allowing for faster and more reliable transit connections. The Dundas Street BRT is expected to operate with headways in the order of 5 minutes during peak travel periods, providing better connections to the TTC, Viva Rapid Transit, MiWay, Oakville Transit, Burlington Transit, Hamilton Street Rail (HSR), Hurontario Light Rail Transit (LRT) and GO Transit routes.

The Mississauga segment of the Dundas Street BRT is in development with the city's Dundas Connects Master Plan. The Dundas Connects Master Plan was endorsed by City Council on June 18, 2018 and it establishes a vision for the future of Dundas Street, supporting major improvements to transportation, land use and the public realm along the 19.5 kilometre corridor.

Details have not been finalized along the Mississauga West corridor of the BRT, although the closest stop to the site will likely be at Erin Mills Parkway, which is located approximately 2.4 kilometres south of the site. The future stop will be an at-grade station located at the intersection of Dundas Street West and Erin Mills Parkway. This new transit stop will significantly enhance transit accessibility of the corridor and the site area, in particular providing a viable and attractive mode for prospective residents, employees, and visitors, which will reduce the extent to which people travel using a car.

The planned transit improvements in the area of the site are illustrated in **Figure 8**.

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**FIGURE 7 EXISTING AREA TRANSIT NETWORK**

**FIGURE 8 FUTURE AREA TRANSIT NETWORK**

## 2.3 AREA CYCLING NETWORK

### 2.3.1 Existing Cycling Network

Bicycle facilities in the area are currently limited to off street trail networks in Arbour Green Park, approximately 50 meters south-west of the site. Along sections of Burnhamthorpe Road (approximately 500 metres south of the site), multi-use trails are provided on the north side of the road for pedestrians and cyclists. The most proximate dedicated bicycle lanes are located along South Millway (approximately 900 metres south-east of the site) which provides a direct east-west travel route between The Collegeway and Erin Mills Parkway.

The existing area cycling network is illustrated in **Figure 9.**

### 2.3.2 Planned Cycling Network

On July 4, 2018 Mississauga City Council adopted a “2018 Cycling Master Plan” that outlines the City’s planned and recommendations for the City’s cycling network which includes 897 kilometres of infrastructure to be built over 27 years. The Cycling Master Plan project intends to connect gaps within the existing cycling network, improve safety for cycling, increase the number of cycling trips in Mississauga and foster a culture of cycling.

The 2018 Cycling Master Plan (CMP 2018) is a long-term plan that will implemented over many years and envisions a comfortable, connected, and convenient cycling network. Routes include a variety of different bikeway infrastructure including cycle tracks / separated bike lanes, bike lanes, multi-use trails (boulevards and parks), and shared routes.

In the vicinity of the site, the CMP 2018 includes the provision of multi-use trails along Erin Mills Parkway, and shared routes along Folkway Drive and Sawmill Valley Drive. Additional multi-use trails are proposed along Burnhamthorpe Road to connect the gaps within the existing network. Cycle tracks / separated bike lanes are proposed along Glen Erin Drive and Mississauga Road, providing safer cycling connections across the City of Mississauga. This infrastructure upgrade will improve future cycling connectivity for future residents and visitors of the site.

The future area cycling network is illustrated in **Figure 10.**

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**FIGURE 9 EXISTING AREA CYCLING NETWORK**

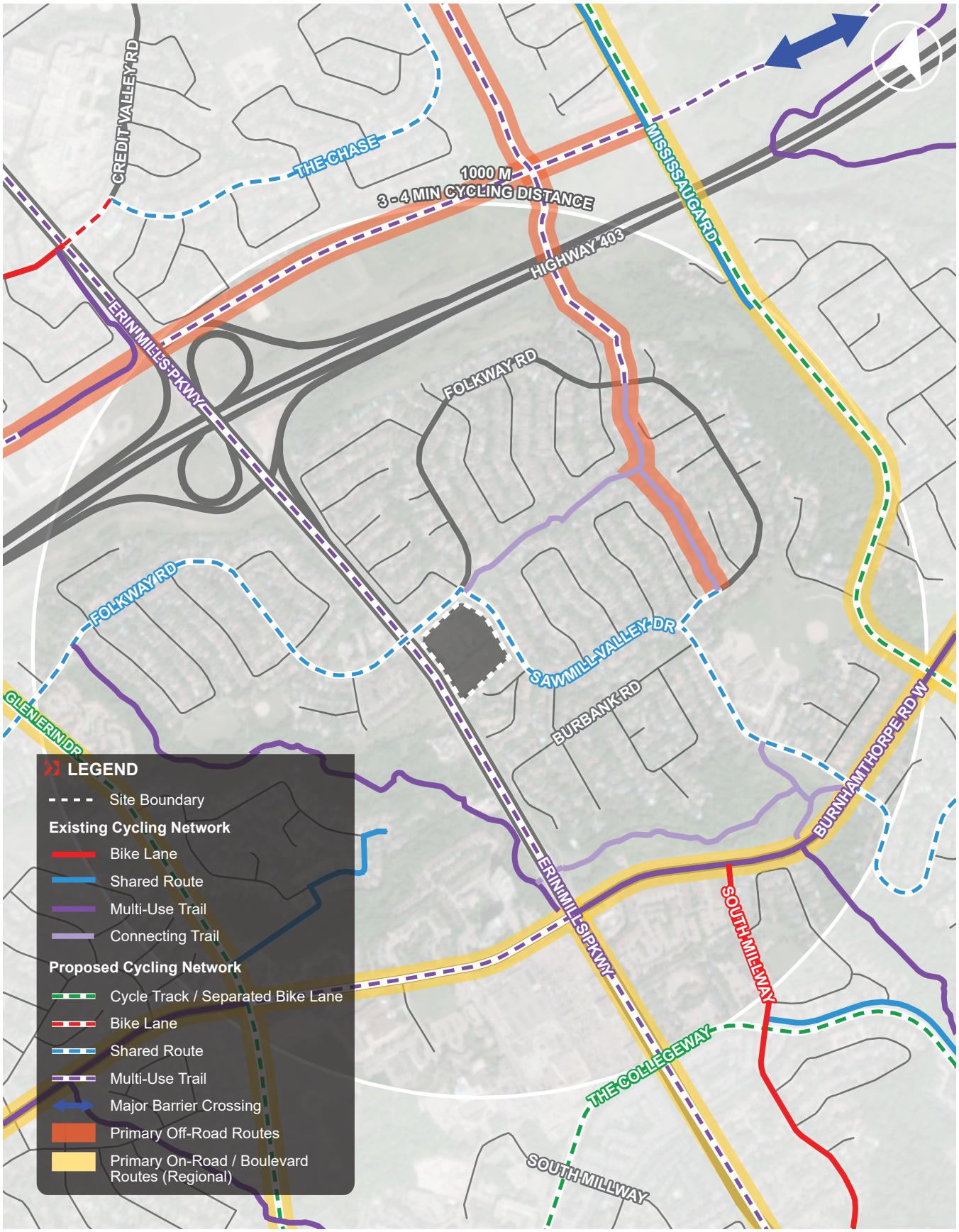


**FIGURE 10 FUTURE AREA CYCLING NETWORK**

## 2.4 AREA PEDESTRIAN NETWORK

There is an extensive network of sidewalks in the vicinity of the site. Directly adjacent to the site, there are sidewalks on both sides of Erin Mills Parkway, Folkway Drive and along Sawmill Valley Drive. These sidewalks provide pedestrians with excellent access to transit stops and encourage walking trips beyond the site.

The nearest protected pedestrian crossing to the site is at the existing traffic signal on Erin Mills at Folkway Drive. The existing all-way stop control intersection at Folkway Drive & Sawmill Valley Drive also provides a protected crossing for pedestrians.

As part of the development proposal, walkways will be provided throughout the site with connections to existing sidewalks at all access points.

The area pedestrian network is shown in **Figure 11**.

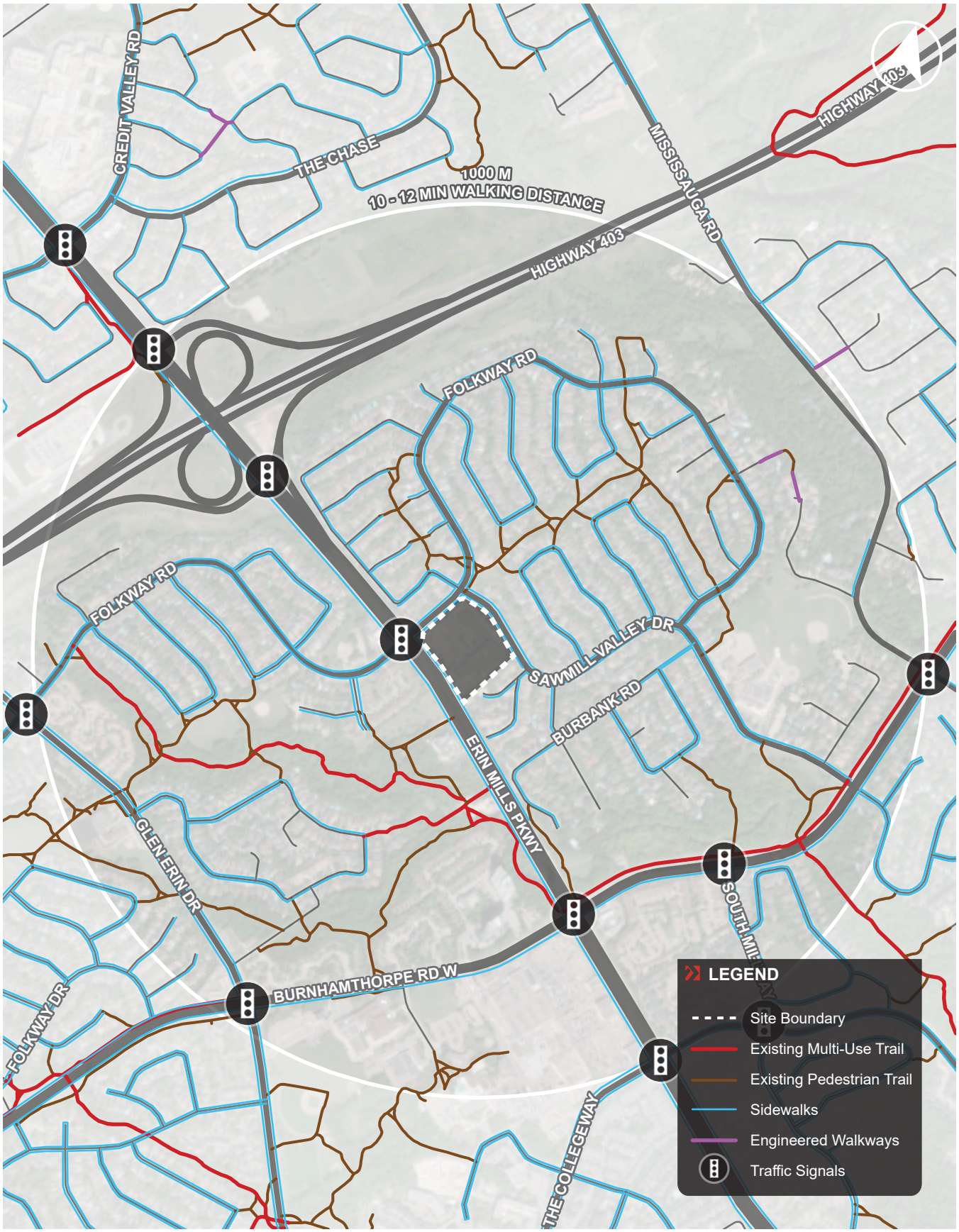


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**FIGURE 11 EXISTING AREA PEDESTRIAN NETWORK**

# 3.0 VEHICLE PARKING CONSIDERATIONS

## 3.1 ZONING BY-LAW REQUIREMENTS

### 3.1.1 The City of Mississauga's 2019 Parking Master Plan & Implementation Study (PMPIS) & Parking Regulations Study

The City's 2019 Parking Master Plan and Implementation Study (PMPIS) established four parking precincts and recommended staff undertake a review of off-street parking rates based on these precincts. Subsequently, staff prepared a Parking Regulations Study which was the subject of the May 31, 2021 Planning Development Committee (PDC) meeting.

On September 14, 2021, a community meeting was held to invite comment on the draft off-street parking rates and regulations. Based on feedback heard from various stakeholders, staff undertook additional revisions which culminated in a new set of off-street parking rates and regulations, which were tabled at the December 6, 2021 PDC meeting for public comments.

On April 19, 2022 report to Council included an overview of the final recommendations for the amended Zoning By-law 0225-2007 and highlighted where changes were made since the December 6, 2021 PDC meeting. On June 8, 2022, Council endorsed the recommendations and passed Zoning By-law 0117-2022. This Zoning By-law is now in effect but within the appeal period. For this reason, this study will reference both Zoning By-law 0225-2007 and Zoning By-law 0117-2022.

### 3.1.2 Zoning By-law 0117-2022

In accordance with the recommendations of Zoning By-law 0117-2022, the site is located within Precinct 4. As outlined in **Table 3**, application of this Zoning By-law results a total requirement of 964 parking spaces, inclusive of 818 resident spaces and 146 non-resident spaces to be shared between resident visitors and retail visitors.

### TABLE 3 ZONING BY-LAW 0117-2022 (PRECINCT 4) MINIMUM PARKING REQUIREMENTS

| Use | Units / GFA | Zoning By-law 0117-2022 Minimum Rate | Minimum Requirement (spaces) |
|---|---|---|---|
| **Resident Rates** | | | |
| Resident – Condominium Apartment[2] | 591 units | 1.1 spaces / unit | 650 |
| Resident - Townhouses | 112 units | 1.5 spaces / unit | 168 |
| **Resident Subtotal** | | | **818** |
| **Non-resident** | | | |
| Visitor – condominium Apartment | 591 units | 0.2 spaces / unit | 118 |
| Visitor - Townhouses | 112 units | 0.25 spaces / unit | 28 |
| Retail | 776 $m^2$ GFA | 5 spaces / 100 $m^2$ GFA | 39 |
| **Non-resident Subtotal (before sharing)** | | | **185** |
| **Non-resident Shared Parking Arrangement[3]** | | | **146** |
| **Non-resident Subtotal (after sharing)** | | | **146** |
| **SITE TOTAL (with sharing)** | | | **964** |

Notes:
1. Site statistics based on site plans received by Turner Fleischer architects on August 31, 2022.
2. For the calculation of the required residential parking, the appropriate resident and / or visitor rate or ratio shall be calculated for each component and then rounded. Fractions of less than 0.5 shall be rounded down to the nearest whole number. Fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.
3. As per Zoning By-law 0117-2022, for the purpose of Article 3.1.2.1, a shared parking arrangement may be used for the calculation of required visitor/non-residential parking in accordance with the greater of 0.2 visitor spaces per unit or required retail parking rate of 5 spaces/100$m^2$ of GFA.

### 3.1.3 Zoning By-law 0225-2007

During the appeal period of the Amended Zoning By-law, the requirements of the existing Zoning By-law 0225-2007 should also be considered. The site is currently zoned “C2”, which is classified as “Neighbourhood Commercial”.

The City’s Zoning By-law 0225-2007 has a shared parking provision for mixed-use buildings that include residential and commercial uses.

**Table 4** summarizes the first step to determine the required parking for a mixed-use development *without* any sharing provisions.

## TABLE 4 ZONING BY-LAW 0225-2007 (C2) MINIMUM PARKING REQUIREMENTS – BEFORE SHARING

| Use | Units / GFA | Zoning By-law 0225-2007 Minimum Rate | Minimum Requirement (number of spaces) |
|---|---|---|---|
| **Resident – Condominium Apartments** | | | |
| 1-Bedroom | 384 units | 1.25 spaces / unit | 480 |
| 2-Bedroom | 176 units | 1.40 spaces / unit | 246 |
| 3-Bedroom | 31 units | 1.75 spaces/unit | 54 |
| **Resident – Stacked Townhomes** | | | |
| 2-bedroom | 112 units | 1.5 spaces / unit | 168 |
| **Resident Sub-total** | **703 units** | **--** | **948** |
| **Non-resident – Condominium Apartments, Stacked Townhomes & Retail** | | | |
| Visitor – condominium Apartment | 591 units | 0.2 spaces / unit | 118 |
| Visitor - Townhome | 112 units | 0.25 spaces / unit | 28 |
| Retail | 776 $m^2$ | 5.40 spaces / 100 $m^2$ GFA | 42 |
| **Non-resident Sub-total (before sharing)** | | | **188** |
| **SITE TOTAL (before sharing)** | | | **1,136** |

Notes:
1. Site statistics based on site plans received by Turner Fleischer architects on August 31, 2022.
2. For the calculation of the required residential parking, the appropriate resident and / or visitor rate or ratio shall be calculated for each component and then rounded. Fractions of less than 0.5 shall be rounded down to the nearest whole number. Fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.

Subsequently, the parking requirement must be multiplied by the percentage of the weekday and Saturday peak period, with the highest required parking obtained from all time periods, being the minimum required parking spaces for the mixed-use development. **Table 5** summarizes the weekday calculations and **Table 6** summarizes the Saturday calculations.

## TABLE 5 ZONING BY-LAW 0225-2007 (C2) MINIMUM PARKING REQUIREMENTS – SHARING PROVISION (WEEKDAY)

| Use | Units / GFA | Zoning By-law 0225-2007 Minimum Rate | Minimum Requirement | | | |
|---|---|---|---|---|---|---|
| **Resident** | | | **Time of Day (number of parking spaces)** | | | |
| | | | **Morning** | **Noon** | **Afternoon** | **Evening** |
| | | | ***90%*** | ***65%*** | ***90%*** | ***100%*** |
| 1-Bedroom - Apartment | 384 units | 1.25 spaces / unit | 432 | 312 | 432 | 480 |
| 2-Bedroom - Apartment | 176 units | 1.40 spaces / unit | 222 | 160 | 222 | 246 |
| 3-Bedroom - Apartment | 31 units | 1.75 spaces / unit | 49 | 35 | 49 | 54 |
| 2-Bedroom - Townhome | 112 units | 1.5 spaces / unit | 151 | 109 | 151 | 168 |
| **Resident Sub-total** | **703 units** | **--** | **854** | **616** | **854** | **948** |
| **Non-resident** | | | **Time of Day (number of parking spaces)** | | | |
| | | | **Morning** | **Noon** | **Afternoon** | **Evening** |
| Visitor – condominium Apartment | 591 units | 0.2 spaces / unit | ***20%*** | ***20%*** | ***60%*** | ***100%*** |
| | | | 24 | 24 | 71 | **118** |
| Visitor – Townhome | 112 units | 0.25 spaces / unit | 6 | 6 | 17 | **28** |
| Retail | 776 $m^2$ | 5.40 spaces / 100 $m^2$ GFA | **Morning** | **Noon** | **Afternoon** | **Evening** |
| | | | ***80%*** | ***90%*** | ***90%*** | ***90%*** |
| | | | 34 | 38 | 38 | **38** |
| **Non-residential Subtotal** | | | **64** | **68** | **126** | **184** |
| **SITE TOTAL (with sharing)** | | | **918** | **684** | **980** | **1,132** |

Notes:

1. Site statistics based on site plans received by Turner Fleischer architects on August 31, 2022.
2. For the calculation of the required residential parking, the appropriate resident and / or visitor rate or ratio shall be calculated for each component and then rounded. Fractions of less than 0.5 shall be rounded down to the nearest whole number. Fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.

## TABLE 6 ZONING BY-LAW 0225-2007 (C2) MINIMUM PARKING REQUIREMENTS – SHARING PROVISION (SATURDAY)

| Use | Units / GFA | Zoning By-law 0225-2007 Minimum Rate | Minimum Requirement | | | |
|---|---|---|---|---|---|---|
| **Resident** | | | **Time of Day (number of parking spaces)** | | | |
| | | | **Morning** | **Noon** | **Afternoon** | **Evening** |
| | | | ***90%*** | ***65%*** | ***90%*** | ***100%*** |
| 1-Bedroom - Apartment | 384 units | 1.25 spaces / unit | 432 | 312 | 432 | 480 |
| 2-Bedroom - Apartment | 176 units | 1.40 spaces / unit | 222 | 160 | 222 | 246 |
| 3-Bedroom - Apartment | 31 units | 1.75 spaces / unit | 49 | 35 | 49 | 54 |
| 2-Bedroom - Townhome | 112 units | 1.5 spaces / unit | 151 | 109 | 151 | 168 |
| **Resident Sub-total** | **703 units** | **--** | **854** | **616** | **854** | **948** |
| **Non-resident** | | | **Time of Day (number of parking spaces)** | | | |
| | | | **Morning** | **Noon** | **Afternoon** | **Evening** |
| Visitor – condominium Apartment | 591 units | 0.2 spaces / unit | ***20%*** | ***20%*** | ***60%*** | ***100%*** |
| | | | 24 | 24 | 71 | **118** |
| Visitor - Townhome | 112 units | 0.25 spaces / unit | 6 | 6 | 17 | **28** |
| Retail | 776 $m^2$ | 5.40 spaces / 100 $m^2$ GFA | **Morning** | **Noon** | **Afternoon** | **Evening** |
| | | | ***80%*** | ***100%*** | ***100%*** | ***70%*** |
| | | | 34 | 42 | 42 | **29** |
| **Non-residential Subtotal** | | | **64** | **72** | **130** | **175** |
| **SITE TOTAL (with sharing)** | | | **918** | **688** | **984** | **1,123** |

Notes:
1. Site statistics based on site plans received by Turner Fleischer architects on August 31, 2022.
2. For the calculation of the required residential parking, the appropriate resident and / or visitor rate or ratio shall be calculated for each component and then rounded. Fractions of less than 0.5 shall be rounded down to the nearest whole number. Fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.

As outlined in **Table 5** and **Table 6**, application of the prevailing Zoning By-law 0225-2007 sharing provision demonstrates that the weekday evening peak period results in the highest parking requirement, thus the total minimum requirement for the site is 1,132 parking spaces, inclusive of 948 resident spaces, 146 resident visitor spaces and 38 retail spaces.

## 3.2 PROPOSED VEHICLE PARKING SUPPLY

The proposed parking supply is summarized in **Table 7** and includes a total of 914 parking spaces, inclusive of 773 resident spaces and 141 non-resident spaces to be shared between resident visitors and retail visitors. A blended parking rate has been proposed for condominium apartments and stacked townhouses as shown in **Table 7**.

### TABLE 7 PROPOSED PARKING SUPPLY

| Use | Number of Units / GFA ($m^2$) | Proposed Parking Rate | Proposed Parking Supply (number of spaces) |
|---|---|---|---|
| **Condominium Apartments & Stacked Townhomes** | | | |
| Resident | 703 units | 1.1 spaces/unit | **773** |
| Visitor | | 0.20 spaces/unit | **141** |
| **Retail** | | | |
| New Retail | 776 $m^2$ GFA | 5.0/100 $m^2$ | **39** |
| **Non-Resident Sharing Considerations** | | | |
| Non-resident sub-total before sharing | | | **180** |
| Non-resident sub-total with permitted sharing[3] | | | **141** |
| | | **Total Resident** | **773** |
| | | **Total Non-Resident** | **141** |
| | | **SITE TOTAL** | **914** |

Notes:
1. Site statistics based on site plans received by Turner Fleischer architects on August 31, 2022.
2. For the calculation of the required residential parking, the appropriate resident and / or visitor rate or ratio shall be calculated for each component and then rounded. Fractions of less than 0.5 shall be rounded down to the nearest whole number. Fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.
3. As per Zoning By-law 0117-2022, for the purpose of Article 3.1.2.1, a shared parking arrangement may be used for the calculation of required visitor/non-residential parking in accordance with the greater of 0.2 visitor spaces per unit or required retail parking rate of 5 spaces/100$m^2$ of GFA.

As summarized in **Table 8**, the total proposed parking supply is only 50 spaces less than what is required by Zoning By-law 0117-2022. It is important to note however that if the townhome unit parking requirements are calculated with the same required parking rate as the condominium units, the proposed parking supply would meet the requirements of Zoning By-law 0117-2022.

### TABLE 8 ZONING BY-LAW REQUIREMENTS VS. PROPOSED PARKING SUPPLY

| Use | Zoning By-law 0117-2022 Minimum Requirement (spaces) | Zoning By-law 0225-2007 Minimum Requirement (spaces) | Proposed Parking Supply (spaces) | Difference between Proposed Supply & Zoning By-law 0117-2022 (spaces) |
|---|---|---|---|---|
| Resident | 818 | 948 | 773 | **-45** |
| Resident Visitor | 146 | 146 | 141 | **-5** |
| Retail | | 38 | | |
| **TOTAL SITE** | **964** | **1132** | **914** | **-50** |

## 3.3 APPROPRIATENESS OF PROPOSED PARKING SUPPLY

### 3.3.1 Recent Resident Condominium Approval Trends

The resident parking supply standards outlined in the City of Mississauga Zoning By-law 0225-2007, could be considered in some locations to be conservative, relative to the parking demands generated by residential buildings across the City, based upon current trends.

Parking standards have been accepted/approved at levels that are less than the applicable zoning by-laws by City staff, City Council, through the approval of minor variances for both condominium and rental buildings and through Ontario Land Tribunal (OLT) decisions. These approvals are most often applied to proposed developments located within urban and transit accessible areas of the City of Mississauga.

A selection of examples where reduced overall resident parking supply rates, in the range of what is proposed for the site, have been approved for developments in a similar transit context to the proposed site, is summarized in **Table 9**.

These examples where reduced standards have been adopted are strongly indicative of a level of support and acceptance of parking supply standards that could be lower than the requirements of Zoning By-law 0225-2007. Furthermore, the extent and number of new developments that are proceeding with reduced parking standards across the City is, increasingly, reflective of a situation where the proposed requirements are considered to overstate current parking needs of residential buildings.

As summarized in **Table 9**, selected approved resident parking supply rates for comparable buildings range from 0.92 spaces per unit to 1.2 spaces per unit. The proposed resident parking rate for the site (effective resident ratio of 1.1 spaces per unit), is within the upper range of these approvals for other condominium applications in the vicinity of the site or with similar transportation contexts. This further suggests that the proposed resident parking rate for the site is appropriate to meet the resident parking demands.

## TABLE 9 RESIDENTIAL DEVELOPMENTS WITH PARKING SUPPLY REDUCTION APPROVALS

| Address | Units | Resident Parking Ratio (spaces/unit) | Permission Through |
|---|---|---|---|
| 630-670 Courtney Valley Road | **668 Units**<br>(654 apartment units; 14 townhome units) | **Res Ratio: 1.2**<br>1-bedroom: 1.13<br>2-bedroom: 1.27 | OMB Case No.: PL141343 File No.: PL141344 (2017 November 10)<br>City By-law Exception RA5-40 |
| 3555 The Collegeway | **384 Units** | **Res Ratio: 1.12** | Supported by City of Mississauga staff Application File #: A-330/21<br>(Minor Variance, January 20, 2022) |
| 2550/2560 Eglinton Avenue West | **361 Units** | **Res Ratio: 1.1**<br>1-bedroom: 1.1<br>2-bedroom: 1.1<br>3-bedroom: 1.2 | Site Specific By-law 0199-2016 City By-law Exception RA5-48 |
| 3005 Eglinton Avenue West | **178 Units** | **Res Ratio: 1.15**<br>1-bedroom: 1.1<br>2-bedroom: 1.3 | Site Specific By-law 0165-2012 City By-law Exception RA1-33 |
| 2285 The Collegeway | **242 Units** | **Res Ratio: 1.04** | Supported by City of Mississauga staff Application File #: A-404/21<br>(Minor Variance, March 17, 2022) |
| 1345 Lakeshore Rd E | **478 Units** | **Res Ratio: 0.92** | Supported by City of Mississauga staff Application File #: A-143/22<br>(Minor Variance, March 31, 2022) |

### 3.3.2 Proxy Site Observed Parking Demand

In order to assess the residential parking demand at other similar buildings in the area, BA Group conducted evening and overnight resident parking surveys at serval residential locations within the City of Mississauga.

Parking demand surveys were conducted at The Craftsman Lofts (1575 Lakeshore Road West), Pinnacle Grand Park Towers (3975 Grand Park Drive) and Park Side Village (4011 Brickstone Mews & 510 Curran Place), Amber Condos (5023 & 5025 Four Springs Avenue), and Crystal Condos (55 & 75 Eglinton Avenue E) between October 26th, 2021, and March 2nd, 2020 as a means to understand demand, given the evolving transit context and shift towards more urban conditions of the site.

#### TABLE 10 RESIDENTIAL PARKING DEMAND STUDIES - PROXIES

| Address | Major Intersection | Study Date | Peak Hour | Units | Resident Parking | |
|---|---|---|---|---|---|---|
| | | | | | Demand (spaces) | Ratio (Spaces/Unit) |
| 1575 Lakeshore Road W[1] | Royal Windsor Dr / Southdown Rd | Tues, Oct. 26, 2021 | 11:30 p.m. | 292 | 314 | 1.08 |
| | | Thurs, Oct. 28, 2021 | 1:00 a.m. | | 301 | 1.03 |
| | | Tues, Nov. 2, 2021 | 1:30 a.m. | | 310 | 1.06 |
| | | Thurs, Nov. 4, 2021 | 1:30 a.m. | | 316 | 1.08 |
| 4011 Brickstone Mews & 510 Curran Place[2] | Confederation Pkwy/ Burnhamthorpe Road W | Wed, Feb 26, 2020 | 1:30 a.m. | 1,008 | 786 | 0.78 |
| | | Thurs, Feb 27, 2020 | 1:30 a.m. | | 784 | 0.78 |
| | | Fri, Feb 28, 2020 | 1:30 a.m. | | 784 | 0.78 |
| | | Mon, March 2, 2020 | 3:00 a.m. | | 786 | 0.78 |
| 3975 Grand Park Drive[3] | Grand Park Dr / Burnhamthorpe Road W | Mon, March 2, 2020 | 2:30 a.m. | 790 | 681 | 0.86 |
| | | Tues, Feb 11, 2020 | 2:00 a.m. | | 665 | 0.84 |
| | | Fri, Feb 21, 2020 | 2:00 a.m. | | 664 | 0.84 |
| | | Mon, Feb 24, 2020 | 2:00 a.m. | | 674 | 0.85 |
| 5023 & 5025 Four Springs Ave[4] | Eglinton Ave W / Hurontario St | Tues, Feb 11, 2020 | 2:00 a.m. | 445 | 400 | 0.90 |
| | | Wed, Feb 12, 2020 | 2:00 a.m. | | 395 | 0.89 |
| | | Thurs, Feb 13, 2020 | 2:00 a.m. | | 388 | 0.87 |
| 55 & 75 Eglinton Ave W[5] | Eglinton Ave W / Hurontario St | Tues, Feb 25, 2020 | 2:00 a.m. | 463 | 417 | 0.90 |
| | | Wed, Feb 26, 2020 | 2:00 a.m. | | 419 | 0.90 |
| | | Thurs, Feb 27, 2020 | 2:00 a.m. | | 425 | 0.92 |

Notes:
1. The surveys were undertaken from 8:00 p.m. to 2:00 a.m. with 30 minute interval counts.
2. The surveys were undertaken from 8:00 p.m. to 3:00 a.m. with 30 minute interval counts.
3. The surveys were undertaken from 10:00 p.m. to 2:00 a.m. with 30 minute interval counts.
4. The surveys were undertaken from 10:00 p.m. to 2:00 a.m. with 30 minute interval counts.
5. The surveys were undertaken from 10:00 p.m. to 2:00 a.m. with 30 minute interval counts.

The observed overall resident parking demand at the proxy sites are in the range of 0.78 – 1.08 spaces per unit. The proposed residential parking rate of 1.1 spaces per unit is above the observed range and will appropriately accommodate the needs of the site.

## 3.4 SUMMARY OF PROPOSED PARKING SUPPLY

### 3.4.1 Summary of Parking Supply

As summarized in **Table 11**, the proposed vehicle parking supply for the site includes a total of 914 parking spaces, inclusive of 773 resident spaces and 141 non-resident spaces to be shared between resident visitors and retail visitors.

The proposed parking supply has been considered with a blended rate of 1.1 spaces/ unit for both the condominium units and the townhome units. The parking supply is deemed appropriate for the following reasons:

- Transportation context of the area, inclusive of excellent transit service;
- Proposed Transportation Demand Management (TDM) strategy;
- Proxy parking demand surveys; and
- Recent parking approvals and trends.

The proposed parking supply is only 50 spaces less than the requirements of Zoning By-law 0117-2022 and will meet the practical needs of the site.

#### TABLE 11 PROPOSED PARKING SUPPLY

| Use | Number of Units / GFA ($m^2$) | Zoning By-law 0117-2022 Minimum Parking Rate | Proposed Parking Supply (number of spaces) |
|---|---|---|---|
| **Condominium Apartments & Stacked Townhomes** | | | |
| Resident | 703 units | 1.1 spaces/unit | **773** |
| Visitor | | 0.20 spaces/unit | **141** |
| **Retail** | | | |
| New Retail | 776 $m^2$ GFA | 5.0/100 $m^2$ | **39** |
| **Non-Resident Sharing Considerations** | | | |
| Non-resident sub-total before sharing | | | **180** |
| Non-resident sub-total with permitted sharing[3] | | | **141** |
| | | **Total Resident** | **773** |
| | | **Total Non-Resident** | **141** |
| | | **SITE TOTAL** | **914** |

Notes:
1. Site statistics based on site plans received by Turner Fleischer architects on August 31, 2022.

### 3.4.2 Accessible Parking

The City's Zoning By-law 0225-2007 and Accessible Parking By-law 0010-2016 require that accessible spaces be provided for non-residential / visitor uses at a minimum rate of 1 space + 3 %, for a supply within the range of 101 - 200 parking spaces.

Furthermore, the By-law states that for lots with an even number of total accessible parking spaces, an equal number of Type 'A' (non-residential uses) and Type 'B' (residential uses) spaces must be provided. The two types of spaces must adhere to the following dimensions:

- Type A space: 5.2 metres (length) x 3.4 metres (width)
- Type B space: 5.2 metres (length) x 2.4 metres (width)

Both types must include a 1.5-metre pedestrian aisle adjacent to the accessible space.

The minimum accessible parking requirements are summarized in **Table 12**.

#### TABLE 12 CITY OF MISSISSAUGA ZONING BY-LAW 0225-2007 ACCESSIBLE PARKING REQUIREMENTS

| Non-residential Parking Supply | Category | Minimum Rate | Minimum Requirement | Type Allocation |
|---|---|---|---|---|
| 141 spaces | 101 - 200 spaces | 1 space + 3% of total parking supply | 6 spaces | 3 Type A<br>3 Type B |

Notes:
1. Site statistics based on site plans received by Turner Fleischer architects on August 22, 2022.
2. Accessible parking rates as per City of Mississauga Zoning By-law 0225-2017 Table 3.1.3.1 & Accessible Zoning By-law 0010-2016 Schedule "A"

Application of the Zoning By-law accessible parking space standards to the proposed non-residential parking supply would require a minimum of 6 accessible parking spaces.

The development plans illustrate 10 accessible parking spaces, inclusive of 6 visitor spaces and 4 resident spaces, which exceeds the minimum requirements. The proposed accessible parking supply complies with the Zoning By-law dimensional requirements. Furthermore, accessible parking spaces are proposed to be provided within the below-grade parking facilities for residents and visitors, and there will be one at-grade visitor space. These spaces are in proximity to the elevator cores.

Based on the above, the proposed accessible parking supply meets the requirements of Zoning By-law 0225-2007 requirements and will meet the practical needs of the site.

### 3.4.3 Electric Vehicle (EV) Parking

As per Zoning By-law 0117-2022 (Table 3.1.1.12), a minimum of 20% of the total resident parking requirement must be EV ready and 10% of the visitor parking requirement must be EV ready.

As shown in **Table 13**, the Zoning By-law requires a minimum of 169 EV ready parking spaces. As the architectural drawings illustrate a total of 169 EV parking spaces, the proposed supply will meet the Zoning By-law requirements.

#### TABLE 13 ELECTRIC VEHICLE PARKING

| | Total Proposed Parking Supply (spaces) | Zoning By-law EV Parking Requirement | Minimum EV Parking Requirement (spaces) | Proposed Supply of EV Parking (spaces) |
|---|---|---|---|---|
| Resident Spaces | 773 | 20% | 155 | 155 |
| Resident Visitor Spaces | 141 | 10% | 15 | 15 |
| **Site Total** | **914** | **--** | **170** | **170** |

Notes:
1. Site statistics based on site plans received by Turner Fleischer architects on August 31, 2022.

# 4.0 BICYCLE PARKING CONSIDERATIONS

## 4.1 BICYCLE PARKING REQUIREMENTS

The recommended bicycle parking supply rates within the Zoning By-law 0118-2022 have been applied to the proposed development. Application of these requirements are summarized in **Table 14** and requires the provision of a total of 457 bicycle parking spaces inclusive of 422 long-term resident spaces and 35 short-term visitor spaces.

As the architectural drawings illustrate a total of 460 bicycle parking spaces, inclusive of 422 long-term resident spaces and 38 short-term visitor spaces, the proposed supply will meet the practical needs of the site and aligns with the Zoning By-law.

The 422 long-term bicycle parking spaces are located at-grade and on P1 within secured, weather-protected rooms. The 35 short term bicycle parking spaces are located at-grade.

### TABLE 14 BICYCLE PARKING REQUIREMENTS & PROPOSED SUPPLY

| Use | Number of Units / GFA ($m^2$) | Space Type | Minimum Rate | Minimum Number of Parking Spaces Required | Number of Parking Spaces Proposed |
|---|---|---|---|---|---|
| Residential | 703 units | Short Term | 0.05 spaces/unit | 35 | 38 |
| | | Long Term | 0.6 spaces/unit | 422 | 422 |
| Retail | 776 $m^2$ | Short Term | 0.20/100 $m^2$ GFA | 0[3] | 0 |
| | | Long Term | 0.15/100 $m^2$ GFA | 0[3] | 0 |
| | | | **SITE TOTAL** | **457** | **460** |

Notes:
1. Site statistics based on site plans received by Turner Fleischer architects on August 31, 2022.
2. For the calculation of the required residential parking, the appropriate resident and / or visitor rate or ratio shall be calculated for each component and then rounded. Fractions of less than 0.5 shall be rounded down to the nearest whole number. Fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.
3. Bicycle parking not required for non-resident uses less than 1,000 $m^2$.

# 5.0 LOADING CONSIDERATIONS

## 5.1 ZONING BY-LAW LOADING REQUIREMENTS

The site is subject to the loading supply standards of the City of Mississauga Zoning By-law 0225-2007. The site is zoned "C2", which is classified as "Neighbourhood Commercial". Application of the City's Zoning By-law 0225-2007 is summarized in **Table 15**.

### TABLE 15 ZONING BY-LAW 0225-2007 – MINIMUM LOADING REQUIREMENTS BY BUILDING

| Block | Use | Units / GFA | Loading Criteria | Loading Requirements (number of spaces) |
|---|---|---|---|---|
| Building A | Residential | 197 units | 30+ units | 1 |
| | Retail | 411 $m^2$ | 250 $m^2$ to 2350 $m^2$ | 1 |
| Building B | Residential | 142 units | 30+ units | 1 |
| | Retail | - | - | 0 |
| Building C | Residential | 80 units | 30+ units | 1 |
| | Retail | - | | - |
| Building D | Residential | 95 units | 30+ units | 1 |
| | Retail | 365 $m^2$ | 250 $m^2$ to 2350 $m^2$ | 1 |
| Building E | Residential | 77 units | 30+ units | 1 |
| | Retail | - | | - |
| | | | **Site Total** | **7** |

Notes:
1. Site statistics based on site plans received by Turner Fleischer architects on August 31, 2022.

## 5.2 PROPOSED LOADING SUPPLY

It is proposed to provide a total of 5 loading spaces for the proposed development, which will collectively serve the refuse collection and other loading requirements for the site.

The 5 proposed loading spaces require a rectangular loading area of 9.0 metres by 3.5 metres as per City of Mississauga Zoning By-law 0225-2007; however, as the site is subject to Peel Region waste collection design standards, loading areas have been sized as per Region's *"Waste collection Design Standards Manual, 2020"* to satisfy the waste collection requirements. Further information regarding the location and size of loading spaces are described in following sections.

It is required to provide 2 loading spaces for each of buildings A and D as per City of Mississauga Zoning By-law 0225-2007; however, a shared loading arrangement of 1 loading space per each building has been considered to serve the loading needs. The adequacy and appropriateness of a shared loading arrangement has been further described in the following sections. The proposed loading supply is summarized in **Table 16**.

### TABLE 16 PROPOSED LOADING SUPPLY

| Block | Use | Units / GFA[1] | Loading Criteria | Loading Requirements (number of spaces) |
|---|---|---|---|---|
| Building A[2] | Residential | 197 units | 30+ units | 1 |
| | Retail | 411 $m^2$ | 250 $m^2$ to 2350 $m^2$ | 0 |
| Building B | Residential | 142 units | 30+ units | 1 |
| | Retail | - | - | 0 |
| Building C | Residential | 80 units | 30+ units | 1 |
| | Retail | - | | - |
| Building D[2] | Residential | 95 units | 30+ units | 1 |
| | Retail | 365 $m^2$ | 250 $m^2$ to 2350 $m^2$ | 0 |
| Building E | Residential | 77 units | 30+ units | 1 |
| | Retail | - | | - |
| | | | **Site Total** | **5** |

Notes:
1. Site statistics based on site plans received by Turner Fleischer architects on August 31, 2022.
2. A shared loading arrangement has been considered for Block A and Block D.

Every loading space will serve the refuse, delivery, and / or commercial needs for each corresponding building. The plan illustrating the locations of the loading spaces servicing each building is provided in **Appendix A**.

### 5.2.1 Location of Loading Facilities

Each building contains a loading area that serves the loading and servicing needs of the proposed block. The townhouse blocks also include a loading space to service the refuse collection, moving and servicing needs of those blocks.

Access to the loading facilities is provided from the internal private driveway that connects to Sawmills Valley Drive, Folkway Drive and Erin Mills Parkway.

### 5.2.2 Operations and Manoeuvring

Vehicular manoeuvring diagrams (VMD's) have been developed which demonstrate the ability of the service and delivery vehicles to manoeuvre within the site when entering / exiting the loading areas. The design vehicles used in assessing the configuration of the proposed loading space are the Peel Region front loading refuse collection vehicle and TAC single unit truck (TAC SU). As buildings 'A' and 'D' contain retail areas, a TAC heavy single unit (HSU) truck has been tested to meet the servicing needs of retail stores.

Vehicle manoeuvring diagrams are provided in **Appendix B** and illustrate the turning movements for the design vehicles entering / exiting the proposed loading spaces. These vehicle manoeuvring diagrams confirm

that the proposed loading arrangements are appropriate and will facilitate the manoeuvring requirements of the vehicles that are expected to access the site. The Peel Region front-loading refuse collection vehicle will be able to enter and exit the site in a forward motion.

In order to satisfy the Peel Region waste collection standards, a minimum turning radius of 13 metre has been considered to facilitate the turning movement of the refuse collection vehicle.

### 5.2.3 Height Clearance and Size of Loading spaces

A minimum height clearance of 7.5 metres is maintained throughout the entire collection point, satisfying the minimum requirements of the Peel Region waste collection standards. The loading area has been designed such that a minimum of 4.4 metres is maintained from the top of access road to the outside of the collection point. A minimum height clearance of 7.5 metres is provided above the collection point (including loading and staging areas) to enable compacted bulk lift bin collection in compliance with the Peel Waste Collection design standards.

Collection points have been sized as per Peel Region waste collection design standards, with an 18-metre head-on approach and a 6-metre wide collection point. Appropriate bin staging provisions are provided in front of the collection point in accordance with the design provisions outlined in the *"Peel Region Waste Collection Design Standards Manual"* dated 2020.

The residential garbage rooms for each building are provided at-grade adjacent to each collection point. Garbage bins will be transferred within the site between the residential garbage rooms and the bin staging area in each building during the waste collection day.

## 5.3 ADEQUACY OF THE PROPOSED LOADING SUPPLY

### 5.3.1 Loading Facility Arrangements

The City of Mississauga Zoning By-law 0225-2007 requires 1 loading space for non-residential (non-office) floor area between 250 $m^2$ and 2,350 $m^2$. For the 411$m^2$ of non-residential uses proposed in Block A and 365 $m^2$ in Block D, Zoning By-law 0225-2007 requires 1 loading space for each block.

For the residential uses, By-law 0225-2007 requires 1 loading space where an apartment building has more than 30 residential units. Since 197 units are proposed for Block A and 95 units for Block D, By-law 0225-2007 requires 1 loading space for the residential uses of each block.

Loading facilities are proposed within Blocks A and D to serve the commercial and residential uses. The loading area will accommodate a staging area for residential solid waste bins on collection day.

One loading space is proposed for each block (a total of 2 loading spaces for Blocks A & D), to operate on a shared basis between the residential and non-residential uses. For a development of the size and scale of that proposed, sharing of the loading space between the residential and commercial uses is appropriate (for example, the City of Toronto zoning by-law allows sharing of one loading space for mixed use developments with up to 2,000 $m^2$ of retail/restaurant uses, and City of Hamilton Zoning by-laws for mixed-use areas also allow for shared loading in a mixed-use development), and will reduce the ground floor area that would otherwise be dedicated to vehicle activity. Additional lay-by pick-up / drop-off areas are available on the site for temporary curbside pick-up and drop-off activity.

Shared loading arrangements have previously been proposed by BA Group as part of the Bridgewater (Port Credit) site located at 70 Mississauga Road South & 181 Lake Shored Road West and the variance has been approved by the City.

## 5.4 LOADING SUMMARY

The proposed loading supply of 5 loading spaces, as well as the arrangements, meets the minimum requirements as per By-law 0225-2007 and Peel Region Collection Design Standards Manual and can appropriately accommodate the servicing needs of the site.

# 6.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) measures and design elements will be incorporated into the development proposal to minimize the need for automobile travel to and from the site, while encouraging and facilitating the use of non-automobile travel modes on a daily basis.

The strategies included within the TDM Plan include physical infrastructure-based components and operational level initiatives that promote the use of sustainable non-auto modes of transportation and are tailored to the mobility needs of the future residents, employees and retail patrons in the area.

The measures within the TDM Plan seek to:

- Mitigate the impact of the site travel demand on the area transportation network;
- Reduce car ownership and single-occupant vehicle usage by site residents, employees and visitors;
- Provide a parking supply that meets the needs of the site but encourages alternative modes of travel;
- Encourage transit use through traveller information and connectivity to sidewalks;
- Encourage bicycle use with bicycle parking and bicycle repair facilities;
- Enhance pedestrian access and walkability through on-site connected walkways;
- Provide awareness of the area's existing and future transportation services and mobility options among building residents, employees and visitors to support and encourage the use of non-automobile modes of transportation.

These TDM measures would play a role in supporting non-automobile dependent travel and minimize car use for a range of travel needs. The series of TDM measures to be considered are described in detail below.

## 6.1 TDM: VEHICLE MANAGEMENT

**Proposed Appropriate Parking Supply**

The provision of convenient and inexpensive parking encourages automobile trips and as such has a significant impact on travel mode choices.

The architectural plans illustrate a total parking supply of 914 parking spaces inclusive of 773 parking spaces for residents (1.1 spaces per unit) and 141 parking spaces for non-residential uses to be shared between resident and retail visitors.

The proposed parking supply aligns with the Amended Zoning By-law 0225-2007 which will ensure that the development does not include an oversupply of parking. The proposed appropriate parking supply will meet the needs of the site and encourage sustainable modes of travel.

**Unbundled Parking**

Sell the parking separately from unit purchase “unbundle” in order to discourage vehicle ownership, encourage sustainable travel and reduce the demand for parking spaces.

## 6.2 TDM: WALKING

To encourage walking as a mode of travel and to facilitate connectivity to transit stops, walkways will provided throughout the site and will connect to existing area sidewalks.

## 6.3 TDM: CYCLING

**Bike Parking**

The proposed bicycle parking supply for the site aligns with the recommendations of the City of Mississauga Cycling Master Plan. The proposed development will include a total of 460 bicycle parking spaces inclusive of 422 long-term resident spaces and 38 short-term visitor spaces. The 422 long-term bicycle parking spaces are located at-grade and on P1 within secured, weather-protected rooms. The 38 short term bicycle parking spaces are located at-grade. The provision of convenient bicycle parking on the site will encourage travel by bicycle.

**Bike Repair Stations**

To further encourage cycling as a desirable travel mode, on-site bike repair stations will be provided. The locations of the bicycle repair stations will be confirmed at Site Plan Approval.

## 6.4 TDM: TRANSIT

**Transit Screens – Resident Travel Information**

To encourage transit use, screens that include information about nearby transit services will be provided in the lobby of each residential building. Further details regarding the information screens will be provided at Site Plan Approval.

**Provision of PRESTO Passes**

To encourage transit use, the developer will consider the provision of pre-loaded Presto passes for residents for a period of one year. As a TDM measure, these transit passes would provide access to a wide variety of travel options within the City of Mississauga and throughout the GTA. It is expected that these passes would provide an incentive for residents to become familiar with the transit options available and increase the likelihood that future travel by transit would be the preferred travel choice.

## 6.5 SUMMARY OF TDM MEASURES

The proposed TDM measures to be considered are summarized in Table 17 and include strategies related to vehicle management, active transportation & transit initiatives and traveller information.

### TABLE 17 PROPOSED TRANSPORTATION DEMAND MANAGEMENT MEASURES

| TDM Measure | Measure Intent | Details |
|---|---|---|
| **Vehicle Management** | | |
| Appropriate Parking Supply | To reduce car usage | Adoption of Amended Zoning By-law parking rates<br>- 1.1 resident spaces/unit<br>- 0.2 visitor spaces/unit |
| Unbundled Parking | | Unbundle parking from unit purchase |
| **Walking** | | |
| Pedestrian Facilities | To encourage walking as a mode of travel and facilitate connectivity to transit stops. | Provide on-site walkways for pedestrians with connectivity to existing area sidewalks |
| **Cycling** | | |
| Bicycle Parking | To encourage cycling as a mode of travel | Align with the recommendations of the City of Mississauga Cycling Master Plan<br><br>The proposed development will include 422 long-term resident spaces and 38 short-term visitor spaces. |
| Bike Repair Stations | | Locations to be finalized at Site Plan Approval. |
| **Transit** | | |
| Transit Screens | To encourage transit use by providing real time information about nearby transit services | 1 screen per lobby<br>Details to be provided at Site Plan Approval |
| PRESTO Passes | To encourage transit usage | Provide PRESTO passes for up to 1 year for residents<br><br>The number of passes and value to be confirmed at Site Plan Approval |
| **Communication & Promotion** | | |
| Provide new residents with a traveller information package | To educate residents about sustainable travel options in the area | Information package could include 1) a copy of the City's Bikeway, Trails Map, and Cyclists Handbook,<br>2) MiWay promotional materials, 3) information about City bicycle events (e.g. community rides, bike safety & repair workshops, etc.), 4) information about CAN-BIKE courses on cycling and riding safety |

# 7.0 TRAFFIC VOLUME FORECASTING

## 7.1 SCOPE OF ANALYSIS

The traffic analysis has been undertaken for the surrounding area for four planning horizons, including:

- Baseline existing conditions (2022 adjusted);
- Site build-out (2027); and
- 5-years post site build-out (2032).

By 2027, it is expected that the site will have been constructed, which includes 703 residential units and 776 $m^2$ of retail gross floor area (GFA).

An additional horizon year of 2032 has been studied, to account for road network conditions 5-years post build-out of the project.

The intersections studied as part of this analysis include the following:

**Signalized Intersections:**

- Erin Mills Parkway / Burnhamthorpe Road West
- Erin Mills Parkway / Folkway Drive

**Unsignalized Intersections & Site Driveways:**

- Folkway Drive / Sawmill Valley Drive
- Folkway Drive / Site Driveway (main access)
- Erin Mills Parkway / Site Driveway (right-in/ right-out only)
- Sawmill Valley Drive / Site Driveway (rear access)

## 7.2 BASELINE EXISTING TRAFFIC VOLUMES

Due to the recent COVID-19 “lockdowns” imposed by the Province of Ontario, current traffic volumes on the public road network may not reflect typical (i.e. pre-COVID-19) operating conditions. As a result, it was not possible at the time of writing this report to collect data for existing traffic volumes representative of typical conditions.

Notwithstanding, data were collected in February 2022 to determine if traffic volumes had returned to pre-pandemic levels, or if adjustments would be required based on previous traffic counts to develop a set of baseline existing traffic volumes representing typical conditions. The data was also used to establish traffic patterns throughout the study area and determine the amount of traffic currently travelling to and from the site.

Traffic conditions were surveyed during the weekday morning and afternoon peak periods (the busiest hours of traffic between 7:30 morning to 9:30 morning and 4:00 afternoon to 6:00 afternoon, respectively) for all intersections within the study area. Detailed traffic volume counts conducted prior to the COVID-19 pandemic were obtained from the City of Mississauga for the intersections at Erin Mills Parkway / Burnhamthorpe Road West and Erin Mills Parkway / Folkway Drive.

A comparison of traffic counts undertaken during various years along Erin Mills Parkway, indicated that traffic levels in 2022 were not yet representative of typical conditions. **Table 18** demonstrates a comparison of north-south and east-west arterial volumes within the study area, at the intersection of Erin Mills Parkway / Burnhamthorpe Road West.

### TABLE 18 EXISTING VS PRE-PANDEMIC ARTERIAL VOLUME COMPARISON

| | Two-Way Peak Hour Traffic Volumes on Erin Mills Parkway[1] | | Two-Way Peak Hour Traffic Volumes on Burnhamthorpe Road West[1] | |
|---|---|---|---|---|
| | Morning Peak | Afternoon Peak | Morning Peak | Afternoon Peak |
| February 28, 2018 | 4151 | 4120 | 2281 | 2522 |
| February 22, 2022 | 2964 | 3275 | 1378 | 1781 |
| **Difference** | **-40%** | **-26%** | **-66%** | **-42%** |

Notes:
1. Two-way volumes observed directly north and east of subject intersection.

The new (2022) volumes were balanced within the study area based on the highest available intersection volumes for each peak hour at the intersections of Erin Mills Parkway / Burnhamthorpe Road West (2018) and Erin Mills Parkway / Folkway Drive (2019). The intersection of Folkway Drive was used for the morning peak hour and the intersection at Burnhamthorpe Road was used for the afternoon peak hour.

Balanced volumes better reflect what would likely be typical existing conditions under normal circumstances and provide a platform for a conservative capacity analysis. Traffic count information is summarized in **Table 19** and detailed traffic count data is attached in **Appendix C**.

## TABLE 19 EXISTING TRAFFIC COUNT INFORMATION

| Intersection | Date of Count | Source |
|---|---|---|
| Erin Mills Parkway / Burnhamthorpe Road West | Wednesday, February 28, 2018 & Tuesday, February 22, 2022 | Spectrum Traffic Data Inc. |
| Erin Mills Parkway / Folkway Drive | Thursday, September 26, 2019 & Tuesday, February 22, 2022 | |
| Erin Mills Parkway / Site Driveway (RIRO[1]) | Tuesday, February 22, 2022 | |
| Folkway Drive / Site Driveway (Main) | | |
| Folkway Drive / Sawmill Valley Drive | | |
| Sawmill Valley Drive / Site Driveway (Rear) | | |

Notes:
1. RIRO = right-in/right-out restricted.

The resultant baseline existing traffic volumes on the study area road network for the weekday morning and afternoon peak hours, adopted for the purposes of this analysis, are illustrated in **Figure 12**.

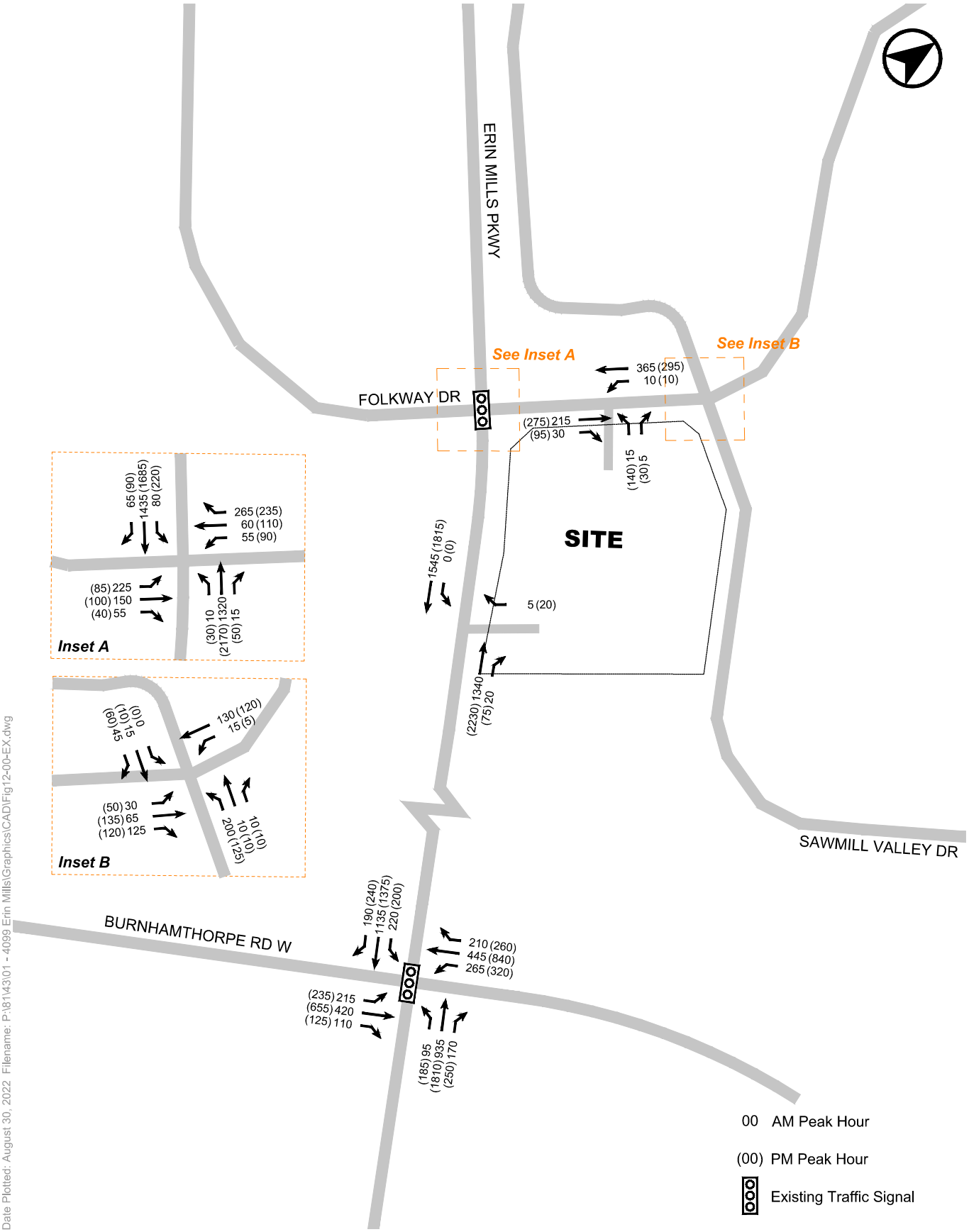


**FIGURE 12 BASELINE EXISTING TRAFFIC VOLUMES**

## 7.3 FUTURE BACKGROUND TRAFFIC VOLUMES

### 7.3.1 Corridor Growth

Estimated compounded annual growth rate (CAGR) values for Erin Mills Parkway were provided by the Region of Peel (Jade Huangfu, Transportation Analyst) for use within this study. According to the Region of Peel *"the growth rates are estimated based on multiple sources including Peel Travel Demand forecasting model, ÄTR and land use/forecasts data."*

The CAGRs are summarized in **Table 20** and have been applied to traffic volumes on Erin Mills Parkway for each horizon year to account for general corridor growth. The correspondence received from Peel Region staff is attached in **Appendix D**.

#### TABLE 20 CORRIDOR GROWTH RATES

| Year | Erin Mills Parkway CAGR | |
|---|---|---|
| | Northbound | Southbound |
| 2021 – 2031 | 0.5% | 0.5% |
| 2031 onwards[1] | 0.5% | 0.5% |

Notes:
1. CAGRs were provided up until the year 2031. Given this study includes a 2032 horizon year, the same growth rates were conservatively adopted for 2031 onwards.

### 7.3.2 Specific Development Allowances

Following a review of area developments on the Mississauga's online development map, no additional traffic volumes were added as a result of no active developments in the surrounding area being shown.

Forecasted 2027 and 2032 future background traffic volumes are illustrated on **Figure 13** and **Figure 14**, respectively.

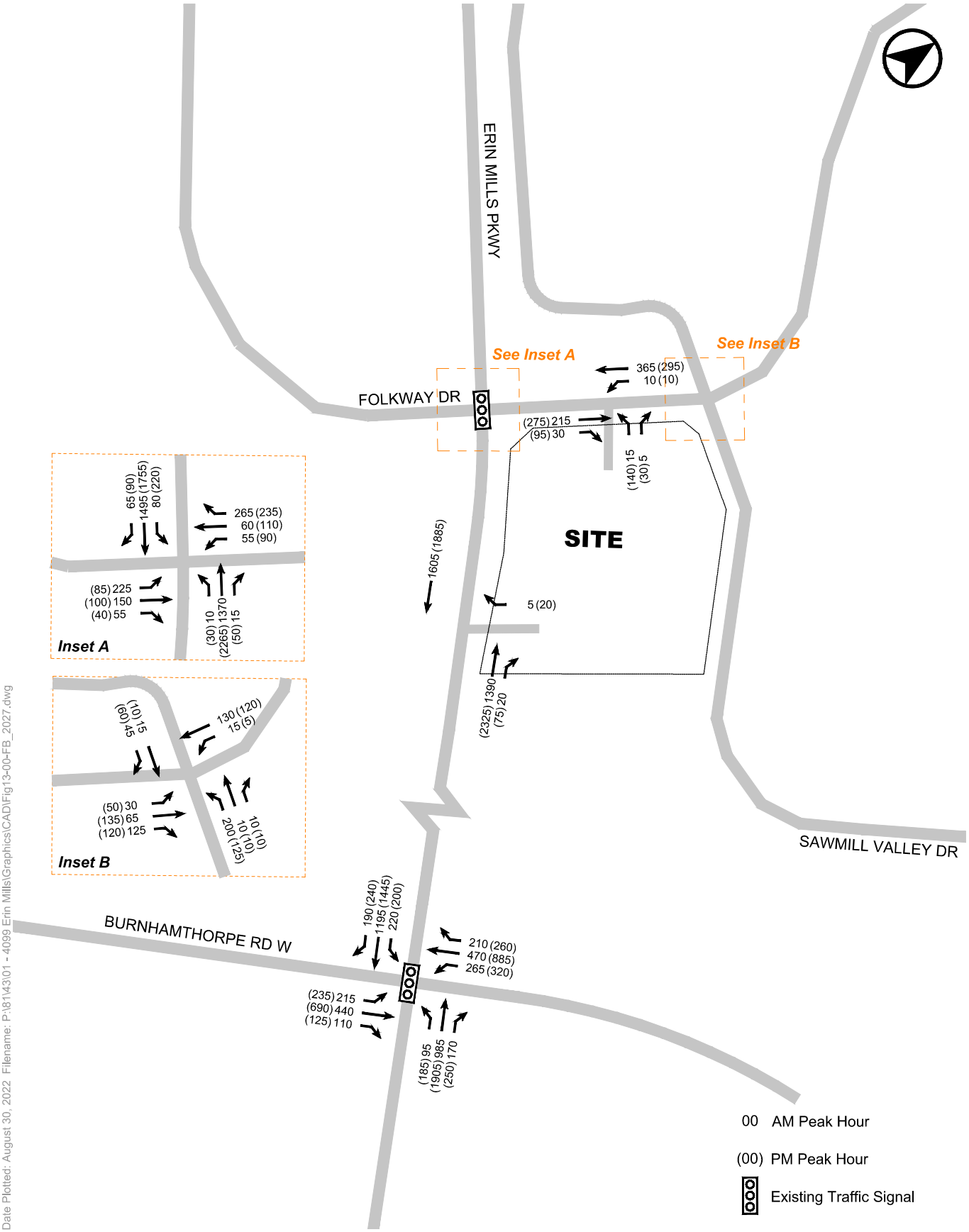


**FIGURE 13 2027 FUTURE BACKGROUND TRAFFIC VOLUMES**

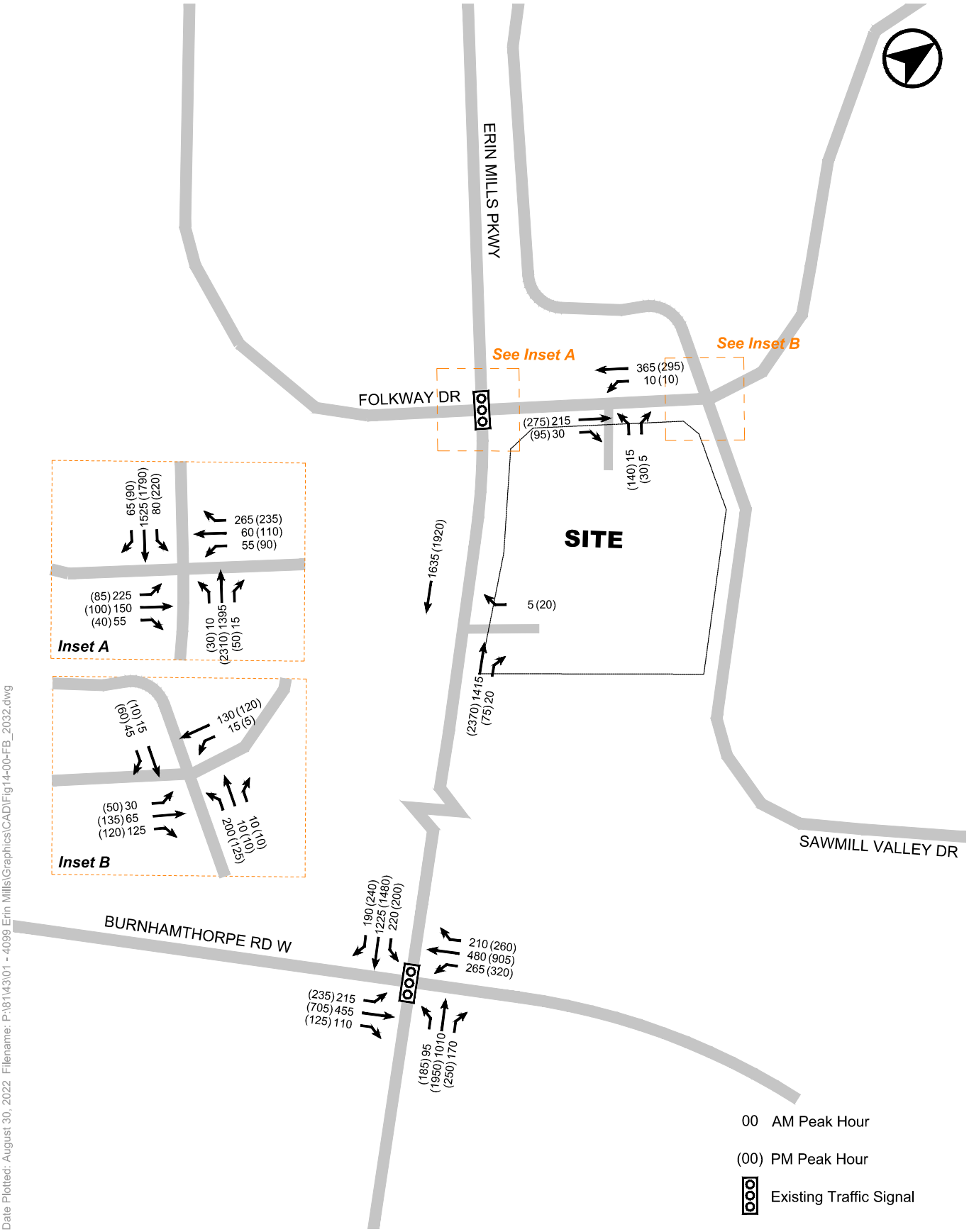


**FIGURE 14 2032 FUTURE BACKGROUND TRAFFIC VOLUMES**

## 7.4 SITE TRAFFIC VOLUMES

### 7.4.1 Vehicle Trip Generation

Trip generation rates for the proposed development were adopted based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition Volume 3. For the common access residential uses on site, LUC 221 – Multifamily Housing (Mid-Rise) was adopted.

For the future retail uses on site, a trip generation rate has been calculated using the existing site trip generation from the site today.

Existing trips generated by the site have also been removed to create a net-new site traffic layer for analysis. Existing site trips to be removed are illustrated on **Figure 15**. Site trip generation rates and forecasts are outlined below in **Table 21**.

#### TABLE 21 SITE RESIDENTIAL TRIP GENERATION RATES

| | No. Units or GFA | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | 2-Way | In | Out | 2-Way |
| **Resident Trip Generation** | | | | | | | |
| *Multifamily Housing (Mid-Rise) (LUC 221)[1]* | - | *0.09* | *0.28* | *0.37* | *0.24* | *0.15* | *0.39* |
| **Retail Trip Generation** | | | | | | | |
| Existing Trips (6,692 $m^2$ retail GFA) | - | 60 | 25 | 85 | 180 | 190 | 370 |
| *Retail Trip Rate (per 100 $m^2$ GFA)* | - | *0.90* | *0.37* | *1.27* | *2.69* | *2.84* | *5.53* |
| **Trips Generated** | | | | | | | |
| New Retail Use | 776 $m^2$ | 10 | 5 | 15 | 25 | 25 | 50 |
| Residential Use | 703 units | 60 | 205 | 265 | 170 | 110 | 280 |
| **Total Site Vehicle Volumes** | **-** | **70** | **210** | **280** | **195** | **135** | **330** |
| **Existing Site Vehicle Volumes to be Removed** | **-** | **-60** | **-25** | **-85** | **-180** | **-190** | **-370** |
| **Net-New Site Traffic Volumes** | **-** | **10** | **185** | **195** | **15** | **-55** | **-40** |

Notes:
1. Trips per residential unit.

It is projected that the site will generate in the order of **195** net-new two-way vehicle trips in the morning peak hour in future. In the afternoon peak hour, the site is projected to generate **40 less** two-way vehicle trips than the existing retail site.

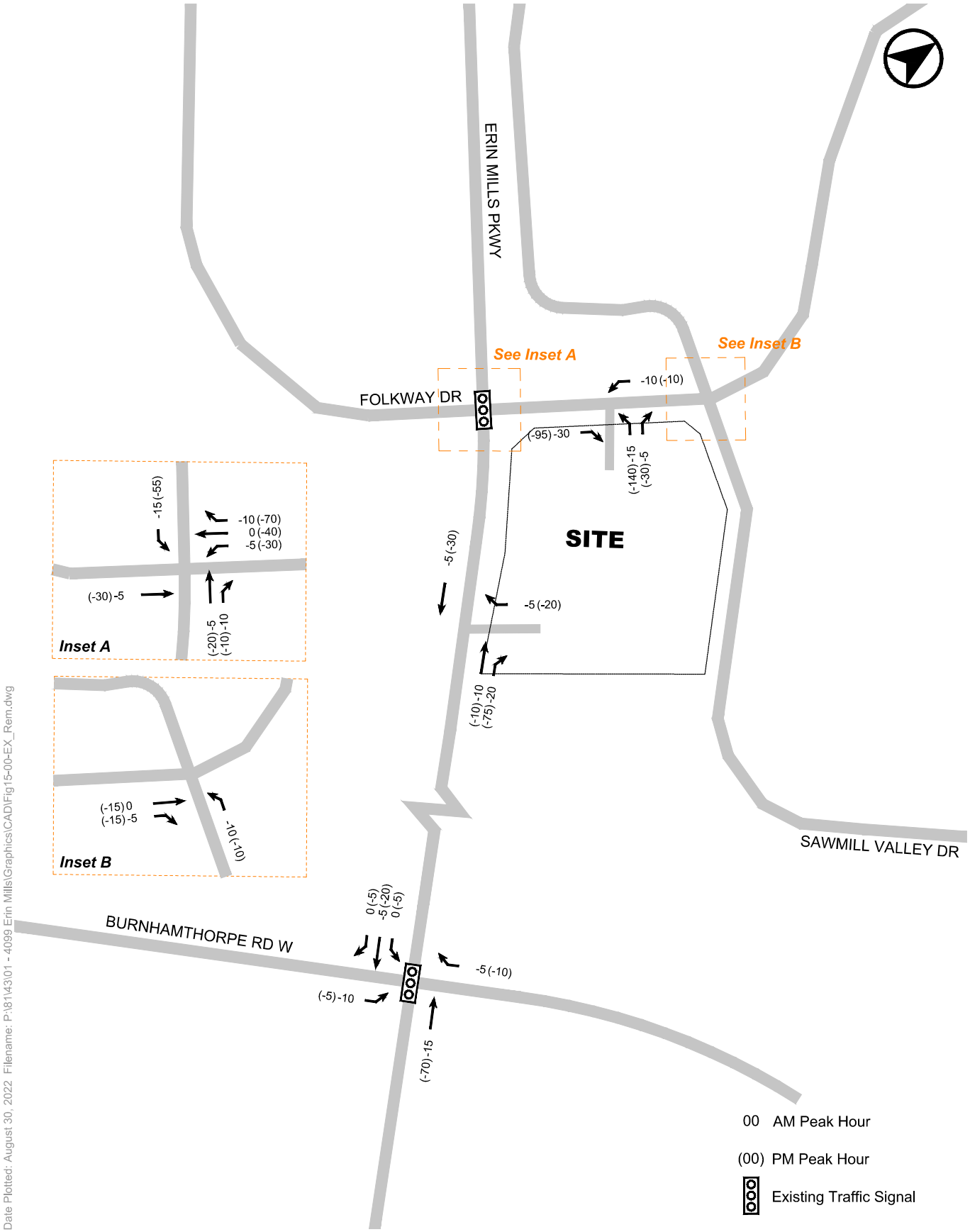


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**FIGURE 15 EXISTING SITE TRIPS TO BE REMOVED**

### 7.4.2 Trip Distribution and Assignment

Site traffic distribution patterns are based upon a review of information from the 2016 Transportation Tomorrow Survey (TTS) and observations of existing traffic patterns in the area. Data from 2006 TTS zones 3677, 3676 and 3663 were queried to determine trip distribution patterns for the locality of the site. The adopted trip distribution is summarized in **Table 22**. Detailed query results are attached in **Appendix E**.

#### TABLE 22 SITE TRIP DISTRIBUTION

| To/From | Potential Route Option | Inbound | Outbound |
|---|---|---|---|
| **North** | Erin Mills Parkway | 12.5% | 15% |
| **South** | Erin Mills Parkway | 30% | 27.5% |
| **East** | Burnhamthorpe Road (via Sawmill Valley Drive) | 12.5% | 12.5% |
| | Highway 403 | 27.5% | 27.5% |
| **West** | Burnhamthorpe Road West | 10% | 7.5% |
| | Highway 403 | 7.5% | 10% |

The adopted directional distribution was used to assign site trips to the area road network. Net-new site traffic for the site is demonstrated on **Figure 16**.

## 7.5 FUTURE TOTAL TRAFFIC

The future 2027 and 2032 background traffic volumes in the weekday morning and afternoon peak hours were combined with net-new site traffic volumes, to develop future total traffic forecasts. The 2027 and 2032 future total traffic volumes for the weekday morning and afternoon peak hours are illustrated in **Figure 17** and **Figure 18**, respectively.

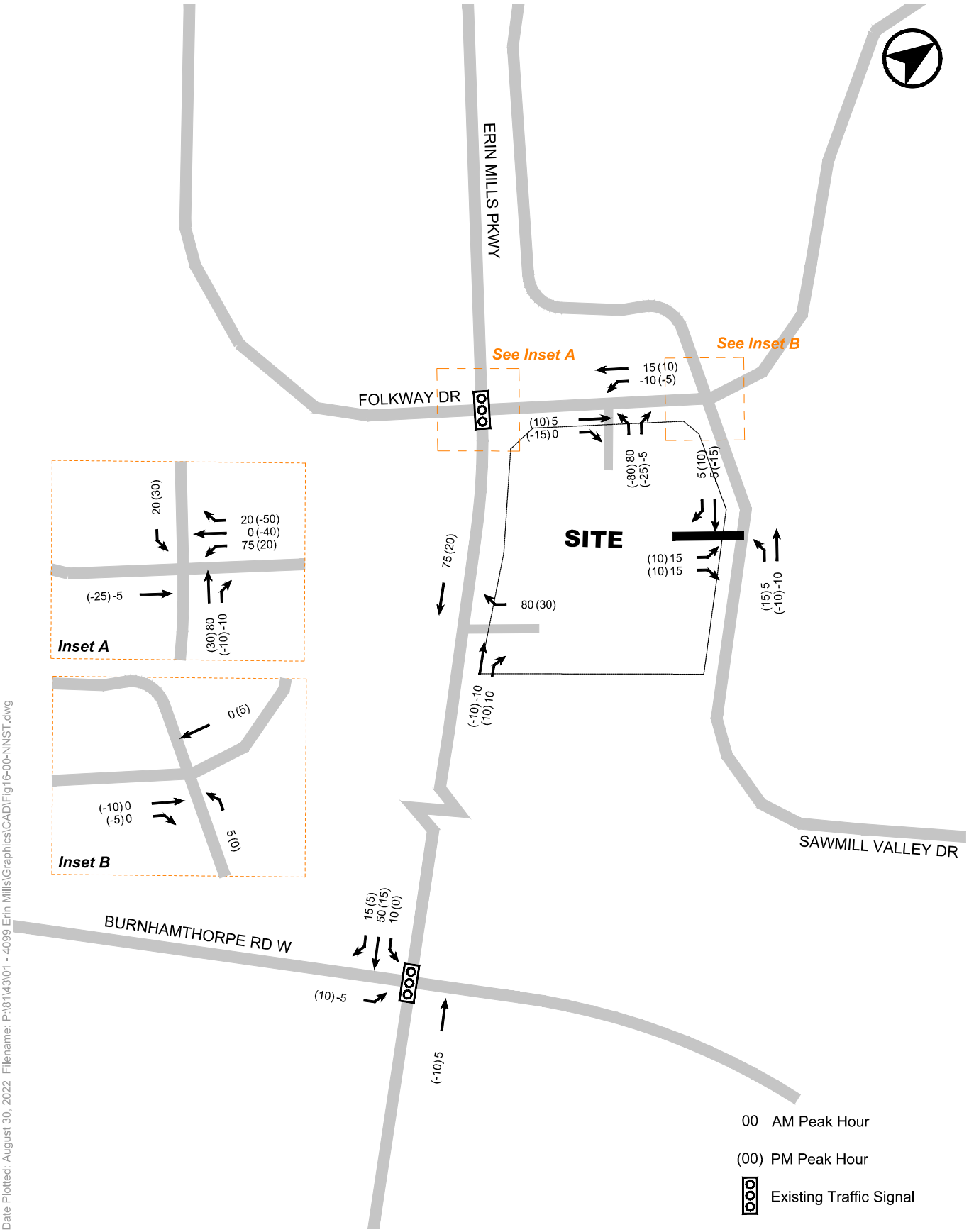


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**FIGURE 16 NET-NEW SITE TRAFFIC VOLUMES**

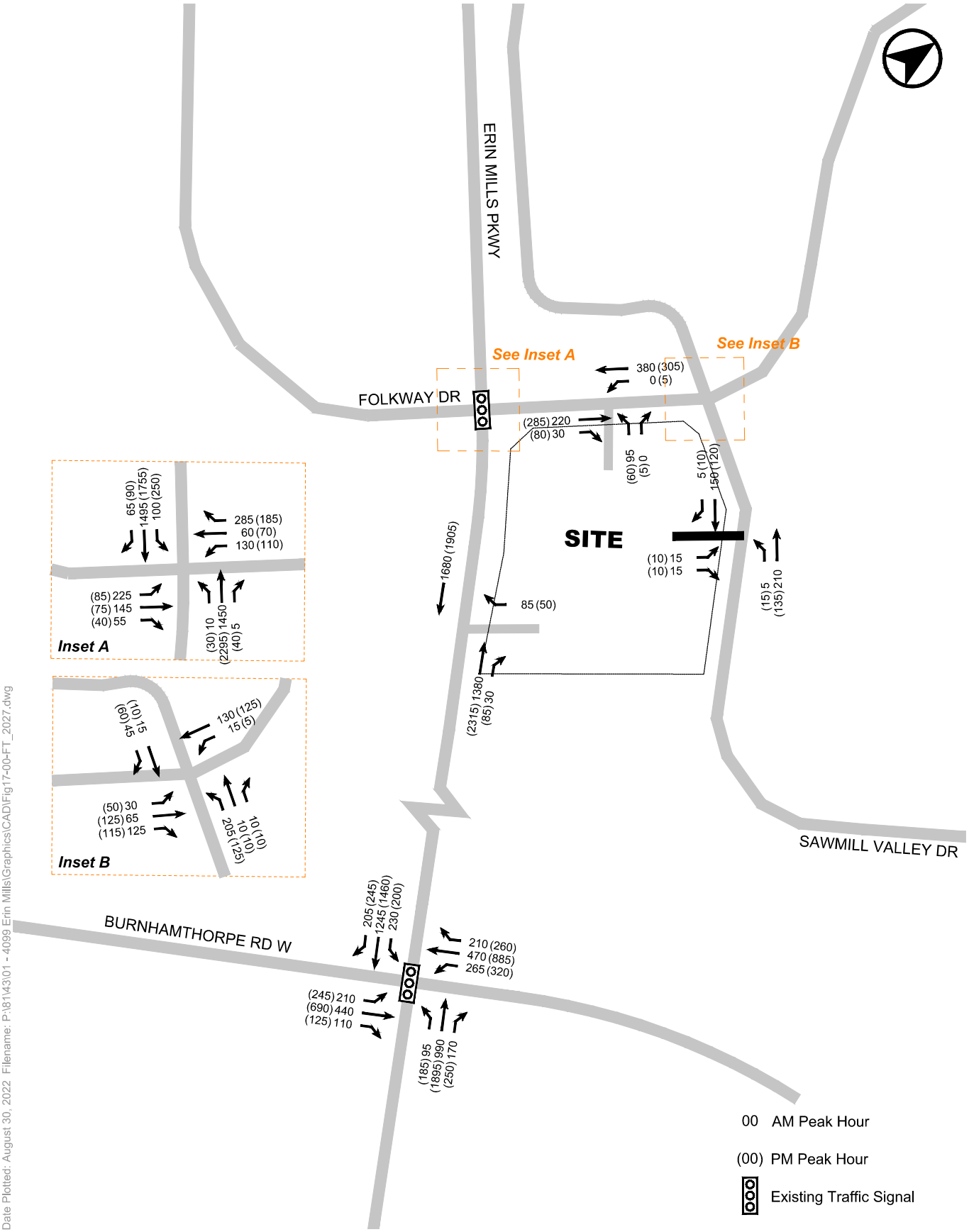


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**FIGURE 17 2027 FUTURE TOTAL TRAFFIC VOLUMES**

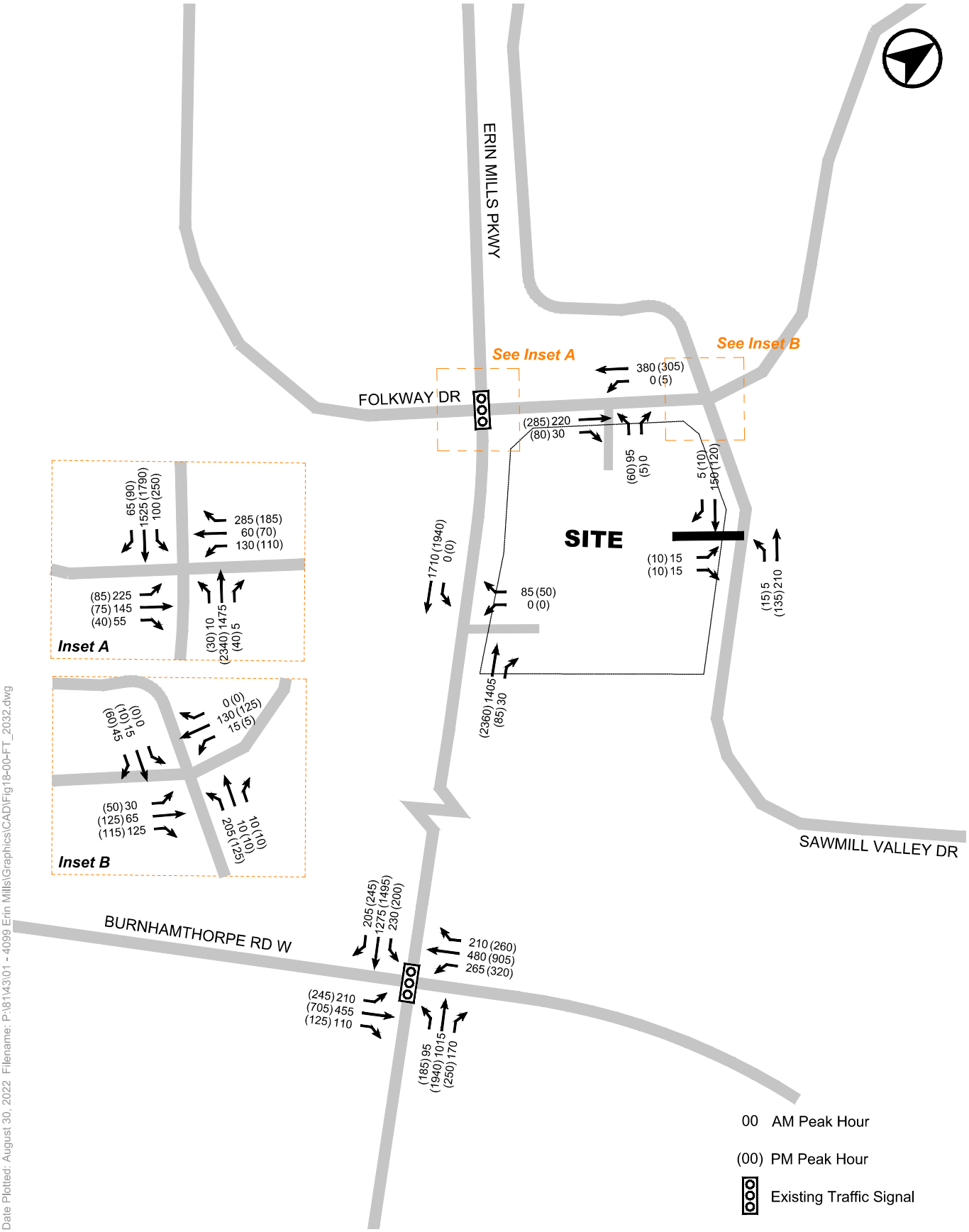


**FIGURE 18 2032 FUTURE TOTAL TRAFFIC VOLUMES**

# 8.0 TRAFFIC ANALYSIS

An analysis of the study area intersections was undertaken using Synchro 11 and the *Highway Capacity Manual (HCM) 2000* methodology. The quality of traffic operations at intersections is typically based on the volume to capacity (v/c) ratio and level of service (LOS).

The v/c ratio for a particular movement (e.g. left/right turn or through) at an intersection is a measure of the capacity consumed by the number of vehicles making that movement and the total available capacity. The v/c ratio for an intersection overall is the weighted average of the v/c ratios for the critical movements. A v/c ratio of 1.00 indicates that the movement or intersection is operating at its theoretical capacity and there is no capacity available to accommodate any additional vehicles.

The LOS for a particular movement is based on the average delay per vehicle and includes deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections, the LOS ranges from LOS A (10 seconds or less average delay per vehicle) to LOS F (greater than 80 seconds average delay per vehicle). The LOS for an intersection overall is based on the weighted average delay for all vehicles processed by the intersection.

The LOS criteria for unsignalized intersections are somewhat different from the criteria for signalized intersections as the characteristics of different transportation facilities result in different driver perceptions. The expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay than an unsignalized intersection. Therefore, the delay values for unsignalized intersection have a smaller range, from LOS A (10 seconds or less average delay per vehicle) to LOS F (greater than 50 seconds average delay per vehicle). For unsignalized intersections, LOS is only calculated for those movements that conflict with opposing free-flow traffic and is not defined for the intersection as a whole.

Acceptable operations are generally considered to be LOS D or better. However, during peak hours, a LOS D is considered acceptable for through movements and the overall intersection, and a LOS E is considered acceptable for turning movements.

Calibrations were made to the intersection at Erin Mills Parkway / Burnhamthorpe Road West in the afternoon peak hour to account for intersection “sneakers” (vehicles entering the intersection on an amber or all-red phase). These calibrations were made to the northbound movements, based on data collected as part of an intergreen study.

Each “sneaker” per cycle corresponds generally to -1 second of lost time adjustment (LTA) to be entered into Synchro for calibration. For the northbound left movement, -2 seconds LTA was adopted. For the northbound through movement, a very conservative LTA of -1.5 seconds was adopted, although a much higher volume of “sneakers” was observed in the field (4+ vehicles per cycle).

As well as LTA adjustments, in the afternoon peak hour, the Left-Turn Factors (permissive/protected) were adjusted for the northbound left-turn movement. Lastly, the Lane Utilization Factor was also increased to 1.00 for the northbound through movement to account for heavy volumes of traffic spreading more evenly across all available lanes under existing conditions.

Model calibrations are important to ensure that existing v/c ratios remain at 1.00 or below to reflect actual field conditions, as this is the number of counted vehicles that were registered as making it through the intersection on the day of the surveys. The intergreen calibration study results are attached in **Appendix F**.

Other key parameters used in the analysis include:

- Existing lane configurations for the road network;
- Heavy vehicle percentages as derived from existing traffic;
- Peak hour factors per Region of Peel guidelines for Regional roads
- Peak hour factors per existing traffic counts for City roads; and
- Synchro defaults for all other parameters.

Detailed Synchro outputs are attached for reference in **Appendix G**.

## 8.1 SIGNALIZED INTERSECTION OPERATIONS

### 8.1.1 Erin Mills Parkway / Burnhamthorpe Road West

The results of the traffic analysis for the intersection of Erin Mills Parkway / Burnhamthorpe Road are summarized in **Table 23.**

Under existing conditions, the intersection functions adequately with a maximum overall v/c ratio of 0.90 (occurring in the afternoon peak hour). With the necessary calibrations in place, the northbound through movement operates with a v/c ratio of 1.00. This indicates that the movement is, under existing conditions, already operating at its theoretical capacity and will require split optimization under future conditions.

In the 2027 future background scenario, the maximum overall v/c ratio is 0.94, indicating that the intersection operates within its theoretical capacity. Notably, the northbound through movement produces a v/c ratio of 1.03 under this condition. The addition of site traffic results only a small increase in the maximum overall v/c ratio to 0.95 (in the afternoon peak hour). The northbound through movement remains at a v/c above 1.00 for both the future background and future total conditions.

In the 2032 horizon year, conditions are very similar to 2027 with the maximum overall v/c ratio being 0.96 with the inclusion of site-related traffic.

### TABLE 23 ANALYSIS SUMMARY – ERIN MILLS PKWY / BURNHAMTHORPE RD

| | 2022 Existing | | 2027 Future Background | | 2027 Future Total | | 2032 Future Background | | 2032 Future Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | V/C | LOS | V/C | LOS | V/C | LOS | V/C | LOS | V/C | LOS |
| EBL | 0.77 (0.90) | E (F) | 0.77 (0.93) | E (F) | 0.76 (0.98) | E (F) | 0.77 (0.94) | E (F) | 0.77 (0.97) | E (F) |
| EBTR | 0.49 (0.49) | D (D) | 0.49 (0.49) | D (D) | 0.50 (0.49) | D (D) | 0.50 (0.49) | D (D) | 0.50 (0.49) | D (D) |
| WBL | 0.67 (0.80) | D (D) | 0.68 (0.84) | D (D) | 0.68 (0.84) | D (D) | 0.68 (0.85) | D (D) | 0.68 (0.85) | D (D) |
| WBT | 0.70 (0.81) | D (D) | 0.71 (0.83) | D (E) | 0.71 (0.83) | D (E) | 0.71 (0.84) | D (E) | 0.71 (0.84) | D (E) |
| WBR | 0.15 (0.26) | D (D) | 0.15 (0.29) | D (D) | 0.15 (0.29) | D (D) | 0.15 (0.29) | D (D) | 0.15 (0.29) | D (D) |
| NBL | 0.42 (0.87) | C (E) | 0.45 (0.82) | C (D) | 0.47 (0.83) | C (D) | 0.47 (0.83) | C (D) | 0.48 (0.83) | C (D) |
| NBT | 0.53 (1.00) | C (E) | 0.57 (1.03) | D (F) | 0.58 (1.02) | D (E) | 0.59 (1.06) | D (F) | 0.61 (1.05) | D (F) |
| NBR | 0.11 (0.16) | C (D) | 0.11 (0.16) | C (D) | 0.11 (0.16) | C (D) | 0.11 (0.16) | C (D) | 0.11 (0.16) | C (D) |
| SBL | 0.65 (0.91) | C (F) | 0.67 (0.97) | C (F) | 0.69 (1.00) | C (F) | 0.69 (0.97) | C (F) | 0.70 (0.98) | C (F) |
| SBT | 0.55 (0.74) | C (D) | 0.59 (0.79) | C (D) | 0.61 (0.80) | C (D) | 0.61 (0.82) | C (D) | 0.63 (0.83) | C (D) |
| SBR | 0.13 (0.16) | C (C) | 0.13 (0.16) | C (D) | 0.14 (0.17) | C (D) | 0.13 (0.16) | C (D) | 0.14 (0.17) | C (D) |
| **Overall** | **0.70 (0.90)** | **D (E)** | **0.71 (0.94)** | **D (E)** | **0.72 (0.95)** | **D (E)** | **0.72 (0.95)** | **D (E)** | **0.73 (0.96)** | **D (E)** |

Notes:
1. 00 (00): Weekday morning peak hour (Weekday afternoon peak hour).

### 8.1.2 Erin Mills Parkway / Folkway Drive

The results of the traffic analysis for the intersection of Erin Mills Parkway / Folkway Drive are summarized in **Table 24.**

Under existing conditions, the intersection functions relatively well, with a maximum overall v/c ratio of 0.86 (occurring in the afternoon peak hour). With the necessary model calibrations in place, the eastbound left-turn movement operates with a v/c ratio of 1.00 in the morning peak hour. This indicates that the intersection would likely require split optimization under future conditions where any level of traffic growth is present.

In the 2027 future background scenario (with split timing optimization), the maximum overall v/c ratio is 0.88 indicating that the intersection operates within its theoretical capacity. The addition of site traffic sees only a small increase in the maximum overall v/c ratio in the morning peak hour, and a reduction in the afternoon peak as a result of existing site traffic removals. The maximum overall v/c ratio is 0.84 under 2027 future total conditions.

In the 2032 horizon year, conditions are very similar to 2027 with only the northbound and southbound through movements becoming slightly busier – still well within their theoretical capacity. The maximum overall v/c ratio for the 2032 future total scenario is 0.85.

#### TABLE 24 ANALYSIS SUMMARY – ERIN MILLS PKWY / FOLKWAY DR

| | 2022 Existing | | 2027 Future Background | | 2027 Future Total | | 2032 Future Background | | 2032 Future Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | V/C | LOS | V/C | LOS | V/C | LOS | V/C | LOS | V/C | LOS |
| EBL | 1.00 (0.96) | F (F) | 0.91 (0.96) | F (F) | 0.91 (0.69) | F (E) | 0.91 (0.96) | F (F) | 0.91 (0.68) | F (E) |
| EBTR | 0.45 (0.54) | D (E) | 0.41 (0.54) | D (E) | 0.40 (0.47) | D (E) | 0.41 (0.54) | D (E) | 0.40 (0.49) | D (E) |
| WBL | 0.18 (0.35) | D (D) | 0.18 (0.35) | C (D) | 0.40 (0.42) | D (D) | 0.18 (0.35) | C (D) | 0.40 (0.42) | D (D) |
| WBTR | 0.44 (0.78) | D (E) | 0.41 (0.78) | D (E) | 0.42 (0.53) | D (D) | 0.41 (0.78) | D (E) | 0.42 (0.54) | D (D) |
| NBL | 0.06 (0.17) | C (B) | 0.07 (0.19) | C (B) | 0.07 (0.18) | C (B) | 0.07 (0.19) | C (B) | 0.07 (0.19) | C (B) |
| NBT | 0.55 (0.85) | C (C) | 0.60 (0.89) | C (D) | 0.66 (0.88) | C (D) | 0.61 (0.90) | C (D) | 0.67 (0.90) | C (D) |
| NBR | 0.01 (0.03) | C (B) | 0.01 (0.03) | C (B) | 0.00 (0.03) | C (B) | 0.01 (0.03) | C (B) | 0.00 (0.03) | C (B) |
| SBL | 0.59 (0.85) | E (F) | 0.55 (0.85) | E (F) | 0.63 (0.95) | E (F) | 0.55 (0.85) | E (F) | 0.63 (0.93) | E (F) |
| SBT | 0.54 (0.53) | C (B) | 0.58 (0.56) | C (B) | 0.59 (0.54) | C (B) | 0.59 (0.57) | C (B) | 0.60 (0.56) | C (B) |
| SBR | 0.05 (0.06) | B (B) | 0.05 (0.06) | B (B) | 0.05 (0.06) | B (B) | 0.05 (0.06) | B (B) | 0.05 (0.06) | B (B) |
| **Overall** | **0.68 (0.86)** | **D (C)** | **0.69 (0.88)** | **C (D)** | **0.73 (0.84)** | **C (C)** | **0.70 (0.89)** | **C (D)** | **0.73 (0.85)** | **C (C)** |

Notes:
1. 00 (00): Weekday morning peak hour (Weekday afternoon peak hour).

## 8.2 UNSIGNALIZED INTERSECTION OPERATIONS

The intersection of Folkway Drive / Sawmill Valley Drive is an All-Way Stop Controlled (AWSC) intersection within the study area that does not provide direct site access. The intersection has been analyzed under existing, future background and future total scenarios for the horizon years identified.

The intersection of Folkway Drive / Sawmill Valley Drive functions well under all scenarios. The maximum average movement delay in existing conditions is 11 seconds. With buildout of the site in future, there is not expected to be any significant delay time at this intersection. The site's multiple driveways ensure that drivers can enter and exit the site from the best approach and minimize any additional impacts at this local unsignalized intersection.

The results of the traffic analysis for the intersection of Folkway Drive / Sawmill Valley Drive are summarized in **Table 25**. Only existing and 2032 horizon years are shown, as there is a negligible difference in results for the intermediate horizon years.

### TABLE 25 ANALYSIS SUMMARY – FOLKWAY DRIVE / SAWMILL VALLEY DRIVE

| | Existing | | 2032 Future Background | | 2032 Future Total | |
|---|---|---|---|---|---|---|
| | LOS | Delay | LOS | Delay | LOS | Delay |
| EBTLR | A (B) | 9.7 (10.8) | A (B) | 9.7 (10.8) | A (B) | 9.7 (10.5) |
| WBTLR | A (A) | 9.5 (9.2) | A (A) | 9.5 (9.2) | A (A) | 9.5 (9.2) |
| NBTLR | B (A) | 10.8 (9.9) | B (A) | 10.8 (9.9) | B (A) | 10.9 (9.8) |
| SBTLR | A (A) | 8.3 (8.4) | A (A) | 8.3 (8.4) | A (A) | 8.3 (8.3) |

Notes:
1. 00 (00): Weekday morning peak hour (Weekday afternoon peak hour).

### 8.2.1 Site Driveways

Future access to the site is proposed to be provided by three unsignalized driveway access points at the following locations:

- Folkway Drive (all movements permitted);
- Sawmill Valley Drive (all movements permitted); and
- Erin Mills Parkway (existing right-in/right-out access).

Driveways to the site function well under all scenarios, with the maximum delay experienced being approximately 19 seconds (LOS rating of C). The results of analysis for site driveways are summarized in **Table 26**.

#### TABLE 26 ANALYSIS SUMMARY – SITE DRIVEWAYS

| Movement | 2027 Future Background | | 2027 Future Total | | 2032 Future Background | | 2032 Future Total | |
|---|---|---|---|---|---|---|---|---|
| | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay |
| **Erin Mills Parkway Driveway (Right-In/Right-Out)** | | | | | | | | |
| WBR | B (C) | 12.2 (17.0) | B (C) | 13.5 (18.2) | B (C) | 12.3 (17.3) | B (C) | 13.6 (18.6) |
| **Folkway Drive Driveway (All-Movements)** | | | | | | | | |
| WBTL | A (A) | 0.3 (0.4) | A (A) | 0.0 (0.0) | A (A) | 0.3 (0.4) | A (A) | 0.0 (0.2) |
| NBLR | B (C) | 12.9 (18.4) | C (B) | 16.0 (14.9) | B (C) | 12.9 (18.4) | C (C) | 16.0 (15.0) |
| **Sawmill Valley Drive Driveway (All-Movements)** | | | | | | | | |
| EBLR | Future total only. | | B (A) | 10.6 (9.8) | Future total only. | | B (A) | 10.6 (9.8) |
| NBTL | | | A (A) | 0.2 (0.8) | | | A (A) | 0.2 (0.8) |

Notes:
1. 00 (00): Weekday morning peak hour (Weekday afternoon peak hour).
2. Only movements with delay > 0 seconds are shown.

# 9.0 TRAFFIC OPERATIONS AND SAFETY REVIEW

## 9.1 PROPOSED POINTS OF ACCESS

The development proposal includes three points of access for the site as follows:

- Right-in/right-out only on Erin Mills Parkway at south end of site (existing access)
- Full access on Folkway Drive (existing access)
- Full access on Sawmill Valley Drive (new proposed access)

The proposed access at Erin Mills Parkway has been redesigned as per Peel Region's Standard 5-1-5, except with urbanized with smaller curb radii's. A functional design for the proposed new access on Sawmill Valley Drive is provided in **Appendix H.**

### 9.1.1 Evaluation of Sight Distance

Sight distance has been evaluated based on TAC design criteria for the proposed access points on Erin Mills Parkway, Folkway Drive and Sawmill Valley Drive. As summarized in **Table 27**, all site access points meet the minimum sight distance requirements as outlined in the TAC Manual. The relevant sight distance figures are provided in **Appendix I**.

**TABLE 27 TAC MINIMUM SIGHT DISTANCE REQUIREMENTS**

| Access | Posted Speed | Design Speed Assumption | Intersection Control | TAC Minimum Sight Distance | Requirements Satisfied |
|---|---|---|---|---|---|
| Erin Mills Parkway | 70 km/h | 80 km/h | Case B2 – Right turn from the minor road | 145 m | Yes |
| Sawmill Valley Drive | 40 km/h | 50 km/h | Case B1 – left turn from the minor road | 105 m | Yes |
| Folkway Drive | 40 km/h | 50 km/h | Case B1 – left turn from the minor road | 105 m | Yes |

# 10.0 COMMUNITY IMPACTS

This section reviews the potential community-related impacts of the development proposal, with a particular focus on Sawmill Valley Drive.

## 10.1 TRAVEL DEMAND COMPARISON OF SITE

The site-related traffic generated as a result of the development is expected to reverse the current peak hour traffic patterns related to the existing retail land uses on the site.

While the travel demands of the development proposed for the site during the morning peak hour, are expected to be higher when compared to the existing retail land uses on the site, the travel demands during the afternoon peak hour traffic are expected to be less.

**Table 28** summarizes a comparison between the traffic volumes on the existing retail site and the forecasted traffic volumes when the site includes the proposed redevelopment.

### TABLE 28 PEAK HOUR SITE VEHICLE TRIP GENERATION COMPARISON

| | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | In | Out | 2-Way | In | Out | 2-Way |
| Existing Retail Site Trip Generation | 60 | 25 | **85** | 180 | 190 | **370** |
| Projected Future Site Trip Generation | 70 | 210 | **280** | 195 | 135 | **330** |
| **Difference between Existing vs. Future Vehicle Trips** | **+10** | **+185** | **+195** | **+15** | **-55** | **-40** |

The 195 additional trips to and from the site during the morning peak hour will be primarily directed to Erin Mills Parkway and Highway 403. It is not expected that a significant amount of traffic from the site will travel through the local street network. In the afternoon peak hour, a reduction of 40 two-way total site trips is projected. This indicates that community impacts in the afternoon peak will be positive and operations will likely be improved when compared to the existing conditions.

## 10.2 SAWMILL VALLEY DRIVE

As a new full access on Sawmill Valley Drive is proposed as part of the development, it is important to consider potential impacts along Sawmill Valley Drive.

As summarized in **Table 28** the proposed development will generate less traffic during the afternoon peak hour, when compared to the traffic volumes generated by the existing retail development. During the morning peak hour, 195 additional two-way vehicle trips will be generated when compared to the traffic volumes generated by the existing retail development.

As most of the traffic during the morning peak hour will be travelling to/from Erin Mills Parkway and Highway 403, it expected that only a minimal number of vehicles would choose to travel along Sawmill Valley Creek

and through the neighbourhood. During the afternoon peak hour, as trips to/from the site are expected to be 40 less when compared to the existing retail development, the impacts on the community are expected to be positive. As the traffic analysis indicates that the intersections surrounding the site are expected to operate reasonably well in the future, there will be little incentive to drive through the neighbourhood along Sawmill Valley Drive to travel to/from the site.

For the purpose of the analysis, as shown in **Table 29**, at the proposed new site driveway on Sawmill Valley Road, it is estimated that there would be 40 and 45 two-way trips during the morning and afternoon peak hours, respectively.

### TABLE 29 TRAFFIC VOLUMES AT PROPOSED NEW ACCESS ON SAWMILL VALLEY ROAD

| | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | In | Out | 2-Way | In | Out | 2-Way |
| Proposed New Site Access on Sawmill Valley Road | 10 | 30 | **40** | 25 | 20 | **45** |

To gain a better understanding of the potential impact of the development on the overall traffic volumes along Sawmill Valley Road, forecasted traffic volumes (just south of the proposed access) were compared along the road for the 2032 future background (***without*** *the new site development*) and the 2032 future total conditions (***with*** *the new site development*).

As shown in **Table 30**, without the proposed development, it is estimated that there would be 375 and 280 vehicles, during the morning and afternoon peak hours, respectively, travelling along Sawmill Valley Road. With the addition of the site development traffic, it is estimated that there would be 380 and 280 vehicles, during the morning and afternoon peak hours, respectively, travelling on Sawmill Valley Road. The net difference in traffic volumes along Sawmill Valley Drive **with** the proposed development is +5 and 0 vehicles during the morning and afternoon peak hours, respectively. The negligible traffic impact on Sawmill Valley Drive is the result of replacing the existing retail land uses on the site with residential land uses that generate less traffic, particularly during the afternoon peak hour.

For the reasons outlined above, it is appropriate to conclude that the traffic-related impacts of the proposed development on Sawmill Valley Drive and the surrounding residential roads, will be negligible.

### TABLE 30 TRAFFIC VOLUMES ON SAWMILL VALLEY ROAD (SOUTH OF PROPOSED ACCESS)

| Scenario | AM Peak Hour Traffic Volumes | | | PM Peak Hour Traffic Volumes | | |
|---|---|---|---|---|---|---|
| | North bound | South bound | Total 2-way | North Bound | South bound | Total 2-way |
| Future Background (2032) | 220 | 155 | **375** | 145 | 135 | **280** |
| Net New Site-Related | -5 | +10 | **+5** | +5 | -5 | **0** |
| Future Total (2032) | 215 | 165 | **380** | 150 | 130 | **280** |

# 11.0 SUMMARY AND CONCLUSIONS

BA Group was retained by the Queenscorp (Erin Mills) Inc. to provide transportation consulting services related to a proposed mixed-use development on a site municipally known as 4099 Erin Mills Parkway, in the City of Mississauga ("the site").

As part of the proposed development, the existing retail plaza on the site will be demolished and replaced with 5 buildings, with a total of 591 residential condominium units and 776 $m^2$ GFA of retail, and 7 stacked townhouses with 112 residential units. The total number of residential units proposed for the site (condominium units plus stacked townhouses) is 703 units. Parking for the development will be located in a 2-level below-grade parking facility, with some at-grade parking for the retail component and visitors to the site.
.
Vehicle access to the site is proposed via the existing right-in/right out access on Erin Mills Parkway, the existing full access on Folkway Drive and a proposed new full access on Sawmill Valley Drive, approximately 82 metres south of Folkway Drive.

**Key findings are summarized as follows:**

**Transportation Context**

- The site is located in an area with excellent transit service with major bus routes operating on Erin Mills Parkway, Burnhamthorpe Road West and Highway 403. Existing bus stops in the area serve Mississauga Transitway (MiWay) Bus Route 1/1C (Dundas), Bus Route 29 (Park Royal-Homelands), Bus Route 48 (Erin Mills), and Bus Route 110 (University Express). The site is also located within proximity to two transit hubs, Erin Mills Transitway Station and South Common Centre Terminal. The closest bus stops to the site are located adjacent to the site at the corner of Erin Mills Parkway / Folkway Drive.

- Bicycle facilities are located approximately along sections of Burnhamthorpe Road (approximately 500 metres south of the site) and multi-use trails are provided on the north side of the road for pedestrians and cyclists. The most proximate dedicated bicycle lanes are located along South Millway (approximately 900 metres south-east of the site) which provides a direct east-west travel route between The Collegeway and Erin Mills Parkway. In the vicinity of the site, the City's 2018 Cycling Master Plan includes the provision of multi-use trails along Erin Mills Parkway, and shared routes along Folkway Drive and Sawmill Valley Drive. Additional multi-use trails are proposed along Burnhamthorpe Road to connect the gaps within the existing network. Cycle tracks / separated bike lanes are proposed along Glen Erin Drive and Mississauga Road, providing safer cycling connections across the City of Mississauga. These infrastructure upgrades will improve future cycling connectivity for future residents and visitors of the site.

- There is an extensive network of sidewalks in the vicinity of the site. Directly adjacent to the site, there are sidewalks on both sides of Erin Mills Parkway, Folkway Drive and along Sawmill Valley Drive. These sidewalks provide pedestrians with excellent access to transit stops and encourage walking trips beyond the site.

- The nearest protected pedestrian crossing to the site is at the existing traffic signal on Erin Mills at Folkway Drive. The existing all-way stop control intersection at Folkway Drive & Sawmill Valley Drive also provides a protected crossing for pedestrians.

- As part of the development proposal, walkways will be provided throughout the site with connections to existing sidewalks at all access points.

- The site's proximity to Highway 403 and major arterial roads such as Erin Mills Parkway and Burnhamthorpe Road is also supportive of automobile travel to and from the site.

**Vehicle Parking Considerations**

- The City's 2019 Parking Master Plan and Implementation Study (PMPIS) established four parking precincts and recommended staff undertake a review of off-street parking rates based on these precincts. Subsequently, staff prepared a Parking Regulations Study which was the subject of the May 31, 2021 Planning Development Committee (PDC) meeting. On June 8, 2022, Council endorsed the recommendations and passed Zoning By-law 0117-2022.

- In accordance with the recommendations of Zoning By-law 0117-2022, the site is located within Precinct 4. Application of Zoning By-law 0117-2022 results a total requirement of 964 parking spaces, inclusive of 818 resident spaces and 146 non-resident spaces to be shared between resident visitors and retail visitors.

- During the appeal period of the Amended Zoning By-law, the requirements of the existing Zoning By-law 0225-2007 should also be considered. The City's Zoning By-law 0225-2007 has a shared parking provision for mixed-use buildings that include residential and commercial uses. Application of the prevailing Zoning By-law 0225-2007 sharing provision demonstrates that the weekday evening peak period results in the highest parking requirement, and the total minimum requirement for the site is 1,132 parking spaces, inclusive of 948 resident spaces, 146 resident visitor spaces and 38 retail spaces.

- The proposed parking supply for the site includes a total of 914 parking spaces, inclusive of 773 resident spaces and 141 non-resident spaces to be shared between resident visitors and retail visitors. The proposed parking supply is only 50 spaces less than the requirements of Zoning By-law 0117-2022 and will meet the practical needs of the site.

**Bicycle Parking Considerations**

- The recommended bicycle parking supply rates required by Zoning By-law 0118-2022 have been applied to the proposed development and requires the provision of a total of 457 bicycle parking spaces inclusive of 422 long-term resident spaces and 35 short-term visitor spaces.

- As the architectural drawings illustrate a total of 460 bicycle parking spaces, inclusive of 422 long-term resident spaces and 38 short-term visitor spaces, the proposed supply will meet the practical needs of the site and aligns with the Zoning By-law requirements.

**Loading Considerations**

- The City of Mississauga Zoning By-law 0225-2007 requires 1 loading space for non-residential (non-office) floor area between 250 $m^2$ and 2,350 $m^2$. For the 411$m^2$ of non-residential uses proposed in Block G and 365 $m^2$ in Block D, Zoning By-law 0225-2007 requires 1 loading space for each block. For the residential uses, By-law 0225-2007 requires 1 loading space where an apartment building has more than 30 residential units.

- A total of 5 loading spaces are proposed for the site. One loading space is proposed for each block (a total of 2 loading spaces for Blocks A & D), to operate on a shared basis between the residential and non-residential uses. For a development of the size and scale of that proposed, sharing of the loading space between the residential and commercial uses is appropriate. Additional lay-by pick-up / drop-off areas are available on the site for temporary curbside pick-up and drop-off activity.

**Transportation Demand Management Framework**

- The Transportation Demand Management (TDM) framework strives to reduce automobile use as a part of the design and construction of the development, as well as after construction as an on-going strategy by supporting and promoting the use of non-auto transportation modes.

- Proposed TDM strategies for the site include a vehicle parking supply that aligns with Zoning By-law 0117-2022, unbundled vehicle parking from unit purchase, a bicycle parking supply that meets the requirements within the City's Cycling Master Plan, bicycle repair stations, construction of walkways connecting to existing area sidewalks, consideration for the provision of Presto cards and information packages/lobby screens regarding travel options.

**Vehicle Travel Demand**

- Trip generation rates for the proposed development were adopted based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition Volume 3. For the common access residential uses on site, LUC 221 – Multifamily Housing (Mid-Rise) was adopted. For the future retail uses on site, a trip generation rate was calculated using the existing site trip generation from the site today.

- Existing trips generated by the site were removed to create a net-new site traffic layer for analysis.

- It is projected that the site will generate in the order of **195** net-new two-way vehicle trips in the morning peak hour in future. In the afternoon peak hour, the site is projected to generate **40 less** two-way vehicle trips than the existing retail site.

**Traffic Volumes and Operations Analysis**

- The traffic analysis was undertaken for the existing (2022), build-out (2027) and 5-years post-build out (2032) horizon years.

- Due to the recent COVID-19 “lockdowns” imposed by the Province of Ontario, current traffic volumes on the public road network may not reflect typical (i.e. pre-COVID-19) operating conditions. As a result, it was not possible at the time of writing to collect data for existing traffic volumes representative of typical conditions.

- Detailed traffic volume counts conducted prior to the COVID-19 pandemic were obtained from the City of Mississauga for the intersections at Erin Mills Parkway / Burnhamthorpe Road West and Erin Mills Parkway / Folkway Drive. These volumes, collected in 2018 and 2019, allow corridor volumes to be balanced along Erin Mills Parkway and better reflect what would likely be baseline existing conditions under normal circumstances.

- Traffic counts were completed during the weekday morning and afternoon peak periods (the busiest hours of traffic between 7:30 morning to 9:30 morning and 4:00 afternoon to 6:00 afternoon, respectively) for intersections where recent (but still pre-pandemic) data were not available.

- Estimated compounded annual growth rate (CAGR) values for Erin Mills Parkway were provided by the Region of Peel (Jade Huangfu, Transportation Analyst) for use within this study. According to the Region of Peel *“growth rates are estimated based on multiple sources including Peel Travel Demand forecasting model, ATR and land use/forecasts data.”*

- Following a review of area developments on the Mississauga’s online development map, no additional traffic volumes were added as a result of no active developments in the surrounding area being shown.

- Trip generation rates for the proposed development were adopted based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11$^{th}$ Edition Volume 3.

- Existing trips generated by the site were removed to create a net-new site traffic layer for analysis.

- Site traffic distribution patterns were based upon a review of information from the 2016 Transportation Tomorrow Survey (TTS) and observations of existing traffic patterns in the area. Data from 2006 TTS zones 3677, 3676 and 3663 were queried to determine trip distribution patterns for the locality of the site.

- An analysis of the study area intersections was undertaken using Synchro 11 and the *Highway Capacity Manual (HCM) 2000* methodology. The quality of traffic operations at intersections is typically based on the volume to capacity (v/c) ratio and level of service (LOS).

- Maximum overall v/c ratios are below 1.00 for all horizon years, indicating that intersections can function within their theoretical capacity in future. Movements that are heavy under future background conditions (such as the northbound through movement at Erin Mills Parkway / Burnhamthorpe Road) will continue to operate at or above capacity in future – although the intersection overall remains within capacity.

- All unsignalized intersections and site driveways will operate well, with a maximum Level of Service of ‘C’ in future.

**Based on the foregoing, the proposed development can be accommodated on the future transportation network.**

# APPENDIX A:
# Architectural Drawings

## STATISTICS

| | M2 | SF |
|---|---|---|
| PROPOSED SITE AREA: | 26,405 | 284,223 |
| NEW PROPOSAL GFA | 58,976 | 634,821 |
| FSI | 2.23 | |
| NEW RESIDENTIAL UNIT# | 703 | |

### GFA BREAKDOWN

(GFA EXCLUDES U/G PARKING , MECH.P.H., EXIT STAIR WELLS, INDOOR AMENITY SPACE, BICYCLE STORAGE , GARBAGE CHUTES, GARBAGE ROOM PER CITY OF MISSISSAUGE ZONING BY LAW )

| | DESCRIPTION | | RESIDENTIAL | | | | | RETAIL | | TOTAL GFA | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TOTAL GFA | | NET SALEABLE | | | | | | |
| | TYPE | HEIGHT (m) | m2 | ft2 | m2 | ft2 | UNIT | m2 | ft2 | m2 | ft2 |
| U/G PARKING | | 2 LEVELS | 459 | 4941 | | | | | | 459 | 4,941 |
| BUILDING 'A' | RESIDENTIAL BASE | 33.6 | 15,064 | 162,152 | 13,120 | 141,226 | 197 | 411 | 4,429 | 15,476 | 166,581 |
| BUILDING 'B' | RESIDENTIAL BASE | 21.2 | 11,286 | 121,480 | 9,585 | 103,173 | 142 | | | 11,428 | 123,009 |
| BUILDING 'C' | RESIDENTIAL BASE | 21.2 | 5,815 | 62,595 | 4,936 | 53,131 | 80 | | | 5,895 | 63,456 |
| BUILDING 'D' | RESIDENTIAL BASE | 26.0 | 7,308 | 78,664 | 6,213 | 66,877 | 95 | 365 | 3,926 | 7,403 | 79,687 |
| BUILDING 'E' | RESIDENTIAL BASE | 21.9 | 6,184 | 66,569 | 5,221 | 56,195 | 77 | | | 6,184 | 66,569 |
| TOTAL | | | 46,117 | 496,401 | 39,075 | 420,601 | 591 | 776 | 8,356 | 46,845 | 504,242 |

| | DIESCRIPTION | | RESIDENTIAL | | | | | RETAIL | | TOTAL GFA | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TOTAL GFA | | NET SALEABLE | | | | | | |
| | TYPE | HEIGHT (m) | m2 | ft2 | m2 | ft2 | UNIT | | | m2 | ft2 |
| B-B STACKED TOWNHOUSES | 108.3M2/ UNIT | 10.3 TO 11.3 | 12,131 | 130,578 | 12,131 | 130,578 | 112 | | | 12,131 | 130,578 |

### PARKING REQUIRED

| RESIDENTIAL | UNITS # | MIN. RATE | PARKING SPACES |
|---|---|---|---|
| BUILDING 'A' | 197 | 1.1 | 217 |
| BUILDING 'B' | 142 | 1.1 | 156 |
| BUILDING 'C' | 80 | 1.1 | 88 |
| BUILDING 'D' | 95 | 1.1 | 105 |
| BUILDING 'E' | 77 | 1.1 | 85 |
| B-B STACKED TOWNHOUSES | 112 | 1.1 | 123 |
| SUB TOTAL | 703 | | 773 |
| NON-RESIDENTIAL | | | |
| RESIDENTIAL VISITOR | 703 | 0.2 | 141 |
| RETAIL | 776.3 | 5/100M2 | 39 |
| SUB TOTAL (BEFORE SHARING) | | | 180 |
| SUB TOTAL (AFTER SHARING) | | | 141 |
| TOTAL (BEFORE SHARING) | | | 953 |
| TOTAL (AFTER SHARING) | | | 914 |

### AMENITY REQUIRED

| | |
|---|---|
| 5.6m2 per unit | 3936.8 m2 |

### AMENITY PROVIDED

| | |
|---|---|
| INDOOR | 1621.03 m2 |
| OUTDOOR | 2330.41 m2 |

### BICYCLE PARKING - REQUIRED

| | RESIDENTIAL | | NON-RESIDENTIAL | | TOTAL |
|---|---|---|---|---|---|
| USE | RATIO | SPACES | RATIO | SPACES | |
| SHORT TERM (CLASS B) | 0.05 / UNIT | 35 | 0.20 / 100m² | 0 | 35 |
| LONG TERM (CLASS A) | 0.60 / UNIT | 422 | 0.15 / 100m² | 0 | 422 |
| TOTAL REQUIRED | | 457 | | 0 | 457 |

** BICYCLE PARKING RATIOS AS PER CITY OF MISSISSAUGA ZONING BY-LAW*

**BICYCLE PARKING SPACES SHALL NOT BE REQUIRED FOR NON-RESIDENTIAL USES WITH LESS THAN 1000 m² OF GFA - NON-RESIDENTIAL.*

### BICYCLE PARKING - PROVIDED

| | RESIDENTIAL | | |
|---|---|---|---|
| FLOOR | SHORT TERM (CLASS B) | LONG TERM (CLASS A) | SUB-TOTAL |
| FLOOR 1 | 38 | 158 | 196 |
| U/G LEVEL 1 | | 264 | 264 |
| TOTAL PROVIDED | 38 | 422 | 460 |

### PARKING PROVIDED

| FLOOR | USE | | TOTAL |
|---|---|---|---|
| | RESIDENTIAL | NON- RESIDENTIAL | |
| FLOOR 1 | | 26 | 26 |
| U/G LEVEL 1 | 558 | 115 | 673 |
| U/G LEVEL 2 | 215 | | 215 |
| TOTAL PROVIDED | 773 | 141 | 914 |
| RATIO | 1.1 | | |

| EVSE | |
|---|---|
| RESIDENTIAL | NON-RESIDENTIAL |
| | |
| 155 | 15 |
| | |
| 155 | 15 |
| 20% | 10% |

### ACCESSIBLE PARKING - PROVIDED

| FLOOR | SPACES | | TOTAL |
|---|---|---|---|
| | RESIDENTIAL | VISITOR | |
| FLOOR 1 | | 1 | 1 |
| U/G LEVEL 1 | 2 | 5 | 7 |
| U/G LEVEL 2 | 2 | | 2 |
| TOTAL PROVIDED | 4 | 6 | 10 |

SALEABLE UNIT MIX PROVIDED - UNIT TOTALS

| | BLDG | | | | | TOTAL | AVG. UNIT SIZE | |
|---|---|---|---|---|---|---|---|---|
| | | 1B | 2B | 2B+D | 3B | | m² | ft² |
| BLDG A+B+C+D +E | A | 130 | 39 | 16 | 12 | 197 | 66.6 | 717 |
| | B | 86 | 37 | 16 | 3 | 142 | 67.5 | 726 |
| | C | 56 | 16 | 5 | 3 | 80 | 61.7 | 664 |
| | D | 57 | 17 | 15 | 6 | 95 | 65.4 | 704 |
| | E | 55 | 10 | 5 | 7 | 77 | 67.8 | 730 |
| | | | | | | | | |
| | SUBTOTAL | 384 | 119 | 57 | 31 | 591 | 66.1 | 711 |
| | TOTAL UNITS | 384 | 176 | | 31 | | | |
| | UNIT MIX | 65.0% | 20.1% | 9.6% | 5.2% | 100.0% | | |
| | UNIT MIX TOTAL | 65.0% | 29.8% | | 5.2% | 100.0% | | |
| | AVG UNIT SIZE | 57.4 | 75.3 | 83.7 | 106.6 | m² | | |
| | AVG UNIT SIZE TOTAL | 57.4 | 72.8 | | 93.8 | m² | | |

| BLDG | TYPE | AVG UNIT SIZE | |
|---|---|---|---|
| | 2B | m2 | ft2 |
| TH | 112 | 108.3 | 1166 |
| TOTAL UNITS | 112 | | |

**GROSS FLOOR AREA DEFINITION**

CITY OF MISSISSAUGA ZONING BY-LAW

Gross Floor Area (GFA)

means the sum of the areas of each storey of a building, structure or part thereof, above or below established grade, excluting storage below established grade and a parking structure above or below established grade, measured from the exterior of outside walls, orfrom the midpoint of common walls.

Gross Floor Area / (GFA) - Apartment Zone

means the sum of the areas of each storey of a building above or below established grade, measured from the exterior of outside walls of the building including floor area occupied by interior walls but excluding any part of the building used for mechanical floor area,stairwells, elevators, motor vehicle parking, bicycle parking, storage lockers, below-grade storage, any enclosed area used for the collectionor storage of disposable or recyclable waste generated within the building, common facilities for the use of the residents of the building,a day care and amenity area. (0174-2017)

Gross Floor Area / (GFA) - Residential

means the sum of the areas of each storey of a building measured from the exterior of outside walls but shall not include any part of the building used for motor vehicle parking.

Gross Floor Area / (GFA) - Non-Residential

means the sum of the areas of each storey above or below established grade, measured from the exterior of outside walls, or from the midpoint of common walls, including the area of any floor system or assembly located within a storey which is designed or used for access and passage by persons and including all parts of the building or structure or part thereof below established grade used for retail,office, industrial or warehouse uses, but excluding the following:
(1) any part of the building, structure or part thereof used for mechanical floor area;
(2) areas of stairwells, washrooms or elevators;
(3) any enclosed area used for the collection or storage of disposable or recyclable waste generated within the building or structure or part thereof;
(4) any part of the building or structure or part thereof above or below established grade used for motor vehicle parking or the provision of loading spaces;
(5) any part of the building, structure or part thereof below established grade used for storage incidental to other uses in the building, structure or part thereof or provided and reserved for the personal needs of the occupants of the building, structure or part thereof including lunch rooms, lounges or fitness rooms;
(6) accessory outdoor tank. (0379-2009)

2022.08.26 7:20:10 PM

# TURNER FLEISCHER


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67 Lesmill Road
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Sheet List

| Sheet Name | Sheet Number |
|---|---|
| SURVEY | SPA001 |
| STATISTICS | SPA002 |
| STATISTICS | SPA003 |
| CONTEXT PLAN | SPA004 |
| SITE PLAN / ROOF PLAN | SPA005 |
| UNDERGROUND LEVEL 02 | SPA101 |
| UNDERGROUND LEVEL 01 | SPA102 |
| TH LOWER GROUND FLOOR | SPA150 |
| FLOOR 01 | SPA151 |
| MEZZANINE | SPA152 |
| FLOOR 02 | SPA153 |
| FLOOR 03 - 04 | SPA154 |
| FLOOR 05 | SPA155 |
| FLOOR 06 | SPA156 |
| FLOOR 07 | SPA157 |
| FLOOR 08 | SPA158 |
| FLOOR 09-10 | SPA159 |
| M.P.H. | SPA160 |
| BUILDING ELEVATIONS 'A' | SPA310 |
| BUILDING ELEVATIONS 'B' | SPA311 |
| BUILDING ELEVATIONS 'B' | SPA312 |
| BUILDING ELEVATIONS 'C' | SPA313 |
| BUILDING ELEVATIONS 'D' | SPA314 |
| BUILDING ELEVATIONS 'E' | SPA315 |
| TOWNHOUSE ELEVATIONS | SPA316 |
| N-S SITE SECTION | SPA401 |
| W-E SITE SECTIONS | SPA402 |
| 3D PERSPECTIVES | SPA801 |
| 3D PERSPECTIVES | SPA802 |
| 3D PERSPECTIVES | SPA803 |
| 3D PERSPECTIVES | SPA804 |
| SHADOW STUDY ANALYSIS | SPA810 |
| SHADOW STUDY ANALYSIS | SPA811 |
| SHADOW STUDIES_JUNE | SPA812 |
| SHADOW STUDIES_JUNE | SPA813 |
| SHADOW STUDIES_JUNE | SPA814 |
| SHADOW STUDIES_JUNE | SPA815 |
| SHADOW STUDIES_SEPTEMBER | SPA816 |
| SHADOW STUDIES_SEPTEMBER | SPA817 |
| SHADOW STUDIES_SEPTEMBER | SPA818 |
| SHADOW STUDIES_DECEMBER | SPA819 |
| SHADOW STUDIES_DECEMBER | SPA820 |

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | 2022-08-22 | OFFICIAL PLAN AND REZONING SUBMISSION | AYU |

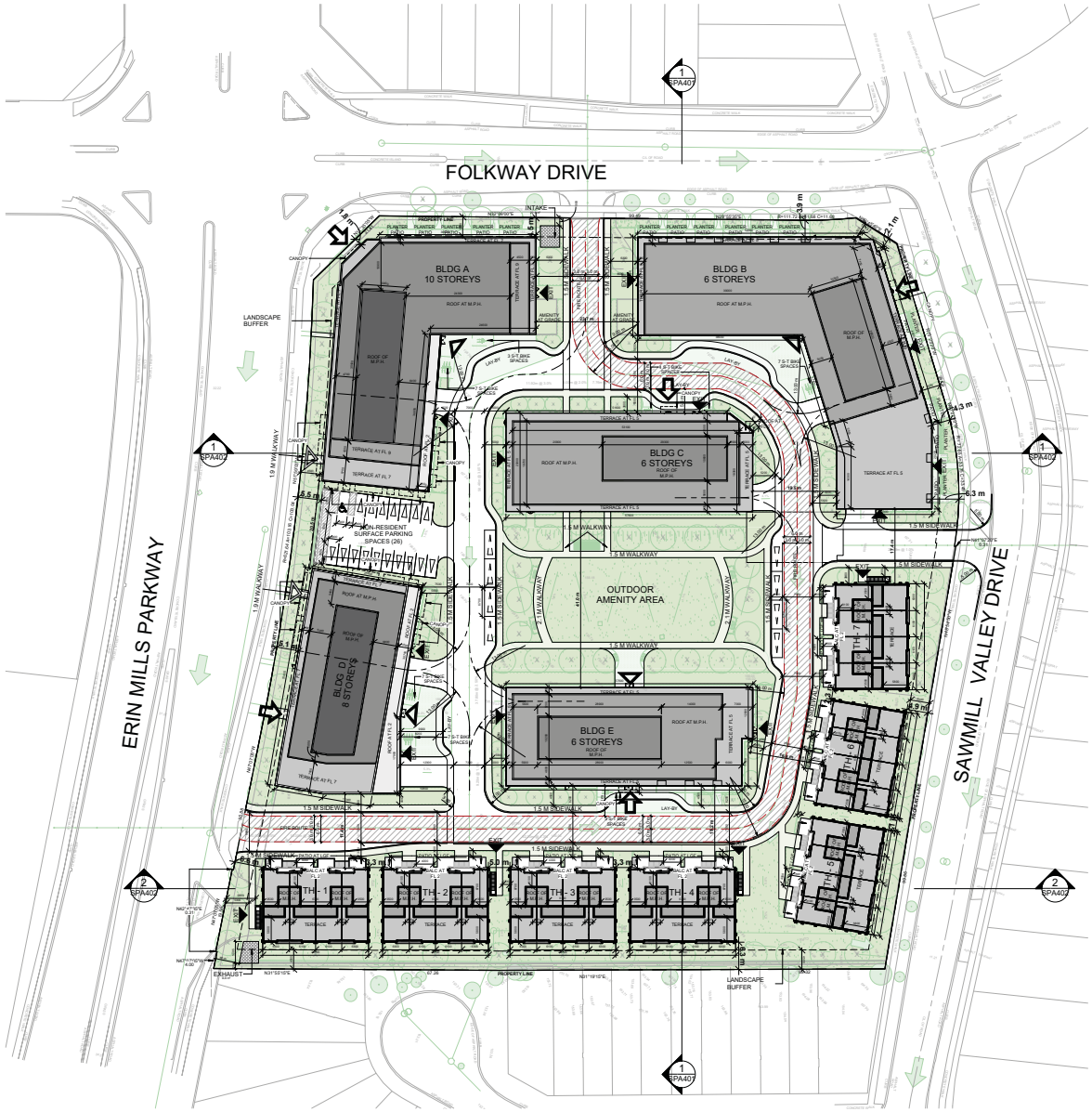
PROJECT
**4099 Erin Mills Parkway, Mississauga, ON**

DRAWING
**STATISTICS**

PROJECT NO: 19.001
PROJECT DATE: 2022-08-26
DRAWN BY: JMS
CHECKED BY: AYU
SCALE: 1 : 1

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL J.FLEISCHER
LICENCE
5004

DRAWING NO. SPA002
REV. 1




1 SPA401 SITE PLAN / ROOF PLAN - ULTIMATE
1 : 500

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## LEGEND

- PRIMARY RESIDENTIAL ENTRANCE
- SECONDARY RESIDENTIAL ENTRANCE
- RETAIL ENTRANCE
- EXIT
- FIRE HYDRANT
- SIAMESE CONNECTION
- CONVEX MIRROR
- TRANSFORMER WITH CLEARANCES
- FIRE ROUTE SIGN
- 000.00 SPOT ELEVATION
- GAS/HYDRO METER

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | 2022-08-22 | OFFICIAL PLAN AND REZONING SUBMISSION | AYU |

PROJECT
**4099 Erin Mills Parkway, Mississauga, ON**

DRAWING
**SITE PLAN / ROOF PLAN**

PROJECT NO: 19.001
PROJECT DATE: 2022-08-26
DRAWN BY: JMS
CHECKED BY: AYU
SCALE: 1 : 500

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL J. FLEISCHER
LICENCE
5004

DRAWING NO. SPA005
REV. 1

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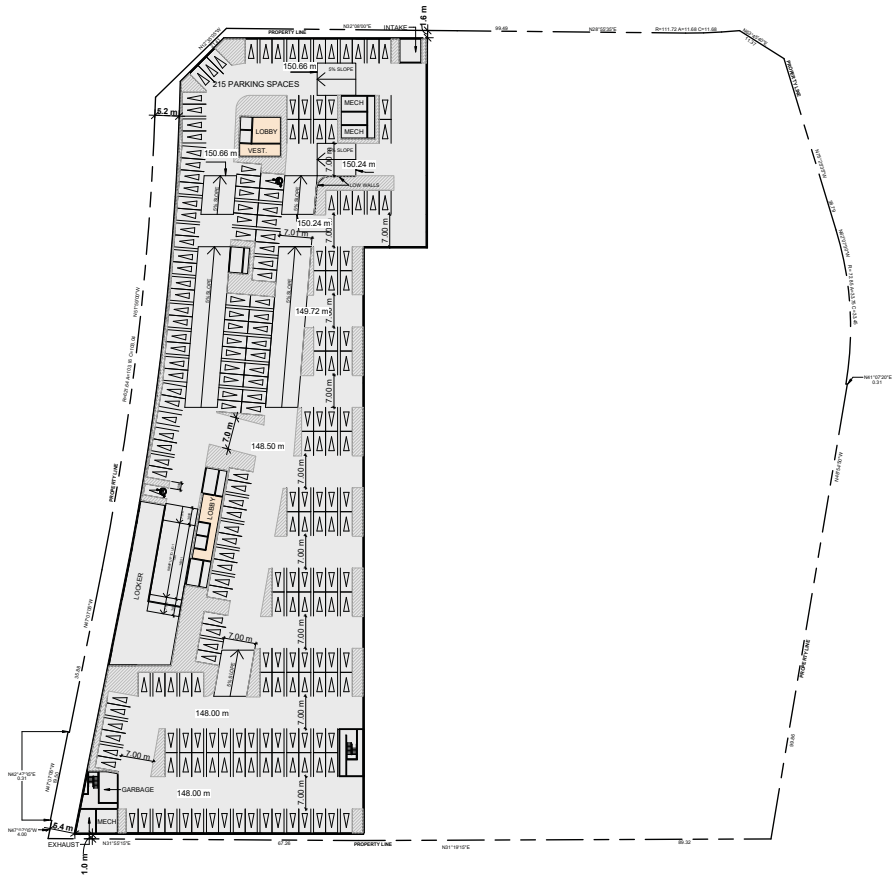



1 UNDERGROUND LEVEL 02
1 : 500

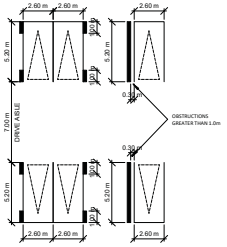
**PARKING LEGEND**

| | |
|---|---|
| **EV** | EVSE PARKING |
| **EV-R** | EV ROUGH-INS |
| | CONVEX MIRROR |

**STANDARD PARKING DIMENSIONS:**

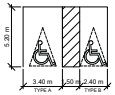
AISLE WIDTH: MIN 7m

TYPICAL PARKING SIZE:
MIN 2.6 x 5.2




**STANDARD BARRIER-FREE SPACE:**

MIN 3.4 x 5.2

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| # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | 2022-08-22 | OFFICIAL PLAN AND REZONING SUBMISSION | AYU |

PROJECT
**4099 Erin Mills Parkway, Mississauga, ON**

DRAWING
**UNDERGROUND LEVEL 02**

PROJECT NO: 19.001
PROJECT DATE: 2022-08-26
DRAWN BY: JMS
CHECKED BY: AYU
SCALE: As indicated

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL J. FLEISCHER
LICENCE
5004

DRAWING NO: SPA101
REV: 1

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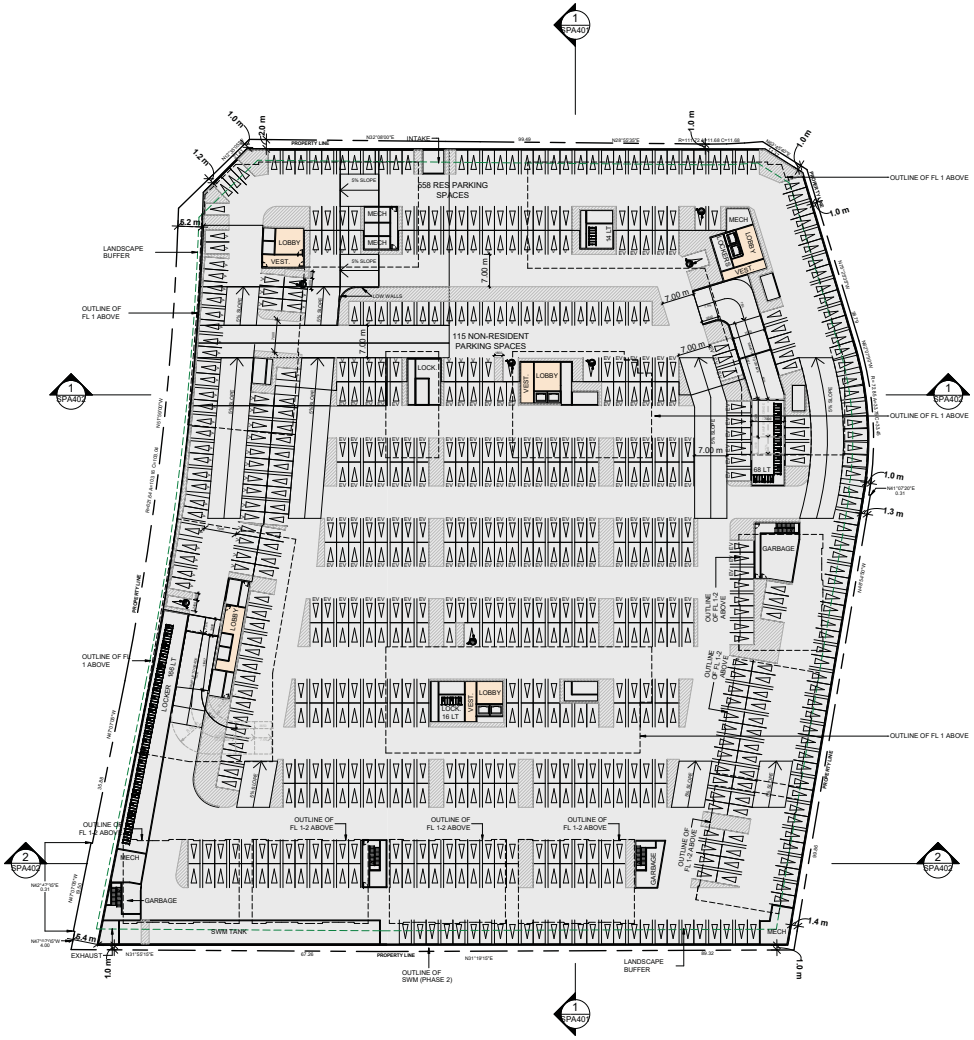



1 SPA407 UNDERGROUND LEVEL 01
1 : 500

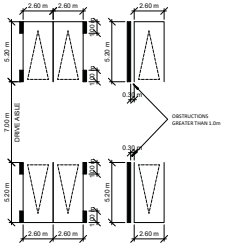
**PARKING LEGEND**

| | |
|---|---|
| **EV** | EVSE PARKING |
| **EV-R** | EV ROUGH-INS |
| | CONVEX MIRROR |

**STANDARD PARKING DIMENSIONS:**

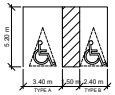
AISLE WIDTH: MIN 7m

TYPICAL PARKING SIZE:
MIN 2.6 x 5.2




**STANDARD BARRIER-FREE SPACE:**

MIN 3.4 x 5.2

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| # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | 2022-08-22 | OFFICIAL PLAN AND REZONING SUBMISSION | AYU |

PROJECT
**4099 Erin Mills Parkway, Mississauga, ON**

DRAWING
**UNDERGROUND LEVEL 01**

PROJECT NO: 19.001
PROJECT DATE: 2022-08-26
DRAWN BY: JMS
CHECKED BY: AYU
SCALE: As indicated

ONTARIO ASSOCIATION OF ARCHITECTS
RUSSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA102
REV. 1

2022-08-26 7:20:23 PM

1 SPA401 FLOOR 01
1 : 500

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## LEGEND

- PRIMARY RESIDENTIAL ENTRANCE
- SECONDARY RESIDENTIAL ENTRANCE
- RETAIL ENTRANCE
- EXIT
- FIRE HYDRANT
- SIAMESE CONNECTION
- CONVEX MIRROR
- TRANSFORMER WITH CLEARANCES
- FIRE ROUTE SIGN
- 000.00 SPOT ELEVATION
- GAS/HYDRO METER

| # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | 2022-08-22 | OFFICIAL PLAN AND REZONING SUBMISSION | AYU |

—

PROJECT
**4099 Erin Mills Parkway, Mississauga, ON**

DRAWING
**FLOOR 01**

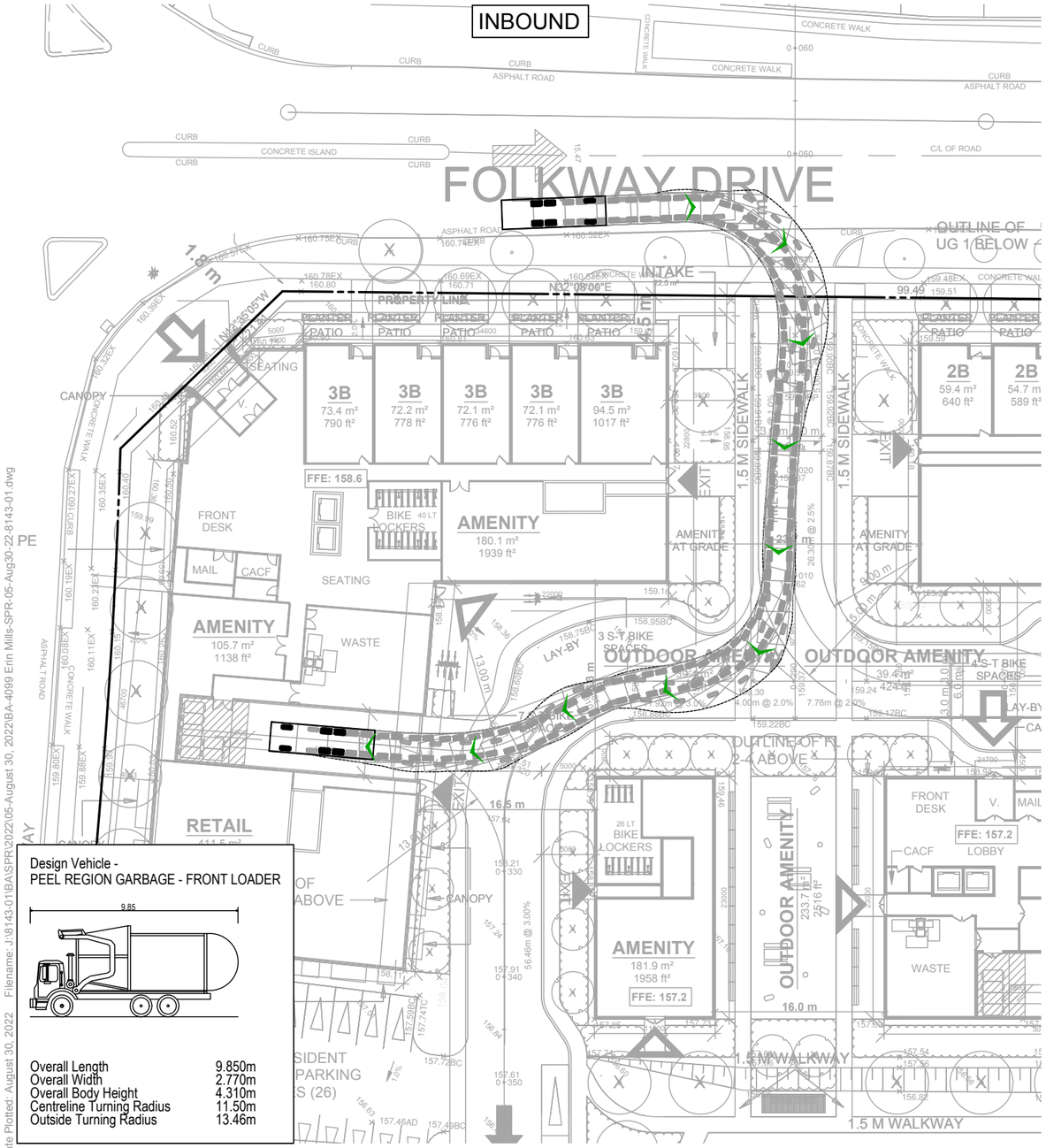
PROJECT NO: 19.001
PROJECT DATE: 2022-08-26
DRAWN BY: JMS
CHECKED BY: AYU
SCALE: 1 : 500

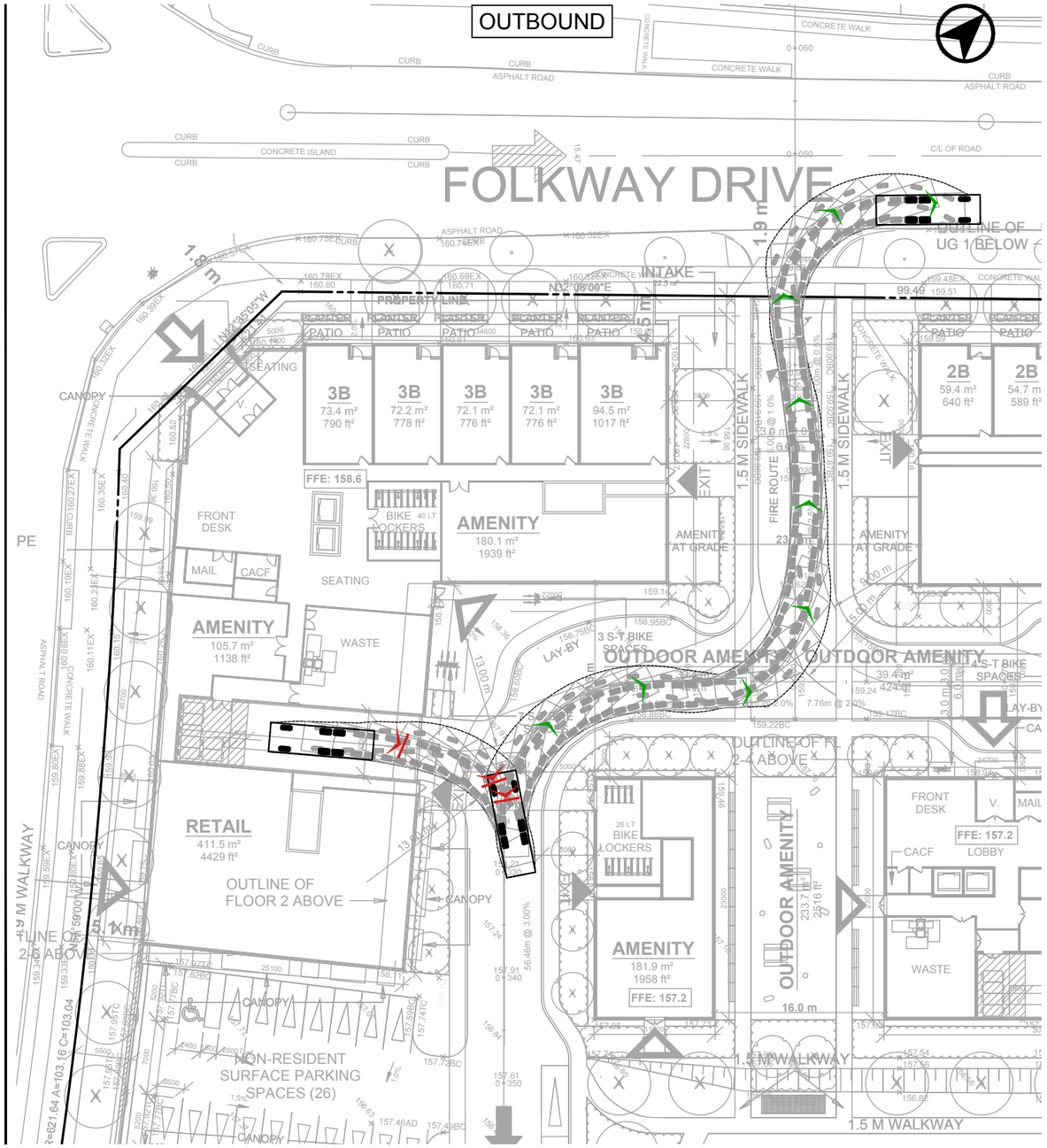
ONTARIO ASSOCIATION OF ARCHITECTS
AYUSELL L.FLEISCHER
LICENCE
5004

DRAWING NO. SPA151
REV. 1

2022-08-26 7:20:33 PM

# APPENDIX B:
# Vehicle Manoeuvring Diagrams

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BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

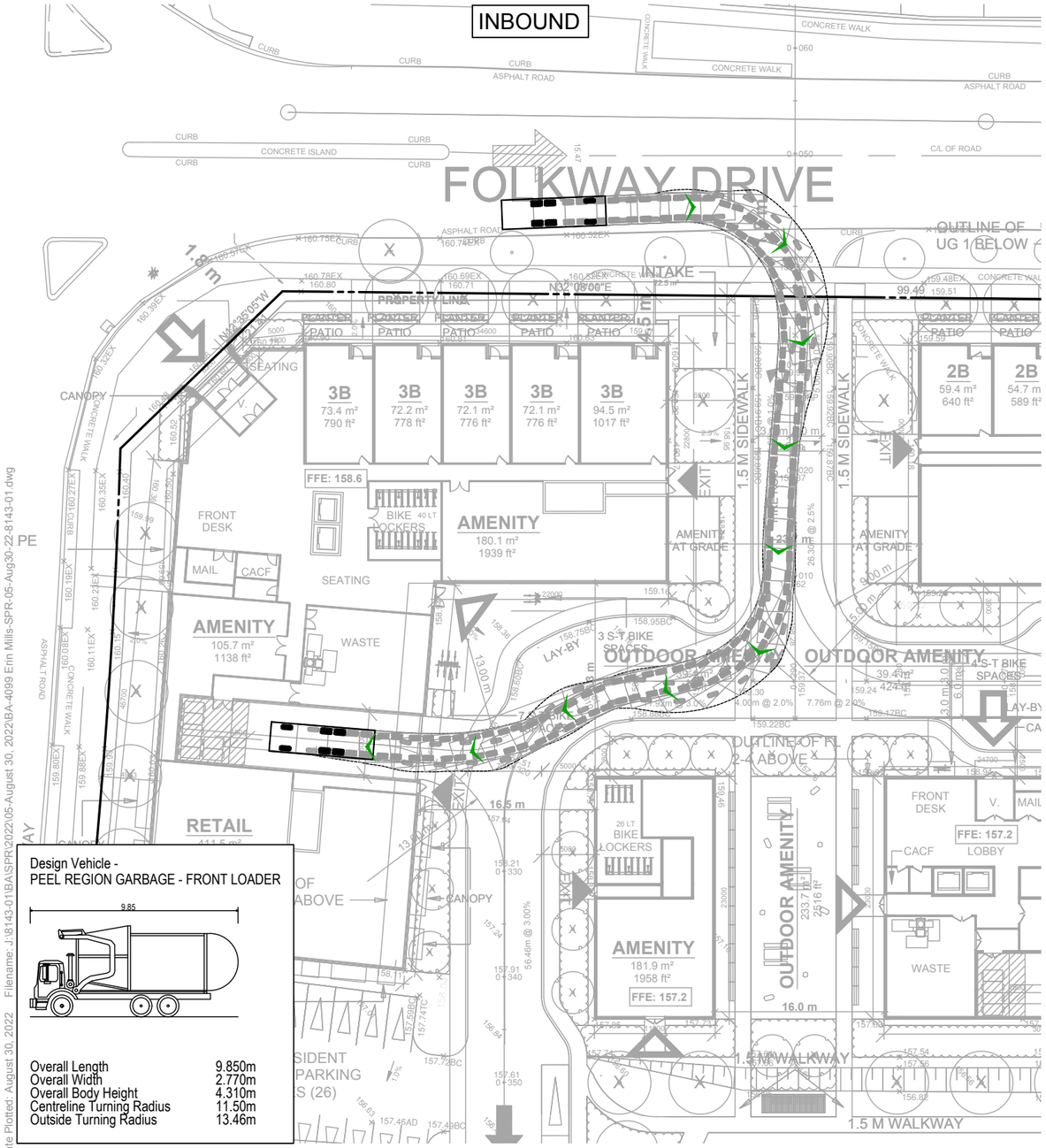
## BUILDING A

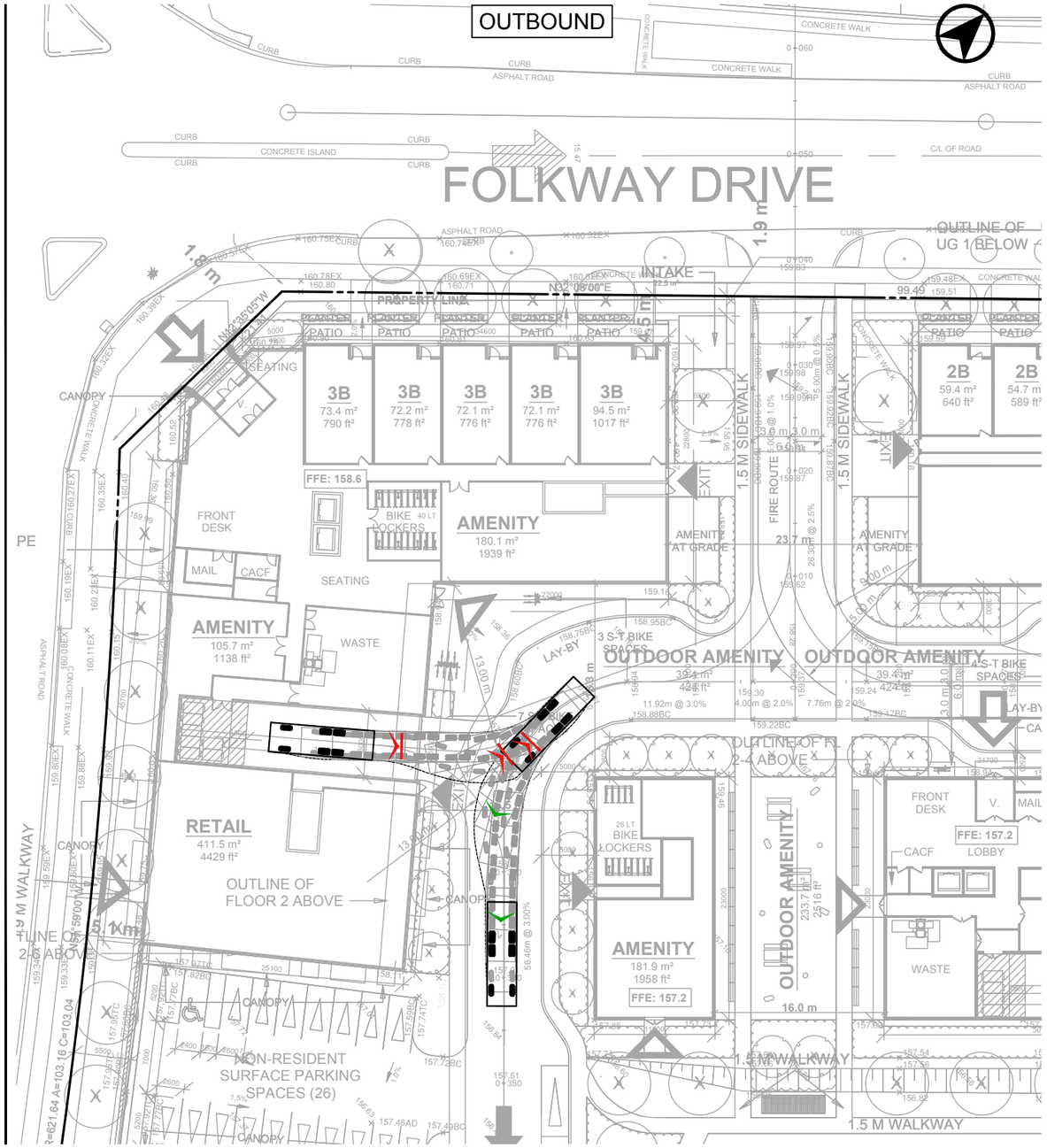
## PEEL REGION GARBAGE TRUCK - FRONT LOADER

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 — 0 5 10 15 20m

Drawing No. VMD-01

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BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

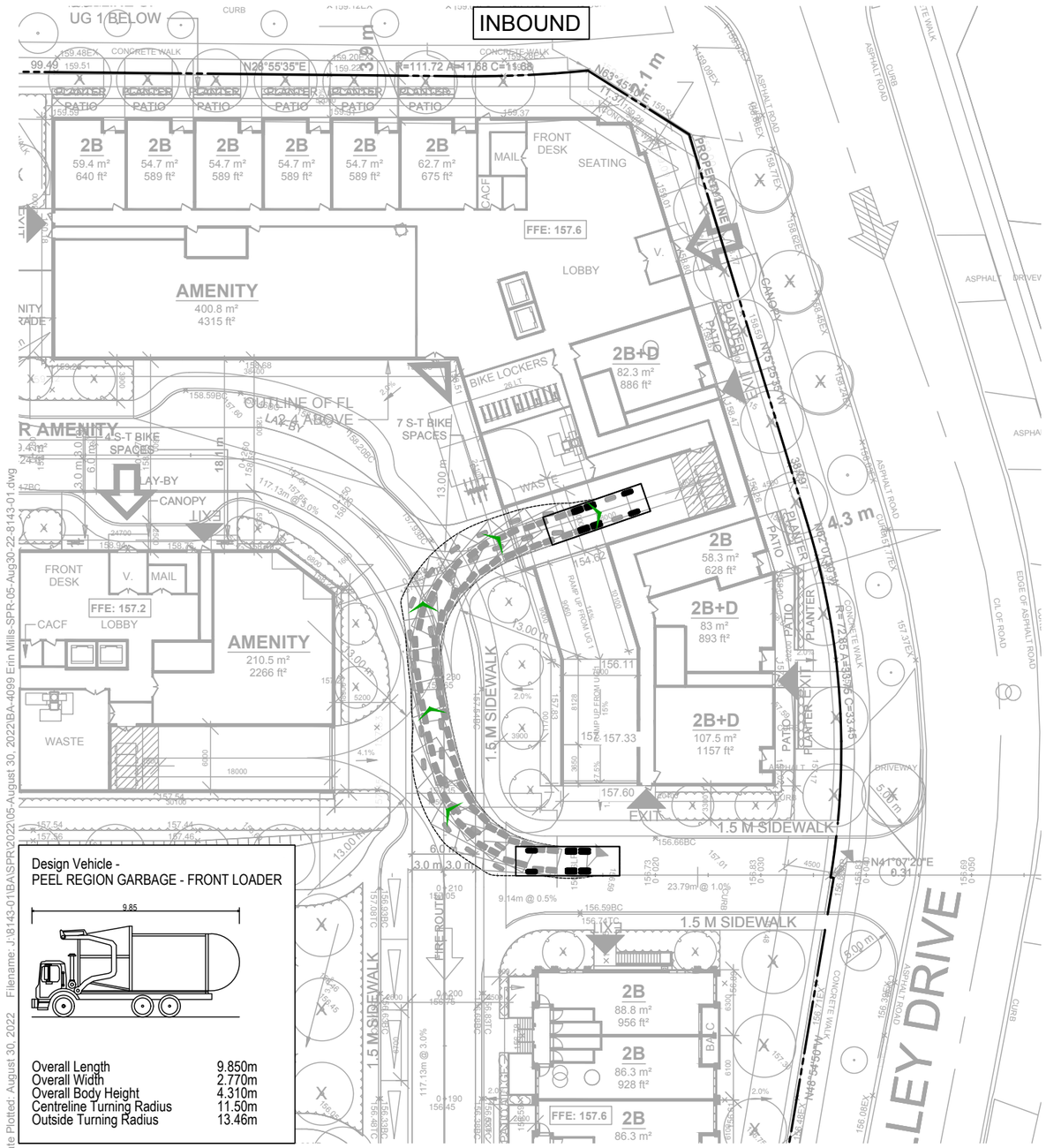
## BUILDING A

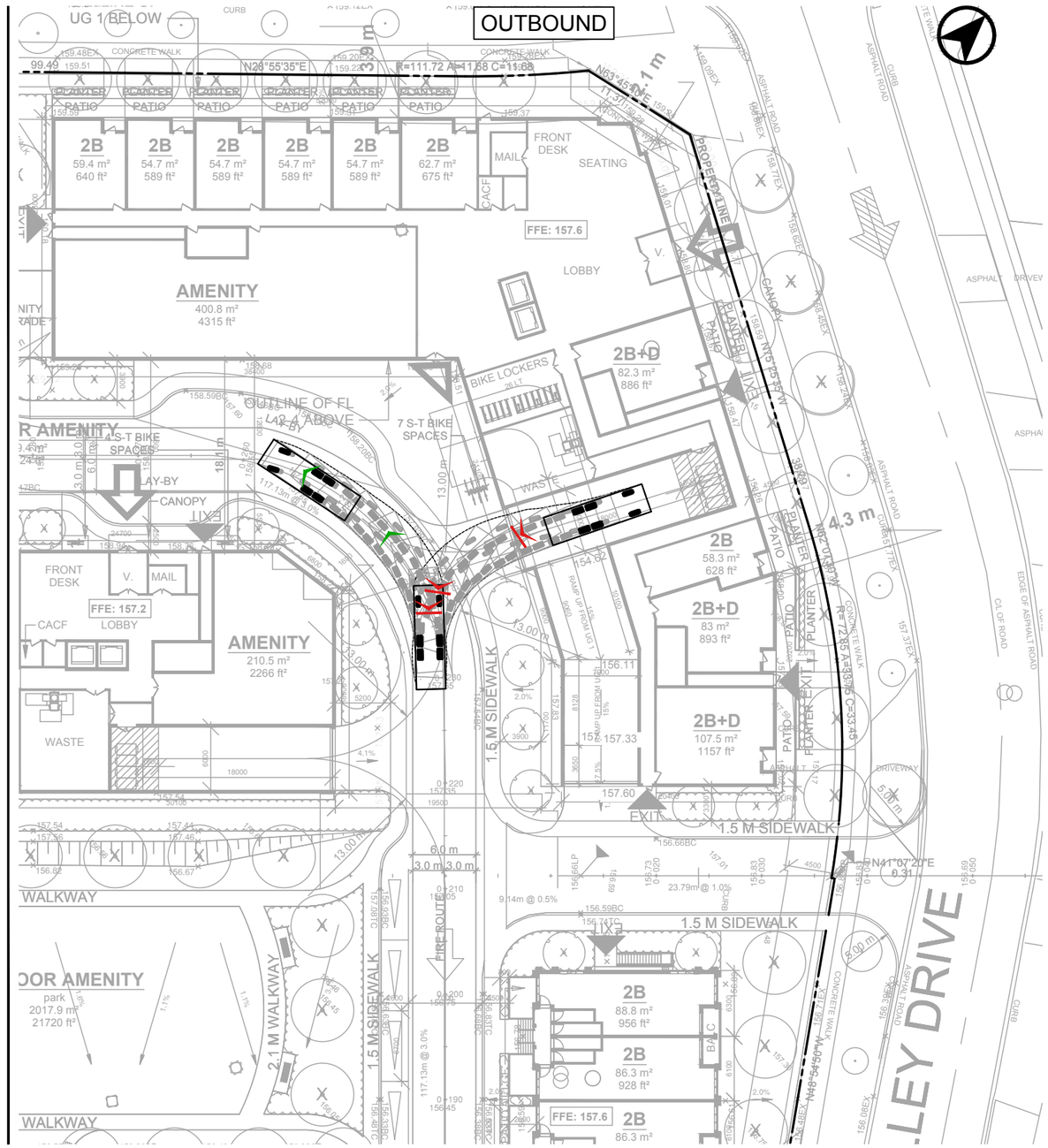
## PEEL REGION GARBAGE TRUCK - FRONT LOADER

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 — 0 5 10 15 20m

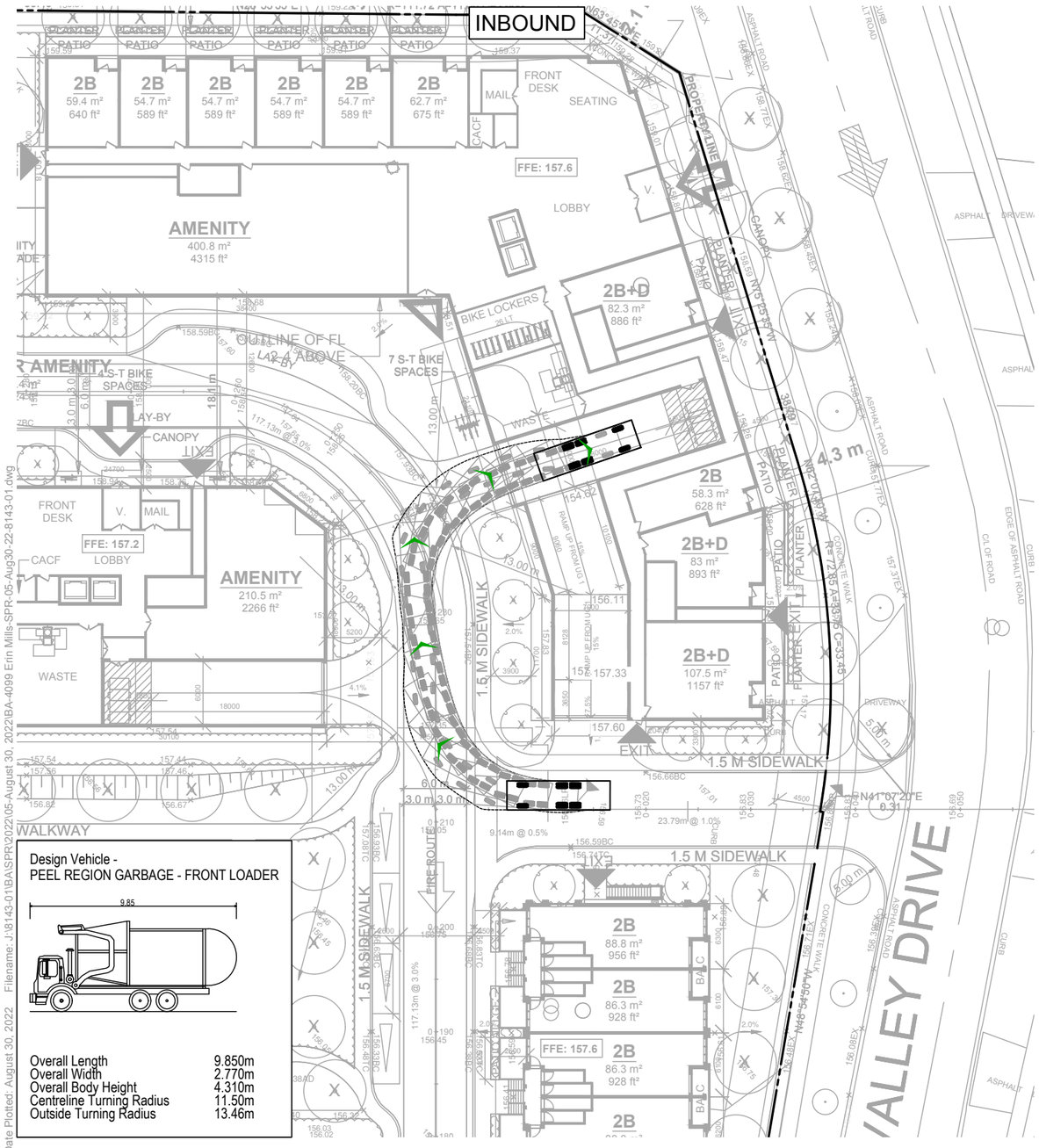
Drawing No. VMD-02

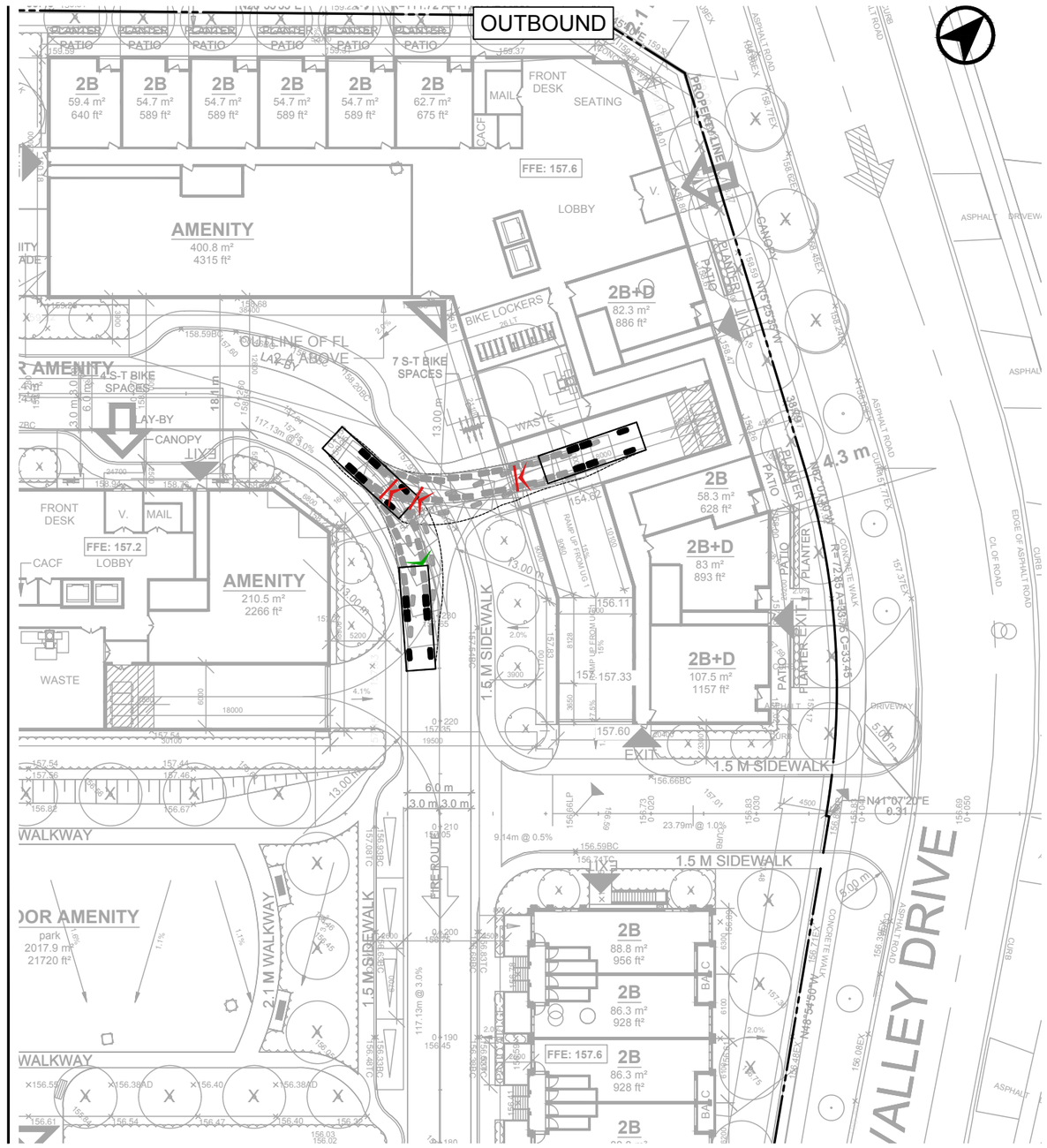



| | | | |
|---|---|---|---|
| BA Group | 4099 ERIN MILLS PARKWAY<br>VEHICLE MANOEUVRING DIAGRAM<br>BUILDING B<br>PEEL REGION GARBAGE TRUCK - FRONT LOADER | Project: 4099 ERIN MILLS PKWY<br>Project No. 8143-01<br>Date: JUNE 22, 2022<br>Revised: AUGUT 30, 2022 | Scale 1:500 (0 5 10 15 20m)<br>Drawing No. VMD-03 |

Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

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BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

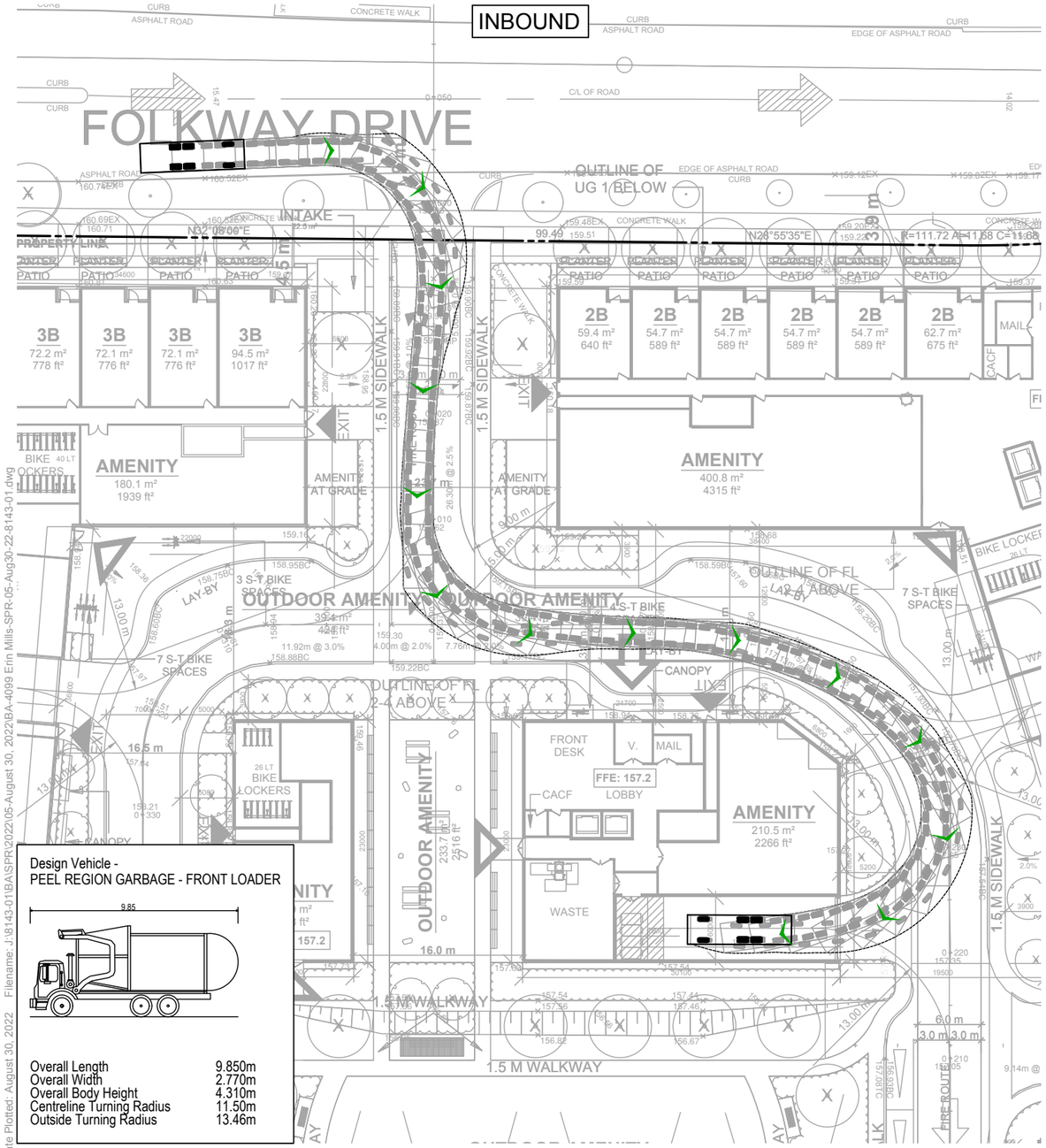
## BUILDING B

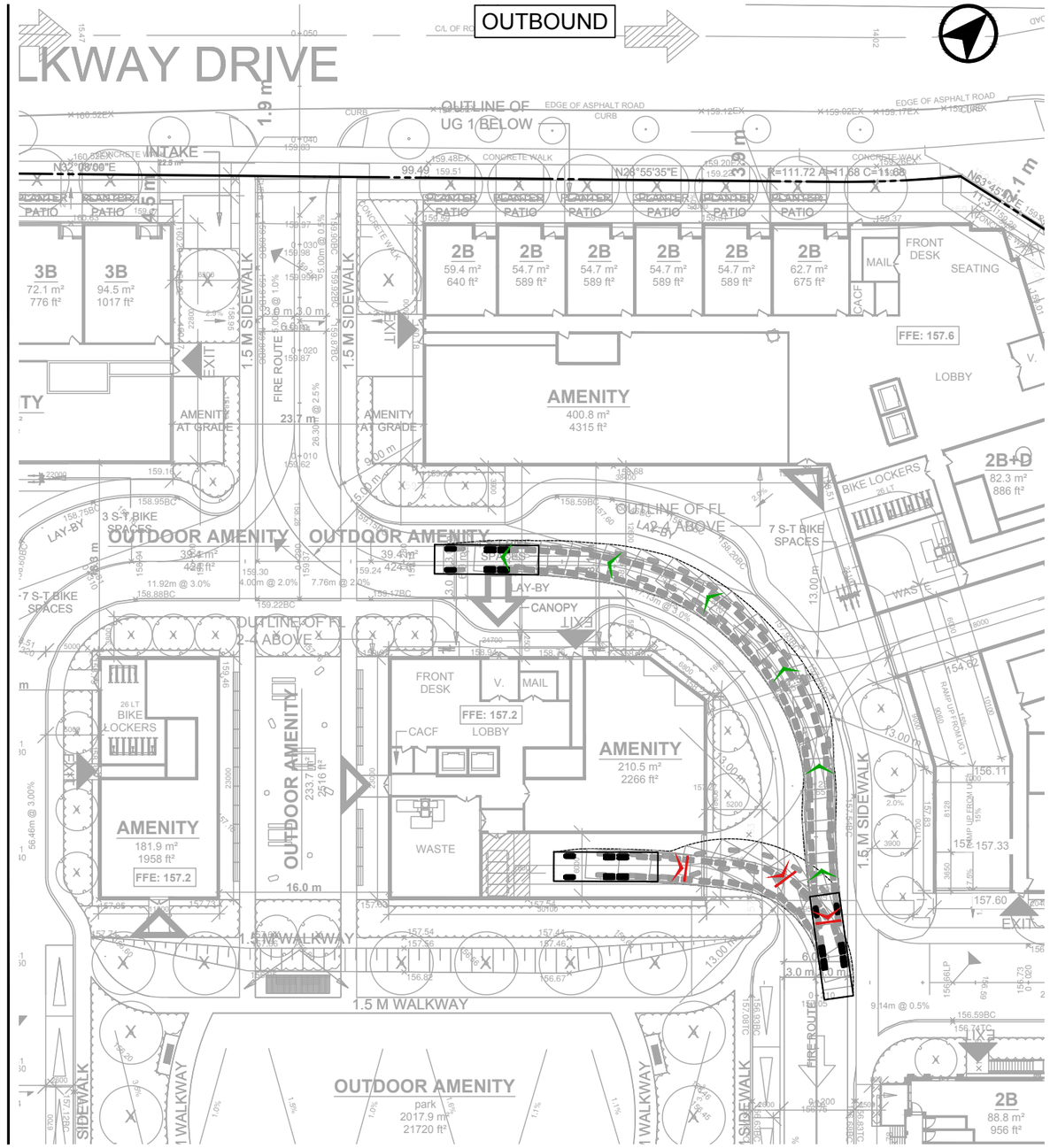
## PEEL REGION GARBAGE TRUCK - FRONT LOADER

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-04




Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

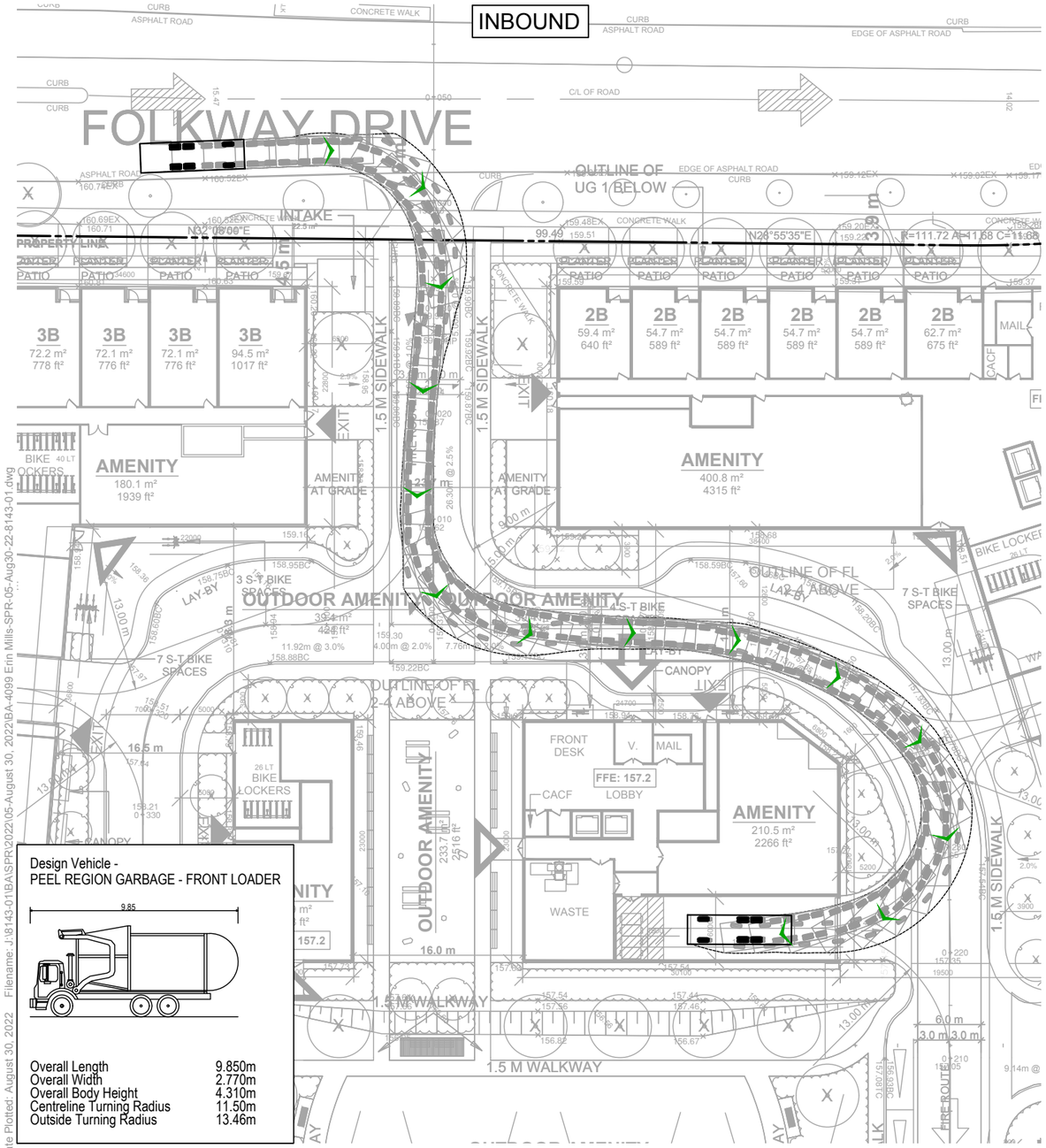
## BUILDING C

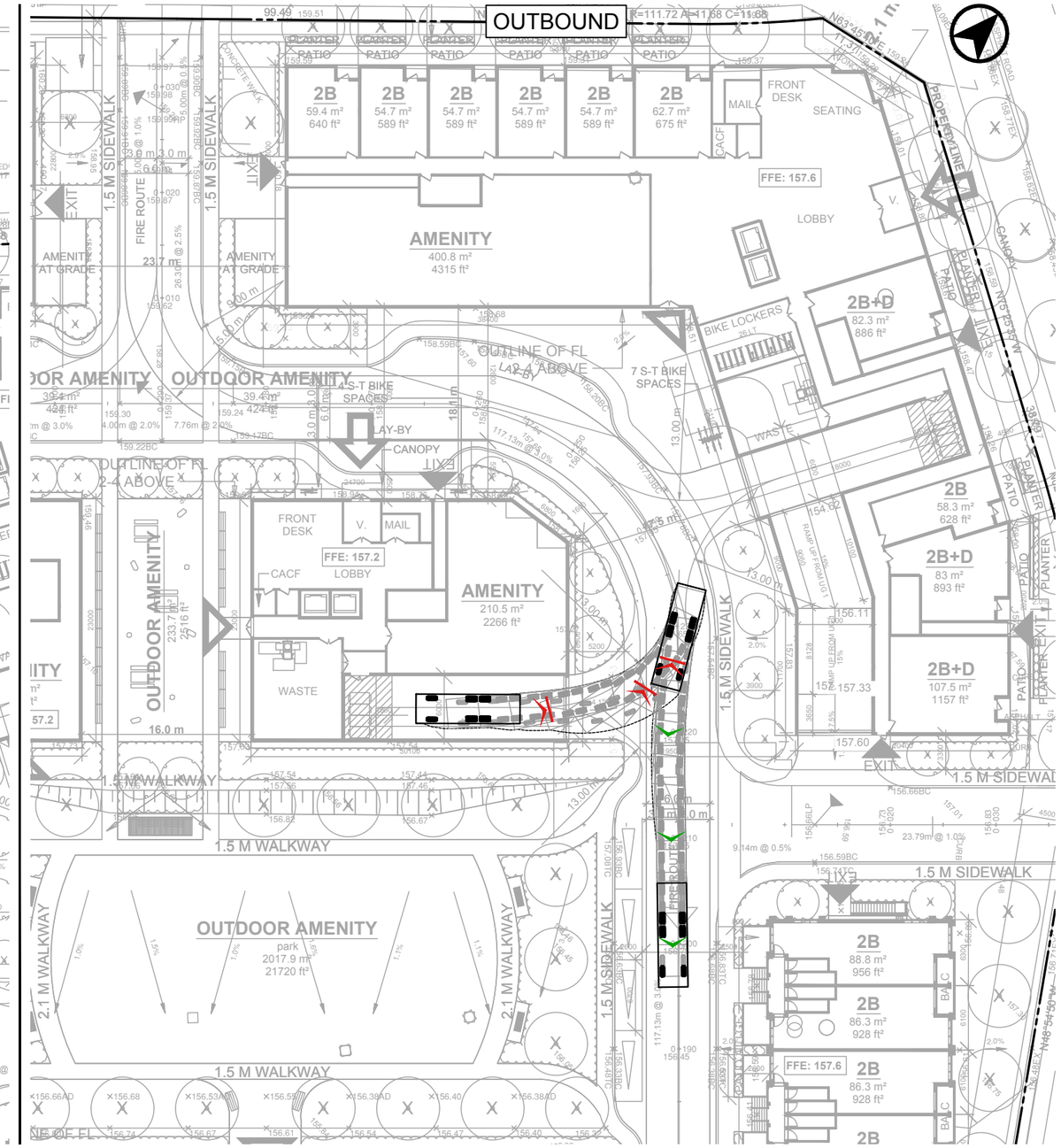
## PEEL REGION GARBAGE TRUCK - FRONT LOADER

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-05

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BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

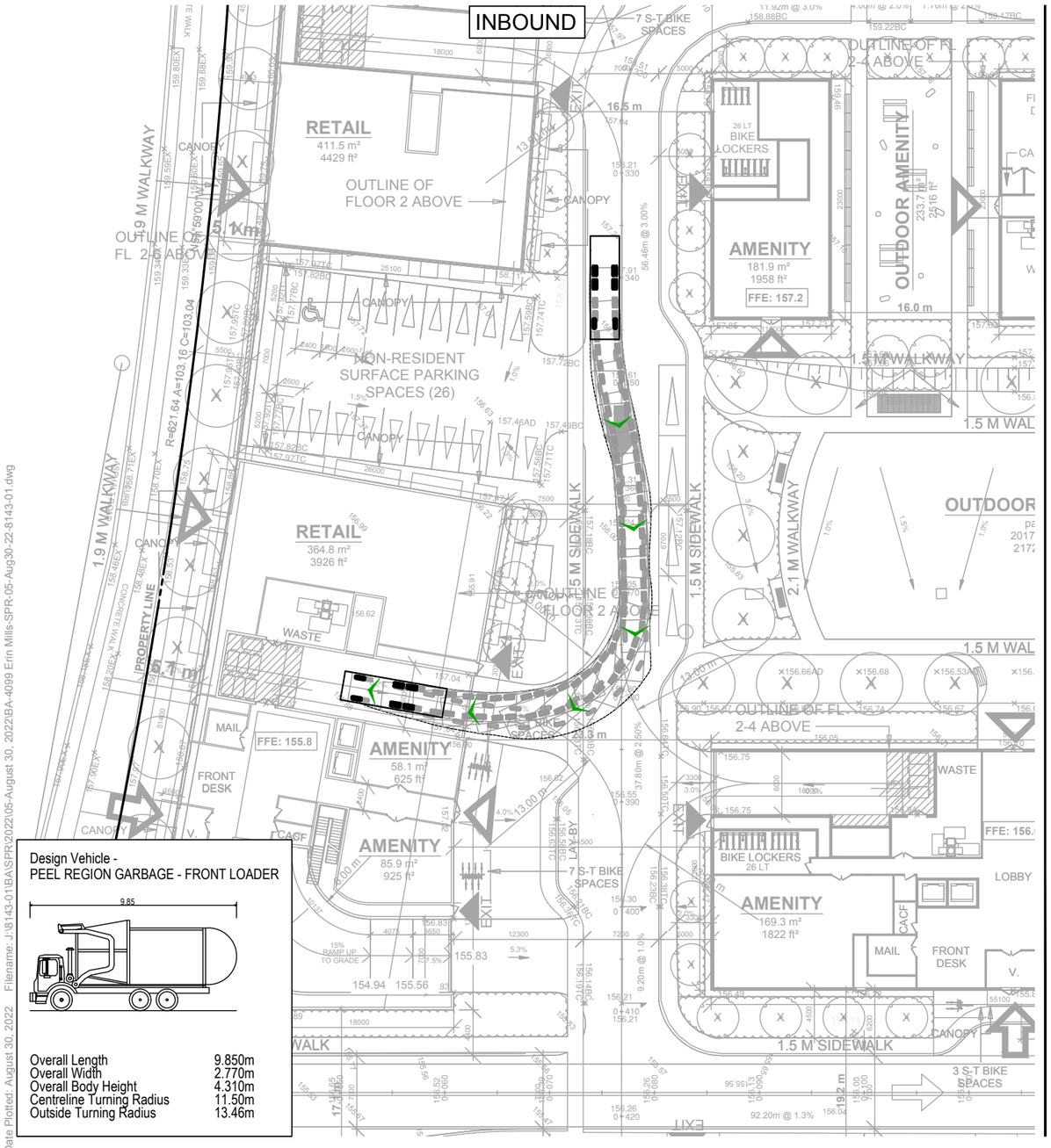
## BUILDING C

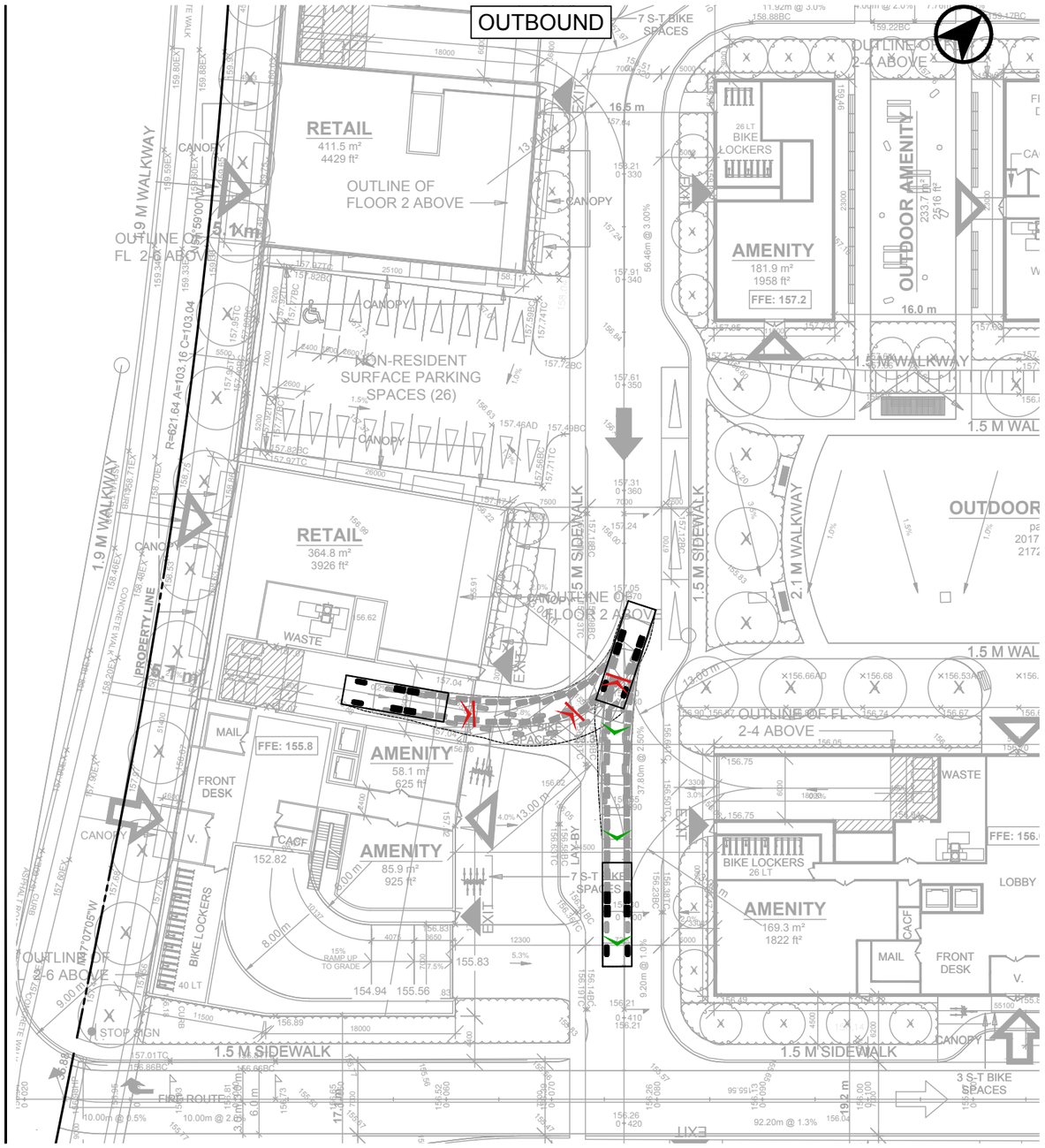
## PEEL REGION GARBAGE TRUCK - FRONT LOADER

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-06




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 |

Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

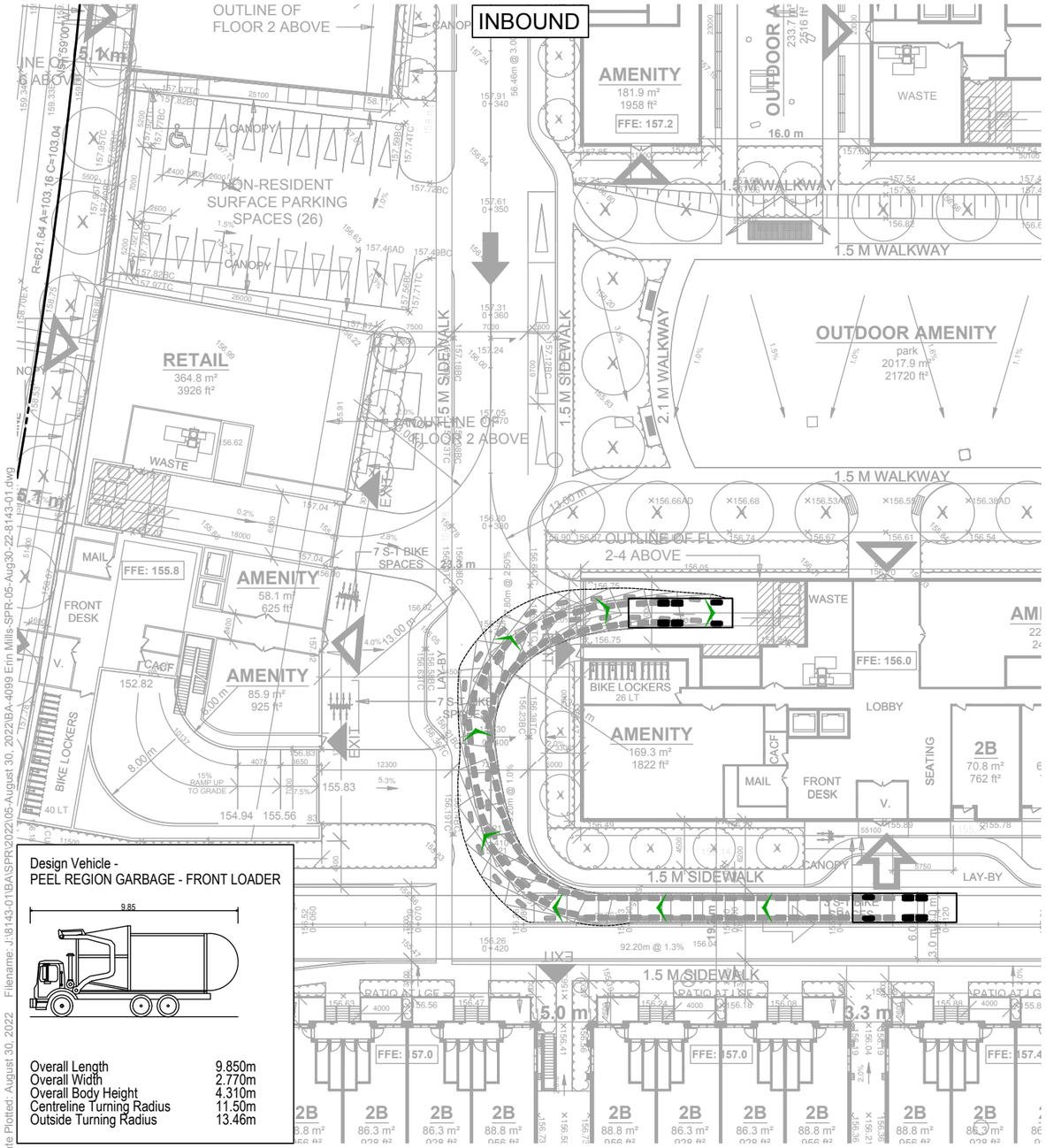
# 4099 ERIN MILLS PARKWAY

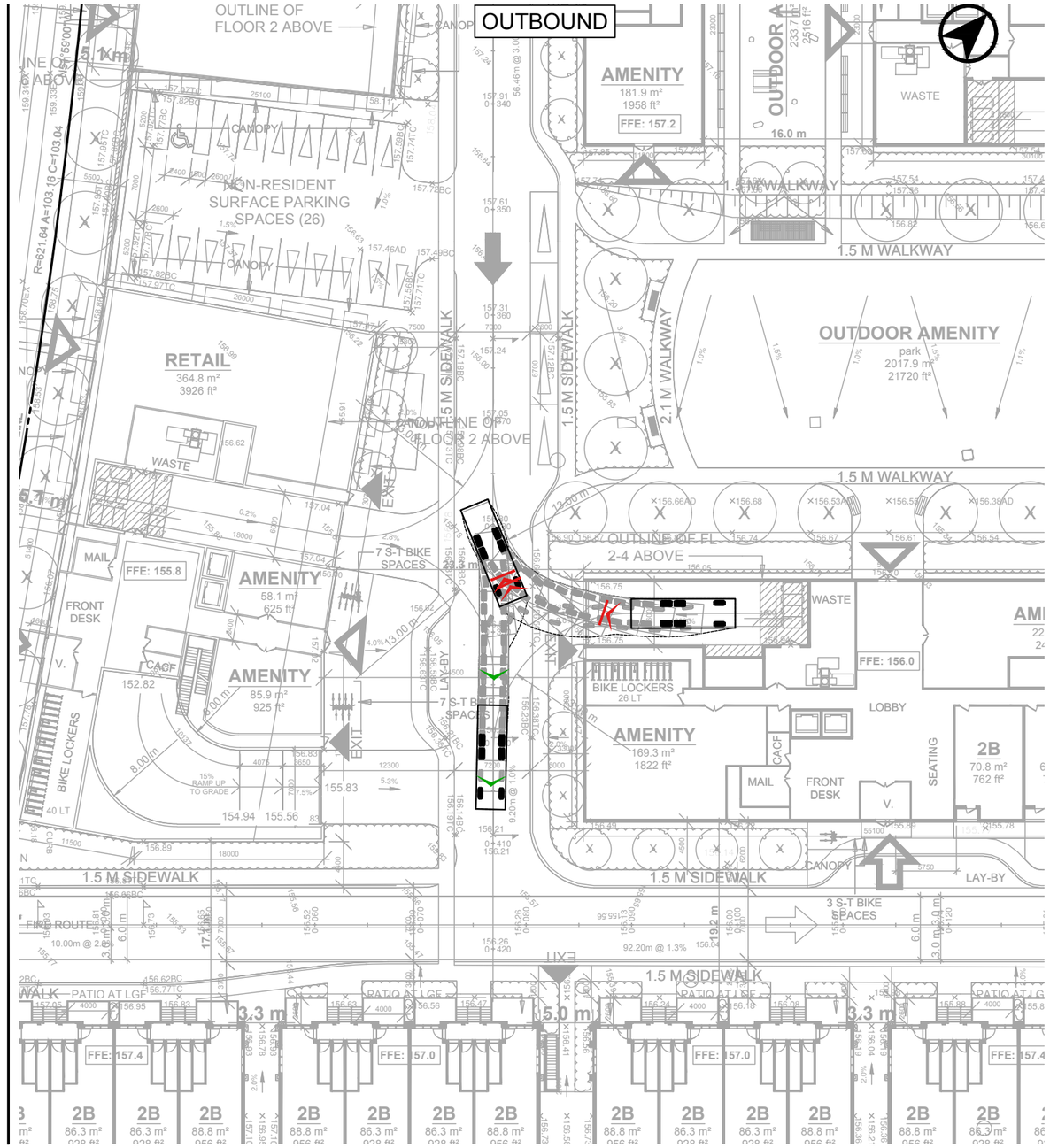
## VEHICLE MANOEUVRING DIAGRAM
## BUILDING D
## PEEL REGION GARBAGE TRUCK - FRONT LOADER

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 — 0 5 10 15 20m

Drawing No. VMD-07




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 |

Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

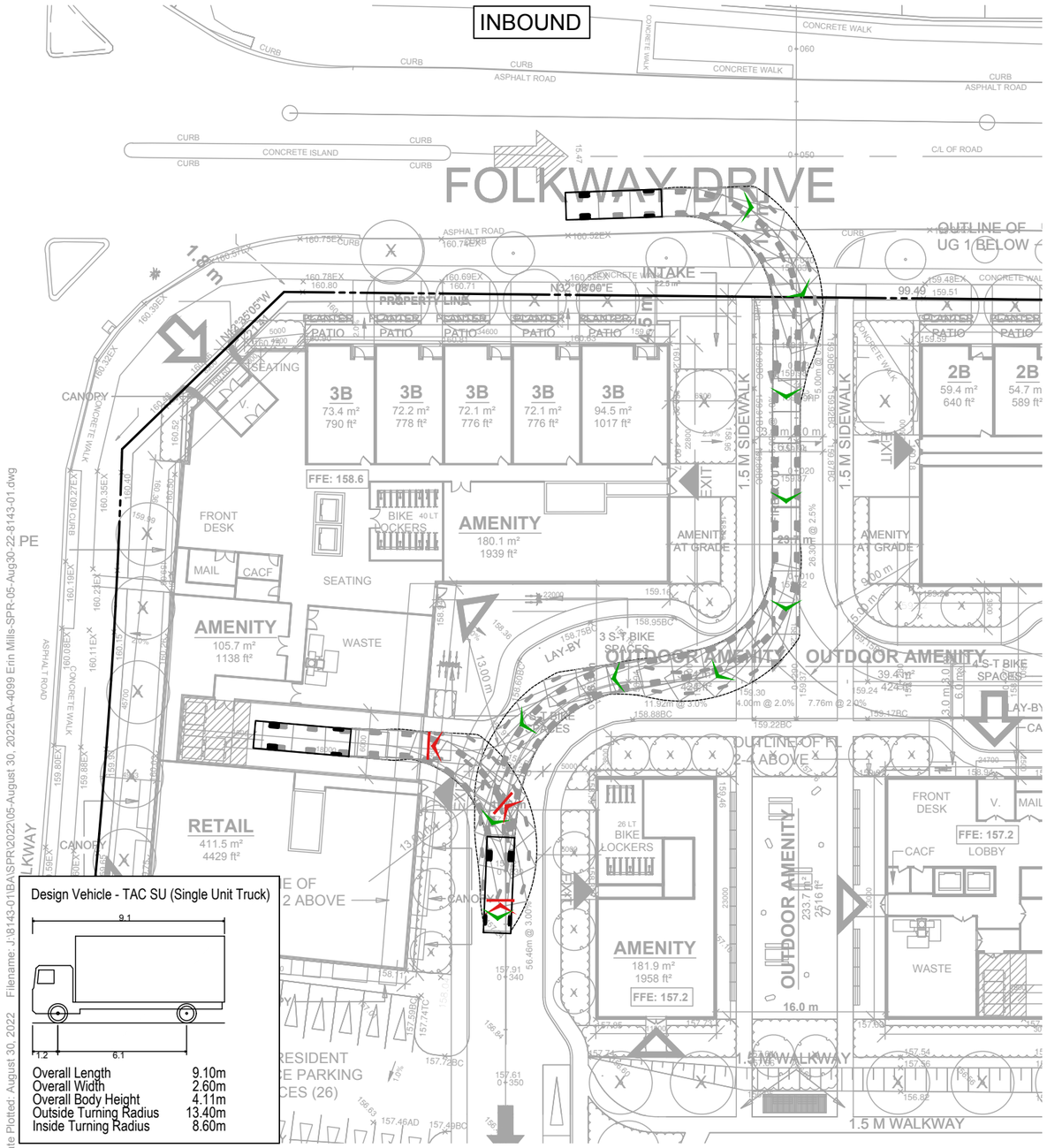
## BUILDING E

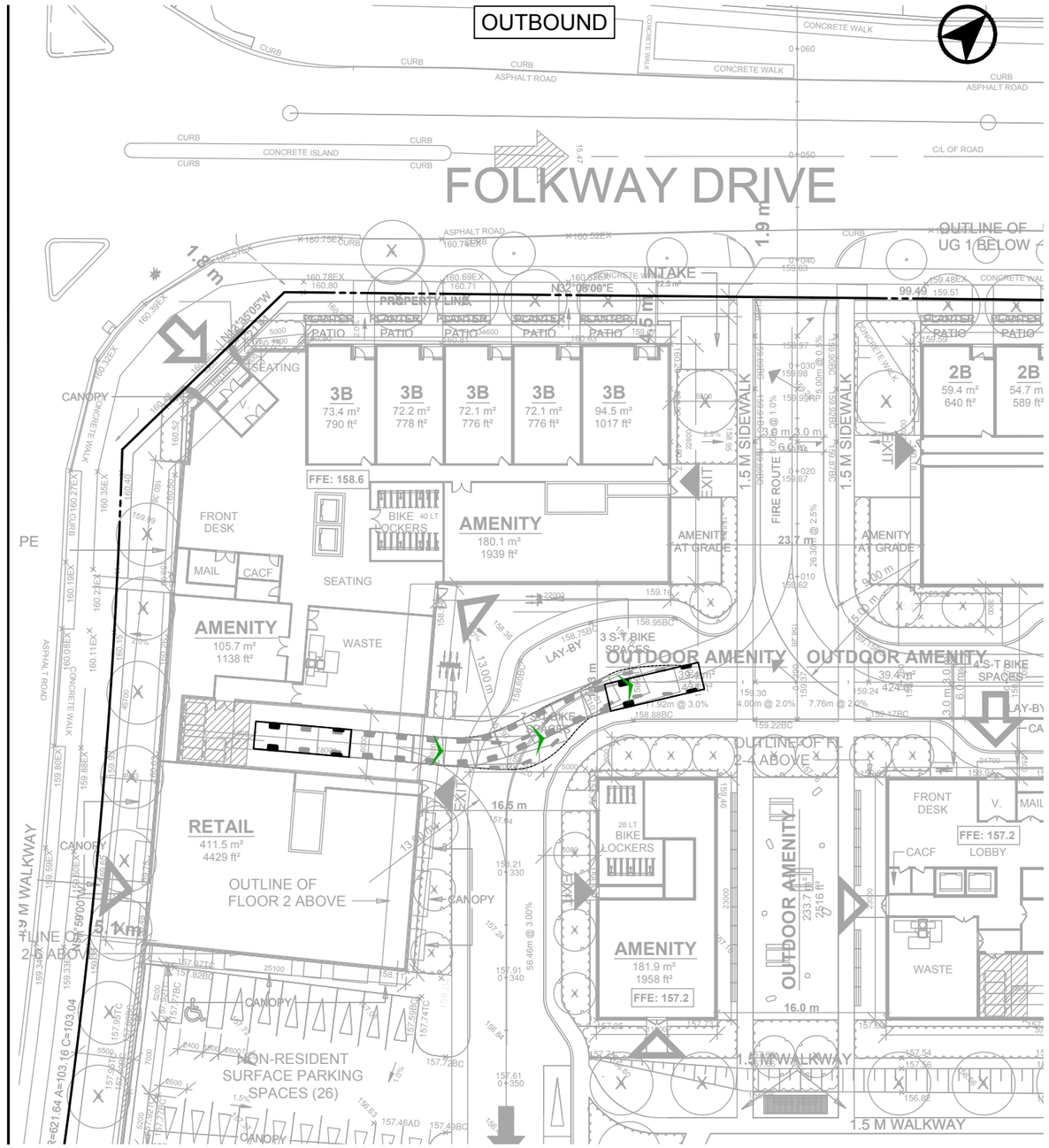
## PEEL REGION GARBAGE TRUCK - FRONT LOADER

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-08




Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

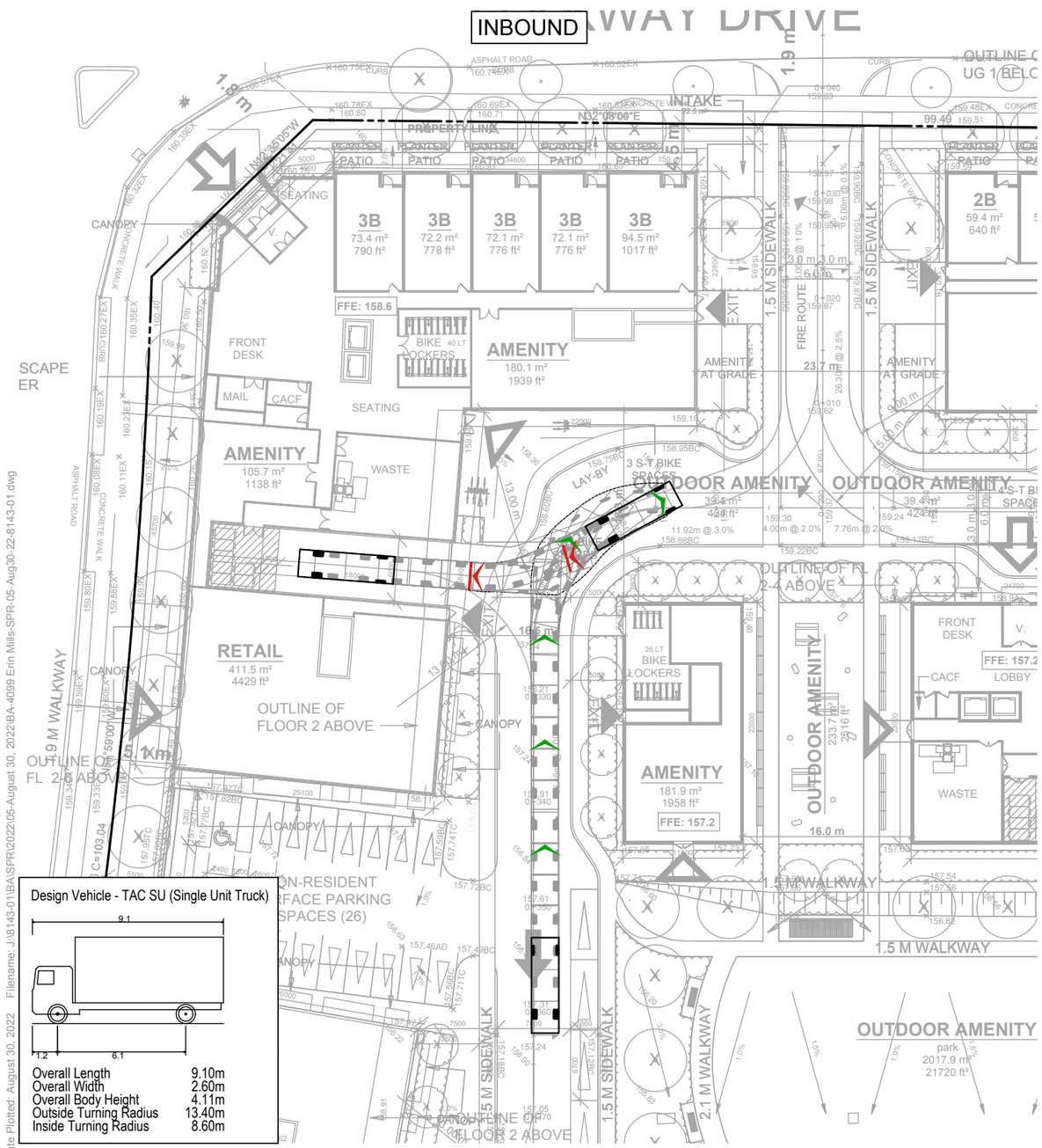
## BUILDING A

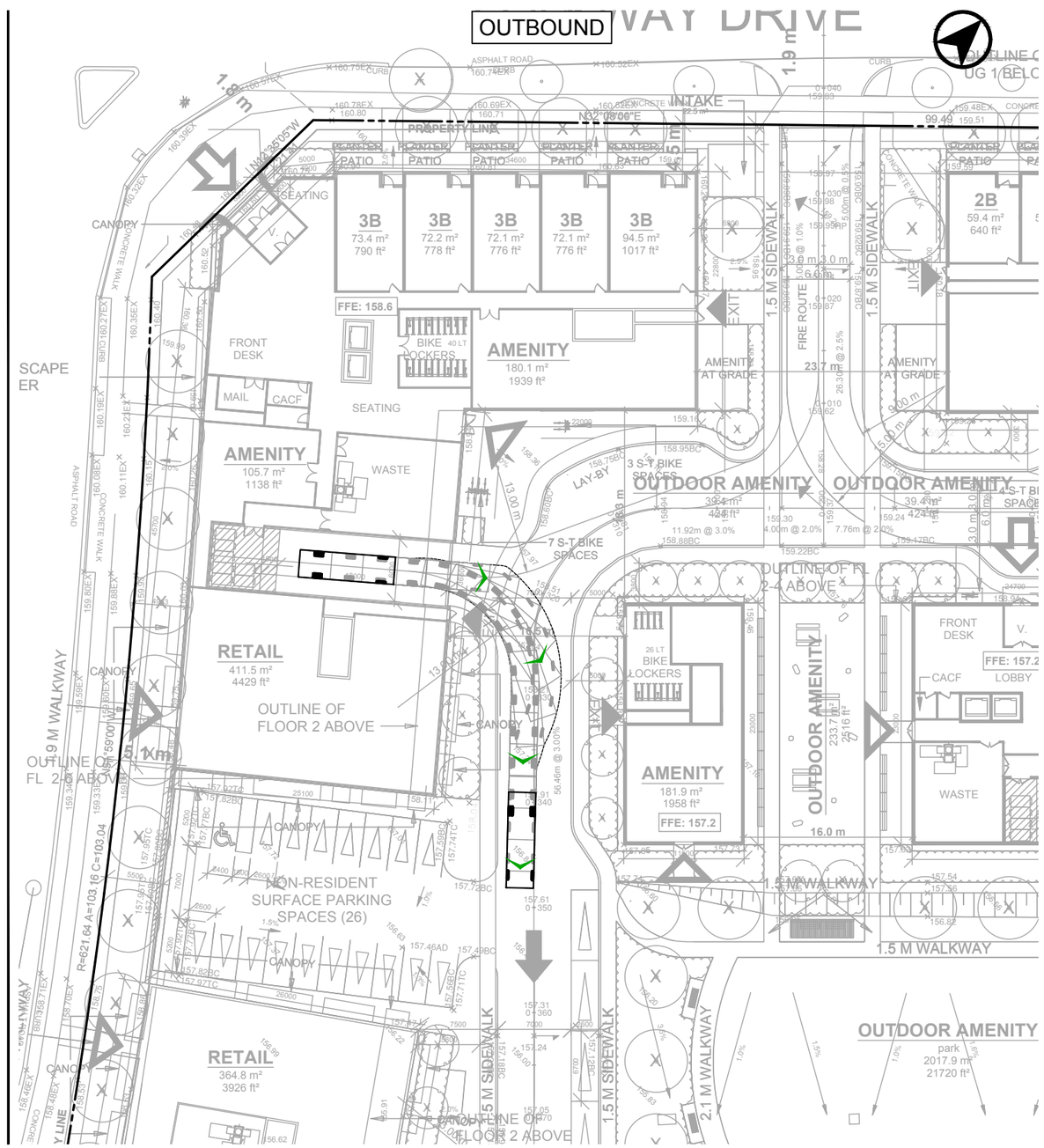
## TAC SINGLE UNIT (SU) TRUCK

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-09




Date Plotted: August 30, 2022 Filename: J:\8143-01BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

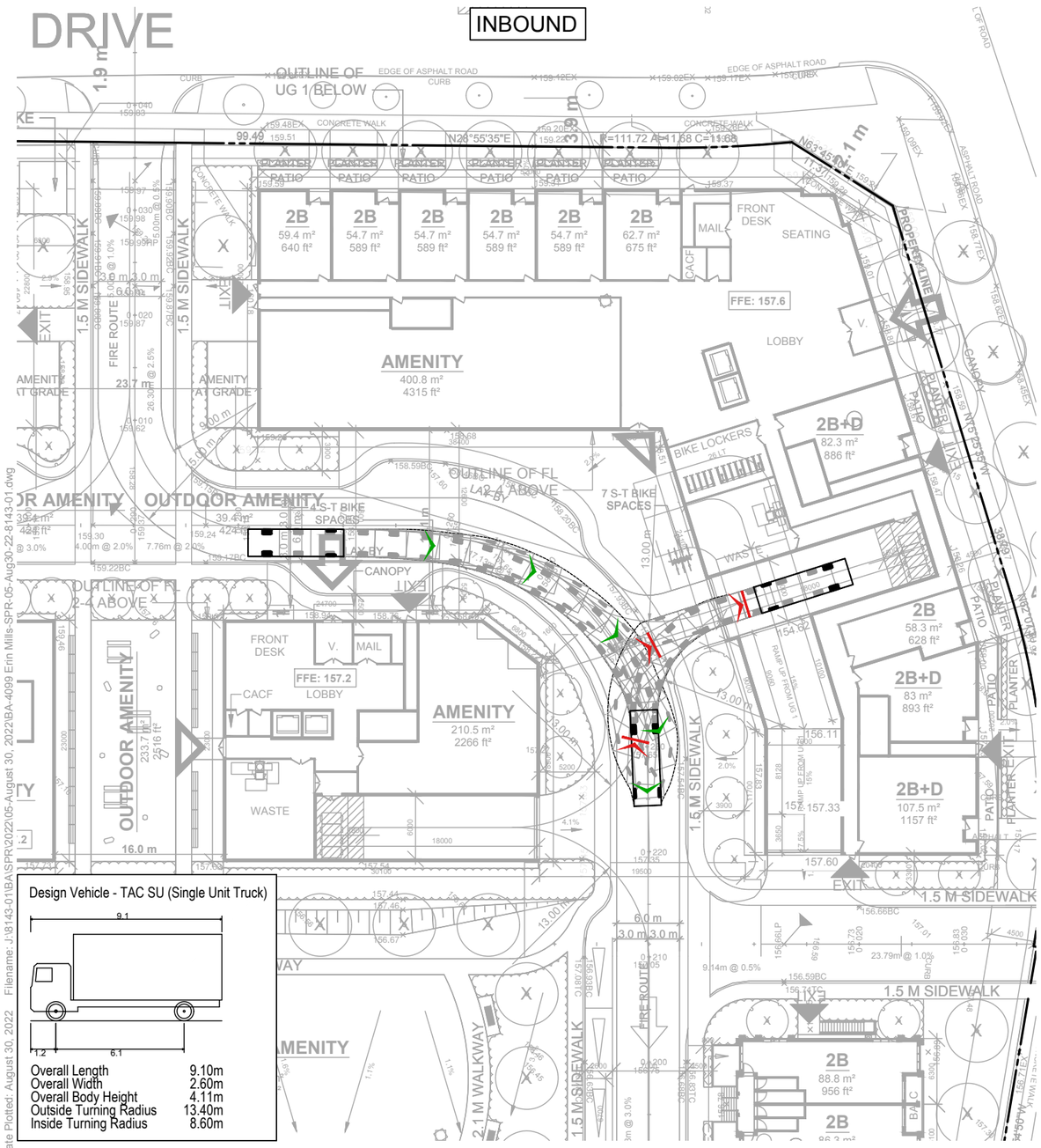
## BUILDING A

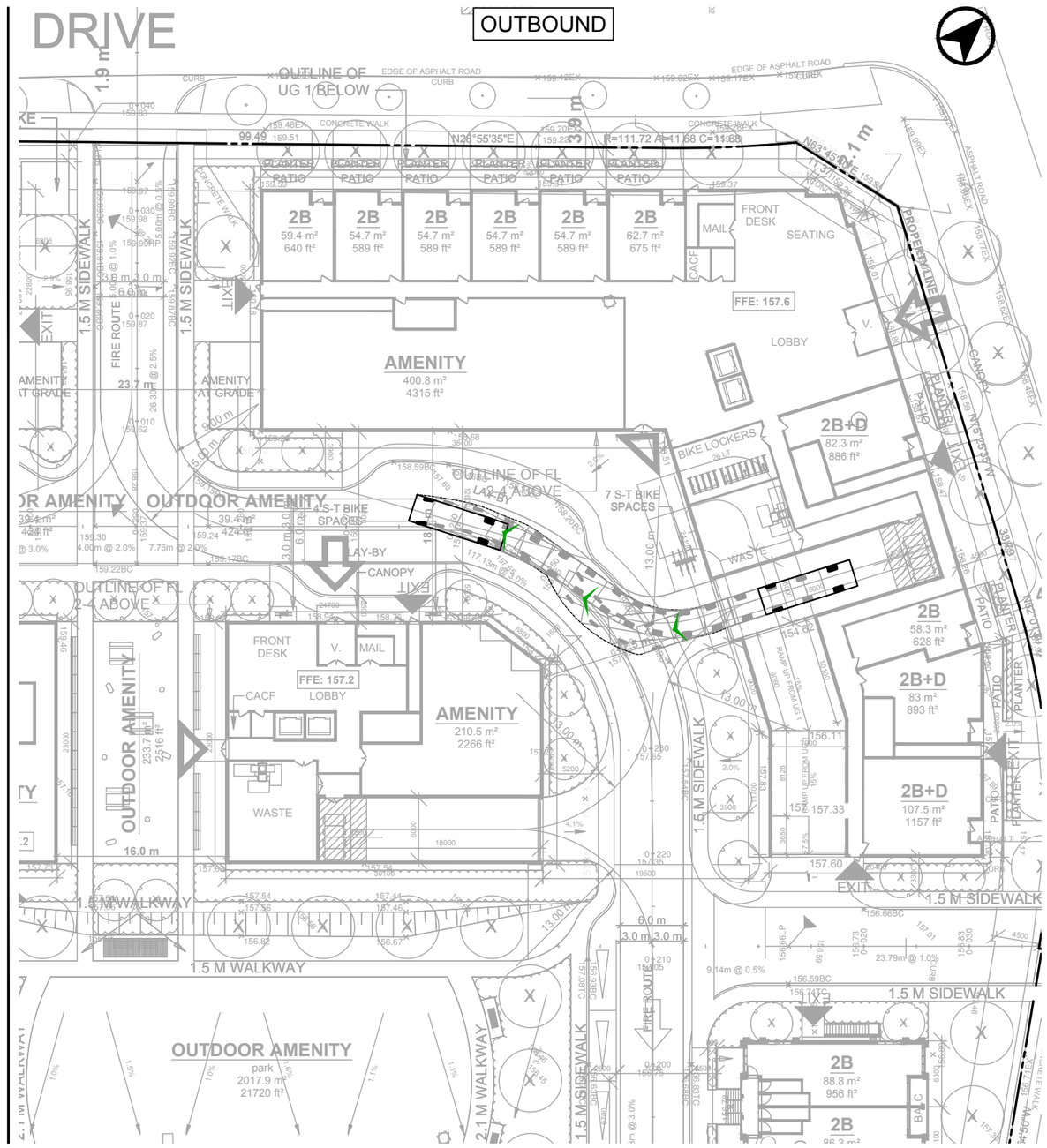
## TAC SINGLE UNIT (SU) TRUCK

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 — 0 5 10 15 20m

Drawing No. VMD-10




Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

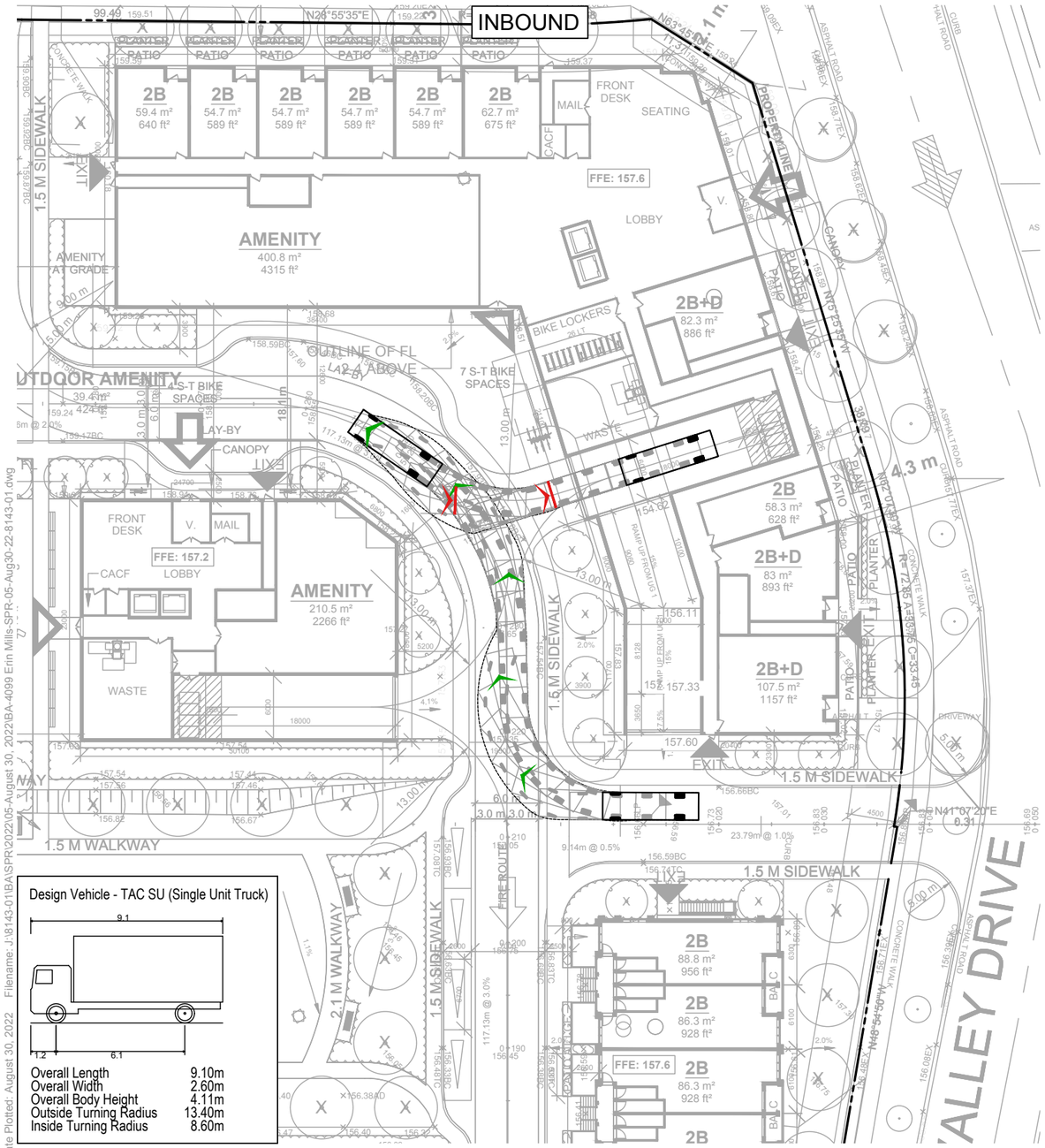
## BUILDING B

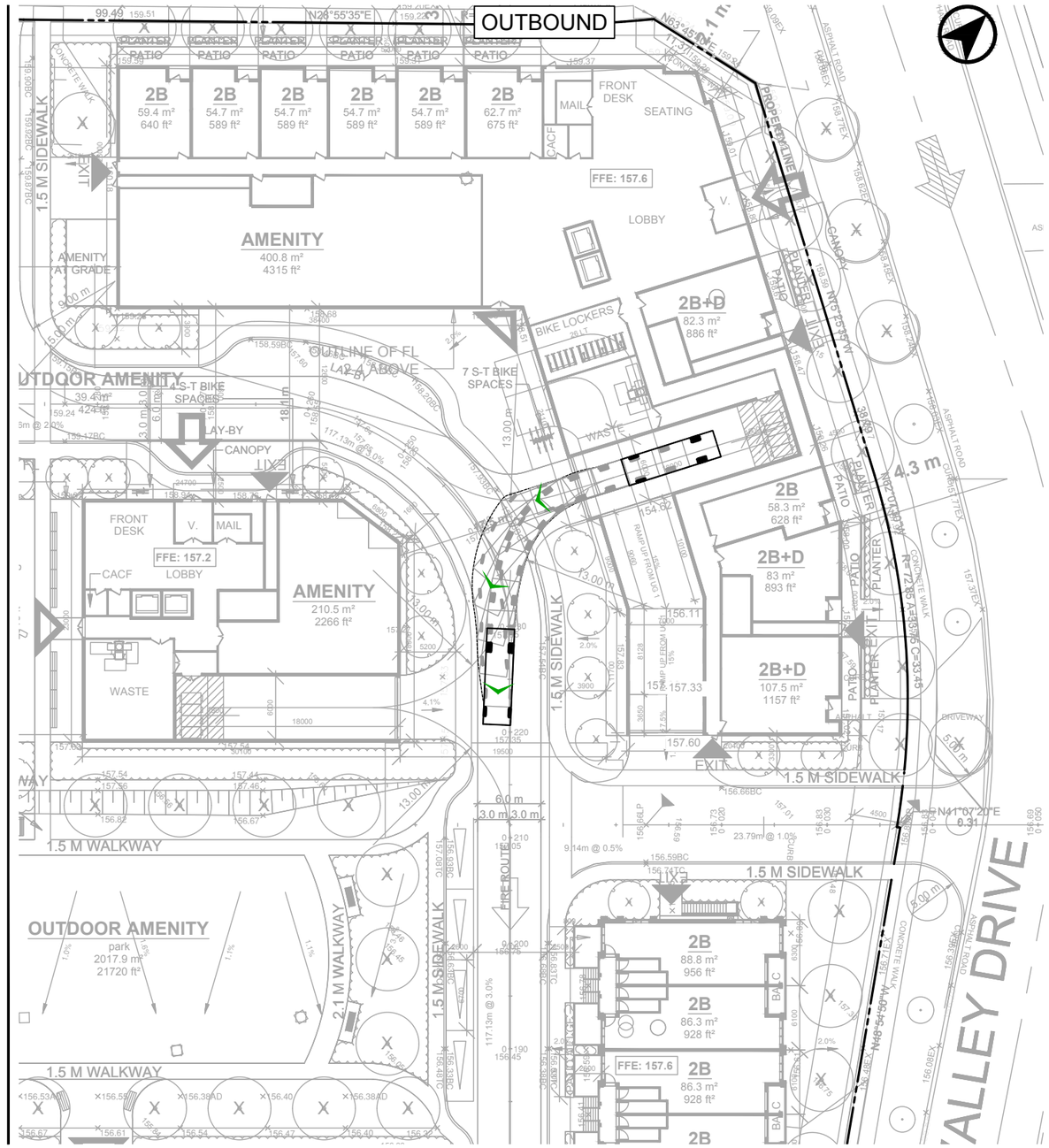
## TAC SINGLE UNIT (SU) TRUCK

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-11




Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

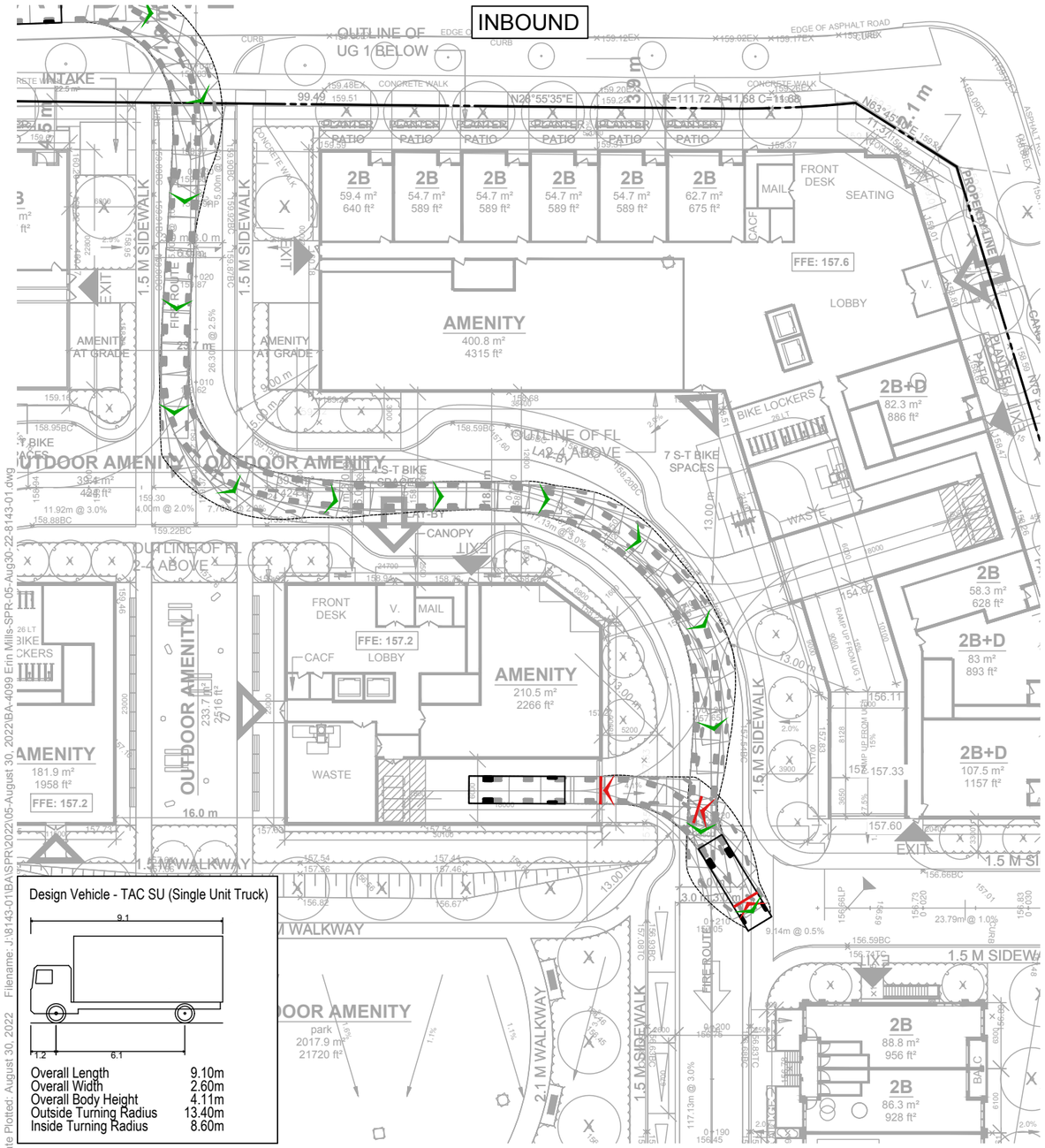
## BUILDING B

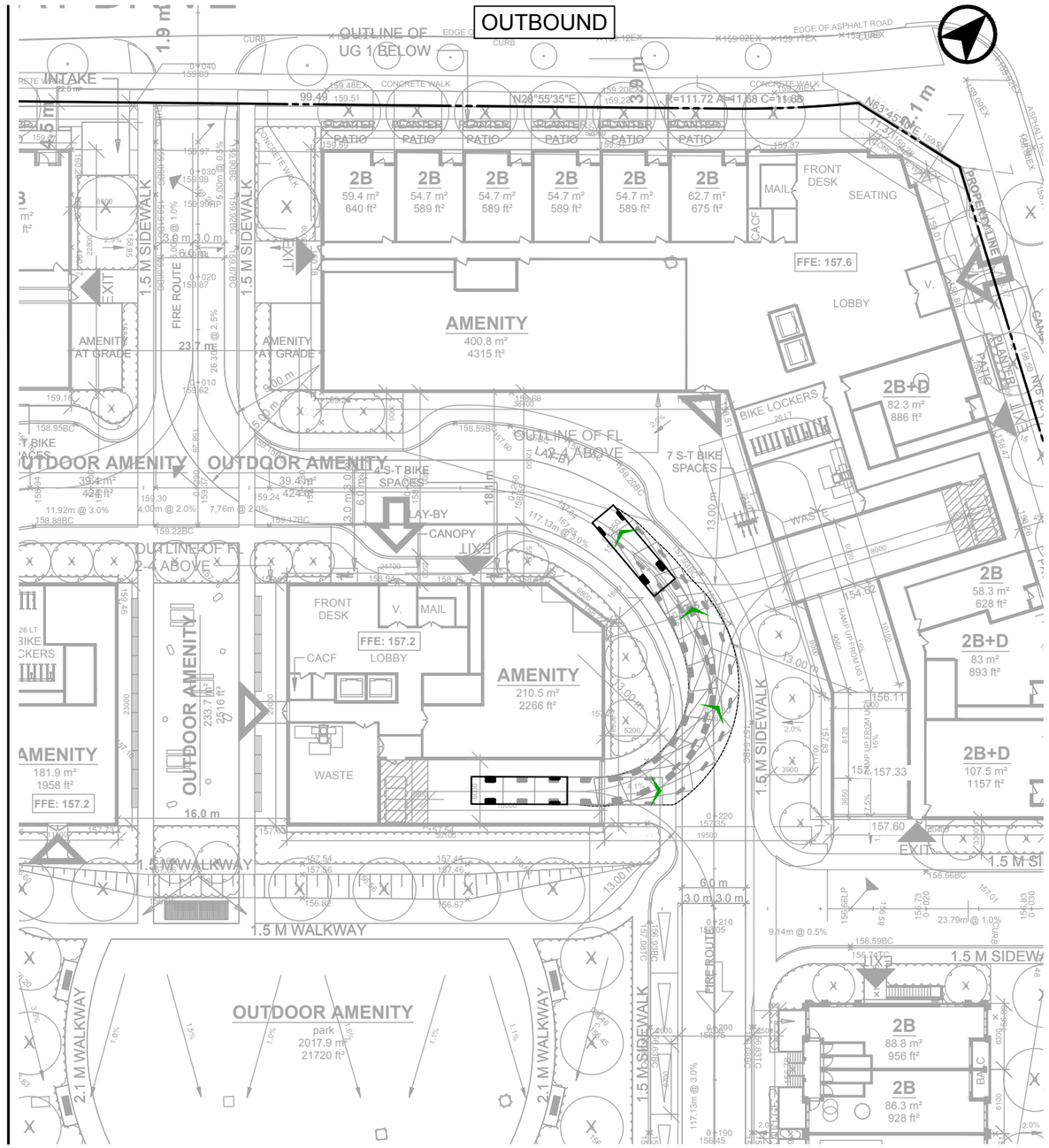
## TAC SINGLE UNIT (SU) TRUCK

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-12




Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

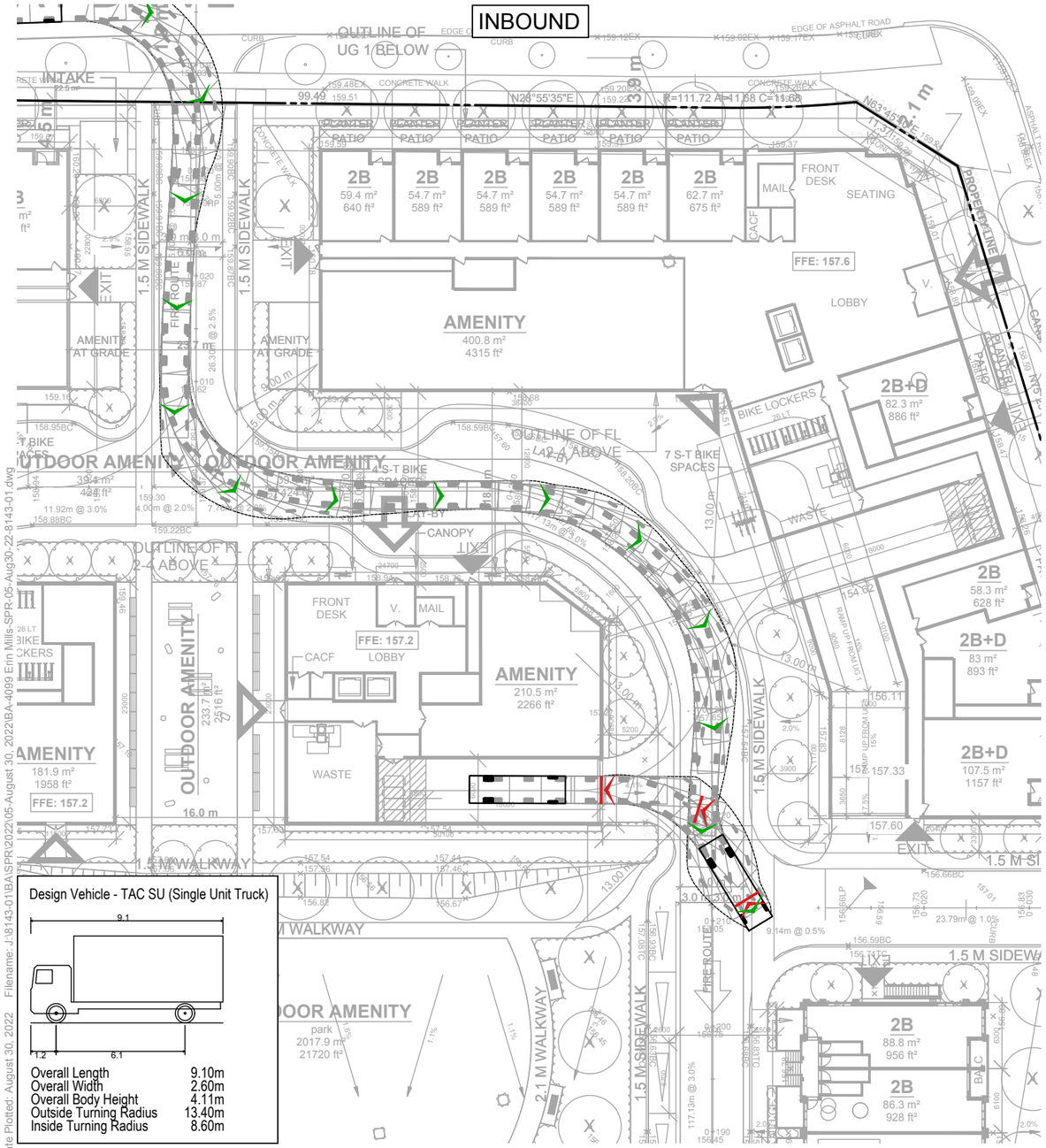
## BUILDING C

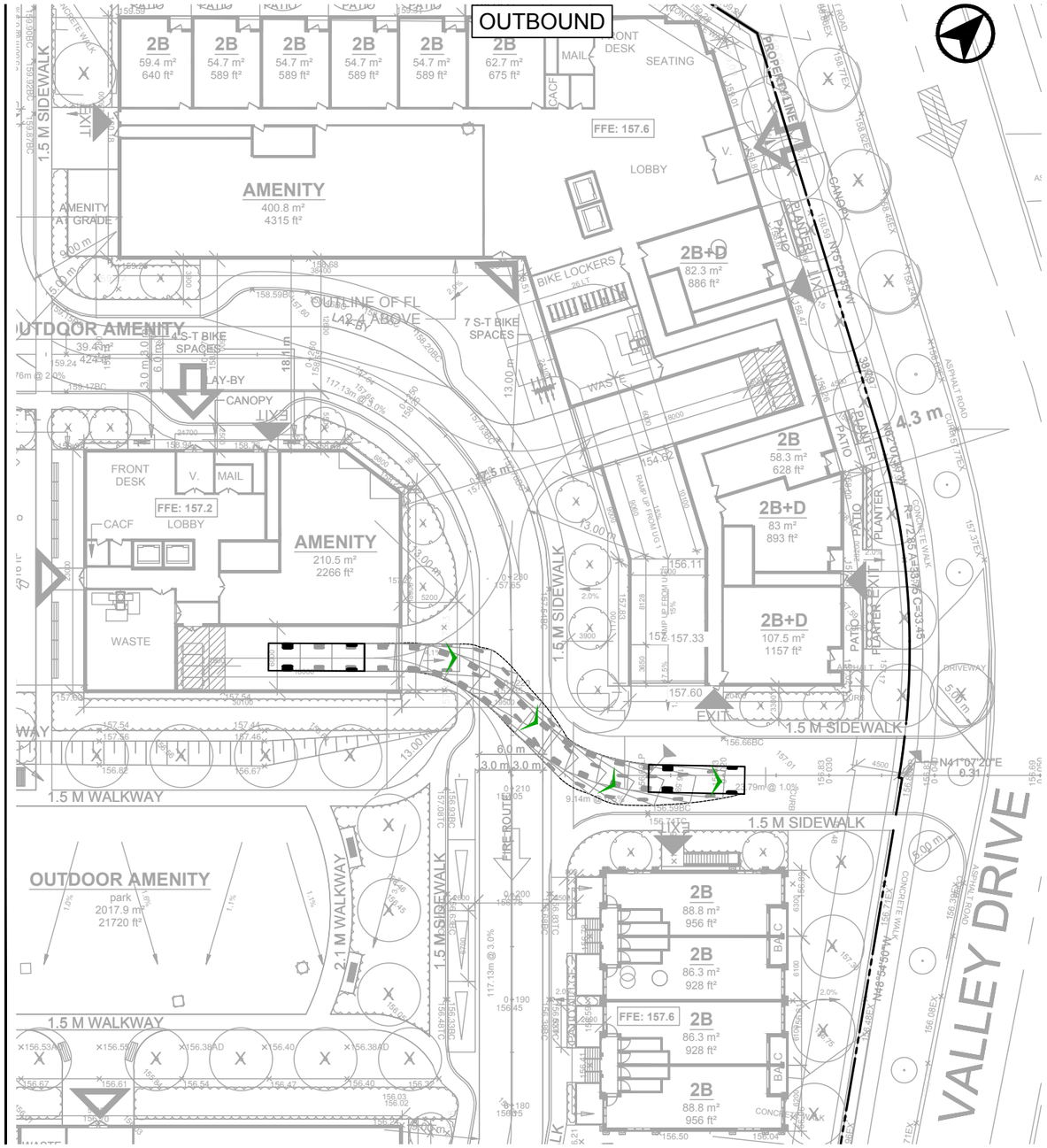
## TAC SINGLE UNIT (SU) TRUCK

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-13




Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

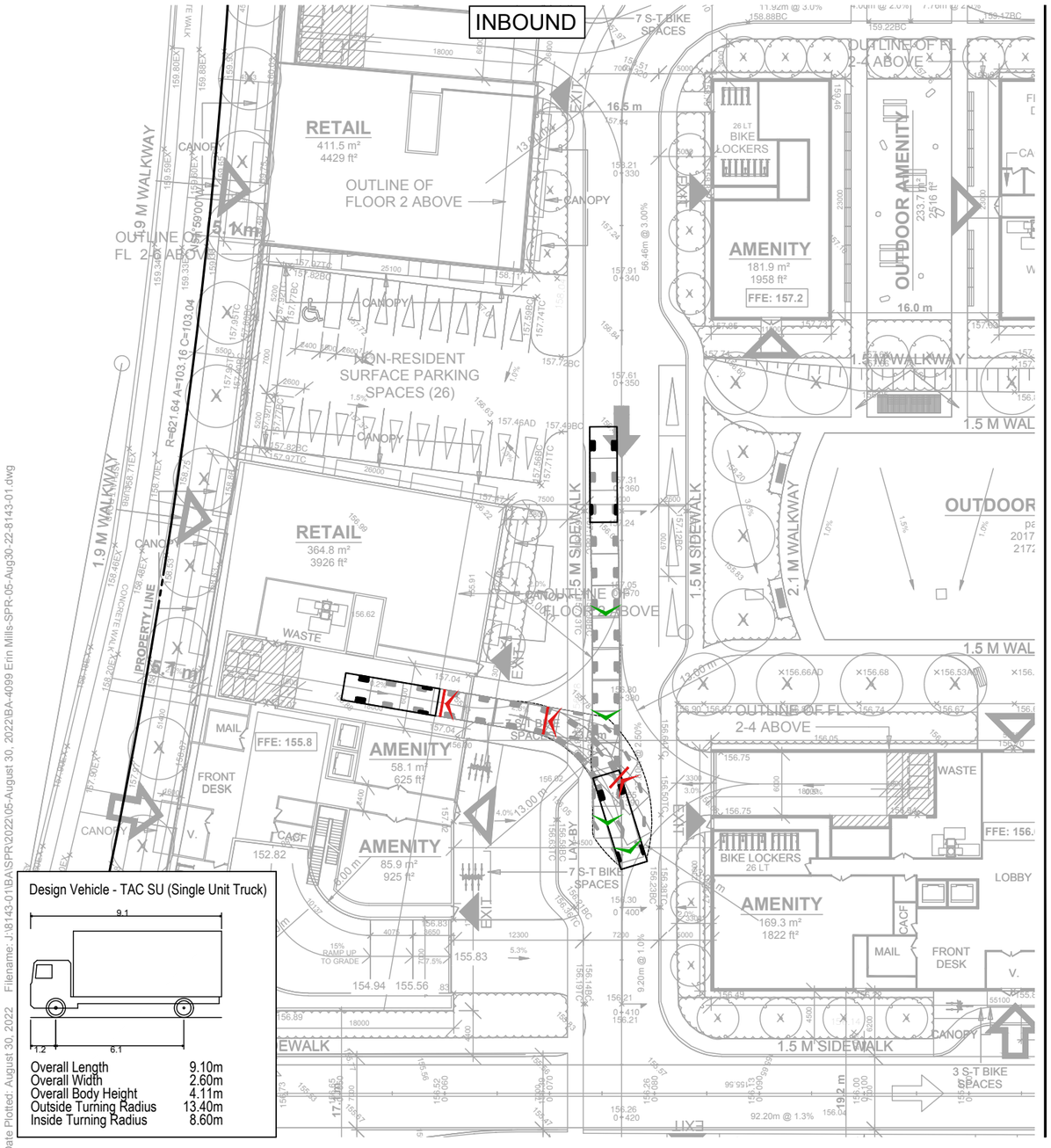
## BUILDING C

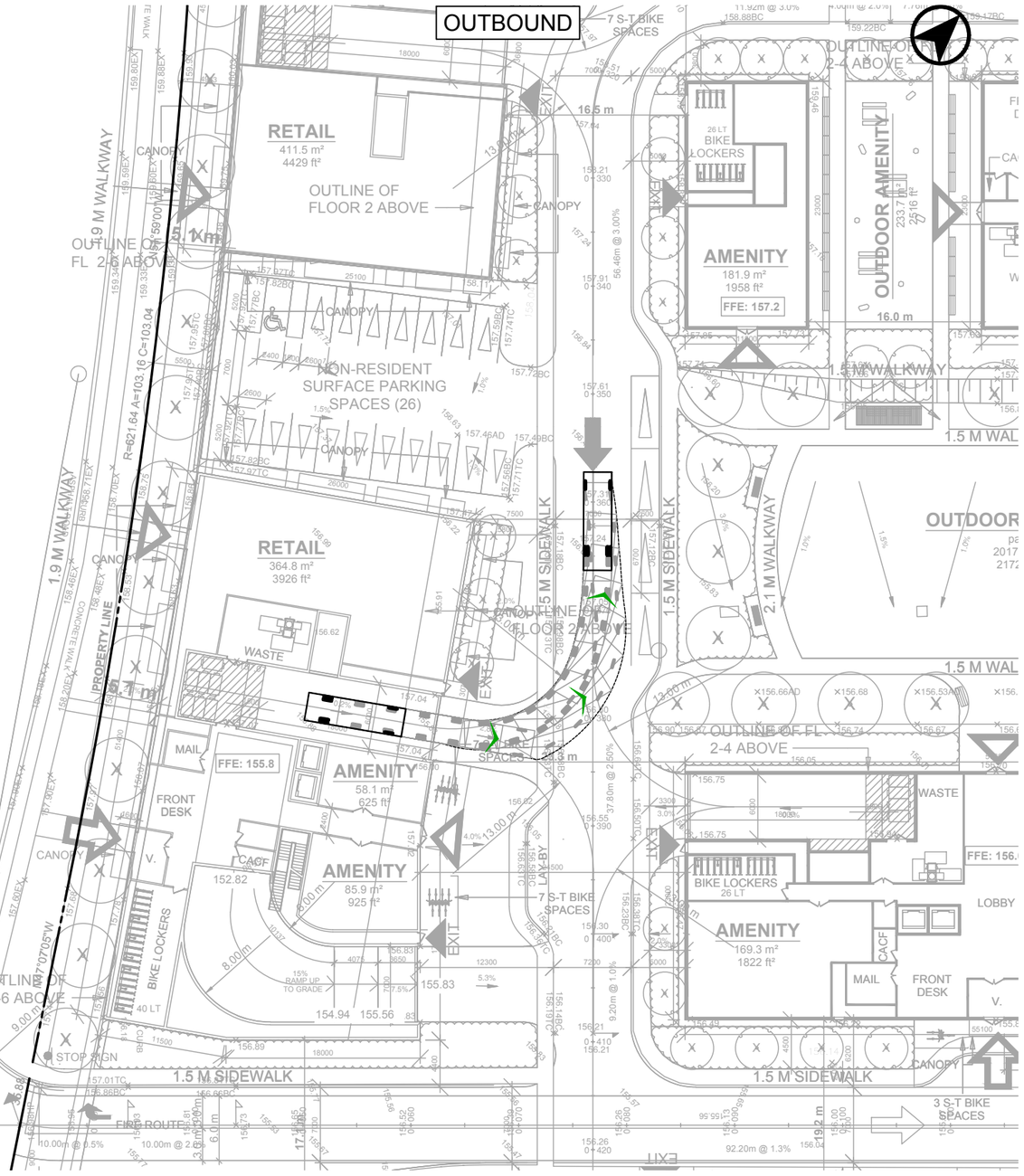
## TAC SINGLE UNIT (SU) TRUCK

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-14




Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

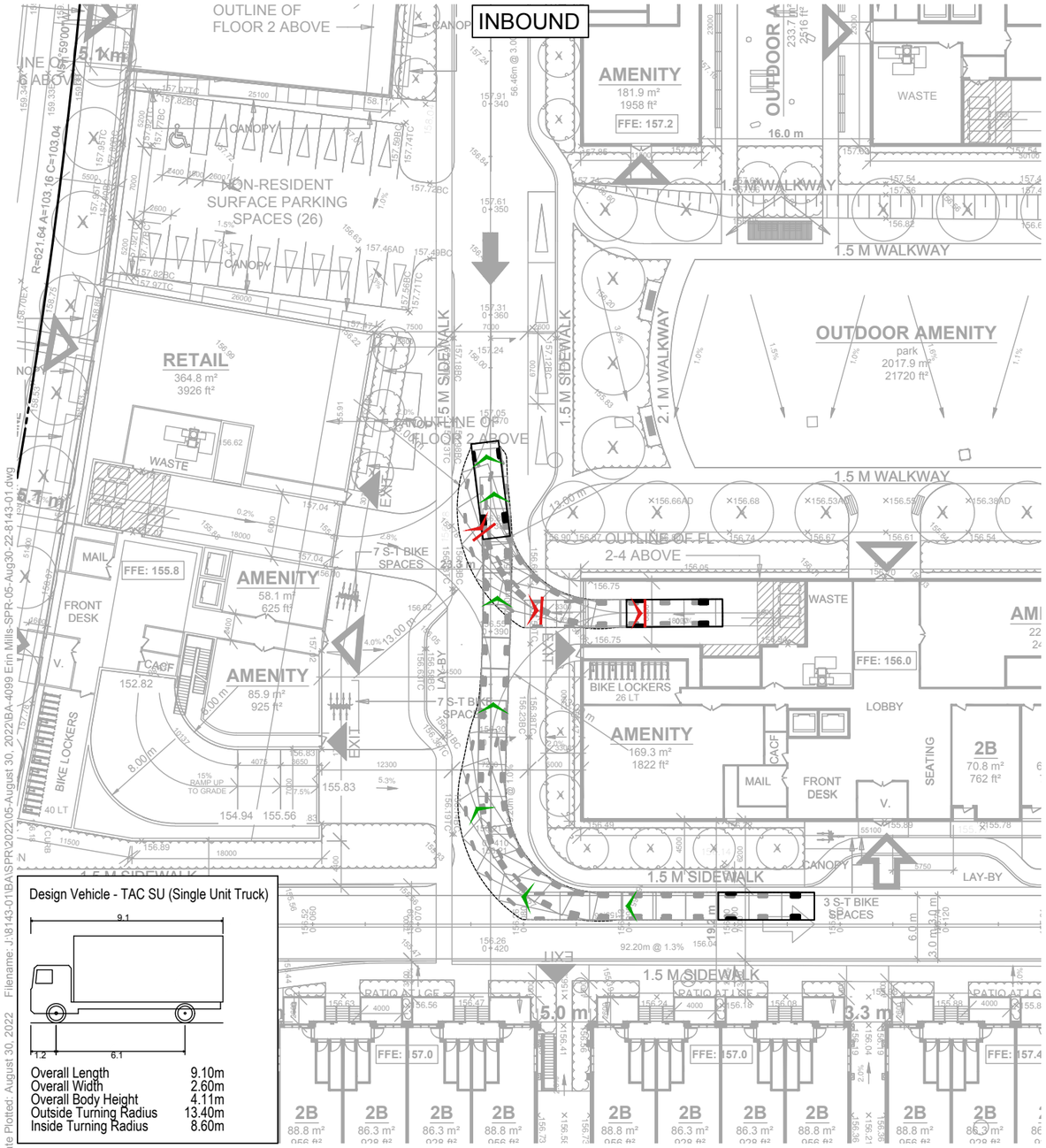
## BUILDING D

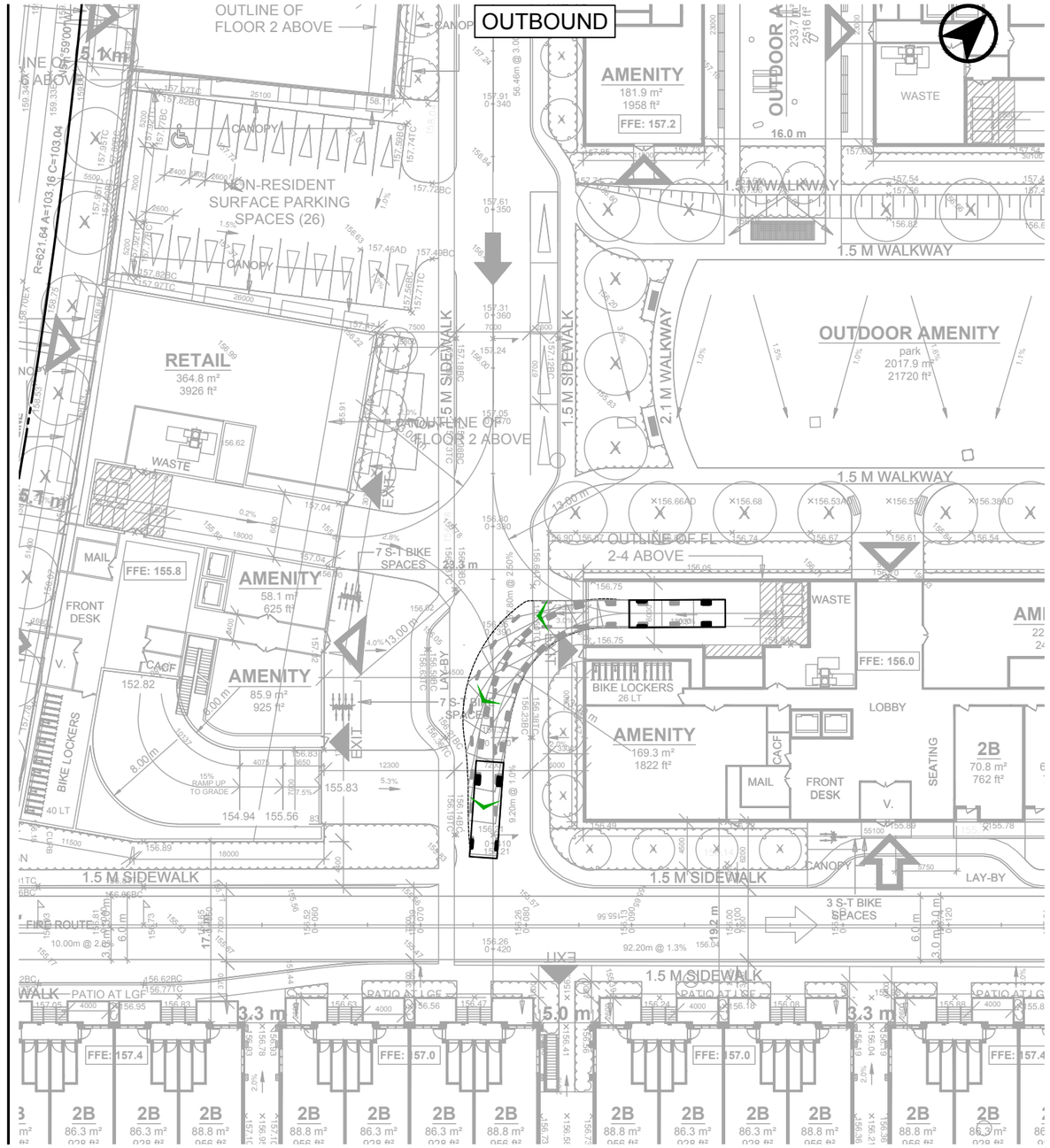
## TAC SINGLE UNIT (SU) TRUCK

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-15




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 |

Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

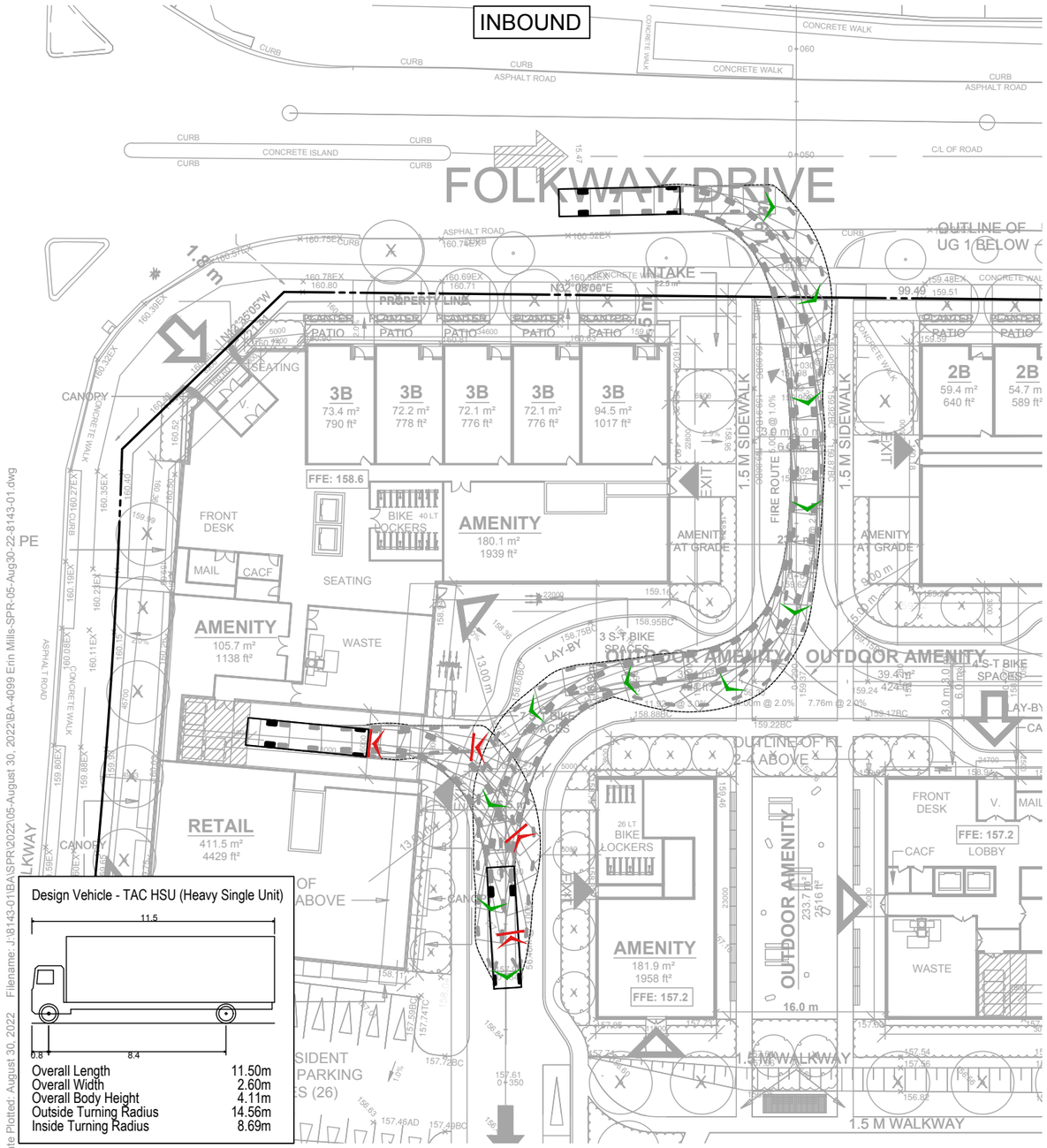
## BUILDING E

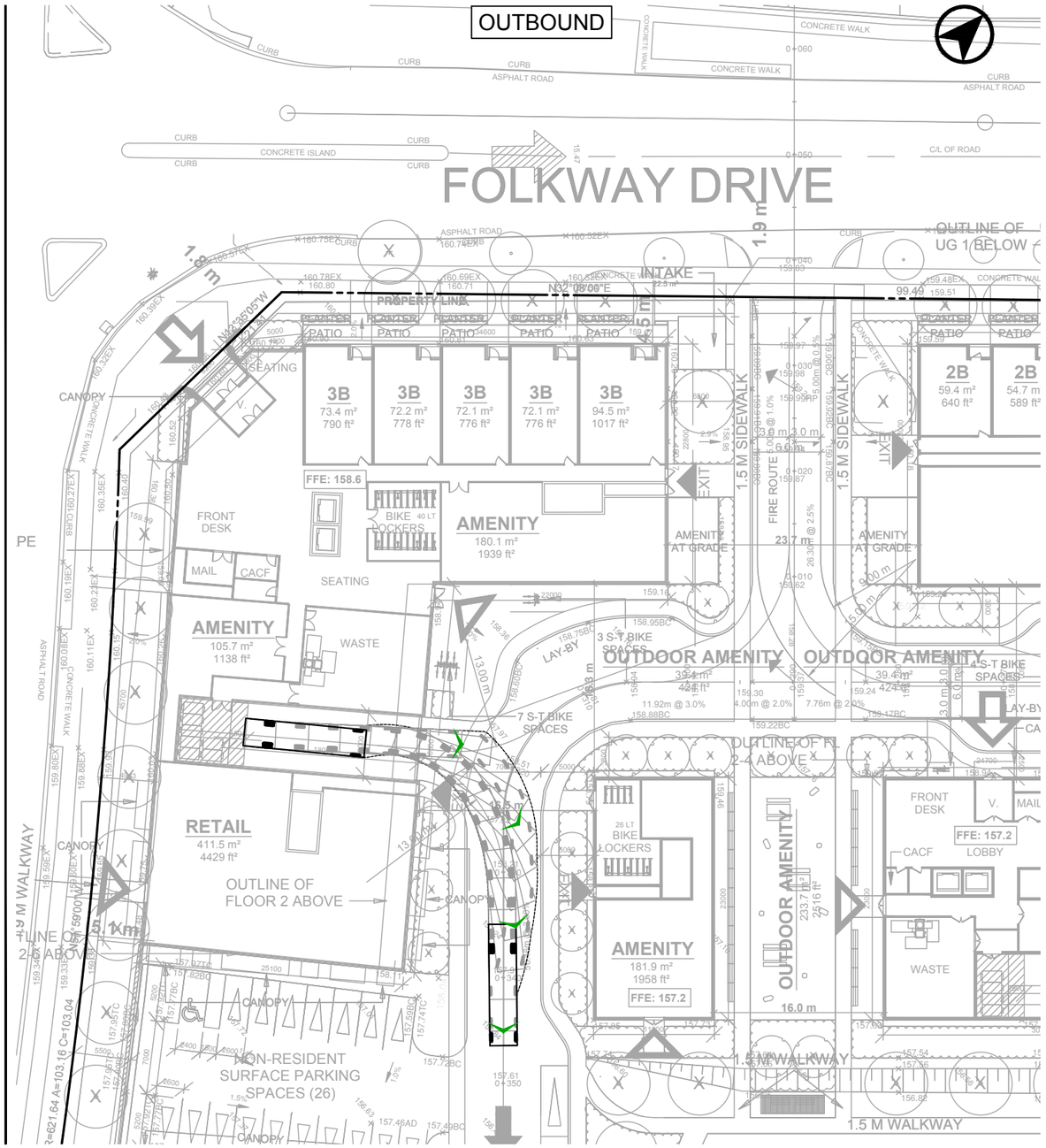
## TAC SINGLE UNIT (SU) TRUCK

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-16




Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

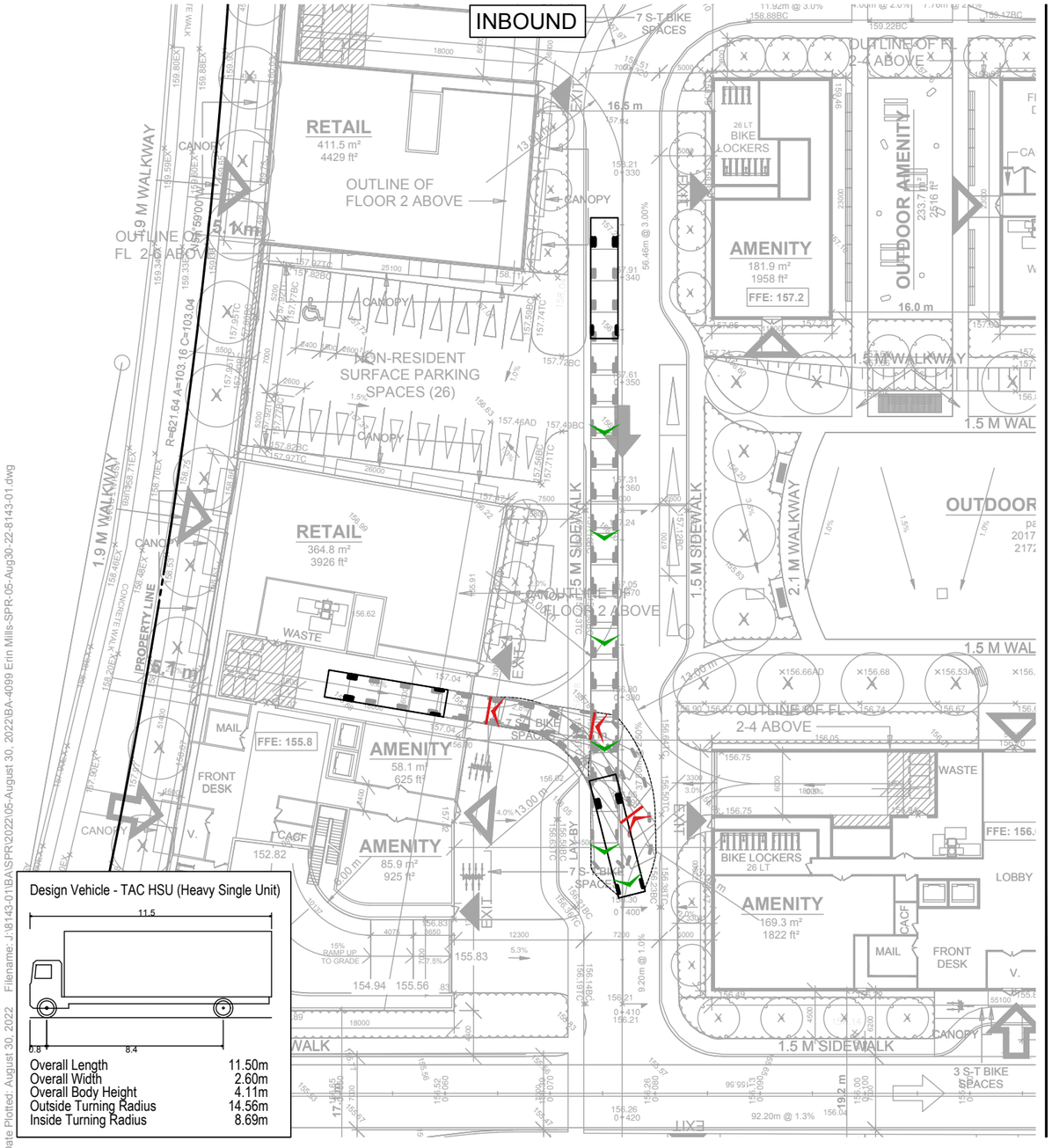
## BUILDING A

## TAC HEAVY SINGLE UNIT (HSU) TRUCK

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-17



Date Plotted: August 30, 2022 Filename: J:\8143-01BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM

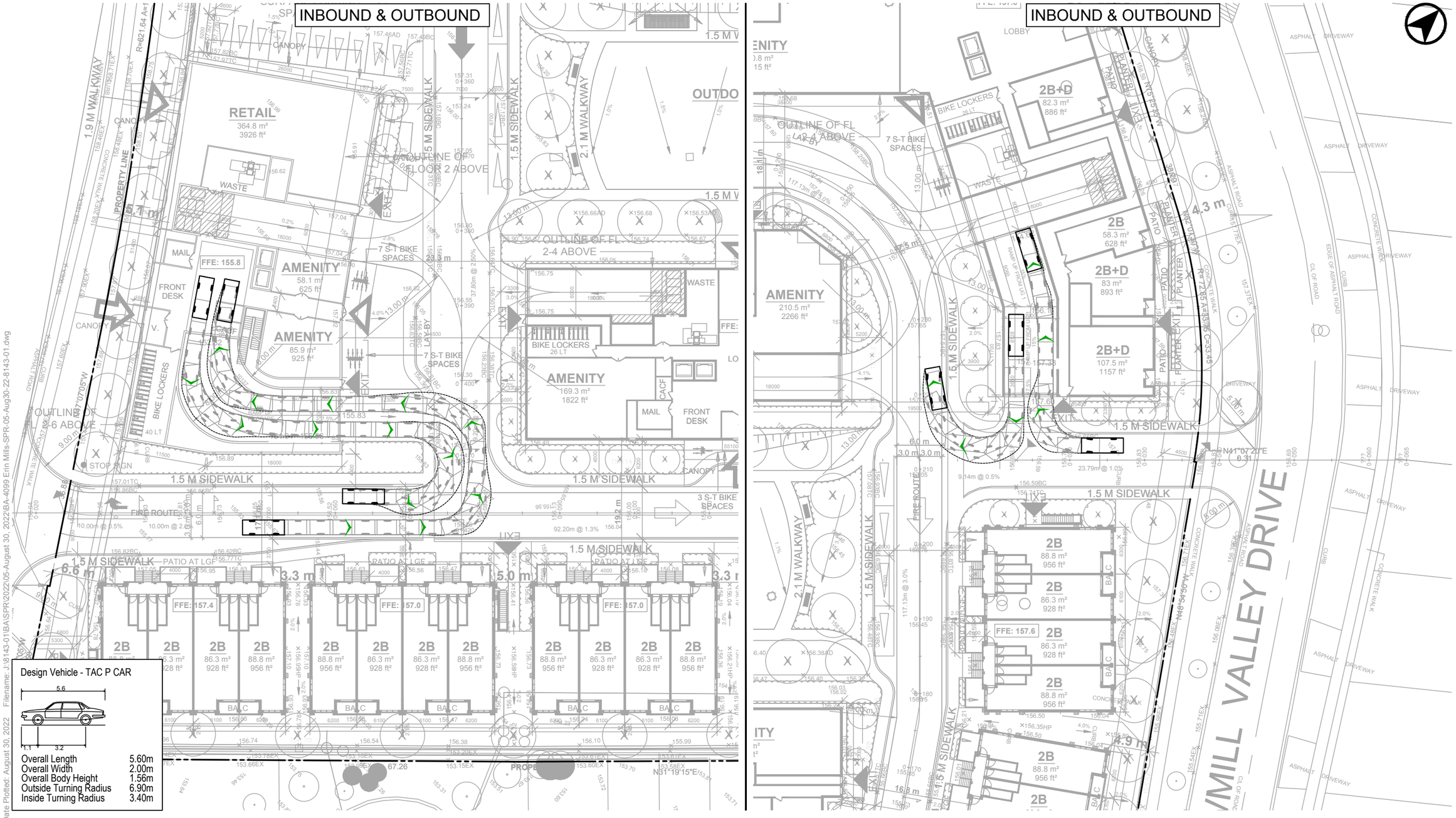
## BUILDING D

## TAC HEAVY SINGLE UNIT (HSU) TRUCK

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 — 0 5 10 15 20m

Drawing No. VMD-18




Date Plotted: August 30, 2022 Filename: J:\8143-01\BA\SPR\2022\05-August 30, 2022\BA-4099 Erin Mills-SPR-05-Aug30-22-8143-01.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## VEHICLE MANOEUVRING DIAGRAM
## PARKING RAMPS
## TAC P CAR

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JUNE 22, 2022 |
| Revised: | AUGUT 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-19

# APPENDIX C:
# Traffic Counts

Spectrum

Turning Movement Count
Location Name: ERIN MILLS PKWY & 4099 ERIN MILLS RETAIL PLAZA
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

## Turning Movement Count (6 . ERIN MILLS PKWY & 4099 ERIN MILLS RETAIL PLAZA)

| Start Time | N Approach ERIN MILLS PKWY | | | | | E Approach 4099 ERIN MILLS RETAIL PLAZA | | | | | S Approach ERIN MILLS PKWY | | | | | Int. Total (15 min) | Int. Total (1 hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru N:S | Left N:E | UTurn N:N | Peds N: | Approach Total | Right E:N | Left E:S | UTurn E:E | Peds E: | Approach Total | Right S:E | Thru S:N | UTurn S:S | Peds S: | Approach Total | | |
| 07:00:00 | 209 | 0 | 0 | 0 | 209 | 1 | 0 | 0 | 0 | 1 | 0 | 239 | 0 | 0 | 239 | 449 | |
| 07:15:00 | 240 | 0 | 0 | 0 | 240 | 1 | 0 | 0 | 0 | 1 | 3 | 256 | 0 | 0 | 259 | 500 | |
| 07:30:00 | 307 | 0 | 0 | 0 | 307 | 0 | 0 | 0 | 0 | 0 | 3 | 351 | 0 | 0 | 354 | 661 | |
| 07:45:00 | 417 | 0 | 0 | 0 | 417 | 0 | 0 | 0 | 1 | 0 | 3 | 356 | 0 | 0 | 359 | 776 | 2386 |
| 08:00:00 | 362 | 0 | 0 | 0 | 362 | 0 | 0 | 0 | 0 | 0 | 3 | 322 | 0 | 0 | 325 | 687 | 2624 |
| 08:15:00 | 356 | 0 | 0 | 0 | 356 | 2 | 0 | 0 | 0 | 2 | 6 | 384 | 0 | 0 | 390 | 748 | 2872 |
| 08:30:00 | 388 | 0 | 0 | 0 | 388 | 4 | 0 | 0 | 0 | 4 | 6 | 349 | 0 | 0 | 355 | 747 | 2958 |
| 08:45:00 | 357 | 0 | 0 | 0 | 357 | 0 | 0 | 0 | 1 | 0 | 3 | 308 | 0 | 1 | 311 | 668 | 2850 |
| ***BREAK*** | | | | | | | | | | | | | | | | | |
| 16:00:00 | 356 | 0 | 0 | 0 | 356 | 3 | 0 | 0 | 0 | 3 | 24 | 445 | 0 | 0 | 469 | 828 | |
| 16:15:00 | 347 | 0 | 0 | 0 | 347 | 4 | 0 | 0 | 0 | 4 | 31 | 493 | 0 | 0 | 524 | 875 | |
| 16:30:00 | 364 | 0 | 0 | 0 | 364 | 4 | 0 | 0 | 2 | 4 | 13 | 417 | 0 | 0 | 430 | 798 | |
| 16:45:00 | 346 | 0 | 0 | 0 | 346 | 2 | 0 | 0 | 0 | 2 | 20 | 455 | 0 | 0 | 475 | 823 | 3324 |
| 17:00:00 | 402 | 0 | 0 | 0 | 402 | 9 | 0 | 0 | 0 | 9 | 13 | 451 | 0 | 0 | 464 | 875 | 3371 |
| 17:15:00 | 320 | 0 | 0 | 0 | 320 | 2 | 0 | 0 | 0 | 2 | 22 | 445 | 0 | 0 | 467 | 789 | 3285 |
| 17:30:00 | 358 | 0 | 0 | 0 | 358 | 4 | 0 | 0 | 2 | 4 | 20 | 458 | 0 | 0 | 478 | 840 | 3327 |
| 17:45:00 | 354 | 0 | 0 | 0 | 354 | 6 | 0 | 0 | 0 | 6 | 19 | 401 | 0 | 0 | 420 | 780 | 3284 |
| **Grand Total** | 5483 | 0 | 0 | 0 | 5483 | 42 | 0 | 0 | 6 | 42 | 189 | 6130 | 0 | 1 | 6319 | **11844** | - |
| **Approach%** | 100% | 0% | 0% | | - | 100% | 0% | 0% | | - | 3% | 97% | 0% | | - | - | - |
| **Totals %** | 46.3% | 0% | 0% | | 46.3% | 0.4% | 0% | 0% | | 0.4% | 1.6% | 51.8% | 0% | | 53.4% | - | - |
| **Heavy** | 210 | 0 | 0 | | - | 4 | 0 | 0 | | - | 1 | 285 | 0 | | - | - | - |
| **Heavy %** | 3.8% | 0% | 0% | | - | 9.5% | 0% | 0% | | - | 0.5% | 4.6% | 0% | | - | - | - |
| **Bicycles** | - | - | - | | - | - | - | - | | - | - | - | - | | - | - | - |
| **Bicycle %** | - | - | - | | - | - | - | - | | - | - | - | - | | - | - | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: ERIN MILLS PKWY & 4099 ERIN MILLS RETAIL PLAZA
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast Clouds (0.16 °C)**

| Start Time | N Approach ERIN MILLS PKWY | | | | | E Approach 4099 ERIN MILLS RETAIL PLAZA | | | | | S Approach ERIN MILLS PKWY | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | UTurn | Peds | Approach Total | Right | Left | UTurn | Peds | Approach Total | Right | Thru | UTurn | Peds | Approach Total | |
| 07:45:00 | 417 | 0 | 0 | 0 | 417 | 0 | 0 | 0 | 1 | 0 | 3 | 356 | 0 | 0 | 359 | 776 |
| 08:00:00 | 362 | 0 | 0 | 0 | 362 | 0 | 0 | 0 | 0 | 0 | 3 | 322 | 0 | 0 | 325 | 687 |
| 08:15:00 | 356 | 0 | 0 | 0 | 356 | 2 | 0 | 0 | 0 | 2 | 6 | 384 | 0 | 0 | 390 | 748 |
| 08:30:00 | 388 | 0 | 0 | 0 | 388 | 4 | 0 | 0 | 0 | 4 | 6 | 349 | 0 | 0 | 355 | 747 |
| **Grand Total** | 1523 | 0 | 0 | 0 | 1523 | 6 | 0 | 0 | 1 | 6 | 18 | 1411 | 0 | 0 | 1429 | **2958** |
| **Approach%** | 100% | 0% | 0% | | - | 100% | 0% | 0% | | - | 1.3% | 98.7% | 0% | | - | - |
| **Totals %** | 51.5% | 0% | 0% | | 51.5% | 0.2% | 0% | 0% | | 0.2% | 0.6% | 47.7% | 0% | | 48.3% | - |
| **PHF** | 0.91 | 0 | 0 | | 0.91 | 0.38 | 0 | 0 | | 0.38 | 0.75 | 0.92 | 0 | | 0.92 | - |
| **Heavy** | 72 | 0 | 0 | | 72 | 1 | 0 | 0 | | 1 | 0 | 48 | 0 | | 48 | - |
| **Heavy %** | 4.7% | 0% | 0% | | 4.7% | 16.7% | 0% | 0% | | 16.7% | 0% | 3.4% | 0% | | 3.4% | - |
| **Lights** | 1451 | 0 | 0 | | 1451 | 5 | 0 | 0 | | 5 | 18 | 1363 | 0 | | 1381 | - |
| **Lights %** | 95.3% | 0% | 0% | | 95.3% | 83.3% | 0% | 0% | | 83.3% | 100% | 96.6% | 0% | | 96.6% | - |
| **Single-Unit Trucks** | 29 | 0 | 0 | | 29 | 1 | 0 | 0 | | 1 | 0 | 15 | 0 | | 15 | - |
| **Single-Unit Trucks %** | 1.9% | 0% | 0% | | 1.9% | 16.7% | 0% | 0% | | 16.7% | 0% | 1.1% | 0% | | 1% | - |
| **Buses** | 31 | 0 | 0 | | 31 | 0 | 0 | 0 | | 0 | 0 | 27 | 0 | | 27 | - |
| **Buses %** | 2% | 0% | 0% | | 2% | 0% | 0% | 0% | | 0% | 0% | 1.9% | 0% | | 1.9% | - |
| **Articulated Trucks** | 12 | 0 | 0 | | 12 | 0 | 0 | 0 | | 0 | 0 | 6 | 0 | | 6 | - |
| **Articulated Trucks %** | 0.8% | 0% | 0% | | 0.8% | 0% | 0% | 0% | | 0% | 0% | 0.4% | 0% | | 0.4% | - |
| **Pedestrians** | - | - | - | 0 | - | - | - | - | 1 | - | - | - | - | 0 | - | - |
| **Pedestrians%** | - | - | - | 0% | | - | - | - | 100% | | - | - | - | 0% | | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: ERIN MILLS PKWY & 4099 ERIN MILLS RETAIL PLAZA
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 04:15 PM - 05:15 PM Weather: Heavy Intensity Rain (2.86 °C)**

| Start Time | N Approach ERIN MILLS PKWY | | | | | E Approach 4099 ERIN MILLS RETAIL PLAZA | | | | | S Approach ERIN MILLS PKWY | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | UTurn | Peds | Approach Total | Right | Left | UTurn | Peds | Approach Total | Right | Thru | UTurn | Peds | Approach Total | |
| 16:15:00 | 347 | 0 | 0 | 0 | 347 | 4 | 0 | 0 | 0 | 4 | 31 | 493 | 0 | 0 | 524 | 875 |
| 16:30:00 | 364 | 0 | 0 | 0 | 364 | 4 | 0 | 0 | 2 | 4 | 13 | 417 | 0 | 0 | 430 | 798 |
| 16:45:00 | 346 | 0 | 0 | 0 | 346 | 2 | 0 | 0 | 0 | 2 | 20 | 455 | 0 | 0 | 475 | 823 |
| 17:00:00 | 402 | 0 | 0 | 0 | 402 | 9 | 0 | 0 | 0 | 9 | 13 | 451 | 0 | 0 | 464 | 875 |
| **Grand Total** | 1459 | 0 | 0 | 0 | 1459 | 19 | 0 | 0 | 2 | 19 | 77 | 1816 | 0 | 0 | 1893 | **3371** |
| **Approach%** | 100% | 0% | 0% | | - | 100% | 0% | 0% | | - | 4.1% | 95.9% | 0% | | - | - |
| **Totals %** | 43.3% | 0% | 0% | | 43.3% | 0.6% | 0% | 0% | | 0.6% | 2.3% | 53.9% | 0% | | 56.2% | - |
| **PHF** | 0.91 | 0 | 0 | | 0.91 | 0.53 | 0 | 0 | | 0.53 | 0.62 | 0.92 | 0 | | 0.9 | - |
| **Heavy** | 43 | 0 | 0 | | 43 | 2 | 0 | 0 | | 2 | 1 | 86 | 0 | | 87 | - |
| **Heavy %** | 2.9% | 0% | 0% | | 2.9% | 10.5% | 0% | 0% | | 10.5% | 1.3% | 4.7% | 0% | | 4.6% | - |
| **Lights** | 1416 | 0 | 0 | | 1416 | 17 | 0 | 0 | | 17 | 76 | 1730 | 0 | | 1806 | - |
| **Lights %** | 97.1% | 0% | 0% | | 97.1% | 89.5% | 0% | 0% | | 89.5% | 98.7% | 95.3% | 0% | | 95.4% | - |
| **Single-Unit Trucks** | 16 | 0 | 0 | | 16 | 2 | 0 | 0 | | 2 | 1 | 52 | 0 | | 53 | - |
| **Single-Unit Trucks %** | 1.1% | 0% | 0% | | 1.1% | 10.5% | 0% | 0% | | 10.5% | 1.3% | 2.9% | 0% | | 2.8% | - |
| **Buses** | 19 | 0 | 0 | | 19 | 0 | 0 | 0 | | 0 | 0 | 10 | 0 | | 10 | - |
| **Buses %** | 1.3% | 0% | 0% | | 1.3% | 0% | 0% | 0% | | 0% | 0% | 0.6% | 0% | | 0.5% | - |
| **Articulated Trucks** | 8 | 0 | 0 | | 8 | 0 | 0 | 0 | | 0 | 0 | 24 | 0 | | 24 | - |
| **Articulated Trucks %** | 0.5% | 0% | 0% | | 0.5% | 0% | 0% | 0% | | 0% | 0% | 1.3% | 0% | | 1.3% | - |
| **Pedestrians** | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 0 | - | - |
| **Pedestrians%** | - | - | - | 0% | | - | - | - | 100% | | - | - | - | 0% | | - |

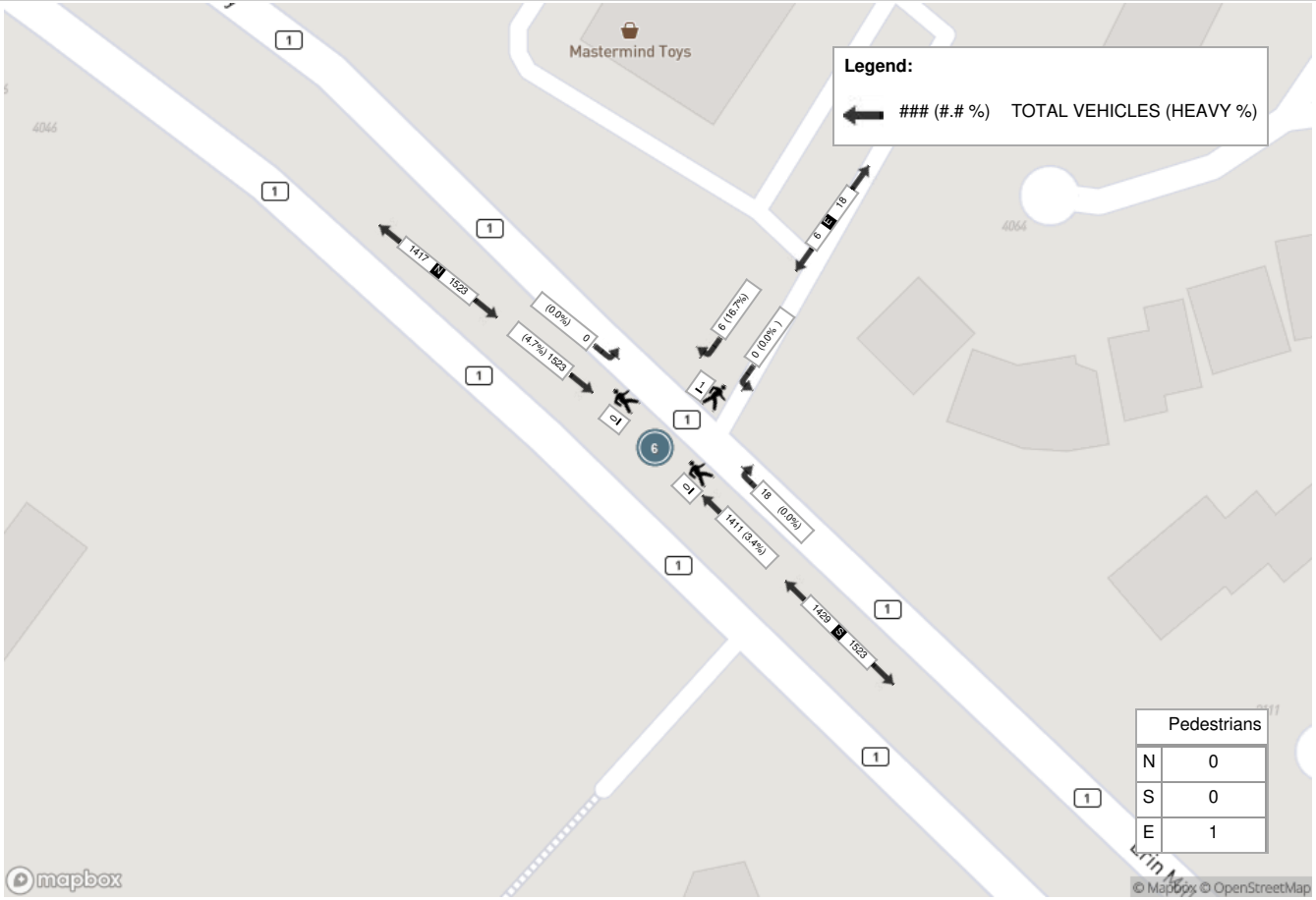
NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: ERIN MILLS PKWY & 4099 ERIN MILLS RETAIL PLAZA
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast Clouds (0.16 °C)**



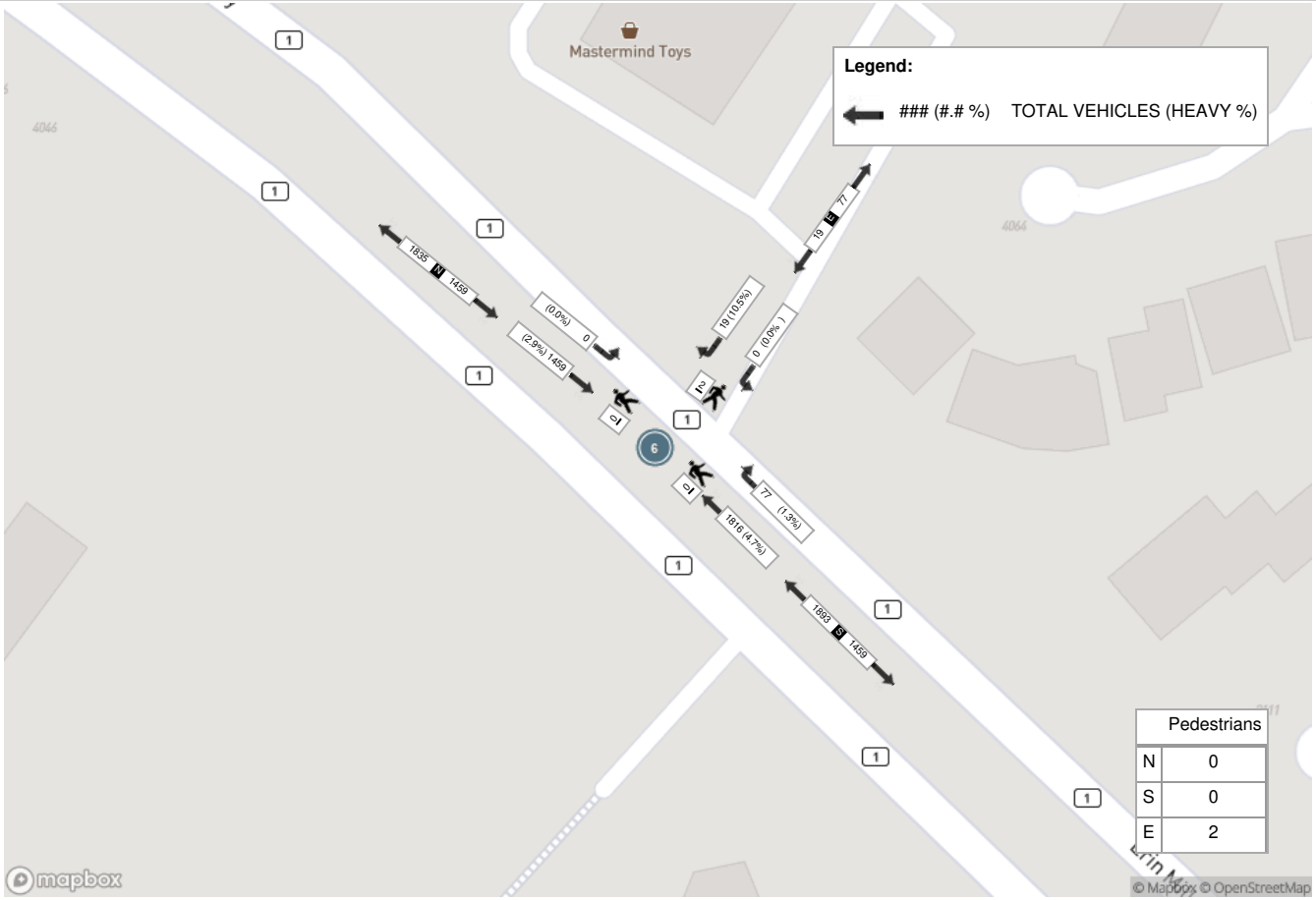

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: ERIN MILLS PKWY & 4099 ERIN MILLS RETAIL PLAZA
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 04:15 PM - 05:15 PM Weather: Heavy Intensity Rain (2.86 °C)**




NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# BA Group - Project Number 8143-01

Turning Movement Count
Location Name: ERIN MILLS PKWY & BURNHAMTHORPE RD
Date: Wed, Feb 28, 2018 Deployment Lead: Theo Daglis

Peel Region
10 Peel Centre Drive
Suite B - 4th Floor
Brampton ON, Canada, L6T 4B9

## Turning Movement Count (14 . ERIN MILLS PKWY & BURNHAMTHORPE RD) CustID: 001-02877 MioID: 499903

| Start Time | Southbound ERIN MILLS PKWY | | | | | | Westbound BURNHAMTHORPE RD | | | | | | Northbound ERIN MILLS PKWY | | | | | | Eastbound BURNHAMTHORPE RD | | | | | | Int. Total (15 min) | Int. Total (1 hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | | |
| 07:00:00 | 40 | 189 | 43 | 0 | 0 | 272 | 41 | 47 | 26 | 0 | 1 | 114 | 13 | 300 | 35 | 0 | 0 | 348 | 51 | 140 | 30 | 0 | 1 | 221 | 955 | |
| 07:15:00 | 61 | 291 | 35 | 0 | 1 | 387 | 33 | 48 | 30 | 0 | 0 | 111 | 11 | 355 | 62 | 0 | 0 | 428 | 75 | 179 | 38 | 0 | 0 | 292 | 1218 | |
| 07:30:00 | 78 | 310 | 34 | 0 | 1 | 422 | 54 | 86 | 27 | 0 | 0 | 167 | 28 | 339 | 53 | 0 | 1 | 420 | 73 | 264 | 57 | 0 | 1 | 394 | 1403 | |
| 07:45:00 | 84 | 405 | 47 | 1 | 0 | 537 | 63 | 115 | 30 | 0 | 1 | 208 | 17 | 380 | 52 | 0 | 0 | 449 | 77 | 206 | 60 | 0 | 0 | 343 | 1537 | 5113 |
| 08:00:00 | 102 | 382 | 37 | 0 | 2 | 521 | 57 | 106 | 41 | 0 | 1 | 204 | 23 | 336 | 70 | 1 | 1 | 430 | 91 | 211 | 59 | 1 | 4 | 362 | 1517 | 5675 |
| 08:15:00 | 89 | 375 | 41 | 0 | 1 | 505 | 54 | 110 | 41 | 0 | 1 | 205 | 20 | 406 | 70 | 0 | 0 | 496 | 85 | 251 | 47 | 0 | 4 | 383 | 1589 | 6046 |
| 08:30:00 | 99 | 439 | 61 | 0 | 2 | 599 | 54 | 104 | 33 | 0 | 0 | 191 | 33 | 411 | 55 | 0 | 0 | 499 | 59 | 184 | 49 | 0 | 3 | 292 | 1581 | 6224 |
| 08:45:00 | 94 | 372 | 71 | 0 | 1 | 537 | 72 | 118 | 40 | 0 | 1 | 230 | 28 | 261 | 60 | 0 | 2 | 349 | 65 | 211 | 68 | 1 | 1 | 345 | 1461 | 6148 |
| ***BREAK*** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11:00:00 | 56 | 175 | 38 | 0 | 1 | 269 | 57 | 84 | 55 | 0 | 0 | 196 | 21 | 279 | 50 | 0 | 1 | 350 | 50 | 93 | 29 | 0 | 1 | 172 | 987 | |
| 11:15:00 | 49 | 190 | 30 | 0 | 0 | 269 | 41 | 99 | 65 | 0 | 0 | 205 | 20 | 245 | 32 | 0 | 1 | 297 | 64 | 113 | 38 | 0 | 5 | 215 | 986 | |
| 11:30:00 | 50 | 203 | 44 | 0 | 0 | 297 | 57 | 121 | 47 | 1 | 1 | 226 | 21 | 313 | 36 | 0 | 1 | 370 | 65 | 102 | 31 | 0 | 0 | 198 | 1091 | |
| 11:45:00 | 67 | 275 | 33 | 0 | 2 | 375 | 73 | 114 | 75 | 0 | 2 | 262 | 21 | 258 | 48 | 0 | 0 | 327 | 53 | 100 | 22 | 0 | 3 | 175 | 1139 | 4203 |
| 12:00:00 | 40 | 260 | 43 | 0 | 2 | 343 | 68 | 107 | 60 | 0 | 1 | 235 | 23 | 233 | 40 | 0 | 3 | 296 | 68 | 106 | 30 | 0 | 0 | 204 | 1078 | 4294 |
| 12:15:00 | 45 | 285 | 52 | 0 | 0 | 382 | 66 | 102 | 60 | 0 | 0 | 228 | 29 | 274 | 47 | 1 | 2 | 351 | 63 | 112 | 29 | 0 | 1 | 204 | 1165 | 4473 |
| 12:30:00 | 55 | 247 | 34 | 0 | 0 | 336 | 44 | 108 | 66 | 0 | 0 | 218 | 27 | 252 | 27 | 1 | 2 | 307 | 59 | 128 | 32 | 0 | 0 | 219 | 1080 | 4462 |
| 12:45:00 | 56 | 233 | 44 | 2 | 0 | 335 | 57 | 98 | 49 | 1 | 1 | 205 | 26 | 230 | 44 | 0 | 2 | 300 | 63 | 124 | 40 | 0 | 2 | 227 | 1067 | 4390 |
| 13:00:00 | 58 | 269 | 37 | 0 | 0 | 364 | 65 | 90 | 61 | 0 | 1 | 216 | 19 | 261 | 45 | 0 | 4 | 325 | 45 | 107 | 26 | 0 | 0 | 178 | 1083 | 4395 |
| 13:15:00 | 38 | 256 | 42 | 0 | 0 | 336 | 56 | 102 | 56 | 1 | 2 | 215 | 16 | 242 | 39 | 0 | 3 | 297 | 70 | 97 | 28 | 0 | 4 | 195 | 1043 | 4273 |
| 13:30:00 | 45 | 242 | 47 | 0 | 0 | 334 | 62 | 94 | 54 | 1 | 0 | 211 | 25 | 285 | 28 | 0 | 3 | 338 | 54 | 107 | 25 | 0 | 0 | 186 | 1069 | 4262 |
| 13:45:00 | 37 | 295 | 40 | 0 | 0 | 372 | 38 | 79 | 43 | 1 | 0 | 161 | 28 | 256 | 37 | 0 | 1 | 321 | 51 | 95 | 27 | 0 | 0 | 173 | 1027 | 4222 |
| ***BREAK*** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15:00:00 | 44 | 338 | 48 | 0 | 2 | 430 | 49 | 127 | 77 | 0 | 0 | 253 | 31 | 310 | 45 | 0 | 3 | 386 | 72 | 130 | 48 | 0 | 2 | 250 | 1319 | |
| 15:15:00 | 59 | 321 | 54 | 0 | 0 | 434 | 81 | 167 | 99 | 0 | 2 | 347 | 33 | 334 | 49 | 0 | 9 | 416 | 55 | 124 | 28 | 0 | 2 | 207 | 1404 | |
| 15:30:00 | 40 | 270 | 54 | 0 | 2 | 364 | 88 | 193 | 78 | 0 | 0 | 359 | 43 | 377 | 56 | 2 | 0 | 478 | 61 | 131 | 37 | 0 | 6 | 229 | 1430 | |
| 15:45:00 | 50 | 358 | 64 | 0 | 0 | 472 | 69 | 168 | 60 | 0 | 1 | 297 | 36 | 407 | 58 | 1 | 1 | 502 | 54 | 132 | 41 | 0 | 2 | 227 | 1498 | 5651 |
| 16:00:00 | 53 | 294 | 59 | 0 | 1 | 406 | 84 | 193 | 83 | 0 | 2 | 360 | 40 | 328 | 41 | 0 | 2 | 409 | 69 | 150 | 41 | 0 | 3 | 260 | 1435 | 5767 |
| 16:15:00 | 54 | 298 | 74 | 0 | 0 | 426 | 68 | 197 | 98 | 0 | 1 | 363 | 38 | 449 | 53 | 0 | 4 | 540 | 69 | 147 | 24 | 0 | 4 | 240 | 1569 | 5932 |
| 16:30:00 | 51 | 378 | 58 | 1 | 1 | 488 | 68 | 198 | 70 | 0 | 1 | 336 | 32 | 435 | 69 | 0 | 1 | 536 | 61 | 123 | 29 | 0 | 7 | 213 | 1573 | 6075 |
| 16:45:00 | 49 | 297 | 40 | 3 | 0 | 389 | 78 | 213 | 74 | 5 | 1 | 370 | 31 | 402 | 60 | 1 | 0 | 494 | 65 | 146 | 28 | 0 | 1 | 239 | 1492 | 6069 |
| 17:00:00 | 46 | 384 | 53 | 0 | 1 | 483 | 76 | 182 | 65 | 0 | 1 | 323 | 41 | 503 | 73 | 0 | 2 | 617 | 57 | 159 | 31 | 1 | 5 | 248 | 1671 | 6305 |
| 17:15:00 | 46 | 324 | 43 | 1 | 1 | 414 | 73 | 239 | 71 | 1 | 2 | 384 | 49 | 449 | 59 | 0 | 4 | 557 | 57 | 163 | 31 | 1 | 3 | 252 | 1607 | 6343 |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: ERIN MILLS PKWY & BURNHAMTHORPE RD
Date: Wed, Feb 28, 2018 Deployment Lead: Theo Daglis

Peel Region
10 Peel Centre Drive
Suite B - 4th Floor
Brampton ON, Canada, L6T 4B9

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17:30:00 | 48 | 320 | 52 | 0 | 2 | 420 | 87 | 230 | 64 | 0 | 0 | 381 | 46 | 429 | 55 | 0 | 3 | 530 | 60 | 178 | 30 | 0 | 3 | 268 | 1599 | 6369 |
| 17:45:00 | 58 | 347 | 93 | 0 | 0 | 498 | 83 | 190 | 60 | 0 | 0 | 333 | 48 | 428 | 63 | 0 | 1 | 539 | 63 | 154 | 35 | 0 | 5 | 252 | 1622 | 6499 |
| **Grand Total** | 1841 | 9622 | 1545 | 8 | 23 | 13016 | 2016 | 4229 | 1858 | 11 | 24 | 8114 | 917 | 10767 | 1611 | 7 | 57 | 13302 | 2024 | 4667 | 1168 | 4 | 73 | 7863 | **42295** | - |
| **Approach%** | 14.1% | 73.9% | 11.9% | 0.1% | | - | 24.8% | 52.1% | 22.9% | 0.1% | | - | 6.9% | 80.9% | 12.1% | 0.1% | | - | 25.7% | 59.4% | 14.9% | 0.1% | | - | **-** | - |
| **Totals %** | 4.4% | 22.7% | 3.7% | 0% | | 30.8% | 4.8% | 10% | 4.4% | 0% | | 19.2% | 2.2% | 25.5% | 3.8% | 0% | | 31.5% | 4.8% | 11% | 2.8% | 0% | | 18.6% | **-** | - |
| **Heavy** | 57 | 307 | 106 | 0 | | - | 65 | 103 | 82 | 0 | | - | 23 | 380 | 50 | 0 | | - | 123 | 120 | 85 | 0 | | - | **-** | - |
| **Heavy %** | 3.1% | 3.2% | 6.9% | 0% | | - | 3.2% | 2.4% | 4.4% | 0% | | - | 2.5% | 3.5% | 3.1% | 0% | | - | 6.1% | 2.6% | 7.3% | 0% | | - | **-** | - |
| **Bicycles** | 0 | 0 | 1 | 0 | | - | 0 | 1 | 0 | 0 | | - | 0 | 0 | 0 | 0 | | - | 0 | 2 | 0 | 0 | | - | **-** | - |
| **Bicycle %** | 0% | 0% | 0.1% | 0% | | - | 0% | 0% | 0% | 0% | | - | 0% | 0% | 0% | 0% | | - | 0% | 0% | 0% | 0% | | - | **-** | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# BA Group - Project Number 8143-01

Turning Movement Count
Location Name: ERIN MILLS PKWY & BURNHAMTHORPE RD
Date: Wed, Feb 28, 2018 Deployment Lead: Theo Daglis

Peel Region
10 Peel Centre Drive
Suite B - 4th Floor
Brampton ON, Canada, L6T 4B9

**Peak Hour: 07:45 AM - 08:45 AM Weather: Mostly Cloudy (4.6 °C)**

| Start Time | Southbound ERIN MILLS PKWY | | | | | | Westbound BURNHAMTHORPE RD | | | | | | Northbound ERIN MILLS PKWY | | | | | | Eastbound BURNHAMTHORPE RD | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | |
| 07:45:00 | 84 | 405 | 47 | 1 | 0 | 537 | 63 | 115 | 30 | 0 | 1 | 208 | 17 | 380 | 52 | 0 | 0 | 449 | 77 | 206 | 60 | 0 | 0 | 343 | 1537 |
| 08:00:00 | 102 | 382 | 37 | 0 | 2 | 521 | 57 | 106 | 41 | 0 | 1 | 204 | 23 | 336 | 70 | 1 | 1 | 430 | 91 | 211 | 59 | 1 | 4 | 362 | 1517 |
| 08:15:00 | 89 | 375 | 41 | 0 | 1 | 505 | 54 | 110 | 41 | 0 | 1 | 205 | 20 | 406 | 70 | 0 | 0 | 496 | 85 | 251 | 47 | 0 | 4 | 383 | 1589 |
| 08:30:00 | 99 | 439 | 61 | 0 | 2 | 599 | 54 | 104 | 33 | 0 | 0 | 191 | 33 | 411 | 55 | 0 | 0 | 499 | 59 | 184 | 49 | 0 | 3 | 292 | 1581 |
| **Grand Total** | 374 | 1601 | 186 | 1 | 5 | 2162 | 228 | 435 | 145 | 0 | 3 | 808 | 93 | 1533 | 247 | 1 | 1 | 1874 | 312 | 852 | 215 | 1 | 11 | 1380 | **6224** |
| **Approach%** | 17.3% | 74.1% | 8.6% | 0% | | - | 28.2% | 53.8% | 17.9% | 0% | | - | 5% | 81.8% | 13.2% | 0.1% | | - | 22.6% | 61.7% | 15.6% | 0.1% | | - | - |
| **Totals %** | 6% | 25.7% | 3% | 0% | | 34.7% | 3.7% | 7% | 2.3% | 0% | | 13% | 1.5% | 24.6% | 4% | 0% | | 30.1% | 5% | 13.7% | 3.5% | 0% | | 22.2% | - |
| **PHF** | 0.92 | 0.91 | 0.76 | 0.25 | | 0.9 | 0.9 | 0.95 | 0.88 | 0 | | 0.97 | 0.7 | 0.93 | 0.88 | 0.25 | | 0.94 | 0.86 | 0.85 | 0.9 | 0.25 | | 0.9 | - |
| **Heavy** | 9 | 57 | 18 | 0 | | 84 | 10 | 9 | 9 | 0 | | 28 | 6 | 29 | 4 | 0 | | 39 | 14 | 17 | 12 | 0 | | 43 | - |
| **Heavy %** | 2.4% | 3.6% | 9.7% | 0% | | 3.9% | 4.4% | 2.1% | 6.2% | 0% | | 3.5% | 6.5% | 1.9% | 1.6% | 0% | | 2.1% | 4.5% | 2% | 5.6% | 0% | | 3.1% | - |
| **Lights** | 365 | 1544 | 168 | 1 | | 2078 | 218 | 426 | 136 | 0 | | 780 | 87 | 1504 | 243 | 1 | | 1835 | 298 | 835 | 203 | 1 | | 1337 | - |
| **Lights %** | 97.6% | 96.4% | 90.3% | 100% | | 96.1% | 95.6% | 97.9% | 93.8% | 0% | | 96.5% | 93.5% | 98.1% | 98.4% | 100% | | 97.9% | 95.5% | 98% | 94.4% | 100% | | 96.9% | - |
| **Single-Unit Trucks** | 0 | 26 | 6 | 0 | | 32 | 1 | 2 | 8 | 0 | | 11 | 2 | 11 | 1 | 0 | | 14 | 2 | 5 | 3 | 0 | | 10 | - |
| **Single-Unit Trucks %** | 0% | 1.6% | 3.2% | 0% | | 1.5% | 0.4% | 0.5% | 5.5% | 0% | | 1.4% | 2.2% | 0.7% | 0.4% | 0% | | 0.7% | 0.6% | 0.6% | 1.4% | 0% | | 0.7% | - |
| **Buses** | 9 | 17 | 12 | 0 | | 38 | 7 | 6 | 1 | 0 | | 14 | 4 | 10 | 3 | 0 | | 17 | 12 | 11 | 9 | 0 | | 32 | - |
| **Buses %** | 2.4% | 1.1% | 6.5% | 0% | | 1.8% | 3.1% | 1.4% | 0.7% | 0% | | 1.7% | 4.3% | 0.7% | 1.2% | 0% | | 0.9% | 3.8% | 1.3% | 4.2% | 0% | | 2.3% | - |
| **Articulated Trucks** | 0 | 14 | 0 | 0 | | 14 | 2 | 1 | 0 | 0 | | 3 | 0 | 8 | 0 | 0 | | 8 | 0 | 1 | 0 | 0 | | 1 | - |
| **Articulated Trucks %** | 0% | 0.9% | 0% | 0% | | 0.6% | 0.9% | 0.2% | 0% | 0% | | 0.4% | 0% | 0.5% | 0% | 0% | | 0.4% | 0% | 0.1% | 0% | 0% | | 0.1% | - |
| **Pedestrians** | - | - | - | - | 4 | - | - | - | - | - | 2 | - | - | - | - | - | 1 | - | - | - | - | - | 11 | - | - |
| **Pedestrians%** | - | - | - | - | 20% | | - | - | - | - | 10% | | - | - | - | - | 5% | | - | - | - | - | 55% | | - |
| **Bicycles on Crosswalk** | - | - | - | - | 1 | - | - | - | - | - | 1 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - |
| **Bicycles on Crosswalk%** | - | - | - | - | 5% | | - | - | - | - | 5% | | - | - | - | - | 0% | | - | - | - | - | 0% | | - |
| **Bicycles on Road** | 0 | 0 | 1 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | - |
| **Bicycles on Road%** | - | - | - | - | 0% | | - | - | - | - | 0% | | - | - | - | - | 0% | | - | - | - | - | 0% | | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# BA Group - Project Number 8143-01

Turning Movement Count
Location Name: ERIN MILLS PKWY & BURNHAMTHORPE RD
Date: Wed, Feb 28, 2018 Deployment Lead: Theo Daglis

Peel Region
10 Peel Centre Drive
Suite B - 4th Floor
Brampton ON, Canada, L6T 4B9

**Peak Hour: 11:30 AM - 12:30 PM Weather: Partly Cloudy (11.5 °C)**

| Start Time | Southbound ERIN MILLS PKWY | | | | | | Westbound BURNHAMTHORPE RD | | | | | | Northbound ERIN MILLS PKWY | | | | | | Eastbound BURNHAMTHORPE RD | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | |
| 11:30:00 | 50 | 203 | 44 | 0 | 0 | 297 | 57 | 121 | 47 | 1 | 1 | 226 | 21 | 313 | 36 | 0 | 1 | 370 | 65 | 102 | 31 | 0 | 0 | 198 | 1091 |
| 11:45:00 | 67 | 275 | 33 | 0 | 2 | 375 | 73 | 114 | 75 | 0 | 2 | 262 | 21 | 258 | 48 | 0 | 0 | 327 | 53 | 100 | 22 | 0 | 3 | 175 | 1139 |
| 12:00:00 | 40 | 260 | 43 | 0 | 2 | 343 | 68 | 107 | 60 | 0 | 1 | 235 | 23 | 233 | 40 | 0 | 3 | 296 | 68 | 106 | 30 | 0 | 0 | 204 | 1078 |
| 12:15:00 | 45 | 285 | 52 | 0 | 0 | 382 | 66 | 102 | 60 | 0 | 0 | 228 | 29 | 274 | 47 | 1 | 2 | 351 | 63 | 112 | 29 | 0 | 1 | 204 | 1165 |
| **Grand Total** | 202 | 1023 | 172 | 0 | 4 | 1397 | 264 | 444 | 242 | 1 | 4 | 951 | 94 | 1078 | 171 | 1 | 6 | 1344 | 249 | 420 | 112 | 0 | 4 | 781 | **4473** |
| **Approach%** | 14.5% | 73.2% | 12.3% | 0% | | - | 27.8% | 46.7% | 25.4% | 0.1% | | - | 7% | 80.2% | 12.7% | 0.1% | | - | 31.9% | 53.8% | 14.3% | 0% | | - | - |
| **Totals %** | 4.5% | 22.9% | 3.8% | 0% | | 31.2% | 5.9% | 9.9% | 5.4% | 0% | | 21.3% | 2.1% | 24.1% | 3.8% | 0% | | 30% | 5.6% | 9.4% | 2.5% | 0% | | 17.5% | - |
| **PHF** | 0.75 | 0.9 | 0.83 | 0 | | 0.91 | 0.9 | 0.92 | 0.81 | 0.25 | | 0.91 | 0.81 | 0.86 | 0.89 | 0.25 | | 0.91 | 0.92 | 0.94 | 0.9 | 0 | | 0.96 | - |
| **Heavy** | 8 | 50 | 13 | 0 | | 71 | 18 | 11 | 21 | 0 | | 50 | 5 | 67 | 6 | 0 | | 78 | 16 | 12 | 10 | 0 | | 38 | - |
| **Heavy %** | 4% | 4.9% | 7.6% | 0% | | 5.1% | 6.8% | 2.5% | 8.7% | 0% | | 5.3% | 5.3% | 6.2% | 3.5% | 0% | | 5.8% | 6.4% | 2.9% | 8.9% | 0% | | 4.9% | - |
| **Lights** | 194 | 973 | 159 | 0 | | 1326 | 246 | 433 | 221 | 1 | | 901 | 89 | 1011 | 165 | 1 | | 1266 | 233 | 408 | 102 | 0 | | 743 | - |
| **Lights %** | 96% | 95.1% | 92.4% | 0% | | 94.9% | 93.2% | 97.5% | 91.3% | 100% | | 94.7% | 94.7% | 93.8% | 96.5% | 100% | | 94.2% | 93.6% | 97.1% | 91.1% | 0% | | 95.1% | - |
| **Single-Unit Trucks** | 4 | 37 | 6 | 0 | | 47 | 8 | 6 | 8 | 0 | | 22 | 5 | 37 | 2 | 0 | | 44 | 8 | 5 | 3 | 0 | | 16 | - |
| **Single-Unit Trucks %** | 2% | 3.6% | 3.5% | 0% | | 3.4% | 3% | 1.4% | 3.3% | 0% | | 2.3% | 5.3% | 3.4% | 1.2% | 0% | | 3.3% | 3.2% | 1.2% | 2.7% | 0% | | 2% | - |
| **Buses** | 2 | 3 | 7 | 0 | | 12 | 7 | 4 | 7 | 0 | | 18 | 0 | 8 | 3 | 0 | | 11 | 8 | 7 | 7 | 0 | | 22 | - |
| **Buses %** | 1% | 0.3% | 4.1% | 0% | | 0.9% | 2.7% | 0.9% | 2.9% | 0% | | 1.9% | 0% | 0.7% | 1.8% | 0% | | 0.8% | 3.2% | 1.7% | 6.3% | 0% | | 2.8% | - |
| **Articulated Trucks** | 2 | 10 | 0 | 0 | | 12 | 3 | 1 | 6 | 0 | | 10 | 0 | 22 | 1 | 0 | | 23 | 0 | 0 | 0 | 0 | | 0 | - |
| **Articulated Trucks %** | 1% | 1% | 0% | 0% | | 0.9% | 1.1% | 0.2% | 2.5% | 0% | | 1.1% | 0% | 2% | 0.6% | 0% | | 1.7% | 0% | 0% | 0% | 0% | | 0% | - |
| **Pedestrians** | - | - | - | - | 4 | - | - | - | - | - | 4 | - | - | - | - | - | 5 | - | - | - | - | - | 4 | - | - |
| **Pedestrians%** | - | - | - | - | 22.2% | | - | - | - | - | 22.2% | | - | - | - | - | 27.8% | | - | - | - | - | 22.2% | | - |
| **Bicycles on Crosswalk** | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | - | - | - | - | - | 0 | - | - |
| **Bicycles on Crosswalk%** | - | - | - | - | 0% | | - | - | - | - | 0% | | - | - | - | - | 5.6% | | - | - | - | - | 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% | | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# BA Group - Project Number 8143-01

Turning Movement Count
Location Name: ERIN MILLS PKWY & BURNHAMTHORPE RD
Date: Wed, Feb 28, 2018 Deployment Lead: Theo Daglis

Peel Region
10 Peel Centre Drive
Suite B - 4th Floor
Brampton ON, Canada, L6T 4B9

**Peak Hour: 05:00 PM - 06:00 PM Weather: Clear (16.6 °C)**

| Start Time | Southbound ERIN MILLS PKWY | | | | | | Westbound BURNHAMTHORPE RD | | | | | | Northbound ERIN MILLS PKWY | | | | | | Eastbound BURNHAMTHORPE RD | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | Left | Thru | Right | U-Turn | Peds | Approach Total | |
| 17:00:00 | 46 | 384 | 53 | 0 | 1 | 483 | 76 | 182 | 65 | 0 | 1 | 323 | 41 | 503 | 73 | 0 | 2 | 617 | 57 | 159 | 31 | 1 | 5 | 248 | 1671 |
| 17:15:00 | 46 | 324 | 43 | 1 | 1 | 414 | 73 | 239 | 71 | 1 | 2 | 384 | 49 | 449 | 59 | 0 | 4 | 557 | 57 | 163 | 31 | 1 | 3 | 252 | 1607 |
| 17:30:00 | 48 | 320 | 52 | 0 | 2 | 420 | 87 | 230 | 64 | 0 | 0 | 381 | 46 | 429 | 55 | 0 | 3 | 530 | 60 | 178 | 30 | 0 | 3 | 268 | 1599 |
| 17:45:00 | 58 | 347 | 93 | 0 | 0 | 498 | 83 | 190 | 60 | 0 | 0 | 333 | 48 | 428 | 63 | 0 | 1 | 539 | 63 | 154 | 35 | 0 | 5 | 252 | 1622 |
| **Grand Total** | 198 | 1375 | 241 | 1 | 4 | 1815 | 319 | 841 | 260 | 1 | 3 | 1421 | 184 | 1809 | 250 | 0 | 10 | 2243 | 237 | 654 | 127 | 2 | 16 | 1020 | **6499** |
| **Approach%** | 10.9% | 75.8% | 13.3% | 0.1% | | - | 22.4% | 59.2% | 18.3% | 0.1% | | - | 8.2% | 80.7% | 11.1% | 0% | | - | 23.2% | 64.1% | 12.5% | 0.2% | | - | - |
| **Totals %** | 3% | 21.2% | 3.7% | 0% | | 27.9% | 4.9% | 12.9% | 4% | 0% | | 21.9% | 2.8% | 27.8% | 3.8% | 0% | | 34.5% | 3.6% | 10.1% | 2% | 0% | | 15.7% | - |
| **PHF** | 0.85 | 0.9 | 0.65 | 0.25 | | 0.91 | 0.92 | 0.88 | 0.92 | 0.25 | | 0.93 | 0.94 | 0.9 | 0.86 | 0 | | 0.91 | 0.94 | 0.92 | 0.91 | 0.5 | | 0.95 | - |
| **Heavy** | 3 | 17 | 11 | 0 | | 31 | 1 | 2 | 1 | 0 | | 4 | 2 | 34 | 2 | 0 | | 38 | 12 | 7 | 8 | 0 | | 27 | - |
| **Heavy %** | 1.5% | 1.2% | 4.6% | 0% | | 1.7% | 0.3% | 0.2% | 0.4% | 0% | | 0.3% | 1.1% | 1.9% | 0.8% | 0% | | 1.7% | 5.1% | 1.1% | 6.3% | 0% | | 2.6% | - |
| **Lights** | 195 | 1358 | 230 | 1 | | 1784 | 318 | 839 | 259 | 1 | | 1417 | 182 | 1775 | 248 | 0 | | 2205 | 225 | 647 | 119 | 2 | | 993 | - |
| **Lights %** | 98.5% | 98.8% | 95.4% | 100% | | 98.3% | 99.7% | 99.8% | 99.6% | 100% | | 99.7% | 98.9% | 98.1% | 99.2% | 0% | | 98.3% | 94.9% | 98.9% | 93.7% | 100% | | 97.4% | - |
| **Single-Unit Trucks** | 2 | 6 | 1 | 0 | | 9 | 0 | 2 | 0 | 0 | | 2 | 0 | 25 | 1 | 0 | | 26 | 1 | 4 | 0 | 0 | | 5 | - |
| **Single-Unit Trucks %** | 1% | 0.4% | 0.4% | 0% | | 0.5% | 0% | 0.2% | 0% | 0% | | 0.1% | 0% | 1.4% | 0.4% | 0% | | 1.2% | 0.4% | 0.6% | 0% | 0% | | 0.5% | - |
| **Buses** | 1 | 7 | 10 | 0 | | 18 | 1 | 0 | 1 | 0 | | 2 | 2 | 3 | 1 | 0 | | 6 | 11 | 3 | 7 | 0 | | 21 | - |
| **Buses %** | 0.5% | 0.5% | 4.1% | 0% | | 1% | 0.3% | 0% | 0.4% | 0% | | 0.1% | 1.1% | 0.2% | 0.4% | 0% | | 0.3% | 4.6% | 0.5% | 5.5% | 0% | | 2.1% | - |
| **Articulated Trucks** | 0 | 4 | 0 | 0 | | 4 | 0 | 0 | 0 | 0 | | 0 | 0 | 6 | 0 | 0 | | 6 | 0 | 0 | 1 | 0 | | 1 | - |
| **Articulated Trucks %** | 0% | 0.3% | 0% | 0% | | 0.2% | 0% | 0% | 0% | 0% | | 0% | 0% | 0.3% | 0% | 0% | | 0.3% | 0% | 0% | 0.8% | 0% | | 0.1% | - |
| **Pedestrians** | - | - | - | - | 2 | - | - | - | - | - | 3 | - | - | - | - | - | 10 | - | - | - | - | - | 14 | - | - |
| **Pedestrians%** | - | - | - | - | 6.1% | | - | - | - | - | 9.1% | | - | - | - | - | 30.3% | | - | - | - | - | 42.4% | | - |
| **Bicycles on Crosswalk** | - | - | - | - | 2 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 2 | - | - |
| **Bicycles on Crosswalk%** | - | - | - | - | 6.1% | | - | - | - | - | 0% | | - | - | - | - | 0% | | - | - | - | - | 6.1% | | - |
| **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% | | - |

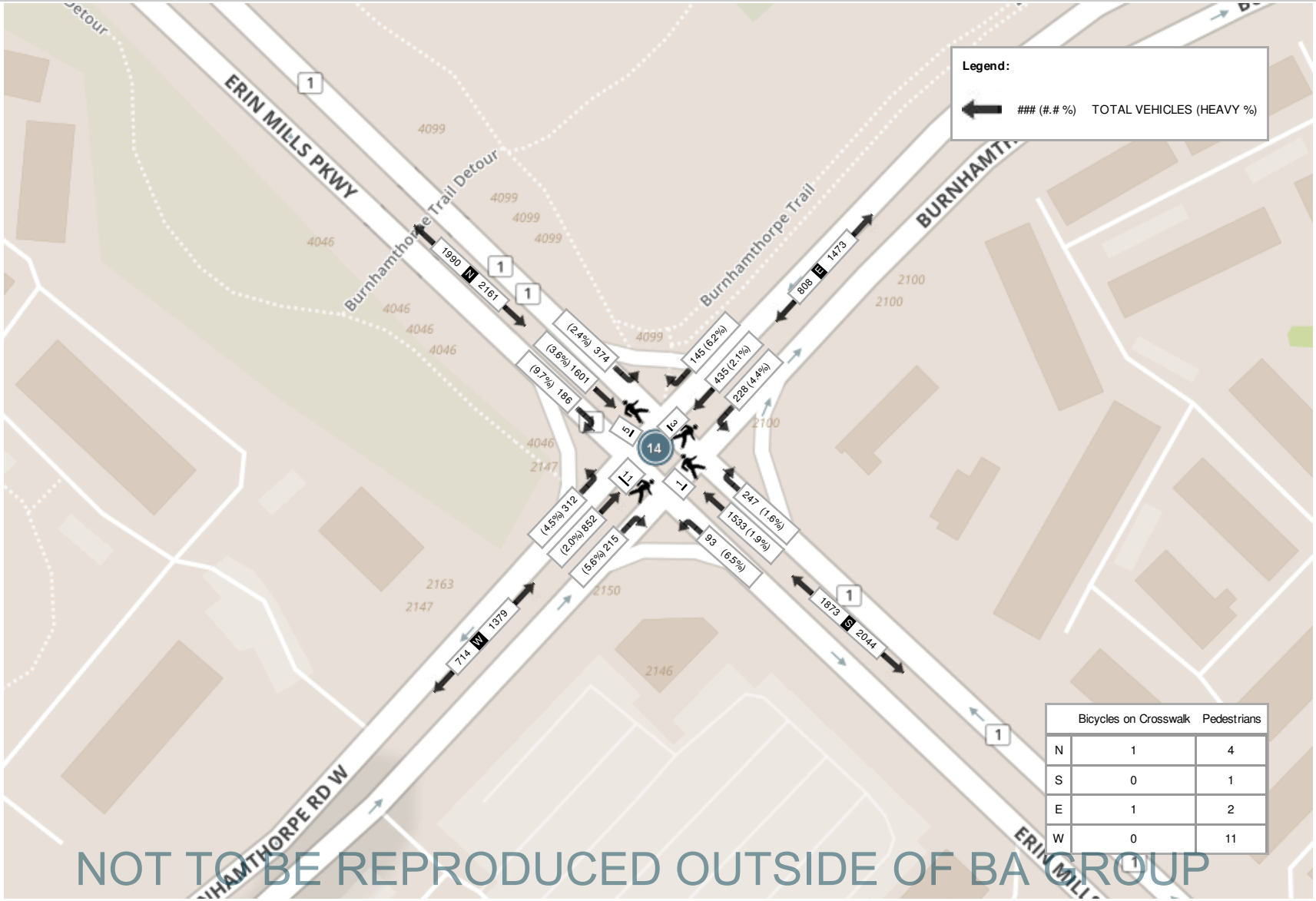
NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# BA Group - Project Number 8143-01

Turning Movement Count
Location Name: ERIN MILLS PKWY & BURNHAMTHORPE RD
Date: Wed, Feb 28, 2018 Deployment Lead: Theo Daglis

Peel Region
10 Peel Centre Drive
Suite B - 4th Floor
Brampton ON, Canada, L6T 4B9

**Peak Hour: 07:45 AM - 08:45 AM Weather: Mostly Cloudy (4.6 °C)**



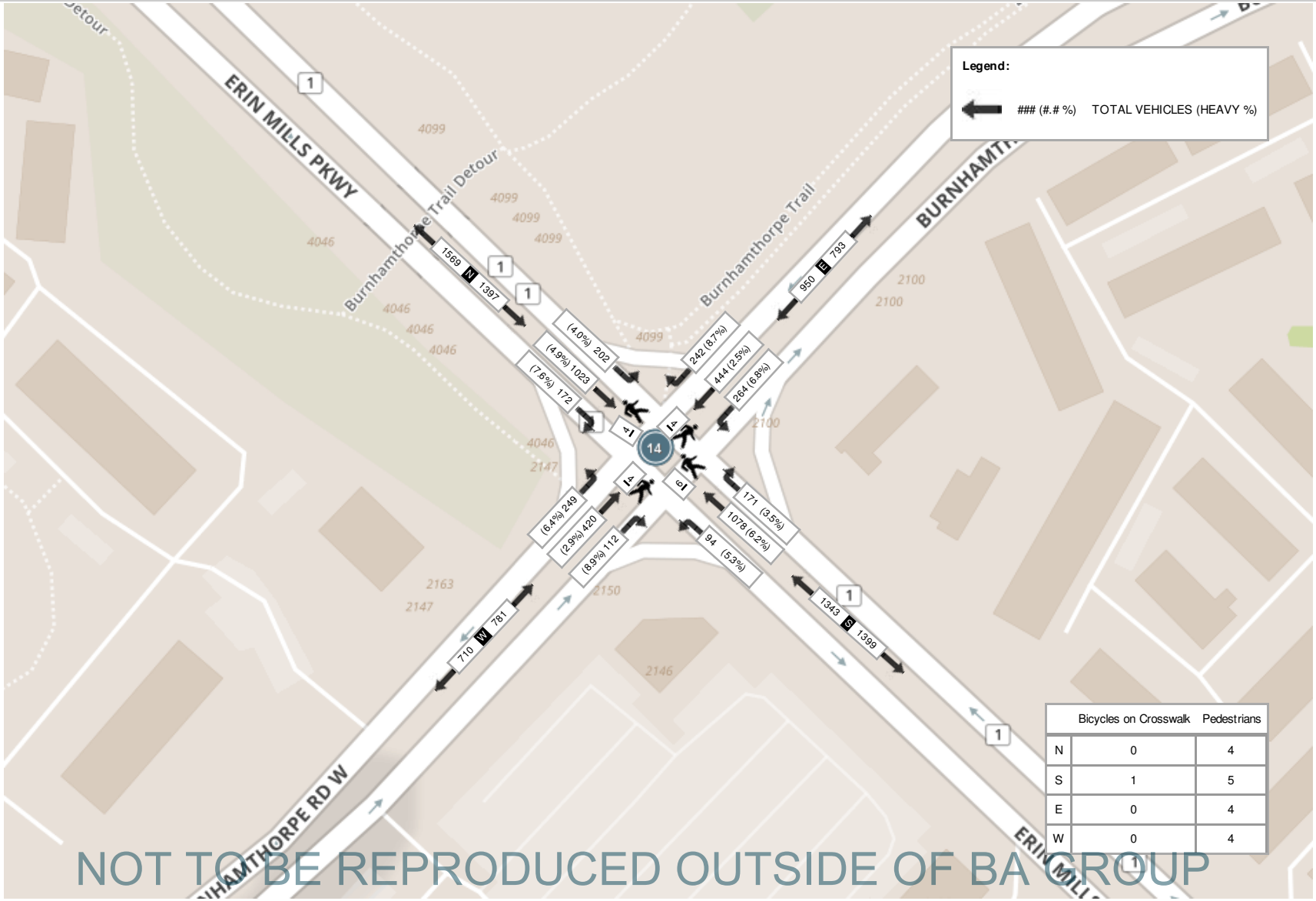

| | Bicycles on Crosswalk | Pedestrians |
|---|---|---|
| N | 1 | 4 |
| S | 0 | 1 |
| E | 1 | 2 |
| W | 0 | 11 |

# BA Group - Project Number 8143-01

Turning Movement Count
Location Name: ERIN MILLS PKWY & BURNHAMTHORPE RD
Date: Wed, Feb 28, 2018 Deployment Lead: Theo Daglis

Peel Region
10 Peel Centre Drive
Suite B - 4th Floor
Brampton ON, Canada, L6T 4B9

**Peak Hour: 11:30 AM - 12:30 PM Weather: Partly Cloudy (11.5 °C)**



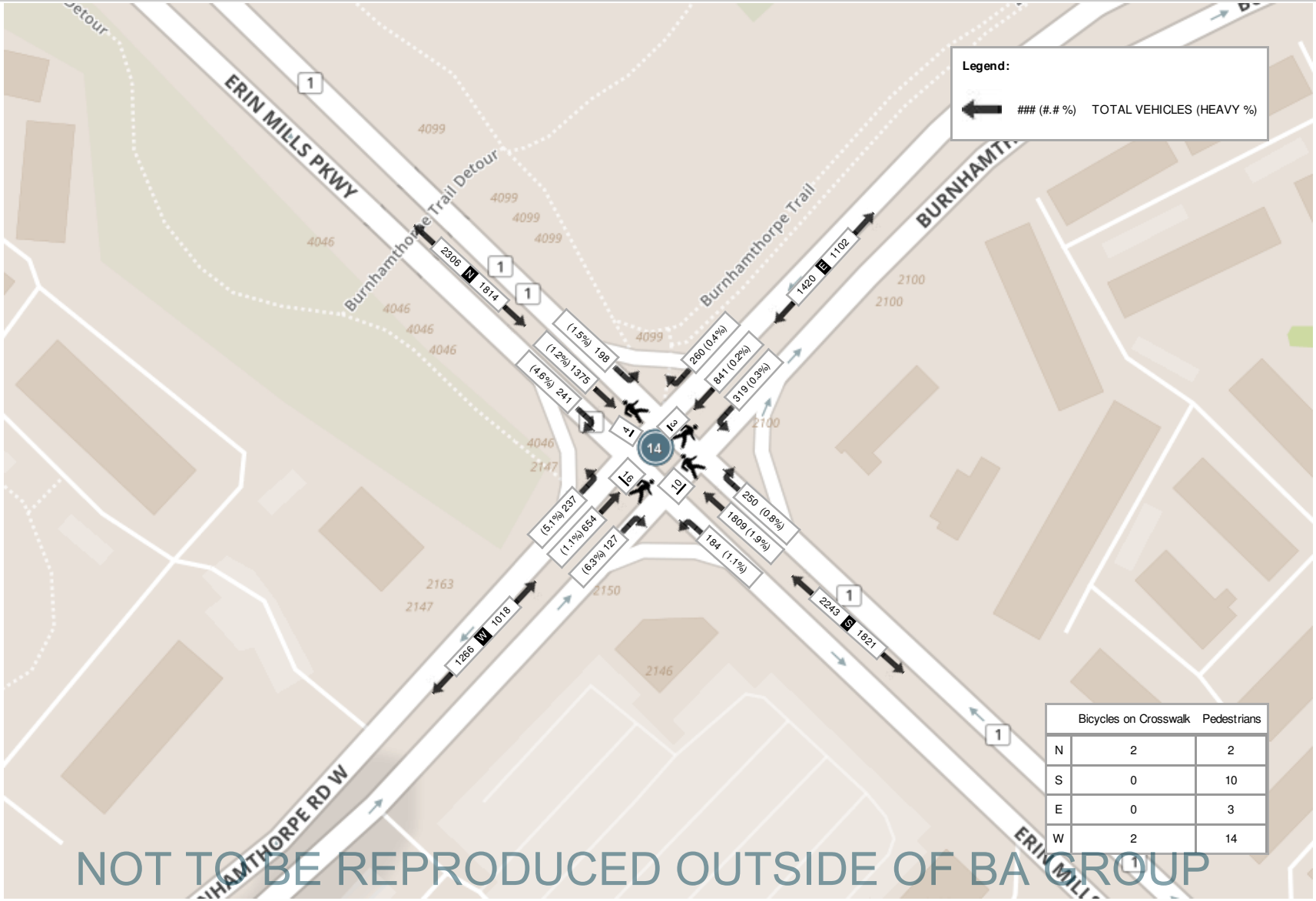

| | Bicycles on Crosswalk | Pedestrians |
|---|---|---|
| N | 0 | 4 |
| S | 1 | 5 |
| E | 0 | 4 |
| W | 0 | 4 |

# BA Group - Project Number 8143-01

Turning Movement Count
Location Name: ERIN MILLS PKWY & BURNHAMTHORPE RD
Date: Wed, Feb 28, 2018 Deployment Lead: Theo Daglis

Peel Region
10 Peel Centre Drive
Suite B - 4th Floor
Brampton ON, Canada, L6T 4B9

**Peak Hour: 05:00 PM - 06:00 PM Weather: Clear (16.6 °C)**




| | Bicycles on Crosswalk | Pedestrians |
|---|---|---|
| N | 2 | 2 |
| S | 0 | 10 |
| E | 0 | 3 |
| W | 2 | 14 |

# BA Group - Project Number 8143-01

Spectrum

Turning Movement Count

Location Name: ERIN MILLS PKWY & FOLKWAY DR

Date: Thu, Sep 26, 2019 Deployment Lead: Patrick Filopoulos

Peel Region

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## Turning Movement Count (55 . ERIN MILLS PKWY & FOLKWAY DR) CustID: 00103599 MioID:

| Start Time | Southbound | | | | | | Westbound | | | | | | Northbound | | | | | | Eastbound | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | |
| 07:00:00 | 7 | 291 | 7 | 0 | 2 | 305 | 7 | 4 | 33 | 0 | 1 | 44 | 5 | 334 | 2 | 0 | 1 | 341 | 14 | 3 | 8 | 0 | 1 | 25 | 715 |
| 07:15:00 | 9 | 344 | 12 | 1 | 0 | 366 | 13 | 8 | 54 | 0 | 4 | 75 | 1 | 332 | 2 | 0 | 1 | 335 | 34 | 21 | 18 | 0 | 1 | 73 | 849 |
| 07:30:00 | 20 | 375 | 13 | 0 | 0 | 408 | 22 | 11 | 56 | 0 | 1 | 89 | 2 | 389 | 2 | 0 | 0 | 393 | 30 | 26 | 11 | 0 | 0 | 67 | 957 |
| 07:45:00 | 16 | 469 | 15 | 1 | 0 | 501 | 19 | 16 | 61 | 0 | 1 | 96 | 4 | 370 | 5 | 0 | 2 | 379 | 41 | 23 | 27 | 0 | 0 | 91 | 1067 |
| Hourly | 52 | 1479 | 47 | 2 | 2 | 1580 | 61 | 39 | 204 | 0 | 7 | 304 | 12 | 1425 | 11 | 0 | 4 | 1448 | 119 | 73 | 64 | 0 | 2 | 256 | 3588 |
| 08:00:00 | 15 | 372 | 24 | 1 | 0 | 412 | 15 | 12 | 57 | 0 | 0 | 84 | 5 | 281 | 4 | 0 | 5 | 290 | 36 | 38 | 14 | 0 | 0 | 88 | 874 |
| 08:15:00 | 21 | 171 | 17 | 4 | 4 | 213 | 8 | 8 | 62 | 0 | 4 | 78 | 0 | 376 | 8 | 0 | 1 | 384 | 65 | 40 | 16 | 0 | 2 | 121 | 796 |
| 08:30:00 | 19 | 472 | 11 | 2 | 5 | 504 | 19 | 17 | 71 | 0 | 1 | 107 | 3 | 317 | 3 | 0 | 0 | 323 | 49 | 46 | 7 | 0 | 0 | 102 | 1036 |
| 08:45:00 | 25 | 421 | 11 | 2 | 1 | 459 | 13 | 24 | 77 | 0 | 0 | 114 | 3 | 345 | 2 | 0 | 4 | 350 | 74 | 28 | 19 | 0 | 2 | 121 | 1044 |
| Hourly | 80 | 1436 | 63 | 9 | 10 | 1588 | 55 | 61 | 267 | 0 | 5 | 383 | 11 | 1319 | 17 | 0 | 10 | 1347 | 224 | 152 | 56 | 0 | 4 | 432 | 3750 |
| ***BREAK*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11:00:00 | 10 | 280 | 27 | 0 | 0 | 317 | 13 | 8 | 29 | 0 | 0 | 50 | 4 | 311 | 13 | 0 | 2 | 328 | 12 | 11 | 5 | 0 | 1 | 28 | 723 |
| 11:15:00 | 14 | 276 | 32 | 0 | 2 | 322 | 16 | 12 | 24 | 0 | 0 | 52 | 5 | 294 | 12 | 0 | 2 | 311 | 17 | 11 | 11 | 0 | 1 | 39 | 724 |
| 11:30:00 | 22 | 286 | 13 | 2 | 2 | 323 | 15 | 5 | 38 | 0 | 0 | 58 | 7 | 250 | 11 | 0 | 2 | 268 | 18 | 15 | 3 | 0 | 4 | 36 | 685 |
| 11:45:00 | 45 | 295 | 11 | 1 | 2 | 352 | 19 | 12 | 27 | 0 | 2 | 58 | 6 | 288 | 12 | 0 | 1 | 306 | 9 | 12 | 8 | 0 | 0 | 29 | 745 |
| Hourly | 91 | 1137 | 83 | 3 | 6 | 1314 | 63 | 37 | 118 | 0 | 2 | 218 | 22 | 1143 | 48 | 0 | 7 | 1213 | 56 | 49 | 27 | 0 | 6 | 132 | 2877 |
| 12:00:00 | 21 | 254 | 14 | 1 | 0 | 290 | 18 | 9 | 38 | 0 | 1 | 65 | 5 | 315 | 9 | 0 | 1 | 329 | 12 | 20 | 5 | 0 | 1 | 37 | 721 |
| 12:15:00 | 29 | 331 | 12 | 0 | 1 | 372 | 18 | 10 | 45 | 0 | 0 | 73 | 7 | 332 | 5 | 0 | 2 | 344 | 15 | 9 | 5 | 0 | 2 | 29 | 818 |
| 12:30:00 | 13 | 317 | 30 | 1 | 0 | 361 | 22 | 9 | 44 | 0 | 1 | 75 | 9 | 261 | 11 | 1 | 0 | 282 | 23 | 8 | 11 | 0 | 0 | 42 | 760 |
| 12:45:00 | 33 | 345 | 17 | 0 | 1 | 395 | 12 | 7 | 37 | 0 | 0 | 56 | 5 | 303 | 12 | 0 | 2 | 320 | 15 | 11 | 8 | 0 | 2 | 34 | 805 |
| Hourly | 96 | 1247 | 73 | 2 | 2 | 1418 | 70 | 35 | 164 | 0 | 2 | 269 | 26 | 1211 | 37 | 1 | 5 | 1275 | 65 | 48 | 29 | 0 | 5 | 142 | 3104 |
| 13:00:00 | 38 | 326 | 19 | 1 | 0 | 384 | 17 | 11 | 48 | 0 | 0 | 76 | 5 | 268 | 7 | 0 | 0 | 280 | 11 | 11 | 6 | 0 | 0 | 28 | 768 |
| 13:15:00 | 20 | 276 | 18 | 1 | 1 | 315 | 14 | 5 | 38 | 0 | 4 | 57 | 9 | 349 | 10 | 0 | 2 | 368 | 21 | 11 | 4 | 0 | 1 | 36 | 776 |
| 13:30:00 | 23 | 288 | 23 | 1 | 4 | 335 | 19 | 7 | 41 | 0 | 1 | 67 | 1 | 338 | 12 | 0 | 2 | 351 | 13 | 13 | 9 | 0 | 2 | 35 | 788 |
| 13:45:00 | 13 | 310 | 16 | 0 | 0 | 339 | 20 | 10 | 32 | 0 | 1 | 62 | 4 | 307 | 3 | 1 | 2 | 315 | 14 | 7 | 15 | 0 | 1 | 36 | 752 |
| Hourly | 94 | 1200 | 76 | 3 | 5 | 1373 | 70 | 33 | 159 | 0 | 6 | 262 | 19 | 1262 | 32 | 1 | 6 | 1314 | 59 | 42 | 34 | 0 | 4 | 135 | 3084 |
| ***BREAK*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15:00:00 | 57 | 374 | 10 | 1 | 0 | 442 | 24 | 18 | 60 | 0 | 0 | 102 | 11 | 384 | 10 | 0 | 1 | 405 | 10 | 26 | 13 | 0 | 3 | 49 | 998 |
| 15:15:00 | 42 | 361 | 17 | 2 | 2 | 422 | 29 | 25 | 56 | 0 | 1 | 110 | 10 | 359 | 9 | 0 | 10 | 378 | 23 | 21 | 16 | 0 | 3 | 60 | 970 |
| 15:30:00 | 36 | 323 | 22 | 0 | 2 | 381 | 23 | 37 | 67 | 1 | 1 | 128 | 7 | 429 | 7 | 0 | 3 | 443 | 19 | 17 | 8 | 0 | 1 | 44 | 996 |
| 15:45:00 | 35 | 380 | 27 | 0 | 0 | 442 | 17 | 23 | 60 | 0 | 1 | 100 | 5 | 426 | 7 | 1 | 4 | 439 | 16 | 14 | 6 | 0 | 4 | 36 | 1017 |
| Hourly | 170 | 1438 | 76 | 3 | 4 | 1687 | 93 | 103 | 243 | 1 | 3 | 440 | 33 | 1598 | 33 | 1 | 18 | 1665 | 68 | 78 | 43 | 0 | 11 | 189 | 3981 |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: ERIN MILLS PKWY & FOLKWAY DR
Date: Thu, Sep 26, 2019 Deployment Lead: Patrick Filopoulos

Peel Region

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16:00:00 | 61 | 339 | 31 | 1 | 5 | 432 | 15 | 18 | 47 | 1 | 2 | 81 | 7 | 364 | 9 | 0 | 2 | 380 | 11 | 20 | 14 | 0 | 3 | 45 | 938 |
| 16:15:00 | 40 | 344 | 24 | 0 | 1 | 408 | 18 | 24 | 53 | 0 | 0 | 95 | 4 | 420 | 9 | 0 | 1 | 433 | 23 | 23 | 5 | 0 | 0 | 51 | 987 |
| 16:30:00 | 53 | 344 | 31 | 0 | 2 | 428 | 9 | 14 | 49 | 0 | 3 | 72 | 13 | 414 | 7 | 1 | 4 | 435 | 28 | 21 | 6 | 0 | 3 | 55 | 990 |
| 16:45:00 | 46 | 331 | 22 | 0 | 3 | 399 | 27 | 34 | 57 | 0 | 1 | 118 | 6 | 391 | 4 | 1 | 3 | 402 | 26 | 44 | 6 | 0 | 1 | 76 | 995 |
| Hourly | 200 | 1358 | 108 | 1 | 11 | 1667 | 69 | 90 | 206 | 1 | 6 | 366 | 30 | 1589 | 29 | 2 | 10 | 1650 | 88 | 108 | 31 | 0 | 7 | 227 | 3910 |
| 17:00:00 | 60 | 349 | 24 | 0 | 1 | 433 | 34 | 32 | 55 | 0 | 1 | 121 | 9 | 435 | 15 | 0 | 5 | 459 | 15 | 19 | 8 | 0 | 4 | 42 | 1055 |
| 17:15:00 | 65 | 398 | 19 | 0 | 3 | 482 | 18 | 24 | 66 | 0 | 1 | 108 | 8 | 416 | 8 | 0 | 2 | 432 | 21 | 30 | 10 | 0 | 0 | 61 | 1083 |
| 17:30:00 | 37 | 377 | 11 | 0 | 6 | 425 | 21 | 32 | 67 | 1 | 1 | 121 | 8 | 416 | 12 | 0 | 5 | 436 | 30 | 22 | 13 | 0 | 4 | 65 | 1047 |
| 17:45:00 | 58 | 386 | 35 | 1 | 2 | 480 | 19 | 21 | 46 | 0 | 0 | 86 | 5 | 453 | 17 | 0 | 1 | 475 | 17 | 29 | 9 | 0 | 1 | 55 | 1096 |
| Hourly | 220 | 1510 | 89 | 1 | 12 | 1820 | 92 | 109 | 234 | 1 | 3 | 436 | 30 | 1720 | 52 | 0 | 13 | 1802 | 83 | 100 | 40 | 0 | 9 | 223 | 4281 |
| **Grand Total** | 1003 | 10805 | 615 | 24 | 52 | 12447 | 573 | 507 | 1595 | 3 | 34 | 2678 | 183 | 11267 | 259 | 5 | 73 | 11714 | 762 | 650 | 324 | 0 | 48 | 1736 | **28575** |
| **Approach%** | 8.1% | 86.8% | 4.9% | 0.2% | | - | 21.4% | 18.9% | 59.6% | 0.1% | | - | 1.6% | 96.2% | 2.2% | 0% | | - | 43.9% | 37.4% | 18.7% | 0% | | - | - |
| **Totals %** | 3.5% | 37.8% | 2.2% | 0.1% | | 43.6% | 2% | 1.8% | 5.6% | 0% | | 9.4% | 0.6% | 39.4% | 0.9% | 0% | | 41% | 2.7% | 2.3% | 1.1% | 0% | | 6.1% | - |
| **Heavy** | 33 | 465 | 16 | 0 | | - | 20 | 11 | 25 | 0 | | - | 3 | 513 | 7 | 0 | | - | 15 | 23 | 9 | 0 | | - | - |
| **Heavy %** | 3.3% | 4.3% | 2.6% | 0% | | - | 3.5% | 2.2% | 1.6% | 0% | | - | 1.6% | 4.6% | 2.7% | 0% | | - | 2% | 3.5% | 2.8% | 0% | | - | - |
| **Bicycles** | 0 | 0 | 0 | 0 | | - | 0 | 0 | 0 | 0 | | - | 0 | 0 | 0 | 0 | | - | 0 | 3 | 0 | 0 | | - | - |
| **Bicycle %** | 0% | 0% | 0% | 0% | | - | 0% | 0% | 0% | 0% | | - | 0% | 0% | 0% | 0% | | - | 0% | 0.5% | 0% | 0% | | - | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# BA Group - Project Number 8143-01

Turning Movement Count
Location Name: ERIN MILLS PKWY & FOLKWAY DR
Date: Thu, Sep 26, 2019 Deployment Lead: Patrick Filopoulos

Peel Region

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**Peak Hour: 08:00 AM - 09:00 AM Weather: Moderate Rain (15.36 °C)**

| Start Time | Southbound | | | | | | Westbound | | | | | | Northbound | | | | | | Eastbound | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | |
| 08:00:00 | 15 | 372 | 24 | 1 | 0 | 412 | 15 | 12 | 57 | 0 | 0 | 84 | 5 | 281 | 4 | 0 | 5 | 290 | 36 | 38 | 14 | 0 | 0 | 88 | 874 |
| 08:15:00 | 21 | 171 | 17 | 4 | 4 | 213 | 8 | 8 | 62 | 0 | 4 | 78 | 0 | 376 | 8 | 0 | 1 | 384 | 65 | 40 | 16 | 0 | 2 | 121 | 796 |
| 08:30:00 | 19 | 472 | 11 | 2 | 5 | 504 | 19 | 17 | 71 | 0 | 1 | 107 | 3 | 317 | 3 | 0 | 0 | 323 | 49 | 46 | 7 | 0 | 0 | 102 | 1036 |
| 08:45:00 | 25 | 421 | 11 | 2 | 1 | 459 | 13 | 24 | 77 | 0 | 0 | 114 | 3 | 345 | 2 | 0 | 4 | 350 | 74 | 28 | 19 | 0 | 2 | 121 | 1044 |
| **Grand Total** | 80 | 1436 | 63 | 9 | 10 | 1588 | 55 | 61 | 267 | 0 | 5 | 383 | 11 | 1319 | 17 | 0 | 10 | 1347 | 224 | 152 | 56 | 0 | 4 | 432 | **3750** |
| **Approach%** | 5% | 90.4% | 4% | 0.6% | | - | 14.4% | 15.9% | 69.7% | 0% | | - | 0.8% | 97.9% | 1.3% | 0% | | - | 51.9% | 35.2% | 13% | 0% | | - | - |
| **Totals %** | 2.1% | 38.3% | 1.7% | 0.2% | | 42.3% | 1.5% | 1.6% | 7.1% | 0% | | 10.2% | 0.3% | 35.2% | 0.5% | 0% | | 35.9% | 6% | 4.1% | 1.5% | 0% | | 11.5% | - |
| **PHF** | 0.8 | 0.76 | 0.66 | 0.56 | | 0.79 | 0.72 | 0.64 | 0.87 | 0 | | 0.84 | 0.55 | 0.88 | 0.53 | 0 | | 0.88 | 0.76 | 0.83 | 0.74 | 0 | | 0.89 | - |
| **Heavy** | 6 | 81 | 5 | 0 | | 92 | 3 | 1 | 5 | 0 | | 9 | 0 | 58 | 0 | 0 | | 58 | 4 | 8 | 3 | 0 | | 15 | - |
| **Heavy %** | 7.5% | 5.6% | 7.9% | 0% | | 5.8% | 5.5% | 1.6% | 1.9% | 0% | | 2.3% | 0% | 4.4% | 0% | 0% | | 4.3% | 1.8% | 5.3% | 5.4% | 0% | | 3.5% | - |
| **Lights** | 74 | 1355 | 58 | 9 | | 1496 | 52 | 60 | 262 | 0 | | 374 | 11 | 1261 | 17 | 0 | | 1289 | 220 | 144 | 53 | 0 | | 417 | - |
| **Lights %** | 92.5% | 94.4% | 92.1% | 100% | | 94.2% | 94.5% | 98.4% | 98.1% | 0% | | 97.7% | 100% | 95.6% | 100% | 0% | | 95.7% | 98.2% | 94.7% | 94.6% | 0% | | 96.5% | - |
| **Single-Unit Trucks** | 2 | 40 | 2 | 0 | | 44 | 0 | 0 | 0 | 0 | | 0 | 0 | 25 | 0 | 0 | | 25 | 4 | 1 | 0 | 0 | | 5 | - |
| **Single-Unit Trucks %** | 2.5% | 2.8% | 3.2% | 0% | | 2.8% | 0% | 0% | 0% | 0% | | 0% | 0% | 1.9% | 0% | 0% | | 1.9% | 1.8% | 0.7% | 0% | 0% | | 1.2% | - |
| **Buses** | 4 | 29 | 3 | 0 | | 36 | 3 | 1 | 5 | 0 | | 9 | 0 | 21 | 0 | 0 | | 21 | 0 | 7 | 3 | 0 | | 10 | - |
| **Buses %** | 5% | 2% | 4.8% | 0% | | 2.3% | 5.5% | 1.6% | 1.9% | 0% | | 2.3% | 0% | 1.6% | 0% | 0% | | 1.6% | 0% | 4.6% | 5.4% | 0% | | 2.3% | - |
| **Articulated Trucks** | 0 | 12 | 0 | 0 | | 12 | 0 | 0 | 0 | 0 | | 0 | 0 | 12 | 0 | 0 | | 12 | 0 | 0 | 0 | 0 | | 0 | - |
| **Articulated Trucks %** | 0% | 0.8% | 0% | 0% | | 0.8% | 0% | 0% | 0% | 0% | | 0% | 0% | 0.9% | 0% | 0% | | 0.9% | 0% | 0% | 0% | 0% | | 0% | - |
| **Pedestrians** | - | - | - | - | 10 | - | - | - | - | - | 5 | - | - | - | - | - | 10 | - | - | - | - | - | 4 | - | - |
| **Pedestrians%** | - | - | - | - | 34.5% | | - | - | - | - | 17.2% | | - | - | - | - | 34.5% | | - | - | - | - | 13.8% | | - |
| **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% | | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# BA Group - Project Number 8143-01

Turning Movement Count
Location Name: ERIN MILLS PKWY & FOLKWAY DR
Date: Thu, Sep 26, 2019 Deployment Lead: Patrick Filopoulos

Peel Region

, ,

**Peak Hour: 12:00 PM - 01:00 PM Weather: Broken Clouds (16.94 °C)**

| Start Time | Southbound | | | | | | Westbound | | | | | | Northbound | | | | | | Eastbound | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | |
| 12:00:00 | 21 | 254 | 14 | 1 | 0 | 290 | 18 | 9 | 38 | 0 | 1 | 65 | 5 | 315 | 9 | 0 | 1 | 329 | 12 | 20 | 5 | 0 | 1 | 37 | 721 |
| 12:15:00 | 29 | 331 | 12 | 0 | 1 | 372 | 18 | 10 | 45 | 0 | 0 | 73 | 7 | 332 | 5 | 0 | 2 | 344 | 15 | 9 | 5 | 0 | 2 | 29 | 818 |
| 12:30:00 | 13 | 317 | 30 | 1 | 0 | 361 | 22 | 9 | 44 | 0 | 1 | 75 | 9 | 261 | 11 | 1 | 0 | 282 | 23 | 8 | 11 | 0 | 0 | 42 | 760 |
| 12:45:00 | 33 | 345 | 17 | 0 | 1 | 395 | 12 | 7 | 37 | 0 | 0 | 56 | 5 | 303 | 12 | 0 | 2 | 320 | 15 | 11 | 8 | 0 | 2 | 34 | 805 |
| **Grand Total** | 96 | 1247 | 73 | 2 | 2 | 1418 | 70 | 35 | 164 | 0 | 2 | 269 | 26 | 1211 | 37 | 1 | 5 | 1275 | 65 | 48 | 29 | 0 | 5 | 142 | **3104** |
| **Approach%** | 6.8% | 87.9% | 5.1% | 0.1% | | - | 26% | 13% | 61% | 0% | | - | 2% | 95% | 2.9% | 0.1% | | - | 45.8% | 33.8% | 20.4% | 0% | | - | - |
| **Totals %** | 3.1% | 40.2% | 2.4% | 0.1% | | 45.7% | 2.3% | 1.1% | 5.3% | 0% | | 8.7% | 0.8% | 39% | 1.2% | 0% | | 41.1% | 2.1% | 1.5% | 0.9% | 0% | | 4.6% | - |
| **PHF** | 0.73 | 0.9 | 0.61 | 0.5 | | 0.9 | 0.8 | 0.88 | 0.91 | 0 | | 0.9 | 0.72 | 0.91 | 0.77 | 0.25 | | 0.93 | 0.71 | 0.6 | 0.66 | 0 | | 0.85 | - |
| **Heavy** | 4 | 53 | 1 | 0 | | 58 | 5 | 0 | 1 | 0 | | 6 | 0 | 66 | 0 | 0 | | 66 | 2 | 0 | 0 | 0 | | 2 | - |
| **Heavy %** | 4.2% | 4.3% | 1.4% | 0% | | 4.1% | 7.1% | 0% | 0.6% | 0% | | 2.2% | 0% | 5.5% | 0% | 0% | | 5.2% | 3.1% | 0% | 0% | 0% | | 1.4% | - |
| **Lights** | 92 | 1194 | 72 | 2 | | 1360 | 65 | 35 | 163 | 0 | | 263 | 26 | 1145 | 37 | 1 | | 1209 | 63 | 48 | 29 | 0 | | 140 | - |
| **Lights %** | 95.8% | 95.7% | 98.6% | 100% | | 95.9% | 92.9% | 100% | 99.4% | 0% | | 97.8% | 100% | 94.5% | 100% | 100% | | 94.8% | 96.9% | 100% | 100% | 0% | | 98.6% | - |
| **Single-Unit Trucks** | 3 | 30 | 1 | 0 | | 34 | 5 | 0 | 0 | 0 | | 5 | 0 | 44 | 0 | 0 | | 44 | 2 | 0 | 0 | 0 | | 2 | - |
| **Single-Unit Trucks %** | 3.1% | 2.4% | 1.4% | 0% | | 2.4% | 7.1% | 0% | 0% | 0% | | 1.9% | 0% | 3.6% | 0% | 0% | | 3.5% | 3.1% | 0% | 0% | 0% | | 1.4% | - |
| **Buses** | 1 | 17 | 0 | 0 | | 18 | 0 | 0 | 0 | 0 | | 0 | 0 | 13 | 0 | 0 | | 13 | 0 | 0 | 0 | 0 | | 0 | - |
| **Buses %** | 1% | 1.4% | 0% | 0% | | 1.3% | 0% | 0% | 0% | 0% | | 0% | 0% | 1.1% | 0% | 0% | | 1% | 0% | 0% | 0% | 0% | | 0% | - |
| **Articulated Trucks** | 0 | 6 | 0 | 0 | | 6 | 0 | 0 | 1 | 0 | | 1 | 0 | 9 | 0 | 0 | | 9 | 0 | 0 | 0 | 0 | | 0 | - |
| **Articulated Trucks %** | 0% | 0.5% | 0% | 0% | | 0.4% | 0% | 0% | 0.6% | 0% | | 0.4% | 0% | 0.7% | 0% | 0% | | 0.7% | 0% | 0% | 0% | 0% | | 0% | - |
| **Pedestrians** | - | - | - | - | 2 | - | - | - | - | - | 2 | - | - | - | - | - | 5 | - | - | - | - | - | 5 | - | - |
| **Pedestrians%** | - | - | - | - | 14.3% | | - | - | - | - | 14.3% | | - | - | - | - | 35.7% | | - | - | - | - | 35.7% | | - |
| **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% | | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# BA Group - Project Number 8143-01

Turning Movement Count

Location Name: ERIN MILLS PKWY & FOLKWAY DR

Date: Thu, Sep 26, 2019 Deployment Lead: Patrick Filopoulos

Peel Region

, ,

**Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (20.41 °C)**

| Start Time | Southbound | | | | | | Westbound | | | | | | Northbound | | | | | | Eastbound | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | Left | Thru | Right | UTurn | Peds | Approach Total | |
| 17:00:00 | 60 | 349 | 24 | 0 | 1 | 433 | 34 | 32 | 55 | 0 | 1 | 121 | 9 | 435 | 15 | 0 | 5 | 459 | 15 | 19 | 8 | 0 | 4 | 42 | 1055 |
| 17:15:00 | 65 | 398 | 19 | 0 | 3 | 482 | 18 | 24 | 66 | 0 | 1 | 108 | 8 | 416 | 8 | 0 | 2 | 432 | 21 | 30 | 10 | 0 | 0 | 61 | 1083 |
| 17:30:00 | 37 | 377 | 11 | 0 | 6 | 425 | 21 | 32 | 67 | 1 | 1 | 121 | 8 | 416 | 12 | 0 | 5 | 436 | 30 | 22 | 13 | 0 | 4 | 65 | 1047 |
| 17:45:00 | 58 | 386 | 35 | 1 | 2 | 480 | 19 | 21 | 46 | 0 | 0 | 86 | 5 | 453 | 17 | 0 | 1 | 475 | 17 | 29 | 9 | 0 | 1 | 55 | 1096 |
| **Grand Total** | 220 | 1510 | 89 | 1 | 12 | 1820 | 92 | 109 | 234 | 1 | 3 | 436 | 30 | 1720 | 52 | 0 | 13 | 1802 | 83 | 100 | 40 | 0 | 9 | 223 | **4281** |
| **Approach%** | 12.1% | 83% | 4.9% | 0.1% | | - | 21.1% | 25% | 53.7% | 0.2% | | - | 1.7% | 95.4% | 2.9% | 0% | | - | 37.2% | 44.8% | 17.9% | 0% | | - | - |
| **Totals %** | 5.1% | 35.3% | 2.1% | 0% | | 42.5% | 2.1% | 2.5% | 5.5% | 0% | | 10.2% | 0.7% | 40.2% | 1.2% | 0% | | 42.1% | 1.9% | 2.3% | 0.9% | 0% | | 5.2% | - |
| **PHF** | 0.85 | 0.95 | 0.64 | 0.25 | | 0.94 | 0.68 | 0.85 | 0.87 | 0.25 | | 0.9 | 0.83 | 0.95 | 0.76 | 0 | | 0.95 | 0.69 | 0.83 | 0.77 | 0 | | 0.86 | - |
| **Heavy** | 0 | 31 | 0 | 0 | | 31 | 0 | 0 | 1 | 0 | | 1 | 0 | 47 | 1 | 0 | | 48 | 2 | 1 | 0 | 0 | | 3 | - |
| **Heavy %** | 0% | 2.1% | 0% | 0% | | 1.7% | 0% | 0% | 0.4% | 0% | | 0.2% | 0% | 2.7% | 1.9% | 0% | | 2.7% | 2.4% | 1% | 0% | 0% | | 1.3% | - |
| **Lights** | 220 | 1479 | 89 | 1 | | 1789 | 92 | 109 | 233 | 1 | | 435 | 30 | 1673 | 51 | 0 | | 1754 | 81 | 99 | 40 | 0 | | 220 | - |
| **Lights %** | 100% | 97.9% | 100% | 100% | | 98.3% | 100% | 100% | 99.6% | 100% | | 99.8% | 100% | 97.3% | 98.1% | 0% | | 97.3% | 97.6% | 99% | 100% | 0% | | 98.7% | - |
| **Single-Unit Trucks** | 0 | 9 | 0 | 0 | | 9 | 0 | 0 | 0 | 0 | | 0 | 0 | 28 | 1 | 0 | | 29 | 1 | 0 | 0 | 0 | | 1 | - |
| **Single-Unit Trucks %** | 0% | 0.6% | 0% | 0% | | 0.5% | 0% | 0% | 0% | 0% | | 0% | 0% | 1.6% | 1.9% | 0% | | 1.6% | 1.2% | 0% | 0% | 0% | | 0.4% | - |
| **Buses** | 0 | 16 | 0 | 0 | | 16 | 0 | 0 | 1 | 0 | | 1 | 0 | 13 | 0 | 0 | | 13 | 1 | 1 | 0 | 0 | | 2 | - |
| **Buses %** | 0% | 1.1% | 0% | 0% | | 0.9% | 0% | 0% | 0.4% | 0% | | 0.2% | 0% | 0.8% | 0% | 0% | | 0.7% | 1.2% | 1% | 0% | 0% | | 0.9% | - |
| **Articulated Trucks** | 0 | 6 | 0 | 0 | | 6 | 0 | 0 | 0 | 0 | | 0 | 0 | 6 | 0 | 0 | | 6 | 0 | 0 | 0 | 0 | | 0 | - |
| **Articulated Trucks %** | 0% | 0.4% | 0% | 0% | | 0.3% | 0% | 0% | 0% | 0% | | 0% | 0% | 0.3% | 0% | 0% | | 0.3% | 0% | 0% | 0% | 0% | | 0% | - |
| **Pedestrians** | - | - | - | - | 12 | - | - | - | - | - | 3 | - | - | - | - | - | 13 | - | - | - | - | - | 9 | - | - |
| **Pedestrians%** | - | - | - | - | 32.4% | | - | - | - | - | 8.1% | | - | - | - | - | 35.1% | | - | - | - | - | 24.3% | | - |
| **Bicycles on Road** | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 2 | 0 | 0 | 0 | - | - |
| **Bicycles on Road%** | - | - | - | - | 0% | | - | - | - | - | 0% | | - | - | - | - | 0% | | - | - | - | - | 0% | | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

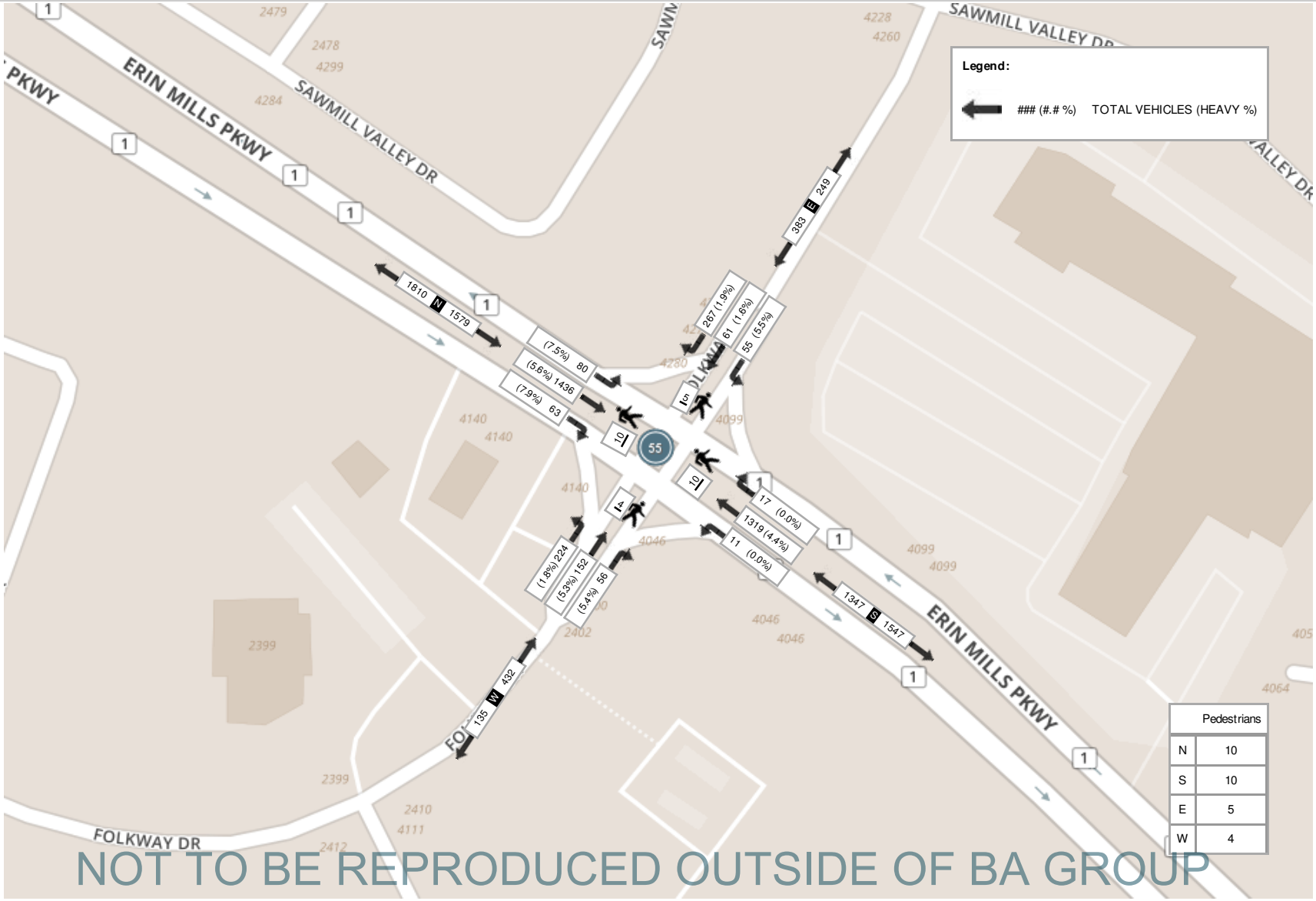
Spectrum

Turning Movement Count
Location Name: ERIN MILLS PKWY & FOLKWAY DR
Date: Thu, Sep 26, 2019 Deployment Lead: Patrick Filopoulos

Peel Region

, ,

**Peak Hour: 08:00 AM - 09:00 AM Weather: Moderate Rain (15.36 °C)**




NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

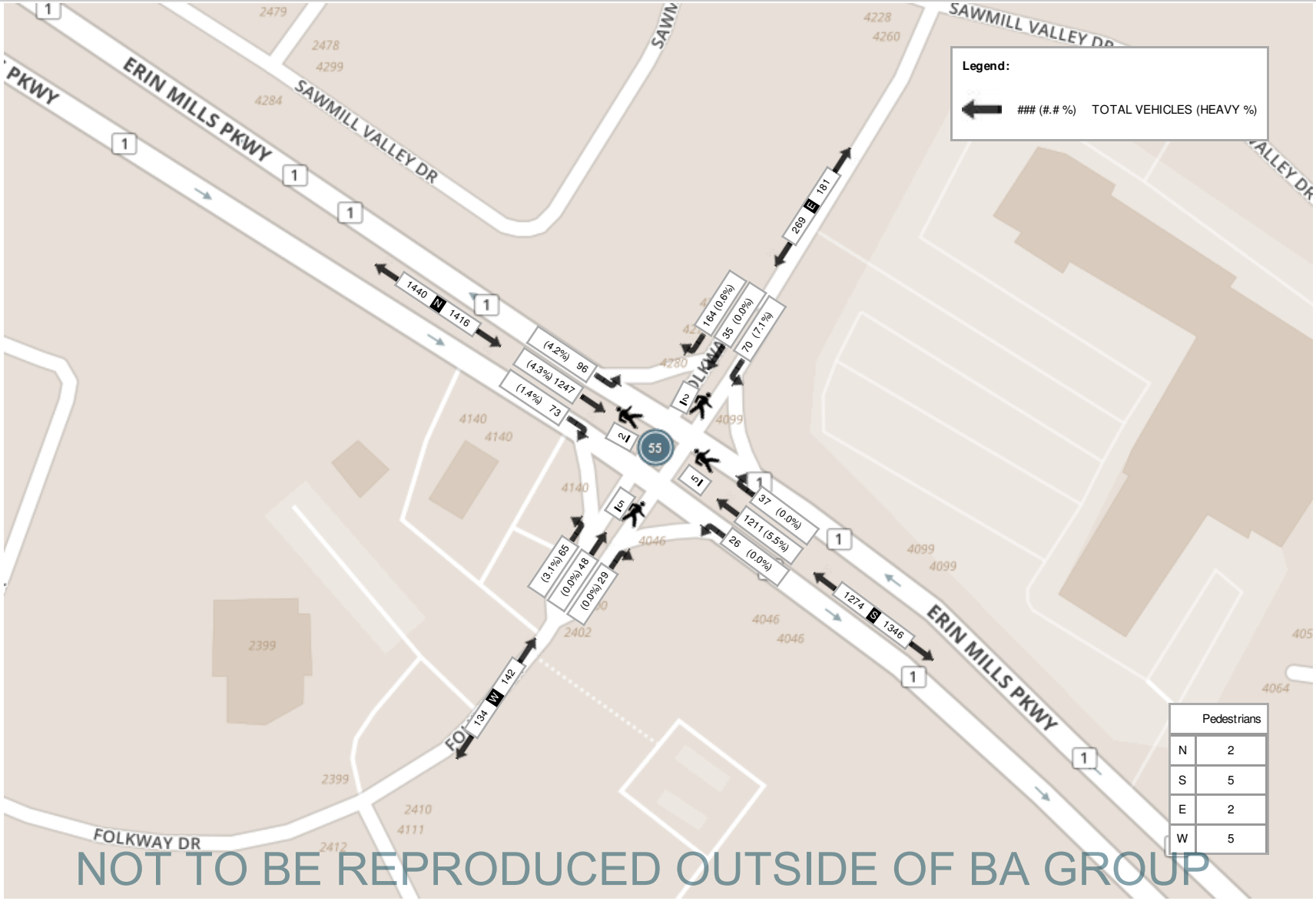
Spectrum

Turning Movement Count
Location Name: ERIN MILLS PKWY & FOLKWAY DR
Date: Thu, Sep 26, 2019 Deployment Lead: Patrick Filopoulos

Peel Region

, ,

**Peak Hour: 12:00 PM - 01:00 PM Weather: Broken Clouds (16.94 °C)**




NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

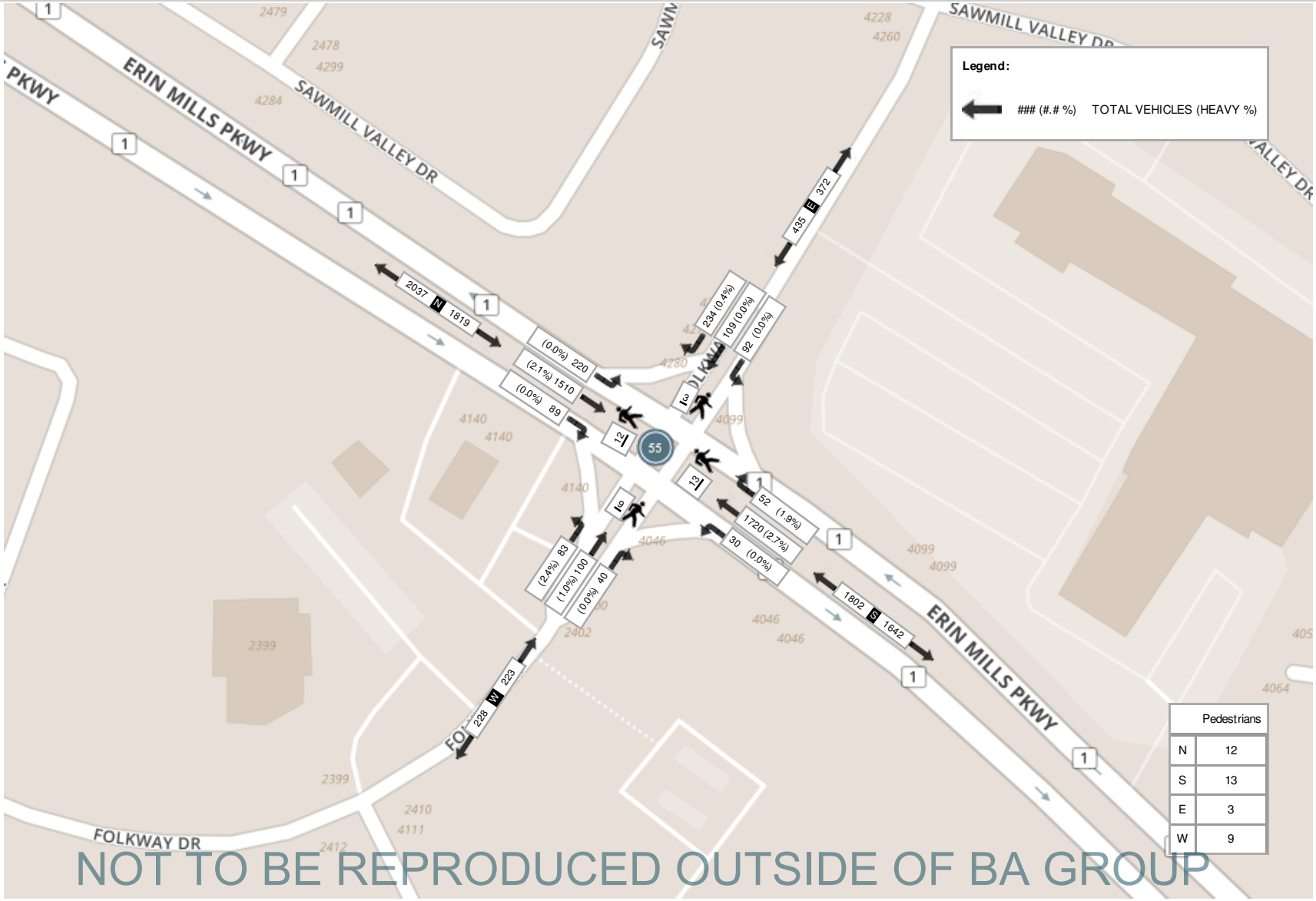
# BA Group - Project Number 8143-01

Turning Movement Count
Location Name: ERIN MILLS PKWY & FOLKWAY DR
Date: Thu, Sep 26, 2019 Deployment Lead: Patrick Filopoulos

Peel Region

, ,

**Peak Hour: 05:00 PM - 06:00 PM Weather: Scattered Clouds (20.41 °C)**




NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# BA Group - Project Number 8143-01

Spectrum

Turning Movement Count
Location Name: FOLKWAY DR & 4099 ERIN MILLS RETAIL PLAZA
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

## Turning Movement Count (3 . FOLKWAY DR & 4099 ERIN MILLS RETAIL PLAZA)

| Start Time | E Approach FOLKWAY DR | | | | | S Approach 4099 ERIN MILLS RETAIL PLAZA | | | | | W Approach FOLKWAY DR | | | | | Int. Total (15 min) | Int. Total (1 hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru E:W | Left E:S | UTurn E:E | Peds E: | Approach Total | Right S:E | Left S:W | UTurn S:S | Peds S: | Approach Total | Right W:S | Thru W:E | UTurn W:W | Peds W: | Approach Total | | |
| 07:00:00 | 27 | 0 | 0 | 0 | 27 | 0 | 1 | 0 | 2 | 1 | 4 | 14 | 0 | 0 | 18 | 46 | |
| 07:15:00 | 32 | 0 | 0 | 0 | 32 | 1 | 3 | 0 | 0 | 4 | 3 | 15 | 1 | 0 | 19 | 55 | |
| 07:30:00 | 59 | 0 | 0 | 0 | 59 | 1 | 1 | 0 | 1 | 2 | 1 | 15 | 0 | 0 | 16 | 77 | |
| 07:45:00 | 65 | 2 | 0 | 0 | 67 | 2 | 3 | 0 | 0 | 5 | 3 | 26 | 0 | 0 | 29 | 101 | 279 |
| 08:00:00 | 74 | 0 | 0 | 0 | 74 | 1 | 4 | 0 | 0 | 5 | 6 | 26 | 0 | 0 | 32 | 111 | 344 |
| 08:15:00 | 65 | 3 | 0 | 0 | 68 | 2 | 4 | 0 | 0 | 6 | 10 | 41 | 1 | 0 | 52 | 126 | 415 |
| 08:30:00 | 57 | 1 | 1 | 0 | 59 | 3 | 5 | 0 | 4 | 8 | 3 | 44 | 0 | 0 | 47 | 114 | 452 |
| 08:45:00 | 71 | 6 | 0 | 0 | 77 | 1 | 3 | 0 | 0 | 4 | 9 | 32 | 0 | 0 | 41 | 122 | 473 |
| ***BREAK*** | | | | | | | | | | | | | | | | | |
| 16:00:00 | 33 | 3 | 0 | 0 | 36 | 6 | 29 | 0 | 0 | 35 | 22 | 57 | 1 | 0 | 80 | 151 | |
| 16:15:00 | 40 | 5 | 0 | 0 | 45 | 6 | 28 | 0 | 2 | 34 | 17 | 44 | 1 | 1 | 62 | 141 | |
| 16:30:00 | 31 | 3 | 0 | 0 | 34 | 8 | 33 | 0 | 1 | 41 | 18 | 41 | 2 | 0 | 61 | 136 | |
| 16:45:00 | 34 | 0 | 0 | 0 | 34 | 8 | 43 | 0 | 0 | 51 | 26 | 50 | 0 | 0 | 76 | 161 | 589 |
| 17:00:00 | 35 | 3 | 0 | 0 | 38 | 8 | 31 | 0 | 2 | 39 | 25 | 46 | 2 | 0 | 73 | 150 | 588 |
| 17:15:00 | 37 | 4 | 0 | 0 | 41 | 8 | 33 | 0 | 2 | 41 | 24 | 49 | 1 | 0 | 74 | 156 | 603 |
| 17:30:00 | 25 | 4 | 0 | 0 | 29 | 5 | 36 | 0 | 1 | 41 | 20 | 32 | 0 | 0 | 52 | 122 | 589 |
| 17:45:00 | 41 | 3 | 0 | 0 | 44 | 7 | 39 | 0 | 3 | 46 | 24 | 42 | 0 | 0 | 66 | 156 | 584 |
| **Grand Total** | 726 | 37 | 1 | 0 | 764 | 67 | 296 | 0 | 18 | 363 | 215 | 574 | 9 | 1 | 798 | **1925** | - |
| **Approach%** | 95% | 4.8% | 0.1% | | - | 18.5% | 81.5% | 0% | | - | 26.9% | 71.9% | 1.1% | | - | - | - |
| **Totals %** | 37.7% | 1.9% | 0.1% | | 39.7% | 3.5% | 15.4% | 0% | | 18.9% | 11.2% | 29.8% | 0.5% | | 41.5% | - | - |
| **Heavy** | 24 | 1 | 0 | | - | 0 | 3 | 0 | | - | 4 | 22 | 0 | | - | - | - |
| **Heavy %** | 3.3% | 2.7% | 0% | | - | 0% | 1% | 0% | | - | 1.9% | 3.8% | 0% | | - | - | - |
| **Bicycles** | - | - | - | | - | - | - | - | | - | - | - | - | | - | - | - |
| **Bicycle %** | - | - | - | | - | - | - | - | | - | - | - | - | | - | - | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: FOLKWAY DR & 4099 ERIN MILLS RETAIL PLAZA
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.16 °C)**

| Start Time | E Approach FOLKWAY DR | | | | | S Approach 4099 ERIN MILLS RETAIL PLAZA | | | | | W Approach FOLKWAY DR | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | UTurn | Peds | Approach Total | Right | Left | UTurn | Peds | Approach Total | Right | Thru | UTurn | Peds | Approach Total | |
| 08:00:00 | 74 | 0 | 0 | 0 | 74 | 1 | 4 | 0 | 0 | 5 | 6 | 26 | 0 | 0 | 32 | 111 |
| 08:15:00 | 65 | 3 | 0 | 0 | 68 | 2 | 4 | 0 | 0 | 6 | 10 | 41 | 1 | 0 | 52 | 126 |
| 08:30:00 | 57 | 1 | 1 | 0 | 59 | 3 | 5 | 0 | 4 | 8 | 3 | 44 | 0 | 0 | 47 | 114 |
| 08:45:00 | 71 | 6 | 0 | 0 | 77 | 1 | 3 | 0 | 0 | 4 | 9 | 32 | 0 | 0 | 41 | 122 |
| **Grand Total** | 267 | 10 | 1 | 0 | 278 | 7 | 16 | 0 | 4 | 23 | 28 | 143 | 1 | 0 | 172 | **473** |
| **Approach%** | 96% | 3.6% | 0.4% | | - | 30.4% | 69.6% | 0% | | - | 16.3% | 83.1% | 0.6% | | - | - |
| **Totals %** | 56.4% | 2.1% | 0.2% | | 58.8% | 1.5% | 3.4% | 0% | | 4.9% | 5.9% | 30.2% | 0.2% | | 36.4% | - |
| **PHF** | 0.9 | 0.42 | 0.25 | | 0.9 | 0.58 | 0.8 | 0 | | 0.72 | 0.7 | 0.81 | 0.25 | | 0.83 | - |
| **Heavy** | 7 | 1 | 0 | | 8 | 0 | 1 | 0 | | 1 | 1 | 7 | 0 | | 8 | - |
| **Heavy %** | 2.6% | 10% | 0% | | 2.9% | 0% | 6.3% | 0% | | 4.3% | 3.6% | 4.9% | 0% | | 4.7% | - |
| **Lights** | 260 | 9 | 1 | | 270 | 7 | 15 | 0 | | 22 | 27 | 136 | 1 | | 164 | - |
| **Lights %** | 97.4% | 90% | 100% | | 97.1% | 100% | 93.8% | 0% | | 95.7% | 96.4% | 95.1% | 100% | | 95.3% | - |
| **Single-Unit Trucks** | 3 | 0 | 0 | | 3 | 0 | 0 | 0 | | 0 | 1 | 0 | 0 | | 1 | - |
| **Single-Unit Trucks %** | 1.1% | 0% | 0% | | 1.1% | 0% | 0% | 0% | | 0% | 3.6% | 0% | 0% | | 0.6% | - |
| **Buses** | 4 | 1 | 0 | | 5 | 0 | 1 | 0 | | 1 | 0 | 7 | 0 | | 7 | - |
| **Buses %** | 1.5% | 10% | 0% | | 1.8% | 0% | 6.3% | 0% | | 4.3% | 0% | 4.9% | 0% | | 4.1% | - |
| **Pedestrians** | - | - | - | 0 | - | - | - | - | 4 | - | - | - | - | 0 | - | - |
| **Pedestrians%** | - | - | - | 0% | | - | - | - | 100% | | - | - | - | 0% | | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: FOLKWAY DR & 4099 ERIN MILLS RETAIL PLAZA
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 04:30 PM - 05:30 PM Weather: Heavy Intensity Rain (2.86 °C)**

| Start Time | E Approach FOLKWAY DR | | | | | S Approach 4099 ERIN MILLS RETAIL PLAZA | | | | | W Approach FOLKWAY DR | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | UTurn | Peds | Approach Total | Right | Left | UTurn | Peds | Approach Total | Right | Thru | UTurn | Peds | Approach Total | |
| 16:30:00 | 31 | 3 | 0 | 0 | 34 | 8 | 33 | 0 | 1 | 41 | 18 | 41 | 2 | 0 | 61 | 136 |
| 16:45:00 | 34 | 0 | 0 | 0 | 34 | 8 | 43 | 0 | 0 | 51 | 26 | 50 | 0 | 0 | 76 | 161 |
| 17:00:00 | 35 | 3 | 0 | 0 | 38 | 8 | 31 | 0 | 2 | 39 | 25 | 46 | 2 | 0 | 73 | 150 |
| 17:15:00 | 37 | 4 | 0 | 0 | 41 | 8 | 33 | 0 | 2 | 41 | 24 | 49 | 1 | 0 | 74 | 156 |
| **Grand Total** | 137 | 10 | 0 | 0 | 147 | 32 | 140 | 0 | 5 | 172 | 93 | 186 | 5 | 0 | 284 | **603** |
| **Approach%** | 93.2% | 6.8% | 0% | | - | 18.6% | 81.4% | 0% | | - | 32.7% | 65.5% | 1.8% | | - | - |
| **Totals %** | 22.7% | 1.7% | 0% | | 24.4% | 5.3% | 23.2% | 0% | | 28.5% | 15.4% | 30.8% | 0.8% | | 47.1% | - |
| **PHF** | 0.93 | 0.63 | 0 | | 0.9 | 1 | 0.81 | 0 | | 0.84 | 0.89 | 0.93 | 0.63 | | 0.93 | - |
| **Heavy** | 3 | 0 | 0 | | 3 | 0 | 0 | 0 | | 0 | 0 | 2 | 0 | | 2 | - |
| **Heavy %** | 2.2% | 0% | 0% | | 2% | 0% | 0% | 0% | | 0% | 0% | 1.1% | 0% | | 0.7% | - |
| **Lights** | 134 | 10 | 0 | | 144 | 32 | 140 | 0 | | 172 | 93 | 184 | 5 | | 282 | - |
| **Lights %** | 97.8% | 100% | 0% | | 98% | 100% | 100% | 0% | | 100% | 100% | 98.9% | 100% | | 99.3% | - |
| **Single-Unit Trucks** | 3 | 0 | 0 | | 3 | 0 | 0 | 0 | | 0 | 0 | 2 | 0 | | 2 | - |
| **Single-Unit Trucks %** | 2.2% | 0% | 0% | | 2% | 0% | 0% | 0% | | 0% | 0% | 1.1% | 0% | | 0.7% | - |
| **Buses** | 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% | - |
| **Pedestrians** | - | - | - | 0 | - | - | - | - | 5 | - | - | - | - | 0 | - | - |
| **Pedestrians%** | - | - | - | 0% | | - | - | - | 100% | | - | - | - | 0% | | - |

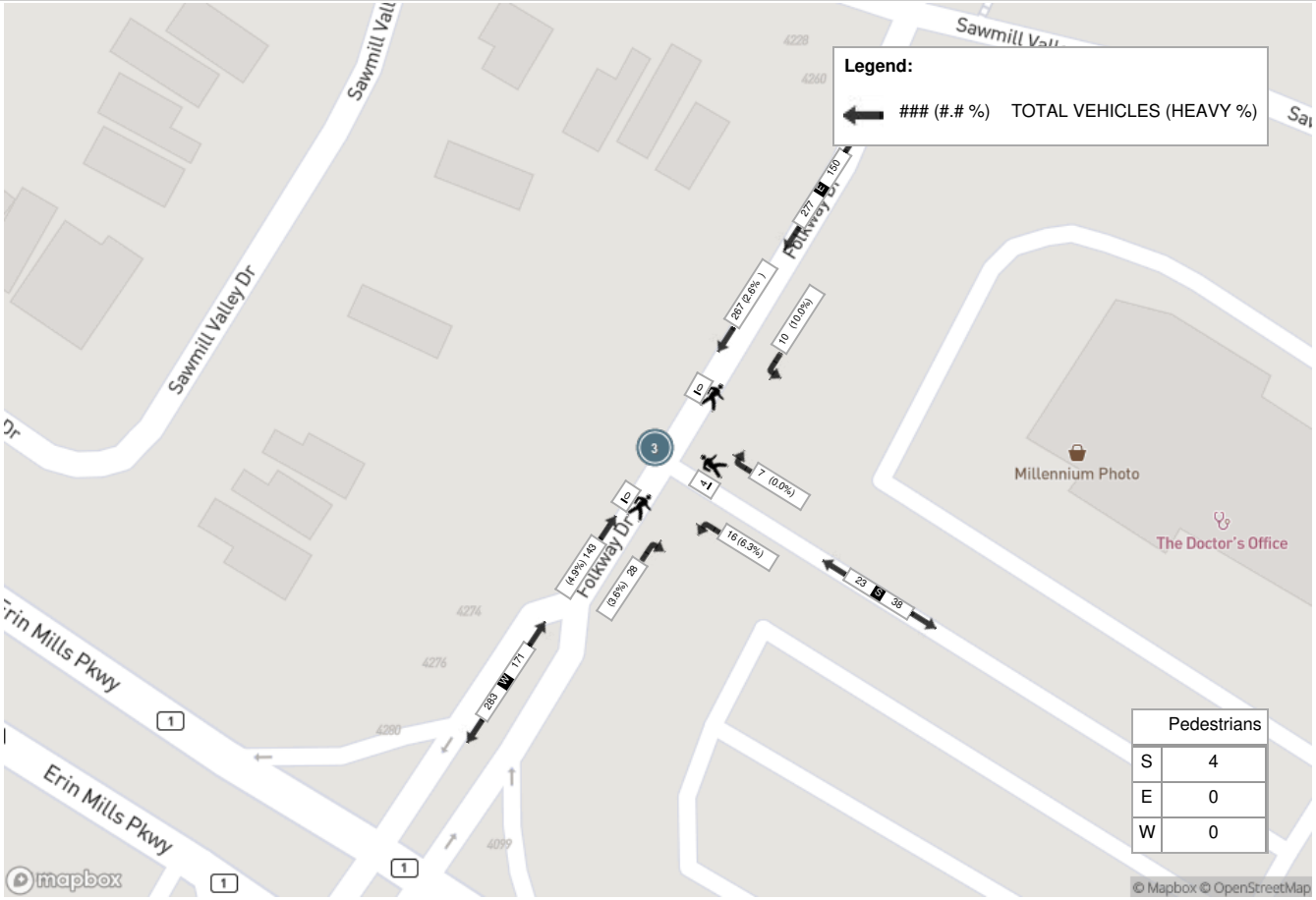
NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: FOLKWAY DR & 4099 ERIN MILLS RETAIL PLAZA
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.16 °C)**



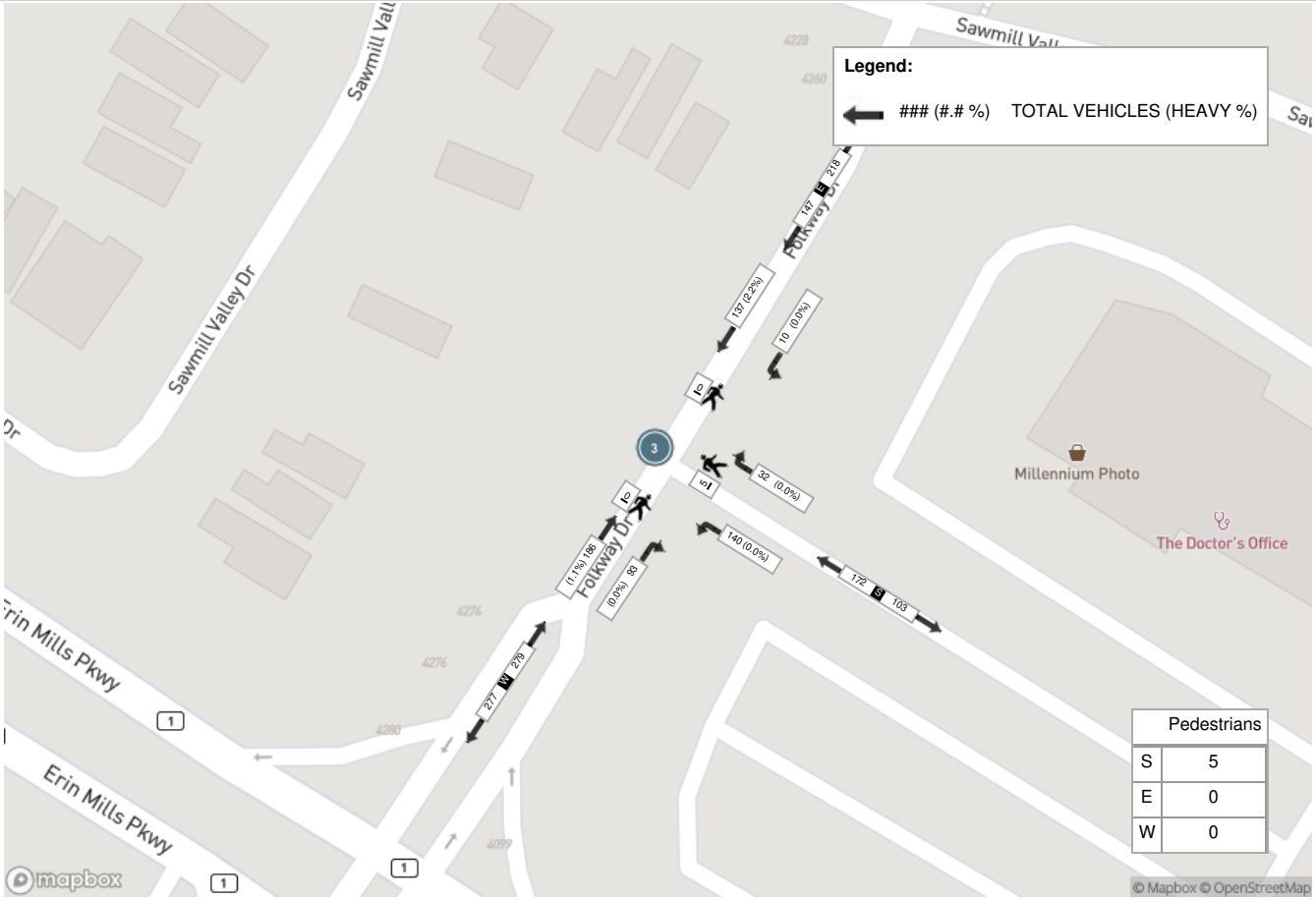

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: FOLKWAY DR & 4099 ERIN MILLS RETAIL PLAZA
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 04:30 PM - 05:30 PM Weather: Heavy Intensity Rain (2.86 °C)**




NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# BA Group - Project Number 8143-01

Spectrum

Turning Movement Count
Location Name: FOLKWAY DR & SAWMILL VALLEY DR
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

## Turning Movement Count (4 . FOLKWAY DR & SAWMILL VALLEY DR)

| Start Time | N Approach SAWMILL VALLEY DR | | | | | | E Approach FOLKWAY DR | | | | | | S Approach SAWMILL VALLEY DR | | | | | | W Approach FOLKWAY DR | | | | | | Int. Total (15 min) | Int. Total (1 hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right N:W | Thru N:S | Left N:E | UTurn N:N | Peds N: | Approach Total | Right E:N | Thru E:W | Left E:S | UTurn E:E | Peds E: | Approach Total | Right S:E | Thru S:N | Left S:W | UTurn S:S | Peds S: | Approach Total | Right W:S | Thru W:E | Left W:N | UTurn W:W | Peds W: | Approach Total | | |
| 07:00:00 | 5 | 1 | 0 | 0 | 0 | 6 | 0 | 10 | 0 | 0 | 2 | 10 | 0 | 0 | 12 | 0 | 3 | 12 | 7 | 4 | 2 | 0 | 0 | 13 | 41 | |
| 07:15:00 | 4 | 1 | 0 | 0 | 0 | 5 | 0 | 14 | 0 | 0 | 3 | 14 | 0 | 1 | 14 | 0 | 2 | 15 | 8 | 7 | 2 | 0 | 1 | 17 | 51 | |
| 07:30:00 | 9 | 1 | 0 | 0 | 0 | 10 | 0 | 22 | 1 | 0 | 1 | 23 | 1 | 0 | 28 | 0 | 3 | 29 | 9 | 3 | 3 | 0 | 0 | 15 | 77 | |
| 07:45:00 | 13 | 0 | 0 | 0 | 1 | 13 | 0 | 31 | 1 | 0 | 1 | 32 | 3 | 0 | 23 | 0 | 2 | 26 | 20 | 9 | 0 | 0 | 1 | 29 | 100 | 269 |
| 08:00:00 | 12 | 1 | 0 | 0 | 0 | 13 | 0 | 30 | 1 | 0 | 4 | 31 | 1 | 0 | 33 | 0 | 1 | 34 | 16 | 4 | 7 | 0 | 0 | 27 | 105 | 333 |
| 08:15:00 | 4 | 6 | 0 | 0 | 0 | 10 | 0 | 20 | 8 | 0 | 5 | 28 | 3 | 1 | 43 | 0 | 3 | 47 | 26 | 10 | 7 | 0 | 0 | 43 | 128 | 410 |
| 08:30:00 | 5 | 4 | 0 | 0 | 0 | 9 | 0 | 21 | 7 | 0 | 1 | 28 | 3 | 2 | 34 | 0 | 3 | 39 | 30 | 14 | 4 | 0 | 0 | 48 | 124 | 457 |
| 08:45:00 | 7 | 4 | 0 | 0 | 3 | 11 | 0 | 27 | 1 | 0 | 3 | 28 | 5 | 7 | 42 | 0 | 1 | 54 | 12 | 17 | 4 | 0 | 3 | 33 | 126 | 483 |
| ***BREAK*** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16:00:00 | 10 | 1 | 0 | 0 | 0 | 11 | 0 | 12 | 2 | 0 | 0 | 14 | 3 | 0 | 14 | 0 | 0 | 17 | 21 | 28 | 15 | 0 | 0 | 64 | 106 | |
| 16:15:00 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 16 | 0 | 0 | 0 | 16 | 1 | 2 | 19 | 0 | 3 | 22 | 22 | 17 | 12 | 0 | 0 | 51 | 99 | |
| 16:30:00 | 7 | 3 | 0 | 0 | 0 | 10 | 0 | 15 | 1 | 0 | 0 | 16 | 4 | 3 | 12 | 0 | 1 | 19 | 21 | 23 | 5 | 0 | 0 | 49 | 94 | |
| 16:45:00 | 4 | 1 | 1 | 0 | 0 | 6 | 0 | 16 | 0 | 0 | 0 | 16 | 1 | 2 | 13 | 0 | 0 | 16 | 22 | 27 | 7 | 1 | 0 | 57 | 95 | 394 |
| 17:00:00 | 1 | 3 | 0 | 0 | 0 | 4 | 0 | 16 | 1 | 0 | 0 | 17 | 2 | 1 | 21 | 0 | 2 | 24 | 21 | 18 | 14 | 1 | 0 | 54 | 99 | 387 |
| 17:15:00 | 11 | 1 | 1 | 0 | 1 | 13 | 1 | 14 | 1 | 0 | 0 | 16 | 1 | 3 | 17 | 0 | 1 | 21 | 20 | 27 | 12 | 0 | 1 | 59 | 109 | 397 |
| 17:30:00 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 13 | 1 | 0 | 0 | 14 | 0 | 2 | 9 | 0 | 0 | 11 | 17 | 16 | 4 | 0 | 0 | 37 | 68 | 371 |
| 17:45:00 | 8 | 1 | 0 | 0 | 1 | 9 | 1 | 17 | 1 | 0 | 0 | 19 | 2 | 2 | 19 | 0 | 2 | 23 | 24 | 21 | 6 | 0 | 0 | 51 | 102 | 378 |
| **Grand Total** | 116 | 28 | 2 | 0 | 6 | 146 | 2 | 294 | 26 | 0 | 20 | 322 | 30 | 26 | 353 | 0 | 27 | 409 | 296 | 245 | 104 | 2 | 6 | 647 | **1524** | - |
| **Approach%** | 79.5% | 19.2% | 1.4% | 0% | | - | 0.6% | 91.3% | 8.1% | 0% | | - | 7.3% | 6.4% | 86.3% | 0% | | - | 45.7% | 37.9% | 16.1% | 0.3% | | - | - | - |
| **Totals %** | 7.6% | 1.8% | 0.1% | 0% | | 9.6% | 0.1% | 19.3% | 1.7% | 0% | | 21.1% | 2% | 1.7% | 23.2% | 0% | | 26.8% | 19.4% | 16.1% | 6.8% | 0.1% | | 42.5% | - | - |
| **Heavy** | 1 | 3 | 1 | 0 | | - | 0 | 12 | 2 | 0 | | - | 3 | 1 | 12 | 0 | | - | 12 | 7 | 4 | 0 | | - | - | - |
| **Heavy %** | 0.9% | 10.7% | 50% | 0% | | - | 0% | 4.1% | 7.7% | 0% | | - | 10% | 3.8% | 3.4% | 0% | | - | 4.1% | 2.9% | 3.8% | 0% | | - | - | - |
| **Bicycles** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - |
| **Bicycle %** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: FOLKWAY DR & SAWMILL VALLEY DR
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.16 °C)**

| Start Time | N Approach SAWMILL VALLEY DR | | | | | | E Approach FOLKWAY DR | | | | | | S Approach SAWMILL VALLEY DR | | | | | | W Approach FOLKWAY DR | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | UTurn | Peds | Approach Total | Right | Thru | Left | UTurn | Peds | Approach Total | Right | Thru | Left | UTurn | Peds | Approach Total | Right | Thru | Left | UTurn | Peds | Approach Total | |
| 08:00:00 | 12 | 1 | 0 | 0 | 0 | 13 | 0 | 30 | 1 | 0 | 4 | 31 | 1 | 0 | 33 | 0 | 1 | 34 | 16 | 4 | 7 | 0 | 0 | 27 | 105 |
| 08:15:00 | 4 | 6 | 0 | 0 | 0 | 10 | 0 | 20 | 8 | 0 | 5 | 28 | 3 | 1 | 43 | 0 | 3 | 47 | 26 | 10 | 7 | 0 | 0 | 43 | 128 |
| 08:30:00 | 5 | 4 | 0 | 0 | 0 | 9 | 0 | 21 | 7 | 0 | 1 | 28 | 3 | 2 | 34 | 0 | 3 | 39 | 30 | 14 | 4 | 0 | 0 | 48 | 124 |
| 08:45:00 | 7 | 4 | 0 | 0 | 3 | 11 | 0 | 27 | 1 | 0 | 3 | 28 | 5 | 7 | 42 | 0 | 1 | 54 | 12 | 17 | 4 | 0 | 3 | 33 | 126 |
| **Grand Total** | 28 | 15 | 0 | 0 | 3 | 43 | 0 | 98 | 17 | 0 | 13 | 115 | 12 | 10 | 152 | 0 | 8 | 174 | 84 | 45 | 22 | 0 | 3 | 151 | **483** |
| **Approach%** | 65.1% | 34.9% | 0% | 0% | | - | 0% | 85.2% | 14.8% | 0% | | - | 6.9% | 5.7% | 87.4% | 0% | | - | 55.6% | 29.8% | 14.6% | 0% | | - | - |
| **Totals %** | 5.8% | 3.1% | 0% | 0% | | 8.9% | 0% | 20.3% | 3.5% | 0% | | 23.8% | 2.5% | 2.1% | 31.5% | 0% | | 36% | 17.4% | 9.3% | 4.6% | 0% | | 31.3% | - |
| **PHF** | 0.58 | 0.63 | 0 | 0 | | 0.83 | 0 | 0.82 | 0.53 | 0 | | 0.93 | 0.6 | 0.36 | 0.88 | 0 | | 0.81 | 0.7 | 0.66 | 0.79 | 0 | | 0.79 | - |
| **Heavy** | 0 | 2 | 0 | 0 | | 2 | 0 | 2 | 2 | 0 | | 4 | 0 | 0 | 6 | 0 | | 6 | 3 | 2 | 2 | 0 | | 7 | - |
| **Heavy %** | 0% | 13.3% | 0% | 0% | | 4.7% | 0% | 2% | 11.8% | 0% | | 3.5% | 0% | 0% | 3.9% | 0% | | 3.4% | 3.6% | 4.4% | 9.1% | 0% | | 4.6% | - |
| **Lights** | 28 | 13 | 0 | 0 | | 41 | 0 | 96 | 15 | 0 | | 111 | 12 | 10 | 146 | 0 | | 168 | 81 | 43 | 20 | 0 | | 144 | - |
| **Lights %** | 100% | 86.7% | 0% | 0% | | 95.3% | 0% | 98% | 88.2% | 0% | | 96.5% | 100% | 100% | 96.1% | 0% | | 96.6% | 96.4% | 95.6% | 90.9% | 0% | | 95.4% | - |
| **Single-Unit Trucks** | 0 | 1 | 0 | 0 | | 1 | 0 | 1 | 0 | 0 | | 1 | 0 | 0 | 2 | 0 | | 2 | 0 | 0 | 0 | 0 | | 0 | - |
| **Single-Unit Trucks %** | 0% | 6.7% | 0% | 0% | | 2.3% | 0% | 1% | 0% | 0% | | 0.9% | 0% | 0% | 1.3% | 0% | | 1.1% | 0% | 0% | 0% | 0% | | 0% | - |
| **Buses** | 0 | 1 | 0 | 0 | | 1 | 0 | 1 | 2 | 0 | | 3 | 0 | 0 | 4 | 0 | | 4 | 3 | 2 | 2 | 0 | | 7 | - |
| **Buses %** | 0% | 6.7% | 0% | 0% | | 2.3% | 0% | 1% | 11.8% | 0% | | 2.6% | 0% | 0% | 2.6% | 0% | | 2.3% | 3.6% | 4.4% | 9.1% | 0% | | 4.6% | - |
| **Pedestrians** | - | - | - | - | 3 | - | - | - | - | - | 13 | - | - | - | - | - | 8 | - | - | - | - | - | 3 | - | - |
| **Pedestrians%** | - | - | - | - | 11.1% | | - | - | - | - | 48.1% | | - | - | - | - | 29.6% | | - | - | - | - | 11.1% | | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: FOLKWAY DR & SAWMILL VALLEY DR
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 04:30 PM - 05:30 PM Weather: Heavy Intensity Rain (2.86 °C)**

| Start Time | N Approach SAWMILL VALLEY DR | | | | | | E Approach FOLKWAY DR | | | | | | S Approach SAWMILL VALLEY DR | | | | | | W Approach FOLKWAY DR | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | UTurn | Peds | Approach Total | Right | Thru | Left | UTurn | Peds | Approach Total | Right | Thru | Left | UTurn | Peds | Approach Total | Right | Thru | Left | UTurn | Peds | Approach Total | |
| 16:30:00 | 7 | 3 | 0 | 0 | 0 | 10 | 0 | 15 | 1 | 0 | 0 | 16 | 4 | 3 | 12 | 0 | 1 | 19 | 21 | 23 | 5 | 0 | 0 | 49 | 94 |
| 16:45:00 | 4 | 1 | 1 | 0 | 0 | 6 | 0 | 16 | 0 | 0 | 0 | 16 | 1 | 2 | 13 | 0 | 0 | 16 | 22 | 27 | 7 | 1 | 0 | 57 | 95 |
| 17:00:00 | 1 | 3 | 0 | 0 | 0 | 4 | 0 | 16 | 1 | 0 | 0 | 17 | 2 | 1 | 21 | 0 | 2 | 24 | 21 | 18 | 14 | 1 | 0 | 54 | 99 |
| 17:15:00 | 11 | 1 | 1 | 0 | 1 | 13 | 1 | 14 | 1 | 0 | 0 | 16 | 1 | 3 | 17 | 0 | 1 | 21 | 20 | 27 | 12 | 0 | 1 | 59 | 109 |
| **Grand Total** | 23 | 8 | 2 | 0 | 1 | 33 | 1 | 61 | 3 | 0 | 0 | 65 | 8 | 9 | 63 | 0 | 4 | 80 | 84 | 95 | 38 | 2 | 1 | 219 | **397** |
| **Approach%** | 69.7% | 24.2% | 6.1% | 0% | | - | 1.5% | 93.8% | 4.6% | 0% | | - | 10% | 11.3% | 78.8% | 0% | | - | 38.4% | 43.4% | 17.4% | 0.9% | | - | - |
| **Totals %** | 5.8% | 2% | 0.5% | 0% | | 8.3% | 0.3% | 15.4% | 0.8% | 0% | | 16.4% | 2% | 2.3% | 15.9% | 0% | | 20.2% | 21.2% | 23.9% | 9.6% | 0.5% | | 55.2% | - |
| **PHF** | 0.52 | 0.67 | 0.5 | 0 | | 0.63 | 0.25 | 0.95 | 0.75 | 0 | | 0.96 | 0.5 | 0.75 | 0.75 | 0 | | 0.83 | 0.95 | 0.88 | 0.68 | 0.5 | | 0.93 | - |
| **Heavy** | 0 | 1 | 1 | 0 | | 2 | 0 | 3 | 0 | 0 | | 3 | 0 | 0 | 0 | 0 | | 0 | 1 | 0 | 1 | 0 | | 2 | - |
| **Heavy %** | 0% | 12.5% | 50% | 0% | | 6.1% | 0% | 4.9% | 0% | 0% | | 4.6% | 0% | 0% | 0% | 0% | | 0% | 1.2% | 0% | 2.6% | 0% | | 0.9% | - |
| **Lights** | 23 | 7 | 1 | 0 | | 31 | 1 | 58 | 3 | 0 | | 62 | 8 | 9 | 63 | 0 | | 80 | 83 | 95 | 37 | 2 | | 217 | - |
| **Lights %** | 100% | 87.5% | 50% | 0% | | 93.9% | 100% | 95.1% | 100% | 0% | | 95.4% | 100% | 100% | 100% | 0% | | 100% | 98.8% | 100% | 97.4% | 100% | | 99.1% | - |
| **Single-Unit Trucks** | 0 | 1 | 1 | 0 | | 2 | 0 | 3 | 0 | 0 | | 3 | 0 | 0 | 0 | 0 | | 0 | 1 | 0 | 1 | 0 | | 2 | - |
| **Single-Unit Trucks %** | 0% | 12.5% | 50% | 0% | | 6.1% | 0% | 4.9% | 0% | 0% | | 4.6% | 0% | 0% | 0% | 0% | | 0% | 1.2% | 0% | 2.6% | 0% | | 0.9% | - |
| **Buses** | 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 | - | - | - | - | - | 0 | - | - | - | - | - | 4 | - | - | - | - | - | 1 | - | - |
| **Pedestrians%** | - | - | - | - | 16.7% | | - | - | - | - | 0% | | - | - | - | - | 66.7% | | - | - | - | - | 16.7% | | - |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: FOLKWAY DR & SAWMILL VALLEY DR
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.16 °C)**

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

Spectrum

Turning Movement Count
Location Name: FOLKWAY DR & SAWMILL VALLEY DR
Date: Tue, Feb 22, 2022 Deployment Lead: Peter Ilias

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

**Peak Hour: 04:30 PM - 05:30 PM Weather: Heavy Intensity Rain (2.86 °C)**

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# REGIONAL MUNICIPALITY OF PEEL

**Traffic Signal Timing Parameters**

| | | | | |
|---|---|---|---|---|
| **Database Date** | **February 14, 2022** | | **Prepared Date** | **February 15, 2022** |
| **Database Rev** | **iNET** | | **Completed By** | **TF** |
| **Timing Card / Field rev** | **iNET** | | **Checked By** | **RC** |
| **Location** | **Erin Mills Parkway & Burnhamthorpe Road** | | | |

| Phase # | Street Name - Direction | Vehicle Minimum (s) | Pedestrian Minimum (s) | | Amber (s) | All Red (s) | TIME PERIOD (s) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | WALK | FDWALK | | | AM SPLITS | OFF SPLITS | PM SPLITS |
| **1** | Erin Mills Parkway - NB LT Prot. Perm. | 5.0 | 0.0 | 0.0 | 3.0 | 0.0 | 11.0 | 14.0 | 11.0 |
| **2** | Erin Mills Parkway - SB | 12.0 | 12.0 | 28.0 | 4.2 | 2.9 | 59.0 | 56.0 | 61.0 |
| **3** | Burnhamthorpe Road - EB LT Prot. | 5.0 | 0.0 | 0.0 | 3.0 | 2.0 | 31.0 | 29.0 | 29.0 |
| **4** | Burnhamthorpe Road - WB | 12.0 | 15.0 | 36.0 | 4.0 | 3.9 | 59.0 | 61.0 | 59.0 |
| **5** | Erin Mills Parkway - SB LT Prot. Perm. | 5.0 | 0.0 | 0.0 | 3.0 | 0.0 | 20.0 | 19.0 | 18.0 |
| **6** | Erin Mills Parkway - NB | 12.0 | 12.0 | 28.0 | 4.2 | 2.9 | 50.0 | 51.0 | 54.0 |
| **7** | Burnhamthorpe Road - WB LT Prot. Perm. | 5.0 | 0.0 | 0.0 | 3.0 | 0.0 | 30.0 | 31.0 | 29.0 |
| **8** | Burnhamthorpe Road - EB | 12.0 | 15.0 | 36.0 | 4.0 | 3.9 | 60.0 | 59.0 | 59.0 |

**System Control**

Yes

**Semi-Actuated Mode**

Yes

| TIME (M-F) | PEAK | CYCLE LENGTH (s) | OFFSET (s) |
|---|---|---|---|
| 06:00-09:30 | AM | 160 | 93 |
| 09:30-15:00<br>19:30-00:00 | OFF | 160 | 117 |
| 15:00-19:30 | PM | 160 | 88 |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# REGIONAL MUNICIPALITY OF PEEL

**Traffic Signal Timing Parameters**

| | | | | |
|---|---|---|---|---|
| **Database Date** | **February 14, 2022** | | **Prepared Date** | **February 15, 2022** |
| **Database Rev** | **iNET** | | **Completed By** | **TF** |
| **Timing Card / Field rev** | **33** | | **Checked By** | **RC** |
| **Location** | **Erin Mills Parkway & Folkway Drive** | | | |

| Phase # | Street Name - Direction | Vehicle Minimum (s) | Pedestrian Minimum (s) | | Amber (s) | All Red (s) | TIME PERIOD (s) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | WALK | FDWALK | | | AM SPLITS | OFF SPLITS | PM SPLITS |
| 1 | Erin Mills Parkway - NB LT Prot. Perm. | 8.0 | 0.0 | 0.0 | 3.0 | 2.0 | 13.0 | 17.0 | 14.0 |
| 2 | Erin Mills Parkway - SB | 12.0 | 7.0 | 13.0 | 4.2 | 2.0 | 88.0 | 84.0 | 87.0 |
| 3 | Not In Use | - | - | - | - | - | - | - | - |
| 4 | Folkway Drive - WB | 8.0 | 12.0 | 25.0 | 4.0 | 3.5 | 59.0 | 59.0 | 59.0 |
| 5 | Erin Mills Parkway - SB LT Prot. | 8.0 | 7.0 | 13.0 | 3.0 | 2.0 | 26.0 | 26.0 | 26.0 |
| 6 | Erin Mills Parkway - NB | 12.0 | 12.0 | 28.0 | 4.2 | 2.0 | 75.0 | 75.0 | 75.0 |
| 7 | Folkway Drive - WB LT Prot. Perm. | 5.0 | 0.0 | 0.0 | 3.0 | 0.0 | 13.0 | 13.0 | 13.0 |
| 8 | Folkway Drive - EB | 8.0 | 15.0 | 36.0 | 4.0 | 3.5 | 46.0 | 46.0 | 46.0 |

**System Control**
Yes

**Semi-Actuated Mode**
Yes

| TIME (M-F) | PEAK | CYCLE LENGTH (s) | OFFSET (s) |
|---|---|---|---|
| 06:00-09:30 | AM | 160 | 102 |
| 09:30-15:00<br>19:30-00:00 | OFF | 160 | 2 |
| 15:00-19:30 | PM | 160 | 118 |

NOT TO BE REPRODUCED OUTSIDE OF BA GROUP

# APPENDIX D:
# Corridor Growth

Date: March 7, 2022
From: Chris Asmanis, BA Consulting Group Ltd.
Re: Growth Rates Request – Erin Mills Parkway at Burnhamthorpe Road West

Chris,
Here are the estimated CAGR values for Erin Mills Parkway at Burnhamthorpe Road W:

| 2011 – 2021 | 2021 - 2031 |
|---|---|
| 1.0% | 0.5% |

These growth rates are estimated based on multiple sources including Peel Travel Demand forecasting model, ATR and land use/forecasts data. Please note that this area may be further affected by future growth (after 2031 and beyond). An additional significant role may play future GTA West highway (particularly its timing and location). Please use your professional judgement when using these values.

If you require further assistance, please contact me at jade.huangfu@peelregion.ca.

Regards,

Jade Huangfu
Transportation Analyst, Transportation System Planning
Transportation Division, Public Works Services, Region of Peel
10 Peel Centre Drive, Suite B, 4th Floor
Brampton, ON L6T 4B9
(905) 791-7800 x8905
E: jade.huangfu@peelregion.ca

# APPENDIX E:
# TTS Data

**TRIP DISTRIBUTION - OUTBOUND - RESIDENTIAL**

| DESTINATION | ORIGIN | Total | Route Selection | | | | | | Trip Distribution | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | N Erin Mills | S Erin Mills | E B'Thorpe | E 403 | W B'Thorpe | W 403 | N Erin Mills | S Erin Mills | E B'Thorpe | E 403 | W B'Thorpe | W 403 | |
| Mississauga | 0 | 0 | | | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0% |
| 3601 | 0 | 0 | 100% | | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3602 | 54 | 54 | 100% | | | | | | 1.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3605 | 12 | 12 | 20% | | | 80% | | | 0.1% | 0.0% | 0.0% | 0.3% | 0.0% | 0.0% | 100% |
| 3607 | 27 | 27 | 20% | | | 80% | | | 0.2% | 0.0% | 0.0% | 0.6% | 0.0% | 0.0% | 100% |
| 3609 | 10 | 10 | 20% | | | 80% | | | 0.1% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| 3610 | 21 | 21 | | | 50% | 50% | | | 0.0% | 0.0% | 0.3% | 0.3% | 0.0% | 0.0% | 100% |
| 3612 | 43 | 43 | 100% | | | | | | 1.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3613 | 47 | 47 | 100% | | | | | | 1.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3614 | 42 | 42 | | 80% | | | 20% | | 0.0% | 0.9% | 0.0% | 0.0% | 0.2% | 0.0% | 100% |
| 3617 | 17 | 17 | 100% | | | | | | 0.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3618 | 9 | 9 | 100% | | | | | | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3621 | 27 | 27 | 50% | | | 50% | | | 0.4% | 0.0% | 0.0% | 0.4% | 0.0% | 0.0% | 100% |
| 3623 | 24 | 24 | | 100% | | | | | 0.0% | 0.7% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3625 | 13 | 13 | 20% | | 80% | | | | 0.1% | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 100% |
| 3631 | 7 | 7 | | 20% | 80% | | | | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 0.0% | 100% |
| 3632 | 15 | 15 | | 20% | 80% | | | | 0.0% | 0.1% | 0.3% | 0.0% | 0.0% | 0.0% | 100% |
| 3633 | 0 | 0 | | 100% | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3634 | 0 | 0 | | 50% | | | 50% | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3635 | 119 | 119 | | | | | 100% | | 0.0% | 0.0% | 0.0% | 0.0% | 3.4% | 0.0% | 100% |
| 3638 | 10 | 10 | 100% | | | | | | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3639 | 86 | 86 | | 100% | | | | | 0.0% | 2.4% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3640 | 0 | 0 | | 100% | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3642 | 10 | 10 | | 50% | 50% | | | | 0.0% | 0.1% | 0.1% | 0.0% | 0.0% | 0.0% | 100% |
| 3644 | 12 | 12 | | 100% | | | | | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3645 | 42 | 42 | | 100% | | | | | 0.0% | 1.2% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3649 | 20 | 20 | | 20% | | 80% | | | 0.0% | 0.1% | 0.0% | 0.5% | 0.0% | 0.0% | 100% |
| 3650 | 8 | 8 | | 80% | | | 20% | | 0.0% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3651 | 14 | 14 | | 80% | 20% | | | | 0.0% | 0.3% | 0.1% | 0.0% | 0.0% | 0.0% | 100% |
| 3655 | 54 | 54 | | 50% | 50% | | | | 0.0% | 0.8% | 0.8% | 0.0% | 0.0% | 0.0% | 100% |
| 3656 | 19 | 19 | | 20% | | 80% | | | 0.0% | 0.1% | 0.0% | 0.4% | 0.0% | 0.0% | 100% |
| 3662 | 110 | 110 | | 50% | | | 50% | | 0.0% | 1.6% | 0.0% | 0.0% | 1.6% | 0.0% | 100% |
| 3663 | 33 | 33 | | 100% | | | | | 0.0% | 0.9% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3664 | 10 | 10 | | 20% | 80% | | | | 0.0% | 0.1% | 0.2% | 0.0% | 0.0% | 0.0% | 100% |
| 3665 | 52 | 52 | | | 100% | | | | 0.0% | 0.0% | 1.5% | 0.0% | 0.0% | 0.0% | 100% |
| 3666 | 25 | 25 | | | 50% | 50% | | | 0.0% | 0.0% | 0.4% | 0.4% | 0.0% | 0.0% | 100% |
| 3667 | 37 | 37 | | | 50% | 50% | | | 0.0% | 0.0% | 0.5% | 0.5% | 0.0% | 0.0% | 100% |
| 3669 | 15 | 15 | | 50% | | 50% | | | 0.0% | 0.2% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| 3671 | 25 | 25 | | | 100% | | | | 0.0% | 0.0% | 0.7% | 0.0% | 0.0% | 0.0% | 100% |
| 3674 | 0 | 0 | | 50% | | 50% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3675 | 0 | 0 | | 50% | | 50% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3676 | 21 | 21 | | | | | 100% | | 0.0% | 0.0% | 0.0% | 0.0% | 0.6% | 0.0% | 100% |
| 3677 | 199 | 199 | 17% | 17% | 17% | 17% | 17% | 17% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 100% |
| 3678 | 24 | 24 | | | 100% | | | | 0.0% | 0.0% | 0.7% | 0.0% | 0.0% | 0.0% | 100% |
| 3680 | 0 | 0 | | | 20% | 80% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3683 | 19 | 19 | 100% | | | | | | 0.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3685 | 29 | 29 | | | 50% | 50% | | | 0.0% | 0.0% | 0.4% | 0.4% | 0.0% | 0.0% | 100% |
| 3690 | 0 | 0 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3693 | 90 | 90 | 20% | | | 80% | | | 0.5% | 0.0% | 0.0% | 2.0% | 0.0% | 0.0% | 100% |
| 3696 | 9 | 9 | 20% | | | 80% | | | 0.1% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| 3698 | 26 | 26 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.7% | 0.0% | 0.0% | 100% |
| 3699 | 0 | 0 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3700 | 64 | 64 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 1.8% | 0.0% | 0.0% | 100% |
| 3701 | 8 | 8 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| 3702 | 89 | 89 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 2.5% | 0.0% | 0.0% | 100% |
| 3703 | 25 | 25 | 20% | | | 80% | | | 0.1% | 0.0% | 0.0% | 0.6% | 0.0% | 0.0% | 100% |
| 3709 | 0 | 0 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3714 | 14 | 14 | 100% | | | | | | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3715 | 0 | 0 | 100% | | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3716 | 27 | 27 | 100% | | | | | | 0.8% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3717 | 35 | 35 | 100% | | | | | | 1.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3719 | 10 | 10 | 100% | | | | | | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3720 | 68 | 68 | 100% | | | | | | 1.9% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3721 | 44 | 44 | 100% | | | | | | 1.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3724 | 11 | 11 | | | 50% | 50% | | | 0.0% | 0.0% | 0.2% | 0.2% | 0.0% | 0.0% | 100% |
| 3810 | 29 | 29 | 100% | | | | | | 0.8% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3811 | 25 | 25 | 100% | | | | | | 0.7% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3812 | 0 | 0 | | | | | 100% | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3828 | 0 | 0 | | | 20% | 80% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3832 | 11 | 11 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.3% | 0.0% | 0.0% | 100% |
| 3835 | 61 | 61 | 20% | | | 80% | | | 0.3% | 0.0% | 0.0% | 1.4% | 0.0% | 0.0% | 100% |
| 3841 | 44 | 44 | | | 20% | 80% | | | 0.0% | 0.0% | 0.2% | 1.0% | 0.0% | 0.0% | 100% |
| 3847 | 61 | 61 | | | 80% | 20% | | | 0.0% | 0.0% | 1.4% | 0.3% | 0.0% | 0.0% | 100% |
| 3848 | 0 | 0 | | | 80% | 20% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3849 | 0 | 0 | | | 80% | 20% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3851 | 46 | 46 | | | 80% | 20% | | | 0.0% | 0.0% | 1.0% | 0.3% | 0.0% | 0.0% | 100% |
| 3853 | 6 | 6 | | | 80% | 20% | | | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 100% |
| 3854 | 61 | 61 | | | 80% | 20% | | | 0.0% | 0.0% | 1.4% | 0.3% | 0.0% | 0.0% | 100% |
| 3862 | 6 | 6 | | | 80% | 20% | | | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 100% |
| 3866 | 16 | 16 | | | 80% | 20% | | | 0.0% | 0.0% | 0.4% | 0.1% | 0.0% | 0.0% | 100% |
| 3867 | 0 | 0 | | | 80% | 20% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3868 | 107 | 107 | | 50% | | | 50% | | 0.0% | 1.5% | 0.0% | 0.0% | 1.5% | 0.0% | 100% |
| 3870 | 54 | 54 | | 100% | | | | | 0.0% | 1.5% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3874 | 0 | 0 | | 20% | 80% | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3877 | 10 | 10 | | 100% | | | | | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3878 | 11 | 11 | | 100% | | | | | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| PD 1 of Toronto | 134 | 134 | | 90% | | 10% | | | 0.0% | 3.4% | 0.0% | 0.4% | 0.0% | 0.0% | 100% |
| PD 10 of Toronto | 52 | 52 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 1.5% | 0.0% | 0.0% | 100% |
| PD 11 of Toronto | 48 | 48 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 1.4% | 0.0% | 0.0% | 100% |
| PD 12 of Toronto | 6 | 6 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| PD 2 of Toronto | 78 | 78 | | 90% | | 10% | | | 0.0% | 2.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| PD 3 of Toronto | 36 | 36 | | 90% | | 10% | | | 0.0% | 0.9% | 0.0% | 0.1% | 0.0% | 0.0% | 100% |
| PD 4 of Toronto | 22 | 22 | | 90% | | 10% | | | 0.0% | 0.6% | 0.0% | 0.1% | 0.0% | 0.0% | 100% |
| PD 5 of Toronto | 42 | 42 | | 50% | | 50% | | | 0.0% | 0.6% | 0.0% | 0.6% | 0.0% | 0.0% | 100% |
| PD 6 of Toronto | 0 | 0 | | 90% | | 10% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| PD 7 of Toronto | 45 | 45 | | 90% | | 10% | | | 0.0% | 1.1% | 0.0% | 0.1% | 0.0% | 0.0% | 100% |
| PD 8 of Toronto | 22 | 22 | | 10% | | 90% | | | 0.0% | 0.1% | 0.0% | 0.6% | 0.0% | 0.0% | 100% |
| PD 9 of Toronto | 49 | 49 | | 10% | | 90% | | | 0.0% | 0.1% | 0.0% | 1.2% | 0.0% | 0.0% | 100% |
| Brampton | 49 | 49 | 10% | | | 80% | | 10% | 0.1% | 0.0% | 0.0% | 1.1% | 0.0% | 0.1% | 100% |
| Burlington | 73 | 73 | | | | | | 100% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 2.1% | 100% |
| Caledon | 25 | 25 | | | | 80% | | 20% | 0.0% | 0.0% | 0.0% | 0.6% | 0.0% | 0.1% | 100% |
| City of Guelph | 26 | 26 | | | | | | 100% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.7% | 100% |
| Erin | 9 | 9 | 10% | | | 10% | | 80% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 100% |
| Halton Hills | 19 | 19 | | | | | | 100% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.5% | 100% |
| Milton | 49 | 49 | | | | | | 100% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 1.4% | 100% |
| Oakville | 279 | 279 | | 50% | | | | 50% | 0.0% | 3.9% | 0.0% | 0.0% | 0.0% | 3.9% | 100% |
| Vaughan | 42 | 42 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 1.2% | 0.0% | 0.0% | 100% |
| Waterloo | 10 | 10 | | | | | | 100% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 100% |
| **Total** | **3544** | **3544** | | | | | | | 15.6% | 27.4% | 12.2% | 26.3% | 8.2% | 10.3% | Check |
| | | | | | | | Rounded | | **15.0%** | **27.5%** | **12.5%** | **27.5%** | **7.5%** | **10.0%** | 100.0% |
| | | | | | | | Adopted | | 15.0% | 27.5% | 12.5% | 27.5% | 7.5% | 10.0% | 100% |

**TRIP DISTRIBUTION - INBOUND - RESIDENTIAL**

| ORIGIN | ESTINATIO | Total | Route Selection | | | | | | Trip Distribution | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | N Erin Mills | S Erin Mills | E B'Thorpe | E 403 | W B'Thorpe | W 403 | N Erin Mills | S Erin Mills | E B'Thorpe | E 403 | W B'Thorpe | W 403 | |
| Mississauga | 0 | 0 | | | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0% |
| 3601 | 64 | 64 | 100% | | | | | | 1.6% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3602 | 0 | 0 | 100% | | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3605 | 12 | 12 | 20% | | | 80% | | | 0.1% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| 3607 | 27 | 27 | 20% | | | 80% | | | 0.1% | 0.0% | 0.0% | 0.5% | 0.0% | 0.0% | 100% |
| 3609 | 10 | 10 | 20% | | | 80% | | | 0.1% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| 3610 | 21 | 21 | | | 50% | 50% | | | 0.0% | 0.0% | 0.3% | 0.3% | 0.0% | 0.0% | 100% |
| 3612 | 18 | 18 | 100% | | | | | | 0.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3613 | 136 | 136 | 100% | | | | | | 3.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3614 | 0 | 0 | | 80% | | | 20% | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3617 | 17 | 17 | 100% | | | | | | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3618 | 9 | 9 | 100% | | | | | | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3621 | 27 | 27 | 50% | | | 50% | | | 0.3% | 0.0% | 0.0% | 0.3% | 0.0% | 0.0% | 100% |
| 3623 | 24 | 24 | | 100% | | | | | 0.0% | 0.6% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3625 | 13 | 13 | 20% | | 80% | | | | 0.1% | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 100% |
| 3631 | 32 | 32 | | 20% | 80% | | | | 0.0% | 0.2% | 0.6% | 0.0% | 0.0% | 0.0% | 100% |
| 3632 | 0 | 0 | | 20% | 80% | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3633 | 5 | 5 | | 100% | | | | | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3634 | 113 | 113 | | 50% | | | 50% | | 0.0% | 1.4% | 0.0% | 0.0% | 1.4% | 0.0% | 100% |
| 3635 | 97 | 97 | | | | | 100% | | 0.0% | 0.0% | 0.0% | 0.0% | 2.5% | 0.0% | 100% |
| 3638 | 0 | 0 | 100% | | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3639 | 33 | 33 | | 100% | | | | | 0.0% | 0.8% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3640 | 6 | 6 | | 100% | | | | | 0.0% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3642 | 37 | 37 | | 50% | 50% | | | | 0.0% | 0.5% | 0.5% | 0.0% | 0.0% | 0.0% | 100% |
| 3644 | 0 | 0 | | 100% | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3645 | 12 | 12 | | 100% | | | | | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3649 | 0 | 0 | | 20% | | 80% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3650 | 29 | 29 | | 80% | | | 20% | | 0.0% | 0.6% | 0.0% | 0.0% | 0.1% | 0.0% | 100% |
| 3651 | 0 | 0 | | 80% | 20% | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3655 | 7 | 7 | | 50% | 50% | | | | 0.0% | 0.1% | 0.1% | 0.0% | 0.0% | 0.0% | 100% |
| 3656 | 0 | 0 | | 20% | | 80% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3662 | 219 | 219 | | 50% | | | 50% | | 0.0% | 2.8% | 0.0% | 0.0% | 2.8% | 0.0% | 100% |
| 3663 | 49 | 49 | | 100% | | | | | 0.0% | 1.2% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3664 | 29 | 29 | | 20% | 80% | | | | 0.0% | 0.1% | 0.6% | 0.0% | 0.0% | 0.0% | 100% |
| 3665 | 19 | 19 | | | 100% | | | | 0.0% | 0.0% | 0.5% | 0.0% | 0.0% | 0.0% | 100% |
| 3666 | 25 | 25 | | | 50% | 50% | | | 0.0% | 0.0% | 0.3% | 0.3% | 0.0% | 0.0% | 100% |
| 3667 | 18 | 18 | | | 50% | 50% | | | 0.0% | 0.0% | 0.2% | 0.2% | 0.0% | 0.0% | 100% |
| 3669 | 0 | 0 | | 50% | | 50% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3671 | 22 | 22 | | | 100% | | | | 0.0% | 0.0% | 0.6% | 0.0% | 0.0% | 0.0% | 100% |
| 3674 | 62 | 62 | | 50% | | 50% | | | 0.0% | 0.8% | 0.0% | 0.8% | 0.0% | 0.0% | 100% |
| 3675 | 12 | 12 | | 50% | | 50% | | | 0.0% | 0.2% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| 3676 | 28 | 28 | | | | | 100% | | 0.0% | 0.0% | 0.0% | 0.0% | 0.7% | 0.0% | 100% |
| 3677 | 173 | 173 | 17% | 17% | 17% | 17% | 17% | 17% | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% | 100% |
| 3678 | 45 | 45 | | | 100% | | | | 0.0% | 0.0% | 1.1% | 0.0% | 0.0% | 0.0% | 100% |
| 3680 | 12 | 12 | | | 20% | 80% | | | 0.0% | 0.0% | 0.1% | 0.2% | 0.0% | 0.0% | 100% |
| 3683 | 0 | 0 | 100% | | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3685 | 29 | 29 | | | 50% | 50% | | | 0.0% | 0.0% | 0.4% | 0.4% | 0.0% | 0.0% | 100% |
| 3690 | 54 | 54 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 1.4% | 0.0% | 0.0% | 100% |
| 3693 | 96 | 96 | 20% | | | 80% | | | 0.5% | 0.0% | 0.0% | 1.9% | 0.0% | 0.0% | 100% |
| 3696 | 9 | 9 | 20% | | | 80% | | | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| 3698 | 34 | 34 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.9% | 0.0% | 0.0% | 100% |
| 3699 | 8 | 8 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| 3700 | 64 | 64 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 1.6% | 0.0% | 0.0% | 100% |
| 3701 | 55 | 55 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 1.4% | 0.0% | 0.0% | 100% |
| 3702 | 24 | 24 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.6% | 0.0% | 0.0% | 100% |
| 3703 | 14 | 14 | 20% | | | 80% | | | 0.1% | 0.0% | 0.0% | 0.3% | 0.0% | 0.0% | 100% |
| 3709 | 9 | 9 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| 3714 | 29 | 29 | 100% | | | | | | 0.7% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3715 | 41 | 41 | 100% | | | | | | 1.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3716 | 0 | 0 | 100% | | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3717 | 8 | 8 | 100% | | | | | | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3719 | 10 | 10 | 100% | | | | | | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3720 | 68 | 68 | 100% | | | | | | 1.7% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3721 | 12 | 12 | 100% | | | | | | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3724 | 11 | 11 | | | 50% | 50% | | | 0.0% | 0.0% | 0.1% | 0.1% | 0.0% | 0.0% | 100% |
| 3810 | 6 | 6 | 100% | | | | | | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3811 | 0 | 0 | 100% | | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3812 | 16 | 16 | | | | | 100% | | 0.0% | 0.0% | 0.0% | 0.0% | 0.4% | 0.0% | 100% |
| 3828 | 19 | 19 | | | 20% | 80% | | | 0.0% | 0.0% | 0.1% | 0.4% | 0.0% | 0.0% | 100% |
| 3832 | 0 | 0 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3835 | 70 | 70 | 20% | | | 80% | | | 0.4% | 0.0% | 0.0% | 1.4% | 0.0% | 0.0% | 100% |
| 3841 | 44 | 44 | | | 20% | 80% | | | 0.0% | 0.0% | 0.2% | 0.9% | 0.0% | 0.0% | 100% |
| 3847 | 61 | 61 | | | 80% | 20% | | | 0.0% | 0.0% | 1.2% | 0.3% | 0.0% | 0.0% | 100% |
| 3848 | 37 | 37 | | | 80% | 20% | | | 0.0% | 0.0% | 0.8% | 0.2% | 0.0% | 0.0% | 100% |
| 3849 | 37 | 37 | | | 80% | 20% | | | 0.0% | 0.0% | 0.8% | 0.2% | 0.0% | 0.0% | 100% |
| 3851 | 34 | 34 | | | 80% | 20% | | | 0.0% | 0.0% | 0.7% | 0.2% | 0.0% | 0.0% | 100% |
| 3853 | 6 | 6 | | | 80% | 20% | | | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 100% |
| 3854 | 31 | 31 | | | 80% | 20% | | | 0.0% | 0.0% | 0.6% | 0.2% | 0.0% | 0.0% | 100% |
| 3862 | 54 | 54 | | | 80% | 20% | | | 0.0% | 0.0% | 1.1% | 0.3% | 0.0% | 0.0% | 100% |
| 3866 | 0 | 0 | | | 80% | 20% | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3867 | 10 | 10 | | | 80% | 20% | | | 0.0% | 0.0% | 0.2% | 0.1% | 0.0% | 0.0% | 100% |
| 3868 | 102 | 102 | | 50% | | | 50% | | 0.0% | 1.3% | 0.0% | 0.0% | 1.3% | 0.0% | 100% |
| 3870 | 84 | 84 | | 100% | | | | | 0.0% | 2.1% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3874 | 37 | 37 | | 20% | 80% | | | | 0.0% | 0.2% | 0.8% | 0.0% | 0.0% | 0.0% | 100% |
| 3877 | 10 | 10 | | 100% | | | | | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| 3878 | 0 | 0 | | 100% | | | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| PD 1 of Toronto | 231 | 231 | | 90% | | 10% | | | 0.0% | 5.3% | 0.0% | 0.6% | 0.0% | 0.0% | 100% |
| PD 10 of Toronto | 74 | 74 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 1.9% | 0.0% | 0.0% | 100% |
| PD 11 of Toronto | 26 | 26 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.7% | 0.0% | 0.0% | 100% |
| PD 12 of Toronto | 6 | 6 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| PD 2 of Toronto | 78 | 78 | | 90% | | 10% | | | 0.0% | 1.8% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| PD 3 of Toronto | 48 | 48 | | 90% | | 10% | | | 0.0% | 1.1% | 0.0% | 0.1% | 0.0% | 0.0% | 100% |
| PD 4 of Toronto | 52 | 52 | | 90% | | 10% | | | 0.0% | 1.2% | 0.0% | 0.1% | 0.0% | 0.0% | 100% |
| PD 5 of Toronto | 42 | 42 | | 50% | | 50% | | | 0.0% | 0.5% | 0.0% | 0.5% | 0.0% | 0.0% | 100% |
| PD 6 of Toronto | 16 | 16 | | 90% | | 10% | | | 0.0% | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| PD 7 of Toronto | 42 | 42 | | 90% | | 10% | | | 0.0% | 1.0% | 0.0% | 0.1% | 0.0% | 0.0% | 100% |
| PD 8 of Toronto | 88 | 88 | | 10% | | 90% | | | 0.0% | 0.2% | 0.0% | 2.0% | 0.0% | 0.0% | 100% |
| PD 9 of Toronto | 42 | 42 | | 10% | | 90% | | | 0.0% | 0.1% | 0.0% | 1.0% | 0.0% | 0.0% | 100% |
| Brampton | 12 | 12 | 10% | | | 80% | | 10% | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 100% |
| Burlington | 19 | 19 | | | | | | 100% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.5% | 100% |
| Caledon | 16 | 16 | | | | 80% | | 20% | 0.0% | 0.0% | 0.0% | 0.3% | 0.0% | 0.1% | 100% |
| City of Guelph | 26 | 26 | | | | | | 100% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.7% | 100% |
| Erin | 9 | 9 | 10% | | | 10% | | 80% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 100% |
| Halton Hills | 0 | 0 | | | | | | 100% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100% |
| Milton | 9 | 9 | | | | | | 100% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 100% |
| Oakville | 325 | 325 | | 50% | | | | 50% | 0.0% | 4.1% | 0.0% | 0.0% | 0.0% | 4.1% | 100% |
| Vaughan | 81 | 81 | | | | 100% | | | 0.0% | 0.0% | 0.0% | 2.1% | 0.0% | 0.0% | 100% |
| Waterloo | 7 | 7 | | | | | | 100% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 100% |
| **Total** | **3944** | **3944** | | | | | | | 13.0% | 30.1% | 12.9% | 27.4% | 10.0% | 6.7% | Check |
| | | | | | | | Rounded | | **12.5%** | **30.0%** | **12.5%** | **27.5%** | **10.0%** | **7.5%** | 100.0% |
| | | | | | | | Adopted | | 12.5% | 30.0% | 12.5% | 27.5% | 10.0% | 7.5% | 100% |

# MODE SPLIT DATA

Tue Feb 22 2022 11:57:57 GMT+0100 (Central European Standard Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode_prime

Filters:
2006 GTA 3676 3663
and
Start time of trip - start_time In 600-859
and
Trip purpose of origin - purp_orig In H

Table: Trip 2016

| Row: | Count: | Expanded: | |
|---|---|---|---|
| Transit exc | 9 | 233 | 5% |
| Cycle | 3 | 88 | 2% |
| Auto drive | 176 | 3099 | 67% |
| GO rail onl | 18 | 287 | 6% |
| Joint GO ra | 4 | 60 | 1% |
| Auto passe | 30 | 484 | 10% |
| School bus | 9 | 177 | 4% |
| Walk | 9 | 198 | 4% |
| **Total:** | **258** | **4625** | **100%** |

Tue Feb 22 2022 11:58:41 GMT+0100 (Central European Standard Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode_prime

Filters:
2006 GTA 3676 3663
and
Start time of trip - start_time In 1500-1759
and
Trip purpose of destination - purp_dest In H

Table: Trip 2016

| Row: | Count: | Expanded: | |
|---|---|---|---|
| Transit exc | 11 | 213 | 4% |
| Cycle | 1 | 7 | 0% |
| Auto drive | 192 | 3419 | 72% |
| GO rail onl | 15 | 251 | 5% |
| Joint GO ra | 2 | 35 | 1% |
| Auto passe | 35 | 449 | 9% |
| School bus | 7 | 126 | 3% |
| Taxi passe | 3 | 95 | 2% |
| Walk | 9 | 167 | 4% |
| **Total:** | **275** | **4761** | **100%** |

# APPENDIX F:
# Intergreen Calibration

**Project No:** 8143.01
**Project:** 4099 Erin Mills Parkway
**Study Location:** Erin Mills Parkway / Burnhamthorpe Rd
**Study Date:** Tue, Feb 22, 2022
**Peak Hour:** 16:30-17:30

**INTERGREEN STUDY**

**Northbound**

| Start Time | Cycle No. | Left Turn Advance | Left Turn Regular | Total Left Turns | Thru Regular |
|---|---|---|---|---|---|
| 16:30 | 1 | 2 | 2 | 4 | 1 |
| 16:33 | 2 | 1 | 1 | 2 | 1 |
| 16:37 | 3 | 2 | 2 | 4 | 0 |
| 16:38 | 4 | 1 | 0 | 1 | 6 |
| 16:41 | 5 | 1 | 1 | 2 | 4 |
| 16:43 | 6 | 1 | 1 | 2 | 6 |
| 16:46 | 7 | 1 | 2 | 3 | 7 |
| 16:49 | 8 | 2 | 0 | 2 | 4 |
| 16:51 | 9 | 1 | 0 | 1 | 6 |
| 16:54 | 10 | 2 | 2 | 4 | 1 |
| 16:57 | 11 | 2 | 2 | 4 | 7 |
| 17:00 | 12 | 1 | 0 | 1 | 4 |
| 17:02 | 13 | 2 | 2 | 4 | 4 |
| 17:05 | 14 | 0 | 0 | 0 | 2 |
| 17:07 | 15 | 1 | 3 | 4 | 3 |
| 17:10 | 16 | 1 | 3 | 4 | 3 |
| 17:13 | 17 | 1 | 0 | 1 | 2 |
| 17:15 | 18 | 0 | 2 | 2 | 5 |
| 17:18 | 19 | 1 | 0 | 1 | 7 |
| 17:21 | 20 | 1 | 1 | 2 | 4 |
| 17:23 | 21 | 1 | 0 | 1 | 7 |
| 17:26 | 22 | 1 | 2 | 3 | 4 |
| 17:29 | 23 | 2 | 0 | 2 | 8 |
| **Total** | | **28** | **26** | **54** | **96** |
| **Vehicles per Cycle** | | **1.22** | **1.13** | **2.35** | **4.17** |

# APPENDIX G:
# Synchro Worksheets

## Timings
### 1: Erin Mills Pkwy & Folkway Dr

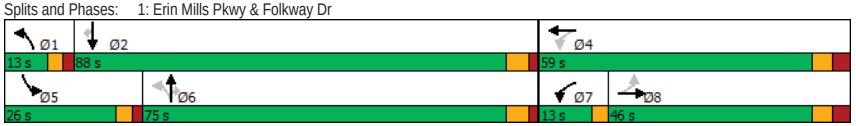
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 150 | 55 | 60 | 10 | 1320 | 15 | 80 | 1435 | 65 |
| Future Volume (vph) | 225 | 150 | 55 | 60 | 10 | 1320 | 15 | 80 | 1435 | 65 |
| Turn Type | Perm | NA | pm+pt | NA | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | | 6 | | | 2 |
| Detector Phase | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 |
| Minimum Split (s) | 58.5 | 58.5 | 8.0 | 44.5 | 13.0 | 46.2 | 46.2 | 25.0 | 26.2 | 26.2 |
| Total Split (s) | 46.0 | 46.0 | 13.0 | 59.0 | 13.0 | 75.0 | 75.0 | 26.0 | 88.0 | 88.0 |
| Total Split (%) | 28.8% | 28.8% | 8.1% | 36.9% | 8.1% | 46.9% | 46.9% | 16.3% | 55.0% | 55.0% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 3.5 | 3.5 | 0.0 | 3.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 3.0 | 7.5 | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lead/Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 38.7 | 38.7 | 52.9 | 48.4 | 79.9 | 70.7 | 70.7 | 12.7 | 83.6 | 83.6 |
| Actuated g/C Ratio | 0.26 | 0.26 | 0.35 | 0.32 | 0.53 | 0.47 | 0.47 | 0.08 | 0.56 | 0.56 |
| v/c Ratio | 0.98 | 0.45 | 0.16 | 0.52 | 0.05 | 0.56 | 0.02 | 0.58 | 0.52 | 0.08 |
| Control Delay | 109.2 | 49.9 | 34.9 | 25.6 | 14.0 | 30.6 | 0.1 | 83.7 | 23.0 | 2.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 109.2 | 49.9 | 34.9 | 25.6 | 14.0 | 30.6 | 0.1 | 83.7 | 23.0 | 2.0 |
| LOS | F | D | C | C | B | C | A | F | C | A |
| Approach Delay | | 80.9 | | 27.0 | | 30.1 | | | 25.2 | |
| Approach LOS | | F | | C | | C | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 150.6
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 33.6 — Intersection LOS: C
Intersection Capacity Utilization 97.6% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Erin Mills Pkwy & Folkway Dr






## Queues
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 225 | 205 | 55 | 325 | 10 | 1320 | 15 | 80 | 1435 | 65 |
| v/c Ratio | 0.98 | 0.45 | 0.16 | 0.52 | 0.05 | 0.56 | 0.02 | 0.58 | 0.52 | 0.08 |
| Control Delay | 109.2 | 49.9 | 34.9 | 25.6 | 14.0 | 30.6 | 0.1 | 83.7 | 23.0 | 2.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 109.2 | 49.9 | 34.9 | 25.6 | 14.0 | 30.6 | 0.1 | 83.7 | 23.0 | 2.0 |
| Queue Length 50th (m) | 67.7 | 49.4 | 10.8 | 41.9 | 1.2 | 105.8 | 0.0 | 23.6 | 92.1 | 0.0 |
| Queue Length 95th (m) | #131.7 | 79.7 | 22.5 | 76.9 | 4.0 | 128.8 | 0.0 | 42.2 | 127.0 | 4.7 |
| Internal Link Dist (m) | | 124.3 | | 58.7 | | 138.6 | | | 454.7 | |
| Turn Bay Length (m) | 45.0 | | 55.0 | | 90.0 | | 105.0 | 185.0 | | 140.0 |
| Base Capacity (vph) | 230 | 456 | 349 | 653 | 222 | 2367 | 790 | 231 | 2745 | 828 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.98 | 0.45 | 0.16 | 0.50 | 0.05 | 0.56 | 0.02 | 0.35 | 0.52 | 0.08 |

**Intersection Summary**

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

## HCM Signalized Intersection Capacity Analysis
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 150 | 55 | 55 | 60 | 265 | 10 | 1320 | 15 | 80 | 1435 | 65 |
| Future Volume (vph) | 225 | 150 | 55 | 55 | 60 | 265 | 10 | 1320 | 15 | 80 | 1435 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.96 |
| Flpb, ped/bikes | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.96 | | 1.00 | 0.88 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1736 | 1746 | | 1679 | 1620 | | 1785 | 5043 | 1550 | 1653 | 4948 | 1427 |
| Flt Permitted | 0.49 | 1.00 | | 0.47 | 1.00 | | 0.14 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 899 | 1746 | | 836 | 1620 | | 268 | 5043 | 1550 | 1653 | 4948 | 1427 |
| 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) | 225 | 150 | 55 | 55 | 60 | 265 | 10 | 1320 | 15 | 80 | 1435 | 65 |
| RTOR Reduction (vph) | 0 | 8 | 0 | 0 | 100 | 0 | 0 | 0 | 8 | 0 | 0 | 30 |
| Lane Group Flow (vph) | 225 | 197 | 0 | 55 | 225 | 0 | 10 | 1320 | 7 | 80 | 1435 | 35 |
| Confl. Peds. (#/hr) | 10 | | 10 | 10 | | 10 | 4 | | 5 | 5 | | 4 |
| Heavy Vehicles (%) | 2% | 5% | 5% | 6% | 2% | 2% | 0% | 4% | 0% | 8% | 6% | 8% |
| Turn Type | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | | 4 | | | 6 | | 6 | | | 2 |
| Actuated Green, G (s) | 38.7 | 38.7 | | 49.1 | 49.1 | | 76.9 | 73.9 | 73.9 | 12.7 | 83.6 | 83.6 |
| Effective Green, g (s) | 38.7 | 38.7 | | 49.1 | 49.1 | | 76.9 | 73.9 | 73.9 | 12.7 | 83.6 | 83.6 |
| Actuated g/C Ratio | 0.25 | 0.25 | | 0.32 | 0.32 | | 0.50 | 0.48 | 0.48 | 0.08 | 0.54 | 0.54 |
| Clearance Time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 225 | 437 | | 306 | 515 | | 162 | 2413 | 741 | 135 | 2679 | 772 |
| v/s Ratio Prot | | 0.11 | | 0.01 | c0.14 | | 0.00 | 0.26 | | c0.05 | c0.29 | |
| v/s Ratio Perm | c0.25 | | | 0.05 | | | 0.03 | | 0.00 | | | 0.02 |
| v/c Ratio | 1.00 | 0.45 | | 0.18 | 0.44 | | 0.06 | 0.55 | 0.01 | 0.59 | 0.54 | 0.05 |
| Uniform Delay, d1 | 57.9 | 48.9 | | 37.5 | 41.7 | | 20.2 | 28.4 | 21.1 | 68.4 | 22.9 | 16.6 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 60.0 | 0.7 | | 0.3 | 0.6 | | 0.2 | 0.9 | 0.0 | 6.8 | 0.8 | 0.1 |
| Delay (s) | 117.8 | 49.6 | | 37.8 | 42.3 | | 20.3 | 29.3 | 21.1 | 75.2 | 23.6 | 16.8 |
| Level of Service | F | D | | D | D | | C | C | C | E | C | B |
| Approach Delay (s) | | 85.3 | | | 41.6 | | | 29.2 | | | 26.0 | |
| Approach LOS | | F | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 35.5 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 154.4 | Sum of lost time (s) | 21.7 |
| Intersection Capacity Utilization | 97.6% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 2: Erin Mills Pkwy & Site Access

07/05/2022

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 1340 | 20 | 0 | 1545 |
| Future Volume (Veh/h) | 0 | 5 | 1340 | 20 | 0 | 1545 |
| 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 | 5 | 1340 | 20 | 0 | 1545 |
| Pedestrians | 1 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | 162 |
| pX, platoon unblocked | 0.82 | | | | | |
| vC, conflicting volume | 1856 | 448 | | | 1361 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1258 | 448 | | | 1361 | |
| tC, single (s) | 6.8 | 7.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.5 | | | 2.2 | |
| p0 queue free % | 100 | 99 | | | 100 | |
| cM capacity (veh/h) | 135 | 519 | | | 511 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 5 | 447 | 447 | 447 | 20 | 515 | 515 | 515 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 5 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| cSH | 519 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.26 | 0.26 | 0.26 | 0.01 | 0.30 | 0.30 | 0.30 |
| Queue Length 95th (m) | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 12.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | | | | |
| Approach Delay (s) | 12.0 | 0.0 | | | | 0.0 | | |
| Approach LOS | B | | | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 35.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## Timings
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

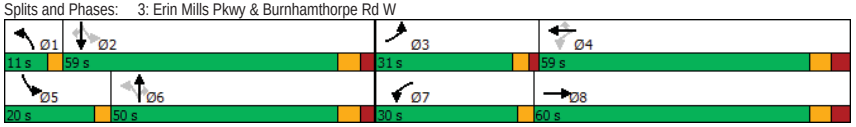
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 215 | 420 | 265 | 445 | 210 | 95 | 935 | 170 | 220 | 1135 | 190 |
| Future Volume (vph) | 215 | 420 | 265 | 445 | 210 | 95 | 935 | 170 | 220 | 1135 | 190 |
| Turn Type | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 10.0 | 58.9 | 8.0 | 58.9 | 58.9 | 8.0 | 47.1 | 47.1 | 8.0 | 47.1 | 47.1 |
| Total Split (s) | 31.0 | 60.0 | 30.0 | 59.0 | 59.0 | 11.0 | 50.0 | 50.0 | 20.0 | 59.0 | 59.0 |
| Total Split (%) | 19.4% | 37.5% | 18.8% | 36.9% | 36.9% | 6.9% | 31.3% | 31.3% | 12.5% | 36.9% | 36.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 2.0 | 3.9 | 0.0 | 3.9 | 3.9 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 7.9 | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 21.2 | 26.3 | 47.2 | 22.6 | 22.6 | 56.7 | 44.9 | 44.9 | 67.0 | 52.2 | 52.2 |
| Actuated g/C Ratio | 0.17 | 0.21 | 0.37 | 0.18 | 0.18 | 0.45 | 0.35 | 0.35 | 0.53 | 0.41 | 0.41 |
| v/c Ratio | 0.77 | 0.51 | 0.63 | 0.71 | 0.49 | 0.40 | 0.53 | 0.26 | 0.63 | 0.55 | 0.27 |
| Control Delay | 69.3 | 42.6 | 31.9 | 55.8 | 9.9 | 22.9 | 35.7 | 5.9 | 26.3 | 30.9 | 4.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 69.3 | 42.6 | 31.9 | 55.8 | 9.9 | 22.9 | 35.7 | 5.9 | 26.3 | 30.9 | 4.8 |
| LOS | E | D | C | E | A | C | D | A | C | C | A |
| Approach Delay | | 50.3 | | 38.4 | | | 30.5 | | | 27.1 | |
| Approach LOS | | D | | D | | | C | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 126.9
Natural Cycle: 135
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 34.3 — Intersection LOS: C
Intersection Capacity Utilization 94.4% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Erin Mills Pkwy & Burnhamthorpe Rd W






## Queues
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 215 | 530 | 265 | 445 | 210 | 95 | 935 | 170 | 220 | 1135 | 190 |
| v/c Ratio | 0.77 | 0.51 | 0.63 | 0.71 | 0.49 | 0.40 | 0.53 | 0.26 | 0.63 | 0.55 | 0.27 |
| Control Delay | 69.3 | 42.6 | 31.9 | 55.8 | 9.9 | 22.9 | 35.7 | 5.9 | 26.3 | 30.9 | 4.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 69.3 | 42.6 | 31.9 | 55.8 | 9.9 | 22.9 | 35.7 | 5.9 | 26.3 | 30.9 | 4.8 |
| Queue Length 50th (m) | 52.2 | 39.8 | 44.6 | 56.0 | 0.0 | 11.8 | 70.5 | 0.0 | 29.6 | 80.2 | 0.0 |
| Queue Length 95th (m) | 83.7 | 54.3 | 65.2 | 76.0 | 20.8 | 24.4 | 95.1 | 16.3 | 52.6 | 107.1 | 15.4 |
| Internal Link Dist (m) | | 139.0 | | 165.8 | | | 355.9 | | | 528.1 | |
| Turn Bay Length (m) | 100.0 | | 95.0 | | 140.0 | 175.0 | | 200.0 | 160.0 | | 180.0 |
| Base Capacity (vph) | 347 | 2033 | 507 | 1435 | 708 | 243 | 1751 | 645 | 374 | 2054 | 710 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.62 | 0.26 | 0.52 | 0.31 | 0.30 | 0.39 | 0.53 | 0.26 | 0.59 | 0.55 | 0.27 |

**Intersection Summary**

## HCM Signalized Intersection Capacity Analysis
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 215 | 420 | 110 | 265 | 445 | 210 | 95 | 935 | 170 | 220 | 1135 | 190 |
| Future Volume (vph) | 215 | 420 | 110 | 265 | 445 | 210 | 95 | 935 | 170 | 220 | 1135 | 190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.97 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1684 | 4862 | | 1668 | 3544 | 1442 | 1699 | 4948 | 1513 | 1716 | 4995 | 1459 |
| Flt Permitted | 0.95 | 1.00 | | 0.43 | 1.00 | 1.00 | 0.20 | 1.00 | 1.00 | 0.20 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1684 | 4862 | | 759 | 3544 | 1442 | 350 | 4948 | 1513 | 363 | 4995 | 1459 |
| 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 | 420 | 110 | 265 | 445 | 210 | 95 | 935 | 170 | 220 | 1135 | 190 |
| RTOR Reduction (vph) | 0 | 35 | 0 | 0 | 0 | 172 | 0 | 0 | 110 | 0 | 0 | 112 |
| Lane Group Flow (vph) | 215 | 495 | 0 | 265 | 445 | 38 | 95 | 935 | 60 | 220 | 1135 | 78 |
| Confl. Peds. (#/hr) | 5 | | 1 | 1 | | 5 | 11 | | 3 | 3 | | 11 |
| Heavy Vehicles (%) | 6% | 3% | 9% | 7% | 3% | 9% | 5% | 6% | 4% | 4% | 5% | 7% |
| Turn Type | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Actuated Green, G (s) | 21.2 | 26.3 | | 42.3 | 22.7 | 22.7 | 52.6 | 44.9 | 44.9 | 62.9 | 52.2 | 52.2 |
| Effective Green, g (s) | 21.2 | 26.3 | | 42.3 | 22.7 | 22.7 | 52.6 | 44.9 | 44.9 | 62.9 | 52.2 | 52.2 |
| Actuated g/C Ratio | 0.17 | 0.21 | | 0.33 | 0.18 | 0.18 | 0.41 | 0.35 | 0.35 | 0.50 | 0.41 | 0.41 |
| Clearance Time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 281 | 1008 | | 393 | 634 | 258 | 227 | 1752 | 535 | 340 | 2056 | 600 |
| v/s Ratio Prot | c0.13 | c0.10 | | 0.10 | c0.13 | | 0.03 | 0.19 | | c0.08 | 0.23 | |
| v/s Ratio Perm | | | | 0.12 | | 0.03 | 0.15 | | 0.04 | c0.24 | | 0.05 |
| v/c Ratio | 0.77 | 0.49 | | 0.67 | 0.70 | 0.15 | 0.42 | 0.53 | 0.11 | 0.65 | 0.55 | 0.13 |
| Uniform Delay, d1 | 50.4 | 44.3 | | 33.5 | 48.9 | 43.9 | 23.3 | 32.6 | 27.5 | 20.0 | 28.4 | 23.2 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 11.7 | 0.4 | | 4.5 | 3.5 | 0.3 | 1.2 | 1.2 | 0.4 | 4.2 | 1.1 | 0.4 |
| Delay (s) | 62.1 | 44.7 | | 38.0 | 52.4 | 44.1 | 24.6 | 33.8 | 28.0 | 24.2 | 29.5 | 23.6 |
| Level of Service | E | D | | D | D | D | C | C | C | C | C | C |
| Approach Delay (s) | | 49.8 | | | 46.4 | | | 32.2 | | | 28.0 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 36.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 126.8 | Sum of lost time (s) | 23.0 |
| Intersection Capacity Utilization | 94.4% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 4: Site Access & Folkway Dr

07/05/2022

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 215 | 30 | 10 | 365 | 15 | 5 |
| Future Volume (Veh/h) | 215 | 30 | 10 | 365 | 15 | 5 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 229 | 32 | 11 | 388 | 16 | 5 |
| Pedestrians | | | | | 4 | |
| Lane Width (m) | | | | | 3.5 | |
| Walking Speed (m/s) | | | | | 1.1 | |
| Percent Blockage | | | | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 83 | | | | | |
| pX, platoon unblocked | | | 0.92 | | 0.92 | 0.92 |
| vC, conflicting volume | | | 265 | | 659 | 249 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 155 | | 584 | 138 |
| tC, single (s) | | | 4.2 | | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.3 | | 3.6 | 3.3 |
| p0 queue free % | | | 99 | | 96 | 99 |
| cM capacity (veh/h) | | | 1260 | | 424 | 838 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 261 | 399 | 21 |
| Volume Left | 0 | 11 | 16 |
| Volume Right | 32 | 0 | 5 |
| cSH | 1700 | 1260 | 480 |
| Volume to Capacity | 0.15 | 0.01 | 0.04 |
| Queue Length 95th (m) | 0.0 | 0.2 | 1.0 |
| Control Delay (s) | 0.0 | 0.3 | 12.8 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 0.3 | 12.8 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.6 | | |
| Intersection Capacity Utilization | 37.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 5: Sawmill Valley Dr & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 30 | 65 | 125 | 15 | 130 | 0 | 200 | 10 | 10 | 0 | 15 | 45 |
| Future Volume (vph) | 30 | 65 | 125 | 15 | 130 | 0 | 200 | 10 | 10 | 0 | 15 | 45 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 32 | 69 | 133 | 16 | 138 | 0 | 213 | 11 | 11 | 0 | 16 | 48 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 234 | 154 | 235 | 64 |
| Volume Left (vph) | 32 | 16 | 213 | 0 |
| Volume Right (vph) | 133 | 0 | 11 | 48 |
| Hadj (s) | -0.23 | 0.07 | 0.21 | -0.39 |
| Departure Headway (s) | 4.7 | 5.1 | 5.2 | 4.8 |
| Degree Utilization, x | 0.30 | 0.22 | 0.34 | 0.09 |
| Capacity (veh/h) | 717 | 656 | 656 | 661 |
| Control Delay (s) | 9.7 | 9.5 | 10.8 | 8.3 |
| Approach Delay (s) | 9.7 | 9.5 | 10.8 | 8.3 |
| Approach LOS | A | A | B | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | 9.9 | | |
| Level of Service | | A | | |
| Intersection Capacity Utilization | | 44.5% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
## 6: Sawmill Valley Dr & Site Access

07/05/2022

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 220 | 155 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 220 | 155 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 265 | 187 | 0 |
| Pedestrians | 6 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 1 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 458 | 193 | 193 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 458 | 193 | 193 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 561 | 849 | 1385 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 0 | 265 | 187 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1700 | 1385 | 1700 |
| Volume to Capacity | 0.05 | 0.00 | 0.11 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | |
| Approach Delay (s) | 0.0 | 0.0 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 0.0 | | |
| Intersection Capacity Utilization | | 14.9% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

## Timings
### 1: Erin Mills Pkwy & Folkway Dr

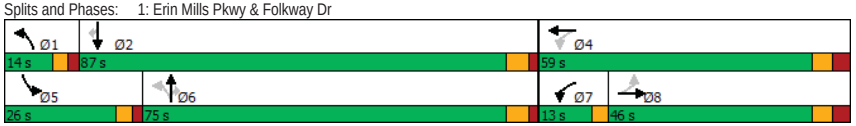
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 85 | 100 | 90 | 110 | 30 | 2170 | 50 | 220 | 1685 | 90 |
| Future Volume (vph) | 85 | 100 | 90 | 110 | 30 | 2170 | 50 | 220 | 1685 | 90 |
| Turn Type | Perm | NA | pm+pt | NA | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | | 6 | | | 2 |
| Detector Phase | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 |
| Minimum Split (s) | 58.5 | 58.5 | 8.0 | 44.5 | 13.0 | 46.2 | 46.2 | 25.0 | 26.2 | 26.2 |
| Total Split (s) | 46.0 | 46.0 | 13.0 | 59.0 | 14.0 | 75.0 | 75.0 | 26.0 | 87.0 | 87.0 |
| Total Split (%) | 28.8% | 28.8% | 8.1% | 36.9% | 8.8% | 46.9% | 46.9% | 16.3% | 54.4% | 54.4% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 3.5 | 3.5 | 0.0 | 3.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 3.0 | 7.5 | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lead/Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 18.8 | 18.8 | 35.7 | 31.1 | 78.3 | 69.0 | 69.0 | 20.5 | 87.0 | 87.0 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.26 | 0.22 | 0.56 | 0.49 | 0.49 | 0.15 | 0.62 | 0.62 |
| v/c Ratio | 0.94 | 0.55 | 0.31 | 0.80 | 0.14 | 0.86 | 0.06 | 0.84 | 0.53 | 0.09 |
| Control Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.4 | 36.4 | 0.1 | 85.5 | 17.3 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.4 | 36.4 | 0.1 | 85.5 | 17.3 | 3.2 |
| LOS | F | E | D | D | B | D | A | F | B | A |
| Approach Delay | | 89.7 | | 51.9 | | 35.2 | | | 24.2 | |
| Approach LOS | | F | | D | | D | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 139.4
Natural Cycle: 150
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 34.7 — Intersection LOS: C
Intersection Capacity Utilization 106.9% — ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: Erin Mills Pkwy & Folkway Dr






## Queues
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 85 | 140 | 90 | 345 | 30 | 2170 | 50 | 220 | 1685 | 90 |
| v/c Ratio | 0.94 | 0.55 | 0.31 | 0.80 | 0.14 | 0.86 | 0.06 | 0.84 | 0.53 | 0.09 |
| Control Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.4 | 36.4 | 0.1 | 85.5 | 17.3 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.4 | 36.4 | 0.1 | 85.5 | 17.3 | 3.2 |
| Queue Length 50th (m) | 23.7 | 33.7 | 19.6 | 73.4 | 2.5 | 191.5 | 0.0 | 60.0 | 101.8 | 0.0 |
| Queue Length 95th (m) | #48.0 | 55.0 | 33.6 | 108.6 | 7.2 | 244.6 | 0.0 | #112.1 | 136.7 | 8.2 |
| Internal Link Dist (m) | | 124.3 | | 65.0 | | 138.6 | | | 454.7 | |
| Turn Bay Length (m) | 45.0 | | 55.0 | | 90.0 | | 105.0 | 185.0 | | 140.0 |
| Base Capacity (vph) | 187 | 511 | 295 | 672 | 229 | 2522 | 815 | 269 | 3209 | 975 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.45 | 0.27 | 0.31 | 0.51 | 0.13 | 0.86 | 0.06 | 0.82 | 0.53 | 0.09 |

**Intersection Summary**

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

## HCM Signalized Intersection Capacity Analysis
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 85 | 100 | 40 | 90 | 110 | 235 | 30 | 2170 | 50 | 220 | 1685 | 90 |
| Future Volume (vph) | 85 | 100 | 40 | 90 | 110 | 235 | 30 | 2170 | 50 | 220 | 1685 | 90 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 |
| Flpb, ped/bikes | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.96 | | 1.00 | 0.90 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1736 | 1814 | | 1778 | 1695 | | 1785 | 5092 | 1526 | 1785 | 5142 | 1515 |
| Flt Permitted | 0.37 | 1.00 | | 0.49 | 1.00 | | 0.12 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 675 | 1814 | | 914 | 1695 | | 228 | 5092 | 1526 | 1785 | 5142 | 1515 |
| 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) | 85 | 100 | 40 | 90 | 110 | 235 | 30 | 2170 | 50 | 220 | 1685 | 90 |
| RTOR Reduction (vph) | 0 | 10 | 0 | 0 | 55 | 0 | 0 | 0 | 25 | 0 | 0 | 35 |
| Lane Group Flow (vph) | 85 | 130 | 0 | 90 | 290 | 0 | 30 | 2170 | 25 | 220 | 1685 | 55 |
| Confl. Peds. (#/hr) | 12 | | 13 | 13 | | 12 | 9 | | 3 | 3 | | 9 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 0% | 0% | 0% | 3% | 2% | 0% | 2% | 0% |
| Turn Type | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | | 4 | | | 6 | | 6 | | | 2 |
| Actuated Green, G (s) | 18.8 | 18.8 | | 31.2 | 31.2 | | 75.7 | 71.1 | 71.1 | 20.5 | 87.0 | 87.0 |
| Effective Green, g (s) | 18.8 | 18.8 | | 31.2 | 31.2 | | 75.7 | 71.1 | 71.1 | 20.5 | 87.0 | 87.0 |
| Actuated g/C Ratio | 0.13 | 0.13 | | 0.22 | 0.22 | | 0.53 | 0.50 | 0.50 | 0.14 | 0.61 | 0.61 |
| Clearance Time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 89 | 241 | | 258 | 373 | | 172 | 2558 | 766 | 258 | 3161 | 931 |
| v/s Ratio Prot | | 0.07 | | 0.02 | c0.17 | | 0.01 | c0.43 | | c0.12 | 0.33 | |
| v/s Ratio Perm | c0.13 | | | 0.05 | | | 0.09 | | 0.02 | | | 0.04 |
| v/c Ratio | 0.96 | 0.54 | | 0.35 | 0.78 | | 0.17 | 0.85 | 0.03 | 0.85 | 0.53 | 0.06 |
| Uniform Delay, d1 | 60.9 | 57.3 | | 45.4 | 51.9 | | 15.7 | 30.5 | 17.8 | 59.0 | 15.6 | 10.9 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 79.9 | 2.3 | | 0.8 | 9.8 | | 0.5 | 3.7 | 0.1 | 22.8 | 0.6 | 0.1 |
| Delay (s) | 140.8 | 59.6 | | 46.2 | 61.6 | | 16.2 | 34.3 | 17.9 | 81.9 | 16.3 | 11.0 |
| Level of Service | F | E | | D | E | | B | C | B | F | B | B |
| Approach Delay (s) | | 90.3 | | | 58.4 | | | 33.7 | | | 23.3 | |
| Approach LOS | | F | | | E | | | C | | | C | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| HCM 2000 Control Delay | 34.2 | HCM 2000 Level of Service | C | |
| HCM 2000 Volume to Capacity ratio | 0.86 | | | |
| Actuated Cycle Length (s) | 141.5 | Sum of lost time (s) | 21.7 | |
| Intersection Capacity Utilization | 106.9% | ICU Level of Service | G | |
| Analysis Period (min) | 15 | | | |
| c Critical Lane Group | | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 2: Erin Mills Pkwy & Site Access

07/05/2022

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 20 | 2230 | 75 | 0 | 1815 |
| Future Volume (Veh/h) | 0 | 20 | 2230 | 75 | 0 | 1815 |
| 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 | 20 | 2230 | 75 | 0 | 1815 |
| Pedestrians | 2 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | 162 |
| pX, platoon unblocked | 0.81 | | | | | |
| vC, conflicting volume | 2837 | 745 | | | 2307 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2447 | 745 | | | 2307 | |
| tC, single (s) | 6.8 | 7.1 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.4 | | | 2.2 | |
| p0 queue free % | 100 | 94 | | | 100 | |
| cM capacity (veh/h) | 21 | 336 | | | 220 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 20 | 743 | 743 | 743 | 75 | 605 | 605 | 605 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 20 | 0 | 0 | 0 | 75 | 0 | 0 | 0 |
| cSH | 336 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.06 | 0.44 | 0.44 | 0.44 | 0.04 | 0.36 | 0.36 | 0.36 |
| Queue Length 95th (m) | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 16.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | | | | |
| Approach Delay (s) | 16.4 | 0.0 | | | | 0.0 | | |
| Approach LOS | C | | | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 53.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

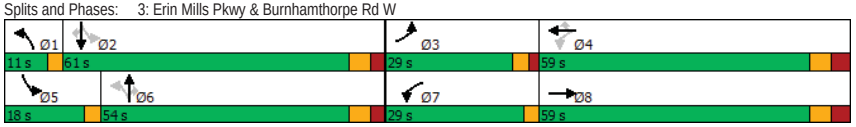
## Timings
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 235 | 655 | 320 | 840 | 260 | 185 | 1810 | 250 | 200 | 1375 | 240 |
| Future Volume (vph) | 235 | 655 | 320 | 840 | 260 | 185 | 1810 | 250 | 200 | 1375 | 240 |
| Turn Type | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 10.0 | 58.9 | 8.0 | 58.9 | 58.9 | 8.0 | 47.1 | 47.1 | 8.0 | 47.1 | 47.1 |
| Total Split (s) | 29.0 | 59.0 | 29.0 | 59.0 | 59.0 | 11.0 | 54.0 | 54.0 | 18.0 | 61.0 | 61.0 |
| Total Split (%) | 18.1% | 36.9% | 18.1% | 36.9% | 36.9% | 6.9% | 33.8% | 33.8% | 11.3% | 38.1% | 38.1% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 2.0 | 3.9 | 0.0 | 3.9 | 3.9 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -1.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 7.9 | 3.0 | 7.9 | 7.9 | 1.0 | 5.6 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 23.2 | 47.1 | 69.5 | 43.2 | 43.2 | 63.3 | 48.7 | 47.2 | 69.2 | 54.1 | 54.1 |
| Actuated g/C Ratio | 0.15 | 0.31 | 0.46 | 0.28 | 0.28 | 0.42 | 0.32 | 0.31 | 0.46 | 0.36 | 0.36 |
| v/c Ratio | 0.90 | 0.50 | 0.77 | 0.81 | 0.44 | 0.84 | 1.00 | 0.38 | 0.89 | 0.74 | 0.35 |
| Control Delay | 98.9 | 42.4 | 35.6 | 57.0 | 13.4 | 59.3 | 71.6 | 6.3 | 75.6 | 46.5 | 5.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 98.9 | 42.4 | 35.6 | 57.0 | 13.4 | 59.3 | 71.6 | 6.3 | 75.6 | 46.5 | 5.6 |
| LOS | F | D | D | E | B | E | E | A | E | D | A |
| Approach Delay | | 55.5 | | 44.2 | | | 63.3 | | | 44.3 | |
| Approach LOS | | E | | D | | | E | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 160 | |
| Actuated Cycle Length: 151.6 | |
| Natural Cycle: 145 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 1.00 | |
| Intersection Signal Delay: 52.6 | Intersection LOS: D |
| Intersection Capacity Utilization 104.9% | ICU Level of Service G |
| Analysis Period (min) 15 | |

Splits and Phases: 3: Erin Mills Pkwy & Burnhamthorpe Rd W






## Queues
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 235 | 780 | 320 | 840 | 260 | 185 | 1810 | 250 | 200 | 1375 | 240 |
| v/c Ratio | 0.90 | 0.50 | 0.77 | 0.81 | 0.44 | 0.84 | 1.00 | 0.38 | 0.89 | 0.74 | 0.35 |
| Control Delay | 98.9 | 42.4 | 35.6 | 57.0 | 13.4 | 59.3 | 71.6 | 6.3 | 75.6 | 46.5 | 5.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 98.9 | 42.4 | 35.6 | 57.0 | 13.4 | 59.3 | 71.6 | 6.3 | 75.6 | 46.5 | 5.6 |
| Queue Length 50th (m) | 71.3 | 68.0 | 56.8 | 124.7 | 14.0 | 33.3 | ~194.0 | 0.0 | 44.3 | 135.6 | 0.0 |
| Queue Length 95th (m) | #126.8 | 84.3 | 78.5 | 148.7 | 38.3 | #72.5 | #235.7 | 20.8 | #97.2 | 163.0 | 19.2 |
| Internal Link Dist (m) | | 139.0 | | 165.8 | | | 355.9 | | | 528.1 | |
| Turn Bay Length (m) | 100.0 | | 95.0 | | 140.0 | 175.0 | | 200.0 | 160.0 | | 180.0 |
| Base Capacity (vph) | 270 | 1711 | 473 | 1234 | 662 | 220 | 1814 | 656 | 226 | 1852 | 680 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.87 | 0.46 | 0.68 | 0.68 | 0.39 | 0.84 | 1.00 | 0.38 | 0.88 | 0.74 | 0.35 |

| Intersection Summary |
|---|
| ~ Volume exceeds capacity, queue is theoretically infinite. |
| Queue shown is maximum after two cycles. |
| # 95th percentile volume exceeds capacity, queue may be longer. |
| Queue shown is maximum after two cycles. |

## HCM Signalized Intersection Capacity Analysis
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 235 | 655 | 125 | 320 | 840 | 260 | 185 | 1810 | 250 | 200 | 1375 | 240 |
| Future Volume (vph) | 235 | 655 | 125 | 320 | 840 | 260 | 185 | 1810 | 250 | 200 | 1375 | 240 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 1.0 | 5.6 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.95 | 1.00 | 1.00 | *1.00 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1700 | 5011 | | 1784 | 3650 | 1572 | 1860 | 5650 | 1557 | 1750 | 5193 | 1476 |
| Flt Permitted | 0.95 | 1.00 | | 0.28 | 1.00 | 1.00 | 0.15 | 1.00 | 1.00 | 0.08 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1700 | 5011 | | 529 | 3650 | 1572 | 279 | 5650 | 1557 | 147 | 5193 | 1476 |
| 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) | 235 | 655 | 125 | 320 | 840 | 260 | 185 | 1810 | 250 | 200 | 1375 | 240 |
| RTOR Reduction (vph) | 0 | 18 | 0 | 0 | 0 | 142 | 0 | 0 | 172 | 0 | 0 | 154 |
| Lane Group Flow (vph) | 235 | 762 | 0 | 320 | 840 | 118 | 185 | 1810 | 78 | 200 | 1375 | 86 |
| Confl. Peds. (#/hr) | 4 | | 10 | 10 | | 4 | 16 | | 3 | 3 | | 16 |
| Heavy Vehicles (%) | 5% | 1% | 6% | 0% | 0% | 0% | 1% | 2% | 1% | 2% | 1% | 5% |
| Turn Type | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Actuated Green, G (s) | 23.2 | 47.1 | | 64.5 | 43.2 | 43.2 | 55.2 | 47.2 | 47.2 | 65.1 | 54.1 | 54.1 |
| Effective Green, g (s) | 23.2 | 47.1 | | 64.5 | 43.2 | 43.2 | 59.2 | 48.7 | 47.2 | 65.1 | 54.1 | 54.1 |
| Actuated g/C Ratio | 0.15 | 0.31 | | 0.43 | 0.29 | 0.29 | 0.39 | 0.32 | 0.31 | 0.43 | 0.36 | 0.36 |
| Clearance Time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 260 | 1557 | | 401 | 1040 | 448 | 213 | 1816 | 485 | 220 | 1854 | 527 |
| v/s Ratio Prot | c0.14 | c0.15 | | 0.11 | c0.23 | | 0.06 | c0.32 | | c0.09 | 0.26 | |
| v/s Ratio Perm | | | | 0.23 | | 0.08 | 0.28 | | 0.05 | 0.30 | | 0.06 |
| v/c Ratio | 0.90 | 0.49 | | 0.80 | 0.81 | 0.26 | 0.87 | 1.00 | 0.16 | 0.91 | 0.74 | 0.16 |
| Uniform Delay, d1 | 63.1 | 42.4 | | 30.8 | 50.3 | 41.9 | 31.2 | 51.3 | 37.8 | 44.3 | 42.6 | 33.2 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 31.6 | 0.2 | | 10.6 | 4.7 | 0.3 | 29.1 | 20.4 | 0.7 | 36.4 | 2.7 | 0.7 |
| Delay (s) | 94.6 | 42.7 | | 41.4 | 55.0 | 42.2 | 60.3 | 71.7 | 38.5 | 80.7 | 45.3 | 33.9 |
| Level of Service | F | D | | D | D | D | E | E | D | F | D | C |
| Approach Delay (s) | | 54.7 | | | 49.6 | | | 67.0 | | | 47.7 | |
| Approach LOS | | D | | | D | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 55.9 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.90 | | |
| Actuated Cycle Length (s) | 151.5 | Sum of lost time (s) | 21.5 |
| Intersection Capacity Utilization | 104.9% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 4: Site Access & Folkway Dr

07/05/2022

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 275 | 95 | 10 | 295 | 140 | 30 |
| Future Volume (Veh/h) | 275 | 95 | 10 | 295 | 140 | 30 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 293 | 101 | 11 | 314 | 149 | 32 |
| Pedestrians | | | | | 5 | |
| Lane Width (m) | | | | | 3.5 | |
| Walking Speed (m/s) | | | | | 1.1 | |
| Percent Blockage | | | | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 89 | | | | | |
| pX, platoon unblocked | | | 0.95 | | 0.95 | 0.95 |
| vC, conflicting volume | | | 399 | | 684 | 348 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 338 | | 640 | 285 |
| 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 | | 64 | 96 |
| cM capacity (veh/h) | | | 1162 | | 414 | 716 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 394 | 325 | 181 |
| Volume Left | 0 | 11 | 149 |
| Volume Right | 101 | 0 | 32 |
| cSH | 1700 | 1162 | 447 |
| Volume to Capacity | 0.23 | 0.01 | 0.40 |
| Queue Length 95th (m) | 0.0 | 0.2 | 14.6 |
| Control Delay (s) | 0.0 | 0.4 | 18.4 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 0.4 | 18.4 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.8 | | |
| Intersection Capacity Utilization | 39.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 5: Sawmill Valley Dr & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 50 | 135 | 120 | 5 | 120 | 0 | 125 | 10 | 10 | 0 | 10 | 60 |
| Future Volume (vph) | 50 | 135 | 120 | 5 | 120 | 0 | 125 | 10 | 10 | 0 | 10 | 60 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 55 | 148 | 132 | 5 | 132 | 0 | 137 | 11 | 11 | 0 | 11 | 66 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 335 | 137 | 159 | 77 |
| Volume Left (vph) | 55 | 5 | 137 | 0 |
| Volume Right (vph) | 132 | 0 | 11 | 66 |
| Hadj (s) | -0.19 | 0.09 | 0.13 | -0.48 |
| Departure Headway (s) | 4.5 | 5.0 | 5.3 | 4.8 |
| Degree Utilization, x | 0.42 | 0.19 | 0.23 | 0.10 |
| Capacity (veh/h) | 754 | 664 | 626 | 661 |
| Control Delay (s) | 10.8 | 9.2 | 9.9 | 8.4 |
| Approach Delay (s) | 10.8 | 9.2 | 9.9 | 8.4 |
| Approach LOS | B | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | 10.0 | | |
| Level of Service | | B | | |
| Intersection Capacity Utilization | | 45.4% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 6: Sawmill Valley Dr & Site Access

07/05/2022

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 145 | 135 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 145 | 135 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 163 | 152 | 0 |
| Pedestrians | | | | 1 | | |
| Lane Width (m) | | | | 3.7 | | |
| Walking Speed (m/s) | | | | 1.1 | | |
| Percent Blockage | | | | 0 | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 315 | 153 | 152 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 315 | 153 | 152 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 682 | 897 | 1441 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 0 | 163 | 152 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1700 | 1441 | 1700 |
| Volume to Capacity | 0.00 | 0.00 | 0.09 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | |
| Approach Delay (s) | 0.0 | 0.0 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 0.0 | | |
| Intersection Capacity Utilization | | 18.0% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

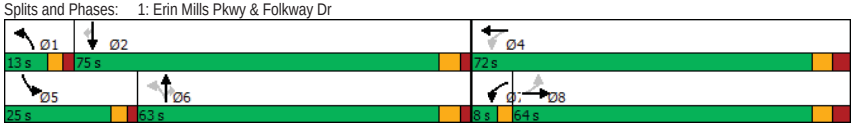
## Timings
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 150 | 55 | 60 | 10 | 1370 | 15 | 80 | 1495 | 65 |
| Future Volume (vph) | 225 | 150 | 55 | 60 | 10 | 1370 | 15 | 80 | 1495 | 65 |
| Turn Type | Perm | NA | pm+pt | NA | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | | 6 | | | 2 |
| Detector Phase | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 |
| Minimum Split (s) | 58.5 | 58.5 | 8.0 | 44.5 | 13.0 | 46.2 | 46.2 | 25.0 | 26.2 | 26.2 |
| Total Split (s) | 64.0 | 64.0 | 8.0 | 72.0 | 13.0 | 63.0 | 63.0 | 25.0 | 75.0 | 75.0 |
| Total Split (%) | 40.0% | 40.0% | 5.0% | 45.0% | 8.1% | 39.4% | 39.4% | 15.6% | 46.9% | 46.9% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 3.5 | 3.5 | 0.0 | 3.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 3.0 | 7.5 | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lead/Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 38.2 | 38.2 | 48.9 | 44.3 | 68.8 | 59.4 | 59.4 | 12.3 | 72.3 | 72.3 |
| Actuated g/C Ratio | 0.28 | 0.28 | 0.36 | 0.33 | 0.51 | 0.44 | 0.44 | 0.09 | 0.54 | 0.54 |
| v/c Ratio | 0.89 | 0.41 | 0.16 | 0.51 | 0.05 | 0.62 | 0.02 | 0.53 | 0.56 | 0.08 |
| Control Delay | 80.7 | 38.9 | 28.4 | 19.0 | 17.9 | 33.5 | 0.1 | 76.0 | 25.6 | 2.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 80.7 | 38.9 | 28.4 | 19.0 | 17.9 | 33.5 | 0.1 | 76.0 | 25.6 | 2.7 |
| LOS | F | D | C | B | B | C | A | E | C | A |
| Approach Delay | | 60.8 | | 20.4 | | 33.0 | | | 27.2 | |
| Approach LOS | | E | | C | | C | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 160 | |
| Actuated Cycle Length: 135.1 | |
| Natural Cycle: 140 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.89 | |
| Intersection Signal Delay: 32.4 | Intersection LOS: C |
| Intersection Capacity Utilization 97.6% | ICU Level of Service F |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Erin Mills Pkwy & Folkway Dr






## Queues
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 225 | 205 | 55 | 325 | 10 | 1370 | 15 | 80 | 1495 | 65 |
| v/c Ratio | 0.89 | 0.41 | 0.16 | 0.51 | 0.05 | 0.62 | 0.02 | 0.53 | 0.56 | 0.08 |
| Control Delay | 80.7 | 38.9 | 28.4 | 19.0 | 17.9 | 33.5 | 0.1 | 76.0 | 25.6 | 2.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 80.7 | 38.9 | 28.4 | 19.0 | 17.9 | 33.5 | 0.1 | 76.0 | 25.6 | 2.7 |
| Queue Length 50th (m) | 56.7 | 40.9 | 9.2 | 31.6 | 1.1 | 103.3 | 0.0 | 20.6 | 89.6 | 0.0 |
| Queue Length 95th (m) | 96.5 | 66.8 | 19.5 | 61.7 | 4.9 | 156.4 | 0.0 | 42.2 | 158.2 | 5.5 |
| Internal Link Dist (m) | | 124.3 | | 58.7 | | 138.6 | | | 454.7 | |
| Turn Bay Length (m) | 45.0 | | 55.0 | | 90.0 | | 105.0 | 185.0 | | 140.0 |
| Base Capacity (vph) | 384 | 754 | 349 | 876 | 215 | 2217 | 747 | 250 | 2648 | 802 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.59 | 0.27 | 0.16 | 0.37 | 0.05 | 0.62 | 0.02 | 0.32 | 0.56 | 0.08 |

Intersection Summary

## HCM Signalized Intersection Capacity Analysis
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 150 | 55 | 55 | 60 | 265 | 10 | 1370 | 15 | 80 | 1495 | 65 |
| Future Volume (vph) | 225 | 150 | 55 | 55 | 60 | 265 | 10 | 1370 | 15 | 80 | 1495 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.96 | | 1.00 | 0.88 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1737 | 1747 | | 1679 | 1622 | | 1785 | 5043 | 1552 | 1653 | 4948 | 1429 |
| Flt Permitted | 0.49 | 1.00 | | 0.50 | 1.00 | | 0.13 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 900 | 1747 | | 885 | 1622 | | 241 | 5043 | 1552 | 1653 | 4948 | 1429 |
| 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) | 225 | 150 | 55 | 55 | 60 | 265 | 10 | 1370 | 15 | 80 | 1495 | 65 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 112 | 0 | 0 | 0 | 8 | 0 | 0 | 31 |
| Lane Group Flow (vph) | 225 | 196 | 0 | 55 | 213 | 0 | 10 | 1370 | 7 | 80 | 1495 | 34 |
| Confl. Peds. (#/hr) | 10 | | 10 | 10 | | 10 | 4 | | 5 | 5 | | 4 |
| Heavy Vehicles (%) | 2% | 5% | 5% | 6% | 2% | 2% | 0% | 4% | 0% | 8% | 6% | 8% |
| Turn Type | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | | 4 | | | 6 | | 6 | | | 2 |
| Actuated Green, G (s) | 38.2 | 38.2 | | 45.0 | 45.0 | | 65.6 | 62.8 | 62.8 | 12.3 | 72.3 | 72.3 |
| Effective Green, g (s) | 38.2 | 38.2 | | 45.0 | 45.0 | | 65.6 | 62.8 | 62.8 | 12.3 | 72.3 | 72.3 |
| Actuated g/C Ratio | 0.28 | 0.28 | | 0.32 | 0.32 | | 0.47 | 0.45 | 0.45 | 0.09 | 0.52 | 0.52 |
| Clearance Time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 247 | 480 | | 308 | 525 | | 145 | 2281 | 702 | 146 | 2577 | 744 |
| v/s Ratio Prot | | 0.11 | | 0.00 | c0.13 | | 0.00 | 0.27 | | c0.05 | c0.30 | |
| v/s Ratio Perm | c0.25 | | | 0.05 | | | 0.03 | | 0.00 | | | 0.02 |
| v/c Ratio | 0.91 | 0.41 | | 0.18 | 0.41 | | 0.07 | 0.60 | 0.01 | 0.55 | 0.58 | 0.05 |
| Uniform Delay, d1 | 48.7 | 41.1 | | 33.0 | 36.5 | | 20.1 | 28.6 | 20.9 | 60.6 | 22.8 | 16.3 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 34.4 | 0.6 | | 0.3 | 0.5 | | 0.2 | 1.2 | 0.0 | 4.2 | 1.0 | 0.1 |
| Delay (s) | 83.0 | 41.6 | | 33.3 | 37.0 | | 20.3 | 29.8 | 20.9 | 64.7 | 23.8 | 16.4 |
| Level of Service | F | D | | C | D | | C | C | C | E | C | B |
| Approach Delay (s) | | 63.3 | | | 36.5 | | | 29.6 | | | 25.5 | |
| Approach LOS | | E | | | D | | | C | | | C | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| HCM 2000 Control Delay | 32.3 | HCM 2000 Level of Service | C | |
| HCM 2000 Volume to Capacity ratio | 0.69 | | | |
| Actuated Cycle Length (s) | 138.8 | Sum of lost time (s) | 21.7 | |
| Intersection Capacity Utilization | 97.6% | ICU Level of Service | F | |
| Analysis Period (min) | 15 | | | |
| c Critical Lane Group | | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 2: Erin Mills Pkwy & Site Access

07/05/2022

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 1390 | 20 | 0 | 1605 |
| Future Volume (Veh/h) | 0 | 5 | 1390 | 20 | 0 | 1605 |
| 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 | 5 | 1390 | 20 | 0 | 1605 |
| Pedestrians | 1 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | 162 |
| pX, platoon unblocked | 0.80 | | | | | |
| vC, conflicting volume | 1926 | 464 | | | 1411 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1263 | 464 | | | 1411 | |
| tC, single (s) | 6.8 | 7.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.5 | | | 2.2 | |
| p0 queue free % | 100 | 99 | | | 100 | |
| cM capacity (veh/h) | 131 | 505 | | | 489 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 5 | 463 | 463 | 463 | 20 | 535 | 535 | 535 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 5 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| cSH | 505 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.27 | 0.27 | 0.27 | 0.01 | 0.31 | 0.31 | 0.31 |
| Queue Length 95th (m) | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | | | | |
| Approach Delay (s) | 12.2 | 0.0 | | | | 0.0 | | |
| Approach LOS | B | | | | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.0 | | | |
| Intersection Capacity Utilization | 36.9% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

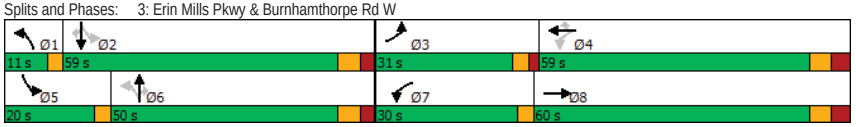
## Timings
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 215 | 440 | 265 | 470 | 210 | 95 | 985 | 170 | 220 | 1195 | 190 |
| Future Volume (vph) | 215 | 440 | 265 | 470 | 210 | 95 | 985 | 170 | 220 | 1195 | 190 |
| Turn Type | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 10.0 | 58.9 | 8.0 | 58.9 | 58.9 | 8.0 | 47.1 | 47.1 | 8.0 | 47.1 | 47.1 |
| Total Split (s) | 31.0 | 60.0 | 30.0 | 59.0 | 59.0 | 11.0 | 50.0 | 50.0 | 20.0 | 59.0 | 59.0 |
| Total Split (%) | 19.4% | 37.5% | 18.8% | 36.9% | 36.9% | 6.9% | 31.3% | 31.3% | 12.5% | 36.9% | 36.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 2.0 | 3.9 | 0.0 | 3.9 | 3.9 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 7.9 | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 21.3 | 27.6 | 48.3 | 23.8 | 23.8 | 56.4 | 44.5 | 44.5 | 67.1 | 52.2 | 52.2 |
| Actuated g/C Ratio | 0.17 | 0.22 | 0.38 | 0.19 | 0.19 | 0.44 | 0.35 | 0.35 | 0.52 | 0.41 | 0.41 |
| v/c Ratio | 0.77 | 0.51 | 0.63 | 0.72 | 0.48 | 0.43 | 0.57 | 0.27 | 0.65 | 0.59 | 0.27 |
| Control Delay | 70.5 | 42.8 | 31.9 | 55.8 | 9.5 | 24.7 | 37.4 | 6.0 | 28.2 | 32.4 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 70.5 | 42.8 | 31.9 | 55.8 | 9.5 | 24.7 | 37.4 | 6.0 | 28.2 | 32.4 | 4.9 |
| LOS | E | D | C | E | A | C | D | A | C | C | A |
| Approach Delay | | 50.6 | | 38.8 | | | 32.2 | | | 28.5 | |
| Approach LOS | | D | | D | | | C | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 160 | |
| Actuated Cycle Length: 128.3 | |
| Natural Cycle: 135 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.77 | |
| Intersection Signal Delay: 35.4 | Intersection LOS: D |
| Intersection Capacity Utilization 95.0% | ICU Level of Service F |
| Analysis Period (min) 15 | |

Splits and Phases: 3: Erin Mills Pkwy & Burnhamthorpe Rd W






## Queues
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 215 | 550 | 265 | 470 | 210 | 95 | 985 | 170 | 220 | 1195 | 190 |
| v/c Ratio | 0.77 | 0.51 | 0.63 | 0.72 | 0.48 | 0.43 | 0.57 | 0.27 | 0.65 | 0.59 | 0.27 |
| Control Delay | 70.5 | 42.8 | 31.9 | 55.8 | 9.5 | 24.7 | 37.4 | 6.0 | 28.2 | 32.4 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 70.5 | 42.8 | 31.9 | 55.8 | 9.5 | 24.7 | 37.4 | 6.0 | 28.2 | 32.4 | 4.9 |
| Queue Length 50th (m) | 52.8 | 41.9 | 44.6 | 59.7 | 0.0 | 12.1 | 76.8 | 0.0 | 30.3 | 87.2 | 0.0 |
| Queue Length 95th (m) | 85.1 | 56.8 | 65.0 | 80.1 | 20.5 | 25.0 | 103.3 | 16.5 | 54.2 | 117.1 | 15.9 |
| Internal Link Dist (m) | | 139.0 | | 165.8 | | | 355.9 | | | 528.1 | |
| Turn Bay Length (m) | 100.0 | | 95.0 | | 140.0 | 175.0 | | 200.0 | 160.0 | | 180.0 |
| Base Capacity (vph) | 343 | 2014 | 503 | 1421 | 703 | 225 | 1716 | 635 | 355 | 2034 | 705 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.63 | 0.27 | 0.53 | 0.33 | 0.30 | 0.42 | 0.57 | 0.27 | 0.62 | 0.59 | 0.27 |

Intersection Summary

## HCM Signalized Intersection Capacity Analysis
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 215 | 440 | 110 | 265 | 470 | 210 | 95 | 985 | 170 | 220 | 1195 | 190 |
| Future Volume (vph) | 215 | 440 | 110 | 265 | 470 | 210 | 95 | 985 | 170 | 220 | 1195 | 190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.97 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1684 | 4870 | | 1668 | 3544 | 1442 | 1700 | 4948 | 1513 | 1716 | 4995 | 1459 |
| Flt Permitted | 0.95 | 1.00 | | 0.42 | 1.00 | 1.00 | 0.18 | 1.00 | 1.00 | 0.18 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1684 | 4870 | | 731 | 3544 | 1442 | 315 | 4948 | 1513 | 324 | 4995 | 1459 |
| 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 | 440 | 110 | 265 | 470 | 210 | 95 | 985 | 170 | 220 | 1195 | 190 |
| RTOR Reduction (vph) | 0 | 31 | 0 | 0 | 0 | 171 | 0 | 0 | 111 | 0 | 0 | 112 |
| Lane Group Flow (vph) | 215 | 519 | 0 | 265 | 470 | 39 | 95 | 985 | 59 | 220 | 1195 | 78 |
| Confl. Peds. (#/hr) | 5 | | 1 | 1 | | 5 | 11 | | 3 | 3 | | 11 |
| Heavy Vehicles (%) | 6% | 3% | 9% | 7% | 3% | 9% | 5% | 6% | 4% | 4% | 5% | 7% |
| Turn Type | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Actuated Green, G (s) | 21.3 | 27.6 | | 43.5 | 23.9 | 23.9 | 52.2 | 44.5 | 44.5 | 63.0 | 52.3 | 52.3 |
| Effective Green, g (s) | 21.3 | 27.6 | | 43.5 | 23.9 | 23.9 | 52.2 | 44.5 | 44.5 | 63.0 | 52.3 | 52.3 |
| Actuated g/C Ratio | 0.17 | 0.22 | | 0.34 | 0.19 | 0.19 | 0.41 | 0.35 | 0.35 | 0.49 | 0.41 | 0.41 |
| Clearance Time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 279 | 1048 | | 391 | 660 | 268 | 211 | 1717 | 525 | 327 | 2037 | 595 |
| v/s Ratio Prot | c0.13 | c0.11 | | 0.10 | c0.13 | | 0.03 | 0.20 | | c0.08 | 0.24 | |
| v/s Ratio Perm | | | | 0.13 | | 0.03 | 0.16 | | 0.04 | c0.25 | | 0.05 |
| v/c Ratio | 0.77 | 0.49 | | 0.68 | 0.71 | 0.15 | 0.45 | 0.57 | 0.11 | 0.67 | 0.59 | 0.13 |
| Uniform Delay, d1 | 51.1 | 44.2 | | 33.3 | 48.9 | 43.6 | 24.3 | 34.1 | 28.4 | 21.0 | 29.5 | 23.7 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 12.4 | 0.4 | | 4.6 | 3.6 | 0.3 | 1.5 | 1.4 | 0.4 | 5.4 | 1.2 | 0.5 |
| Delay (s) | 63.5 | 44.5 | | 37.9 | 52.6 | 43.9 | 25.8 | 35.5 | 28.9 | 26.4 | 30.8 | 24.2 |
| Level of Service | E | D | | D | D | D | C | D | C | C | C | C |
| Approach Delay (s) | | 49.9 | | | 46.5 | | | 33.9 | | | 29.4 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 37.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 128.2 | Sum of lost time (s) | 23.0 |
| Intersection Capacity Utilization | 95.0% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 4: Site Access & Folkway Dr

07/05/2022

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 215 | 30 | 10 | 365 | 15 | 5 |
| Future Volume (Veh/h) | 215 | 30 | 10 | 365 | 15 | 5 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 229 | 32 | 11 | 388 | 16 | 5 |
| Pedestrians | | | | | 4 | |
| Lane Width (m) | | | | | 3.5 | |
| Walking Speed (m/s) | | | | | 1.1 | |
| Percent Blockage | | | | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 83 | | | | | |
| pX, platoon unblocked | | | 0.92 | | 0.92 | 0.92 |
| vC, conflicting volume | | | 265 | | 659 | 249 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 163 | | 589 | 146 |
| tC, single (s) | | | 4.2 | | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.3 | | 3.6 | 3.3 |
| p0 queue free % | | | 99 | | 96 | 99 |
| cM capacity (veh/h) | | | 1259 | | 423 | 835 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 261 | 399 | 21 |
| Volume Left | 0 | 11 | 16 |
| Volume Right | 32 | 0 | 5 |
| cSH | 1700 | 1259 | 479 |
| Volume to Capacity | 0.15 | 0.01 | 0.04 |
| Queue Length 95th (m) | 0.0 | 0.2 | 1.0 |
| Control Delay (s) | 0.0 | 0.3 | 12.9 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 0.3 | 12.9 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.6 | | |
| Intersection Capacity Utilization | 37.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 5: Sawmill Valley Dr & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 30 | 65 | 125 | 15 | 130 | 0 | 200 | 10 | 10 | 0 | 15 | 45 |
| Future Volume (vph) | 30 | 65 | 125 | 15 | 130 | 0 | 200 | 10 | 10 | 0 | 15 | 45 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 32 | 69 | 133 | 16 | 138 | 0 | 213 | 11 | 11 | 0 | 16 | 48 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 234 | 154 | 235 | 64 |
| Volume Left (vph) | 32 | 16 | 213 | 0 |
| Volume Right (vph) | 133 | 0 | 11 | 48 |
| Hadj (s) | -0.23 | 0.07 | 0.21 | -0.39 |
| Departure Headway (s) | 4.7 | 5.1 | 5.2 | 4.8 |
| Degree Utilization, x | 0.30 | 0.22 | 0.34 | 0.09 |
| Capacity (veh/h) | 717 | 656 | 656 | 661 |
| Control Delay (s) | 9.7 | 9.5 | 10.8 | 8.3 |
| Approach Delay (s) | 9.7 | 9.5 | 10.8 | 8.3 |
| Approach LOS | A | A | B | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | 9.9 | | |
| Level of Service | | A | | |
| Intersection Capacity Utilization | 44.5% | | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
## 6: Sawmill Valley Dr & Site Access

07/05/2022

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 220 | 155 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 220 | 155 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 265 | 187 | 0 |
| Pedestrians | 6 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 1 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 458 | 193 | 193 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 458 | 193 | 193 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 561 | 849 | 1385 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 0 | 265 | 187 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1700 | 1385 | 1700 |
| Volume to Capacity | 0.05 | 0.00 | 0.11 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | |
| Approach Delay (s) | 0.0 | 0.0 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 0.0 | | |
| Intersection Capacity Utilization | | 14.9% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

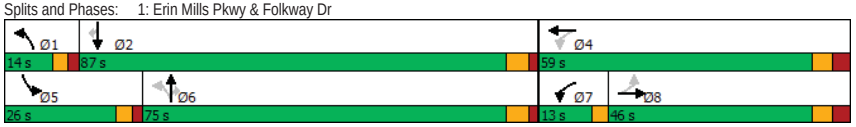
## Timings
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 85 | 100 | 90 | 110 | 30 | 2265 | 50 | 220 | 1755 | 90 |
| Future Volume (vph) | 85 | 100 | 90 | 110 | 30 | 2265 | 50 | 220 | 1755 | 90 |
| Turn Type | Perm | NA | pm+pt | NA | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | | 6 | | | 2 |
| Detector Phase | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 |
| Minimum Split (s) | 58.5 | 58.5 | 8.0 | 44.5 | 13.0 | 46.2 | 46.2 | 25.0 | 26.2 | 26.2 |
| Total Split (s) | 46.0 | 46.0 | 13.0 | 59.0 | 14.0 | 75.0 | 75.0 | 26.0 | 87.0 | 87.0 |
| Total Split (%) | 28.8% | 28.8% | 8.1% | 36.9% | 8.8% | 46.9% | 46.9% | 16.3% | 54.4% | 54.4% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 3.5 | 3.5 | 0.0 | 3.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 3.0 | 7.5 | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lead/Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 18.8 | 18.8 | 35.7 | 31.1 | 78.3 | 69.0 | 69.0 | 20.5 | 87.0 | 87.0 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.26 | 0.22 | 0.56 | 0.49 | 0.49 | 0.15 | 0.62 | 0.62 |
| v/c Ratio | 0.94 | 0.55 | 0.31 | 0.80 | 0.15 | 0.90 | 0.06 | 0.84 | 0.55 | 0.09 |
| Control Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.6 | 38.8 | 0.1 | 85.5 | 17.7 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.6 | 38.8 | 0.1 | 85.5 | 17.7 | 3.2 |
| LOS | F | E | D | D | B | D | A | F | B | A |
| Approach Delay | | 89.7 | | 51.9 | | 37.6 | | | 24.3 | |
| Approach LOS | | F | | D | | D | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 160 | |
| Actuated Cycle Length: 139.4 | |
| Natural Cycle: 150 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.94 | |
| Intersection Signal Delay: 35.7 | Intersection LOS: D |
| Intersection Capacity Utilization 108.7% | ICU Level of Service G |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Erin Mills Pkwy & Folkway Dr






## Queues
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 85 | 140 | 90 | 345 | 30 | 2265 | 50 | 220 | 1755 | 90 |
| v/c Ratio | 0.94 | 0.55 | 0.31 | 0.80 | 0.15 | 0.90 | 0.06 | 0.84 | 0.55 | 0.09 |
| Control Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.6 | 38.8 | 0.1 | 85.5 | 17.7 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.6 | 38.8 | 0.1 | 85.5 | 17.7 | 3.2 |
| Queue Length 50th (m) | 23.7 | 33.7 | 19.6 | 73.4 | 2.5 | 206.7 | 0.0 | 60.0 | 108.2 | 0.0 |
| Queue Length 95th (m) | #48.0 | 55.0 | 33.6 | 108.6 | 7.2 | #277.3 | 0.0 | #112.1 | 144.7 | 8.2 |
| Internal Link Dist (m) | | 124.3 | | 65.0 | | 138.6 | | | 454.7 | |
| Turn Bay Length (m) | 45.0 | | 55.0 | | 90.0 | | 105.0 | 185.0 | | 140.0 |
| Base Capacity (vph) | 187 | 511 | 295 | 672 | 218 | 2522 | 815 | 269 | 3209 | 975 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.45 | 0.27 | 0.31 | 0.51 | 0.14 | 0.90 | 0.06 | 0.82 | 0.55 | 0.09 |

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

## HCM Signalized Intersection Capacity Analysis
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 85 | 100 | 40 | 90 | 110 | 235 | 30 | 2265 | 50 | 220 | 1755 | 90 |
| Future Volume (vph) | 85 | 100 | 40 | 90 | 110 | 235 | 30 | 2265 | 50 | 220 | 1755 | 90 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 |
| Flpb, ped/bikes | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.96 | | 1.00 | 0.90 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1736 | 1814 | | 1778 | 1695 | | 1785 | 5092 | 1526 | 1785 | 5142 | 1515 |
| Flt Permitted | 0.37 | 1.00 | | 0.49 | 1.00 | | 0.11 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 675 | 1814 | | 914 | 1695 | | 205 | 5092 | 1526 | 1785 | 5142 | 1515 |
| 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) | 85 | 100 | 40 | 90 | 110 | 235 | 30 | 2265 | 50 | 220 | 1755 | 90 |
| RTOR Reduction (vph) | 0 | 10 | 0 | 0 | 55 | 0 | 0 | 0 | 25 | 0 | 0 | 35 |
| Lane Group Flow (vph) | 85 | 130 | 0 | 90 | 290 | 0 | 30 | 2265 | 25 | 220 | 1755 | 55 |
| Confl. Peds. (#/hr) | 12 | | 13 | 13 | | 12 | 9 | | 3 | 3 | | 9 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 0% | 0% | 0% | 3% | 2% | 0% | 2% | 0% |
| Turn Type | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | | 4 | | | 6 | | 6 | | | 2 |
| Actuated Green, G (s) | 18.8 | 18.8 | | 31.2 | 31.2 | | 75.7 | 71.1 | 71.1 | 20.5 | 87.0 | 87.0 |
| Effective Green, g (s) | 18.8 | 18.8 | | 31.2 | 31.2 | | 75.7 | 71.1 | 71.1 | 20.5 | 87.0 | 87.0 |
| Actuated g/C Ratio | 0.13 | 0.13 | | 0.22 | 0.22 | | 0.53 | 0.50 | 0.50 | 0.14 | 0.61 | 0.61 |
| Clearance Time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 89 | 241 | | 258 | 373 | | 161 | 2558 | 766 | 258 | 3161 | 931 |
| v/s Ratio Prot | | 0.07 | | 0.02 | c0.17 | | 0.01 | c0.44 | | c0.12 | 0.34 | |
| v/s Ratio Perm | c0.13 | | | 0.05 | | | 0.09 | | 0.02 | | | 0.04 |
| v/c Ratio | 0.96 | 0.54 | | 0.35 | 0.78 | | 0.19 | 0.89 | 0.03 | 0.85 | 0.56 | 0.06 |
| Uniform Delay, d1 | 60.9 | 57.3 | | 45.4 | 51.9 | | 15.8 | 31.6 | 17.8 | 59.0 | 15.9 | 10.9 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 79.9 | 2.3 | | 0.8 | 9.8 | | 0.6 | 5.0 | 0.1 | 22.8 | 0.7 | 0.1 |
| Delay (s) | 140.8 | 59.6 | | 46.2 | 61.6 | | 16.4 | 36.5 | 17.9 | 81.9 | 16.6 | 11.0 |
| Level of Service | F | E | | D | E | | B | D | B | F | B | B |
| Approach Delay (s) | | 90.3 | | | 58.4 | | | 35.9 | | | 23.3 | |
| Approach LOS | | F | | | E | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 35.1 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.88 | | |
| Actuated Cycle Length (s) | 141.5 | Sum of lost time (s) | 21.7 |
| Intersection Capacity Utilization | 108.7% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 2: Erin Mills Pkwy & Site Access

07/05/2022

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 20 | 2325 | 75 | 0 | 1885 |
| Future Volume (Veh/h) | 0 | 20 | 2325 | 75 | 0 | 1885 |
| 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 | 20 | 2325 | 75 | 0 | 1885 |
| Pedestrians | 2 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | 162 |
| pX, platoon unblocked | 0.80 | | | | | |
| vC, conflicting volume | 2955 | 777 | | | 2402 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2562 | 777 | | | 2402 | |
| tC, single (s) | 6.8 | 7.1 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.4 | | | 2.2 | |
| p0 queue free % | 100 | 94 | | | 100 | |
| cM capacity (veh/h) | 18 | 320 | | | 202 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 20 | 775 | 775 | 775 | 75 | 628 | 628 | 628 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 20 | 0 | 0 | 0 | 75 | 0 | 0 | 0 |
| cSH | 320 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.06 | 0.46 | 0.46 | 0.46 | 0.04 | 0.37 | 0.37 | 0.37 |
| Queue Length 95th (m) | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 17.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | | | | |
| Approach Delay (s) | 17.0 | 0.0 | | | | 0.0 | | |
| Approach LOS | C | | | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 54.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## Timings
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

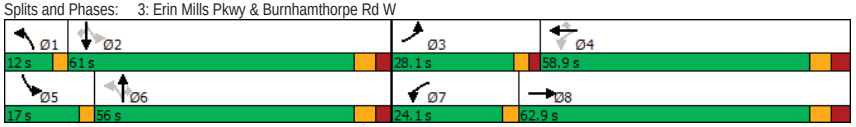
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 235 | 690 | 320 | 885 | 260 | 185 | 1905 | 250 | 200 | 1445 | 240 |
| Future Volume (vph) | 235 | 690 | 320 | 885 | 260 | 185 | 1905 | 250 | 200 | 1445 | 240 |
| Turn Type | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 10.0 | 58.9 | 8.0 | 58.9 | 58.9 | 8.0 | 47.1 | 47.1 | 8.0 | 47.1 | 47.1 |
| Total Split (s) | 28.1 | 62.9 | 24.1 | 58.9 | 58.9 | 12.0 | 56.0 | 56.0 | 17.0 | 61.0 | 61.0 |
| Total Split (%) | 17.6% | 39.3% | 15.1% | 36.8% | 36.8% | 7.5% | 35.0% | 35.0% | 10.6% | 38.1% | 38.1% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 2.0 | 3.9 | 0.0 | 3.9 | 3.9 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -1.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 7.9 | 3.0 | 7.9 | 7.9 | 1.0 | 5.6 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 22.9 | 50.3 | 69.8 | 45.1 | 45.1 | 66.1 | 50.5 | 49.0 | 70.1 | 54.0 | 54.0 |
| Actuated g/C Ratio | 0.15 | 0.33 | 0.45 | 0.29 | 0.29 | 0.43 | 0.33 | 0.32 | 0.45 | 0.35 | 0.35 |
| v/c Ratio | 0.93 | 0.49 | 0.81 | 0.83 | 0.44 | 0.80 | 1.03 | 0.38 | 0.95 | 0.79 | 0.36 |
| Control Delay | 105.7 | 41.4 | 40.2 | 58.2 | 15.6 | 52.2 | 79.0 | 6.1 | 90.0 | 49.7 | 5.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 105.7 | 41.4 | 40.2 | 58.2 | 15.6 | 52.2 | 79.0 | 6.1 | 90.0 | 49.7 | 5.7 |
| LOS | F | D | D | E | B | D | E | A | F | D | A |
| Approach Delay | | 55.8 | | 46.7 | | | 69.1 | | | 48.3 | |
| Approach LOS | | E | | D | | | E | | | D | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 154.1
Natural Cycle: 145
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 56.3 — Intersection LOS: E
Intersection Capacity Utilization 107.2% — ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 3: Erin Mills Pkwy & Burnhamthorpe Rd W






## Queues
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 235 | 815 | 320 | 885 | 260 | 185 | 1905 | 250 | 200 | 1445 | 240 |
| v/c Ratio | 0.93 | 0.49 | 0.81 | 0.83 | 0.44 | 0.80 | 1.03 | 0.38 | 0.95 | 0.79 | 0.36 |
| Control Delay | 105.7 | 41.4 | 40.2 | 58.2 | 15.6 | 52.2 | 79.0 | 6.1 | 90.0 | 49.7 | 5.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 105.7 | 41.4 | 40.2 | 58.2 | 15.6 | 52.2 | 79.0 | 6.1 | 90.0 | 49.7 | 5.7 |
| Queue Length 50th (m) | 73.2 | 72.0 | 57.7 | 133.6 | 18.1 | 33.8 | ~212.6 | 0.0 | 45.9 | 149.0 | 0.0 |
| Queue Length 95th (m) | #130.0 | 85.3 | 79.7 | 158.8 | 43.4 | #66.5 | #248.4 | 20.4 | #100.9 | 173.8 | 19.2 |
| Internal Link Dist (m) | | 139.0 | | 165.8 | | | 355.9 | | | 528.1 | |
| Turn Bay Length (m) | 100.0 | | 95.0 | | 140.0 | 175.0 | | 200.0 | 160.0 | | 180.0 |
| Base Capacity (vph) | 255 | 1810 | 412 | 1210 | 642 | 232 | 1851 | 665 | 210 | 1819 | 672 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.92 | 0.45 | 0.78 | 0.73 | 0.40 | 0.80 | 1.03 | 0.38 | 0.95 | 0.79 | 0.36 |

**Intersection Summary**

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

## HCM Signalized Intersection Capacity Analysis
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 235 | 690 | 125 | 320 | 885 | 260 | 185 | 1905 | 250 | 200 | 1445 | 240 |
| Future Volume (vph) | 235 | 690 | 125 | 320 | 885 | 260 | 185 | 1905 | 250 | 200 | 1445 | 240 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 1.0 | 5.6 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.95 | 1.00 | 1.00 | *1.00 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1700 | 5019 | | 1784 | 3650 | 1572 | 1860 | 5650 | 1557 | 1750 | 5193 | 1475 |
| Flt Permitted | 0.95 | 1.00 | | 0.28 | 1.00 | 1.00 | 0.15 | 1.00 | 1.00 | 0.08 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1700 | 5019 | | 518 | 3650 | 1572 | 279 | 5650 | 1557 | 142 | 5193 | 1475 |
| 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) | 235 | 690 | 125 | 320 | 885 | 260 | 185 | 1905 | 250 | 200 | 1445 | 240 |
| RTOR Reduction (vph) | 0 | 17 | 0 | 0 | 0 | 128 | 0 | 0 | 171 | 0 | 0 | 156 |
| Lane Group Flow (vph) | 235 | 798 | 0 | 320 | 885 | 132 | 185 | 1905 | 79 | 200 | 1445 | 84 |
| Confl. Peds. (#/hr) | 4 | | 10 | 10 | | 4 | 16 | | 3 | 3 | | 16 |
| Heavy Vehicles (%) | 5% | 1% | 6% | 0% | 0% | 0% | 1% | 2% | 1% | 2% | 1% | 5% |
| Turn Type | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Actuated Green, G (s) | 22.9 | 50.3 | | 65.0 | 45.2 | 45.2 | 58.0 | 49.0 | 49.0 | 66.0 | 54.0 | 54.0 |
| Effective Green, g (s) | 22.9 | 50.3 | | 65.0 | 45.2 | 45.2 | 62.0 | 50.5 | 49.0 | 66.0 | 54.0 | 54.0 |
| Actuated g/C Ratio | 0.15 | 0.33 | | 0.42 | 0.29 | 0.29 | 0.40 | 0.33 | 0.32 | 0.43 | 0.35 | 0.35 |
| Clearance Time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 252 | 1638 | | 381 | 1070 | 461 | 225 | 1851 | 495 | 206 | 1819 | 516 |
| v/s Ratio Prot | c0.14 | 0.16 | | 0.11 | 0.24 | | 0.06 | c0.34 | | c0.09 | 0.28 | |
| v/s Ratio Perm | | | | c0.25 | | 0.08 | 0.27 | | 0.05 | 0.33 | | 0.06 |
| v/c Ratio | 0.93 | 0.49 | | 0.84 | 0.83 | 0.29 | 0.82 | 1.03 | 0.16 | 0.97 | 0.79 | 0.16 |
| Uniform Delay, d1 | 64.8 | 41.6 | | 31.8 | 50.8 | 42.0 | 30.6 | 51.8 | 37.8 | 46.6 | 45.1 | 34.5 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 38.6 | 0.2 | | 14.9 | 5.4 | 0.3 | 20.9 | 28.8 | 0.7 | 54.1 | 3.7 | 0.7 |
| Delay (s) | 103.4 | 41.8 | | 46.7 | 56.2 | 42.4 | 51.5 | 80.6 | 38.5 | 100.7 | 48.7 | 35.2 |
| Level of Service | F | D | | D | E | D | D | F | D | F | D | D |
| Approach Delay (s) | | 55.6 | | | 51.7 | | | 73.8 | | | 52.5 | |
| Approach LOS | | E | | | D | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 60.2 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.94 | | |
| Actuated Cycle Length (s) | 154.1 | Sum of lost time (s) | 21.5 |
| Intersection Capacity Utilization | 107.2% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 4: Site Access & Folkway Dr

07/05/2022

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 275 | 95 | 10 | 295 | 140 | 30 |
| Future Volume (Veh/h) | 275 | 95 | 10 | 295 | 140 | 30 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 293 | 101 | 11 | 314 | 149 | 32 |
| Pedestrians | | | | | 5 | |
| Lane Width (m) | | | | | 3.5 | |
| Walking Speed (m/s) | | | | | 1.1 | |
| Percent Blockage | | | | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 89 | | | | | |
| pX, platoon unblocked | | | 0.95 | | 0.95 | 0.95 |
| vC, conflicting volume | | | 399 | | 684 | 348 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 338 | | 640 | 285 |
| 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 | | 64 | 96 |
| cM capacity (veh/h) | | | 1162 | | 414 | 716 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 394 | 325 | 181 |
| Volume Left | 0 | 11 | 149 |
| Volume Right | 101 | 0 | 32 |
| cSH | 1700 | 1162 | 447 |
| Volume to Capacity | 0.23 | 0.01 | 0.40 |
| Queue Length 95th (m) | 0.0 | 0.2 | 14.6 |
| Control Delay (s) | 0.0 | 0.4 | 18.4 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 0.4 | 18.4 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.8 | | |
| Intersection Capacity Utilization | 39.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 5: Sawmill Valley Dr & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 50 | 135 | 120 | 5 | 120 | 0 | 125 | 10 | 10 | 0 | 10 | 60 |
| Future Volume (vph) | 50 | 135 | 120 | 5 | 120 | 0 | 125 | 10 | 10 | 0 | 10 | 60 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 55 | 148 | 132 | 5 | 132 | 0 | 137 | 11 | 11 | 0 | 11 | 66 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 335 | 137 | 159 | 77 |
| Volume Left (vph) | 55 | 5 | 137 | 0 |
| Volume Right (vph) | 132 | 0 | 11 | 66 |
| Hadj (s) | -0.19 | 0.09 | 0.13 | -0.48 |
| Departure Headway (s) | 4.5 | 5.0 | 5.3 | 4.8 |
| Degree Utilization, x | 0.42 | 0.19 | 0.23 | 0.10 |
| Capacity (veh/h) | 754 | 664 | 626 | 661 |
| Control Delay (s) | 10.8 | 9.2 | 9.9 | 8.4 |
| Approach Delay (s) | 10.8 | 9.2 | 9.9 | 8.4 |
| Approach LOS | B | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | 10.0 | | |
| Level of Service | | B | | |
| Intersection Capacity Utilization | | 45.4% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
## 6: Sawmill Valley Dr & Site Access

07/05/2022

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 145 | 135 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 145 | 135 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 163 | 152 | 0 |
| Pedestrians | | | | 1 | | |
| Lane Width (m) | | | | 3.7 | | |
| Walking Speed (m/s) | | | | 1.1 | | |
| Percent Blockage | | | | 0 | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 315 | 153 | 152 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 315 | 153 | 152 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 682 | 897 | 1441 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 0 | 163 | 152 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1700 | 1441 | 1700 |
| Volume to Capacity | 0.00 | 0.00 | 0.09 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | |
| Approach Delay (s) | 0.0 | 0.0 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 0.0 | | |
| Intersection Capacity Utilization | | 18.0% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

## Timings
### 1: Erin Mills Pkwy & Folkway Dr

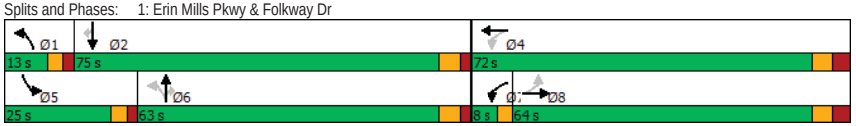
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 145 | 130 | 60 | 10 | 1450 | 5 | 100 | 1495 | 65 |
| Future Volume (vph) | 225 | 145 | 130 | 60 | 10 | 1450 | 5 | 100 | 1495 | 65 |
| Turn Type | Perm | NA | pm+pt | NA | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | | 6 | | | 2 |
| Detector Phase | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 |
| Minimum Split (s) | 58.5 | 58.5 | 8.0 | 44.5 | 13.0 | 46.2 | 46.2 | 25.0 | 26.2 | 26.2 |
| Total Split (s) | 64.0 | 64.0 | 8.0 | 72.0 | 13.0 | 63.0 | 63.0 | 25.0 | 75.0 | 75.0 |
| Total Split (%) | 40.0% | 40.0% | 5.0% | 45.0% | 8.1% | 39.4% | 39.4% | 15.6% | 46.9% | 46.9% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 3.5 | 3.5 | 0.0 | 3.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 3.0 | 7.5 | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lead/Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 38.9 | 38.9 | 51.6 | 47.0 | 67.6 | 58.3 | 58.3 | 13.6 | 72.4 | 72.4 |
| Actuated g/C Ratio | 0.28 | 0.28 | 0.37 | 0.34 | 0.49 | 0.42 | 0.42 | 0.10 | 0.53 | 0.53 |
| v/c Ratio | 0.89 | 0.40 | 0.36 | 0.52 | 0.05 | 0.68 | 0.01 | 0.61 | 0.58 | 0.08 |
| Control Delay | 81.9 | 39.1 | 32.4 | 19.0 | 18.1 | 36.7 | 0.0 | 78.6 | 26.3 | 2.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 81.9 | 39.1 | 32.4 | 19.0 | 18.1 | 36.7 | 0.0 | 78.6 | 26.3 | 2.7 |
| LOS | F | D | C | B | B | D | A | E | C | A |
| Approach Delay | | 61.8 | | 22.7 | | 36.4 | | | 28.5 | |
| Approach LOS | | E | | C | | D | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 137.9
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 34.2 — Intersection LOS: C
Intersection Capacity Utilization 98.5% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Erin Mills Pkwy & Folkway Dr






## Queues
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 225 | 200 | 130 | 345 | 10 | 1450 | 5 | 100 | 1495 | 65 |
| v/c Ratio | 0.89 | 0.40 | 0.36 | 0.52 | 0.05 | 0.68 | 0.01 | 0.61 | 0.58 | 0.08 |
| Control Delay | 81.9 | 39.1 | 32.4 | 19.0 | 18.1 | 36.7 | 0.0 | 78.6 | 26.3 | 2.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 81.9 | 39.1 | 32.4 | 19.0 | 18.1 | 36.7 | 0.0 | 78.6 | 26.3 | 2.7 |
| Queue Length 50th (m) | 57.8 | 40.4 | 23.4 | 34.2 | 1.2 | 115.4 | 0.0 | 26.2 | 90.5 | 0.0 |
| Queue Length 95th (m) | 96.5 | 65.0 | 40.0 | 65.0 | 4.9 | 171.7 | 0.0 | 50.2 | 158.2 | 5.5 |
| Internal Link Dist (m) | | 124.3 | | 58.7 | | 138.6 | | | 454.7 | |
| Turn Bay Length (m) | 45.0 | | 55.0 | | 90.0 | | 105.0 | 185.0 | | 140.0 |
| Base Capacity (vph) | 374 | 733 | 363 | 862 | 209 | 2131 | 723 | 243 | 2598 | 789 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.27 | 0.36 | 0.40 | 0.05 | 0.68 | 0.01 | 0.41 | 0.58 | 0.08 |

**Intersection Summary**

## HCM Signalized Intersection Capacity Analysis
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 145 | 55 | 130 | 60 | 285 | 10 | 1450 | 5 | 100 | 1495 | 65 |
| Future Volume (vph) | 225 | 145 | 55 | 130 | 60 | 285 | 10 | 1450 | 5 | 100 | 1495 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.96 | | 1.00 | 0.88 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1738 | 1744 | | 1679 | 1618 | | 1785 | 5043 | 1551 | 1653 | 4948 | 1429 |
| Flt Permitted | 0.49 | 1.00 | | 0.51 | 1.00 | | 0.13 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 900 | 1744 | | 897 | 1618 | | 242 | 5043 | 1551 | 1653 | 4948 | 1429 |
| 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) | 225 | 145 | 55 | 130 | 60 | 285 | 10 | 1450 | 5 | 100 | 1495 | 65 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 119 | 0 | 0 | 0 | 3 | 0 | 0 | 32 |
| Lane Group Flow (vph) | 225 | 191 | 0 | 130 | 226 | 0 | 10 | 1450 | 2 | 100 | 1495 | 33 |
| Confl. Peds. (#/hr) | 10 | | 10 | 10 | | 10 | 4 | | 5 | 5 | | 4 |
| Heavy Vehicles (%) | 2% | 5% | 5% | 6% | 2% | 2% | 0% | 4% | 0% | 8% | 6% | 8% |
| Turn Type | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | | 4 | | | 6 | | 6 | | | 2 |
| Actuated Green, G (s) | 38.9 | 38.9 | | 47.0 | 47.0 | | 64.4 | 61.6 | 61.6 | 13.6 | 72.4 | 72.4 |
| Effective Green, g (s) | 38.9 | 38.9 | | 47.0 | 47.0 | | 64.4 | 61.6 | 61.6 | 13.6 | 72.4 | 72.4 |
| Actuated g/C Ratio | 0.28 | 0.28 | | 0.33 | 0.33 | | 0.46 | 0.44 | 0.44 | 0.10 | 0.51 | 0.51 |
| Clearance Time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 248 | 481 | | 327 | 539 | | 141 | 2204 | 678 | 159 | 2542 | 734 |
| v/s Ratio Prot | | 0.11 | | 0.01 | c0.14 | | 0.00 | c0.29 | | c0.06 | 0.30 | |
| v/s Ratio Perm | c0.25 | | | 0.12 | | | 0.03 | | 0.00 | | | 0.02 |
| v/c Ratio | 0.91 | 0.40 | | 0.40 | 0.42 | | 0.07 | 0.66 | 0.00 | 0.63 | 0.59 | 0.05 |
| Uniform Delay, d1 | 49.3 | 41.5 | | 36.6 | 36.4 | | 21.5 | 31.3 | 22.3 | 61.2 | 23.9 | 17.0 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 33.2 | 0.5 | | 0.8 | 0.5 | | 0.2 | 1.6 | 0.0 | 7.6 | 1.0 | 0.1 |
| Delay (s) | 82.5 | 42.0 | | 37.4 | 36.9 | | 21.7 | 32.9 | 22.4 | 68.8 | 24.9 | 17.2 |
| Level of Service | F | D | | D | D | | C | C | C | E | C | B |
| Approach Delay (s) | | 63.4 | | | 37.0 | | | 32.8 | | | 27.2 | |
| Approach LOS | | E | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 34.2 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.73 | | |
| Actuated Cycle Length (s) | 140.9 | Sum of lost time (s) | 21.7 |
| Intersection Capacity Utilization | 98.5% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 2: Erin Mills Pkwy & Site Access

07/05/2022

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 85 | 1380 | 30 | 0 | 1680 |
| Future Volume (Veh/h) | 0 | 85 | 1380 | 30 | 0 | 1680 |
| 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 | 85 | 1380 | 30 | 0 | 1680 |
| Pedestrians | 1 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | 162 |
| pX, platoon unblocked | 0.79 | | | | | |
| vC, conflicting volume | 1941 | 461 | | | 1411 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1270 | 461 | | | 1411 | |
| tC, single (s) | 6.8 | 7.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.5 | | | 2.2 | |
| p0 queue free % | 100 | 83 | | | 100 | |
| cM capacity (veh/h) | 129 | 508 | | | 489 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 85 | 460 | 460 | 460 | 30 | 560 | 560 | 560 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 85 | 0 | 0 | 0 | 30 | 0 | 0 | 0 |
| cSH | 508 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.17 | 0.27 | 0.27 | 0.27 | 0.02 | 0.33 | 0.33 | 0.33 |
| Queue Length 95th (m) | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 13.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | | | | |
| Approach Delay (s) | 13.5 | 0.0 | | | | 0.0 | | |
| Approach LOS | B | | | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.4 | | |
| Intersection Capacity Utilization | 38.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## Timings
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

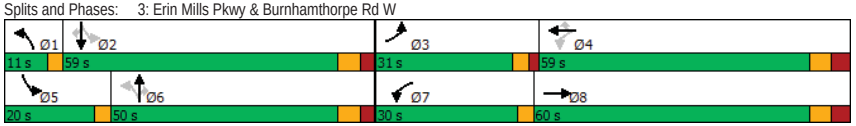
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 210 | 440 | 265 | 470 | 210 | 95 | 990 | 170 | 230 | 1245 | 205 |
| Future Volume (vph) | 210 | 440 | 265 | 470 | 210 | 95 | 990 | 170 | 230 | 1245 | 205 |
| Turn Type | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 10.0 | 58.9 | 8.0 | 58.9 | 58.9 | 8.0 | 47.1 | 47.1 | 8.0 | 47.1 | 47.1 |
| Total Split (s) | 31.0 | 60.0 | 30.0 | 59.0 | 59.0 | 11.0 | 50.0 | 50.0 | 20.0 | 59.0 | 59.0 |
| Total Split (%) | 19.4% | 37.5% | 18.8% | 36.9% | 36.9% | 6.9% | 31.3% | 31.3% | 12.5% | 36.9% | 36.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 2.0 | 3.9 | 0.0 | 3.9 | 3.9 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 7.9 | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 20.9 | 27.1 | 48.3 | 23.8 | 23.8 | 55.9 | 43.9 | 43.9 | 67.1 | 52.2 | 52.2 |
| Actuated g/C Ratio | 0.16 | 0.21 | 0.38 | 0.19 | 0.19 | 0.44 | 0.34 | 0.34 | 0.53 | 0.41 | 0.41 |
| v/c Ratio | 0.76 | 0.52 | 0.64 | 0.71 | 0.48 | 0.45 | 0.58 | 0.27 | 0.67 | 0.61 | 0.29 |
| Control Delay | 70.4 | 43.0 | 32.0 | 55.6 | 9.5 | 25.2 | 37.6 | 6.1 | 28.9 | 32.7 | 4.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 70.4 | 43.0 | 32.0 | 55.6 | 9.5 | 25.2 | 37.6 | 6.1 | 28.9 | 32.7 | 4.8 |
| LOS | E | D | C | E | A | C | D | A | C | C | A |
| Approach Delay | | 50.6 | | 38.7 | | | 32.4 | | | 28.7 | |
| Approach LOS | | D | | D | | | C | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 127.8
Natural Cycle: 135
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 35.3 — Intersection LOS: D
Intersection Capacity Utilization 95.2% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Erin Mills Pkwy & Burnhamthorpe Rd W






## Queues
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 210 | 550 | 265 | 470 | 210 | 95 | 990 | 170 | 230 | 1245 | 205 |
| v/c Ratio | 0.76 | 0.52 | 0.64 | 0.71 | 0.48 | 0.45 | 0.58 | 0.27 | 0.67 | 0.61 | 0.29 |
| Control Delay | 70.4 | 43.0 | 32.0 | 55.6 | 9.5 | 25.2 | 37.6 | 6.1 | 28.9 | 32.7 | 4.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 70.4 | 43.0 | 32.0 | 55.6 | 9.5 | 25.2 | 37.6 | 6.1 | 28.9 | 32.7 | 4.8 |
| Queue Length 50th (m) | 51.3 | 41.9 | 44.6 | 59.4 | 0.0 | 11.9 | 76.7 | 0.0 | 31.5 | 91.3 | 0.0 |
| Queue Length 95th (m) | 83.1 | 56.8 | 65.0 | 80.1 | 20.5 | 25.0 | 104.0 | 16.5 | 56.5 | 123.1 | 16.2 |
| Internal Link Dist (m) | | 139.0 | | 165.8 | | | 355.9 | | | 528.1 | |
| Turn Bay Length (m) | 100.0 | | 95.0 | | 140.0 | 175.0 | | 200.0 | 160.0 | | 180.0 |
| Base Capacity (vph) | 344 | 2021 | 501 | 1425 | 705 | 216 | 1701 | 631 | 354 | 2041 | 715 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.61 | 0.27 | 0.53 | 0.33 | 0.30 | 0.44 | 0.58 | 0.27 | 0.65 | 0.61 | 0.29 |

**Intersection Summary**

## HCM Signalized Intersection Capacity Analysis
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 210 | 440 | 110 | 265 | 470 | 210 | 95 | 990 | 170 | 230 | 1245 | 205 |
| Future Volume (vph) | 210 | 440 | 110 | 265 | 470 | 210 | 95 | 990 | 170 | 230 | 1245 | 205 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.97 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1684 | 4870 | | 1668 | 3544 | 1442 | 1700 | 4948 | 1513 | 1716 | 4995 | 1459 |
| Flt Permitted | 0.95 | 1.00 | | 0.41 | 1.00 | 1.00 | 0.16 | 1.00 | 1.00 | 0.18 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1684 | 4870 | | 717 | 3544 | 1442 | 292 | 4948 | 1513 | 319 | 4995 | 1459 |
| 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) | 210 | 440 | 110 | 265 | 470 | 210 | 95 | 990 | 170 | 230 | 1245 | 205 |
| RTOR Reduction (vph) | 0 | 32 | 0 | 0 | 0 | 171 | 0 | 0 | 111 | 0 | 0 | 121 |
| Lane Group Flow (vph) | 210 | 518 | 0 | 265 | 470 | 39 | 95 | 990 | 59 | 230 | 1245 | 84 |
| Confl. Peds. (#/hr) | 5 | | 1 | 1 | | 5 | 11 | | 3 | 3 | | 11 |
| Heavy Vehicles (%) | 6% | 3% | 9% | 7% | 3% | 9% | 5% | 6% | 4% | 4% | 5% | 7% |
| Turn Type | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Actuated Green, G (s) | 20.9 | 27.1 | | 43.4 | 23.8 | 23.8 | 51.8 | 44.0 | 44.0 | 63.1 | 52.3 | 52.3 |
| Effective Green, g (s) | 20.9 | 27.1 | | 43.4 | 23.8 | 23.8 | 51.8 | 44.0 | 44.0 | 63.1 | 52.3 | 52.3 |
| Actuated g/C Ratio | 0.16 | 0.21 | | 0.34 | 0.19 | 0.19 | 0.41 | 0.34 | 0.34 | 0.49 | 0.41 | 0.41 |
| Clearance Time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 275 | 1032 | | 389 | 659 | 268 | 204 | 1703 | 520 | 333 | 2044 | 597 |
| v/s Ratio Prot | c0.12 | c0.11 | | 0.10 | c0.13 | | 0.03 | 0.20 | | c0.09 | 0.25 | |
| v/s Ratio Perm | | | | 0.13 | | 0.03 | 0.16 | | 0.04 | c0.25 | | 0.06 |
| v/c Ratio | 0.76 | 0.50 | | 0.68 | 0.71 | 0.15 | 0.47 | 0.58 | 0.11 | 0.69 | 0.61 | 0.14 |
| Uniform Delay, d1 | 51.1 | 44.4 | | 33.1 | 48.8 | 43.5 | 24.5 | 34.3 | 28.6 | 21.0 | 29.7 | 23.7 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 11.9 | 0.4 | | 4.9 | 3.7 | 0.3 | 1.7 | 1.5 | 0.4 | 6.1 | 1.4 | 0.5 |
| Delay (s) | 63.0 | 44.8 | | 38.0 | 52.5 | 43.8 | 26.2 | 35.8 | 29.0 | 27.1 | 31.1 | 24.2 |
| Level of Service | E | D | | D | D | D | C | D | C | C | C | C |
| Approach Delay (s) | | 49.8 | | | 46.5 | | | 34.2 | | | 29.7 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 37.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 127.8 | Sum of lost time (s) | 23.0 |
| Intersection Capacity Utilization | 95.2% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 4: Site Access & Folkway Dr

07/05/2022

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 220 | 30 | 0 | 380 | 95 | 0 |
| Future Volume (Veh/h) | 220 | 30 | 0 | 380 | 95 | 0 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 234 | 32 | 0 | 404 | 101 | 0 |
| Pedestrians | | | | | 4 | |
| Lane Width (m) | | | | | 3.5 | |
| Walking Speed (m/s) | | | | | 1.1 | |
| Percent Blockage | | | | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 83 | | | | | |
| pX, platoon unblocked | | | 0.93 | | 0.93 | 0.93 |
| vC, conflicting volume | | | 270 | | 658 | 254 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 173 | | 592 | 156 |
| tC, single (s) | | | 4.2 | | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.3 | | 3.6 | 3.3 |
| p0 queue free % | | | 100 | | 76 | 100 |
| cM capacity (veh/h) | | | 1253 | | 427 | 827 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 266 | 404 | 101 |
| Volume Left | 0 | 0 | 101 |
| Volume Right | 32 | 0 | 0 |
| cSH | 1700 | 1253 | 427 |
| Volume to Capacity | 0.16 | 0.00 | 0.24 |
| Queue Length 95th (m) | 0.0 | 0.0 | 6.9 |
| Control Delay (s) | 0.0 | 0.0 | 16.0 |
| Lane LOS | | | C |
| Approach Delay (s) | 0.0 | 0.0 | 16.0 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 31.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 5: Sawmill Valley Dr & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 30 | 65 | 125 | 15 | 130 | 0 | 205 | 10 | 10 | 0 | 15 | 45 |
| Future Volume (vph) | 30 | 65 | 125 | 15 | 130 | 0 | 205 | 10 | 10 | 0 | 15 | 45 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 32 | 69 | 133 | 16 | 138 | 0 | 218 | 11 | 11 | 0 | 16 | 48 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 234 | 154 | 240 | 64 |
| Volume Left (vph) | 32 | 16 | 218 | 0 |
| Volume Right (vph) | 133 | 0 | 11 | 48 |
| Hadj (s) | -0.23 | 0.07 | 0.22 | -0.39 |
| Departure Headway (s) | 4.7 | 5.1 | 5.2 | 4.8 |
| Degree Utilization, x | 0.30 | 0.22 | 0.34 | 0.09 |
| Capacity (veh/h) | 714 | 653 | 655 | 660 |
| Control Delay (s) | 9.7 | 9.5 | 10.9 | 8.3 |
| Approach Delay (s) | 9.7 | 9.5 | 10.9 | 8.3 |
| Approach LOS | A | A | B | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | 9.9 | | |
| Level of Service | | A | | |
| Intersection Capacity Utilization | 44.8% | | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
## 6: Sawmill Valley Dr & Site Access

07/05/2022

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 15 | 5 | 210 | 150 | 5 |
| Future Volume (Veh/h) | 15 | 15 | 5 | 210 | 150 | 5 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Hourly flow rate (vph) | 18 | 18 | 6 | 253 | 181 | 6 |
| Pedestrians | 6 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 1 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 455 | 190 | 193 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 455 | 190 | 193 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 97 | 98 | 100 | | | |
| cM capacity (veh/h) | 561 | 852 | 1385 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 36 | 259 | 187 |
| Volume Left | 18 | 6 | 0 |
| Volume Right | 18 | 0 | 6 |
| cSH | 677 | 1385 | 1700 |
| Volume to Capacity | 0.05 | 0.00 | 0.11 |
| Queue Length 95th (m) | 1.3 | 0.1 | 0.0 |
| Control Delay (s) | 10.6 | 0.2 | 0.0 |
| Lane LOS | B | A | |
| Approach Delay (s) | 10.6 | 0.2 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 0.9 | | |
| Intersection Capacity Utilization | | 25.1% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

## Timings
### 1: Erin Mills Pkwy & Folkway Dr

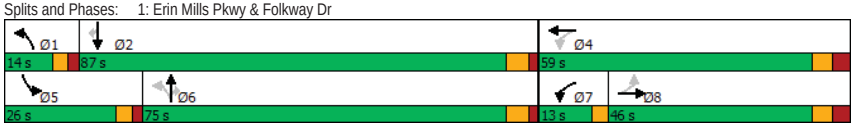
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 85 | 75 | 110 | 70 | 30 | 2295 | 40 | 250 | 1755 | 90 |
| Future Volume (vph) | 85 | 75 | 110 | 70 | 30 | 2295 | 40 | 250 | 1755 | 90 |
| Turn Type | Perm | NA | pm+pt | NA | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | | 6 | | | 2 |
| Detector Phase | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 |
| Minimum Split (s) | 58.5 | 58.5 | 8.0 | 44.5 | 13.0 | 46.2 | 46.2 | 25.0 | 26.2 | 26.2 |
| Total Split (s) | 46.0 | 46.0 | 13.0 | 59.0 | 14.0 | 75.0 | 75.0 | 26.0 | 87.0 | 87.0 |
| Total Split (%) | 28.8% | 28.8% | 8.1% | 36.9% | 8.8% | 46.9% | 46.9% | 16.3% | 54.4% | 54.4% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 3.5 | 3.5 | 0.0 | 3.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 3.0 | 7.5 | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lead/Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 15.9 | 15.9 | 33.1 | 28.6 | 78.2 | 68.9 | 68.9 | 21.0 | 87.4 | 87.4 |
| Actuated g/C Ratio | 0.12 | 0.12 | 0.24 | 0.21 | 0.57 | 0.50 | 0.50 | 0.15 | 0.64 | 0.64 |
| v/c Ratio | 0.67 | 0.52 | 0.37 | 0.61 | 0.14 | 0.90 | 0.05 | 0.92 | 0.54 | 0.09 |
| Control Delay | 83.3 | 57.0 | 45.3 | 37.9 | 10.4 | 37.4 | 0.1 | 94.2 | 16.1 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 83.3 | 57.0 | 45.3 | 37.9 | 10.4 | 37.4 | 0.1 | 94.2 | 16.1 | 2.9 |
| LOS | F | E | D | D | B | D | A | F | B | A |
| Approach Delay | | 68.2 | | 40.1 | | 36.4 | | | 24.8 | |
| Approach LOS | | E | | D | | D | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 137.3
Natural Cycle: 150
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 33.1 — Intersection LOS: C
Intersection Capacity Utilization 107.5% — ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: Erin Mills Pkwy & Folkway Dr






## Queues
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 85 | 115 | 110 | 255 | 30 | 2295 | 40 | 250 | 1755 | 90 |
| v/c Ratio | 0.67 | 0.52 | 0.37 | 0.61 | 0.14 | 0.90 | 0.05 | 0.92 | 0.54 | 0.09 |
| Control Delay | 83.3 | 57.0 | 45.3 | 37.9 | 10.4 | 37.4 | 0.1 | 94.2 | 16.1 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 83.3 | 57.0 | 45.3 | 37.9 | 10.4 | 37.4 | 0.1 | 94.2 | 16.1 | 2.9 |
| Queue Length 50th (m) | 22.5 | 25.6 | 24.3 | 41.3 | 2.3 | 202.2 | 0.0 | 67.8 | 102.2 | 0.0 |
| Queue Length 95th (m) | 40.4 | 45.1 | 40.4 | 69.3 | 6.5 | #252.6 | 0.0 | #126.5 | 132.6 | 7.7 |
| Internal Link Dist (m) | | 124.3 | | 65.0 | | 138.6 | | | 454.7 | |
| Turn Bay Length (m) | 45.0 | | 55.0 | | 90.0 | | 105.0 | 185.0 | | 140.0 |
| Base Capacity (vph) | 307 | 515 | 299 | 685 | 224 | 2556 | 824 | 273 | 3272 | 993 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.28 | 0.22 | 0.37 | 0.37 | 0.13 | 0.90 | 0.05 | 0.92 | 0.54 | 0.09 |

**Intersection Summary**

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

## HCM Signalized Intersection Capacity Analysis
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 85 | 75 | 40 | 110 | 70 | 185 | 30 | 2295 | 40 | 250 | 1755 | 90 |
| Future Volume (vph) | 85 | 75 | 40 | 110 | 70 | 185 | 30 | 2295 | 40 | 250 | 1755 | 90 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 |
| Flpb, ped/bikes | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.95 | | 1.00 | 0.89 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1733 | 1795 | | 1777 | 1681 | | 1785 | 5092 | 1526 | 1785 | 5142 | 1516 |
| Flt Permitted | 0.60 | 1.00 | | 0.54 | 1.00 | | 0.11 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1097 | 1795 | | 1012 | 1681 | | 211 | 5092 | 1526 | 1785 | 5142 | 1516 |
| 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) | 85 | 75 | 40 | 110 | 70 | 185 | 30 | 2295 | 40 | 250 | 1755 | 90 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 70 | 0 | 0 | 0 | 20 | 0 | 0 | 34 |
| Lane Group Flow (vph) | 85 | 101 | 0 | 110 | 185 | 0 | 30 | 2295 | 20 | 250 | 1755 | 56 |
| Confl. Peds. (#/hr) | 12 | | 13 | 13 | | 12 | 9 | | 3 | 3 | | 9 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 0% | 0% | 0% | 3% | 2% | 0% | 2% | 0% |
| Turn Type | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | | 4 | | | 6 | | 6 | | | 2 |
| Actuated Green, G (s) | 15.9 | 15.9 | | 28.6 | 28.6 | | 75.8 | 71.1 | 71.1 | 21.0 | 87.4 | 87.4 |
| Effective Green, g (s) | 15.9 | 15.9 | | 28.6 | 28.6 | | 75.8 | 71.1 | 71.1 | 21.0 | 87.4 | 87.4 |
| Actuated g/C Ratio | 0.11 | 0.11 | | 0.21 | 0.21 | | 0.54 | 0.51 | 0.51 | 0.15 | 0.63 | 0.63 |
| Clearance Time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 125 | 204 | | 260 | 344 | | 167 | 2597 | 778 | 268 | 3223 | 950 |
| v/s Ratio Prot | | 0.06 | | 0.03 | c0.11 | | 0.01 | c0.45 | | c0.14 | 0.34 | |
| v/s Ratio Perm | c0.08 | | | 0.06 | | | 0.09 | | 0.01 | | | 0.04 |
| v/c Ratio | 0.68 | 0.49 | | 0.42 | 0.54 | | 0.18 | 0.88 | 0.03 | 0.93 | 0.54 | 0.06 |
| Uniform Delay, d1 | 59.3 | 58.0 | | 47.0 | 49.5 | | 14.9 | 30.5 | 17.0 | 58.5 | 14.7 | 10.1 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 14.2 | 1.9 | | 1.1 | 1.6 | | 0.5 | 4.8 | 0.1 | 37.2 | 0.7 | 0.1 |
| Delay (s) | 73.5 | 59.9 | | 48.1 | 51.1 | | 15.4 | 35.3 | 17.0 | 95.7 | 15.4 | 10.2 |
| Level of Service | E | E | | D | D | | B | D | B | F | B | B |
| Approach Delay (s) | | 65.6 | | | 50.2 | | | 34.7 | | | 24.7 | |
| Approach LOS | | E | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 32.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.84 | | |
| Actuated Cycle Length (s) | 139.4 | Sum of lost time (s) | 21.7 |
| Intersection Capacity Utilization | 107.5% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 2: Erin Mills Pkwy & Site Access

07/05/2022

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 50 | 2315 | 85 | 0 | 1905 |
| Future Volume (Veh/h) | 0 | 50 | 2315 | 85 | 0 | 1905 |
| 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 | 50 | 2315 | 85 | 0 | 1905 |
| Pedestrians | 2 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | 162 |
| pX, platoon unblocked | 0.80 | | | | | |
| vC, conflicting volume | 2952 | 774 | | | 2402 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2573 | 774 | | | 2402 | |
| tC, single (s) | 6.8 | 7.1 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.4 | | | 2.2 | |
| p0 queue free % | 100 | 84 | | | 100 | |
| cM capacity (veh/h) | 17 | 322 | | | 202 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 50 | 772 | 772 | 772 | 85 | 635 | 635 | 635 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 50 | 0 | 0 | 0 | 85 | 0 | 0 | 0 |
| cSH | 322 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.16 | 0.45 | 0.45 | 0.45 | 0.05 | 0.37 | 0.37 | 0.37 |
| Queue Length 95th (m) | 4.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | | | | |
| Approach Delay (s) | 18.2 | 0.0 | | | | 0.0 | | |
| Approach LOS | C | | | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 54.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## Timings
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

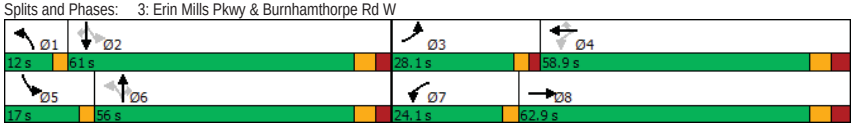
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 245 | 690 | 320 | 885 | 260 | 185 | 1895 | 250 | 200 | 1460 | 245 |
| Future Volume (vph) | 245 | 690 | 320 | 885 | 260 | 185 | 1895 | 250 | 200 | 1460 | 245 |
| Turn Type | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 10.0 | 58.9 | 8.0 | 58.9 | 58.9 | 8.0 | 47.1 | 47.1 | 8.0 | 47.1 | 47.1 |
| Total Split (s) | 28.1 | 62.9 | 24.1 | 58.9 | 58.9 | 12.0 | 56.0 | 56.0 | 17.0 | 61.0 | 61.0 |
| Total Split (%) | 17.6% | 39.3% | 15.1% | 36.8% | 36.8% | 7.5% | 35.0% | 35.0% | 10.6% | 38.1% | 38.1% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 2.0 | 3.9 | 0.0 | 3.9 | 3.9 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -1.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 7.9 | 3.0 | 7.9 | 7.9 | 1.0 | 5.6 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 23.1 | 50.5 | 69.8 | 45.1 | 45.1 | 66.1 | 50.5 | 49.0 | 70.1 | 54.0 | 54.0 |
| Actuated g/C Ratio | 0.15 | 0.33 | 0.45 | 0.29 | 0.29 | 0.43 | 0.33 | 0.32 | 0.45 | 0.35 | 0.35 |
| v/c Ratio | 0.96 | 0.49 | 0.81 | 0.83 | 0.44 | 0.80 | 1.03 | 0.38 | 0.95 | 0.80 | 0.36 |
| Control Delay | 112.1 | 41.3 | 40.2 | 58.4 | 16.0 | 52.3 | 78.0 | 6.1 | 90.3 | 50.1 | 5.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 112.1 | 41.3 | 40.2 | 58.4 | 16.0 | 52.3 | 78.0 | 6.1 | 90.3 | 50.1 | 5.6 |
| LOS | F | D | D | E | B | D | E | A | F | D | A |
| Approach Delay | | 57.7 | | 46.9 | | | 68.3 | | | 48.6 | |
| Approach LOS | | E | | D | | | E | | | D | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 154.3
Natural Cycle: 145
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 56.4 — Intersection LOS: E
Intersection Capacity Utilization 107.0% — ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 3: Erin Mills Pkwy & Burnhamthorpe Rd W






## Queues
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 245 | 815 | 320 | 885 | 260 | 185 | 1895 | 250 | 200 | 1460 | 245 |
| v/c Ratio | 0.96 | 0.49 | 0.81 | 0.83 | 0.44 | 0.80 | 1.03 | 0.38 | 0.95 | 0.80 | 0.36 |
| Control Delay | 112.1 | 41.3 | 40.2 | 58.4 | 16.0 | 52.3 | 78.0 | 6.1 | 90.3 | 50.1 | 5.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 112.1 | 41.3 | 40.2 | 58.4 | 16.0 | 52.3 | 78.0 | 6.1 | 90.3 | 50.1 | 5.6 |
| Queue Length 50th (m) | 76.7 | 72.0 | 57.7 | 133.6 | 18.8 | 33.8 | ~210.4 | 0.0 | 45.9 | 151.1 | 0.0 |
| Queue Length 95th (m) | #136.6 | 85.3 | 79.7 | 158.8 | 44.3 | #66.5 | #246.4 | 20.4 | #100.9 | 176.1 | 19.2 |
| Internal Link Dist (m) | | 139.0 | | 165.8 | | | 355.9 | | | 528.1 | |
| Turn Bay Length (m) | 100.0 | | 95.0 | | 140.0 | 175.0 | | 200.0 | 160.0 | | 180.0 |
| Base Capacity (vph) | 254 | 1807 | 413 | 1208 | 639 | 232 | 1848 | 664 | 210 | 1816 | 675 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.96 | 0.45 | 0.77 | 0.73 | 0.41 | 0.80 | 1.03 | 0.38 | 0.95 | 0.80 | 0.36 |

**Intersection Summary**

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

## HCM Signalized Intersection Capacity Analysis
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 245 | 690 | 125 | 320 | 885 | 260 | 185 | 1895 | 250 | 200 | 1460 | 245 |
| Future Volume (vph) | 245 | 690 | 125 | 320 | 885 | 260 | 185 | 1895 | 250 | 200 | 1460 | 245 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 1.0 | 5.6 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.95 | 1.00 | 1.00 | *1.00 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1700 | 5019 | | 1784 | 3650 | 1572 | 1860 | 5650 | 1557 | 1750 | 5193 | 1475 |
| Flt Permitted | 0.95 | 1.00 | | 0.28 | 1.00 | 1.00 | 0.15 | 1.00 | 1.00 | 0.08 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1700 | 5019 | | 521 | 3650 | 1572 | 279 | 5650 | 1557 | 142 | 5193 | 1475 |
| 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) | 245 | 690 | 125 | 320 | 885 | 260 | 185 | 1895 | 250 | 200 | 1460 | 245 |
| RTOR Reduction (vph) | 0 | 17 | 0 | 0 | 0 | 126 | 0 | 0 | 171 | 0 | 0 | 159 |
| Lane Group Flow (vph) | 245 | 798 | 0 | 320 | 885 | 134 | 185 | 1895 | 79 | 200 | 1460 | 86 |
| Confl. Peds. (#/hr) | 4 | | 10 | 10 | | 4 | 16 | | 3 | 3 | | 16 |
| Heavy Vehicles (%) | 5% | 1% | 6% | 0% | 0% | 0% | 1% | 2% | 1% | 2% | 1% | 5% |
| Turn Type | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Actuated Green, G (s) | 23.1 | 50.5 | | 65.0 | 45.2 | 45.2 | 58.0 | 49.0 | 49.0 | 66.0 | 54.0 | 54.0 |
| Effective Green, g (s) | 23.1 | 50.5 | | 65.0 | 45.2 | 45.2 | 62.0 | 50.5 | 49.0 | 66.0 | 54.0 | 54.0 |
| Actuated g/C Ratio | 0.15 | 0.33 | | 0.42 | 0.29 | 0.29 | 0.40 | 0.33 | 0.32 | 0.43 | 0.35 | 0.35 |
| Clearance Time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 254 | 1642 | | 381 | 1069 | 460 | 224 | 1849 | 494 | 206 | 1817 | 516 |
| v/s Ratio Prot | c0.14 | 0.16 | | 0.11 | 0.24 | | 0.06 | c0.34 | | c0.09 | 0.28 | |
| v/s Ratio Perm | | | | c0.25 | | 0.09 | 0.27 | | 0.05 | 0.33 | | 0.06 |
| v/c Ratio | 0.96 | 0.49 | | 0.84 | 0.83 | 0.29 | 0.83 | 1.02 | 0.16 | 0.97 | 0.80 | 0.17 |
| Uniform Delay, d1 | 65.2 | 41.5 | | 31.9 | 50.9 | 42.2 | 30.7 | 51.9 | 37.9 | 46.7 | 45.4 | 34.6 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 46.3 | 0.2 | | 14.9 | 5.4 | 0.4 | 21.3 | 27.5 | 0.7 | 54.1 | 3.9 | 0.7 |
| Delay (s) | 111.5 | 41.7 | | 46.8 | 56.3 | 42.5 | 52.0 | 79.4 | 38.6 | 100.8 | 49.2 | 35.3 |
| Level of Service | F | D | | D | E | D | D | E | D | F | D | D |
| Approach Delay (s) | | 57.9 | | | 51.8 | | | 72.9 | | | 52.9 | |
| Approach LOS | | E | | | D | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 60.3 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.94 | | |
| Actuated Cycle Length (s) | 154.3 | Sum of lost time (s) | 21.5 |
| Intersection Capacity Utilization | 107.0% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 4: Site Access & Folkway Dr

07/05/2022

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 285 | 80 | 5 | 305 | 60 | 5 |
| Future Volume (Veh/h) | 285 | 80 | 5 | 305 | 60 | 5 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 303 | 85 | 5 | 324 | 64 | 5 |
| Pedestrians | | | | | 5 | |
| Lane Width (m) | | | | | 3.5 | |
| Walking Speed (m/s) | | | | | 1.1 | |
| Percent Blockage | | | | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 89 | | | | | |
| pX, platoon unblocked | | | 0.97 | | 0.97 | 0.97 |
| vC, conflicting volume | | | 393 | | 684 | 350 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 359 | | 659 | 315 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 85 | 99 |
| cM capacity (veh/h) | | | 1169 | | 415 | 705 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 388 | 329 | 69 |
| Volume Left | 0 | 5 | 64 |
| Volume Right | 85 | 0 | 5 |
| cSH | 1700 | 1169 | 428 |
| Volume to Capacity | 0.23 | 0.00 | 0.16 |
| Queue Length 95th (m) | 0.0 | 0.1 | 4.3 |
| Control Delay (s) | 0.0 | 0.2 | 15.0 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 0.2 | 15.0 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.4 | | |
| Intersection Capacity Utilization | 30.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 5: Sawmill Valley Dr & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 50 | 125 | 115 | 5 | 125 | 0 | 125 | 10 | 10 | 0 | 10 | 60 |
| Future Volume (vph) | 50 | 125 | 115 | 5 | 125 | 0 | 125 | 10 | 10 | 0 | 10 | 60 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 55 | 137 | 126 | 5 | 137 | 0 | 137 | 11 | 11 | 0 | 11 | 66 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 318 | 142 | 159 | 77 |
| Volume Left (vph) | 55 | 5 | 137 | 0 |
| Volume Right (vph) | 126 | 0 | 11 | 66 |
| Hadj (s) | -0.19 | 0.09 | 0.13 | -0.48 |
| Departure Headway (s) | 4.5 | 5.0 | 5.2 | 4.8 |
| Degree Utilization, x | 0.40 | 0.20 | 0.23 | 0.10 |
| Capacity (veh/h) | 752 | 668 | 631 | 666 |
| Control Delay (s) | 10.5 | 9.2 | 9.8 | 8.3 |
| Approach Delay (s) | 10.5 | 9.2 | 9.8 | 8.3 |
| Approach LOS | B | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | 9.8 | | |
| Level of Service | | A | | |
| Intersection Capacity Utilization | | 48.3% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
## 6: Sawmill Valley Dr & Site Access

07/05/2022

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 10 | 10 | 15 | 135 | 120 | 10 |
| Future Volume (Veh/h) | 10 | 10 | 15 | 135 | 120 | 10 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 11 | 11 | 17 | 152 | 135 | 11 |
| Pedestrians | | | | 1 | | |
| Lane Width (m) | | | | 3.7 | | |
| Walking Speed (m/s) | | | | 1.1 | | |
| Percent Blockage | | | | 0 | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 326 | 142 | 146 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 326 | 142 | 146 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 98 | 99 | 99 | | | |
| cM capacity (veh/h) | 664 | 911 | 1448 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 22 | 169 | 146 |
| Volume Left | 11 | 17 | 0 |
| Volume Right | 11 | 0 | 11 |
| cSH | 768 | 1448 | 1700 |
| Volume to Capacity | 0.03 | 0.01 | 0.09 |
| Queue Length 95th (m) | 0.7 | 0.3 | 0.0 |
| Control Delay (s) | 9.8 | 0.8 | 0.0 |
| Lane LOS | A | A | |
| Approach Delay (s) | 9.8 | 0.8 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 1.1 | | |
| Intersection Capacity Utilization | | 28.5% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

## Timings
### 1: Erin Mills Pkwy & Folkway Dr

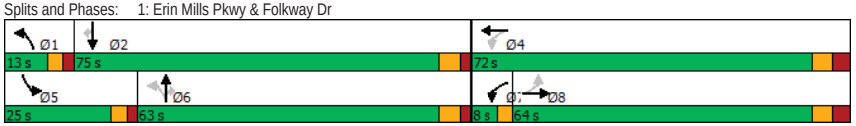
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 150 | 55 | 60 | 10 | 1395 | 15 | 80 | 1525 | 65 |
| Future Volume (vph) | 225 | 150 | 55 | 60 | 10 | 1395 | 15 | 80 | 1525 | 65 |
| Turn Type | Perm | NA | pm+pt | NA | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | | 6 | | | 2 |
| Detector Phase | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 |
| Minimum Split (s) | 58.5 | 58.5 | 8.0 | 44.5 | 13.0 | 46.2 | 46.2 | 25.0 | 26.2 | 26.2 |
| Total Split (s) | 64.0 | 64.0 | 8.0 | 72.0 | 13.0 | 63.0 | 63.0 | 25.0 | 75.0 | 75.0 |
| Total Split (%) | 40.0% | 40.0% | 5.0% | 45.0% | 8.1% | 39.4% | 39.4% | 15.6% | 46.9% | 46.9% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 3.5 | 3.5 | 0.0 | 3.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 3.0 | 7.5 | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lead/Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 38.2 | 38.2 | 48.9 | 44.3 | 68.8 | 59.4 | 59.4 | 12.3 | 72.3 | 72.3 |
| Actuated g/C Ratio | 0.28 | 0.28 | 0.36 | 0.33 | 0.51 | 0.44 | 0.44 | 0.09 | 0.54 | 0.54 |
| v/c Ratio | 0.89 | 0.41 | 0.16 | 0.51 | 0.05 | 0.63 | 0.02 | 0.53 | 0.58 | 0.08 |
| Control Delay | 80.7 | 38.9 | 28.4 | 19.0 | 18.0 | 33.8 | 0.1 | 76.0 | 25.9 | 2.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 80.7 | 38.9 | 28.4 | 19.0 | 18.0 | 33.8 | 0.1 | 76.0 | 25.9 | 2.7 |
| LOS | F | D | C | B | B | C | A | E | C | A |
| Approach Delay | | 60.8 | | 20.4 | | 33.3 | | | 27.4 | |
| Approach LOS | | E | | C | | C | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 135.1
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 32.5 — Intersection LOS: C
Intersection Capacity Utilization 97.6% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Erin Mills Pkwy & Folkway Dr






## Queues
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 225 | 205 | 55 | 325 | 10 | 1395 | 15 | 80 | 1525 | 65 |
| v/c Ratio | 0.89 | 0.41 | 0.16 | 0.51 | 0.05 | 0.63 | 0.02 | 0.53 | 0.58 | 0.08 |
| Control Delay | 80.7 | 38.9 | 28.4 | 19.0 | 18.0 | 33.8 | 0.1 | 76.0 | 25.9 | 2.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 80.7 | 38.9 | 28.4 | 19.0 | 18.0 | 33.8 | 0.1 | 76.0 | 25.9 | 2.7 |
| Queue Length 50th (m) | 56.7 | 40.9 | 9.2 | 31.6 | 1.1 | 105.8 | 0.0 | 20.6 | 92.2 | 0.0 |
| Queue Length 95th (m) | 96.5 | 66.8 | 19.5 | 61.7 | 4.9 | 160.1 | 0.0 | 42.2 | 162.7 | 5.5 |
| Internal Link Dist (m) | | 124.3 | | 58.7 | | 138.6 | | | 454.7 | |
| Turn Bay Length (m) | 45.0 | | 55.0 | | 90.0 | | 105.0 | 185.0 | | 140.0 |
| Base Capacity (vph) | 384 | 754 | 349 | 876 | 210 | 2217 | 747 | 250 | 2648 | 802 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.59 | 0.27 | 0.16 | 0.37 | 0.05 | 0.63 | 0.02 | 0.32 | 0.58 | 0.08 |

**Intersection Summary**

## HCM Signalized Intersection Capacity Analysis
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 150 | 55 | 55 | 60 | 265 | 10 | 1395 | 15 | 80 | 1525 | 65 |
| Future Volume (vph) | 225 | 150 | 55 | 55 | 60 | 265 | 10 | 1395 | 15 | 80 | 1525 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.96 | | 1.00 | 0.88 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1737 | 1747 | | 1679 | 1622 | | 1785 | 5043 | 1552 | 1653 | 4948 | 1429 |
| Flt Permitted | 0.49 | 1.00 | | 0.50 | 1.00 | | 0.12 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 900 | 1747 | | 885 | 1622 | | 229 | 5043 | 1552 | 1653 | 4948 | 1429 |
| 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) | 225 | 150 | 55 | 55 | 60 | 265 | 10 | 1395 | 15 | 80 | 1525 | 65 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 112 | 0 | 0 | 0 | 8 | 0 | 0 | 31 |
| Lane Group Flow (vph) | 225 | 196 | 0 | 55 | 213 | 0 | 10 | 1395 | 7 | 80 | 1525 | 34 |
| Confl. Peds. (#/hr) | 10 | | 10 | 10 | | 10 | 4 | | 5 | 5 | | 4 |
| Heavy Vehicles (%) | 2% | 5% | 5% | 6% | 2% | 2% | 0% | 4% | 0% | 8% | 6% | 8% |
| Turn Type | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | | 4 | | | 6 | | 6 | | | 2 |
| Actuated Green, G (s) | 38.2 | 38.2 | | 45.0 | 45.0 | | 65.6 | 62.8 | 62.8 | 12.3 | 72.3 | 72.3 |
| Effective Green, g (s) | 38.2 | 38.2 | | 45.0 | 45.0 | | 65.6 | 62.8 | 62.8 | 12.3 | 72.3 | 72.3 |
| Actuated g/C Ratio | 0.28 | 0.28 | | 0.32 | 0.32 | | 0.47 | 0.45 | 0.45 | 0.09 | 0.52 | 0.52 |
| Clearance Time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 247 | 480 | | 308 | 525 | | 139 | 2281 | 702 | 146 | 2577 | 744 |
| v/s Ratio Prot | | 0.11 | | 0.00 | c0.13 | | 0.00 | 0.28 | | c0.05 | c0.31 | |
| v/s Ratio Perm | c0.25 | | | 0.05 | | | 0.03 | | 0.00 | | | 0.02 |
| v/c Ratio | 0.91 | 0.41 | | 0.18 | 0.41 | | 0.07 | 0.61 | 0.01 | 0.55 | 0.59 | 0.05 |
| Uniform Delay, d1 | 48.7 | 41.1 | | 33.0 | 36.5 | | 20.2 | 28.8 | 20.9 | 60.6 | 23.0 | 16.3 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 34.4 | 0.6 | | 0.3 | 0.5 | | 0.2 | 1.2 | 0.0 | 4.2 | 1.0 | 0.1 |
| Delay (s) | 83.0 | 41.6 | | 33.3 | 37.0 | | 20.4 | 30.0 | 20.9 | 64.7 | 24.0 | 16.4 |
| Level of Service | F | D | | C | D | | C | C | C | E | C | B |
| Approach Delay (s) | | 63.3 | | | 36.5 | | | 29.8 | | | 25.7 | |
| Approach LOS | | E | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 32.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 138.8 | Sum of lost time (s) | 21.7 |
| Intersection Capacity Utilization | 97.6% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 2: Erin Mills Pkwy & Site Access

07/05/2022

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 1415 | 20 | 0 | 1635 |
| Future Volume (Veh/h) | 0 | 5 | 1415 | 20 | 0 | 1635 |
| 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 | 5 | 1415 | 20 | 0 | 1635 |
| Pedestrians | 1 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | 162 |
| pX, platoon unblocked | 0.79 | | | | | |
| vC, conflicting volume | 1961 | 473 | | | 1436 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1282 | 473 | | | 1436 | |
| tC, single (s) | 6.8 | 7.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.5 | | | 2.2 | |
| p0 queue free % | 100 | 99 | | | 100 | |
| cM capacity (veh/h) | 126 | 499 | | | 479 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 5 | 472 | 472 | 472 | 20 | 545 | 545 | 545 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 5 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| cSH | 499 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.28 | 0.28 | 0.28 | 0.01 | 0.32 | 0.32 | 0.32 |
| Queue Length 95th (m) | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 12.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | | | | |
| Approach Delay (s) | 12.3 | 0.0 | | | | 0.0 | | |
| Approach LOS | B | | | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 37.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## Timings
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

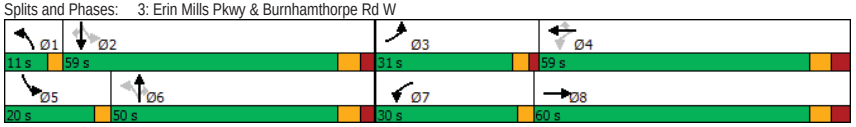
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 215 | 455 | 265 | 480 | 210 | 95 | 1010 | 170 | 220 | 1225 | 190 |
| Future Volume (vph) | 215 | 455 | 265 | 480 | 210 | 95 | 1010 | 170 | 220 | 1225 | 190 |
| Turn Type | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 10.0 | 58.9 | 8.0 | 58.9 | 58.9 | 8.0 | 47.1 | 47.1 | 8.0 | 47.1 | 47.1 |
| Total Split (s) | 31.0 | 60.0 | 30.0 | 59.0 | 59.0 | 11.0 | 50.0 | 50.0 | 20.0 | 59.0 | 59.0 |
| Total Split (%) | 19.4% | 37.5% | 18.8% | 36.9% | 36.9% | 6.9% | 31.3% | 31.3% | 12.5% | 36.9% | 36.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 2.0 | 3.9 | 0.0 | 3.9 | 3.9 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 7.9 | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 21.4 | 28.5 | 49.2 | 24.7 | 24.7 | 56.3 | 44.4 | 44.4 | 67.2 | 52.2 | 52.2 |
| Actuated g/C Ratio | 0.17 | 0.22 | 0.38 | 0.19 | 0.19 | 0.44 | 0.34 | 0.34 | 0.52 | 0.40 | 0.40 |
| v/c Ratio | 0.77 | 0.51 | 0.64 | 0.71 | 0.47 | 0.45 | 0.59 | 0.27 | 0.67 | 0.61 | 0.27 |
| Control Delay | 71.4 | 42.9 | 31.9 | 55.4 | 9.4 | 25.6 | 38.3 | 6.1 | 29.9 | 33.2 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.4 | 42.9 | 31.9 | 55.4 | 9.4 | 25.6 | 38.3 | 6.1 | 29.9 | 33.2 | 4.9 |
| LOS | E | D | C | E | A | C | D | A | C | C | A |
| Approach Delay | | 50.8 | | 38.7 | | | 33.1 | | | 29.5 | |
| Approach LOS | | D | | D | | | C | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 129.2
Natural Cycle: 135
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 35.9 — Intersection LOS: D
Intersection Capacity Utilization 95.2% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Erin Mills Pkwy & Burnhamthorpe Rd W






## Queues
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 215 | 565 | 265 | 480 | 210 | 95 | 1010 | 170 | 220 | 1225 | 190 |
| v/c Ratio | 0.77 | 0.51 | 0.64 | 0.71 | 0.47 | 0.45 | 0.59 | 0.27 | 0.67 | 0.61 | 0.27 |
| Control Delay | 71.4 | 42.9 | 31.9 | 55.4 | 9.4 | 25.6 | 38.3 | 6.1 | 29.9 | 33.2 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.4 | 42.9 | 31.9 | 55.4 | 9.4 | 25.6 | 38.3 | 6.1 | 29.9 | 33.2 | 4.9 |
| Queue Length 50th (m) | 53.0 | 43.5 | 44.6 | 61.2 | 0.0 | 12.2 | 79.7 | 0.0 | 30.5 | 90.8 | 0.0 |
| Queue Length 95th (m) | 85.5 | 58.5 | 65.0 | 81.9 | 20.5 | 25.2 | 107.0 | 16.5 | 55.1 | 121.4 | 15.8 |
| Internal Link Dist (m) | | 139.0 | | 165.8 | | | 355.9 | | | 528.1 | |
| Turn Bay Length (m) | 100.0 | | 95.0 | | 140.0 | 175.0 | | 200.0 | 160.0 | | 180.0 |
| Base Capacity (vph) | 341 | 2001 | 501 | 1410 | 700 | 216 | 1701 | 631 | 345 | 2019 | 701 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.63 | 0.28 | 0.53 | 0.34 | 0.30 | 0.44 | 0.59 | 0.27 | 0.64 | 0.61 | 0.27 |

**Intersection Summary**

## HCM Signalized Intersection Capacity Analysis
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 215 | 455 | 110 | 265 | 480 | 210 | 95 | 1010 | 170 | 220 | 1225 | 190 |
| Future Volume (vph) | 215 | 455 | 110 | 265 | 480 | 210 | 95 | 1010 | 170 | 220 | 1225 | 190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.97 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1684 | 4876 | | 1668 | 3544 | 1442 | 1700 | 4948 | 1513 | 1716 | 4995 | 1459 |
| Flt Permitted | 0.95 | 1.00 | | 0.41 | 1.00 | 1.00 | 0.16 | 1.00 | 1.00 | 0.17 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1684 | 4876 | | 712 | 3544 | 1442 | 295 | 4948 | 1513 | 306 | 4995 | 1459 |
| 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 | 455 | 110 | 265 | 480 | 210 | 95 | 1010 | 170 | 220 | 1225 | 190 |
| RTOR Reduction (vph) | 0 | 30 | 0 | 0 | 0 | 170 | 0 | 0 | 112 | 0 | 0 | 113 |
| Lane Group Flow (vph) | 215 | 535 | 0 | 265 | 480 | 40 | 95 | 1010 | 58 | 220 | 1225 | 77 |
| Confl. Peds. (#/hr) | 5 | | 1 | 1 | | 5 | 11 | | 3 | 3 | | 11 |
| Heavy Vehicles (%) | 6% | 3% | 9% | 7% | 3% | 9% | 5% | 6% | 4% | 4% | 5% | 7% |
| Turn Type | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Actuated Green, G (s) | 21.4 | 28.5 | | 44.3 | 24.7 | 24.7 | 52.2 | 44.4 | 44.4 | 63.0 | 52.2 | 52.2 |
| Effective Green, g (s) | 21.4 | 28.5 | | 44.3 | 24.7 | 24.7 | 52.2 | 44.4 | 44.4 | 63.0 | 52.2 | 52.2 |
| Actuated g/C Ratio | 0.17 | 0.22 | | 0.34 | 0.19 | 0.19 | 0.40 | 0.34 | 0.34 | 0.49 | 0.40 | 0.40 |
| Clearance Time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 279 | 1076 | | 389 | 678 | 275 | 204 | 1701 | 520 | 319 | 2019 | 589 |
| v/s Ratio Prot | c0.13 | c0.11 | | 0.10 | c0.14 | | 0.03 | 0.20 | | c0.08 | 0.25 | |
| v/s Ratio Perm | | | | 0.13 | | 0.03 | 0.16 | | 0.04 | c0.25 | | 0.05 |
| v/c Ratio | 0.77 | 0.50 | | 0.68 | 0.71 | 0.15 | 0.47 | 0.59 | 0.11 | 0.69 | 0.61 | 0.13 |
| Uniform Delay, d1 | 51.5 | 44.0 | | 33.1 | 48.8 | 43.4 | 24.8 | 34.9 | 28.9 | 21.6 | 30.3 | 24.2 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 12.4 | 0.4 | | 4.9 | 3.4 | 0.2 | 1.7 | 1.5 | 0.4 | 6.1 | 1.4 | 0.5 |
| Delay (s) | 63.9 | 44.4 | | 38.0 | 52.2 | 43.7 | 26.5 | 36.4 | 29.3 | 27.7 | 31.7 | 24.6 |
| Level of Service | E | D | | D | D | D | C | D | C | C | C | C |
| Approach Delay (s) | | 49.8 | | | 46.4 | | | 34.8 | | | 30.4 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 38.1 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 129.1 | Sum of lost time (s) | 23.0 |
| Intersection Capacity Utilization | 95.2% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 4: Site Access & Folkway Dr

07/05/2022

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 215 | 30 | 10 | 365 | 15 | 5 |
| Future Volume (Veh/h) | 215 | 30 | 10 | 365 | 15 | 5 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 229 | 32 | 11 | 388 | 16 | 5 |
| Pedestrians | | | | | 4 | |
| Lane Width (m) | | | | | 3.5 | |
| Walking Speed (m/s) | | | | | 1.1 | |
| Percent Blockage | | | | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 83 | | | | | |
| pX, platoon unblocked | | | 0.92 | | 0.92 | 0.92 |
| vC, conflicting volume | | | 265 | | 659 | 249 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 163 | | 589 | 146 |
| tC, single (s) | | | 4.2 | | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.3 | | 3.6 | 3.3 |
| p0 queue free % | | | 99 | | 96 | 99 |
| cM capacity (veh/h) | | | 1259 | | 423 | 835 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 261 | 399 | 21 |
| Volume Left | 0 | 11 | 16 |
| Volume Right | 32 | 0 | 5 |
| cSH | 1700 | 1259 | 479 |
| Volume to Capacity | 0.15 | 0.01 | 0.04 |
| Queue Length 95th (m) | 0.0 | 0.2 | 1.0 |
| Control Delay (s) | 0.0 | 0.3 | 12.9 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 0.3 | 12.9 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.6 | | |
| Intersection Capacity Utilization | 37.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 5: Sawmill Valley Dr & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 30 | 65 | 125 | 15 | 130 | 0 | 200 | 10 | 10 | 0 | 15 | 45 |
| Future Volume (vph) | 30 | 65 | 125 | 15 | 130 | 0 | 200 | 10 | 10 | 0 | 15 | 45 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 32 | 69 | 133 | 16 | 138 | 0 | 213 | 11 | 11 | 0 | 16 | 48 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 234 | 154 | 235 | 64 |
| Volume Left (vph) | 32 | 16 | 213 | 0 |
| Volume Right (vph) | 133 | 0 | 11 | 48 |
| Hadj (s) | -0.23 | 0.07 | 0.21 | -0.39 |
| Departure Headway (s) | 4.7 | 5.1 | 5.2 | 4.8 |
| Degree Utilization, x | 0.30 | 0.22 | 0.34 | 0.09 |
| Capacity (veh/h) | 717 | 656 | 656 | 661 |
| Control Delay (s) | 9.7 | 9.5 | 10.8 | 8.3 |
| Approach Delay (s) | 9.7 | 9.5 | 10.8 | 8.3 |
| Approach LOS | A | A | B | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | 9.9 | | |
| Level of Service | | A | | |
| Intersection Capacity Utilization | 44.5% | | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
## 6: Sawmill Valley Dr & Site Access

07/05/2022

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 220 | 155 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 220 | 155 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 265 | 187 | 0 |
| Pedestrians | 6 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 1 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 458 | 193 | 193 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 458 | 193 | 193 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 561 | 849 | 1385 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 0 | 265 | 187 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1700 | 1385 | 1700 |
| Volume to Capacity | 0.05 | 0.00 | 0.11 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | |
| Approach Delay (s) | 0.0 | 0.0 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 0.0 | | |
| Intersection Capacity Utilization | | 14.9% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

## Timings
### 1: Erin Mills Pkwy & Folkway Dr

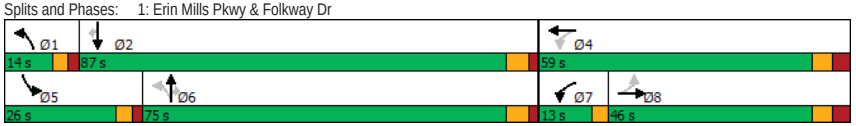
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 85 | 100 | 90 | 110 | 30 | 2310 | 50 | 220 | 1790 | 90 |
| Future Volume (vph) | 85 | 100 | 90 | 110 | 30 | 2310 | 50 | 220 | 1790 | 90 |
| Turn Type | Perm | NA | pm+pt | NA | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | | 6 | | | 2 |
| Detector Phase | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 |
| Minimum Split (s) | 58.5 | 58.5 | 8.0 | 44.5 | 13.0 | 46.2 | 46.2 | 25.0 | 26.2 | 26.2 |
| Total Split (s) | 46.0 | 46.0 | 13.0 | 59.0 | 14.0 | 75.0 | 75.0 | 26.0 | 87.0 | 87.0 |
| Total Split (%) | 28.8% | 28.8% | 8.1% | 36.9% | 8.8% | 46.9% | 46.9% | 16.3% | 54.4% | 54.4% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 3.5 | 3.5 | 0.0 | 3.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 3.0 | 7.5 | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lead/Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 18.8 | 18.8 | 35.7 | 31.1 | 78.3 | 69.0 | 69.0 | 20.5 | 87.0 | 87.0 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.26 | 0.22 | 0.56 | 0.49 | 0.49 | 0.15 | 0.62 | 0.62 |
| v/c Ratio | 0.94 | 0.55 | 0.31 | 0.80 | 0.15 | 0.92 | 0.06 | 0.84 | 0.56 | 0.09 |
| Control Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.7 | 40.2 | 0.1 | 85.5 | 17.9 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.7 | 40.2 | 0.1 | 85.5 | 17.9 | 3.2 |
| LOS | F | E | D | D | B | D | A | F | B | A |
| Approach Delay | | 89.7 | | 51.9 | | 39.0 | | | 24.4 | |
| Approach LOS | | F | | D | | D | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 139.4
Natural Cycle: 150
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 36.3 — Intersection LOS: D
Intersection Capacity Utilization 109.6% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Erin Mills Pkwy & Folkway Dr






## Queues
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 85 | 140 | 90 | 345 | 30 | 2310 | 50 | 220 | 1790 | 90 |
| v/c Ratio | 0.94 | 0.55 | 0.31 | 0.80 | 0.15 | 0.92 | 0.06 | 0.84 | 0.56 | 0.09 |
| Control Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.7 | 40.2 | 0.1 | 85.5 | 17.9 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 139.4 | 59.5 | 42.8 | 54.3 | 11.7 | 40.2 | 0.1 | 85.5 | 17.9 | 3.2 |
| Queue Length 50th (m) | 23.7 | 33.7 | 19.6 | 73.4 | 2.5 | 214.2 | 0.0 | 60.0 | 111.6 | 0.0 |
| Queue Length 95th (m) | #48.0 | 55.0 | 33.6 | 108.6 | 7.2 | #287.1 | 0.0 | #112.1 | 149.0 | 8.2 |
| Internal Link Dist (m) | | 124.3 | | 65.0 | | 138.6 | | | 454.7 | |
| Turn Bay Length (m) | 45.0 | | 55.0 | | 90.0 | | 105.0 | 185.0 | | 140.0 |
| Base Capacity (vph) | 187 | 511 | 295 | 672 | 213 | 2522 | 815 | 269 | 3209 | 975 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.45 | 0.27 | 0.31 | 0.51 | 0.14 | 0.92 | 0.06 | 0.82 | 0.56 | 0.09 |

**Intersection Summary**

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

## HCM Signalized Intersection Capacity Analysis
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 85 | 100 | 40 | 90 | 110 | 235 | 30 | 2310 | 50 | 220 | 1790 | 90 |
| Future Volume (vph) | 85 | 100 | 40 | 90 | 110 | 235 | 30 | 2310 | 50 | 220 | 1790 | 90 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 |
| Flpb, ped/bikes | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.96 | | 1.00 | 0.90 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1736 | 1814 | | 1778 | 1695 | | 1785 | 5092 | 1526 | 1785 | 5142 | 1515 |
| Flt Permitted | 0.37 | 1.00 | | 0.49 | 1.00 | | 0.10 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 675 | 1814 | | 914 | 1695 | | 195 | 5092 | 1526 | 1785 | 5142 | 1515 |
| 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) | 85 | 100 | 40 | 90 | 110 | 235 | 30 | 2310 | 50 | 220 | 1790 | 90 |
| RTOR Reduction (vph) | 0 | 10 | 0 | 0 | 55 | 0 | 0 | 0 | 25 | 0 | 0 | 35 |
| Lane Group Flow (vph) | 85 | 130 | 0 | 90 | 290 | 0 | 30 | 2310 | 25 | 220 | 1790 | 55 |
| Confl. Peds. (#/hr) | 12 | | 13 | 13 | | 12 | 9 | | 3 | 3 | | 9 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 0% | 0% | 0% | 3% | 2% | 0% | 2% | 0% |
| Turn Type | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | | 4 | | | 6 | | 6 | | | 2 |
| Actuated Green, G (s) | 18.8 | 18.8 | | 31.2 | 31.2 | | 75.7 | 71.1 | 71.1 | 20.5 | 87.0 | 87.0 |
| Effective Green, g (s) | 18.8 | 18.8 | | 31.2 | 31.2 | | 75.7 | 71.1 | 71.1 | 20.5 | 87.0 | 87.0 |
| Actuated g/C Ratio | 0.13 | 0.13 | | 0.22 | 0.22 | | 0.53 | 0.50 | 0.50 | 0.14 | 0.61 | 0.61 |
| Clearance Time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 89 | 241 | | 258 | 373 | | 156 | 2558 | 766 | 258 | 3161 | 931 |
| v/s Ratio Prot | | 0.07 | | 0.02 | c0.17 | | 0.01 | c0.45 | | c0.12 | 0.35 | |
| v/s Ratio Perm | c0.13 | | | 0.05 | | | 0.10 | | 0.02 | | | 0.04 |
| v/c Ratio | 0.96 | 0.54 | | 0.35 | 0.78 | | 0.19 | 0.90 | 0.03 | 0.85 | 0.57 | 0.06 |
| Uniform Delay, d1 | 60.9 | 57.3 | | 45.4 | 51.9 | | 15.9 | 32.1 | 17.8 | 59.0 | 16.1 | 10.9 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 79.9 | 2.3 | | 0.8 | 9.8 | | 0.6 | 5.8 | 0.1 | 22.8 | 0.7 | 0.1 |
| Delay (s) | 140.8 | 59.6 | | 46.2 | 61.6 | | 16.5 | 37.8 | 17.9 | 81.9 | 16.8 | 11.0 |
| Level of Service | F | E | | D | E | | B | D | B | F | B | B |
| Approach Delay (s) | | 90.3 | | | 58.4 | | | 37.2 | | | 23.4 | |
| Approach LOS | | F | | | E | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 35.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.89 | | |
| Actuated Cycle Length (s) | 141.5 | Sum of lost time (s) | 21.7 |
| Intersection Capacity Utilization | 109.6% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 2: Erin Mills Pkwy & Site Access

07/05/2022

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 20 | 2370 | 75 | 0 | 1920 |
| Future Volume (Veh/h) | 0 | 20 | 2370 | 75 | 0 | 1920 |
| 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 | 20 | 2370 | 75 | 0 | 1920 |
| Pedestrians | 2 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | 162 |
| pX, platoon unblocked | 0.79 | | | | | |
| vC, conflicting volume | 3012 | 792 | | | 2447 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2618 | 792 | | | 2447 | |
| tC, single (s) | 6.8 | 7.1 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.4 | | | 2.2 | |
| p0 queue free % | 100 | 94 | | | 100 | |
| cM capacity (veh/h) | 16 | 313 | | | 194 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 20 | 790 | 790 | 790 | 75 | 640 | 640 | 640 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 20 | 0 | 0 | 0 | 75 | 0 | 0 | 0 |
| cSH | 313 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.06 | 0.46 | 0.46 | 0.46 | 0.04 | 0.38 | 0.38 | 0.38 |
| Queue Length 95th (m) | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | | | | |
| Approach Delay (s) | 17.3 | 0.0 | | | | 0.0 | | |
| Approach LOS | C | | | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 55.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## Timings
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

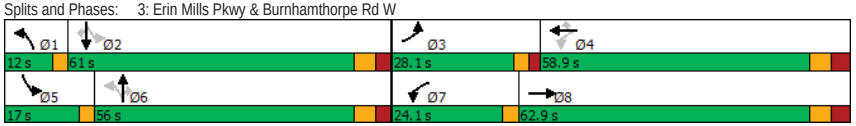
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 235 | 705 | 320 | 905 | 260 | 185 | 1950 | 250 | 200 | 1480 | 240 |
| Future Volume (vph) | 235 | 705 | 320 | 905 | 260 | 185 | 1950 | 250 | 200 | 1480 | 240 |
| Turn Type | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 10.0 | 58.9 | 8.0 | 58.9 | 58.9 | 8.0 | 47.1 | 47.1 | 8.0 | 47.1 | 47.1 |
| Total Split (s) | 28.1 | 62.9 | 24.1 | 58.9 | 58.9 | 12.0 | 56.0 | 56.0 | 17.0 | 61.0 | 61.0 |
| Total Split (%) | 17.6% | 39.3% | 15.1% | 36.8% | 36.8% | 7.5% | 35.0% | 35.0% | 10.6% | 38.1% | 38.1% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 2.0 | 3.9 | 0.0 | 3.9 | 3.9 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -1.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 7.9 | 3.0 | 7.9 | 7.9 | 1.0 | 5.6 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 22.9 | 50.9 | 70.4 | 45.7 | 45.7 | 66.1 | 50.5 | 49.0 | 70.1 | 54.0 | 54.0 |
| Actuated g/C Ratio | 0.15 | 0.33 | 0.46 | 0.30 | 0.30 | 0.43 | 0.33 | 0.32 | 0.45 | 0.35 | 0.35 |
| v/c Ratio | 0.93 | 0.50 | 0.81 | 0.84 | 0.44 | 0.80 | 1.06 | 0.38 | 0.95 | 0.82 | 0.36 |
| Control Delay | 106.6 | 41.5 | 40.9 | 58.9 | 15.5 | 52.9 | 87.6 | 6.1 | 90.9 | 51.0 | 5.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 106.6 | 41.5 | 40.9 | 58.9 | 15.5 | 52.9 | 87.6 | 6.1 | 90.9 | 51.0 | 5.7 |
| LOS | F | D | D | E | B | D | F | A | F | D | A |
| Approach Delay | | 55.9 | | 47.4 | | | 76.3 | | | 49.5 | |
| Approach LOS | | E | | D | | | E | | | D | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 154.7
Natural Cycle: 145
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 59.4 — Intersection LOS: E
Intersection Capacity Utilization 108.3% — ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 3: Erin Mills Pkwy & Burnhamthorpe Rd W






## Queues
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 235 | 830 | 320 | 905 | 260 | 185 | 1950 | 250 | 200 | 1480 | 240 |
| v/c Ratio | 0.93 | 0.50 | 0.81 | 0.84 | 0.44 | 0.80 | 1.06 | 0.38 | 0.95 | 0.82 | 0.36 |
| Control Delay | 106.6 | 41.5 | 40.9 | 58.9 | 15.5 | 52.9 | 87.6 | 6.1 | 90.9 | 51.0 | 5.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 106.6 | 41.5 | 40.9 | 58.9 | 15.5 | 52.9 | 87.6 | 6.1 | 90.9 | 51.0 | 5.7 |
| Queue Length 50th (m) | 73.8 | 73.7 | 57.7 | 137.7 | 18.1 | 34.3 | ~225.2 | 0.0 | 46.4 | 155.7 | 0.0 |
| Queue Length 95th (m) | #130.0 | 87.2 | #80.7 | 163.4 | 43.4 | #66.5 | #258.3 | 20.4 | #100.9 | 179.3 | 19.2 |
| Internal Link Dist (m) | | 139.0 | | 165.8 | | | 355.9 | | | 528.1 | |
| Turn Bay Length (m) | 100.0 | | 95.0 | | 140.0 | 175.0 | | 200.0 | 160.0 | | 180.0 |
| Base Capacity (vph) | 254 | 1803 | 408 | 1205 | 640 | 231 | 1843 | 663 | 210 | 1812 | 670 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.93 | 0.46 | 0.78 | 0.75 | 0.41 | 0.80 | 1.06 | 0.38 | 0.95 | 0.82 | 0.36 |

**Intersection Summary**

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

## HCM Signalized Intersection Capacity Analysis
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 235 | 705 | 125 | 320 | 905 | 260 | 185 | 1950 | 250 | 200 | 1480 | 240 |
| Future Volume (vph) | 235 | 705 | 125 | 320 | 905 | 260 | 185 | 1950 | 250 | 200 | 1480 | 240 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 1.0 | 5.6 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.95 | 1.00 | 1.00 | *1.00 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1700 | 5022 | | 1784 | 3650 | 1572 | 1860 | 5650 | 1557 | 1750 | 5193 | 1475 |
| Flt Permitted | 0.95 | 1.00 | | 0.27 | 1.00 | 1.00 | 0.15 | 1.00 | 1.00 | 0.08 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1700 | 5022 | | 506 | 3650 | 1572 | 279 | 5650 | 1557 | 142 | 5193 | 1475 |
| 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) | 235 | 705 | 125 | 320 | 905 | 260 | 185 | 1950 | 250 | 200 | 1480 | 240 |
| RTOR Reduction (vph) | 0 | 16 | 0 | 0 | 0 | 127 | 0 | 0 | 171 | 0 | 0 | 156 |
| Lane Group Flow (vph) | 235 | 814 | 0 | 320 | 905 | 133 | 185 | 1950 | 79 | 200 | 1480 | 84 |
| Confl. Peds. (#/hr) | 4 | | 10 | 10 | | 4 | 16 | | 3 | 3 | | 16 |
| Heavy Vehicles (%) | 5% | 1% | 6% | 0% | 0% | 0% | 1% | 2% | 1% | 2% | 1% | 5% |
| Turn Type | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Actuated Green, G (s) | 22.9 | 50.9 | | 65.6 | 45.8 | 45.8 | 58.0 | 49.0 | 49.0 | 66.0 | 54.0 | 54.0 |
| Effective Green, g (s) | 22.9 | 50.9 | | 65.6 | 45.8 | 45.8 | 62.0 | 50.5 | 49.0 | 66.0 | 54.0 | 54.0 |
| Actuated g/C Ratio | 0.15 | 0.33 | | 0.42 | 0.30 | 0.30 | 0.40 | 0.33 | 0.32 | 0.43 | 0.35 | 0.35 |
| Clearance Time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 251 | 1652 | | 378 | 1080 | 465 | 224 | 1844 | 493 | 206 | 1812 | 514 |
| v/s Ratio Prot | c0.14 | 0.16 | | 0.11 | 0.25 | | 0.06 | c0.35 | | c0.09 | 0.29 | |
| v/s Ratio Perm | | | | c0.25 | | 0.08 | 0.27 | | 0.05 | 0.33 | | 0.06 |
| v/c Ratio | 0.94 | 0.49 | | 0.85 | 0.84 | 0.29 | 0.83 | 1.06 | 0.16 | 0.97 | 0.82 | 0.16 |
| Uniform Delay, d1 | 65.2 | 41.6 | | 31.7 | 51.0 | 41.9 | 30.8 | 52.1 | 38.0 | 46.9 | 45.8 | 34.8 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 39.4 | 0.2 | | 15.9 | 5.8 | 0.3 | 21.3 | 38.1 | 0.7 | 54.1 | 4.2 | 0.7 |
| Delay (s) | 104.6 | 41.8 | | 47.6 | 56.8 | 42.2 | 52.2 | 90.2 | 38.7 | 101.0 | 50.1 | 35.4 |
| Level of Service | F | D | | D | E | D | D | F | D | F | D | D |
| Approach Delay (s) | | 55.6 | | | 52.3 | | | 81.8 | | | 53.5 | |
| Approach LOS | | E | | | D | | | F | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 63.4 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 154.7 | Sum of lost time (s) | 21.5 |
| Intersection Capacity Utilization | 108.3% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 4: Site Access & Folkway Dr

07/05/2022

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 275 | 95 | 10 | 295 | 140 | 30 |
| Future Volume (Veh/h) | 275 | 95 | 10 | 295 | 140 | 30 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 293 | 101 | 11 | 314 | 149 | 32 |
| Pedestrians | | | | | 5 | |
| Lane Width (m) | | | | | 3.5 | |
| Walking Speed (m/s) | | | | | 1.1 | |
| Percent Blockage | | | | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 89 | | | | | |
| pX, platoon unblocked | | | 0.95 | | 0.95 | 0.95 |
| vC, conflicting volume | | | 399 | | 684 | 348 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 338 | | 640 | 285 |
| 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 | | 64 | 96 |
| cM capacity (veh/h) | | | 1162 | | 414 | 716 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 394 | 325 | 181 |
| Volume Left | 0 | 11 | 149 |
| Volume Right | 101 | 0 | 32 |
| cSH | 1700 | 1162 | 447 |
| Volume to Capacity | 0.23 | 0.01 | 0.40 |
| Queue Length 95th (m) | 0.0 | 0.2 | 14.6 |
| Control Delay (s) | 0.0 | 0.4 | 18.4 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 0.4 | 18.4 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.8 | | |
| Intersection Capacity Utilization | 39.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 5: Sawmill Valley Dr & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 50 | 135 | 120 | 5 | 120 | 0 | 125 | 10 | 10 | 0 | 10 | 60 |
| Future Volume (vph) | 50 | 135 | 120 | 5 | 120 | 0 | 125 | 10 | 10 | 0 | 10 | 60 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 55 | 148 | 132 | 5 | 132 | 0 | 137 | 11 | 11 | 0 | 11 | 66 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 335 | 137 | 159 | 77 |
| Volume Left (vph) | 55 | 5 | 137 | 0 |
| Volume Right (vph) | 132 | 0 | 11 | 66 |
| Hadj (s) | -0.19 | 0.09 | 0.13 | -0.48 |
| Departure Headway (s) | 4.5 | 5.0 | 5.3 | 4.8 |
| Degree Utilization, x | 0.42 | 0.19 | 0.23 | 0.10 |
| Capacity (veh/h) | 754 | 664 | 626 | 661 |
| Control Delay (s) | 10.8 | 9.2 | 9.9 | 8.4 |
| Approach Delay (s) | 10.8 | 9.2 | 9.9 | 8.4 |
| Approach LOS | B | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | 10.0 | | |
| Level of Service | | B | | |
| Intersection Capacity Utilization | | 45.4% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
## 6: Sawmill Valley Dr & Site Access

07/05/2022

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 145 | 135 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 145 | 135 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 163 | 152 | 0 |
| Pedestrians | | | | 1 | | |
| Lane Width (m) | | | | 3.7 | | |
| Walking Speed (m/s) | | | | 1.1 | | |
| Percent Blockage | | | | 0 | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 315 | 153 | 152 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 315 | 153 | 152 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 682 | 897 | 1441 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 0 | 163 | 152 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1700 | 1441 | 1700 |
| Volume to Capacity | 0.03 | 0.00 | 0.09 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | |
| Approach Delay (s) | 0.0 | 0.0 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 0.0 | | |
| Intersection Capacity Utilization | | 18.0% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

## Timings
### 1: Erin Mills Pkwy & Folkway Dr

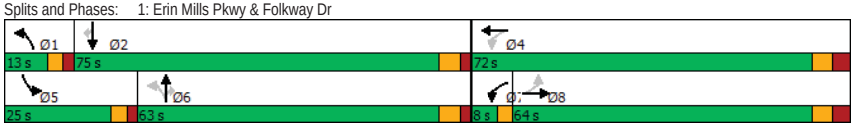
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 145 | 130 | 60 | 10 | 1475 | 5 | 100 | 1525 | 65 |
| Future Volume (vph) | 225 | 145 | 130 | 60 | 10 | 1475 | 5 | 100 | 1525 | 65 |
| Turn Type | Perm | NA | pm+pt | NA | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | | 6 | | | 2 |
| Detector Phase | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 |
| Minimum Split (s) | 58.5 | 58.5 | 8.0 | 44.5 | 13.0 | 46.2 | 46.2 | 25.0 | 26.2 | 26.2 |
| Total Split (s) | 64.0 | 64.0 | 8.0 | 72.0 | 13.0 | 63.0 | 63.0 | 25.0 | 75.0 | 75.0 |
| Total Split (%) | 40.0% | 40.0% | 5.0% | 45.0% | 8.1% | 39.4% | 39.4% | 15.6% | 46.9% | 46.9% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 3.5 | 3.5 | 0.0 | 3.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 3.0 | 7.5 | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lead/Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 38.9 | 38.9 | 51.6 | 47.0 | 67.6 | 58.3 | 58.3 | 13.6 | 72.4 | 72.4 |
| Actuated g/C Ratio | 0.28 | 0.28 | 0.37 | 0.34 | 0.49 | 0.42 | 0.42 | 0.10 | 0.53 | 0.53 |
| v/c Ratio | 0.89 | 0.40 | 0.36 | 0.52 | 0.05 | 0.69 | 0.01 | 0.61 | 0.59 | 0.08 |
| Control Delay | 81.9 | 39.1 | 32.4 | 19.0 | 18.2 | 37.0 | 0.0 | 78.6 | 26.5 | 2.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 81.9 | 39.1 | 32.4 | 19.0 | 18.2 | 37.0 | 0.0 | 78.6 | 26.5 | 2.7 |
| LOS | F | D | C | B | B | D | A | E | C | A |
| Approach Delay | | 61.8 | | 22.7 | | 36.8 | | | 28.7 | |
| Approach LOS | | E | | C | | D | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 137.9
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 34.4 — Intersection LOS: C
Intersection Capacity Utilization 98.5% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Erin Mills Pkwy & Folkway Dr






## Queues
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 225 | 200 | 130 | 345 | 10 | 1475 | 5 | 100 | 1525 | 65 |
| v/c Ratio | 0.89 | 0.40 | 0.36 | 0.52 | 0.05 | 0.69 | 0.01 | 0.61 | 0.59 | 0.08 |
| Control Delay | 81.9 | 39.1 | 32.4 | 19.0 | 18.2 | 37.0 | 0.0 | 78.6 | 26.5 | 2.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 81.9 | 39.1 | 32.4 | 19.0 | 18.2 | 37.0 | 0.0 | 78.6 | 26.5 | 2.7 |
| Queue Length 50th (m) | 57.8 | 40.4 | 23.4 | 34.2 | 1.2 | 118.0 | 0.0 | 26.2 | 93.3 | 0.0 |
| Queue Length 95th (m) | 96.5 | 65.0 | 40.0 | 65.0 | 4.9 | 175.8 | 0.0 | 50.2 | 162.7 | 5.5 |
| Internal Link Dist (m) | | 124.3 | | 58.7 | | 138.6 | | | 454.7 | |
| Turn Bay Length (m) | 45.0 | | 55.0 | | 90.0 | | 105.0 | 185.0 | | 140.0 |
| Base Capacity (vph) | 374 | 733 | 363 | 862 | 204 | 2131 | 723 | 243 | 2598 | 789 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.27 | 0.36 | 0.40 | 0.05 | 0.69 | 0.01 | 0.41 | 0.59 | 0.08 |

**Intersection Summary**

## HCM Signalized Intersection Capacity Analysis
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 145 | 55 | 130 | 60 | 285 | 10 | 1475 | 5 | 100 | 1525 | 65 |
| Future Volume (vph) | 225 | 145 | 55 | 130 | 60 | 285 | 10 | 1475 | 5 | 100 | 1525 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.96 | | 1.00 | 0.88 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1738 | 1744 | | 1679 | 1618 | | 1785 | 5043 | 1551 | 1653 | 4948 | 1429 |
| Flt Permitted | 0.49 | 1.00 | | 0.51 | 1.00 | | 0.12 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 900 | 1744 | | 897 | 1618 | | 230 | 5043 | 1551 | 1653 | 4948 | 1429 |
| 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) | 225 | 145 | 55 | 130 | 60 | 285 | 10 | 1475 | 5 | 100 | 1525 | 65 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 119 | 0 | 0 | 0 | 3 | 0 | 0 | 32 |
| Lane Group Flow (vph) | 225 | 191 | 0 | 130 | 226 | 0 | 10 | 1475 | 2 | 100 | 1525 | 33 |
| Confl. Peds. (#/hr) | 10 | | 10 | 10 | | 10 | 4 | | 5 | 5 | | 4 |
| Heavy Vehicles (%) | 2% | 5% | 5% | 6% | 2% | 2% | 0% | 4% | 0% | 8% | 6% | 8% |
| Turn Type | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | | 4 | | | 6 | | 6 | | | 2 |
| Actuated Green, G (s) | 38.9 | 38.9 | | 47.0 | 47.0 | | 64.4 | 61.6 | 61.6 | 13.6 | 72.4 | 72.4 |
| Effective Green, g (s) | 38.9 | 38.9 | | 47.0 | 47.0 | | 64.4 | 61.6 | 61.6 | 13.6 | 72.4 | 72.4 |
| Actuated g/C Ratio | 0.28 | 0.28 | | 0.33 | 0.33 | | 0.46 | 0.44 | 0.44 | 0.10 | 0.51 | 0.51 |
| Clearance Time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 248 | 481 | | 327 | 539 | | 136 | 2204 | 678 | 159 | 2542 | 734 |
| v/s Ratio Prot | | 0.11 | | 0.01 | c0.14 | | 0.00 | c0.29 | | c0.06 | 0.31 | |
| v/s Ratio Perm | c0.25 | | | 0.12 | | | 0.03 | | 0.00 | | | 0.02 |
| v/c Ratio | 0.91 | 0.40 | | 0.40 | 0.42 | | 0.07 | 0.67 | 0.00 | 0.63 | 0.60 | 0.05 |
| Uniform Delay, d1 | 49.3 | 41.5 | | 36.6 | 36.4 | | 21.6 | 31.5 | 22.3 | 61.2 | 24.1 | 17.0 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 33.2 | 0.5 | | 0.8 | 0.5 | | 0.2 | 1.6 | 0.0 | 7.6 | 1.1 | 0.1 |
| Delay (s) | 82.5 | 42.0 | | 37.4 | 36.9 | | 21.8 | 33.2 | 22.4 | 68.8 | 25.1 | 17.2 |
| Level of Service | F | D | | D | D | | C | C | C | E | C | B |
| Approach Delay (s) | | 63.4 | | | 37.0 | | | 33.1 | | | 27.4 | |
| Approach LOS | | E | | | D | | | C | | | C | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| HCM 2000 Control Delay | 34.3 | HCM 2000 Level of Service | C | |
| HCM 2000 Volume to Capacity ratio | 0.73 | | | |
| Actuated Cycle Length (s) | 140.9 | Sum of lost time (s) | 21.7 | |
| Intersection Capacity Utilization | 98.5% | ICU Level of Service | F | |
| Analysis Period (min) | 15 | | | |
| c Critical Lane Group | | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 2: Erin Mills Pkwy & Site Access

07/05/2022

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 85 | 1405 | 30 | 0 | 1710 |
| Future Volume (Veh/h) | 0 | 85 | 1405 | 30 | 0 | 1710 |
| 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 | 85 | 1405 | 30 | 0 | 1710 |
| Pedestrians | 1 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | 162 |
| pX, platoon unblocked | 0.79 | | | | | |
| vC, conflicting volume | 1976 | 469 | | | 1436 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1288 | 469 | | | 1436 | |
| tC, single (s) | 6.8 | 7.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.5 | | | 2.2 | |
| p0 queue free % | 100 | 83 | | | 100 | |
| cM capacity (veh/h) | 124 | 501 | | | 479 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 85 | 468 | 468 | 468 | 30 | 570 | 570 | 570 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 85 | 0 | 0 | 0 | 30 | 0 | 0 | 0 |
| cSH | 501 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.17 | 0.28 | 0.28 | 0.28 | 0.02 | 0.34 | 0.34 | 0.34 |
| Queue Length 95th (m) | 4.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 13.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | | | | |
| Approach Delay (s) | 13.6 | 0.0 | | | | 0.0 | | |
| Approach LOS | B | | | | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.4 | | | |
| Intersection Capacity Utilization | 39.1% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

## Timings
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

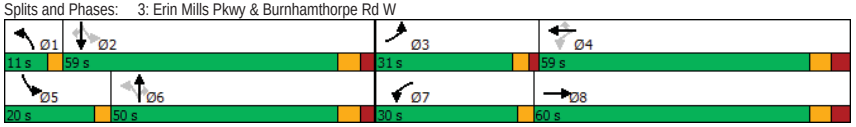
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 210 | 455 | 265 | 480 | 210 | 95 | 1015 | 170 | 230 | 1275 | 205 |
| Future Volume (vph) | 210 | 455 | 265 | 480 | 210 | 95 | 1015 | 170 | 230 | 1275 | 205 |
| Turn Type | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 10.0 | 58.9 | 8.0 | 58.9 | 58.9 | 8.0 | 47.1 | 47.1 | 8.0 | 47.1 | 47.1 |
| Total Split (s) | 31.0 | 60.0 | 30.0 | 59.0 | 59.0 | 11.0 | 50.0 | 50.0 | 20.0 | 59.0 | 59.0 |
| Total Split (%) | 19.4% | 37.5% | 18.8% | 36.9% | 36.9% | 6.9% | 31.3% | 31.3% | 12.5% | 36.9% | 36.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 2.0 | 3.9 | 0.0 | 3.9 | 3.9 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 7.9 | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 21.0 | 28.0 | 49.2 | 24.6 | 24.6 | 55.6 | 43.6 | 43.6 | 67.2 | 52.2 | 52.2 |
| Actuated g/C Ratio | 0.16 | 0.22 | 0.38 | 0.19 | 0.19 | 0.43 | 0.34 | 0.34 | 0.52 | 0.41 | 0.41 |
| v/c Ratio | 0.77 | 0.52 | 0.64 | 0.71 | 0.47 | 0.47 | 0.61 | 0.27 | 0.68 | 0.63 | 0.29 |
| Control Delay | 71.0 | 43.1 | 32.1 | 55.2 | 9.3 | 26.4 | 38.7 | 6.1 | 30.6 | 33.6 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.0 | 43.1 | 32.1 | 55.2 | 9.3 | 26.4 | 38.7 | 6.1 | 30.6 | 33.6 | 4.9 |
| LOS | E | D | C | E | A | C | D | A | C | C | A |
| Approach Delay | | 50.7 | | 38.7 | | | 33.5 | | | 29.7 | |
| Approach LOS | | D | | D | | | C | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 128.8
Natural Cycle: 135
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 36.0 — Intersection LOS: D
Intersection Capacity Utilization 95.5% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Erin Mills Pkwy & Burnhamthorpe Rd W






## Queues
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 210 | 565 | 265 | 480 | 210 | 95 | 1015 | 170 | 230 | 1275 | 205 |
| v/c Ratio | 0.77 | 0.52 | 0.64 | 0.71 | 0.47 | 0.47 | 0.61 | 0.27 | 0.68 | 0.63 | 0.29 |
| Control Delay | 71.0 | 43.1 | 32.1 | 55.2 | 9.3 | 26.4 | 38.7 | 6.1 | 30.6 | 33.6 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.0 | 43.1 | 32.1 | 55.2 | 9.3 | 26.4 | 38.7 | 6.1 | 30.6 | 33.6 | 4.9 |
| Queue Length 50th (m) | 51.6 | 43.5 | 44.6 | 60.9 | 0.0 | 12.0 | 79.6 | 0.0 | 31.7 | 94.7 | 0.0 |
| Queue Length 95th (m) | 83.4 | 58.5 | 65.0 | 81.9 | 20.5 | 25.2 | 107.5 | 16.5 | #63.7 | 127.6 | 16.4 |
| Internal Link Dist (m) | | 139.0 | | 165.8 | | | 355.9 | | | 528.1 | |
| Turn Bay Length (m) | 100.0 | | 95.0 | | 140.0 | 175.0 | | 200.0 | 160.0 | | 180.0 |
| Base Capacity (vph) | 342 | 2007 | 498 | 1414 | 701 | 207 | 1676 | 624 | 344 | 2025 | 712 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.61 | 0.28 | 0.53 | 0.34 | 0.30 | 0.46 | 0.61 | 0.27 | 0.67 | 0.63 | 0.29 |

**Intersection Summary**

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

## HCM Signalized Intersection Capacity Analysis
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 210 | 455 | 110 | 265 | 480 | 210 | 95 | 1015 | 170 | 230 | 1275 | 205 |
| Future Volume (vph) | 210 | 455 | 110 | 265 | 480 | 210 | 95 | 1015 | 170 | 230 | 1275 | 205 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.97 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1684 | 4876 | | 1668 | 3544 | 1442 | 1700 | 4948 | 1513 | 1716 | 4995 | 1459 |
| Flt Permitted | 0.95 | 1.00 | | 0.40 | 1.00 | 1.00 | 0.15 | 1.00 | 1.00 | 0.17 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1684 | 4876 | | 700 | 3544 | 1442 | 275 | 4948 | 1513 | 299 | 4995 | 1459 |
| 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) | 210 | 455 | 110 | 265 | 480 | 210 | 95 | 1015 | 170 | 230 | 1275 | 205 |
| RTOR Reduction (vph) | 0 | 30 | 0 | 0 | 0 | 170 | 0 | 0 | 112 | 0 | 0 | 122 |
| Lane Group Flow (vph) | 210 | 535 | 0 | 265 | 480 | 40 | 95 | 1015 | 58 | 230 | 1275 | 83 |
| Confl. Peds. (#/hr) | 5 | | 1 | 1 | | 5 | 11 | | 3 | 3 | | 11 |
| Heavy Vehicles (%) | 6% | 3% | 9% | 7% | 3% | 9% | 5% | 6% | 4% | 4% | 5% | 7% |
| Turn Type | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Actuated Green, G (s) | 21.0 | 28.0 | | 44.2 | 24.6 | 24.6 | 51.4 | 43.6 | 43.6 | 63.0 | 52.2 | 52.2 |
| Effective Green, g (s) | 21.0 | 28.0 | | 44.2 | 24.6 | 24.6 | 51.4 | 43.6 | 43.6 | 63.0 | 52.2 | 52.2 |
| Actuated g/C Ratio | 0.16 | 0.22 | | 0.34 | 0.19 | 0.19 | 0.40 | 0.34 | 0.34 | 0.49 | 0.41 | 0.41 |
| Clearance Time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 274 | 1061 | | 388 | 677 | 275 | 196 | 1677 | 512 | 327 | 2027 | 592 |
| v/s Ratio Prot | c0.12 | c0.11 | | 0.10 | c0.14 | | 0.03 | 0.21 | | c0.09 | 0.26 | |
| v/s Ratio Perm | | | | 0.13 | | 0.03 | 0.16 | | 0.04 | c0.25 | | 0.06 |
| v/c Ratio | 0.77 | 0.50 | | 0.68 | 0.71 | 0.15 | 0.48 | 0.61 | 0.11 | 0.70 | 0.63 | 0.14 |
| Uniform Delay, d1 | 51.5 | 44.2 | | 32.9 | 48.7 | 43.3 | 25.2 | 35.3 | 29.2 | 21.7 | 30.5 | 24.1 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 12.1 | 0.4 | | 4.9 | 3.4 | 0.2 | 1.9 | 1.6 | 0.4 | 6.7 | 1.5 | 0.5 |
| Delay (s) | 63.5 | 44.6 | | 37.9 | 52.1 | 43.5 | 27.1 | 37.0 | 29.7 | 28.4 | 32.0 | 24.6 |
| Level of Service | E | D | | D | D | D | C | D | C | C | C | C |
| Approach Delay (s) | | 49.7 | | | 46.2 | | | 35.3 | | | 30.6 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 38.2 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.73 | | |
| Actuated Cycle Length (s) | 128.6 | Sum of lost time (s) | 23.0 |
| Intersection Capacity Utilization | 95.5% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 4: Site Access & Folkway Dr

07/05/2022

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 220 | 30 | 0 | 380 | 95 | 0 |
| Future Volume (Veh/h) | 220 | 30 | 0 | 380 | 95 | 0 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 234 | 32 | 0 | 404 | 101 | 0 |
| Pedestrians | | | | | 4 | |
| Lane Width (m) | | | | | 3.5 | |
| Walking Speed (m/s) | | | | | 1.1 | |
| Percent Blockage | | | | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 83 | | | | | |
| pX, platoon unblocked | | | 0.93 | | 0.93 | 0.93 |
| vC, conflicting volume | | | 270 | | 658 | 254 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 173 | | 592 | 156 |
| tC, single (s) | | | 4.2 | | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.3 | | 3.6 | 3.3 |
| p0 queue free % | | | 100 | | 76 | 100 |
| cM capacity (veh/h) | | | 1253 | | 427 | 827 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 266 | 404 | 101 |
| Volume Left | 0 | 0 | 101 |
| Volume Right | 32 | 0 | 0 |
| cSH | 1700 | 1253 | 427 |
| Volume to Capacity | 0.16 | 0.00 | 0.24 |
| Queue Length 95th (m) | 0.0 | 0.0 | 6.9 |
| Control Delay (s) | 0.0 | 0.0 | 16.0 |
| Lane LOS | | | C |
| Approach Delay (s) | 0.0 | 0.0 | 16.0 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 31.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 5: Sawmill Valley Dr & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 30 | 65 | 125 | 15 | 130 | 0 | 205 | 10 | 10 | 0 | 15 | 45 |
| Future Volume (vph) | 30 | 65 | 125 | 15 | 130 | 0 | 205 | 10 | 10 | 0 | 15 | 45 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 32 | 69 | 133 | 16 | 138 | 0 | 218 | 11 | 11 | 0 | 16 | 48 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 234 | 154 | 240 | 64 |
| Volume Left (vph) | 32 | 16 | 218 | 0 |
| Volume Right (vph) | 133 | 0 | 11 | 48 |
| Hadj (s) | -0.23 | 0.07 | 0.22 | -0.39 |
| Departure Headway (s) | 4.7 | 5.1 | 5.2 | 4.8 |
| Degree Utilization, x | 0.30 | 0.22 | 0.34 | 0.09 |
| Capacity (veh/h) | 714 | 653 | 655 | 660 |
| Control Delay (s) | 9.7 | 9.5 | 10.9 | 8.3 |
| Approach Delay (s) | 9.7 | 9.5 | 10.9 | 8.3 |
| Approach LOS | A | A | B | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | 9.9 | | |
| Level of Service | | A | | |
| Intersection Capacity Utilization | 44.8% | | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
## 6: Sawmill Valley Dr & Site Access

07/05/2022

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 15 | 5 | 210 | 150 | 5 |
| Future Volume (Veh/h) | 15 | 15 | 5 | 210 | 150 | 5 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Hourly flow rate (vph) | 18 | 18 | 6 | 253 | 181 | 6 |
| Pedestrians | 6 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 1 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 455 | 190 | 193 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 455 | 190 | 193 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 97 | 98 | 100 | | | |
| cM capacity (veh/h) | 561 | 852 | 1385 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 36 | 259 | 187 |
| Volume Left | 18 | 6 | 0 |
| Volume Right | 18 | 0 | 6 |
| cSH | 677 | 1385 | 1700 |
| Volume to Capacity | 0.05 | 0.00 | 0.11 |
| Queue Length 95th (m) | 1.3 | 0.1 | 0.0 |
| Control Delay (s) | 10.6 | 0.2 | 0.0 |
| Lane LOS | B | A | |
| Approach Delay (s) | 10.6 | 0.2 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 0.9 | | |
| Intersection Capacity Utilization | | 25.1% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

## Timings
### 1: Erin Mills Pkwy & Folkway Dr

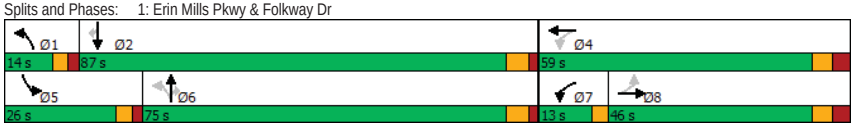
07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 85 | 75 | 110 | 70 | 30 | 2340 | 40 | 250 | 1790 | 90 |
| Future Volume (vph) | 85 | 75 | 110 | 70 | 30 | 2340 | 40 | 250 | 1790 | 90 |
| Turn Type | Perm | NA | pm+pt | NA | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | | 6 | | | 2 |
| Detector Phase | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 |
| Minimum Split (s) | 58.5 | 58.5 | 8.0 | 44.5 | 13.0 | 46.2 | 46.2 | 25.0 | 26.2 | 26.2 |
| Total Split (s) | 46.0 | 46.0 | 13.0 | 59.0 | 14.0 | 75.0 | 75.0 | 26.0 | 87.0 | 87.0 |
| Total Split (%) | 28.8% | 28.8% | 8.1% | 36.9% | 8.8% | 46.9% | 46.9% | 16.3% | 54.4% | 54.4% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 3.5 | 3.5 | 0.0 | 3.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 3.0 | 7.5 | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lead/Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 15.9 | 15.9 | 33.1 | 28.6 | 78.2 | 68.9 | 68.9 | 21.0 | 87.4 | 87.4 |
| Actuated g/C Ratio | 0.12 | 0.12 | 0.24 | 0.21 | 0.57 | 0.50 | 0.50 | 0.15 | 0.64 | 0.64 |
| v/c Ratio | 0.67 | 0.52 | 0.37 | 0.61 | 0.15 | 0.92 | 0.05 | 0.92 | 0.55 | 0.09 |
| Control Delay | 83.3 | 57.0 | 45.3 | 37.9 | 10.5 | 38.8 | 0.1 | 94.2 | 16.3 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 83.3 | 57.0 | 45.3 | 37.9 | 10.5 | 38.8 | 0.1 | 94.2 | 16.3 | 2.9 |
| LOS | F | E | D | D | B | D | A | F | B | A |
| Approach Delay | | 68.2 | | 40.1 | | 37.8 | | | 24.9 | |
| Approach LOS | | E | | D | | D | | | C | |

**Intersection Summary**

Cycle Length: 160
Actuated Cycle Length: 137.3
Natural Cycle: 150
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 33.8 — Intersection LOS: C
Intersection Capacity Utilization 108.4% — ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: Erin Mills Pkwy & Folkway Dr






## Queues
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 85 | 115 | 110 | 255 | 30 | 2340 | 40 | 250 | 1790 | 90 |
| v/c Ratio | 0.67 | 0.52 | 0.37 | 0.61 | 0.15 | 0.92 | 0.05 | 0.92 | 0.55 | 0.09 |
| Control Delay | 83.3 | 57.0 | 45.3 | 37.9 | 10.5 | 38.8 | 0.1 | 94.2 | 16.3 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 83.3 | 57.0 | 45.3 | 37.9 | 10.5 | 38.8 | 0.1 | 94.2 | 16.3 | 2.9 |
| Queue Length 50th (m) | 22.5 | 25.6 | 24.3 | 41.3 | 2.3 | 209.6 | 0.0 | 67.8 | 105.4 | 0.0 |
| Queue Length 95th (m) | 40.4 | 45.1 | 40.4 | 69.3 | 6.5 | #274.6 | 0.0 | #126.5 | 136.6 | 7.7 |
| Internal Link Dist (m) | | 124.3 | | 65.0 | | 138.6 | | | 454.7 | |
| Turn Bay Length (m) | 45.0 | | 55.0 | | 90.0 | | 105.0 | 185.0 | | 140.0 |
| Base Capacity (vph) | 307 | 515 | 299 | 685 | 220 | 2556 | 824 | 273 | 3272 | 993 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.28 | 0.22 | 0.37 | 0.37 | 0.14 | 0.92 | 0.05 | 0.92 | 0.55 | 0.09 |

**Intersection Summary**

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

## HCM Signalized Intersection Capacity Analysis
### 1: Erin Mills Pkwy & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 85 | 75 | 40 | 110 | 70 | 185 | 30 | 2340 | 40 | 250 | 1790 | 90 |
| Future Volume (vph) | 85 | 75 | 40 | 110 | 70 | 185 | 30 | 2340 | 40 | 250 | 1790 | 90 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 |
| Flpb, ped/bikes | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.95 | | 1.00 | 0.89 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1733 | 1795 | | 1777 | 1681 | | 1785 | 5092 | 1526 | 1785 | 5142 | 1516 |
| Flt Permitted | 0.60 | 1.00 | | 0.54 | 1.00 | | 0.11 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1097 | 1795 | | 1012 | 1681 | | 200 | 5092 | 1526 | 1785 | 5142 | 1516 |
| 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) | 85 | 75 | 40 | 110 | 70 | 185 | 30 | 2340 | 40 | 250 | 1790 | 90 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 70 | 0 | 0 | 0 | 20 | 0 | 0 | 34 |
| Lane Group Flow (vph) | 85 | 101 | 0 | 110 | 185 | 0 | 30 | 2340 | 20 | 250 | 1790 | 56 |
| Confl. Peds. (#/hr) | 12 | | 13 | 13 | | 12 | 9 | | 3 | 3 | | 9 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 0% | 0% | 0% | 3% | 2% | 0% | 2% | 0% |
| Turn Type | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm | Prot | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | | 4 | | | 6 | | 6 | | | 2 |
| Actuated Green, G (s) | 15.9 | 15.9 | | 28.6 | 28.6 | | 75.8 | 71.1 | 71.1 | 21.0 | 87.4 | 87.4 |
| Effective Green, g (s) | 15.9 | 15.9 | | 28.6 | 28.6 | | 75.8 | 71.1 | 71.1 | 21.0 | 87.4 | 87.4 |
| Actuated g/C Ratio | 0.11 | 0.11 | | 0.21 | 0.21 | | 0.54 | 0.51 | 0.51 | 0.15 | 0.63 | 0.63 |
| Clearance Time (s) | 7.5 | 7.5 | | 3.0 | 7.5 | | 5.0 | 6.2 | 6.2 | 5.0 | 6.2 | 6.2 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 125 | 204 | | 260 | 344 | | 162 | 2597 | 778 | 268 | 3223 | 950 |
| v/s Ratio Prot | | 0.06 | | 0.03 | c0.11 | | 0.01 | c0.46 | | c0.14 | 0.35 | |
| v/s Ratio Perm | c0.08 | | | 0.06 | | | 0.09 | | 0.01 | | | 0.04 |
| v/c Ratio | 0.68 | 0.49 | | 0.42 | 0.54 | | 0.19 | 0.90 | 0.03 | 0.93 | 0.56 | 0.06 |
| Uniform Delay, d1 | 59.3 | 58.0 | | 47.0 | 49.5 | | 15.0 | 31.0 | 17.0 | 58.5 | 14.9 | 10.1 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 14.2 | 1.9 | | 1.1 | 1.6 | | 0.6 | 5.6 | 0.1 | 37.2 | 0.7 | 0.1 |
| Delay (s) | 73.5 | 59.9 | | 48.1 | 51.1 | | 15.5 | 36.6 | 17.0 | 95.7 | 15.6 | 10.2 |
| Level of Service | E | E | | D | D | | B | D | B | F | B | B |
| Approach Delay (s) | | 65.6 | | | 50.2 | | | 36.0 | | | 24.7 | |
| Approach LOS | | E | | | D | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 33.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.85 | | |
| Actuated Cycle Length (s) | 139.4 | Sum of lost time (s) | 21.7 |
| Intersection Capacity Utilization | 108.4% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 2: Erin Mills Pkwy & Site Access

07/05/2022

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 50 | 2360 | 85 | 0 | 1940 |
| Future Volume (Veh/h) | 0 | 50 | 2360 | 85 | 0 | 1940 |
| 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 | 50 | 2360 | 85 | 0 | 1940 |
| Pedestrians | 2 | | | | | |
| Lane Width (m) | 3.5 | | | | | |
| Walking Speed (m/s) | 1.1 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | 162 |
| pX, platoon unblocked | 0.80 | | | | | |
| vC, conflicting volume | 3009 | 789 | | | 2447 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2629 | 789 | | | 2447 | |
| tC, single (s) | 6.8 | 7.1 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.4 | | | 2.2 | |
| p0 queue free % | 100 | 84 | | | 100 | |
| cM capacity (veh/h) | 16 | 314 | | | 194 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 50 | 787 | 787 | 787 | 85 | 647 | 647 | 647 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 50 | 0 | 0 | 0 | 85 | 0 | 0 | 0 |
| cSH | 314 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.16 | 0.46 | 0.46 | 0.46 | 0.05 | 0.38 | 0.38 | 0.38 |
| Queue Length 95th (m) | 4.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | | | | |
| Approach Delay (s) | 18.6 | 0.0 | | | | 0.0 | | |
| Approach LOS | C | | | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 55.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

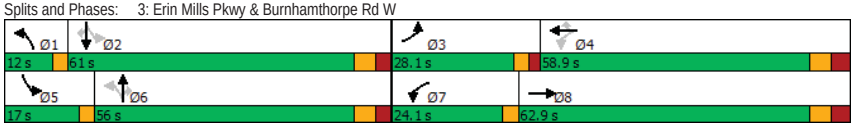
## Timings
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 245 | 705 | 320 | 905 | 260 | 185 | 1940 | 250 | 200 | 1495 | 245 |
| Future Volume (vph) | 245 | 705 | 320 | 905 | 260 | 185 | 1940 | 250 | 200 | 1495 | 245 |
| Turn Type | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 10.0 | 58.9 | 8.0 | 58.9 | 58.9 | 8.0 | 47.1 | 47.1 | 8.0 | 47.1 | 47.1 |
| Total Split (s) | 28.1 | 62.9 | 24.1 | 58.9 | 58.9 | 12.0 | 56.0 | 56.0 | 17.0 | 61.0 | 61.0 |
| Total Split (%) | 17.6% | 39.3% | 15.1% | 36.8% | 36.8% | 7.5% | 35.0% | 35.0% | 10.6% | 38.1% | 38.1% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.2 | 4.2 | 3.0 | 4.2 | 4.2 |
| All-Red Time (s) | 2.0 | 3.9 | 0.0 | 3.9 | 3.9 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -1.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 7.9 | 3.0 | 7.9 | 7.9 | 1.0 | 5.6 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 23.1 | 51.1 | 70.4 | 45.7 | 45.7 | 66.1 | 50.5 | 49.0 | 70.1 | 54.0 | 54.0 |
| Actuated g/C Ratio | 0.15 | 0.33 | 0.45 | 0.30 | 0.30 | 0.43 | 0.33 | 0.32 | 0.45 | 0.35 | 0.35 |
| v/c Ratio | 0.97 | 0.50 | 0.81 | 0.84 | 0.44 | 0.80 | 1.05 | 0.38 | 0.96 | 0.83 | 0.36 |
| Control Delay | 113.3 | 41.4 | 40.8 | 59.0 | 16.0 | 53.1 | 86.4 | 6.1 | 91.4 | 51.5 | 5.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 113.3 | 41.4 | 40.8 | 59.0 | 16.0 | 53.1 | 86.4 | 6.1 | 91.4 | 51.5 | 5.7 |
| LOS | F | D | D | E | B | D | F | A | F | D | A |
| Approach Delay | | 57.8 | | 47.6 | | | 75.4 | | | 49.8 | |
| Approach LOS | | E | | D | | | E | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 160 | |
| Actuated Cycle Length: 154.9 | |
| Natural Cycle: 145 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 1.05 | |
| Intersection Signal Delay: 59.4 | Intersection LOS: E |
| Intersection Capacity Utilization 108.1% | ICU Level of Service G |
| Analysis Period (min) 15 | |

Splits and Phases: 3: Erin Mills Pkwy & Burnhamthorpe Rd W






## Queues
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 245 | 830 | 320 | 905 | 260 | 185 | 1940 | 250 | 200 | 1495 | 245 |
| v/c Ratio | 0.97 | 0.50 | 0.81 | 0.84 | 0.44 | 0.80 | 1.05 | 0.38 | 0.96 | 0.83 | 0.36 |
| Control Delay | 113.3 | 41.4 | 40.8 | 59.0 | 16.0 | 53.1 | 86.4 | 6.1 | 91.4 | 51.5 | 5.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 113.3 | 41.4 | 40.8 | 59.0 | 16.0 | 53.1 | 86.4 | 6.1 | 91.4 | 51.5 | 5.7 |
| Queue Length 50th (m) | 77.4 | 73.7 | 57.7 | 137.7 | 18.8 | 34.3 | ~223.0 | 0.0 | 46.4 | 157.9 | 0.0 |
| Queue Length 95th (m) | #136.6 | 87.2 | #80.2 | 163.4 | 44.3 | #66.5 | #256.1 | 20.4 | #100.9 | 181.7 | 19.2 |
| Internal Link Dist (m) | | 139.0 | | 165.8 | | | 355.9 | | | 528.1 | |
| Turn Bay Length (m) | 100.0 | | 95.0 | | 140.0 | 175.0 | | 200.0 | 160.0 | | 180.0 |
| Base Capacity (vph) | 253 | 1800 | 409 | 1203 | 637 | 231 | 1841 | 663 | 209 | 1809 | 673 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.97 | 0.46 | 0.78 | 0.75 | 0.41 | 0.80 | 1.05 | 0.38 | 0.96 | 0.83 | 0.36 |

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

## HCM Signalized Intersection Capacity Analysis
### 3: Erin Mills Pkwy & Burnhamthorpe Rd W

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 245 | 705 | 125 | 320 | 905 | 260 | 185 | 1940 | 250 | 200 | 1495 | 245 |
| Future Volume (vph) | 245 | 705 | 125 | 320 | 905 | 260 | 185 | 1940 | 250 | 200 | 1495 | 245 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 1.0 | 5.6 | 7.1 | 3.0 | 7.1 | 7.1 |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.95 | 1.00 | 1.00 | *1.00 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1700 | 5022 | | 1784 | 3650 | 1572 | 1860 | 5650 | 1557 | 1750 | 5193 | 1475 |
| Flt Permitted | 0.95 | 1.00 | | 0.27 | 1.00 | 1.00 | 0.15 | 1.00 | 1.00 | 0.08 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1700 | 5022 | | 508 | 3650 | 1572 | 279 | 5650 | 1557 | 142 | 5193 | 1475 |
| 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) | 245 | 705 | 125 | 320 | 905 | 260 | 185 | 1940 | 250 | 200 | 1495 | 245 |
| RTOR Reduction (vph) | 0 | 16 | 0 | 0 | 0 | 125 | 0 | 0 | 171 | 0 | 0 | 160 |
| Lane Group Flow (vph) | 245 | 814 | 0 | 320 | 905 | 135 | 185 | 1940 | 79 | 200 | 1495 | 85 |
| Confl. Peds. (#/hr) | 4 | | 10 | 10 | | 4 | 16 | | 3 | 3 | | 16 |
| Heavy Vehicles (%) | 5% | 1% | 6% | 0% | 0% | 0% | 1% | 2% | 1% | 2% | 1% | 5% |
| Turn Type | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Actuated Green, G (s) | 23.1 | 51.1 | | 65.6 | 45.8 | 45.8 | 58.0 | 49.0 | 49.0 | 66.0 | 54.0 | 54.0 |
| Effective Green, g (s) | 23.1 | 51.1 | | 65.6 | 45.8 | 45.8 | 62.0 | 50.5 | 49.0 | 66.0 | 54.0 | 54.0 |
| Actuated g/C Ratio | 0.15 | 0.33 | | 0.42 | 0.30 | 0.30 | 0.40 | 0.33 | 0.32 | 0.43 | 0.35 | 0.35 |
| Clearance Time (s) | 5.0 | 7.9 | | 3.0 | 7.9 | 7.9 | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 7.1 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 253 | 1656 | | 378 | 1079 | 464 | 223 | 1841 | 492 | 205 | 1810 | 514 |
| v/s Ratio Prot | c0.14 | 0.16 | | 0.11 | 0.25 | | 0.06 | c0.34 | | c0.09 | 0.29 | |
| v/s Ratio Perm | | | | c0.25 | | 0.09 | 0.27 | | 0.05 | 0.33 | | 0.06 |
| v/c Ratio | 0.97 | 0.49 | | 0.85 | 0.84 | 0.29 | 0.83 | 1.05 | 0.16 | 0.98 | 0.83 | 0.17 |
| Uniform Delay, d1 | 65.5 | 41.5 | | 31.8 | 51.1 | 42.0 | 30.9 | 52.2 | 38.1 | 47.0 | 46.2 | 34.9 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 47.2 | 0.2 | | 15.9 | 5.8 | 0.3 | 21.8 | 36.8 | 0.7 | 55.3 | 4.5 | 0.7 |
| Delay (s) | 112.8 | 41.7 | | 47.7 | 56.9 | 42.4 | 52.7 | 89.0 | 38.8 | 102.3 | 50.6 | 35.6 |
| Level of Service | F | D | | D | E | D | D | F | D | F | D | D |
| Approach Delay (s) | | 57.9 | | | 52.4 | | | 80.9 | | | 54.0 | |
| Approach LOS | | E | | | D | | | F | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 63.6 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.96 | | |
| Actuated Cycle Length (s) | 154.9 | Sum of lost time (s) | 21.5 |
| Intersection Capacity Utilization | 108.1% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



## HCM Unsignalized Intersection Capacity Analysis
### 4: Site Access & Folkway Dr

07/05/2022

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 285 | 80 | 5 | 305 | 60 | 5 |
| Future Volume (Veh/h) | 285 | 80 | 5 | 305 | 60 | 5 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 303 | 85 | 5 | 324 | 64 | 5 |
| Pedestrians | | | | | 5 | |
| Lane Width (m) | | | | | 3.5 | |
| Walking Speed (m/s) | | | | | 1.1 | |
| Percent Blockage | | | | | 0 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 89 | | | | | |
| pX, platoon unblocked | | | 0.97 | | 0.97 | 0.97 |
| vC, conflicting volume | | | 393 | | 684 | 350 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 359 | | 659 | 315 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 85 | 99 |
| cM capacity (veh/h) | | | 1169 | | 415 | 705 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 388 | 329 | 69 |
| Volume Left | 0 | 5 | 64 |
| Volume Right | 85 | 0 | 5 |
| cSH | 1700 | 1169 | 428 |
| Volume to Capacity | 0.23 | 0.00 | 0.16 |
| Queue Length 95th (m) | 0.0 | 0.1 | 4.3 |
| Control Delay (s) | 0.0 | 0.2 | 15.0 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 0.2 | 15.0 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.4 | | |
| Intersection Capacity Utilization | 30.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 5: Sawmill Valley Dr & Folkway Dr

07/05/2022

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 50 | 125 | 115 | 5 | 125 | 0 | 125 | 10 | 10 | 0 | 10 | 60 |
| Future Volume (vph) | 50 | 125 | 115 | 5 | 125 | 0 | 125 | 10 | 10 | 0 | 10 | 60 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 55 | 137 | 126 | 5 | 137 | 0 | 137 | 11 | 11 | 0 | 11 | 66 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 318 | 142 | 159 | 77 |
| Volume Left (vph) | 55 | 5 | 137 | 0 |
| Volume Right (vph) | 126 | 0 | 11 | 66 |
| Hadj (s) | -0.19 | 0.09 | 0.13 | -0.48 |
| Departure Headway (s) | 4.5 | 5.0 | 5.2 | 4.8 |
| Degree Utilization, x | 0.40 | 0.20 | 0.23 | 0.10 |
| Capacity (veh/h) | 752 | 668 | 631 | 666 |
| Control Delay (s) | 10.5 | 9.2 | 9.8 | 8.3 |
| Approach Delay (s) | 10.5 | 9.2 | 9.8 | 8.3 |
| Approach LOS | B | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | 9.8 | | |
| Level of Service | | A | | |
| Intersection Capacity Utilization | | 48.3% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
## 6: Sawmill Valley Dr & Site Access

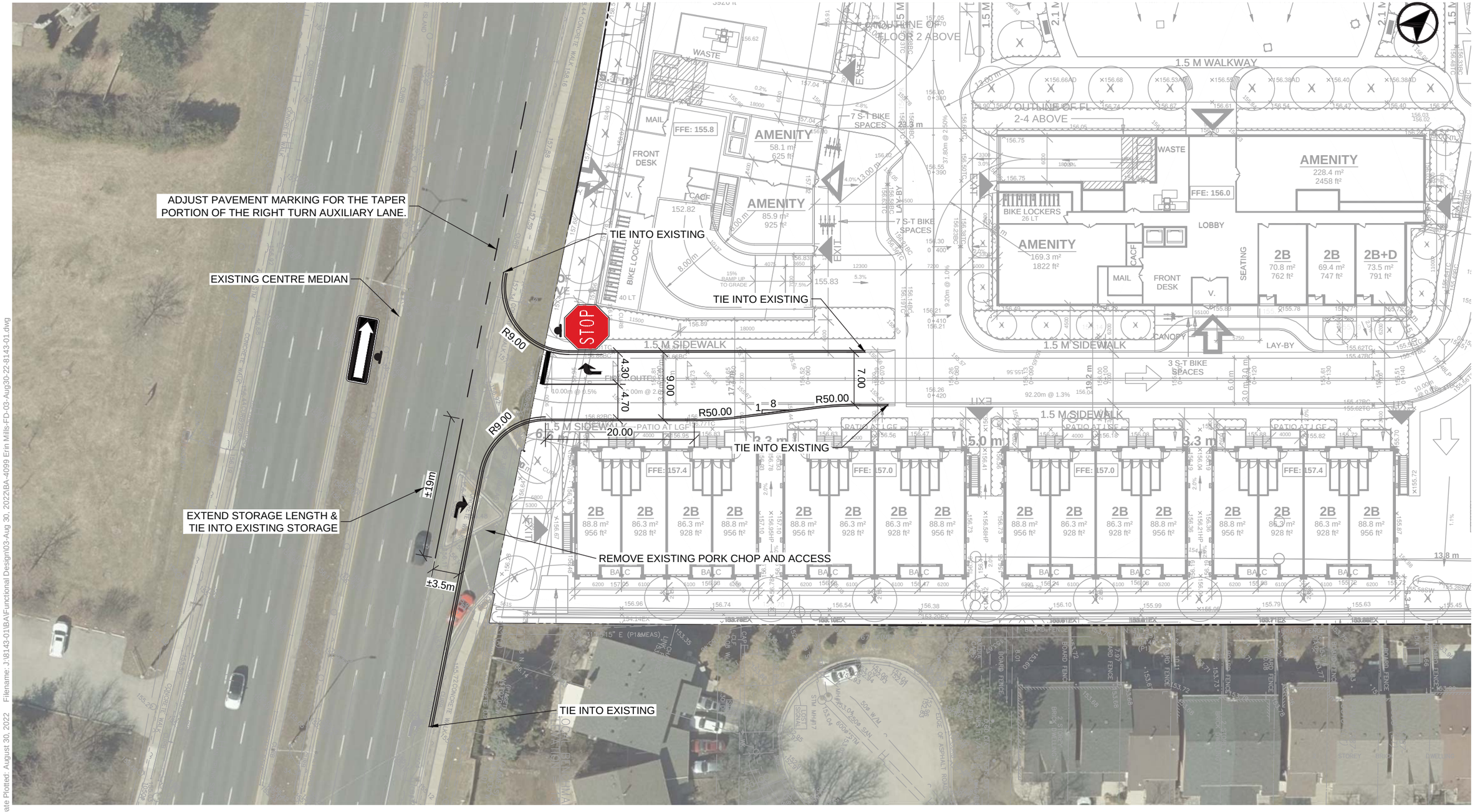
07/05/2022

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 10 | 10 | 15 | 135 | 120 | 10 |
| Future Volume (Veh/h) | 10 | 10 | 15 | 135 | 120 | 10 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 11 | 11 | 17 | 152 | 135 | 11 |
| Pedestrians | | | | 1 | | |
| Lane Width (m) | | | | 3.7 | | |
| Walking Speed (m/s) | | | | 1.1 | | |
| Percent Blockage | | | | 0 | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 326 | 142 | 146 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 326 | 142 | 146 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 98 | 99 | 99 | | | |
| cM capacity (veh/h) | 664 | 911 | 1448 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 22 | 169 | 146 |
| Volume Left | 11 | 17 | 0 |
| Volume Right | 11 | 0 | 11 |
| cSH | 768 | 1448 | 1700 |
| Volume to Capacity | 0.03 | 0.01 | 0.09 |
| Queue Length 95th (m) | 0.7 | 0.3 | 0.0 |
| Control Delay (s) | 9.8 | 0.8 | 0.0 |
| Lane LOS | A | A | |
| Approach Delay (s) | 9.8 | 0.8 | 0.0 |
| Approach LOS | A | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | | 1.1 | | |
| Intersection Capacity Utilization | | 28.5% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

# APPENDIX H:
# Functional Intersection Design

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BA Group

# 4099 ERIN MILLS PARKWAY

## FUNCTIONAL ROAD PLAN

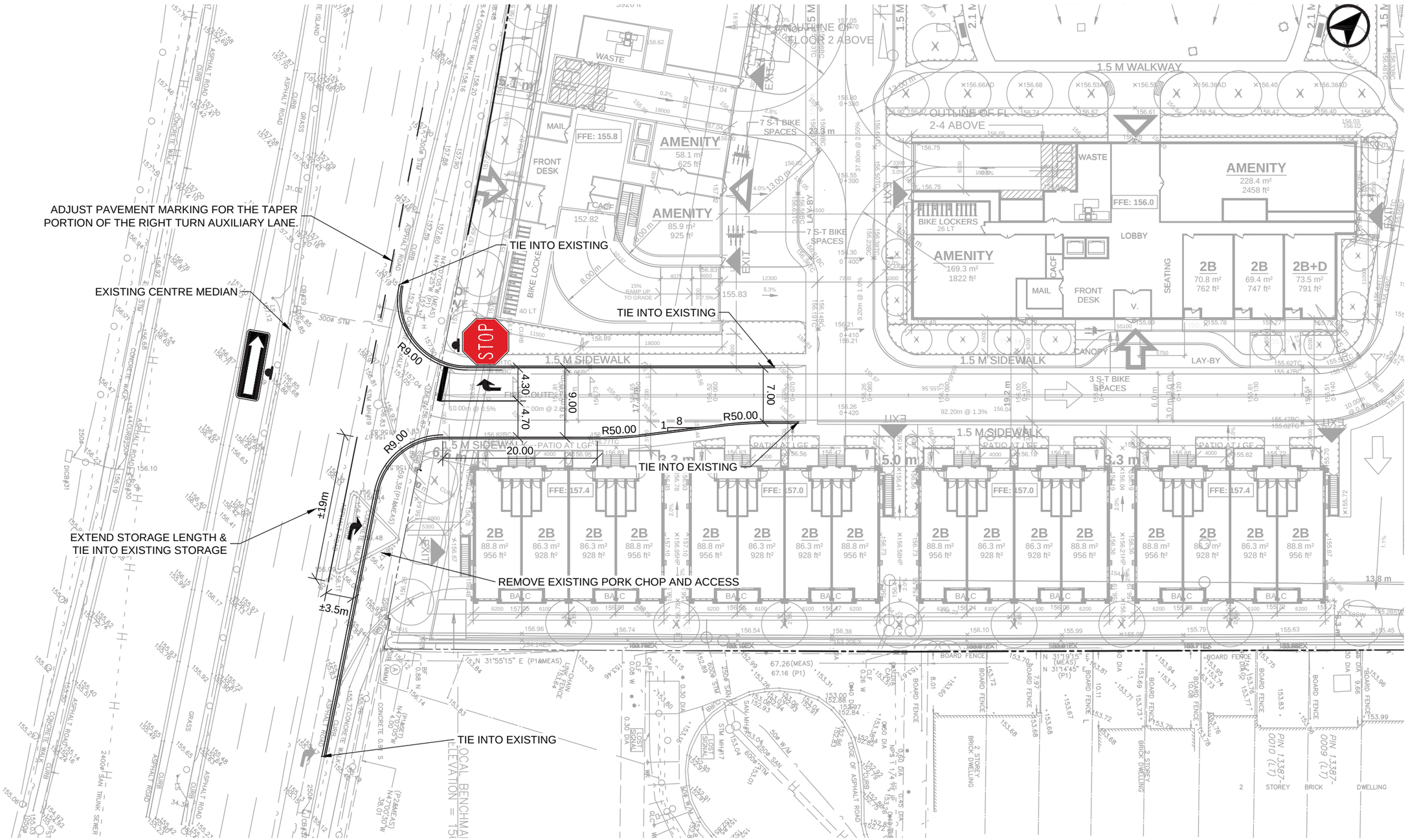
## PROPOSED ACCESS OFF OF ERIN MILLS PARKWAY

## PEEL REGION STANDARD 5-1-5 WITH MODIFICATIONS

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JULY 14, 2022 |
| Revised: | AUGUST 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. FD-01

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BA Group

# 4099 ERIN MILLS PARKWAY

## FUNCTIONAL ROAD PLAN

## PROPOSED ACCESS OFF OF ERIN MILLS PARKWAY

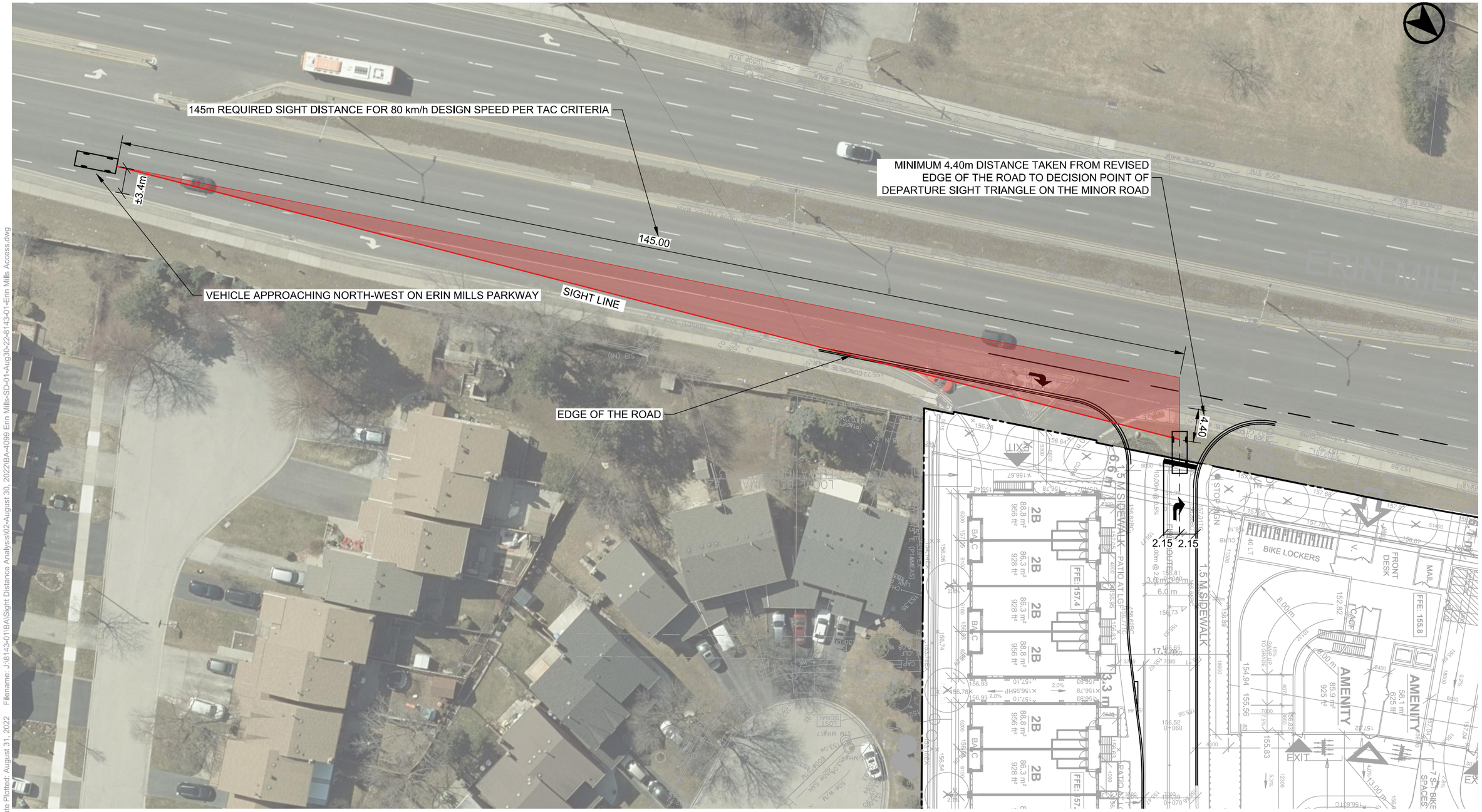
## PEEL REGION STANDARD 5-1-5 WITH MODIFICATIONS

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | JULY 14, 2022 |
| Revised: | AUGUST 30, 2022 |

Scale 1:500 (0 5 10 15 20m)

Drawing No. FD-02

# APPENDIX I:
# Sight Distance Assessment

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BA Group

# 4099 ERIN MILLS PARKWAY

RIGHT-IN / RIGHT OUT ACCESS OFF OF ERIN MILLS PARKWAY

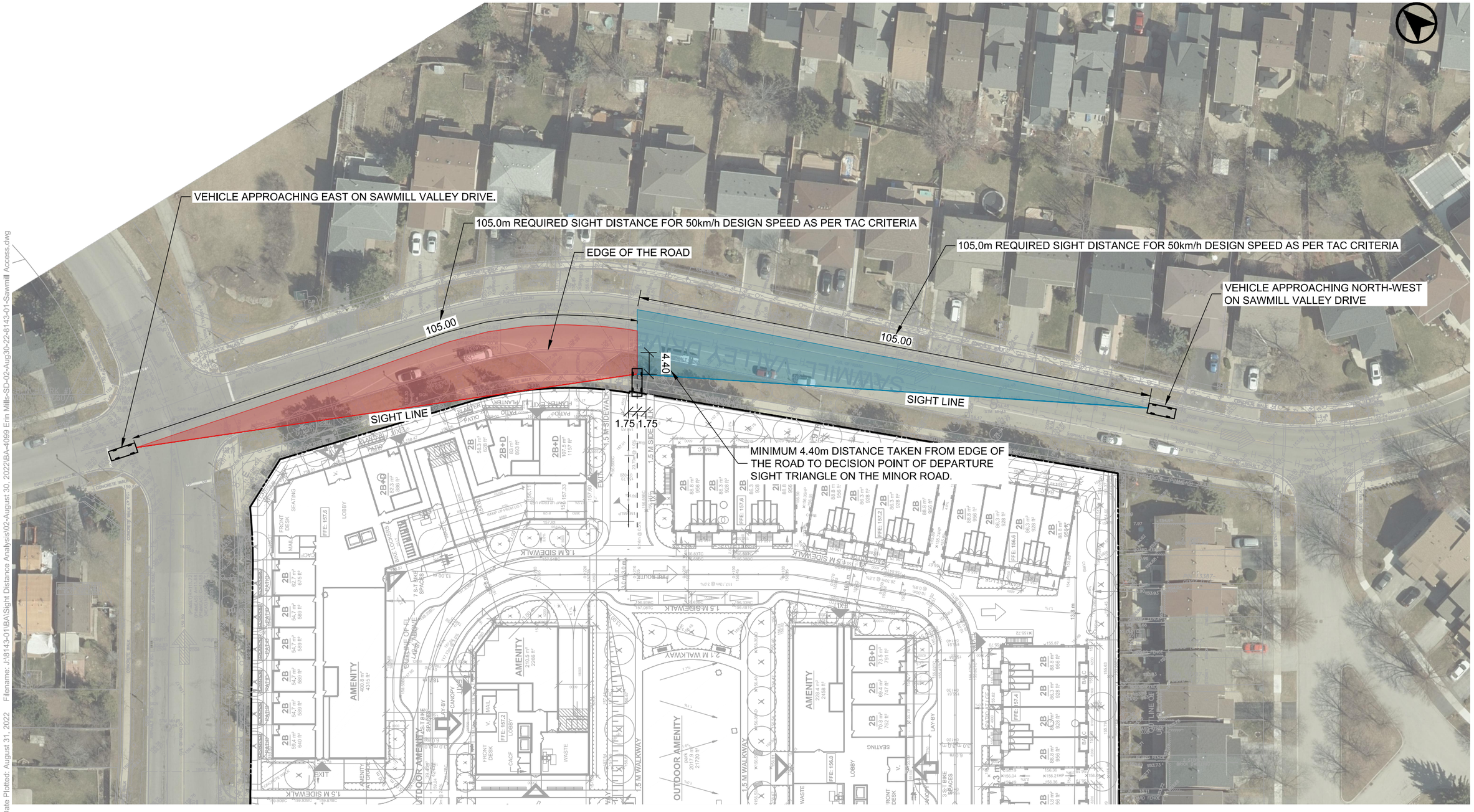
TAC MINIMUM SIGHT LINE REVIEW

CASE B2 - RIGHT TURN FROM THE MINOR ROAD

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | AUGUST 02, 2022 |
| Revised: | AUGUST 30, 2022 |

Scale 1:500 — 0 5 10 15 20m

Drawing No. SD-01




Date Plotted: August 31, 2022 Filename: J:\8143-01\BA\Sight Distance Analysis\02-August 30, 2022\BA-4099 Erin Mills-SD-02-Aug30-22-8143-01-Sawmill Access.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

## ALL MANOEUVRE ACCESS - SAWMILL VALLEY DRIVE

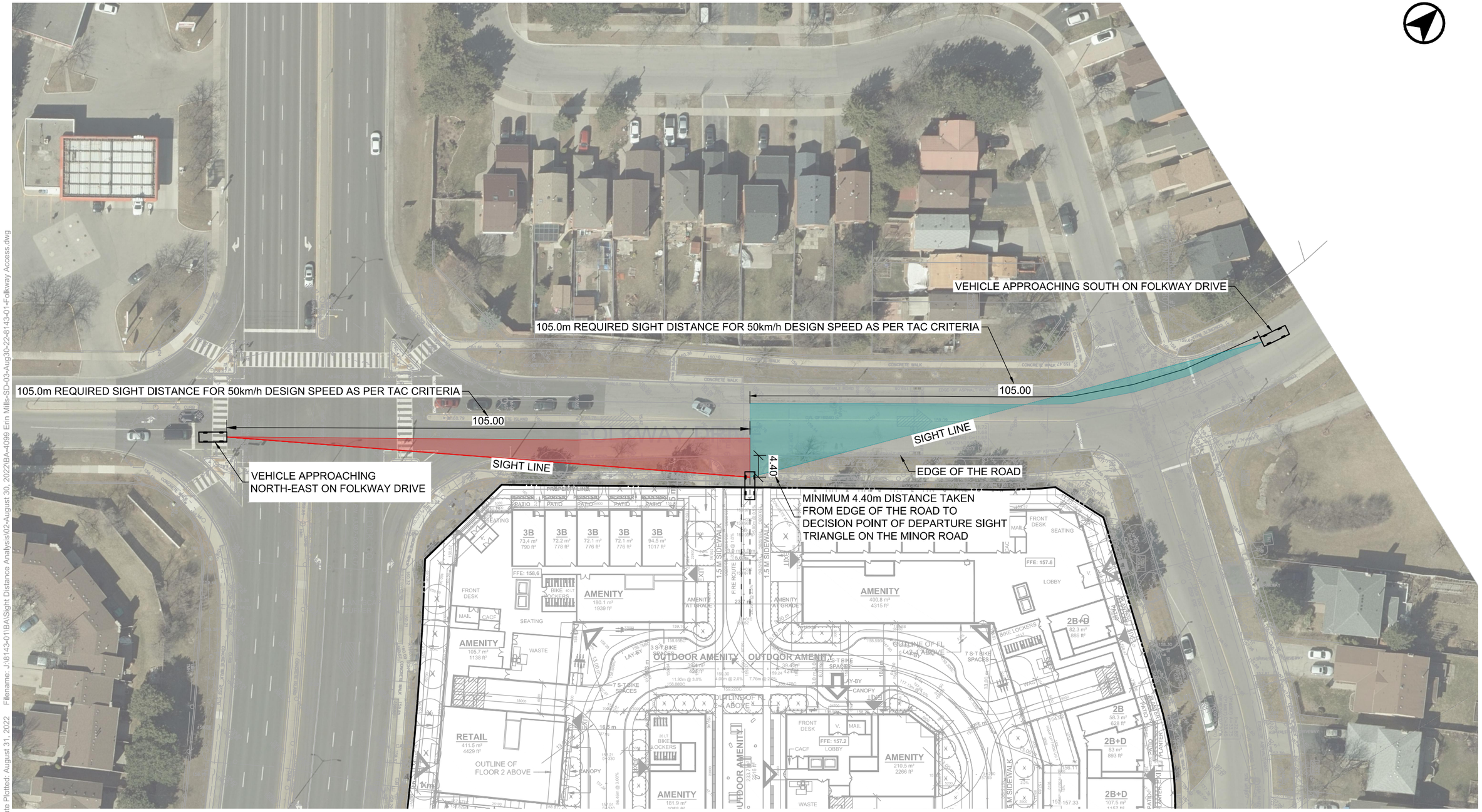
## TAC MINIMUM SIGHT LINE REVIEW

## CASE B1 - LEFT TURN FROM THE MINOR ROAD

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | AUGUST 02, 2022 |
| Revised: | AUGUST 30, 2022 |

Scale 1:750 (0 – 15 – 30m)

Drawing No. SD-02




Date Plotted: August 31, 2022 Filename: J:\8143-01\BA\Sight Distance Analysis\02-August 30, 2022\BA-4099 Erin Mills-SD-03-Aug30-22-8143-01-Folkway Access.dwg

BA Group

# 4099 ERIN MILLS PARKWAY

ALL MANOEUVRE ACCESS - FOLKWAY DRIVE

TAC MINIMUM SIGHT LINE REVIEW

CASE B1 - LEFT TURN FROM THE MINOR ROAD

| | |
|---|---|
| Project: | 4099 ERIN MILLS PKWY |
| Project No. | 8143-01 |
| Date: | AUGUST 02, 2022 |
| Revised: | AUGUST 30, 2022 |

Scale 1:750 (0 – 15 – 30m)

Drawing No. SD-03

# APPENDIX J:
# Terms of Reference

# Revised Memorandum

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| **FROM:** | **PROJECT:** | **DATE:** |
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| Deanna Green, P.Eng. | 4099 Erin Mills Parkway Proposed Multi-Use Redevelopment | February 15, 2022 |

**SUBJECT: Revised Terms of Reference: Traffic Impact Study & Traffic Operations and Safety Assessment - 4099 Erin Mills Parkway Proposed Multi-Use Development**

## 1.0 INTRODUCTION

BA Group has been retained by QueensCorp Inc. to provide transportation consulting services related to the proposed redevelopment of a site municipally known as 4099 Erin Mills Parkway in the City of Mississauga, in the Region of Peel (herein referred to as “the site”). The site is bounded by Erin Mills Parkway to the west, Folkway Drive to the north, Sawmill Valley Drive to the east and a residential development to the south.

The site's preliminary plan includes approximately 760 residential units and 890 $m^2$ GFA of retail gross floor area (GFA). The development proposal also includes eliminating the existing approximately 6,692 $m^2$ GFA retail plaza that occupies the site today. A phased development approach (Phases 1 & 2) is being considered at this time in order to provide greater flexibility for the site.

As requested by the City, this letter outlines the proposed Terms of Reference for the Traffic Impact Study (TIS) and the Traffic Operations & Safety Assessment (TOSA) that are being prepared as part of the **Official Plan and Zoning By-law Amendment (ZBA) application** submitted to the City of Mississauga. A terms of reference for the TIS will also be provided to the Region of Peel for their review and comment.

## 2.0 PROPOSED DEVELOPMENT

The site's preliminary concept plan includes an approximate total of 760 residential units and 890 $m^2$ GFA of retail gross floor area (GFA). The proposal includes 5 residential buildings (Buildings A, B, C, D & E) and 7 townhome buildings.

The proposal also includes eliminating the existing approximately 6,692 $m^2$ GFA retail plaza that occupies the site today.

A phased development approach (Phases 1 & 2) is being considered at this time in order to provide greater flexibility for the site. The propopsed phasing will potentially allow the majority of the retail plaza (in particular the grocery store) to remain operational while completion of the first phase is underway. The proposed phases are inclusive of the following:

- Phase 1 includes the construction of Buildings A & D, along with the demolition of a portion of the existing retail units along the southwest leg of the plaza.
- Phase 2 includes construction of Buildings B, C & E, as well as 7 townhome buildings.

The Traffic Impact Study and the Traffic Operations & Safety Assessment will be completed in consideration of the above-noted phasing.

The primary points of access to the site are proposed to be provided as follows:

- The existing driveway access at the south end of the site at Erin Mills Parkway (right-in/right-out access)
- The existing driveway access at Folkway Drive at the mid-point of the site (full movement access)
- A new driveway access at Sawmill Valley Drive, slightly south of the existing access (full movement access)

The scope of work for the traffic impact study will be completed in accordance with the TIS Guidelines of the Region of Peel and the City of Mississauga, as outlined in the following sections.

### 2.1.1 Full Description

The study will provide a full description of the proposed development and will include the following:

- Municipal address;
- Existing land uses that are permitted and use provisions in an Official Plan Amendment, Zoning By-law, etc.;
- Proposed land uses;
- Floor space, including a summary of each type of use and number of residential units;
- Anticipated date of occupancy;
- Approximate hour of operation (retail uses);
- Planned phasing of the development;
- Nearby Regional of Peel and City of Mississauga intersections and access to adjacent developments, including type of control (signalized or unsignalized);
- Number of lanes, width and configuration:
- The requirements for auxiliary turn lanes will be reviewed;
- All design standards will be in accordance with those outlined in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads and the Ministry of Transportation, Ontario (MTO) Geometric Design Standards for Ontario Highways;
- When determining the location of accesses, consideration will be provided in relation to how the accesses will affect the surrounding road network, area residents and area businesses. All proposed site access points on Region of Peel and City of Mississauga roads will be evaluated for capacity, safety and adequacy of queue storage capacity;
- Nearby transit facilities/stops;
- Pedestrian facilities;
- Bike paths;
- A combination of maps and other documentation, which will identify all relevant information.

### 2.1.2 Traffic Volume Analysis

The traffic analysis will include the following intersections:

- Erin Mills Parkway & Burnhamthorpe Road West
- Erin Mills Parkway & existing site driveway to 4099 Erin Mills Parkway (Region of Peel)
- Erin Mills Parkway & Folkway Drive (Region of Peel)
- ~~Erin Mills Parkway & Highway 403 eastbound (south ramp terminal) (MTO)~~
- Folkway Drive & existing site driveway to 4099 Erin Mills Parkway (City of Mississauga)
- Folkway Drive & Sawmill Valley Drive (City of Mississauga)

The Region of Peel and the City of Mississauga will be contacted regarding current traffic counts for intersections in the study area.

All traffic data collection undertaken includes pedestrians, cyclists, buses and cars on a typical weekday during typical morning and afternoon peak periods. As the site currently includes retail, traffic count data will also be collected for the Saturday peak period.

Given the current COVID-19 conditions, it is recognized that current traffic counts may not be representative. For this reason, any current traffic counts collected will be calibrated and balanced utilizing traffic counts from pre-COVID conditions when possible.

As the proposes retail component of the development only has a Gross Floor Area (GFA) of 890 $m^2$, it is proposed that the analysis consider only the weekday morning and afternoon peak periods.

It is proposed that the traffic analysis includes the following scenarios:

- Existing conditions;
- Future background conditions (Phase 1 completion): build-out of Phase 1 with corridor growth and area background development traffic;
- Future total conditions (Phase 1 completion): with site generated traffic from Phase 1
- Future background conditions (Phase 2 completion): build-out of Phase 2 with corridor growth and area background development traffic;
- Future total conditions (Phase 2 completion): with site generated traffic from Phase 2
- Future total conditions: 5 years post build-out
- ~~Future total conditions: 10 years post build-out~~

The Region of Peel and the City of Mississauga will be contacted regarding appropriate corridor growth rates.

Traffic signal timing parameters will be obtained from the Region of Peel.

The City of Mississauga website will be utilized to confirm details on surrounding developments in the area that may affect traffic capacity in the planning horizon years.

### 2.1.3 Trip Generation and Distribution

The trip distribution and trip generation analysis will include the following:

- Trip generation surveys from similar developments in the City, which have similar operating characteristics as the proposed development, will be considered;
- The latest edition of the Institute of Transportation Engineers (ITE) trip generation rates will be utilized as a reference with the use of the greater of the average rate method or the fitted line equation;
- A table summarizing the trip generation findings; and
- Trip distribution assumptions will be supported by one or more of the following:
    - Transportation Tomorrow Survey
    - Origin-destination surveys

- Comprehensive travel surveys
- Existing/anticipated travel patterns
- Output from the Region of Peel Travel Demand Forecasting Model
- Market studies.

### 2.1.4 Capacity Analysis

Intersection capacity analysis will be completed using Synchro Version 11.0 and a combination of Highway Capacity Manual (HCM) 2000 and HCM 6 methodologies.

The following parameters will be applied to the analysis:

- Saturation flow rate of 1,900 vehicles per hour (Region and City intersections);
- 3.7 metre lane width on Regional roads; and
- 5 metre lane width on the intersecting street(s) and/or access(es)

The Synchro analysis will adhere to Peel Region's Guidelines for Using Synchro for other individual parameters for Regional intersections and the City's Traffic Impact Study Guidelines for City intersections.

For **Region of Peel intersections**, the analysis will also include the identification of signalized intersections, unsignalized intersections and unsignalized accesses where:

- Volume/capacity (v/c) ratios for overall intersection operations, through movements or shared through/turning movements increased to 0.90 or above;
- V/C ratios for exclusive movements that will exceed 1.00; and
- 95th percentile queue lengths for individual movements with confirmation of any queues that exceed available lane storage.

For **City of Mississauga intersections**, the analysis will include identification of signalized intersections where:

- Volume/capacity (v/c) ratios for overall intersections operations, through movements or shared through/turning movements increase to 0.85 or above;
- V/C ratios for exclusive movements increase to 0.90 or above; or
- Queues for an individual movement are projected to exceed available turning lane storage.

The analysis will include identification of unsignalized intersections where:

- Level of service, based on average delay per vehicle or on individual movements is LOS "E" or greater; or
- The estimated 95th percentile queue length for an individual movement exceeds the available queue storage.

All intersections that are modelled as signalized intersections (other than existing signalized intersections) will be supported by an Ontario Traffic Manual (OTM) Book 12 traffic control signals warrant and each one will be included in the appendix of the TIS.

The horizon year in which a particular intersection is warranted for traffic control signals will be documented in the text of the TIS.

In the Synchro unsignalized intersection analysis, if an unacceptable LOS ("E" or higher) and v/c ratio results on the minor approach in existing conditions analysis, a gap study will be completed to establish an average value for gaps accepted (in seconds) to override the resultant value for the HCM-calculated critical gap in the signing window.

For horizon year analysis with an existing two-lane road, if the road is forecasted to be widened to four lanes by the respective horizon year, the analysis will override the resultant value for the HCM-calculated critical gap in the signing window by inputting recommended values for critical gap of left-turning and right-turning movements onto a four-lane road as identified in the Ministry of Transportation, Ontario (MTO) Geometric Design Standards for Ontario Highways.

### 2.1.5 Traffic Operations & Safety Assessment

Identification of potential safety or operational issues will be reviewed that are associated with:

- weaving
- merging
- roadway alignment
- sight distances
- corner clearances
- clear throat length
- vehicle/pedestrian conflicts
- traffic infiltration
- access conflicts
- cyclist movements
- heavy truck movement conflicts
- transit operational conflicts

#### 2.1.5.1 Sight Distance Evaluation

The Traffic Operations & Safety Assessment will include a review and analysis of the sight distance availability for all proposed accesses. Available sight distance may be taken from actual field measurements to ensure accurate conditions when possible. Alternatively aerial photos may be used for preliminary sight distance evaluations if field measurements are not possible.

The sightlines will be assessed based on the Region of Peel and/or City of Mississauga standard practice. The assessment will adhere to the requirement that the access meets the following sightline requirements:

- Stopping sight distance; and
- Turning sight distance.

Sight distances will be in accordance with the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads methodology. Folded full size and to scale drawings of the sightline analysis will be provided for review and comment.

In addition, Region of Peel and City of Mississauga staff will be contacted to determine if there are any intersections within the study area with a significant collision history that should be further evaluated.

### 2.1.6 Functional Design

A functional design detailing a recommended access configuration and/or proposed intersection geometrics will be provided if requested by staff.

### 2.1.7 Final Report

The final report will include the following:

- Site/development description
- Study area, including map
- Existing conditions (with an exhibit)
- Analysis periods
- Background, existing, future background and future total traffic demand (with an exhibit)
- Site generated traffic (with an exhibit)
- Improvement alternatives
- Traffic impacts for future background and total traffic with and without mitigation (tabular summaries)
- Access considerations
- A Transportation Demand Management (TDM) strategy
- A Traffic Operations & Safety Assessment
- Recommendations

Recommendations will consider the following issues:

- Timing of short term and longer range network improvements that are already planned and scheduled;
- Anticipated schedule for adjacent developments;
- Size and timing of individual phases of the proposed development;
- Logical sequencing of various improvements or segments;
- Right-of-way needs and availability of additional right-of-way within the appropriate time frames;
- Local priorities for transportation improvements and funding;

- Cost effectiveness of implementing improvements at a given stage of development; and
- Necessary lead time for additional design and construction.

### 2.1.8 Appendices

The technical appendices will include the detailed analysis along with relevant data utilized in the study such as traffic counts and traffic signal timings.

The appendices will as a minimum include the following:

- Vehicle maneuvering diagrams
- Turning movement counts (including date counted) with breakdown of heavy vehicle counts;
- Traffic signal timing plan(s) for signalized intersections;
- Transportation Tomorrow Survey (TTS) data
- Synchro reports showing HCM 2000 results and queuing, as well as electronic Synchro files (CD copy or sent concurrently with the TIS via email).