



BA Group

4099 ERIN MILLS PARKWAY MISSISSAUGA, ONTARIO PROPOSED MIXED-USE DEVELOPMENT

UPDATED Urban Transportation Considerations
OPA and ZBA Application

Prepared For: QueensCorp (Erin Mills) Inc.

September 2024



Responses to Town Comments – Submission 1
Official Plan Amendment / Zoning By-law Amendment
4099 Erin Mills Parkway
City of Mississauga

Responses to March 16, 2023 comments

CITY OF MISSISSAUGA

PARKING

Comment #111: Staff recommended rates are those within the City's amended Zoning By-law 0225-2007; these newly updated rates have been carefully researched, and are tailored to Mississauga's context, reflecting the City's existing and most recent parking needs.

BA Group Response:

The proposed parking supply has been justified within BA Group's September 2024 Report as well as within BA Group's separate Parking Justification Letter dated September 23, 2024. The revised site plan includes a parking supply that is only 48 spaces (4.9%) less than the minimum requirements of the Zoning By-law.

Comment #112: The parking reduction that is being requested by the applicant is a 5% parking space deficiency; or in this case scenario equates to a total of 50 parking spaces reduced. With a parking deficiency under the 10% threshold, a satisfactory Parking Justification Letter (PJL) is required to be submitted. Each application must stand on its own merit. Staff see merit in supporting the proposed residential and visitor parking rates, although in accordance with the City's Parking Terms of Reference, a Parking Justification Letter (PJL) is required to be submitted.

BA Group Response:

Please reference BA Group's Parking Justification Letter dated September 23, 2024. It is noted that the revised site plan includes a parking supply that is only 48 spaces (4.9%) less than the minimum requirements of the Zoning By-law.

Comment #113: Should the proposal change in subsequent submissions/iterations, please be advised, Municipal Parking will need to be re-engaged in the review.

BA Group Response:

Noted.

Comment #114: Staff commend the Applicant for considering the provision of TDM measures on-site; however staff request further details in regards to the implementation of these measures. Staff request the Applicant coordinate with TDM Staff in the Transportation Planning section, in order to discuss the considered TDM measures as well as specific details and commitments as to how the TDM measures will be provided and implemented on-site.

BA Group Response:

BA Group reached out to the City's Transportation Planning section and no comments were received regarding the proposed TDM Plan for the site. Specific details regarding how the proposed TDM measures will be implemented can be provided as part of the **Site Plan Approval (SPA)** application.

TRAFFIC

Comment # 103: A Traffic Impact Study prepared by BA Group dated September 2022 was submitted in support of the proposed development. Based on the information provided to date, staff provide the following comments: (A) EXISTING CONDITION: (i) Figure 16 Net New Site Traffic Volumes - Net new site traffic is not consistent with the existing trip removed and the new trips generated, i.e. inbound trip during a.m., and p.m. Please revise accordingly. (ii) Existing Erin Mills Pkwy at Folkway Drive westbound through movement 95th queue extends beyond the location of the existing access along Folkway Drive. Please provide how this is addressed in the future total condition and its mitigation measures accordingly. (B) FUTURE TOTAL CONDITION: (i) Addition to comment (A) (ii), Erin Mills Pkwy at Folkway Drive future total westbound left turn movement have significantly increased comparing to the future background condition. Please provide additional analysis if the westbound movements will create any operational concerns. Please confirm the storage length of the left turn lane. The combination of left, through, and right turn movements should be analyzed to demonstrate its impact to the access along Folkway Drive. Please provide any mitigation measure required. (C) COMMUNITY IMPACTS: (i) Comments or concerns from the community through future public meetings and engagements that are related to traffic shall also be addressed in this section. (D) ADDITIONAL COMMENTS: (i) Please submit a revised TIS addressing all of the aforementioned TIS comments. Further comments may be provided in the subsequent submission(s).

BA Group Response:

The traffic analysis has been revised based on updated (2023) traffic count data and updated site statistics. New traffic volume figures have been prepared to demonstrate the revised traffic volumes. To remain conservative with the future analysis, existing traffic volume removals remain based on the previously submitted (i.e. lower) traffic counts. Details of the revised traffic analysis are provided in **Sections 7.0 and 8.0** of BA Group's Updated September 2024 Report.

A revised queueing assessment is provided in **Section 8.2.3** of the BA Group's Updated September 2024 Report. The 95th percentile westbound queue length can be accommodated at Erin Mills Parkway along Folkway Drive under future total conditions. The existing storage length of 55 metres for westbound left-



turning vehicles along Folkway Drive for westbound left-turning vehicles will increase to 67 metres with the slight shift of the site driveway towards the east.

A Community Impact section has been provided in **Section 10.0** of the updated BA Group September 2024 report. As most of the new site traffic during the morning peak hour (160 two-way vehicle trips) will be travelling to/from Erin Mills Parkway and Highway 403, it is expected that only a minimal number of vehicles would travel along Sawmill Valley Drive, southbound through the neighborhood. In the morning peak hour, it is expected that approximately 5 – 10 of the 160 net-new vehicles on the road network will be on Sawmill Valley Drive, with the remainder destined to or from Erin Mills Parkway and hence not impacting the local street network.

During the afternoon peak hour, as trips to/from the site are expected to be 75 vehicles **less** when compared to the existing retail development, the impacts on the community are expected to be minimal as lower vehicle volumes are expected to be generated by the site, resulting in less vehicle traffic on the local street network. It is important to note that as the traffic analysis indicates that the intersections surrounding the site are expected to operate well in the future, there will be little limited incentive for motorists to travel through the neighborhood along Sawmill Valley Drive to travel to/from the site.

Comment #110: The Owner will be required to provide accessible and secure short term (outdoor) and long term (indoor) bicycle storage facilities on site. The Site Plan shall be revised to identify the cycling facility locations and to specify the facility detail(s), including quantity of spaces proposed for each. The following rates are to be used: (a) Apartment Mississauga - A minimum of 0.60 long term spaces and 0.05 (6 spaces min.) short term spaces per residential unit. (b) Retail (Per 100 sq.m. GFA of retail area) Mississauga A minimum of 0.10 long term spaces and 0.20 short term spaces.

BA Group Response:

The recommended bicycle parking supply rates within Zoning By-law 0118-2022 have been applied to the proposed development. Application of these requirements requires the provision of a total of 460 bicycle parking spaces inclusive of 425 long-term resident spaces and 35 short-term visitor spaces. As the architectural drawings illustrate a total of 460 bicycle parking spaces, inclusive of 425 long-term resident spaces and 35 short-term visitor spaces, the proposed supply will meet the practical needs of the site and aligns with the Zoning By-law. The 425 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.

Comment #123: Should the proposal change in subsequent submissions/iterations, please be advised, Municipal Parking will need to be re-engaged in the review.

BA Group Response:

Noted.

Comment #168: [INTERNAL SITE CIRCULATION] (a) Turning movement diagrams will be required to depict the internal site circulation. (b) Additional provisions to aid in the safety and operation of these features may be required. (c) Detailed turning movements are to be provided for ingress and egress through the access



point(s) for the site. (d) Confirmation from Fire and Emergency Services that the internal road is acceptable from an emergency response perspective. (e) Confirmation from the Region of Peel that the internal road is acceptable from a waste collection perspective.

BA Group Response:

BA Group's September 2024 Report includes turning movement diagrams (VMD's) in Appendix B that depict the internal site circulation and the fire route.

REGION OF PEEL

Comment #52: Prior to Site Plan Approval - The Region of Peel will provide Front-End collection of Garbage and Recyclable Materials subject to Section 2.0, 4.0 and 5.0 of the Waste Collection Design Standards Manual conditions being met and labelled on the Waste Collection Site Plan.

- Overhead clearance outside of the Collection Point Outside the Collection Point, a clear height of 4.4 metres from the top of the access road, along the Waste Collection Vehicle access and egress route is required. The clear height of 4.4 metres is free of obstructions such as sprinkler systems, ducts, wires, trees, or balconies. Please confirm by labeling figure 1 of the WMP.
- Please confirm we have a minimum 18 metre straight head-on approach to all the concealed collection points. This approach is to be level and solid (+/- 2%) and the same width as the collection point. Please confirm by labeling figure 1 of the WMP.
- In a situation where a waste collection vehicle must reverse the maximum straight back-up distance is 15 metres at all the collection points. Please confirm by labeling figure 1 of the WMP.
- Overhead clearance at all the Collection Point A minimum of 7.5 metres from.
- The concrete pad is required for the entire length of the collection point. Please confirm by labeling figure 1 of the WMP.
- Stacked townhouse drop-off points are convenient for residents (within 100m walking distance of the furthest unit). Please confirm by labeling figure 2 of the WMP.

BA Group Response:

Noted. Please refer to Appendix B in BA Group's September 2024 Report confirming a minimum 18.0m straight head-on approach to all concealed collection points.

Comment #116: The Region is in receipt of a TIS; the Region offers the following comments; After review of the TIS, the Region will and is in support the access off of Erin Mills Parkway, as a right-in/right-out access.

Response:

Noted.

Comment #117: Property Requirements: The Region requests the gratuitous dedication of lands to meet the Regional Official Plan requirement for Regional Road 1 (Erin Mills Parkway) which has a right of way of 50.5



metres, 25.25 metres from the centreline of the road allowance, within 245 metres of intersections to protect for the provision of but not limited to: utilities, sidewalks, multiuse pathways and transit bay/shelters; The Region will require the gratuitous dedication of a 15 x 15 metre daylight triangle at the intersection of Erin Mills Parkway and Folkway Drive; The Region will require the gratuitous dedication of a 0.3 metre reserve along the frontage Regional Road 1 (Erin Mills Parkway) behind the property line and daylight triangle, except at any approved access point; The applicant is required to gratuitously dedicate these lands to the Region, free and clear of all encumbrances. All costs associated with the transfer are the responsibility of the applicant. The applicant must provide the Region with the necessary title documents and reference plan(s) to confirm the Regions right-of-way.

BA Group Response:

As per BA Group's June 20, 2024 memorandum, the width of the existing right-of-way on Erin Mills in the vicinity of the site is deemed to be adequate for the following reasons:

- The discussion at a meeting with City and Regional staff on June 6, 2024 noted that there are no confirmed plans at this time to upgrade the section of Erin Mills Parkway adjacent to the site, nor are there any confirmed plans that would require additional right-of-way beyond the existing 45.9 metres.
- The west side of Erin Mills Parkway is likely the preferred location for a future multi-use pathway due to opportunities to connect to the existing multi-use pathway along the west side of Erin Mills Road at Burnhamthorpe Road, as well as connectivity to numerous existing trails along the west side of Erin Mills Parkway that provide access to Arbour Green, Dunn Park and adjacent residential areas. It is therefore BA Group's opinion that additional right-of-way (as specified in the ROP), is not required across the site frontage to accommodate the implementation of future active transportation facilities along the east side Erin Mills Parkway.
- Based on the results of the capacity analysis at the intersection of Erin Mills Parkway and Folkway Drive, it was confirmed that the existing lane configuration and existing right-of-way on Erin Mills Parkway at Folkway Drive are appropriate and will be able to accommodate future travel demands up to 2034.
- The results of the updated queuing assessment for the intersection of Erin Mills Parkway at Folkway Drive, confirm that the existing lane configuration and existing right-of-way on Erin Mills Parkway at Folkway Drive are appropriate and will be able to accommodate future queues up to 2034. Additional lanes, or the extension of existing dedicated turning lanes, are not required for the intersection to function appropriately in the future.
- BA Group's review confirms that the existing right-of-way along Erin Mills Parkway adjacent to the site is appropriate based upon 1) the existing cross-section and lane configuration of Erin Mills Parkway and 2) the results of BA Group's comprehensive traffic analysis under future total conditions.



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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, residential townhouse units 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 m² 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**, respectively.

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 597 residential condominium units and 790 m² GFA of retail, and 7 stacked townhouse blocks with 112 residential condominium units. The total number of residential units proposed for the site (condominium units plus stacked condominium townhouses) is 709 units.

Parking for the development will be located in a 2-level below-grade parking facility (P2 is a partial level), 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, a full access on Folkway Drive (45 metres east of Erin Mills Parkway) and a proposed new full access on Sawmill Valley Drive, approximately 65 metres south of Folkway Drive. The existing full movement driveway on Folkway Drive will be shifted approximately 11 metres to the east.

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



TABLE 1 UPDATED DEVELOPMENT PROPOSAL SUMMARY

Use		Development Proposal						Total
		Building A	Building B	Building C	Building D	Building E	Townhome Apartments	
	Residential Units (Apartment Condos)	256	74	82	93	92	112	709 units
		597						
	Retail	408		-	382	-	-	790 m ² GFA
	Vehicle Parking Spaces	Resident			783			925 spaces
		Non-Resident			142			
	Bicycle Parking Spaces	Long-Term			425			460 spaces
		Short-Term			35			
	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, a full access on Folkway Drive and a new full access at Sawmill Valley Drive.						



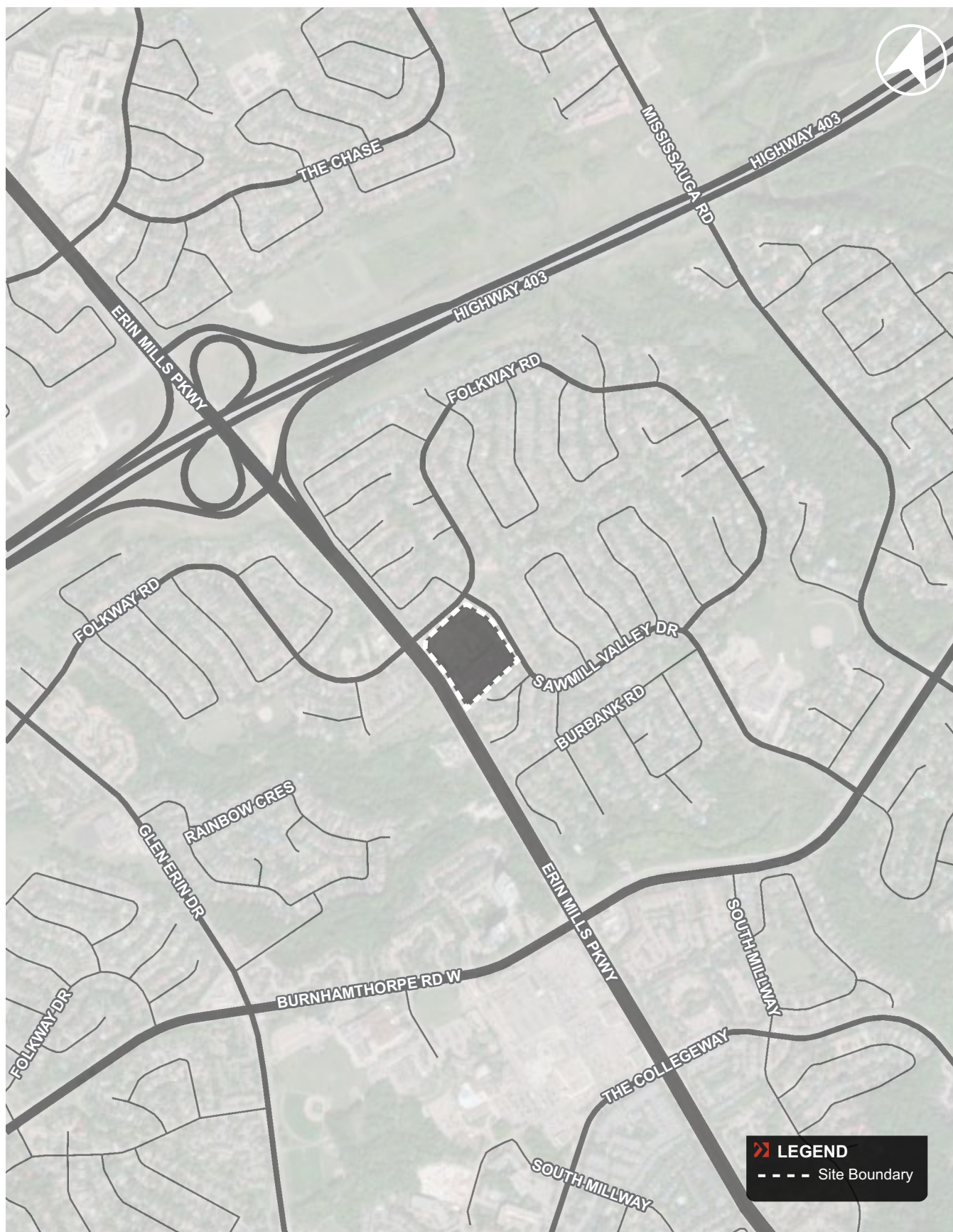


FIGURE 1 SITE LOCATION

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FIGURE 2 SITE CONTEXT



FIGURE 3 DEVELOPMENT PROPOSAL

2.0 TRANSPORTATION CONTEXT

2.1 ERIN MILLS PARKWAY RIGHT-OF-WAY

On October 26, 2022 an Official Plan Amendment and Rezoning Application was filed for the site with the City of Mississauga. As a result, comments were received from the Region including a request for a road widening dedication on Erin Mill Parkway. Their comment dated January 25th, 2023 states:

"The Region requests the gratuitous dedication of lands to meet the Regional Official Plan requirement for Regional Road 1 (Erin Mills Parkway) which has a right of way of 50.5 metres, 25.25 metres from the centreline of the road allowance, within 245 metres of intersections to protect for the provision of but not limited to: utilities, sidewalks, multiuse pathways and transit bay/shelters; The Region will require the gratuitous dedication of a 15 x 15 metre daylight triangle at the intersection of Erin Mills Parkway and Folkway Drive; The Region will require the gratuitous dedication of a 0.3 metre reserve along the frontage Regional Road 1 (Erin Mills Parkway) behind the property line and daylight triangle, except at any approved access point; The applicant is required to gratuitously dedicate these lands to the Region, free and clear of all encumbrances. All costs associated with the transfer are the responsibility of the applicant. The applicant must provide the Region with the necessary title documents and reference plan(s) to confirm the Regions right-of-way;"

The Region of Peel Official Plan (September 2021) states the following in regard to the protection of additional right-of-way along Regional roads:

Section 5.9.4.2.5. "Within 245 metres (804 feet) of a Regional Road intersection, protect an additional 5.5 metres (18 feet) over that identified on Schedule F for a single left turn configuration, right turn lanes, multi-purpose pathways or transit-related improvements. Intersection right-of-way requirements shall be confirmed by a Traffic Impact Study and/or functional design acceptable to the Region."

The discussion at a meeting with City and Regional staff on June 6, 2024 noted that there are no confirmed plans at this time to upgrade the section of Erin Mills Parkway adjacent to the site, nor are there any confirmed plans that would require additional right-of-way. It was also confirmed at this meeting that the intent of Section 5.9.4.2.5, is for the protection of an additional **total** of 5.5 metres with 2.25 metres on each side of Erin Mills Parkway.

A review of relevant documents included the following information:

- The City's 2018 Cycling Master Plan (page 43) includes a figure of the City's proposed cycling network. The figure includes a multi-use trail along the middle of Erin Mills Parkway, which indicates that the multi-use trail could be along either side of the road.
- The Region of Peel trail map illustrates a multi-use trail along the **west side** of Erin Mills Parkway between just south of the QEW to just north of Burnhamthorpe Road. It is therefore reasonable to assume that the existing trail would continue along the west side of Erin Mills Parkway.
- The Region of Peel's Official Plan (Schedule F-3 page 23) for Regional right-of-way requirements includes a right-of-way of 45 metres for Erin Mills Parkway.
- The City's Official Plan (Schedule 8) includes a designated right-of-way width along Erin Mills Parkway of 45 metres.



- The City's Official Plan (Schedule 7) includes primary on-road/ boulevard route along Erin Mills Parkway without illustrating whether the route is along the west or east side of the road.

BA Group completed a memorandum dated July 9, 2024 (provided in **Appendix K**) that includes justification that the existing right-of-way on Erin Mills Parkway, in the vicinity of the site, is appropriate. Since submission of this memorandum to the Region, the Region provided comments in an email dated August 16, 2024. Despite the Region's comments, the summary below includes a review of the appropriateness of the existing right-of-way as follows:

- The discussion at a meeting with City and Regional staff on June 6, 2024 noted that there are no confirmed plans at this time to upgrade the section of Erin Mills Parkway adjacent to the site, nor are there any confirmed plans that would require additional right-of-way.
- The west side of Erin Mills Parkway is likely the preferred location for a future multi-use pathway due to opportunities to connect to the existing multi-use pathway along the west side of Erin Mills Road at Burnhamthorpe Road, as well as connectivity to numerous existing trails along the west side of Erin Mills Parkway that provide access to Arbour Green, Dunn Park and adjacent residential areas. It is therefore our opinion that additional right-of-way (as specified in the ROP), is not required across the site frontage to accommodate the implementation of future active transportation facilities along the east side Erin Mills Parkway. Therefore, no additional land dedication from the subject site is required.
- Based on the results of the capacity analysis at the intersection of Erin Mills Parkway and Folkway Drive, it was confirmed that the existing lane configuration and existing right-of-way on Erin Mills Parkway at Folkway Drive are appropriate and will be able to accommodate future travel demands up to 2034. For this reason, additional right-of-way on Erin Mills is not required for reasons related to vehicle capacity.
- The results of the updated queuing assessment for the intersection of Erin Mills Parkway at Folkway Drive, confirm that the existing lane configuration and existing right-of-way on Erin Mills Parkway at Folkway Drive are appropriate and will be able to accommodate future queues up to 2034. Additional lanes, or the extension of existing dedicated turning lanes, are not required for the intersection to function appropriately in the future, hence additional right-of-way along Erin Mills Parkway in the vicinity of the site is not required.
- BA Group's review confirms that the existing right-of-way along Erin Mills Parkway adjacent to the site is appropriate based upon 1) the existing cross-section and lane configuration of Erin Mills Parkway and 2) the results of BA Group's comprehensive traffic analysis under future total conditions.



2.2 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**.





FIGURE 4 EXISTING AREA ROAD NETWORK

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FIGURE 5 EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

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FIGURE 6 FUTURE LANE CONFIGURATION AND TRAFFIC CONTROL

2.3 AREA TRANSIT NETWORK

2.3.1 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.
	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.
	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.
	1C Dundas-Collegeway	10 to 15 minutes	Burnhamthorpe 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.
	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. Available routes at this terminal include the 1C, 13,26,29,36,48,101, 110 and Oakville transit connections.



2.3.2 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**.





FIGURE 7 EXISTING AREA TRANSIT NETWORK



FIGURE 8 FUTURE AREA TRANSIT NETWORK

2.4 AREA CYCLING NETWORK

2.4.1 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**.

2.4.2 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 be 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**.





FIGURE 9 EXISTING AREA CYCLING NETWORK

2.5 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**.





FIGURE 10 FUTURE AREA CYCLING NETWORK

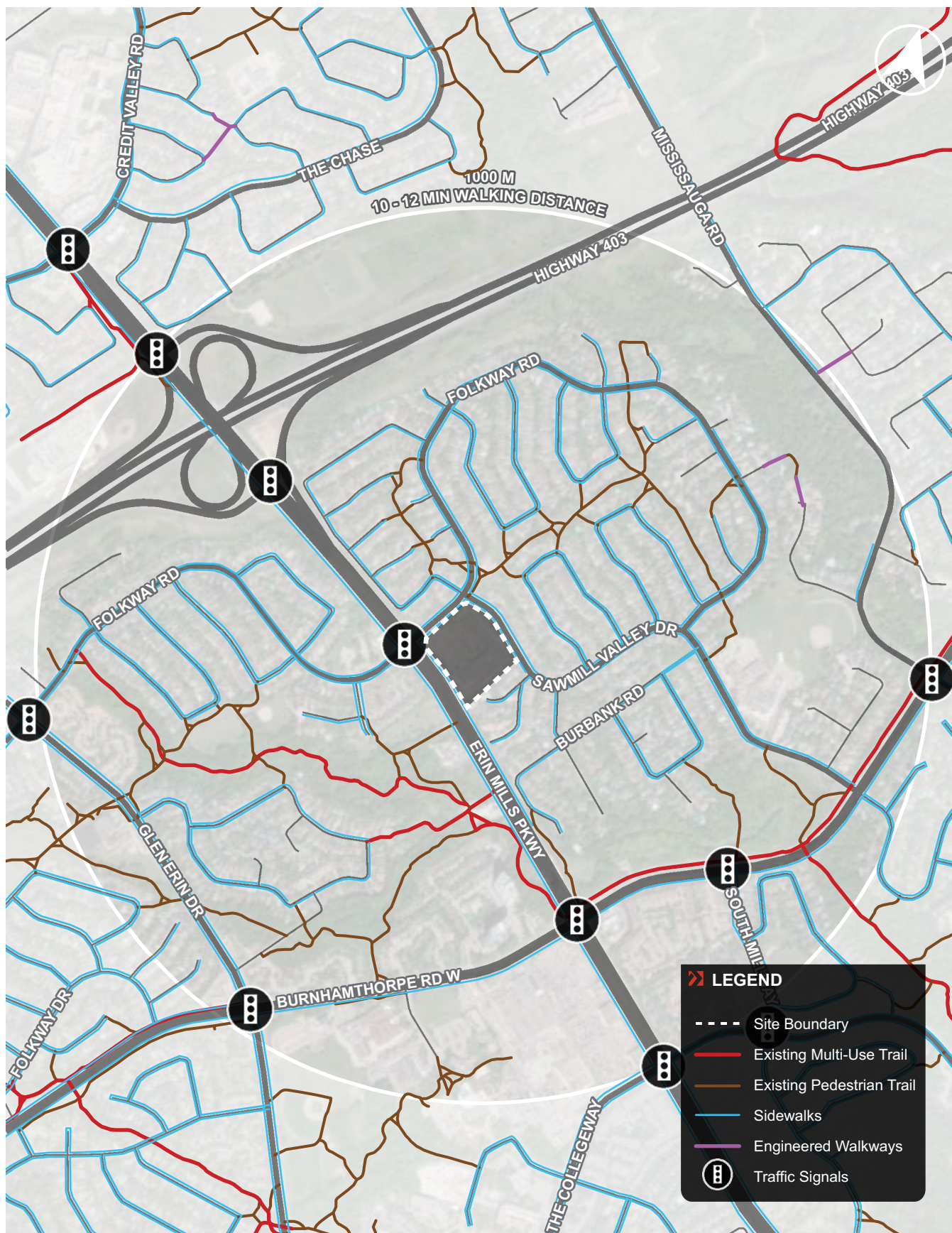


FIGURE 11 EXISTING AREA PEDESTRIAN NETWORK

3.0 VEHICLE PARKING CONSIDERATIONS

3.1 ZONING BY-LAW REQUIREMENTS

The site is subject to the requirements of Zoning By-law 0117-2022, and is located within Precinct 4. As outlined in **Table 3**, application of this Zoning By-law results a total requirement of 973 parking spaces, inclusive of 825 resident spaces and 148 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	597 units	1.1 spaces / unit	657
Resident – Stacked Condominium Townhouses	112 units	1.5 spaces / unit	168
Resident Subtotal			825
Non-resident			
Visitor – Condominium Apartment	597 units	0.2 spaces / unit	120
Visitor - Condominium Townhouses	112 units	0.25 spaces / unit	28
Retail	790 m ²	5 spaces / 100 m ² GFA	40
Non-resident Subtotal (before sharing)			188
Non-resident Shared Parking Arrangement³			148
SITE TOTAL (with sharing)			973

Notes:

1. Site statistics based on site plans received by Turner Fleischer architects dated August 28, 2024.
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/100m² of GFA.



3.2 PROPOSED VEHICLE PARKING SUPPLY

The proposed parking supply is summarized in **Table 4** and includes a total of 925 parking spaces, inclusive of 783 resident spaces and 142 non-resident spaces to be shared between resident visitors and retail visitors. A blended parking rate has been proposed for condominium apartments and stacked condominium townhouses as shown in **Table 4**.

TABLE 4 PROPOSED PARKING SUPPLY

Use	Number of Units / GFA (m²)	Proposed Parking Rate	Proposed Parking Supply (number of spaces)
Condominium Apartments & Stacked Condominium Townhomes			
Resident	709 units	1.1 spaces/unit	783
Visitor		0.20 spaces/unit	142
Retail			
New Retail	790 m²	5.0/100 m²	40
Non-Resident Sharing Considerations			
Non-resident sub-total before sharing			182
Non-resident sub-total with permitted sharing ³			142
Total Resident			783
Total Non-Resident			142
SITE TOTAL			925

Notes:

1. Site statistics based on site plans received by Turner Fleischer architects dated September 19, 2024.
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/100m² of GFA.

As summarized in **Table 8**, the total proposed parking supply is only 48 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 5 ZONING BY-LAW REQUIREMENTS VS. PROPOSED PARKING SUPPLY

Use	Zoning By-law 0117-2022 Minimum Requirement (spaces)	Proposed Parking Supply (spaces)	Difference between Proposed Supply & Zoning By-law 0117-2022 (spaces)
Resident	825	783	-42
Resident Visitor	148	142	-6
Retail			
TOTAL SITE	973	925	-48

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 0117-2022, could still 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, has been approved for developments in a similar transit context to the proposed site, is summarized in **Table 6**.

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 0117-2022. 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 6**, 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 6 RESIDENTIAL DEVELOPMENTS WITH PARKING SUPPLY REDUCTION APPROVALS

Address	Units	Resident Parking Ratio (spaces/unit)	Permission Through
630-670 Courtney Valley Road	668 Units (654 apartment units; 14 townhome units)	Res Ratio: 1.2 1-bedroom: 1.13 2-bedroom: 1.27	OMB Case No.: PL141343 File No.: PL141344 (2017 November 10) 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 (Minor Variance, January 20, 2022)
2550/2560 Eglinton Avenue West	361 Units	Res Ratio: 1.1 1-bedroom: 1.1 2-bedroom: 1.1 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 1-bedroom: 1.1 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 (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 (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 several 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 7 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 8**, the proposed vehicle parking supply for the site includes a total of 925 parking spaces, inclusive of 783 resident spaces and 142 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 48 spaces less than the requirements of Zoning By-law 0117-2022 and will meet the practical needs of the site.

TABLE 8 PROPOSED PARKING SUPPLY

Use	Number of Units / GFA (m ²)	Proposed Minimum Parking Rate	Proposed Parking Supply (number of spaces)
Condominium Apartments & Stacked Townhomes			
Resident	709 units	1.1 spaces/unit	783
Visitor		0.20 spaces/unit	142
Retail			
New Retail	790 m ² GFA	5.0/100 m ²	40
Non-Resident Sharing Considerations			
Non-resident sub-total before sharing			182
Non-resident sub-total with permitted sharing ³			142
Total Resident			783
Total Non-Resident			142
SITE TOTAL			925

Notes:

1. Site statistics based on site plans received by Turner Fleischer architects dated September 18, 2024.



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 9**.

TABLE 9 CITY OF MISSISSAUGA ZONING BY-LAW 0225-2007 ACCESSIBLE PARKING REQUIREMENTS

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

- Notes:
1. Site statistics based on site plans received by Turner Fleischer architects dated September 18, 2024.
 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 architectural drawings 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 10**, the Zoning By-law requires a minimum of 172 EV ready parking spaces. As the architectural drawings illustrate a total of 172 EV parking spaces, the proposed supply will meet the Zoning By-law requirements.

TABLE 10 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	783	20%	157	157
Resident Visitor Spaces	142	10%	15	15
Site Total	925	--	172	172

- Notes:
1. Site statistics based on site plans received by Turner Fleischer architects dated September 18, 2024.



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 11** and requires the provision of a total of 460 bicycle parking spaces inclusive of 425 long-term resident spaces and 35 short-term visitor spaces.

As the architectural drawings illustrate a total of 460 bicycle parking spaces, inclusive of 425 long-term resident spaces and 35 short-term visitor spaces, the proposed supply will meet the practical needs of the site and aligns with the Zoning By-law.

The 425 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 11 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	709 units	Short Term	0.05 spaces/unit	35	35
		Long Term	0.6 spaces/unit	425	425
Retail	790 m ²	Short Term	0.20/100 m ² GFA	0 ³	0
		Long Term	0.10/100 m ² GFA	0 ³	0
SITE TOTAL				460	460

Notes:

1. Site statistics based on site plans received by Turner Fleischer architects dated August 28, 2024.
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 m².



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 12**.

TABLE 12 ZONING BY-LAW 0225-2007 – MINIMUM LOADING REQUIREMENTS BY BUILDING

Block	Use	Units / GFA	Loading Criteria	Loading Requirements (number of spaces)
Building A	Residential	256 units	30+ units	1
	Retail	408 m ²	250 m ² to 2350 m ²	1
Building B	Residential	74 units	30+ units	1
	Retail	-	-	--
Building C	Residential	82 units	30+ units	1
	Retail	-		--
Building D	Residential	93 units	30+ units	1
	Retail	382 m ²	250 m ² to 2350 m ²	1
Building E	Residential	92 units	30+ units	1
	Retail	-		--
Site Total		597 residential units 790 m ² GFA retail		7

Notes:

1. Site statistics based on site plans received by Turner Fleischer architects dates August 28, 2024.

5.2 PROPOSED LOADING SUPPLY

It is proposed to provide a total of 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 13**.

TABLE 13 PROPOSED LOADING SUPPLY

Block	Use	Units / GFA ¹	Loading Criteria	Loading Requirements (number of spaces)
Building A ²	Residential	256 units	30+ units	1
	Retail	408 m ²	250 m ² to 2350 m ²	0
Building B	Residential	74units	30+ units	1
	Retail	-	-	--
Building C	Residential	82 units	30+ units	1
	Retail	-		--
Building D ²	Residential	93 units	30+ units	1
	Retail	382 m ²	250 m ² to 2350 m ²	0
Building E	Residential	92 units	30+ units	1
	Retail	-		--
Site Total		597 residential units 790 m² GFA retail	--	5

Notes:

1. Site statistics based on site plans received by Turner Fleischer architects dated August 28, 2024.
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 Sawmill 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 m² and 2,350 m². For the 408 m² of non-residential uses proposed in Block A and 382 m² 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 256 units are proposed for Block A and 93 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 m² 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 925 parking spaces inclusive of 783 parking spaces for residents (1.1 spaces per unit) and 142 parking spaces (0.20 spaces per unit) 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 be 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 425 long-term resident spaces and 35 short-term visitor spaces. The 425 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. 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

Provision of PRESTO Passes

To encourage transit use, the developer will consider the provision of pre-loaded Presto passes with a value of \$150 per residential unit. 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 14 and include strategies related to vehicle management, active transportation & transit initiatives and traveller information.



TABLE 14 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 - 1.1 resident spaces/unit - 0.20 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 The proposed development will include 425 long-term bicycle parking spaces and 35 short-term bicycle parking spaces.
Bike Repair Stations		Locations to be finalized at Site Plan Approval.
Transit		
PRESTO Passes	To encourage transit usage	Provide PRESTO passes for up to a value of \$150 for each unit. 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, 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 three planning horizons, including:

- Baseline existing conditions (based on April 2023 traffic counts);
- Site build-out (2029 – 5-years from current year); and
- 5-years post site build-out (2034).

Full build-out of the site, inclusive of 709 residential units and 790 m² GFA of retail, is expected by the year 2029. An additional future horizon year (2034) was also assessed as part of the analysis, in order to account for road network conditions 5-years post build-out of the site.

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

Since the September 2022 submission for this proposal, traffic volumes were re-counted at key intersections to determine current baseline traffic volumes. However, traffic volumes at the site driveway on Sawmill Valley Drive continues to be derived from the previously collected data (and subsequently balanced with newly counted volumes) for a realistic representation of baseline existing conditions.

Balanced traffic volumes are more likely to better reflect typical existing conditions and result in a conservative traffic analysis. Traffic count information is summarized in **Table 15** and detailed traffic count data is attached in **Appendix C**.

TABLE 15 UPDATED EXISTING TRAFFIC COUNT INFORMATION

Intersection	Date of Count	Source
Erin Mills Parkway / Burnhamthorpe Road West	Wednesday, April 26, 2023	Spectrum Traffic Data Inc.
Erin Mills Parkway / Folkway Drive		
Erin Mills Parkway / Site Driveway (RIRO ¹)		
Folkway Drive / Site Driveway (Main)		
Folkway Drive / Sawmill Valley Drive		
Sawmill Valley Drive / Site Driveway (Rear)	Tuesday, February 22, 2022	

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 the traffic analysis, are illustrated in **Figure 12**.



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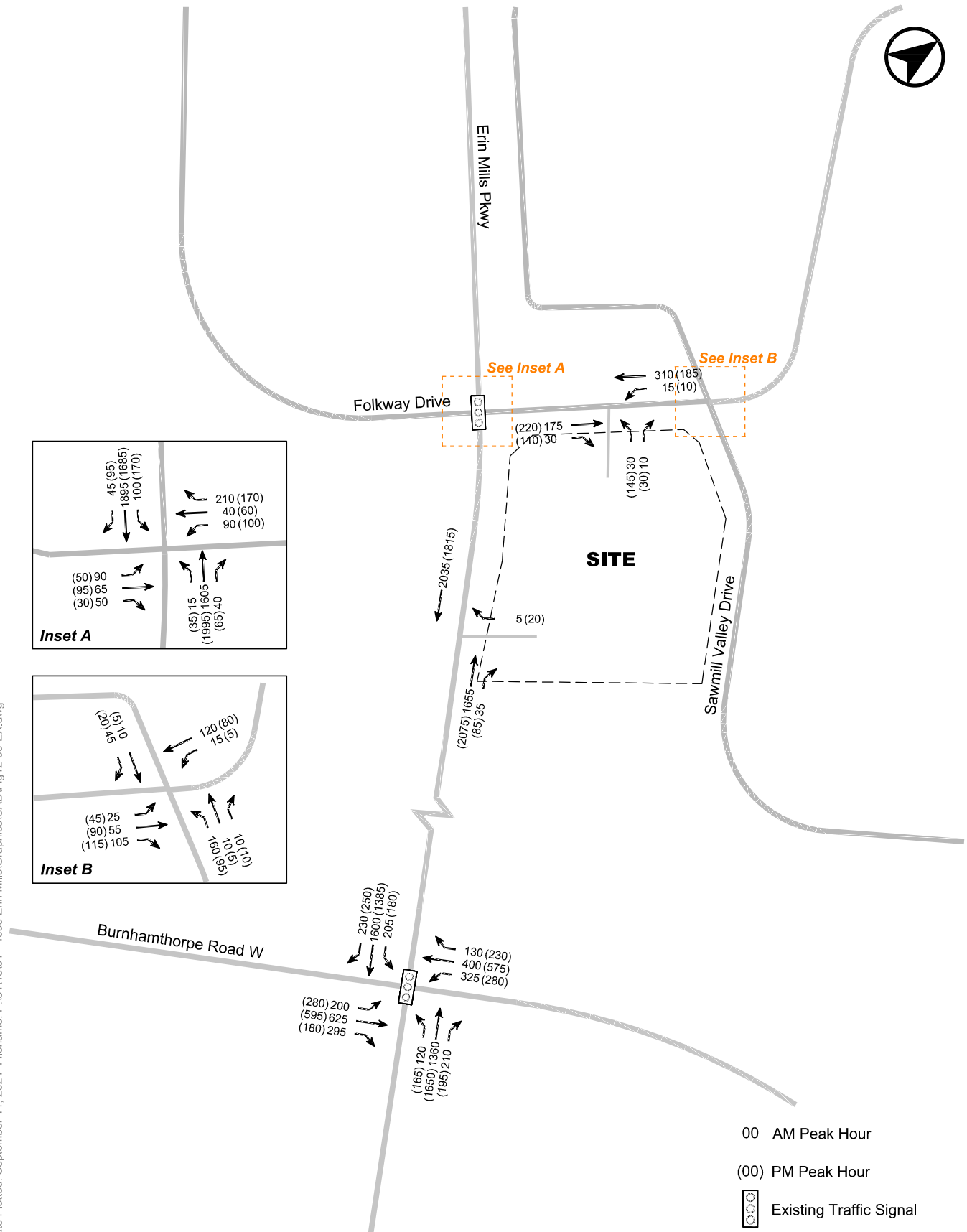


FIGURE 12 BASELINE EXISTING TRAFFIC VOLUMES

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, ATR and land use/forecasts data.”*

The CAGRs are summarized in **Table 16** and have been applied to traffic volumes on Erin Mills Parkway for each horizon year (from 2023 to remain conservative) to account for general corridor growth. The correspondence received from Peel Region staff is attached in **Appendix D**.

TABLE 16 CORRIDOR GROWTH RATES

Year	Erin Mills Parkway Compounded Annual Growth Rate (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 2034 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 the lack of active developments in the surrounding study area.

Forecasted 2029 and 2034 future background traffic volumes are illustrated on **Figure 13** and **Figure 14**, respectively.



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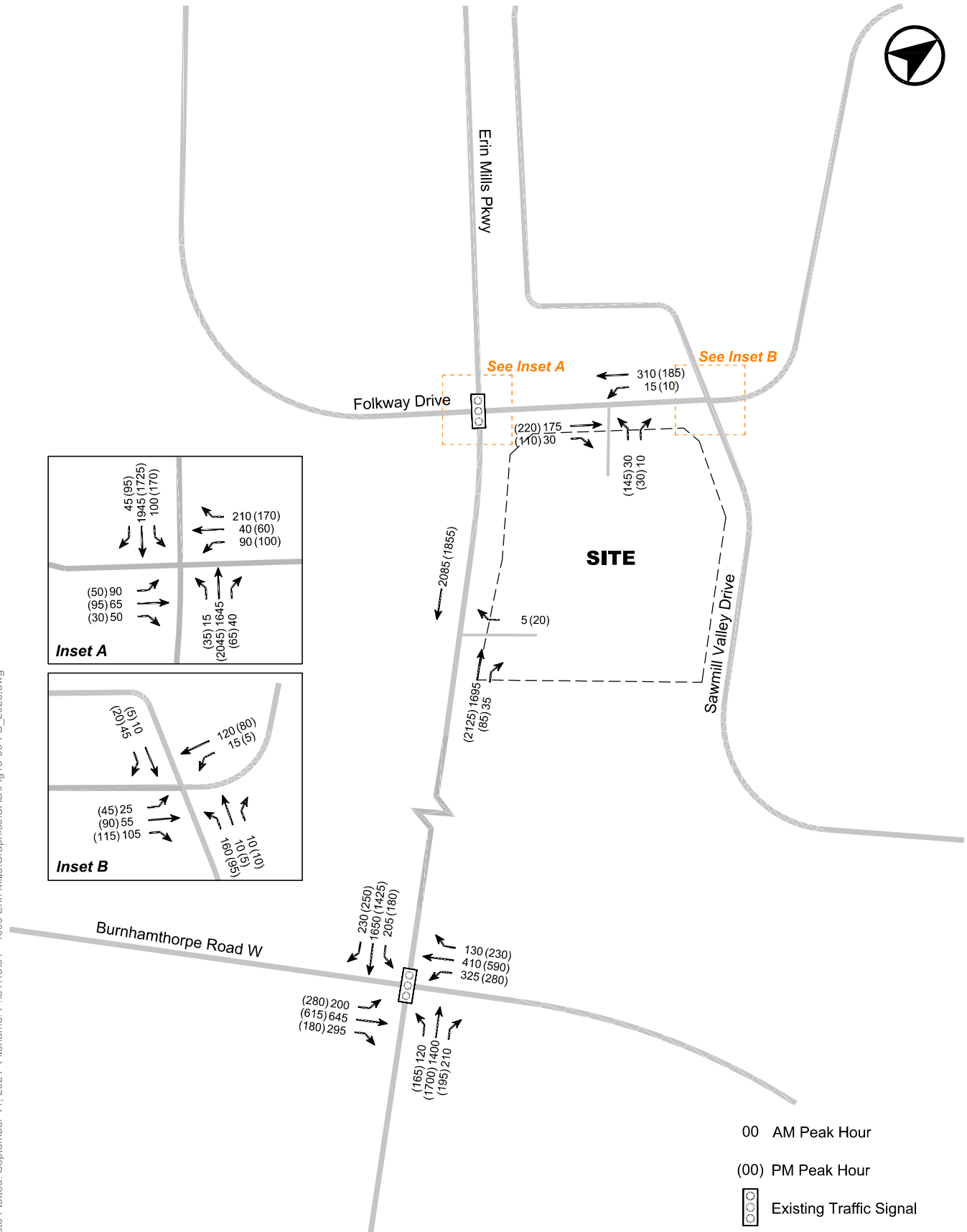


FIGURE 13 2029 FUTURE BACKGROUND TRAFFIC VOLUMES

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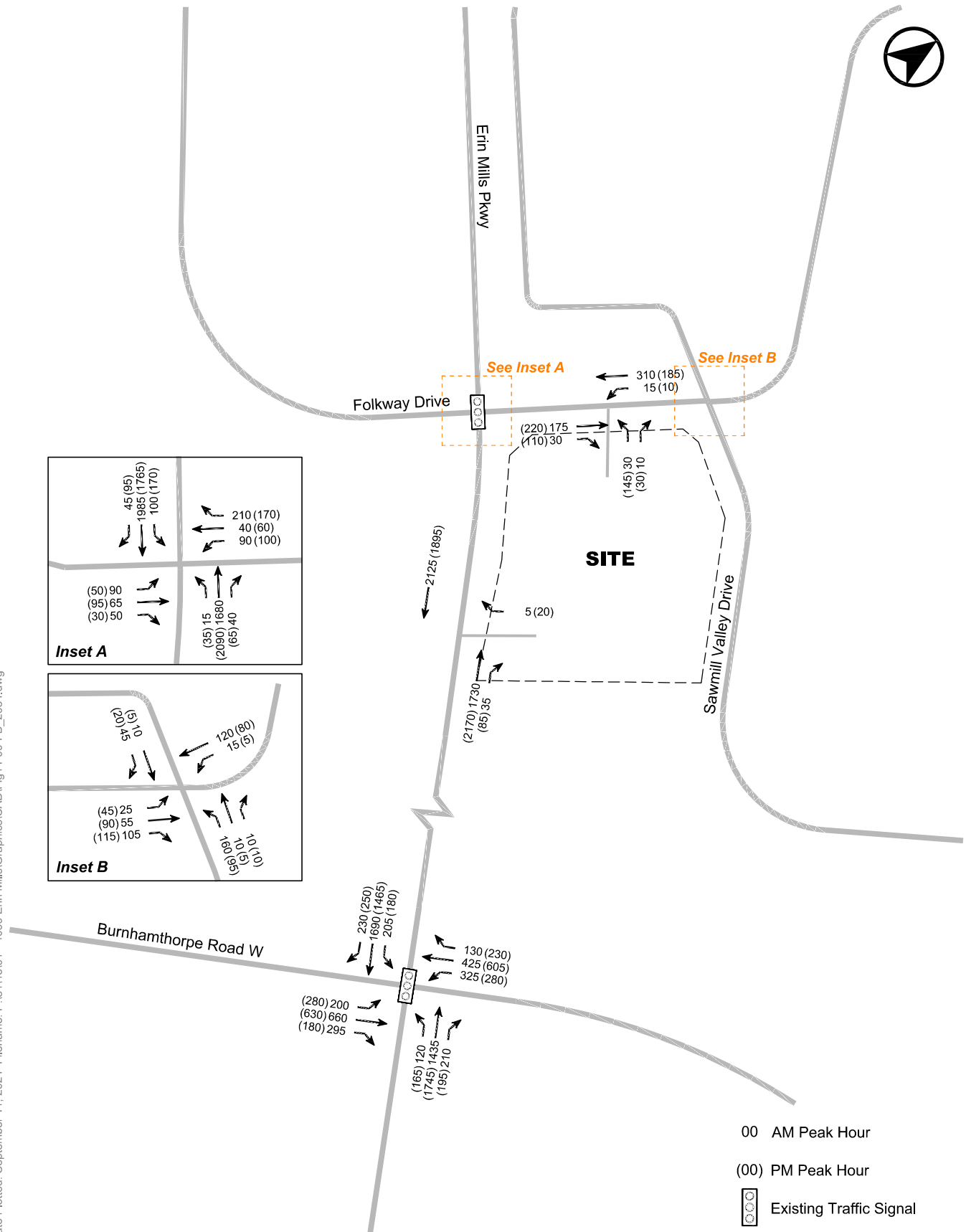


FIGURE 14 2034 FUTURE BACKGROUND TRAFFIC VOLUMES

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 buildings with less than 10 floors and LUC 222 – Multifamily Housing (High-Rise) was adopted for buildings with 10 or more floors. For the future retail uses on site, a trip generation rate was calculated using the existing trip generation from the existing retail on the site.

Existing trips generated by the site were also removed based on the original traffic counts (most conservative approach), to create a net-new site traffic layer for the traffic analysis. Existing site trips to be removed are illustrated on **Figure 15**. Site trip generation rates and forecasts are outlined below in **Table 17**.

TABLE 17 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 (High-Rise) (LUC 222) ^{1,2}	-	0.07	0.20	0.27	0.20	0.12	0.32
Multifamily Housing (Mid-Rise) (LUC 221)	-	0.09	0.28	0.37	0.24	0.15	0.39
Condominiums (High-Rise)	256 units	20	50	70	50	30	80
Condominiums (Mid-Rise)	341 units	30	95	125	80	50	130
Townhomes ³	112 units	10	30	40	25	15	40
Total New Residential Trips	709 units	60	175	235	155	95	250
Retail Trip Generation							
Existing Trips (retail GFA)	6,692 m ²	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
New Retail Trips	790 m ²	5	5	10	20	20	45
Total Trips Generated							
Total Site Vehicle Volumes		65	180	245	175	120	295
Existing Site Vehicle Volumes to be Removed		-60	-25	-85	-180	-190	-370
Net-New Site Traffic Volumes		+5	+155	+160	-5	-70	-75

Notes:

1. Trips per residential unit.
2. Adopted only for the building with greater than 10 storeys.
3. The trip generation rate for “mid-rise” buildings has been adopted for townhomes in this context, as with the previous submission.
4. All trips have been rounded to the nearest five.

It is projected that the site will generate in the order of **160** net-new two-way vehicle trips in the morning peak hour in future. In the afternoon peak hour, the site is projected to generate **75 less** two-way vehicle trips than the existing retail site. Compared to BA Group’s September 2022 report, this represents **35 less** trips in the morning peak hour and **35 less** trips in the afternoon peak hour.



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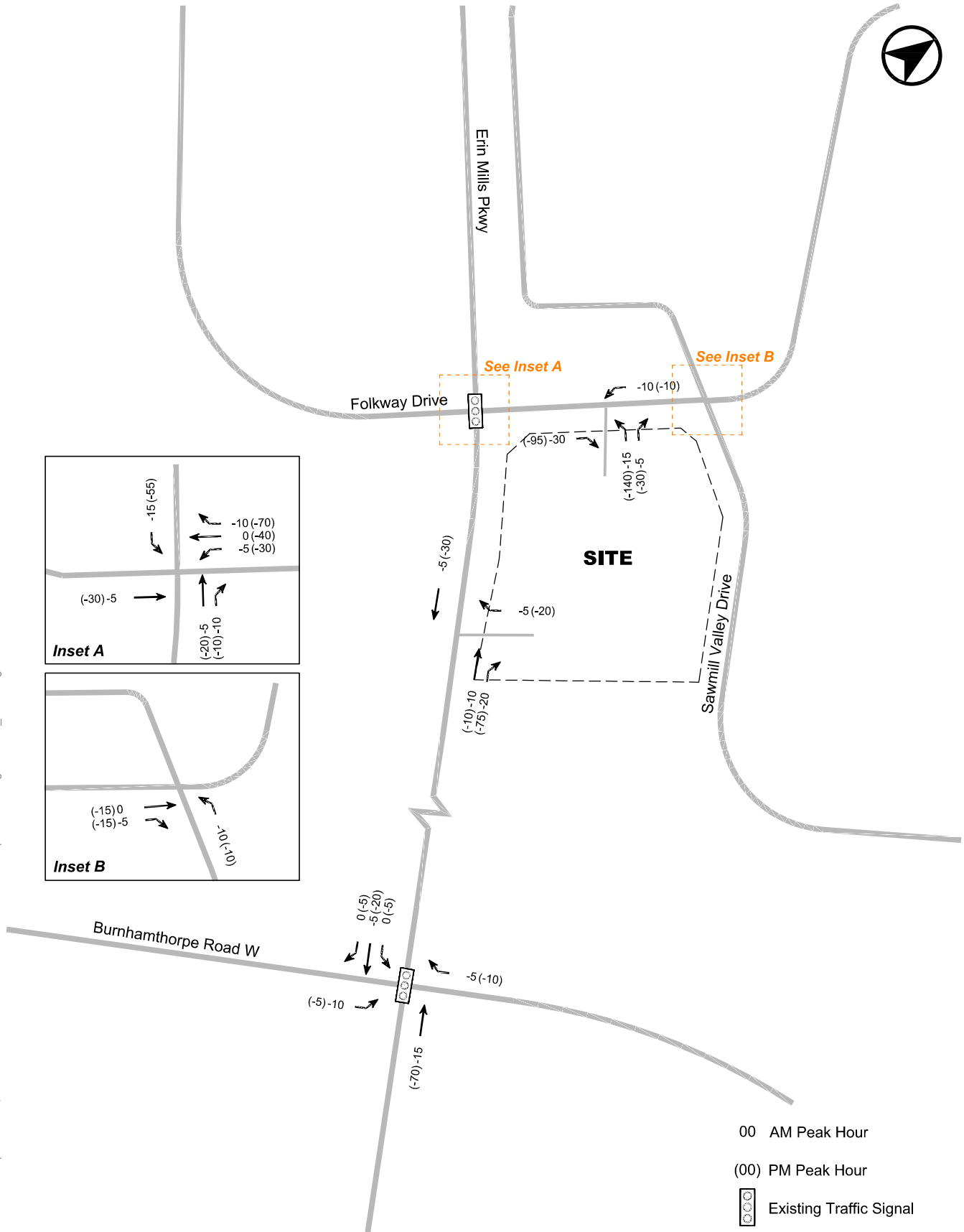


FIGURE 15 EXISTING SITE TRIPS TO BE REMOVED

7.4.2 Trip Distribution and Assignment

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. The adopted trip distribution is summarized in **Table 18**. Detailed query results are attached in **Appendix E**.

TABLE 18 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 2029 and 2034 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 2029 and 2034 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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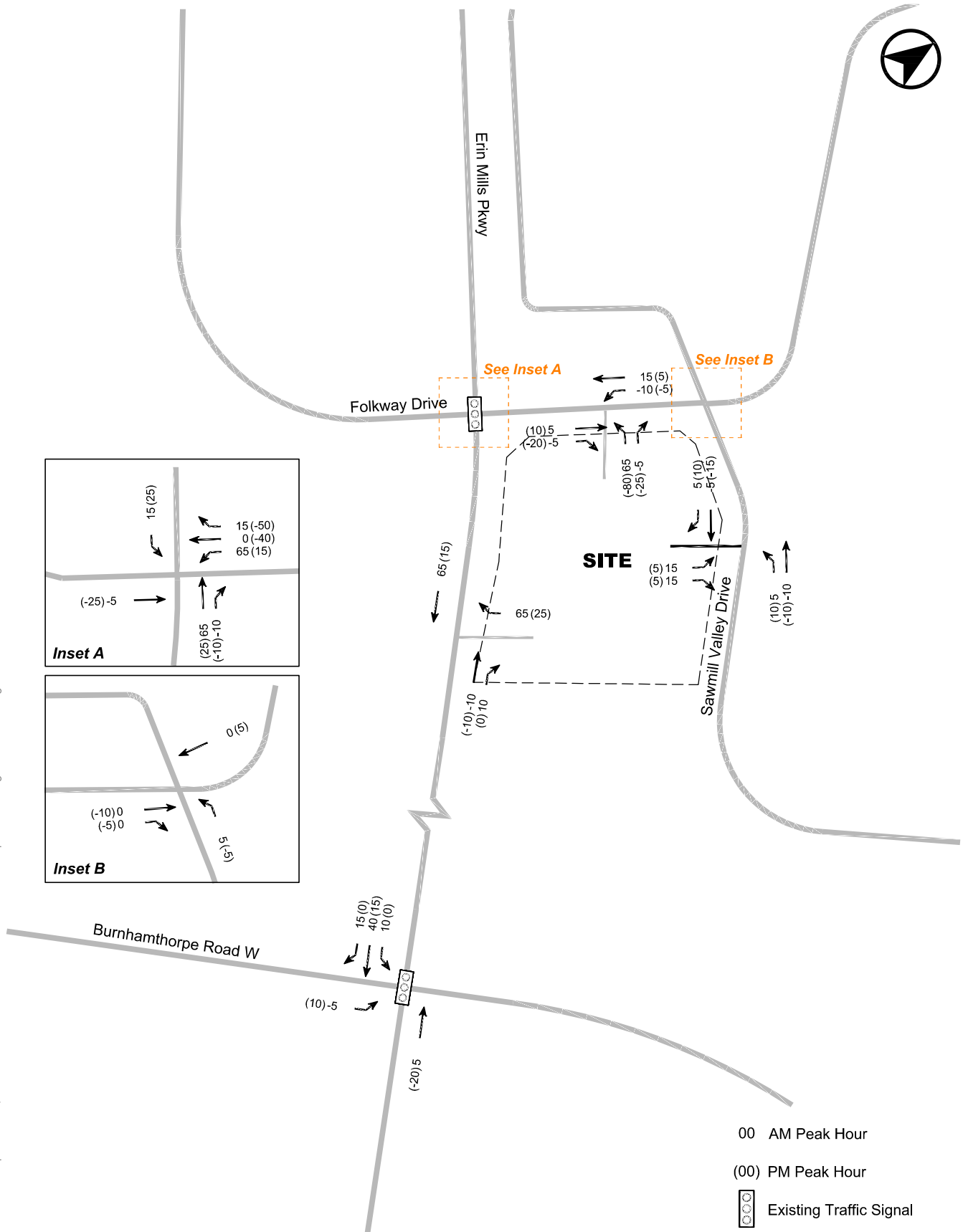


FIGURE 16 NET-NEW SITE TRAFFIC VOLUMES

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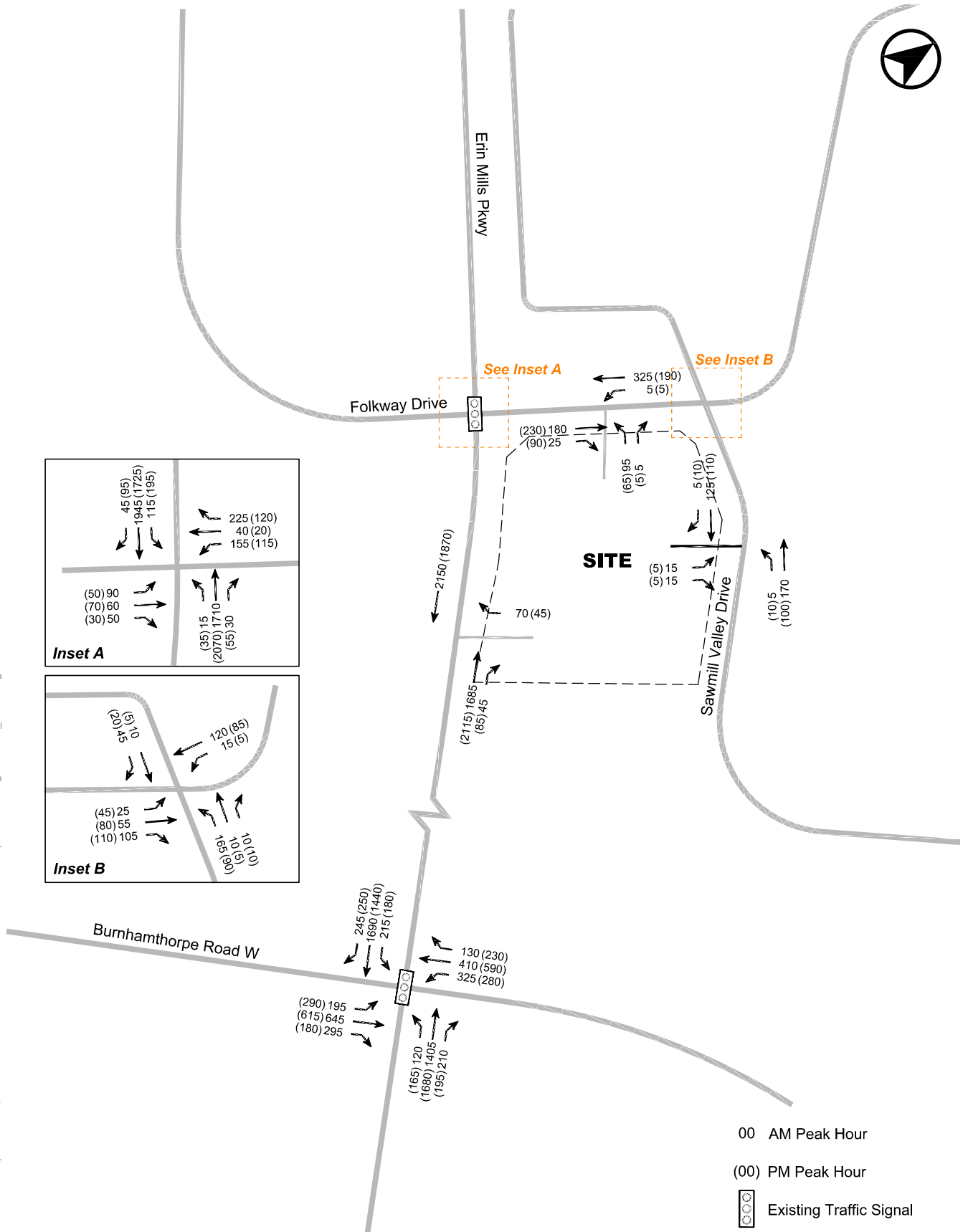


FIGURE 17 2029 FUTURE TOTAL TRAFFIC VOLUMES

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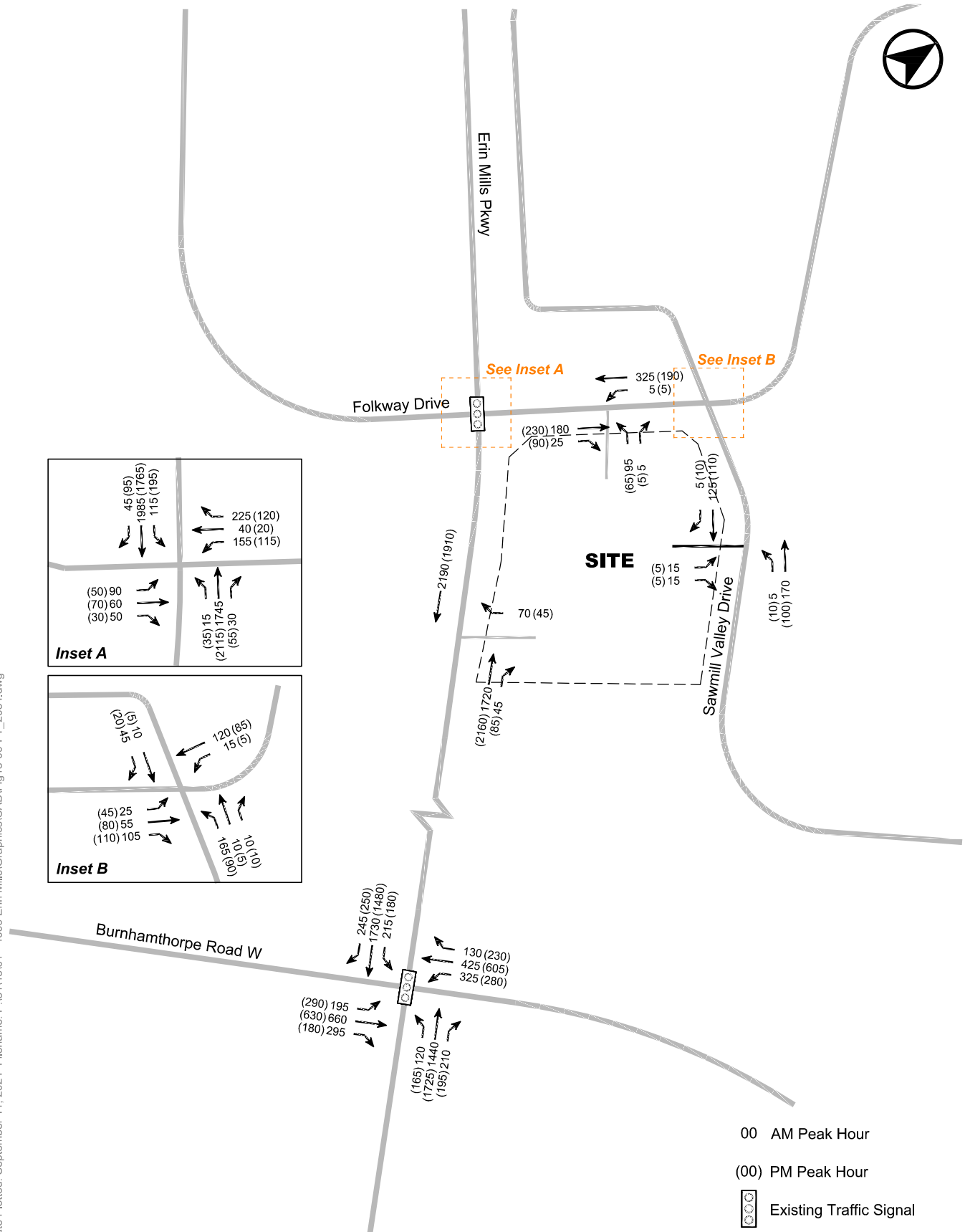


FIGURE 18 2034 FUTURE TOTAL TRAFFIC VOLUMES

8.0 TRAFFIC ANALYSIS

8.1 METHODOLOGY

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 1.0 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.

The signal timing plans for the signalized intersections are available in **Appendix C**.

8.1.1 Model Calibration

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 applied 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). The intergreen calibration study results are provided in **Appendix F**.



8.1.2 Other Key Model Factors

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 provided for reference in **Appendix G**.

8.2 SIGNALIZED INTERSECTION OPERATIONS

8.2.1 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 19**. Under existing conditions, the intersection functions adequately with a maximum overall v/c ratio of 0.89 (occurring in the morning peak hour).

In the 2029 future background scenario, the maximum overall v/c ratio is 0.90, indicating that the intersection operates within its theoretical capacity. The addition of site traffic results in only a minor increase in the maximum overall v/c ratio to 0.91 (in the morning peak hour).

In the 2034 horizon year, conditions are very similar to 2029 with the maximum overall v/c ratio being 0.92 with the inclusion of site-related traffic.

TABLE 19 ANALYSIS SUMMARY – ERIN MILLS PKWY / BURNHAMTHORPE RD

	Baseline Existing		2029 Future Background		2029 Future Total		2034 Future Background		2034 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBL	0.78 (0.91)	E (F)	0.78 (0.91)	E (F)	0.77 (0.94)	E (F)	0.78 (0.92)	E (F)	0.77 (0.95)	E (F)
EBTR	0.75 (0.56)	D (D)	0.76 (0.57)	D (D)	0.76 (0.57)	D (D)	0.76 (0.58)	D (D)	0.76 (0.58)	D (D)
WBL	0.89 (0.77)	E (D)	0.89 (0.77)	E (D)	0.89 (0.77)	E (D)	0.89 (0.78)	E (D)	0.89 (0.78)	E (D)
WBT	0.45 (0.74)	D (D)	0.46 (0.75)	D (D)	0.45 (0.75)	D (D)	0.47 (0.76)	D (E)	0.46 (0.76)	D (E)
WBR	0.08 (0.25)	D (D)	0.08 (0.25)	D (D)	0.08 (0.25)	D (D)	0.08 (0.25)	D (D)	0.08 (0.25)	D (D)
NBL	0.75 (0.81)	D (D)	0.75 (0.85)	D (E)	0.75 (0.85)	D (E)	0.75 (0.88)	D (E)	0.75 (0.89)	D (E)
NBT	0.78 (0.87)	D (D)	0.81 (0.90)	D (D)	0.82 (0.89)	D (D)	0.83 (0.93)	D (D)	0.84 (0.92)	D (D)
NBR	0.13 (0.12)	C (C)	0.13 (0.12)	C (C)	0.13 (0.12)	C (C)	0.13 (0.12)	C (C)	0.13 (0.12)	C (C)
SBL	0.81 (0.79)	D (D)	0.81 (0.79)	D (D)	0.83 (0.79)	E (D)	0.82 (0.79)	D (D)	0.83 (0.79)	E (D)
SBT	0.79 (0.68)	D (D)	0.82 (0.70)	D (D)	0.84 (0.71)	D (D)	0.85 (0.72)	D (D)	0.87 (0.73)	D (D)



	Baseline Existing		2029 Future Background		2029 Future Total		2034 Future Background		2034 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
SBR	0.14 (0.16)	C (C)	0.14 (0.16)	C (C)	0.15 (0.16)	C (C)	0.14 (0.16)	C (C)	0.15 (0.16)	C (C)
Overall	0.89 (0.84)	D (D)	0.90 (0.86)	D (D)	0.91 (0.86)	D (D)	0.91 (0.88)	D (D)	0.92 (0.88)	D (D)

Notes:

- 00 (00): Weekday morning peak hour (Weekday afternoon peak hour).

8.2.2 Erin Mills Parkway / Folkway Drive

The results of the traffic analysis for the intersection of Erin Mills Parkway / Folkway Drive are summarized in **Table 20**.

Under existing conditions, the intersection functions well, with a maximum overall v/c ratio of 0.70 (occurring in the afternoon peak hour).

In the 2029 future background scenario, the maximum overall v/c ratio is 0.70 indicating that the intersection remains within its theoretical capacity. The addition of site traffic results in only a minor increase in the maximum overall v/c ratio in the morning peak hour. The maximum overall v/c ratio remains at 0.70 under 2029 future total conditions. In the 2034 horizon year, conditions are very similar to 2029, with only the northbound and southbound through movements becoming slightly busier but still well within their theoretical capacity. The maximum overall v/c ratio for the 2034 future total scenario is 0.71.

TABLE 20 ANALYSIS SUMMARY – ERIN MILLS PKWY / FOLKWAY DR

	Baseline Existing		2029 Future Background		2029 Future Total		2034 Future Background		2034 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBL	0.68 (0.42)	E (E)	0.68 (0.42)	E (E)	0.69 (0.45)	E (E)	0.68 (0.42)	E (E)	0.69 (0.45)	E (E)
EBTR	0.45 (0.62)	E (E)	0.45 (0.62)	E (E)	0.42 (0.54)	E (E)	0.45 (0.62)	E (E)	0.42 (0.54)	E (E)
WBL	0.33 (0.41)	D (D)	0.33 (0.41)	D (D)	0.55 (0.47)	D (D)	0.33 (0.41)	D (D)	0.55 (0.47)	D (D)
WBTR	0.32 (0.46)	D (D)	0.32 (0.46)	D (D)	0.33 (0.14)	D (D)	0.32 (0.46)	D (D)	0.33 (0.14)	D (D)
NBL	0.12 (0.18)	B (B)	0.12 (0.18)	B (B)	0.13 (0.20)	B (B)	0.13 (0.19)	B (B)	0.13 (0.20)	B (B)
NBT	0.55 (0.71)	B (C)	0.56 (0.73)	C (C)	0.60 (0.74)	C (C)	0.58 (0.75)	C (C)	0.61 (0.76)	C (C)
NBR	0.03 (0.04)	B (B)	0.03 (0.04)	B (B)	0.02 (0.03)	B (B)	0.03 (0.04)	B (B)	0.02 (0.03)	B (B)
SBL	0.60 (0.74)	E (E)	0.60 (0.74)	E (E)	0.63 (0.77)	E (E)	0.60 (0.74)	E (E)	0.63 (0.77)	E (E)
SBT	0.58 (0.52)	B (B)	0.59 (0.53)	B (B)	0.59 (0.51)	B (B)	0.60 (0.55)	B (B)	0.61 (0.53)	B (B)
SBR	0.03 (0.06)	A (B)	0.03 (0.06)	A (B)	0.03 (0.06)	A (A)	0.03 (0.06)	A (B)	0.03 (0.06)	A (A)
Overall	0.58 (0.68)	C (C)	0.60 (0.70)	C (C)	0.62 (0.70)	C (C)	0.60 (0.71)	C (C)	0.63 (0.71)	C (C)

Notes:

- 00 (00): Weekday morning peak hour (Weekday afternoon peak hour).



8.2.3 Signalized Intersection Queueing Assessment

In addition to capacity assessment, queue lengths were also assessed for the study area signalized intersections. **Table 21** provides a summary of 50th and 95th percentile queue lengths at the intersections of Erin Mills Parkway / Burnhamthorpe Road and Erin Mills Parkway / Folkway Drive. Future queue lengths were compared for the 2034 horizon year to assess the worst-case scenario.

TABLE 21 SIGNALIZED INTERSECTION QUEUEING ASSESSMENT

Movement	Available Turn-Lane Storage (m)	Existing		2034 Future Background		2034 Future Total	
		50 th Percentile Queue (m)	95 th Percentile Queue (m)	50 th Percentile Queue (m)	95 th Percentile Queue (m)	50 th Percentile Queue (m)	95 th Percentile Queue (m)
Erin Mills Parkway / Burnhamthorpe Road							
EBL	80	53 (75)	83 (137)	53 (76)	83 (140)	52 (80)	81 (146)
EBT	-	80 (63)	98 (82)	83 (67)	101 (86)	83 (67)	101 (86)
WBL	80	66 (48)	118 (68)	65 (48)	116 (68)	65 (48)	116 (68)
WBT	-	49 (78)	68 (97)	51 (82)	71 (103)	51 (82)	71 (103)
WBR	90	0 (10)	16 (33)	0 (10)	15 (33)	0 (10)	15 (34)
NBL	160	17 (23)	53 (65)	17 (26)	53 (74)	17 (27)	53 (75)
NBT	-	127 (156)	162 (202)	137 (172)	184 (227)	137 (169)	185 (223)
NBR	200	0 (0)	18 (17)	0 (0)	18 (17)	0 (0)	18 (17)
SBL	135	37 (30)	82 (69)	38 (31)	82 (70)	40 (31)	90 (70)
SBT	-	143 (114)	183 (143)	155 (125)	198 (157)	161 (126)	214 (159)
SBR	160	0 (0)	14 (17)	0 (0)	17 (17)	0 (0)	18 (17)
Erin Mills Parkway / Folkway Drive							
EBL	35	22 (12)	42 (26)	22 (12)	42 (26)	22 (12)	42 (26)
EBT	-	21 (30)	43 (50)	21 (30)	43 (50)	20 (22)	40 (41)
WBL	60 ²	17 (21)	34 (37)	17 (21)	34 (37)	32 (25)	54 (43)
WBT	-	15 (32)	42 (58)	15 (32)	42 (58)	16 (4)	44 (22)
NBL	85	1 (2)	4 (6)	1 (2)	4 (6)	1 (2)	4 (6)
NBT	-	96 (143)	136 (182)	102 (154)	145 (196)	111 (159)	157 (193)
SBL	170	24 (43)	46 (69)	24 (43)	46 (69)	28 (49)	51 (82)
SBT	-	83 (91)	147 (114)	89 (97)	158 (122)	90 (93)	158 (116)
SBR	120	0 (0)	0 (7)	0 (0)	0 (7)	0 (0)	0 (7)

Notes:

1. Queue lengths are rounded down to the nearest metre.
2. Approximately 67 metres from stop bar to existing site driveway on Folkway Drive.



As demonstrated above, any queueing issues under future conditions are existing and will not be caused as a result of the development of the site. Notably, all 50th percentile queues can be contained within existing storage provisions.

95th percentile queues are based on the 95th percentile arrival rate of traffic and are therefore only expected to occur a very limited number of times during the peak hour. Based on a 160 second cycle length, there are approximately 22 cycles during a peak hour. If the 95th percentile arrival rate occurs on average during 5% of the cycles, it is likely that 95th percentile queue lengths may only occur during 1 – 2 cycles during peak hours.

8.3 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 10 seconds. With buildout of the site in future, any significant delay time at this intersection is not expected.

The results of the traffic analysis for the intersection of Folkway Drive / Sawmill Valley Drive are summarized in **Table 22**. Only existing and 2034 horizon years are shown, as there is a negligible difference in results for the intermediate horizon years.

TABLE 22 ANALYSIS SUMMARY – FOLKWAY DRIVE / SAWMILL VALLEY DRIVE

	Existing		2034 Future Background		2034 Future Total	
	LOS	Delay	LOS	Delay	LOS	Delay
EBTLR	A (A)	8.8 (9.0)	A (A)	8.8 (9.0)	A (A)	8.8 (8.8)
WBTLR	A (A)	8.9 (8.2)	A (A)	8.9 (8.2)	A (A)	9.0 (8.2)
NBTLR	A (A)	9.7 (8.8)	A (A)	9.7 (8.8)	A (A)	9.8 (8.7)
SBTLR	A (A)	7.8 (7.5)	A (A)	7.8 (7.5)	A (A)	7.9 (7.5)

Notes:

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



8.3.1 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 (right-in/right-out access).

Driveways to the site function well under all scenarios, with the maximum delay experienced being approximately 16 seconds (LOS rating of C). The results of analysis for site driveways are summarized in **Table 23**.

TABLE 23 ANALYSIS SUMMARY – SITE DRIVEWAYS

Movement	2029 Future Background		2029 Future Total		2034 Future Background		2034 Future Total	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Erin Mills Parkway Driveway (Right-In/Right-Out)								
WBR	B (B)	12.7 (15.0)	B (C)	13.9 (15.6)	B (C)	12.8 (15.2)	B (C)	14.1 (15.9)
Folkway Drive Driveway (All-Movements)								
WBTL	A (A)	0.5 (0.5)	A (A)	0.1 (0.2)	A (A)	0.5 (0.5)	A (A)	0.1 (0.2)
NBLR	B (B)	12.2 (14.6)	B (B)	14.1 (12.6)	B (B)	12.2 (14.6)	B (B)	14.1 (12.6)
Sawmill Valley Drive Driveway (All-Movements)								
EBLR	Future total only.		B (A)	10.1 (9.5)	Future total only.		B (A)	10.1 (9.5)
NBTL			A (A)	0.2 (0.7)			A (A)	0.2 (0.7)

Notes:

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

8.3.2 Unsignalized Intersection Queuing Assessment

At unsignalized intersections and site driveways, all reported 95th percentile queue lengths are 1 car length (7 metres) or less in future total conditions, therefore a more detailed queuing summary has not been provided for these unsignalized intersections.



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 (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. 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 24**, 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 24 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



9.2 SCHOOL CROSSING ON SAWMILL VALLEY DRIVE

The site is approximately 600 metres away from an existing school zone on Sawmill Valley Drive that includes St. Mark Catholic Elementary School and Sawmill Valley Public School. The posted reduced speed limit within the school zone is 30 km/h. A marked mid-block school crossing, with a crossing guard present during specified school hours, is currently located on Sawmill Valley Drive between the two schools.

The site is expected to result in a maximum of 5 to 10 additional vehicles on Sawmill Valley Drive, south of the site, during the peak periods of the day. As the site is expected to generate only a modest number of additional vehicle trips along Sawmill Valley Drive, the development of the site is not expected to impact the level of safety within the school zone. It is recommended however that the City continue to monitor the school zone in order to determine if any existing concerns can be mitigated with additional safety measures.



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 lower.

Table 25 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 25 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	65	180	245	175	120	295
Difference between Existing vs. Future Vehicle Trips	+5	+155	+160	-5	-70	-75

The 160 additional vehicle trips to and from the site during the morning peak hour will be primarily directed to Erin Mills Parkway and Highway 403. It is expected that only a very minimal amount of this site traffic site would travel through the local street network. In the morning peak hour, it is expected that approximately 5 – 10 of the 160 net-new vehicles on the road network will be on Sawmill Valley Drive, with the remainder destined to or from Erin Mills Parkway and hence not impacting the local street network.

In the afternoon peak hour, a reduction of 75 two-way total vehicle site trips is projected for the site. The assessment indicates that community impacts of the site in the afternoon peak will be positive as lower vehicle volumes are expected to be generated by the site, resulting in less vehicle traffic on the local street network.



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 25** 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, 160 additional two-way vehicle trips will be generated related to the site, 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 is expected that only up to an additional 10 vehicles would travel along Sawmill Valley Drive, southbound through the neighborhood. During the afternoon peak hour, as trips to/from the site are expected to be 75 vehicles less when compared to the existing retail development, the impacts on the community are expected to be positive as lower vehicle volumes are expected to be generated by the site, resulting in less vehicle traffic on the local street network. It is important to note that as the traffic analysis indicates that the intersections surrounding the site are expected to operate well in the future, there will be little incentive to drive through the neighborhood along Sawmill Valley Drive to travel to/from the site.

For the purpose of the analysis, as shown in **Table 26**, at the proposed new site driveway on Sawmill Valley Drive, it is estimated that there would be 40 and 30 total two-way vehicle trips, during the morning and afternoon peak hours, respectively. This does not account for existing site traffic removals, which are further discussed below.

TABLE 26 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 Drive	10	30	40	20	10	30

To gain a better understanding of the potential impact of the development on the overall traffic volumes along Sawmill Valley Drive, forecasted traffic volumes (just south of the proposed access) were compared along the road for the 2034 future background (***without the new site development***) and the 2034 future total conditions (***with the new site development***). This comparison **does** include existing site traffic removals, as a result of demolition of the existing retail site.

As shown in **Table 27**, without the proposed development, it is estimated that there would be approximately 310 and 235 vehicles, during the morning and afternoon peak hours, respectively, travelling along Sawmill Valley Drive. With the addition of the site development traffic, it is estimated that there would be 315 and 225 vehicles, during the morning and afternoon peak hours, respectively, travelling on Sawmill Valley Drive. The net difference in traffic volumes along Sawmill Valley Drive **with** the proposed development is +5 and -10 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 27 TRAFFIC VOLUMES ON SAWMILL VALLEY ROAD (NORTH 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 (2034)	180	130	310	110	125	235
Net New Site-Related	+5	0	+5	-5	-5	-10
Future Total (2034)	185	130	315	105	120	225



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 790 m² GFA of retail, and 7 stacked townhouse blocks with 112 residential condominium units. The total number of residential units proposed for the site (condominium units plus stacked condominium townhouses) is 709 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, a full access on Folkway Drive (45 metres east of Erin Mills Parkway), and a proposed new full access on Sawmill Valley Drive, approximately 65 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

- In accordance with the requirements of Zoning By-law 0117-2022, the site is located within Precinct 4. Application of Zoning By-law 0117-2022 results in a total requirement of 973 parking spaces, inclusive of 825 resident spaces and 148 non-resident spaces to be shared between resident visitors and retail visitors.
- The proposed parking supply for the site includes a total of 925 parking spaces, inclusive of 783 resident spaces and 142 non-resident spaces to be shared between resident visitors and retail visitors. The proposed residential parking supply has been considered with a blended rate of 1.1 spaces per unit for both the condominium units and the townhome units and a rate of 0.20 spaces per unit for non-resident parking. The proposed parking supply is appropriate and will meet the 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 460 bicycle parking spaces inclusive of 425 long-term resident spaces and 35 short-term visitor spaces.
- As the architectural drawings illustrate a total of 460 bicycle parking spaces, inclusive of 425 long-term resident spaces and 35 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

- 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) and LUC 222 (High-Rise) was adopted, depending on the size of each building. 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 **160** net-new two-way vehicle trips in the morning peak hour in future. In the afternoon peak hour, the site is projected to generate **75 less** two-way vehicle trips than the existing retail site.

Traffic Volumes and Operations Analysis

- The traffic analysis was undertaken for the baseline existing, build-out (2029) and 5-years post-build out (2034) horizon years.
- Since the September 2022 submission for this proposal, traffic volumes were re-counted at key intersections to determine up to date baseline traffic volumes. Volumes at other intersections remain based off of the previously collected data but have been subsequently balanced with the newly counted intersections for a realistic representation of baseline existing conditions.
- 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).
- Trip generation rates for the proposed development were adopted based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition Volume 3.



- 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.
- No new queueing issues are introduced as a result of the proposed development buildout, with all 50th percentile queues able to be contained within existing storage provisions.
- 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.



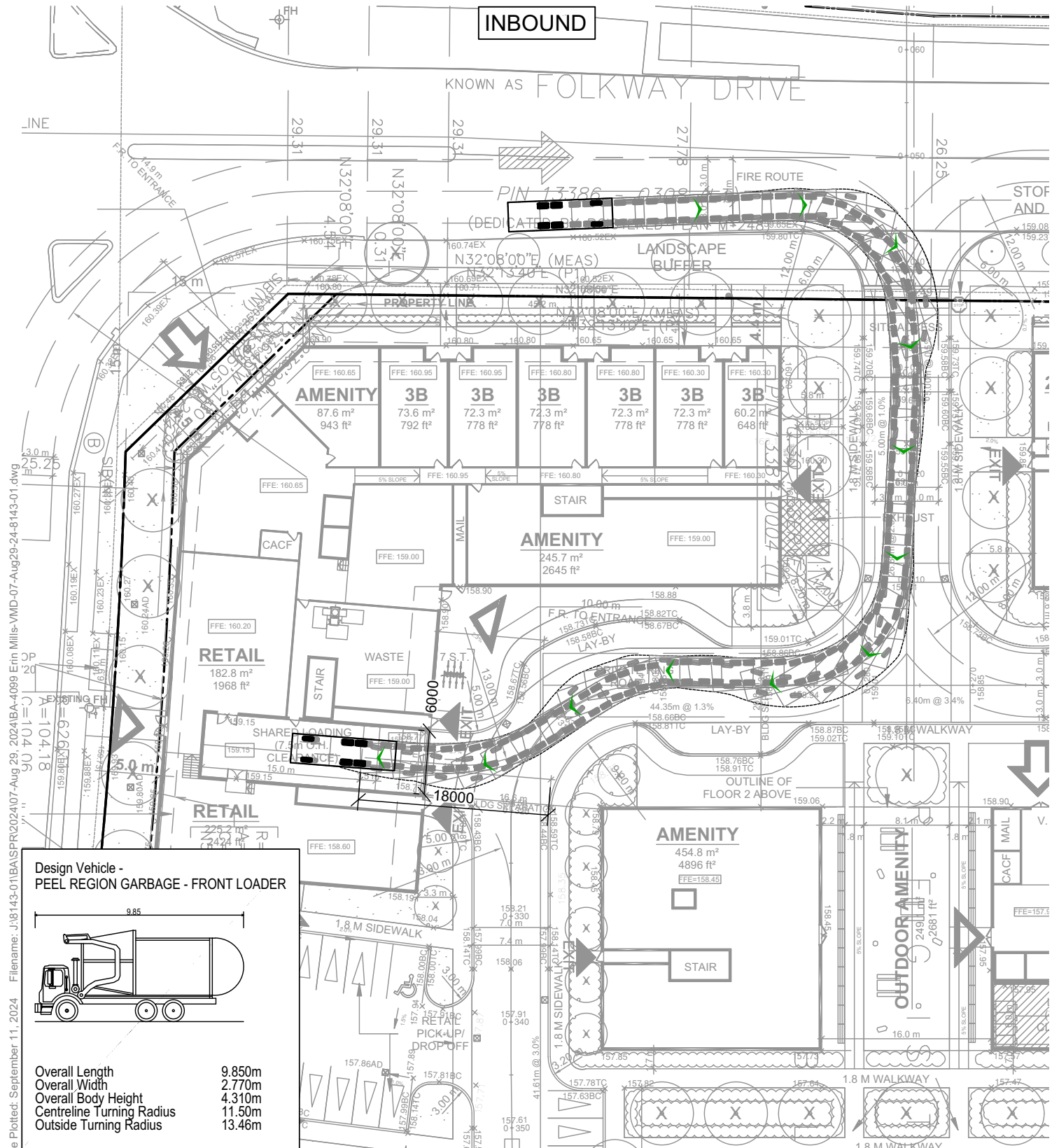
APPENDIX A: Architectural Drawings



APPENDIX B:

Vehicle Manoeuvring Diagrams





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: SEPTEMBER 11, 2024

Scale 0 5 10 15 20m
1:500
Drawing No. VMD-01



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: SEPTEMBER 11, 2024

Scale

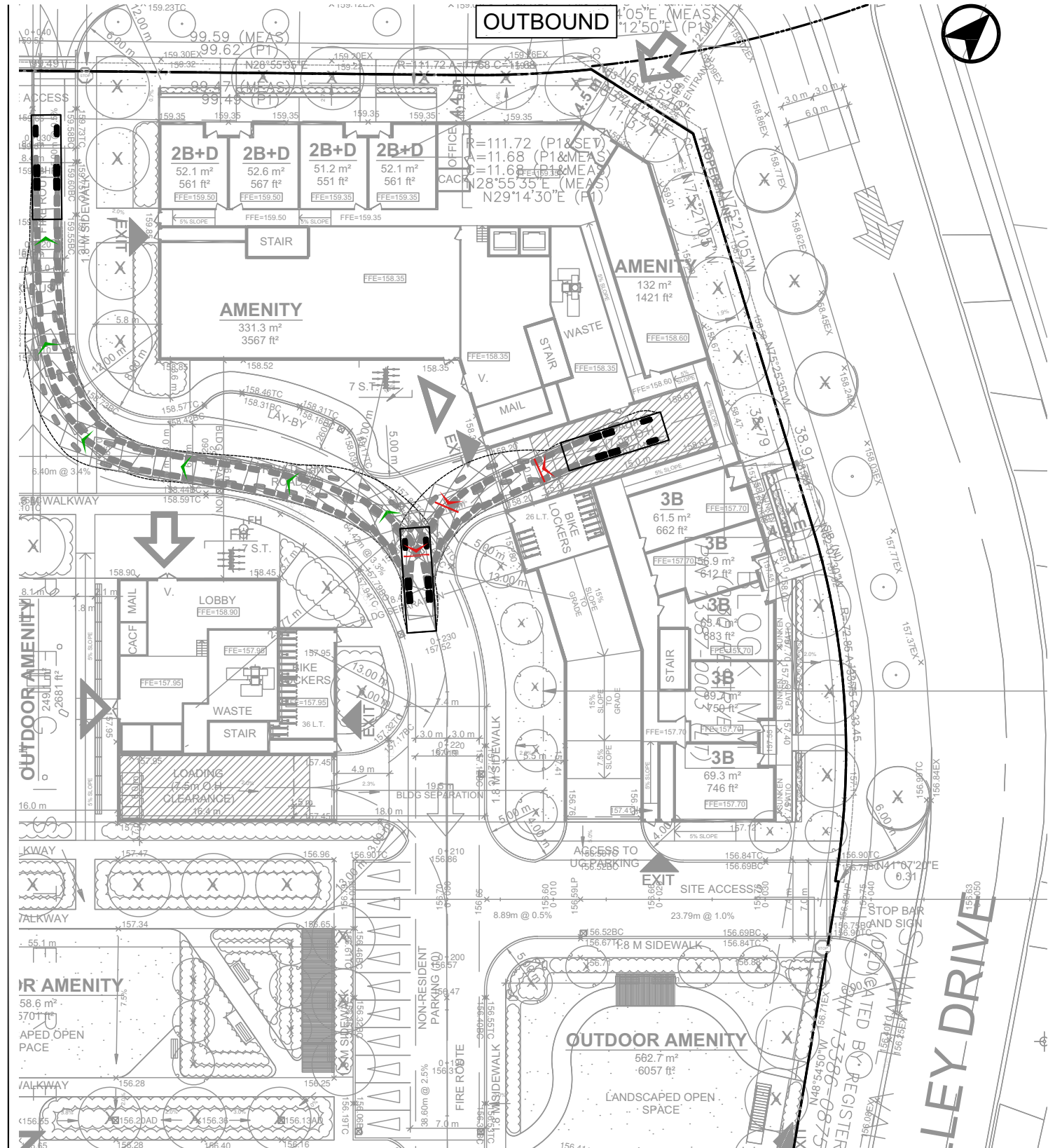
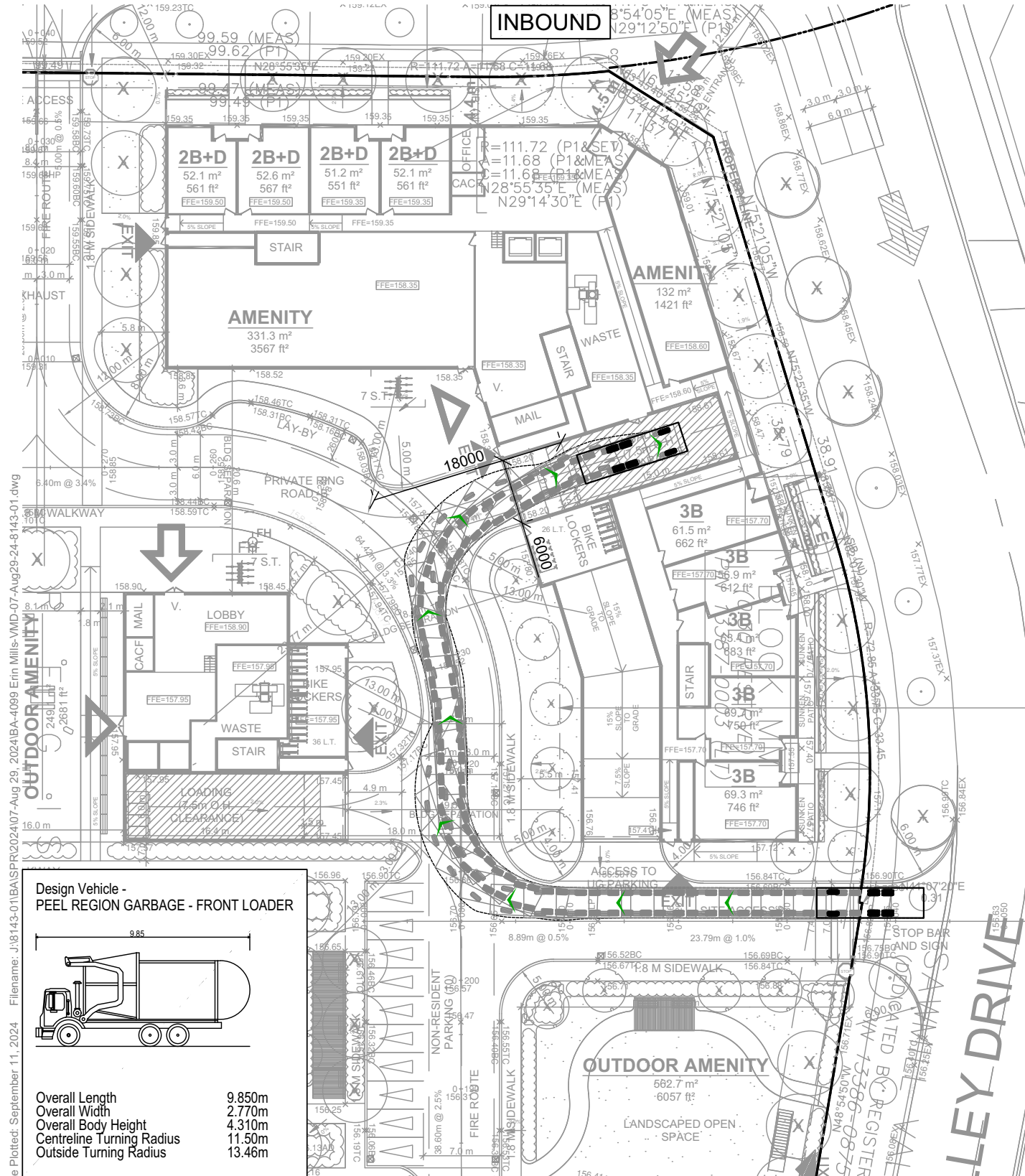
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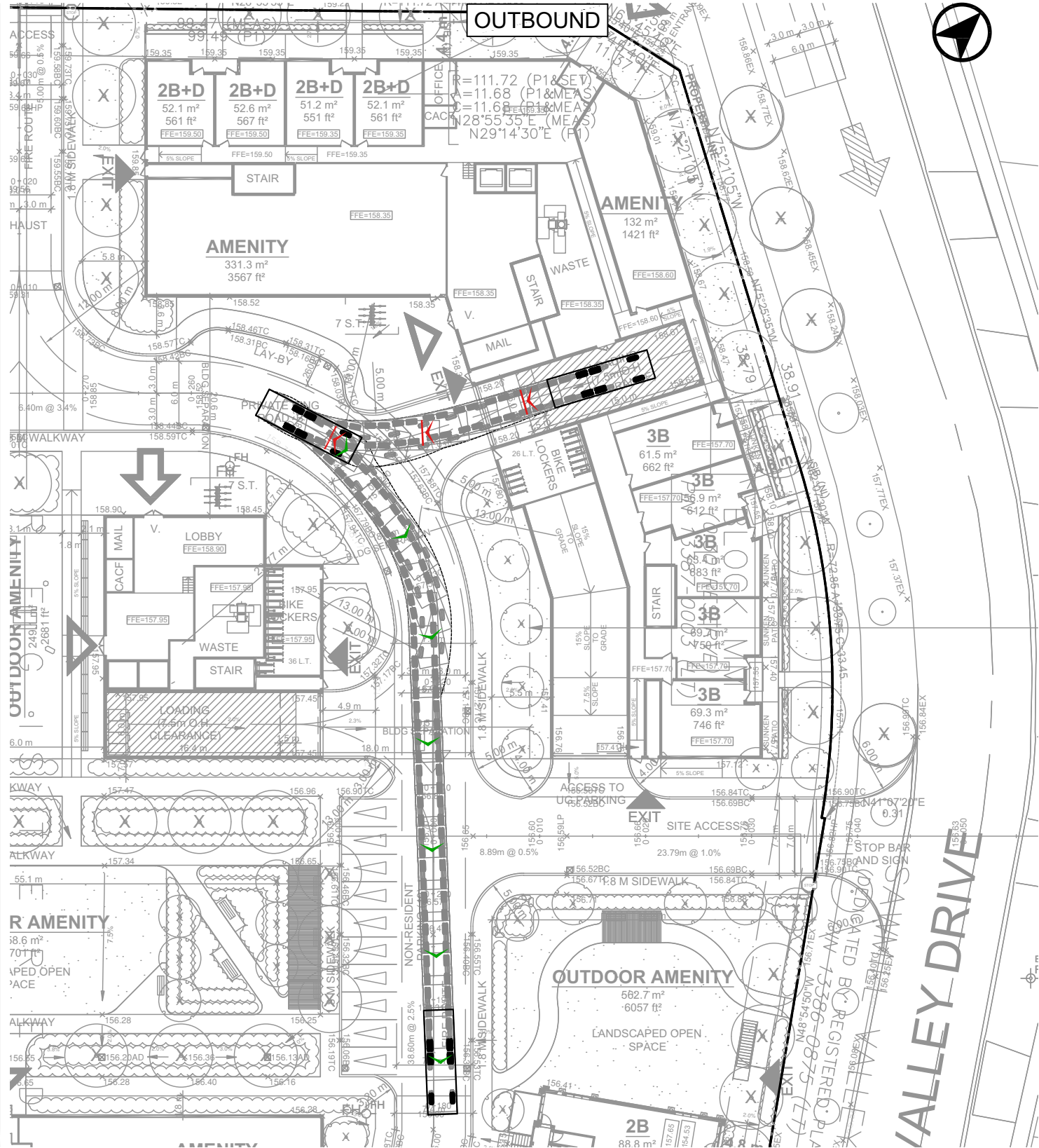
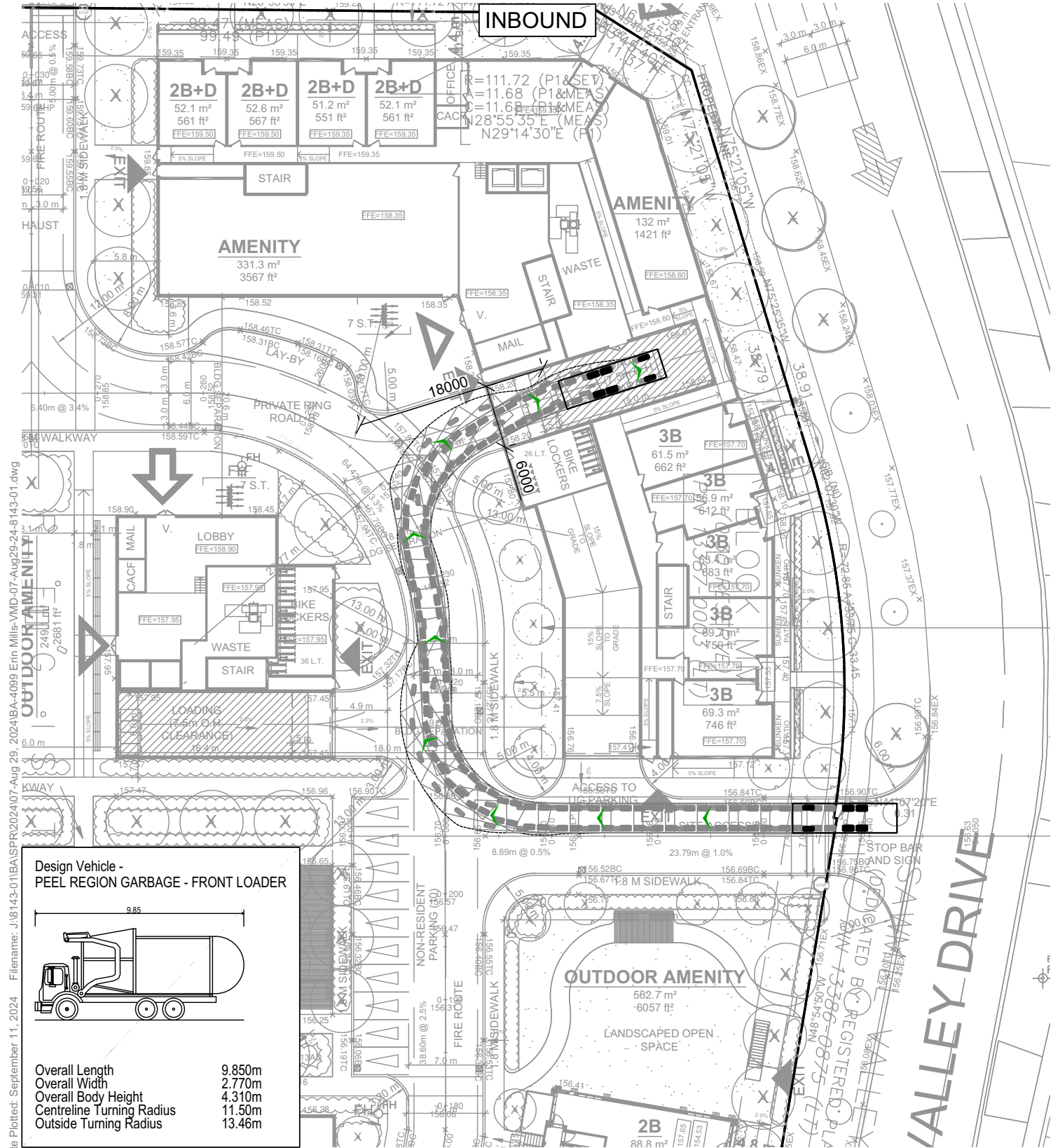
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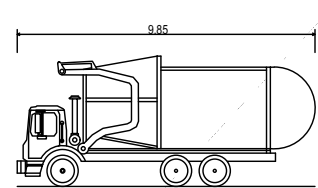
4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING B
PEEL REGION GARBAGE TRUCK - FRONT LOADER

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

Scale: 0 5 10 15 20m
1:500
Drawing No. VMD-03



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

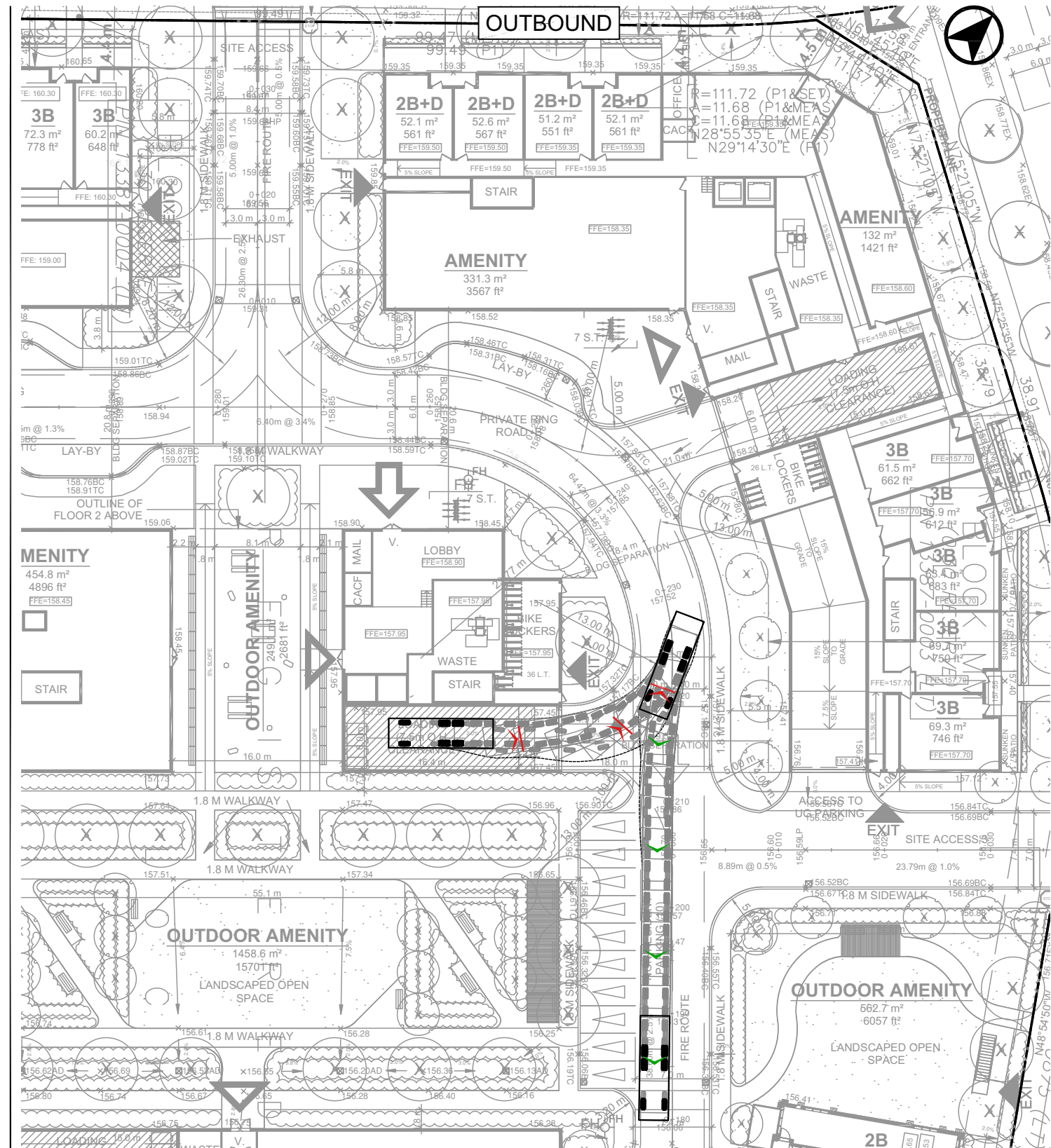
4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING B
PEEL REGION GARBAGE TRUCK - FRONT LOADER



Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

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Drawing No. VMD-04



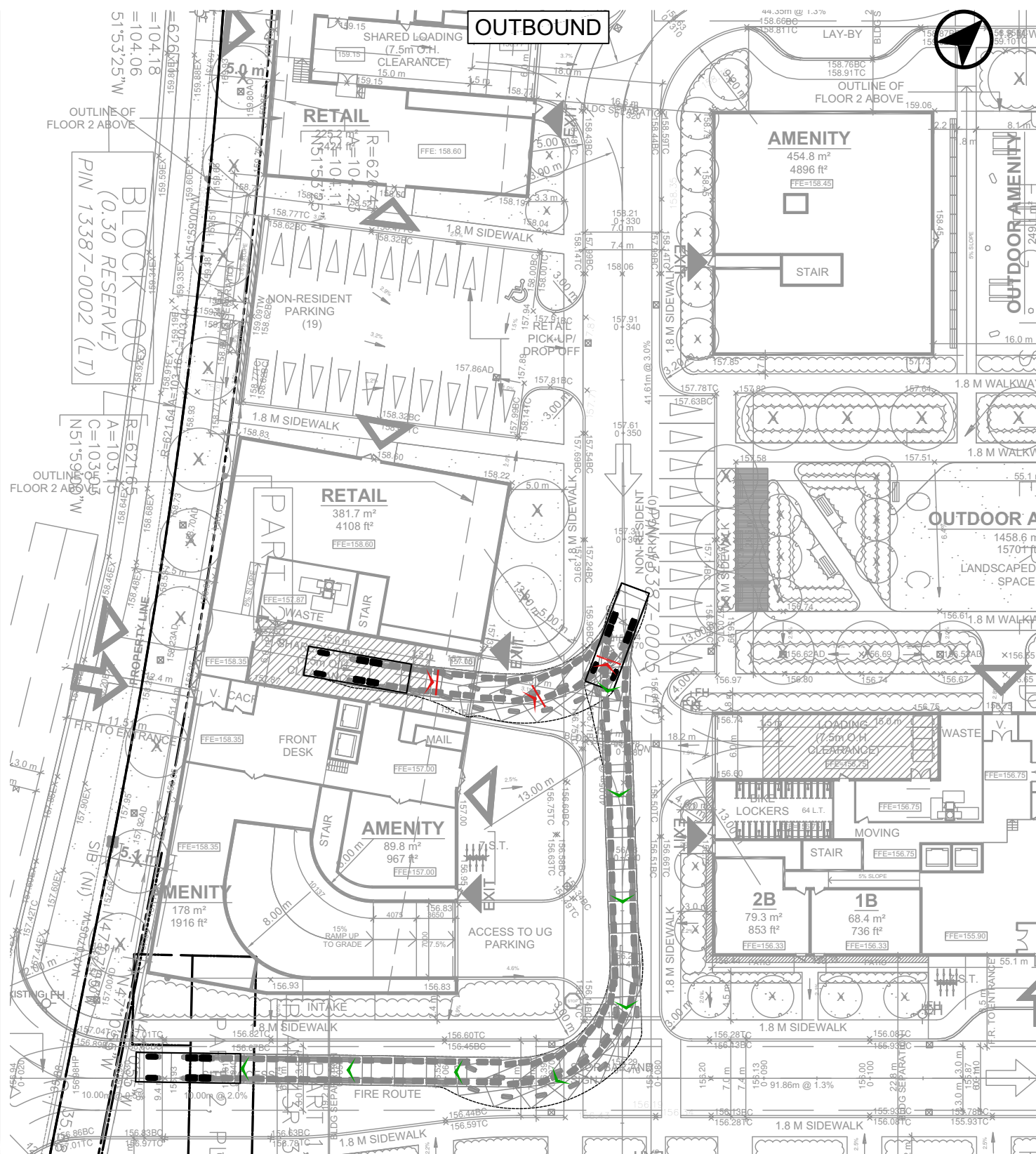
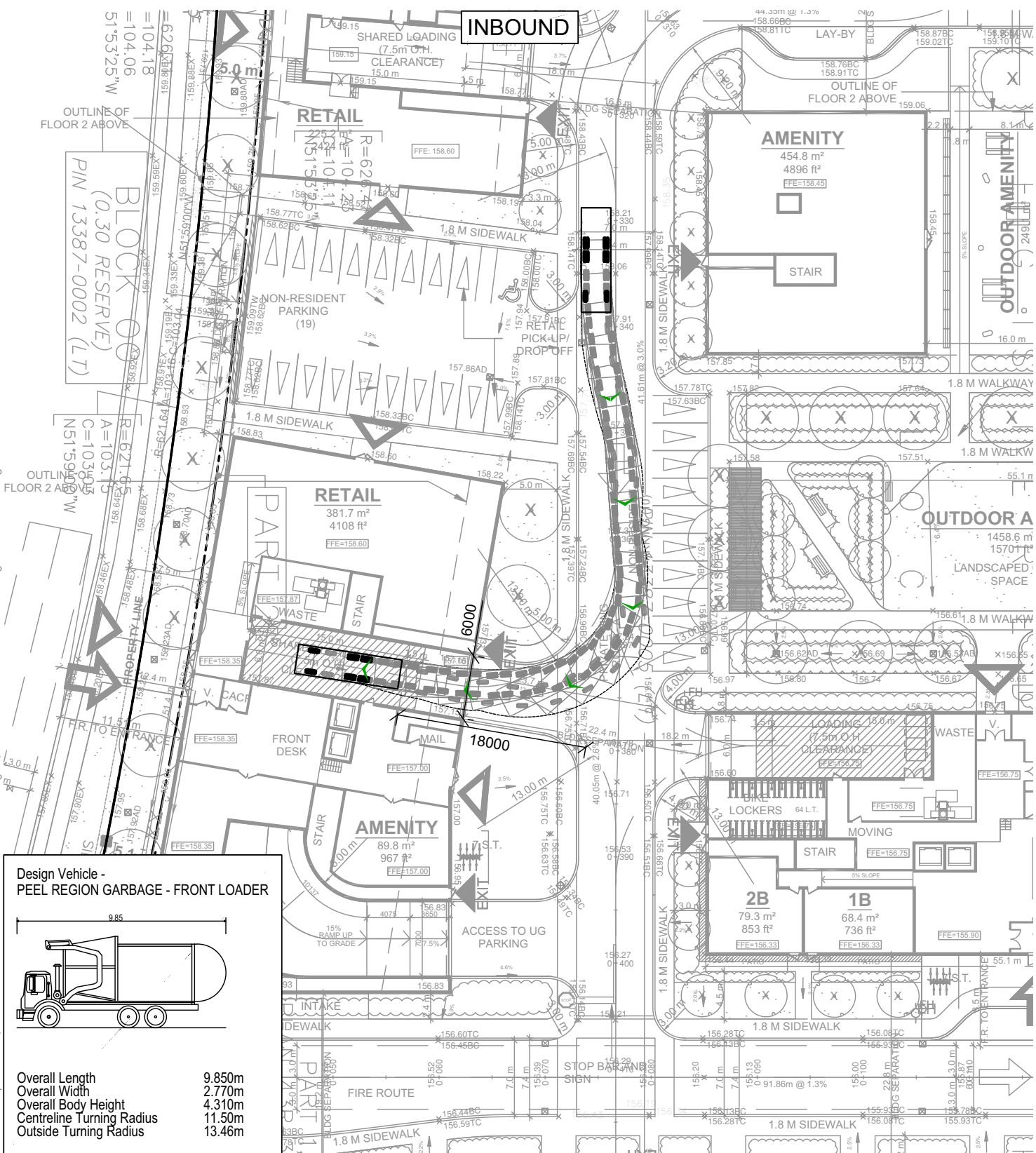
4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING C
PEEL REGION GARBAGE TRUCK - FRONT LOADER

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

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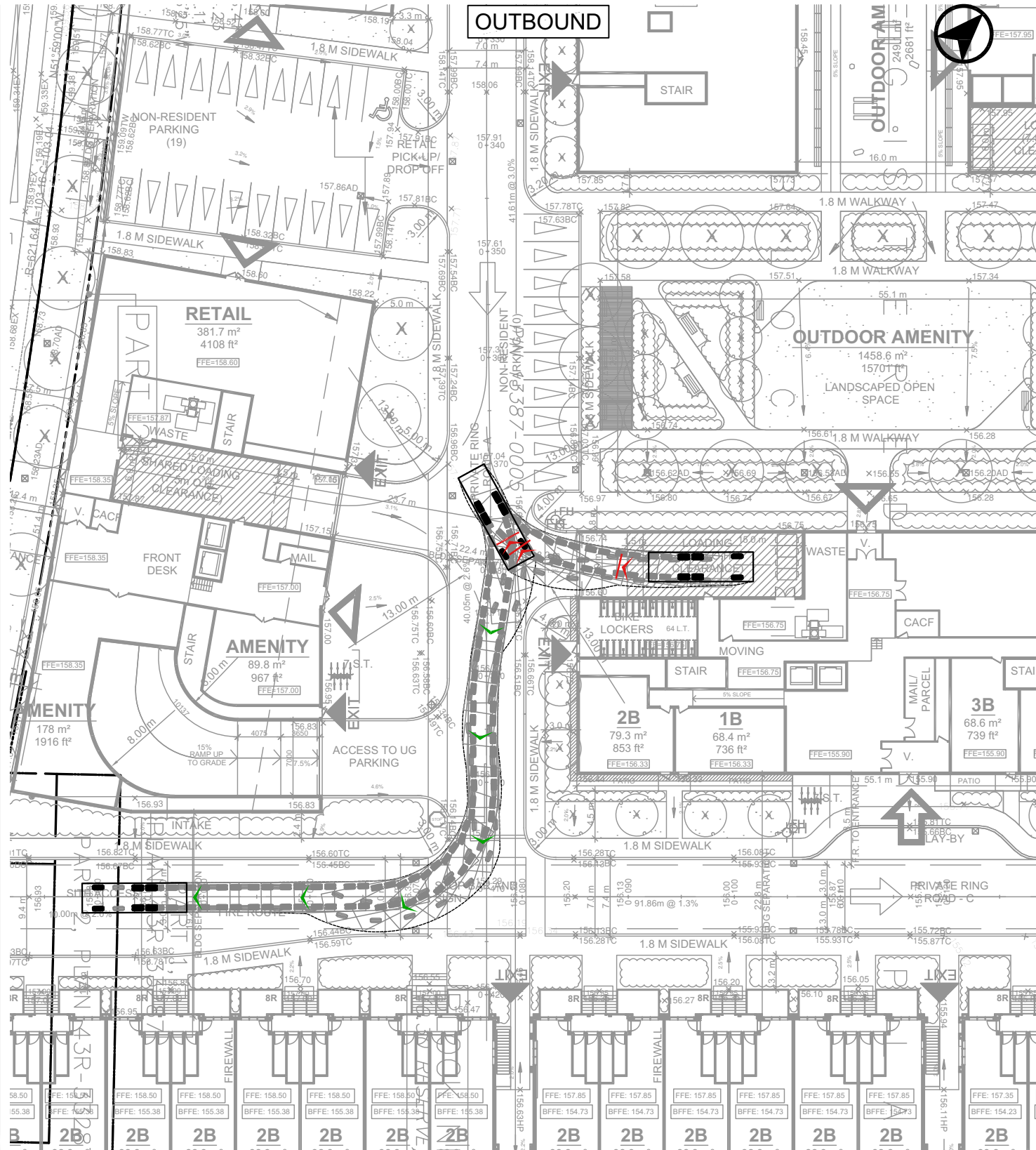
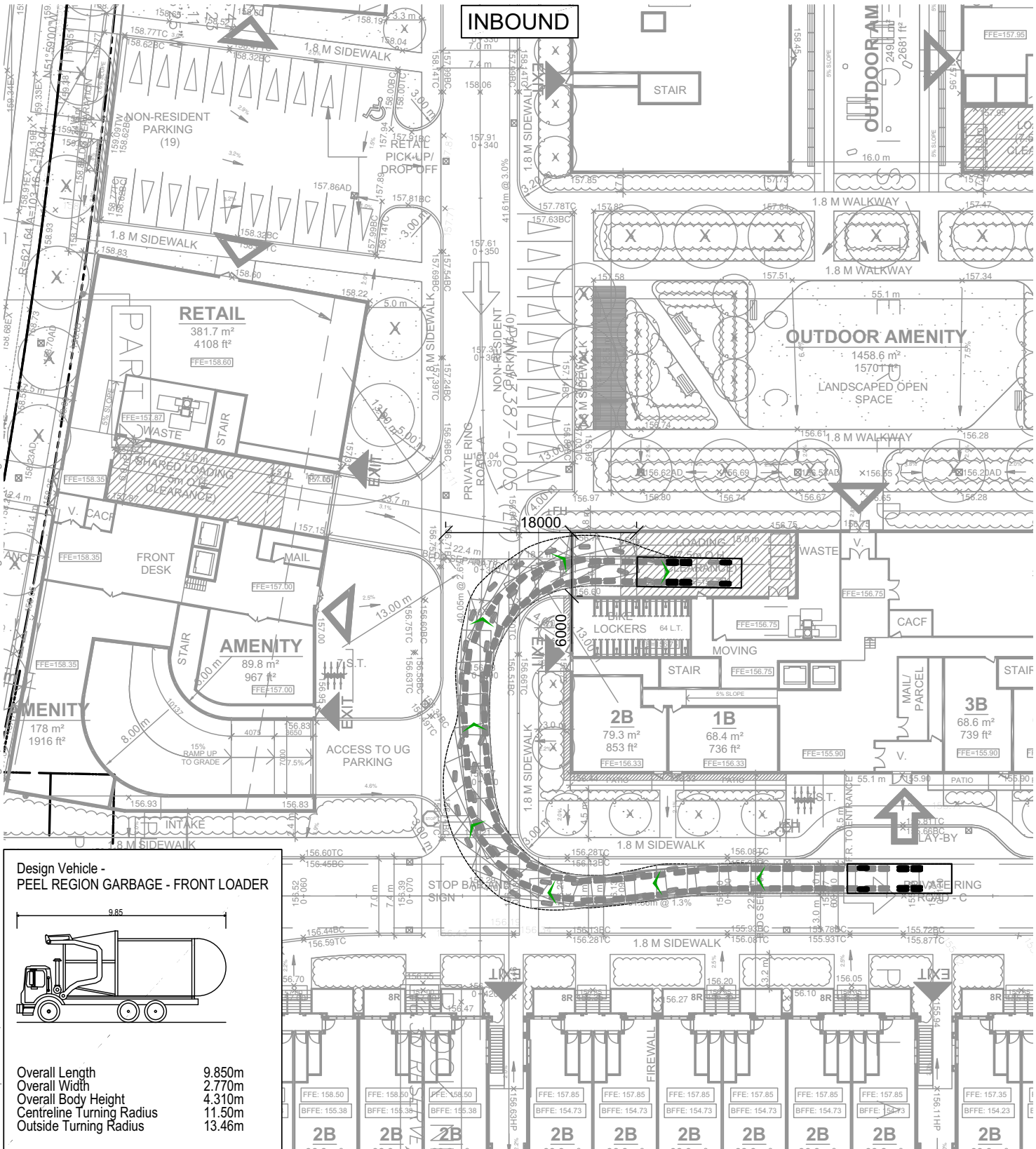


4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING D
PEEL REGION GARBAGE TRUCK - FRONT LOADER

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

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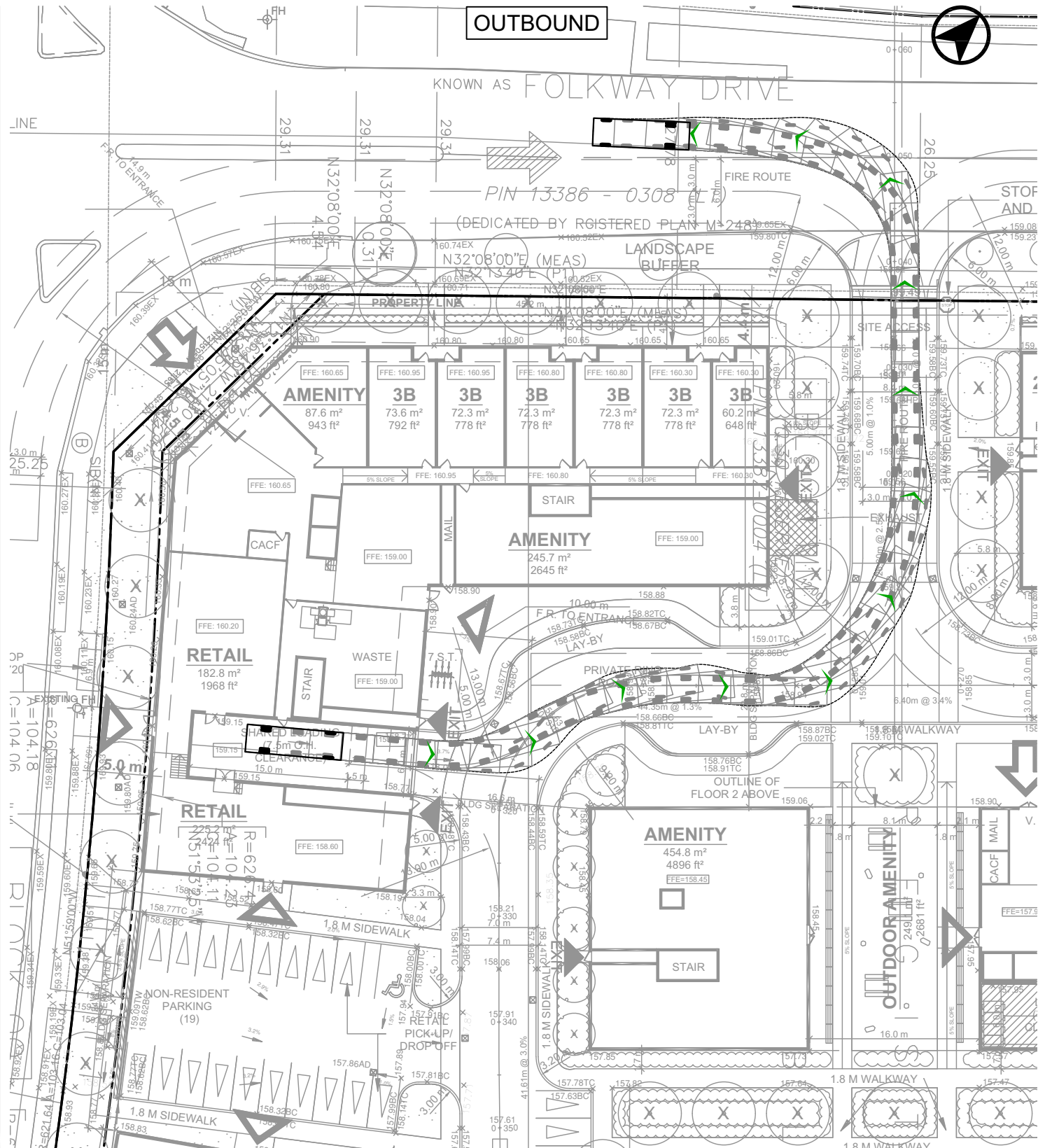
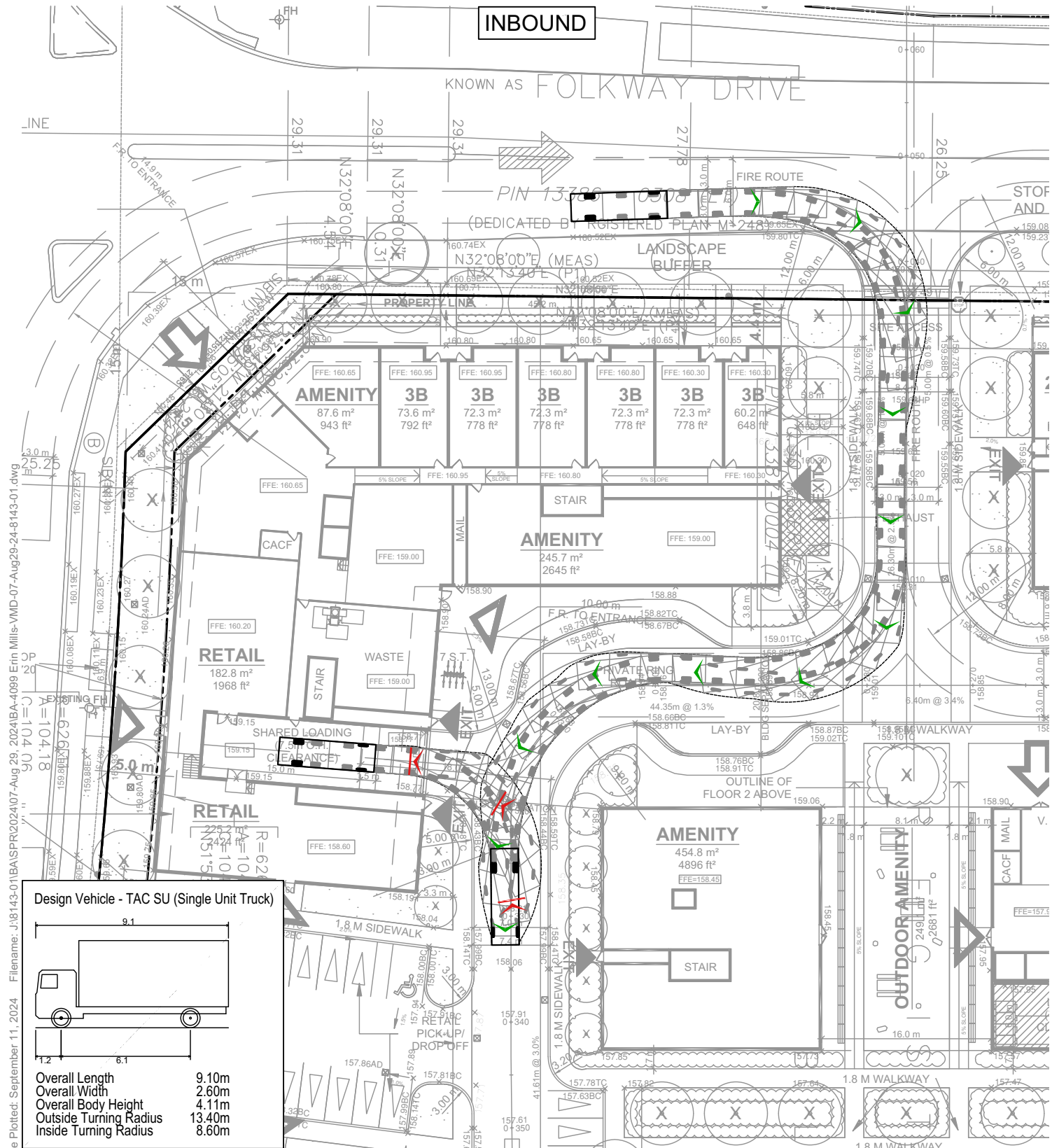
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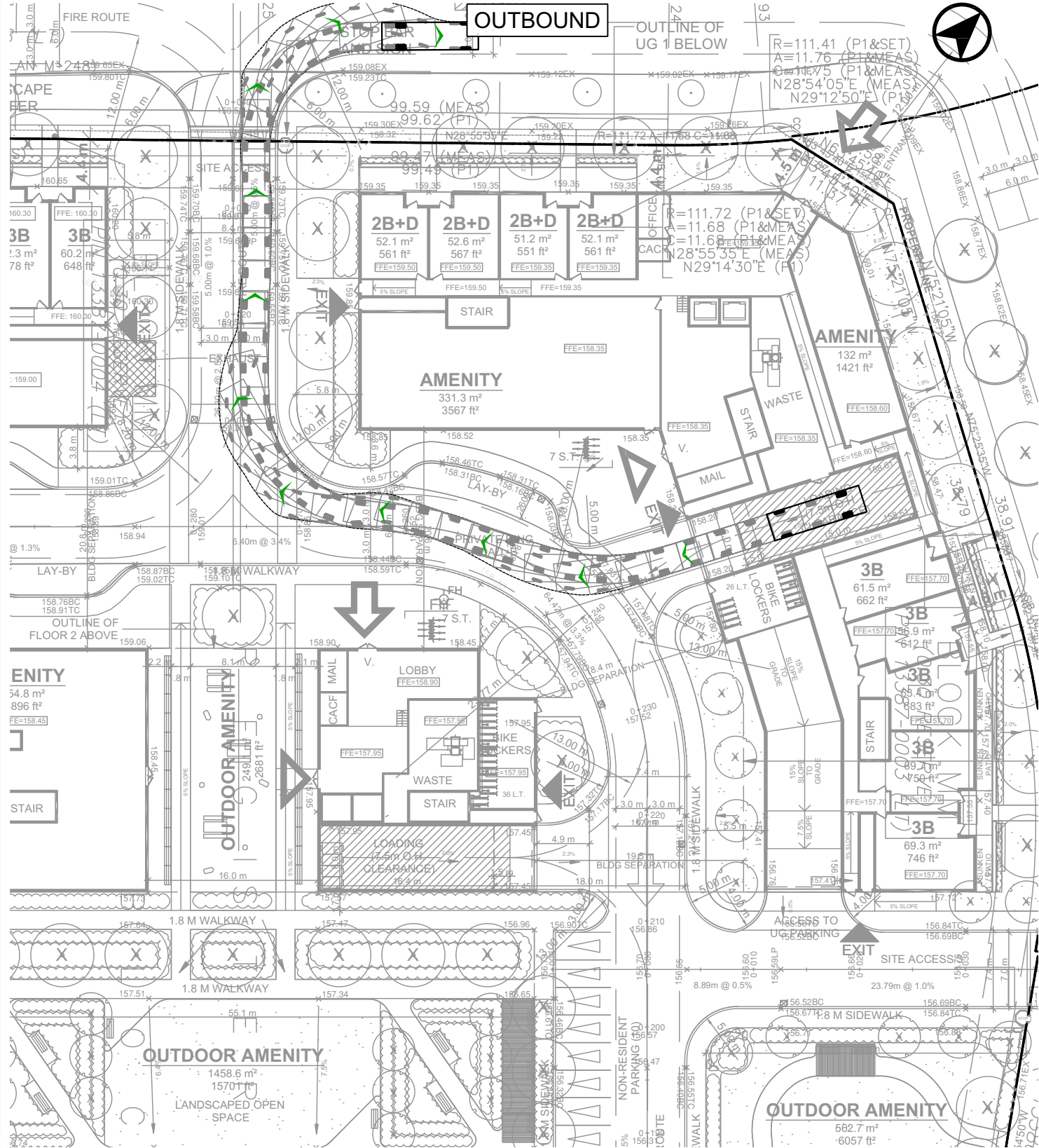
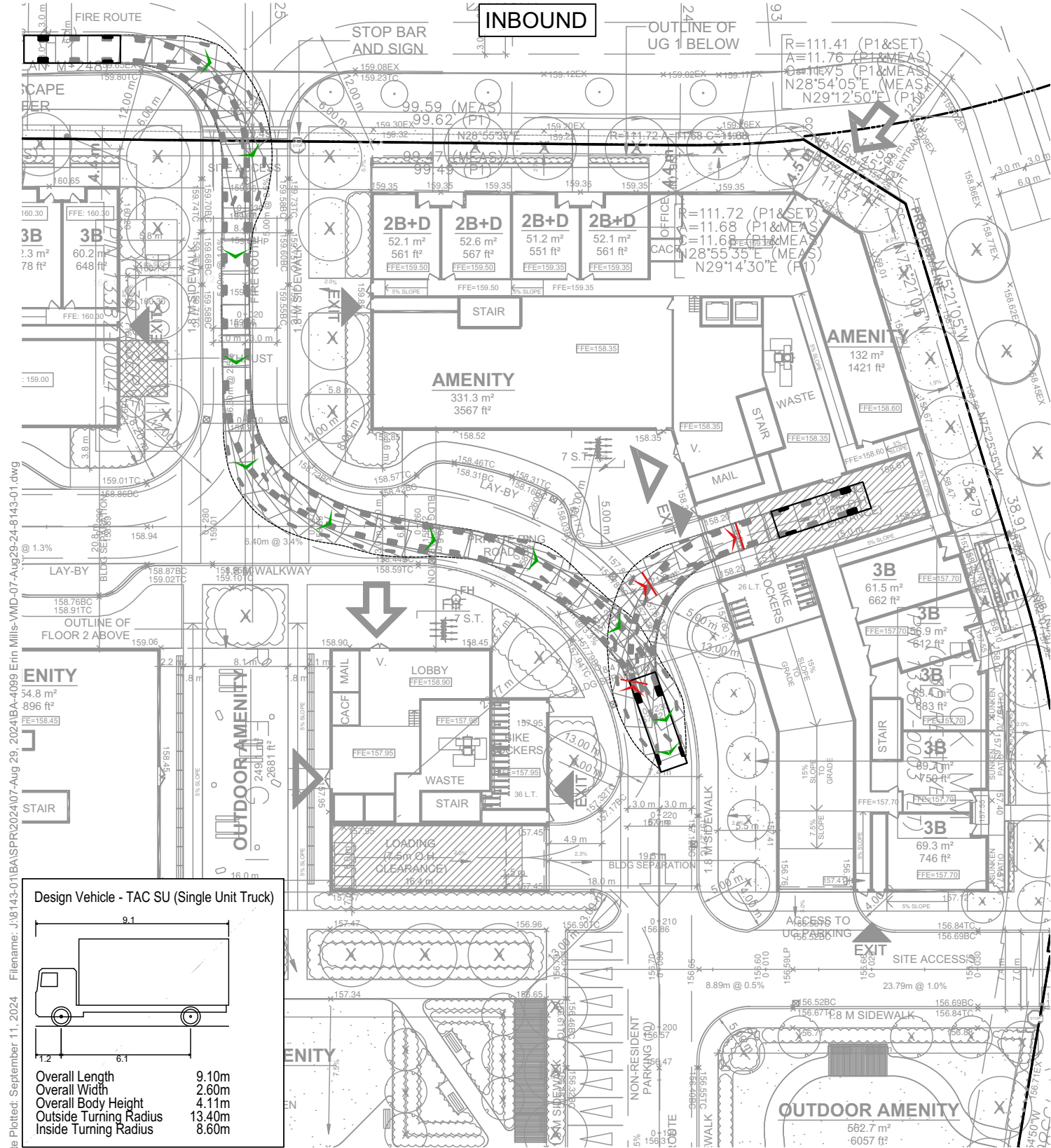
4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING E
PEEL REGION GARBAGE TRUCK - FRONT LOADER

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

Scale 0 5 10 15 20m
1:500
Drawing No. VMD-08



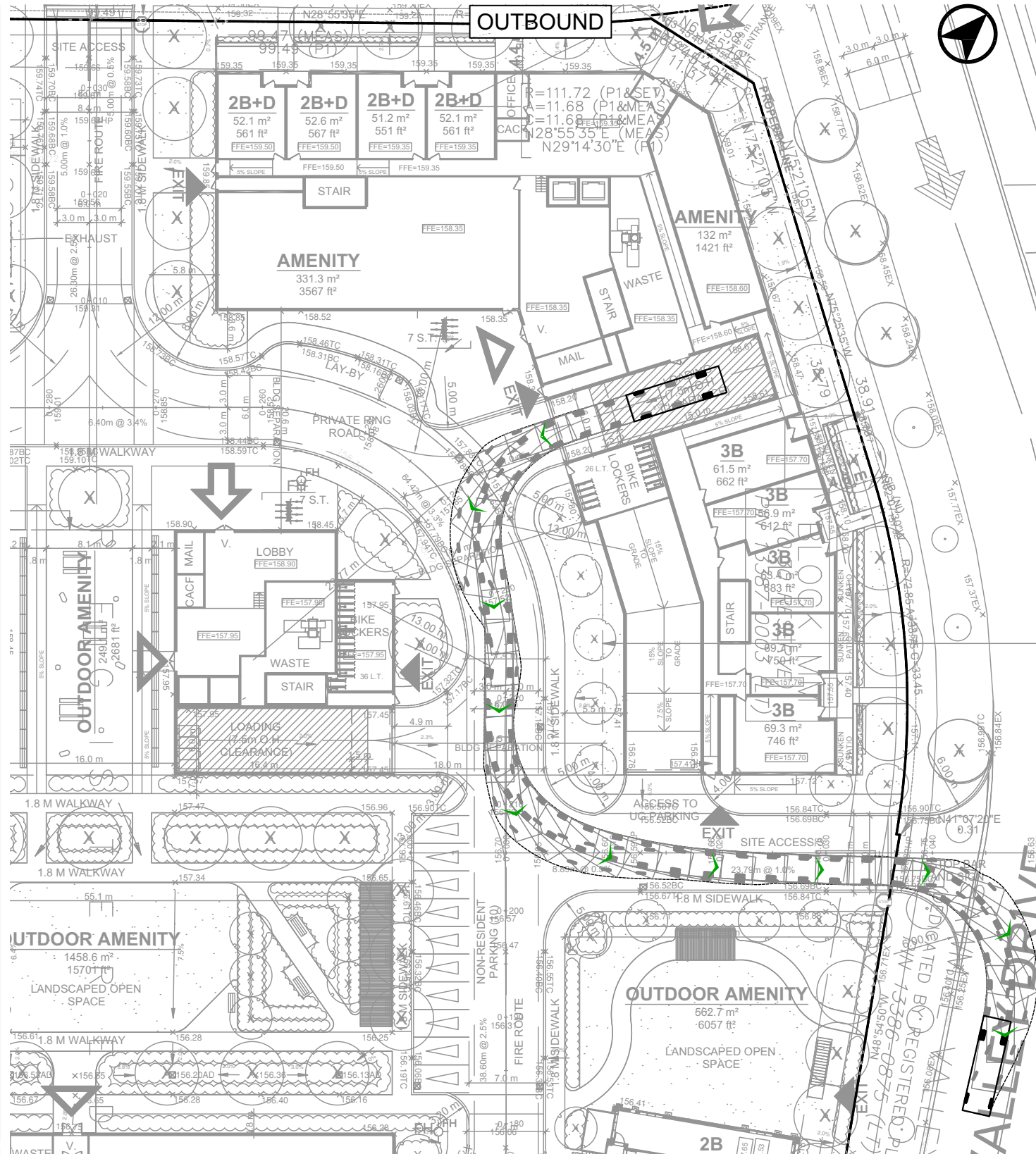
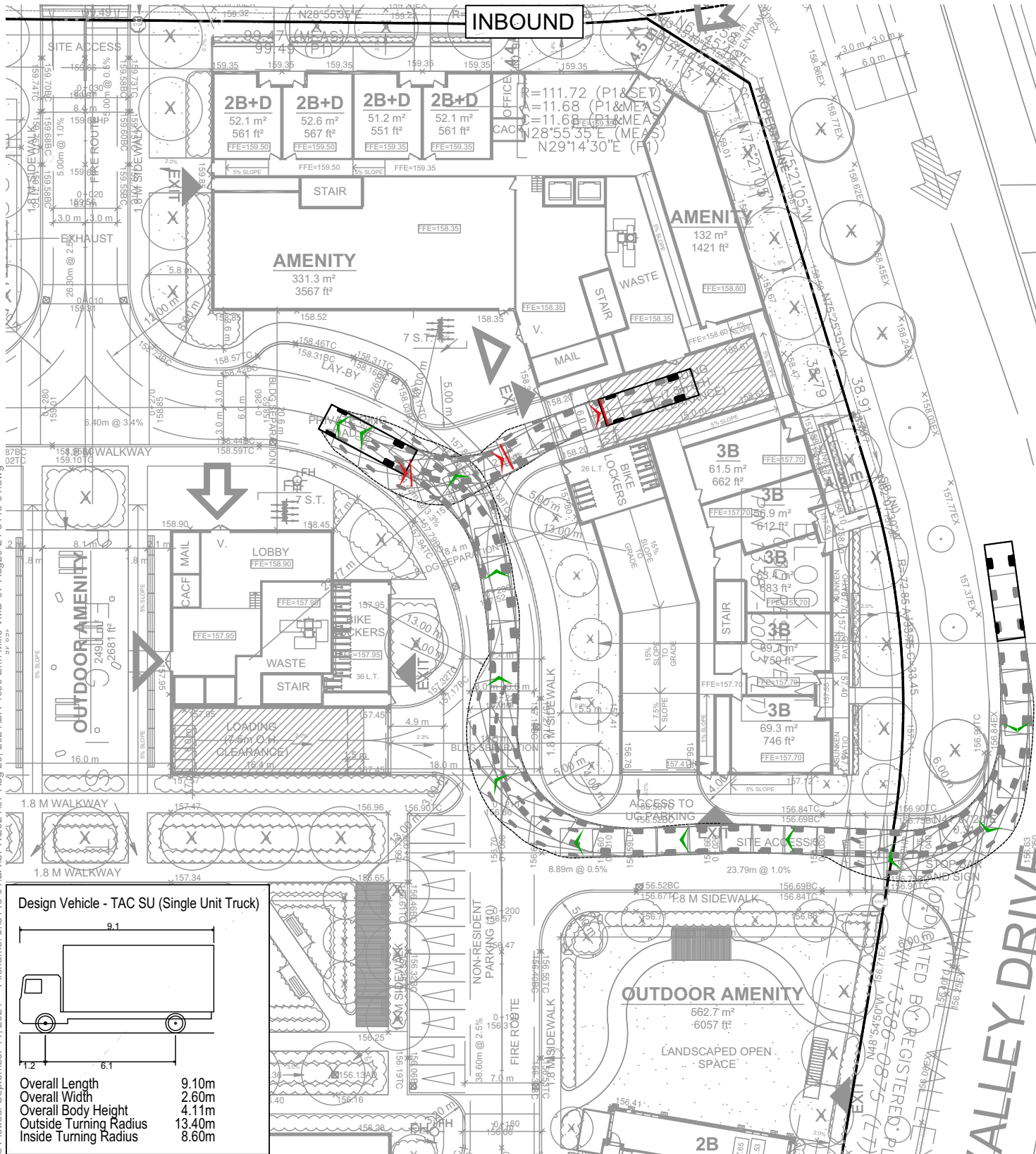


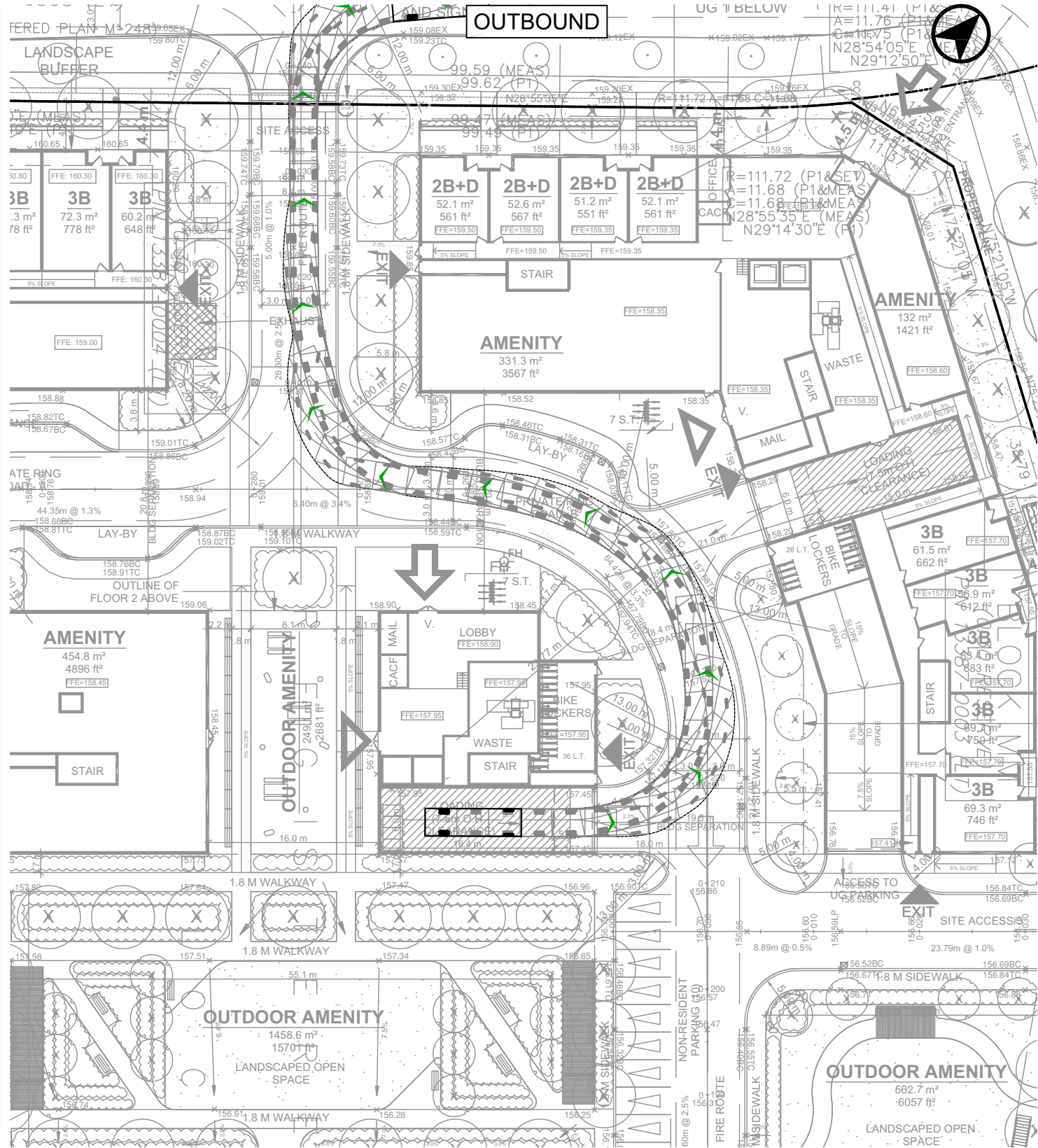
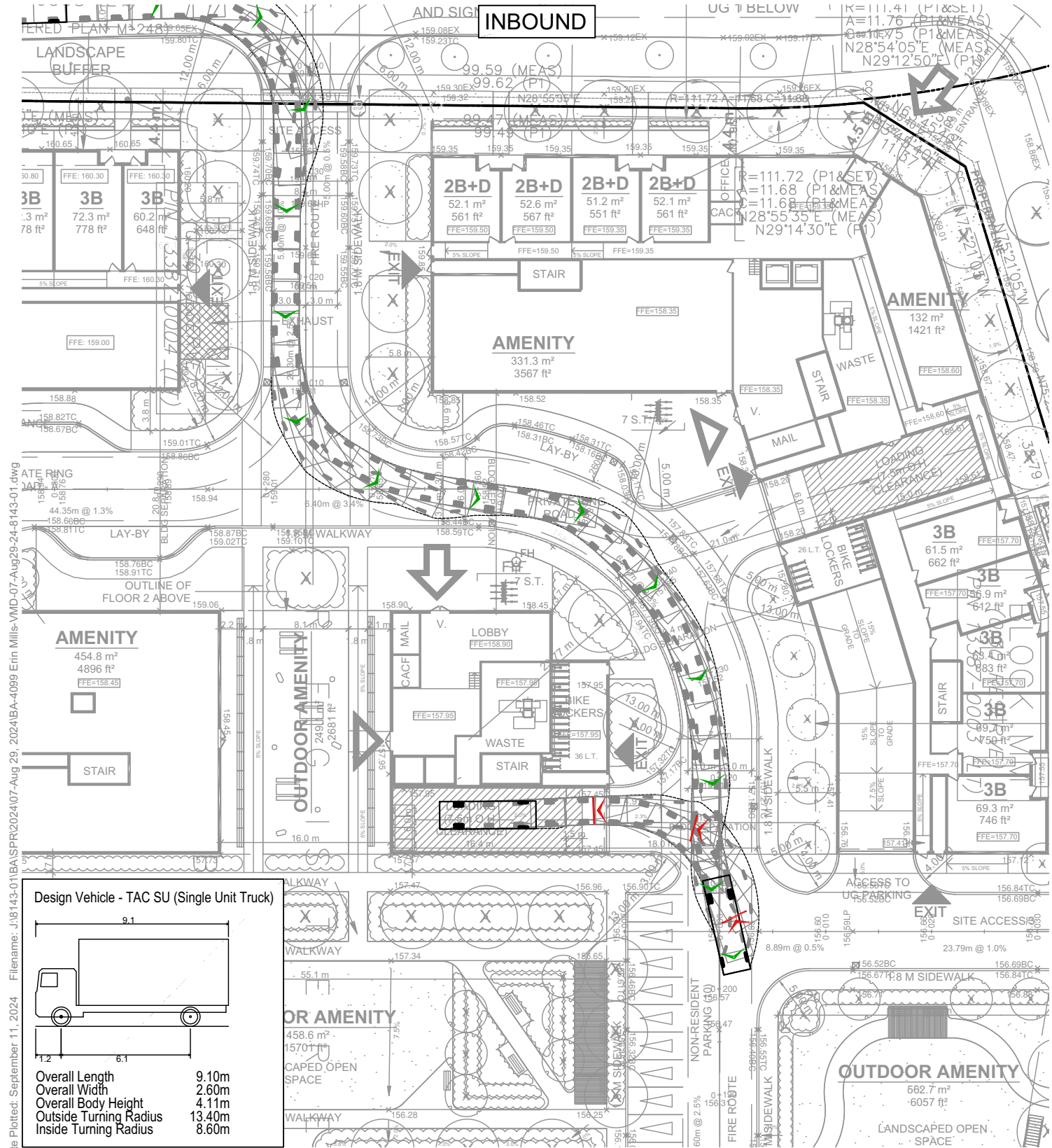


4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING B
TAC SINGLE UNIT (SU) TRUCK

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

Scale: 0 5 10 15 20m
1:500
Drawing No. VMD-11

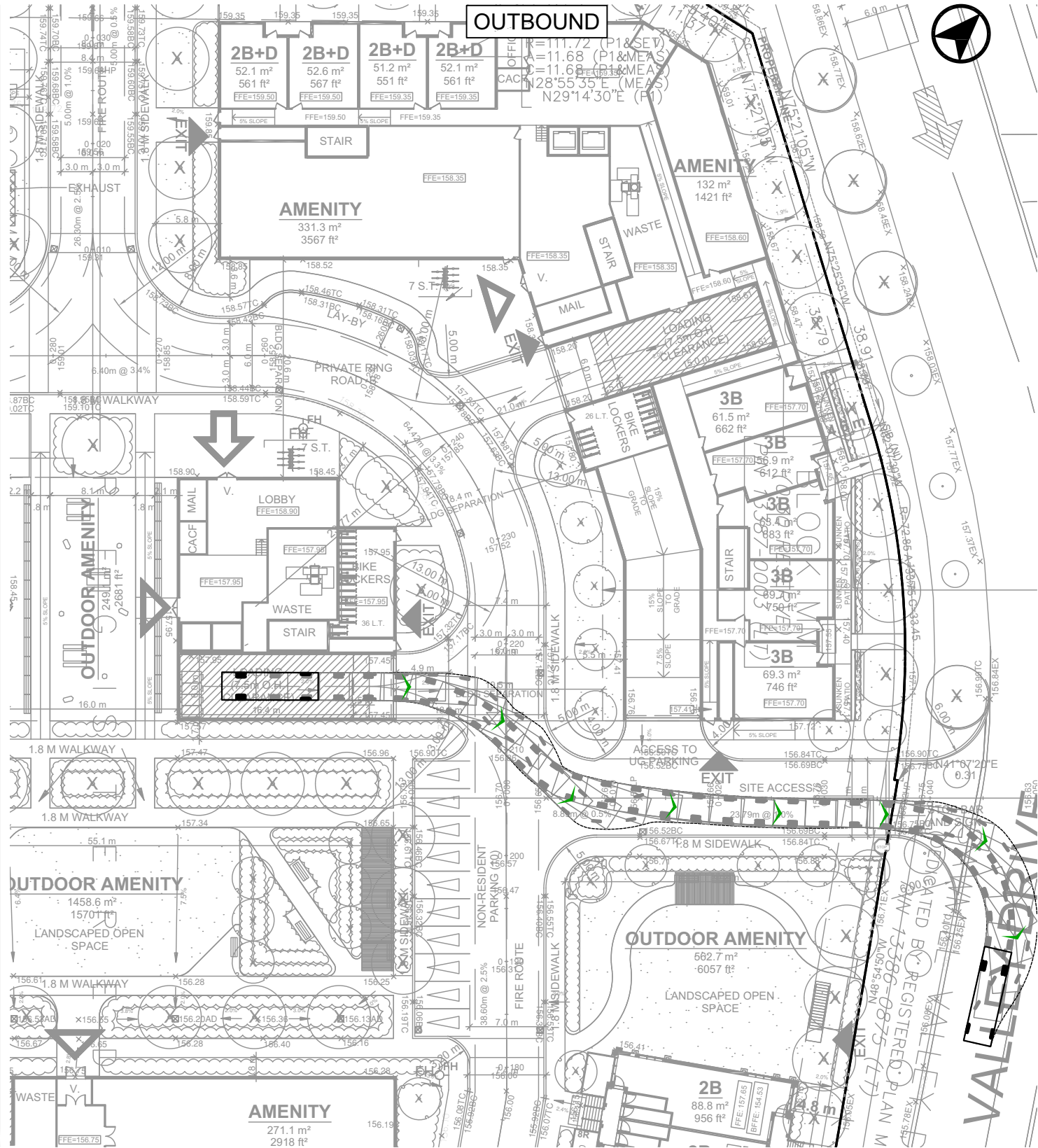
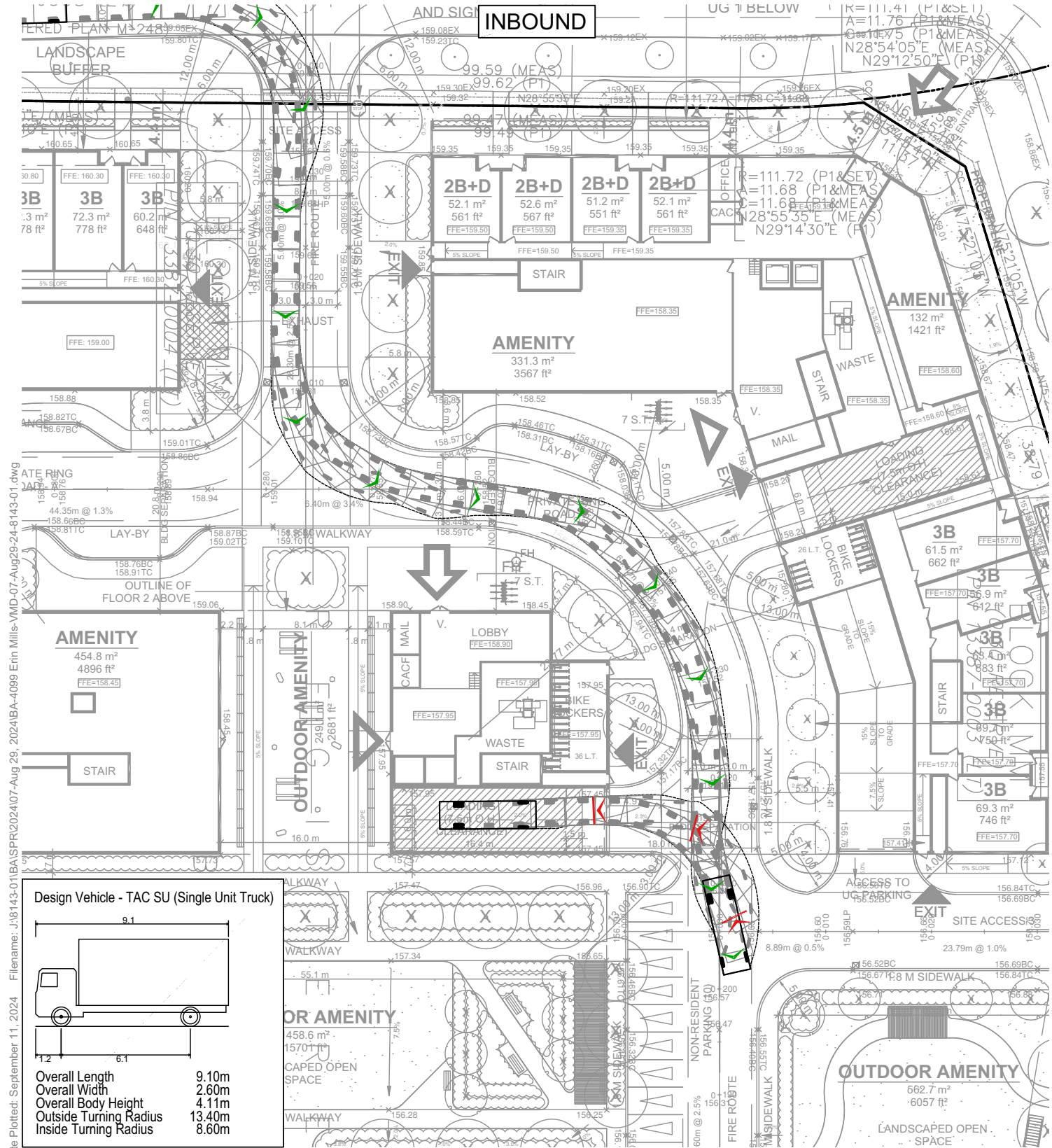




4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING C
TAC SINGLE UNIT (SU) TRUCK

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

Scale
0 5 10 15 20m
1:500
Drawing No. VMD-13

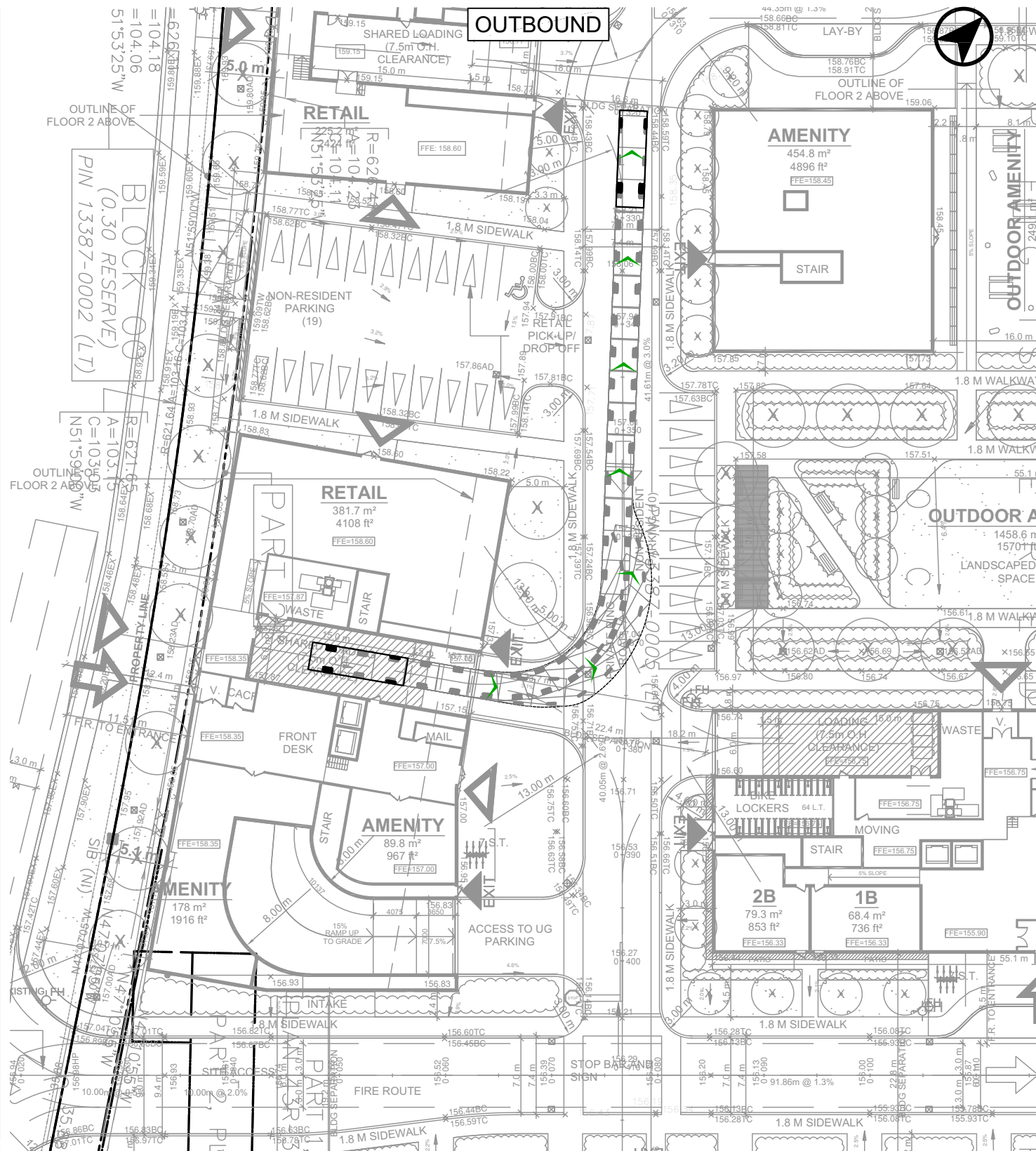
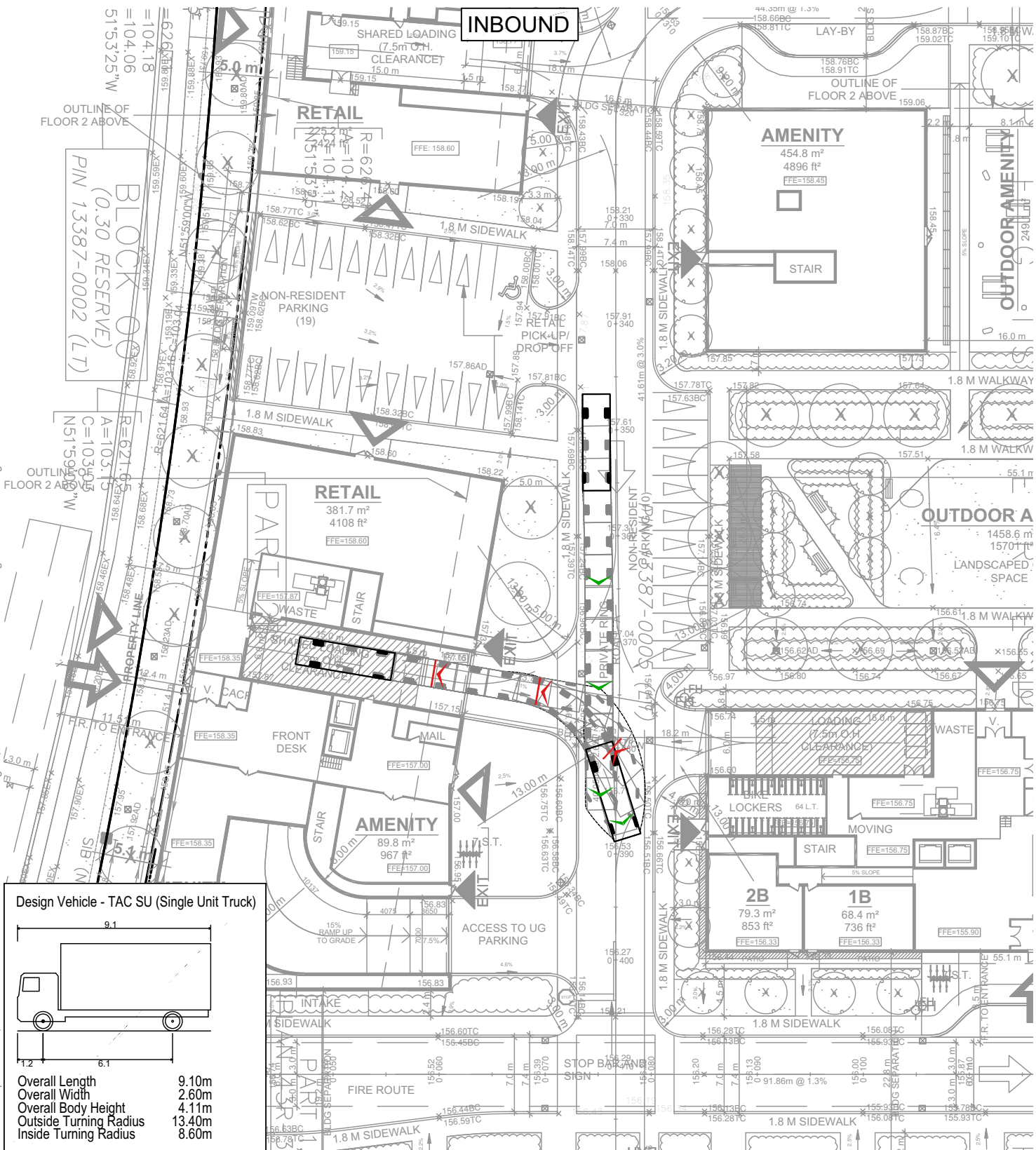


4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING C
TAC SINGLE UNIT (SU) TRUCK

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

Scale: 0 5 10 15 20m
1:500
Drawing No. VMD-14

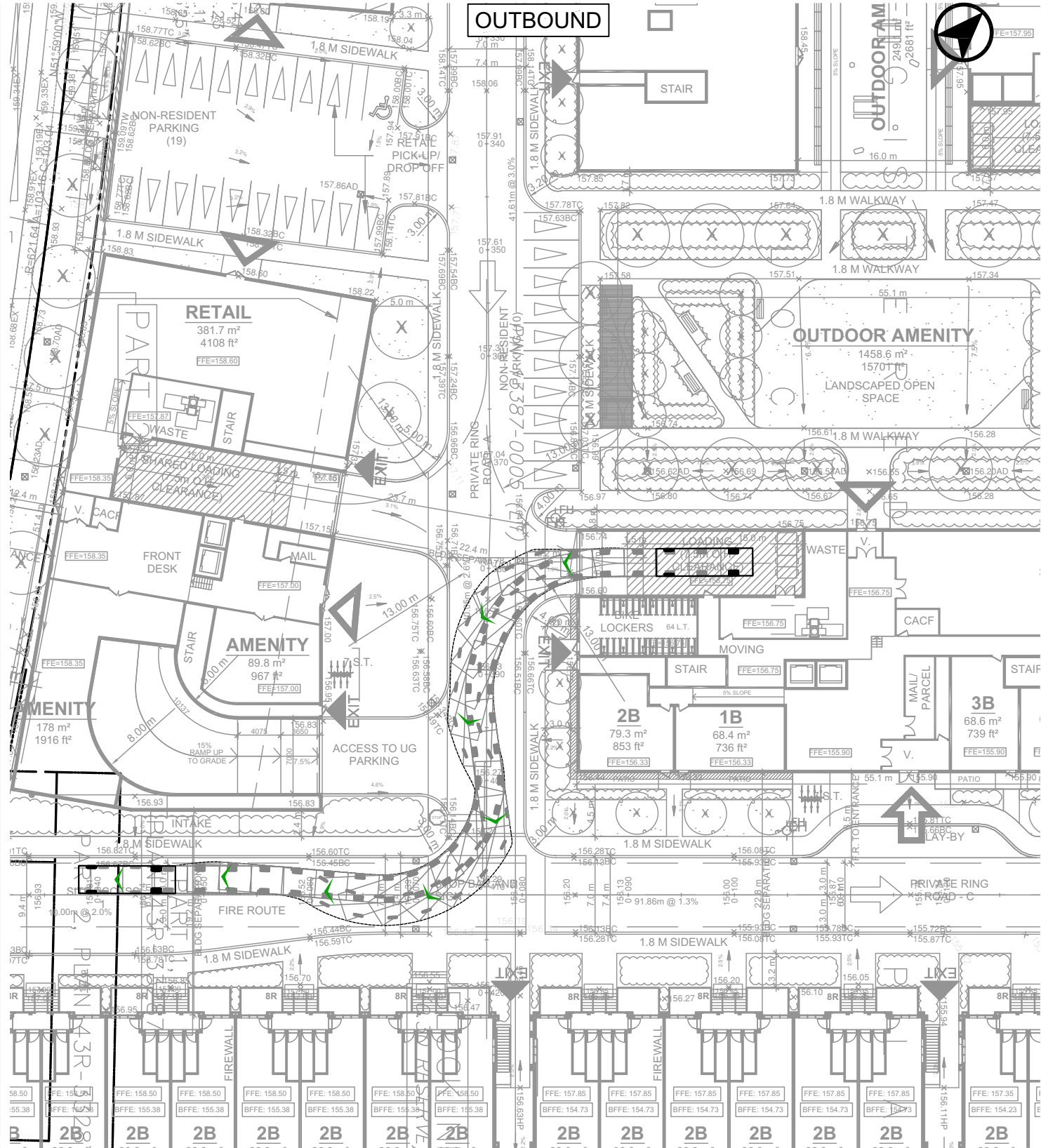
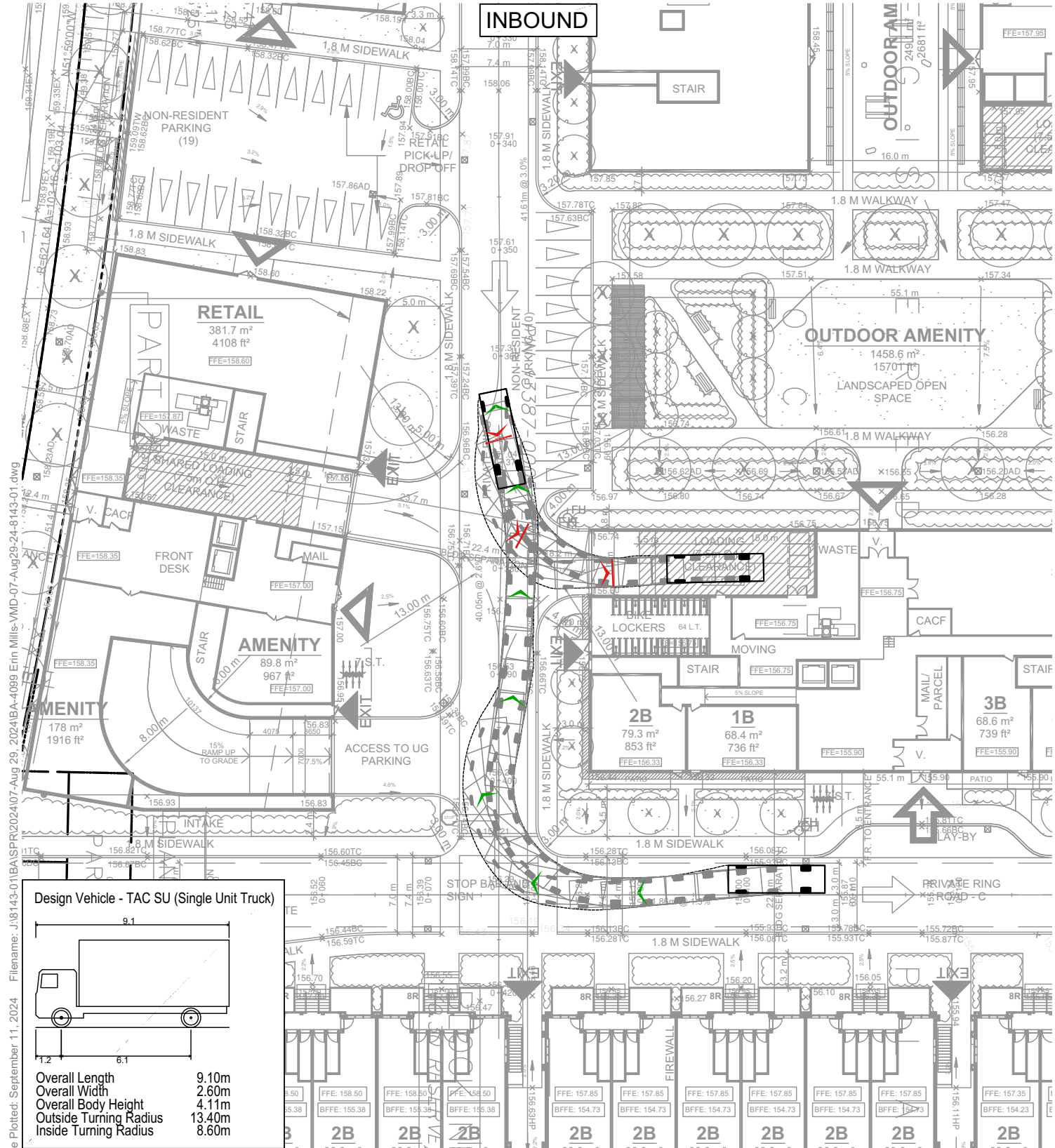
Date Plotted: September 11, 2024 Filename: J:\8143-01\BAS\PR202407-Aug 29, 2024\BA-4099 Erin Mills-VMD-07-Aug29-24-8143-01.dwg

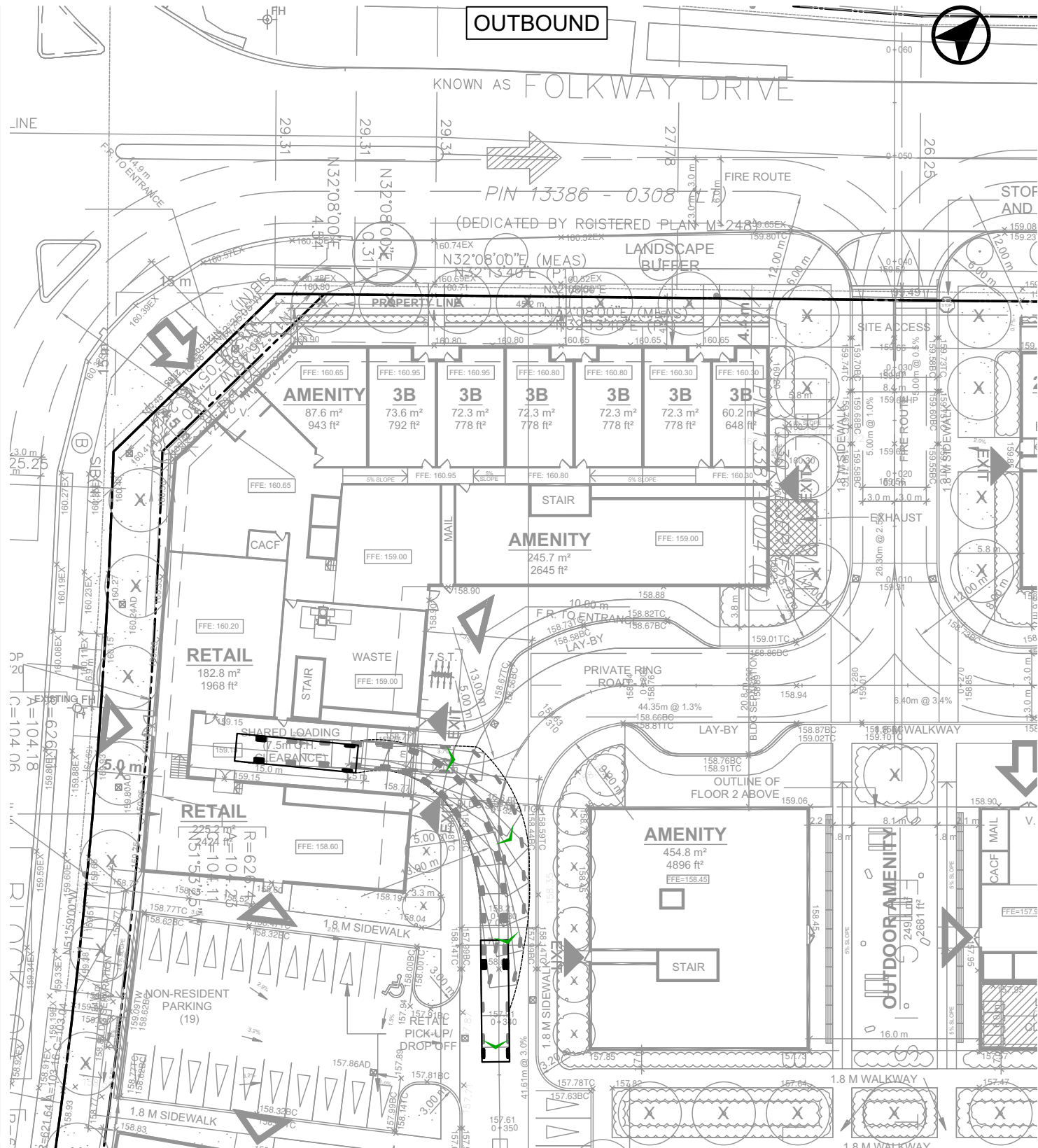
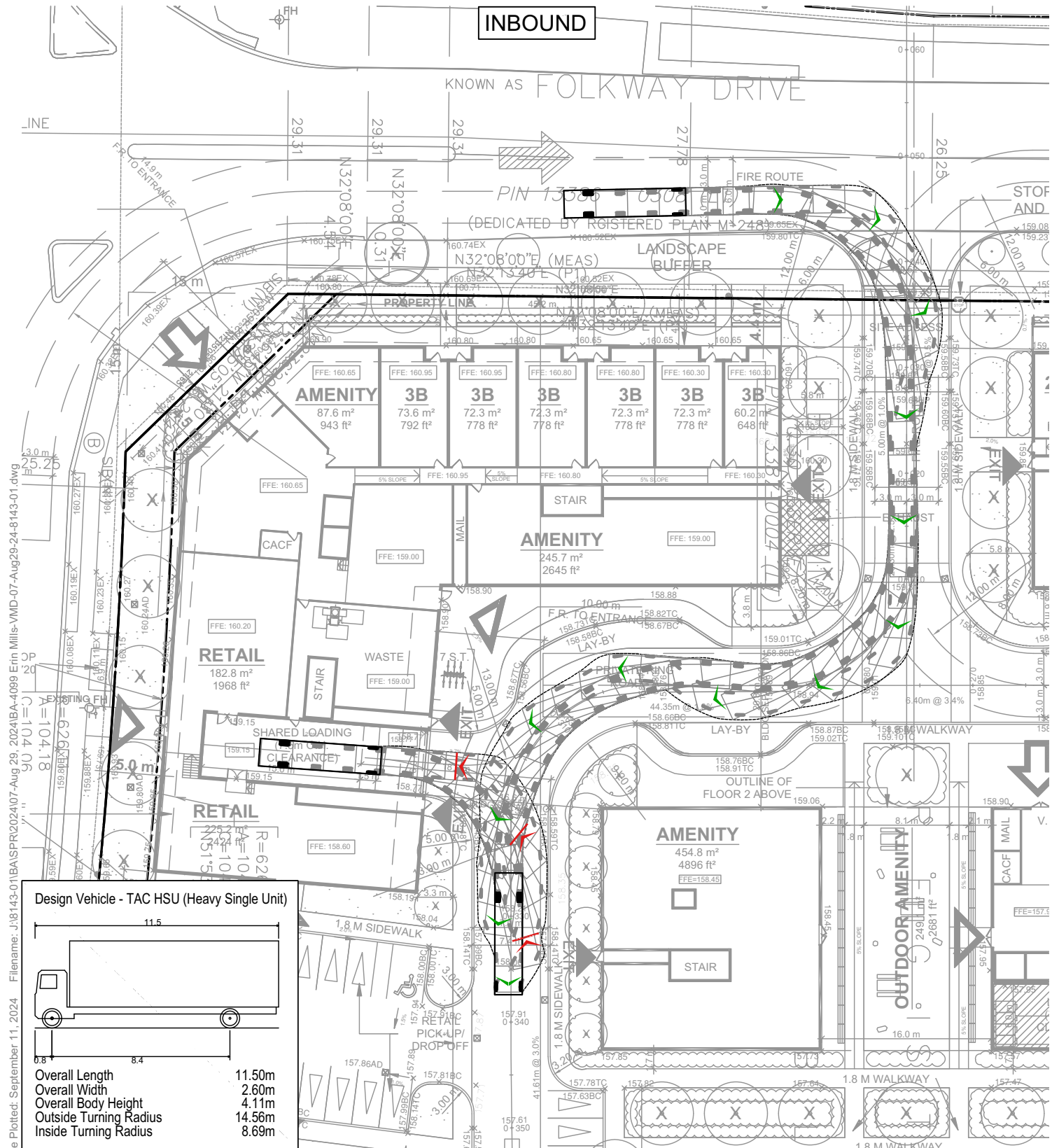


**4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING D
TAC SINGLE UNIT (SU) TRUCK**

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

Scale: 1:500
Drawing No. **VMD-15**



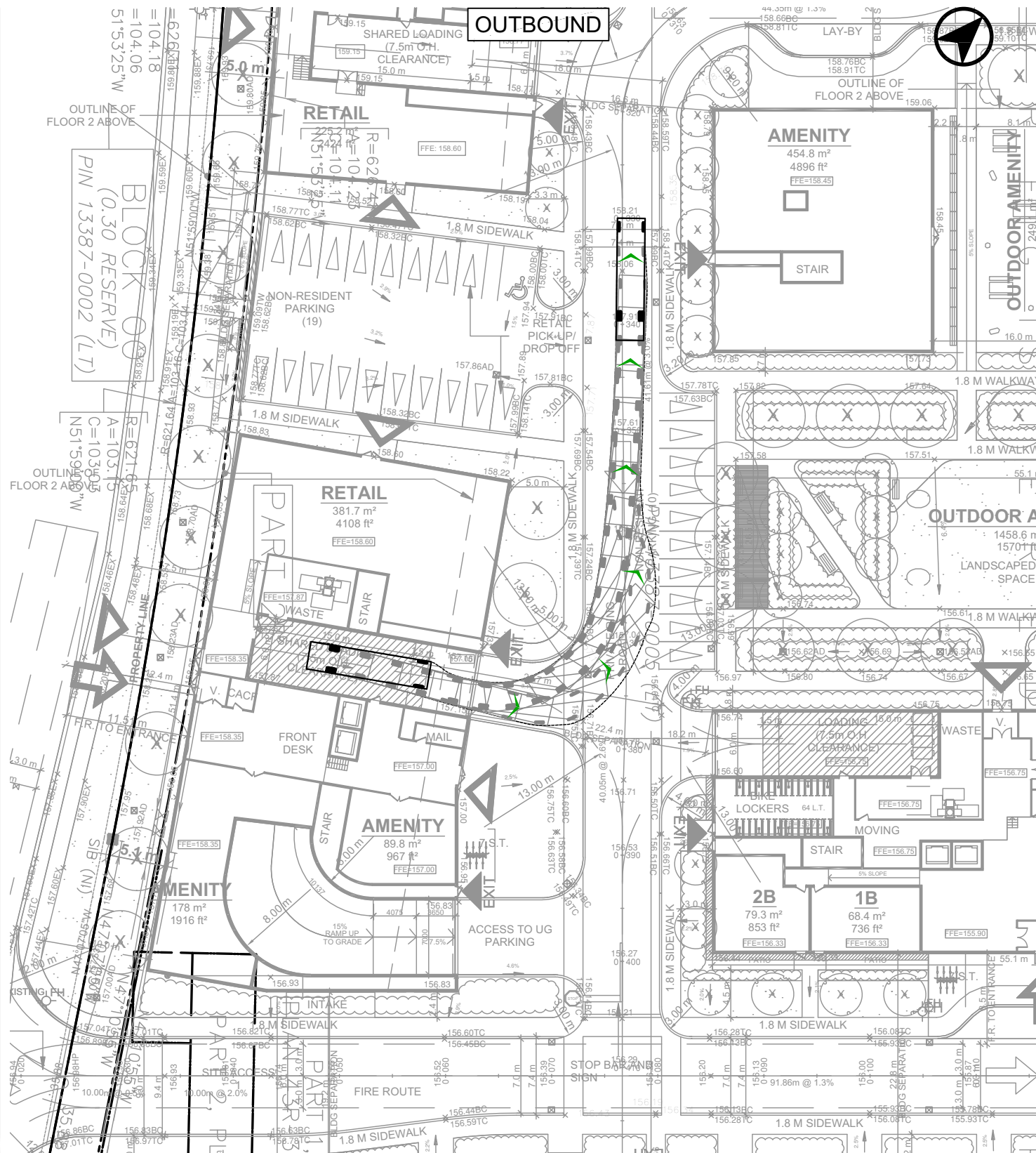
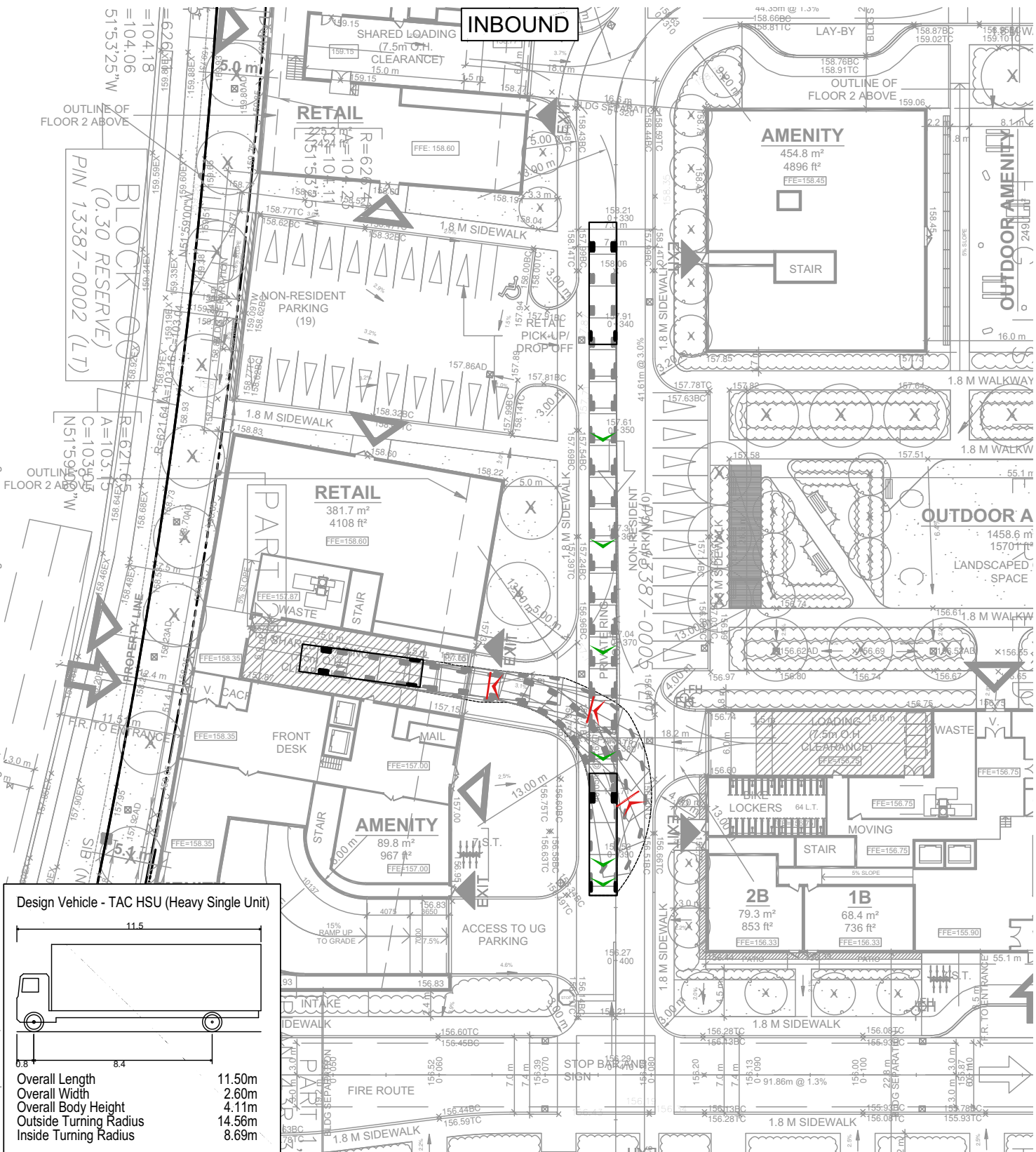


4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING A
TAC HEAVY SINGLE UNIT (HSU) TRUCK

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

Scale: 0 5 10 15 20m
1:500
Drawing No. VMD-17

Data Plotted: September 11, 2024 Filename: J:\8143-01\BAS\PR202407-Aug 29, 2024\BA-4099 Erin Mills-VMD-07-Aug29-24-8143-01.dwg



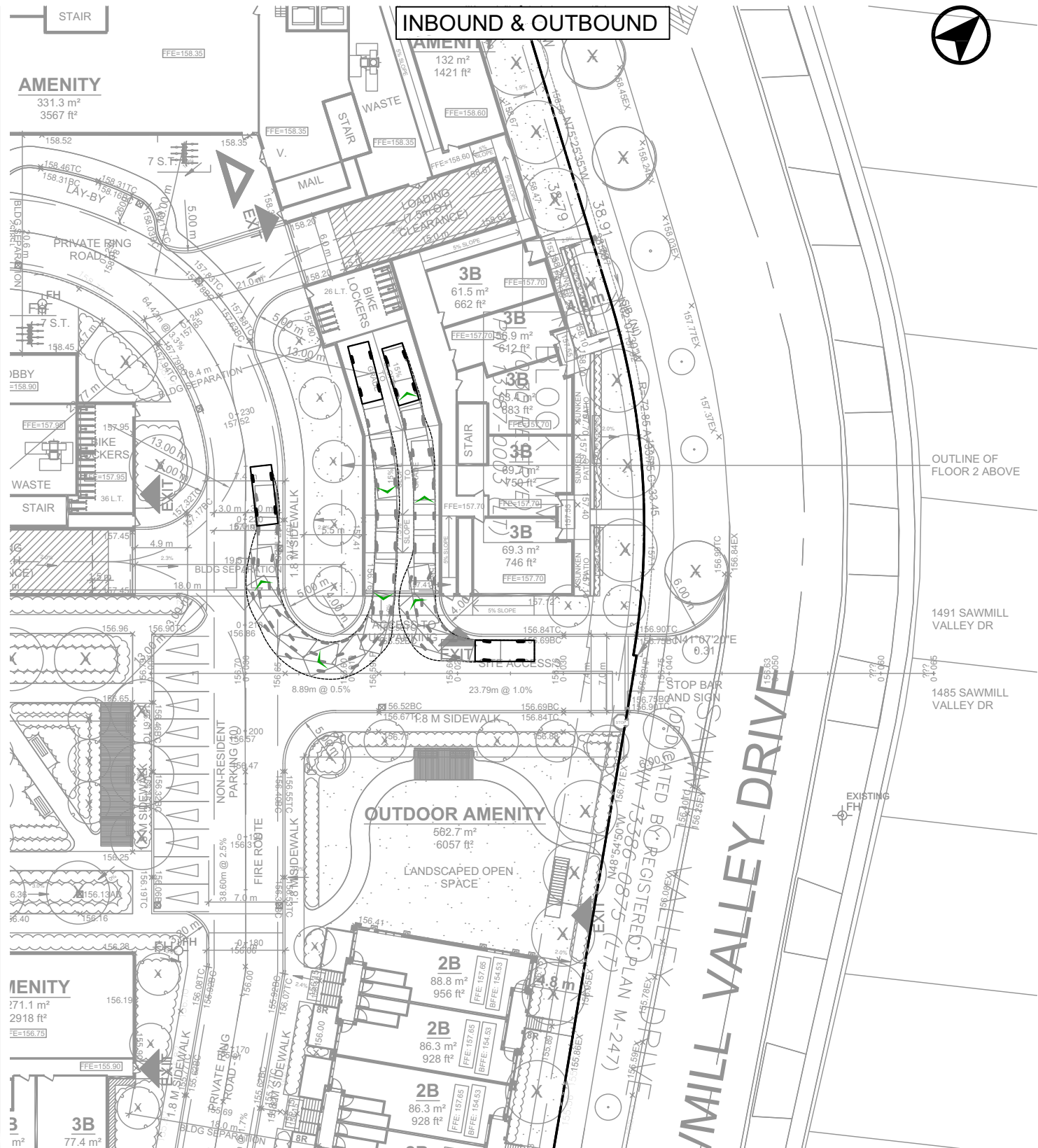
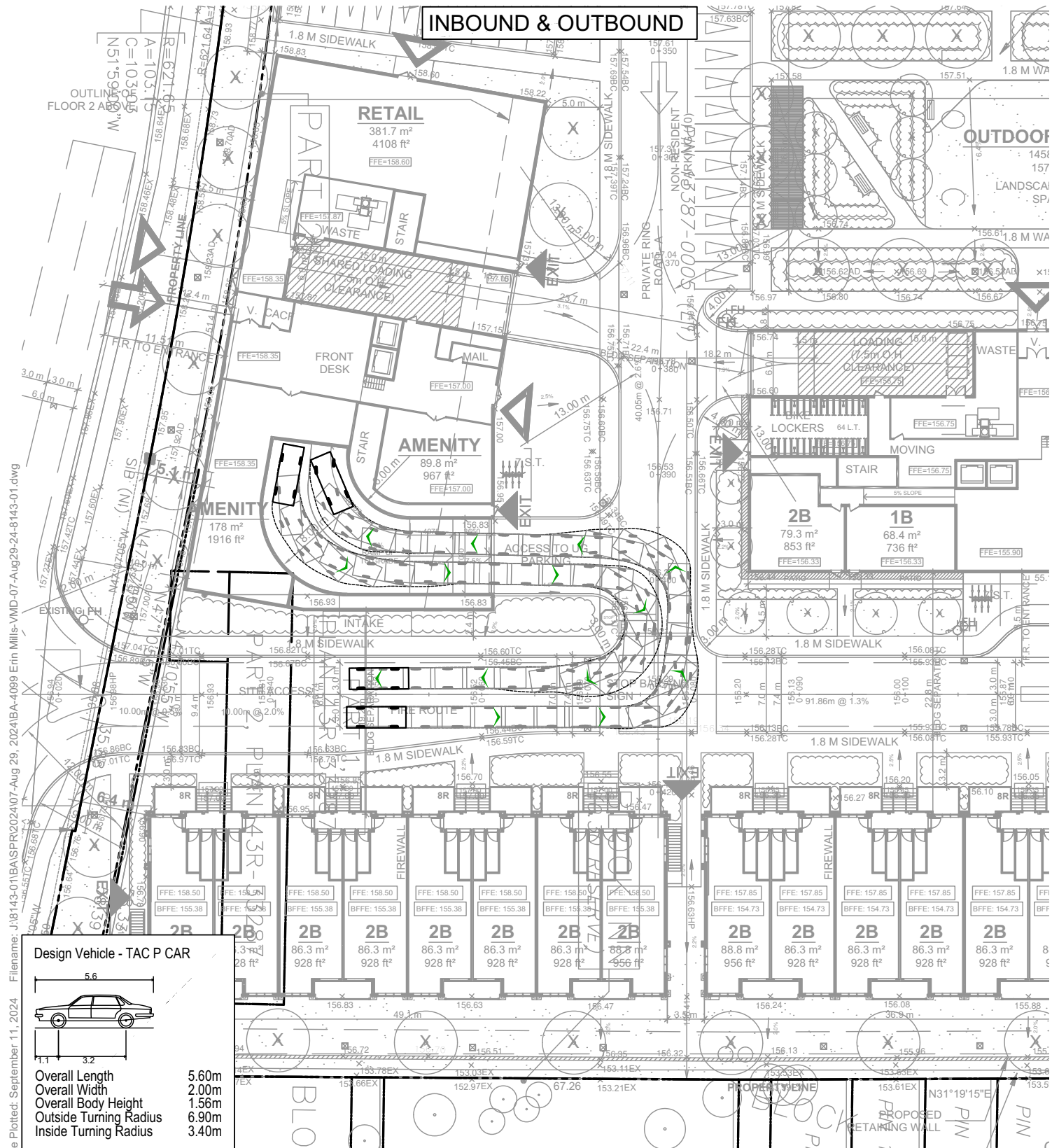
**4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
BUILDING D
TAC HEAVY SINGLE UNIT (HSU) TRUCK**



Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

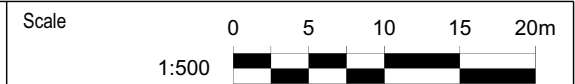
Scale 0 5 10 15 20m
1:500
Drawing No. **VMD-18**

Date Plotted: September 11, 2024 Filename: J:\8143-01\BAS\PR202407-Aug 29, 2024\BA-4099 Erin Mills VMD-07-Aug29-24-8143-01.dwg



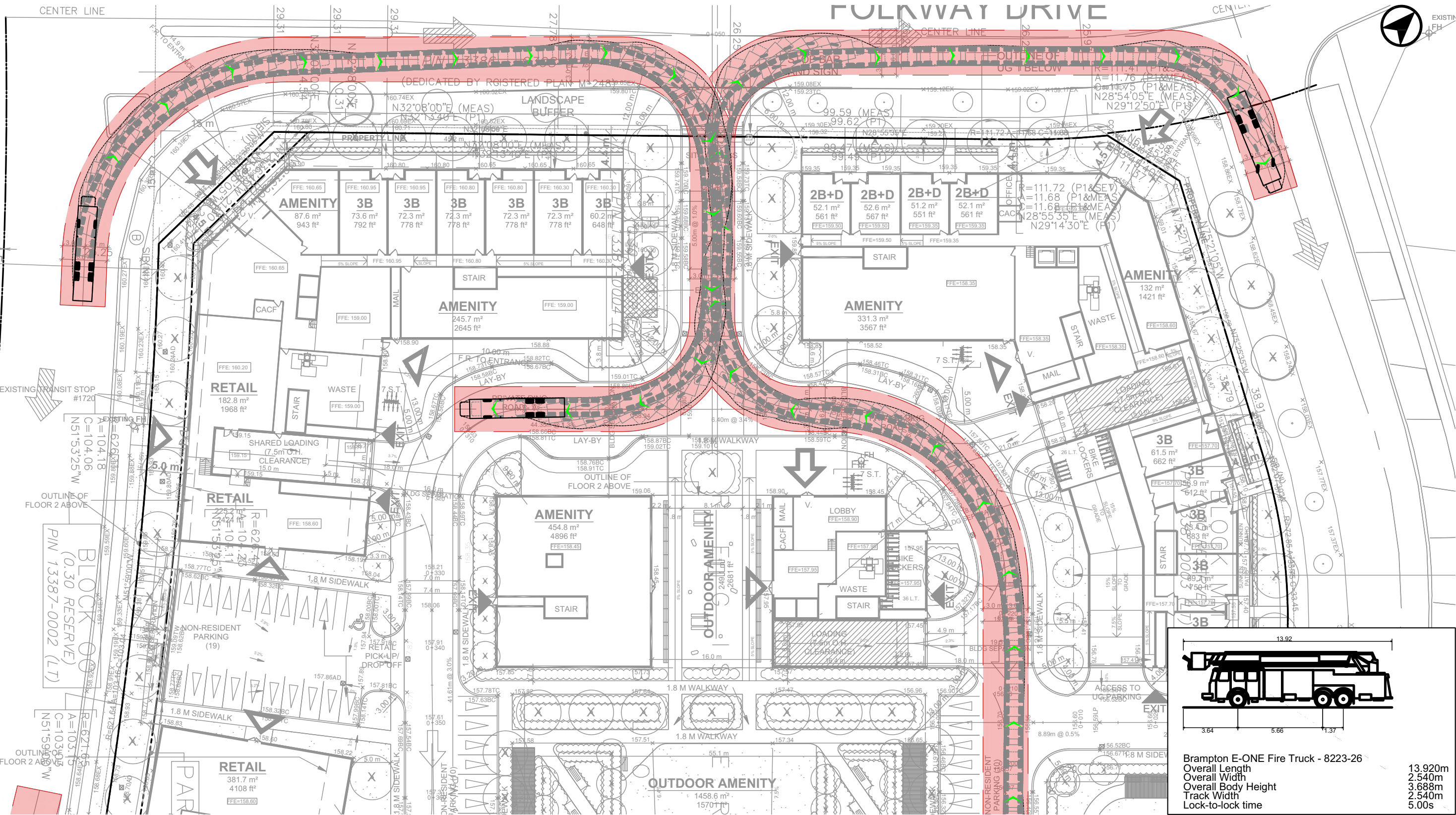
4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
PARKING RAMPS
TAC P CAR

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024



Drawing No. VMD-19

Date Plotted: September 11, 2024 Filename: J:\8143-01\BASPR202407-Aug 29, 2024\BA-4099 Erin Mills-VMD-07-Aug29-24-8143-01.dwg



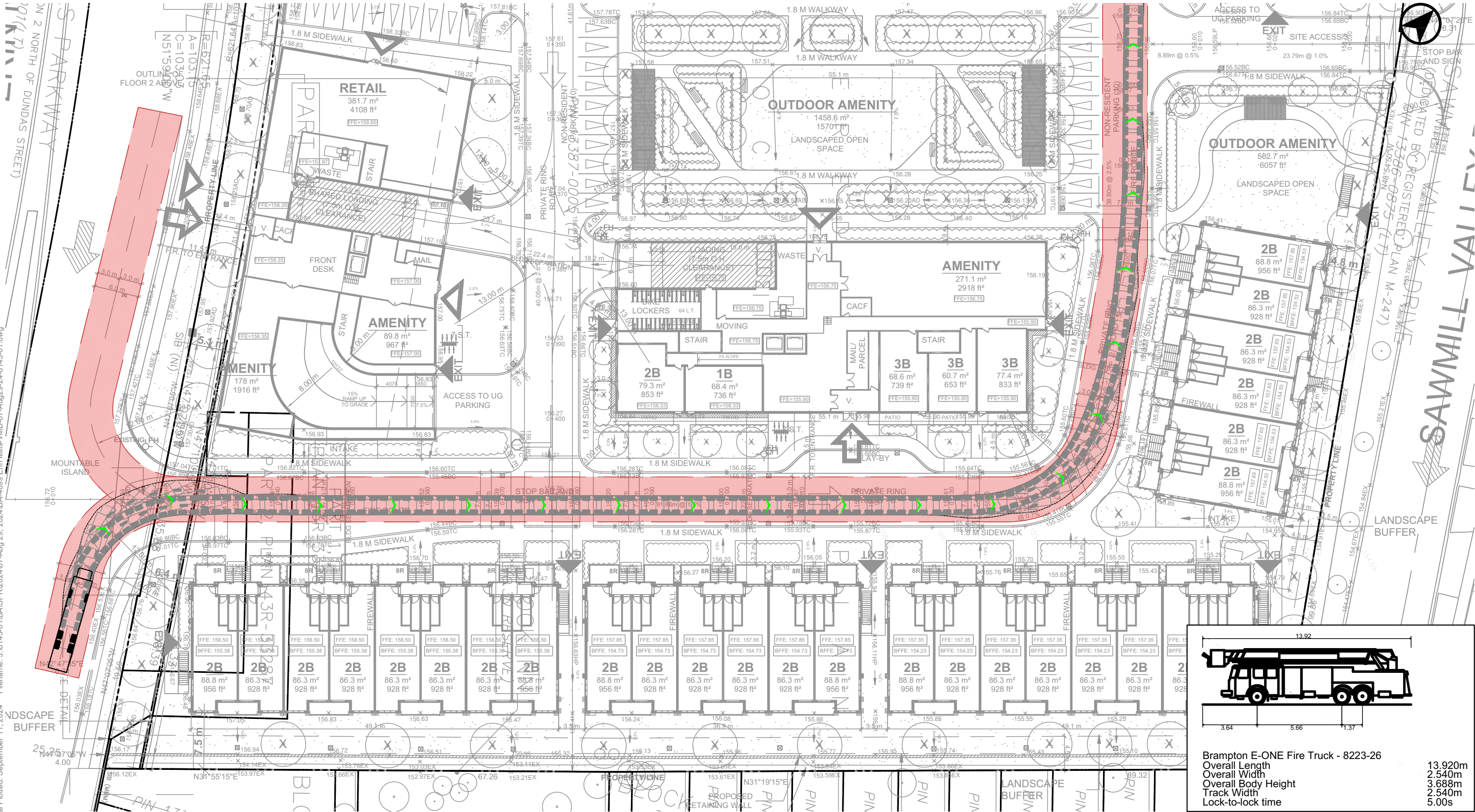
4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
FIRE ROUTE
NORTHERN SEGMENT

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

Scale 0 5 10 15 20m
1:500

Drawing No. VMD-20

File name: J:\8143-01\BAS\PR202407-AUG 29, 2024\BA-4099 Erin Mills VMD-07-AUG 29-24-8143-01.dwg Date Plotted: September 11, 2024



4099 ERIN MILLS PARKWAY
VEHICLE MANOEUVRING DIAGRAM
FIRE ROUTE
SOUTHERN SEGMENT

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JUNE 22, 2022
Revised: SEPTEMBER 11, 2024

Scale 0 5 10 15 20m
1:500
Drawing No. VMD-21

APPENDIX C:

Traffic Counts and Signal Timing Plans





Turning Movement Count (4 . 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	285	0	0	0	285	1	0	0	1	1	0	304	0	0	304	590	
07:15:00	314	0	0	0	314	0	0	0	0	0	2	291	0	0	293	607	
07:30:00	409	0	0	0	409	0	0	0	0	0	6	466	0	0	472	881	
07:45:00	541	0	0	0	541	3	0	0	0	3	1	368	0	0	369	913	2991
08:00:00	462	0	0	0	462	0	0	0	1	0	6	374	0	0	380	842	3243
08:15:00	555	0	0	0	555	2	0	0	0	2	8	435	0	0	443	1000	3636
08:30:00	489	0	0	0	489	2	0	0	2	2	12	423	0	0	435	926	3681
08:45:00	530	0	0	0	530	0	0	0	0	0	9	423	0	0	432	962	3730
BREAK																	
16:00:00	387	0	0	0	387	3	0	0	0	3	16	512	0	0	528	918	
16:15:00	493	0	0	0	493	2	0	0	0	2	27	546	0	0	573	1068	
16:30:00	415	0	0	0	415	6	0	0	0	6	25	486	0	0	511	932	
16:45:00	448	0	0	0	448	7	0	0	1	7	14	488	0	0	502	957	3875
17:00:00	460	1	0	0	461	5	0	0	1	5	18	555	0	0	573	1039	3996
17:15:00	422	0	0	0	422	6	0	0	2	6	21	484	0	0	505	933	3861
17:30:00	444	0	0	0	444	4	0	0	0	4	22	505	0	0	527	975	3904
17:45:00	454	0	0	0	454	8	0	0	1	8	17	427	0	0	444	906	3853
Grand Total	7108	1	0	0	7109	49	0	0	9	49	204	7087	0	0	7291	14449	-
Approach%	100%	0%	0%		-	100%	0%	0%		-	2.8%	97.2%	0%		-	-	-
Totals %	49.2%	0%	0%		49.2%	0.3%	0%	0%		0.3%	1.4%	49%	0%		50.5%	-	-
Heavy	233	0	0		-	3	0	0		-	1	259	0		-	-	-
Heavy %	3.3%	0%	0%		-	6.1%	0%	0%		-	0.5%	3.7%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (0.96 °C)

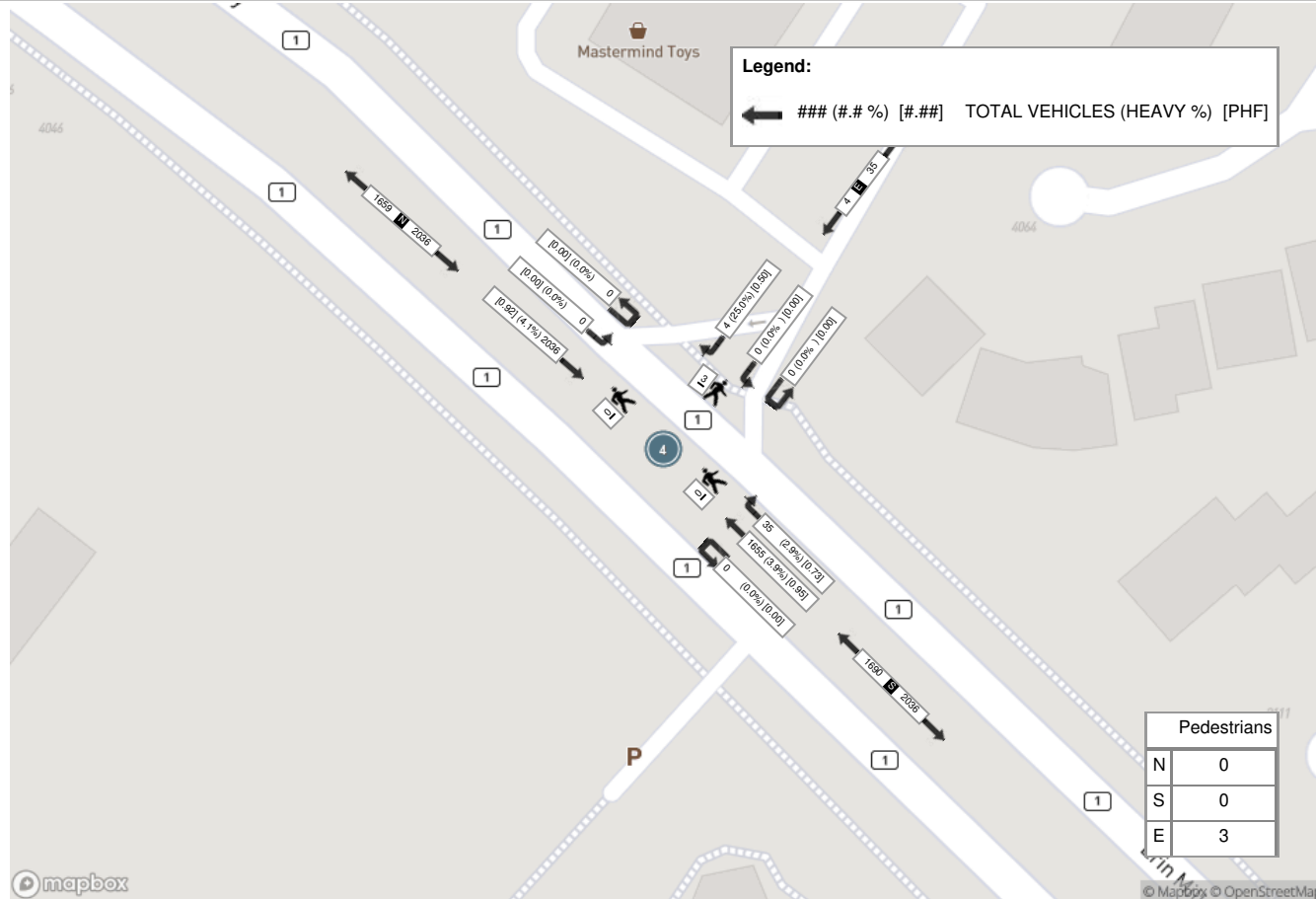
Start Time	N Approach ERIN MILLS PKWY					E Approach 4099 ERIN MILLS RETAIL PLAZA					S Approach ERIN MILLS PKWY					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:00:00	462	0	0	0	462	0	0	0	1	0	6	374	0	0	380	842
08:15:00	555	0	0	0	555	2	0	0	0	2	8	435	0	0	443	1000
08:30:00	489	0	0	0	489	2	0	0	2	2	12	423	0	0	435	926
08:45:00	530	0	0	0	530	0	0	0	0	0	9	423	0	0	432	962
Grand Total	2036	0	0	0	2036	4	0	0	3	4	35	1655	0	0	1690	3730
Approach%	100%	0%	0%		-	100%	0%	0%		-	2.1%	97.9%	0%		-	-
Totals %	54.6%	0%	0%		54.6%	0.1%	0%	0%		0.1%	0.9%	44.4%	0%		45.3%	-
PHF	0.92	0	0		0.92	0.5	0	0		0.5	0.73	0.95	0		0.95	-
Heavy	83	0	0		83	1	0	0		1	1	65	0		66	-
Heavy %	4.1%	0%	0%		4.1%	25%	0%	0%		25%	2.9%	3.9%	0%		3.9%	-
Lights	1953	0	0		1953	3	0	0		3	34	1590	0		1624	-
Lights %	95.9%	0%	0%		95.9%	75%	0%	0%		75%	97.1%	96.1%	0%		96.1%	-
Single-Unit Trucks	35	0	0		35	0	0	0		0	1	20	0		21	-
Single-Unit Trucks %	1.7%	0%	0%		1.7%	0%	0%	0%		0%	2.9%	1.2%	0%		1.2%	-
Buses	35	0	0		35	1	0	0		1	0	26	0		26	-
Buses %	1.7%	0%	0%		1.7%	25%	0%	0%		25%	0%	1.6%	0%		1.5%	-
Articulated Trucks	13	0	0		13	0	0	0		0	0	19	0		19	-
Articulated Trucks %	0.6%	0%	0%		0.6%	0%	0%	0%		0%	0%	1.1%	0%		1.1%	-
Pedestrians	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	100%	-	-	-	-	0%	-	-



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (8.31 °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	493	0	0	0	493	2	0	0	0	2	27	546	0	0	573	1068
16:30:00	415	0	0	0	415	6	0	0	0	6	25	486	0	0	511	932
16:45:00	448	0	0	0	448	7	0	0	1	7	14	488	0	0	502	957
17:00:00	460	1	0	0	461	5	0	0	1	5	18	555	0	0	573	1039
Grand Total	1816	1	0	0	1817	20	0	0	2	20	84	2075	0	0	2159	3996
Approach%	99.9%	0.1%	0%		-	100%	0%	0%		-	3.9%	96.1%	0%		-	-
Totals %	45.4%	0%	0%		45.5%	0.5%	0%	0%		0.5%	2.1%	51.9%	0%		54%	-
PHF	0.92	0.25	0		0.92	0.71	0	0		0.71	0.78	0.93	0		0.94	-
Heavy	38	0	0		38	2	0	0		2	0	51	0		51	-
Heavy %	2.1%	0%	0%		2.1%	10%	0%	0%		10%	0%	2.5%	0%		2.4%	-
Lights	1778	1	0		1779	18	0	0		18	84	2024	0		2108	-
Lights %	97.9%	100%	0%		97.9%	90%	0%	0%		90%	100%	97.5%	0%		97.6%	-
Single-Unit Trucks	17	0	0		17	2	0	0		2	0	22	0		22	-
Single-Unit Trucks %	0.9%	0%	0%		0.9%	10%	0%	0%		10%	0%	1.1%	0%		1%	-
Buses	16	0	0		16	0	0	0		0	0	14	0		14	-
Buses %	0.9%	0%	0%		0.9%	0%	0%	0%		0%	0%	0.7%	0%		0.6%	-
Articulated Trucks	5	0	0		5	0	0	0		0	0	15	0		15	-
Articulated Trucks %	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0%	0.7%	0%		0.7%	-
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	100%	-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (0.96 °C)





Turning Movement Count (5 . ERIN MILLS PKWY & BURNHAMTHORPE RD W) CustID: 00102877 MioID:

Start Time	N Approach ERIN MILLS PKWY						E Approach BURNHAMTHORPE RD						S Approach ERIN MILLS PKWY						W Approach BURNHAMTHORPE RD						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	19	224	28	0	0	271	30	36	21	0	2	87	24	223	14	0	2	261	32	57	32	0	0	121	740		
07:15:00	44	238	26	0	0	308	25	50	38	0	0	113	30	249	18	0	0	297	64	73	31	0	0	168	886		
07:30:00	45	295	36	0	0	376	23	66	55	0	0	144	28	368	12	0	1	408	70	117	47	0	0	234	1162		
07:45:00	53	419	66	0	2	538	28	69	52	0	0	149	45	297	25	0	0	367	85	99	37	0	1	221	1275	4063	
08:00:00	56	339	47	1	0	443	20	86	72	0	0	178	47	296	26	0	3	369	92	153	50	0	5	295	1285	4608	
08:15:00	45	453	50	0	0	548	30	90	82	0	2	202	43	350	30	0	0	423	79	158	46	0	0	283	1456	5178	
08:30:00	55	399	54	0	1	508	38	98	70	0	1	206	59	397	34	0	3	490	67	147	48	0	4	262	1466	5482	
08:45:00	76	382	56	0	2	514	44	125	103	0	1	272	60	282	32	0	0	374	55	168	54	0	2	277	1437	5644	
BREAK																											
16:00:00	55	287	41	1	2	384	68	154	72	0	1	294	38	349	44	1	3	432	40	152	66	0	10	258	1368		
16:15:00	68	391	36	2	0	497	55	169	66	0	0	290	44	435	30	0	5	509	44	150	79	0	3	273	1569		
16:30:00	63	331	49	0	1	443	55	116	71	0	5	242	54	445	47	0	2	546	43	134	54	0	3	231	1462		
16:45:00	63	295	53	0	4	411	56	163	70	0	0	289	50	325	37	0	0	412	52	163	67	0	5	282	1394	5793	
17:00:00	55	365	37	1	1	458	62	128	71	1	3	262	49	432	48	1	7	530	42	149	78	0	1	269	1519	5944	
17:15:00	62	345	46	0	0	453	50	150	63	1	1	264	57	423	54	0	0	534	32	137	59	0	2	228	1479	5854	
17:30:00	59	318	43	0	0	420	57	145	94	1	0	297	61	356	45	0	1	462	50	151	69	1	0	271	1450	5842	
17:45:00	62	356	46	0	0	464	44	104	65	0	1	213	72	371	56	0	2	499	41	132	59	0	1	232	1408	5856	
Grand Total	880	5437	714	5	13	7036	685	1749	1065	3	17	3502	761	5598	552	2	29	6913	888	2140	876	1	37	3905	21356	-	
Approach%	12.5%	77.3%	10.1%	0.1%		-	19.6%	49.9%	30.4%	0.1%		-	11%	81%	8%	0%		-	22.7%	54.8%	22.4%	0%		-	-	-	
Totals %	4.1%	25.5%	3.3%	0%		32.9%	3.2%	8.2%	5%	0%		16.4%	3.6%	26.2%	2.6%	0%		32.4%	4.2%	10%	4.1%	0%		18.3%	-	-	
Heavy	39	171	19	0		-	21	46	33	0		-	20	189	10	0		-	40	56	43	0		-	-	-	
Heavy %	4.4%	3.1%	2.7%	0%		-	3.1%	2.6%	3.1%	0%		-	2.6%	3.4%	1.8%	0%		-	4.5%	2.6%	4.9%	0%		-	-	-	
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	



Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (0.96 °C)

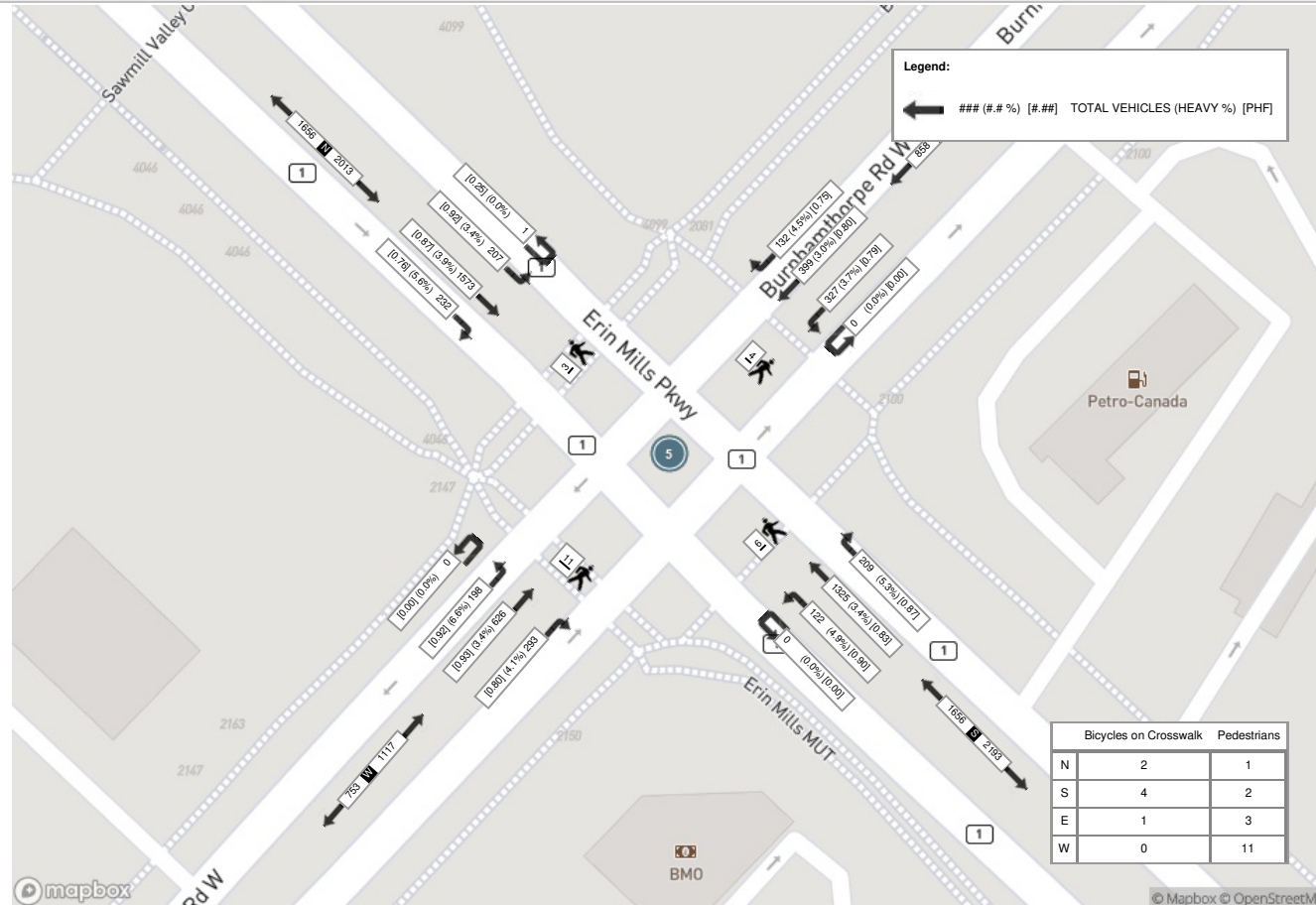
Start Time	N Approach ERIN MILLS PKWY						E Approach BURNHAMTHORPE RD						S Approach ERIN MILLS PKWY						W Approach BURNHAMTHORPE RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	56	339	47	1	0	443	20	86	72	0	0	178	47	296	26	0	3	369	92	153	50	0	5	295	1285
08:15:00	45	453	50	0	0	548	30	90	82	0	2	202	43	350	30	0	0	423	79	158	46	0	0	283	1456
08:30:00	55	399	54	0	1	508	38	98	70	0	1	206	59	397	34	0	3	490	67	147	48	0	4	262	1466
08:45:00	76	382	56	0	2	514	44	125	103	0	1	272	60	282	32	0	0	374	55	168	54	0	2	277	1437
Grand Total	232	1573	207	1	3	2013	132	399	327	0	4	858	209	1325	122	0	6	1656	293	626	198	0	11	1117	5644
Approach%	11.5%	78.1%	10.3%	0%		-	15.4%	46.5%	38.1%	0%		-	12.6%	80%	7.4%	0%		-	26.2%	56%	17.7%	0%		-	-
Totals %	4.1%	27.9%	3.7%	0%		35.7%	2.3%	7.1%	5.8%	0%		15.2%	3.7%	23.5%	2.2%	0%		29.3%	5.2%	11.1%	3.5%	0%		19.8%	-
PHF	0.76	0.87	0.92	0.25		0.92	0.75	0.8	0.79	0		0.79	0.87	0.83	0.9	0		0.84	0.8	0.93	0.92	0		0.95	-
Heavy	13	61	7	0		81	6	12	12	0		30	11	45	6	0		62	12	21	13	0		46	-
Heavy %	5.6%	3.9%	3.4%	0%		4%	4.5%	3%	3.7%	0%		3.5%	5.3%	3.4%	4.9%	0%		3.7%	4.1%	3.4%	6.6%	0%		4.1%	-
Lights	219	1512	200	1		1932	126	387	315	0		828	198	1280	116	0		1594	281	605	185	0		1071	-
Lights %	94.4%	96.1%	96.6%	100%		96%	95.5%	97%	96.3%	0%		96.5%	94.7%	96.6%	95.1%	0%		96.3%	95.9%	96.6%	93.4%	0%		95.9%	-
Single-Unit Trucks	3	29	1	0		33	3	4	6	0		13	3	12	1	0		16	3	5	4	0		12	-
Single-Unit Trucks %	1.3%	1.8%	0.5%	0%		1.6%	2.3%	1%	1.8%	0%		1.5%	1.4%	0.9%	0.8%	0%		1%	1%	0.8%	2%	0%		1.1%	-
Buses	10	20	6	0		36	3	8	4	0		15	8	13	5	0		26	9	16	9	0		34	-
Buses %	4.3%	1.3%	2.9%	0%		1.8%	2.3%	2%	1.2%	0%		1.7%	3.8%	1%	4.1%	0%		1.6%	3.1%	2.6%	4.5%	0%		3%	-
Articulated Trucks	0	12	0	0		12	0	0	2	0		2	0	20	0	0		20	0	0	0	0		0	-
Articulated Trucks %	0%	0.8%	0%	0%		0.6%	0%	0%	0.6%	0%		0.2%	0%	1.5%	0%	0%		1.2%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	1	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	11	-	-
Pedestrians%	-	-	-	-	4.2%	-	-	-	-	12.5%	-	-	-	-	-	8.3%	-	-	-	-	-	-	45.8%	-	-
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	8.3%	-	-	-	-	4.2%	-	-	-	-	-	16.7%	-	-	-	-	-	-	0%	-	-



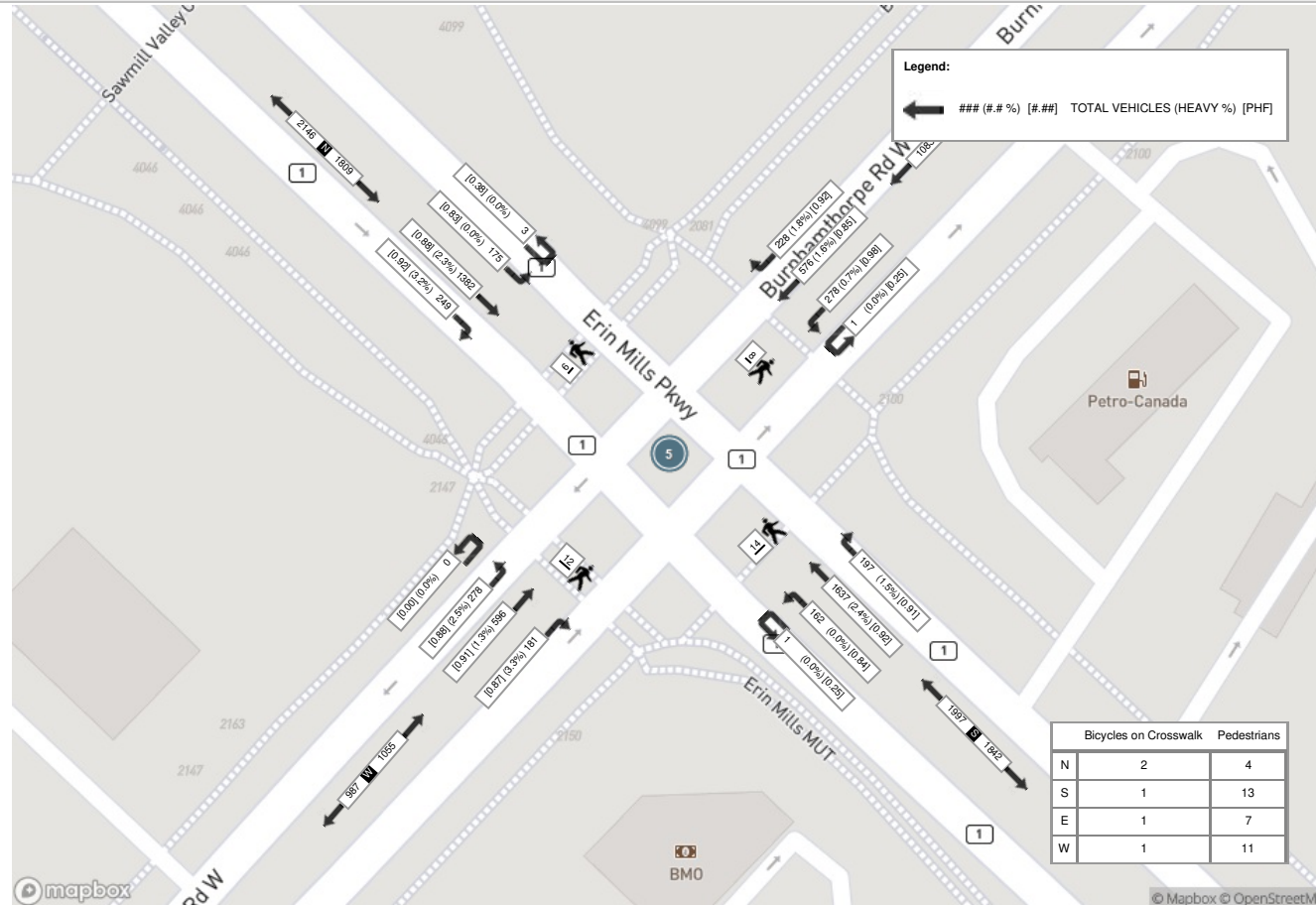
Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (8.31 °C)

Start Time	N Approach ERIN MILLS PKWY						E Approach BURNHAMTHORPE RD						S Approach ERIN MILLS PKWY						W Approach BURNHAMTHORPE RD						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	
16:15:00	68	391	36	2	0	497	55	169	66	0	0	290	44	435	30	0	5	509	44	150	79	0	3	273	1569
16:30:00	63	331	49	0	1	443	55	116	71	0	5	242	54	445	47	0	2	546	43	134	54	0	3	231	1462
16:45:00	63	295	53	0	4	411	56	163	70	0	0	289	50	325	37	0	0	412	52	163	67	0	5	282	1394
17:00:00	55	365	37	1	1	458	62	128	71	1	3	262	49	432	48	1	7	530	42	149	78	0	1	269	1519
Grand Total	249	1382	175	3	6	1809	228	576	278	1	8	1083	197	1637	162	1	14	1997	181	596	278	0	12	1055	5944
Approach%	13.8%	76.4%	9.7%	0.2%		-	21.1%	53.2%	25.7%	0.1%		-	9.9%	82%	8.1%	0.1%		-	17.2%	56.5%	26.4%	0%		-	-
Totals %	4.2%	23.3%	2.9%	0.1%		30.4%	3.8%	9.7%	4.7%	0%		18.2%	3.3%	27.5%	2.7%	0%		33.6%	3%	10%	4.7%	0%		17.7%	-
PHF	0.92	0.88	0.83	0.38		0.91	0.92	0.85	0.98	0.25		0.93	0.91	0.92	0.84	0.25		0.91	0.87	0.91	0.88	0		0.94	-
Heavy	8	32	0	0		40	4	9	2	0		15	3	39	0	0		42	6	8	7	0		21	-
Heavy %	3.2%	2.3%	0%	0%		2.2%	1.8%	1.6%	0.7%	0%		1.4%	1.5%	2.4%	0%	0%		2.1%	3.3%	1.3%	2.5%	0%		2%	-
Lights	241	1350	175	3		1769	224	567	276	1		1068	194	1598	162	1		1955	175	588	271	0		1034	-
Lights %	96.8%	97.7%	100%	100%		97.8%	98.2%	98.4%	99.3%	100%		98.6%	98.5%	97.6%	100%	100%		97.9%	96.7%	98.7%	97.5%	0%		98%	-
Single-Unit Trucks	1	16	0	0		17	2	3	1	0		6	3	19	0	0		22	1	1	0	0		2	-
Single-Unit Trucks %	0.4%	1.2%	0%	0%		0.9%	0.9%	0.5%	0.4%	0%		0.6%	1.5%	1.2%	0%	0%		1.1%	0.6%	0.2%	0%	0%		0.2%	-
Buses	7	10	0	0		17	1	6	1	0		8	0	6	0	0		6	5	6	7	0		18	-
Buses %	2.8%	0.7%	0%	0%		0.9%	0.4%	1%	0.4%	0%		0.7%	0%	0.4%	0%	0%		0.3%	2.8%	1%	2.5%	0%		1.7%	-
Articulated Trucks	0	6	0	0		6	1	0	0	0		1	0	14	0	0		14	0	1	0	0		1	-
Articulated Trucks %	0%	0.4%	0%	0%		0.3%	0.4%	0%	0%	0%		0.1%	0%	0.9%	0%	0%		0.7%	0%	0.2%	0%	0%		0.1%	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	7	-	-	-	-	-	13	-	-	-	-	-	11	-	-
Pedestrians%	-	-	-	-	10%	-	-	-	-	-	17.5%	-	-	-	-	-	32.5%	-	-	-	-	-	27.5%	-	-
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	5%	-	-	-	-	-	2.5%	-	-	-	-	-	2.5%	-	-	-	-	-	2.5%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (0.96 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (8.31 °C)





Turning Movement Count (1 . ERIN MILLS PKWY & FOLKWAY DR) CustID: 00103599 MioID:

Start Time	N Approach ERIN MILLS PKWY						E Approach FOLKWAY DR						S Approach ERIN MILLS PKWY						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	10	268	6	0	1	284	33	4	5	0	0	42	5	289	0	0	1	294	12	6	18	0	1	36	656		
07:15:00	8	291	12	1	0	312	48	3	4	0	0	55	3	283	2	0	0	288	14	3	25	0	2	42	697		
07:30:00	4	380	10	0	1	394	58	4	14	0	0	76	7	417	1	0	2	425	10	8	21	0	1	39	934		
07:45:00	8	513	16	0	2	537	46	8	20	0	1	74	7	373	3	0	1	383	12	11	14	0	1	37	1031	3318	
08:00:00	9	422	18	0	2	449	43	9	28	0	2	80	13	339	5	0	2	357	14	13	26	0	3	53	939	3601	
08:15:00	16	507	25	1	1	549	55	12	18	0	1	85	9	402	1	0	1	412	12	20	22	0	1	54	1100	4004	
08:30:00	9	478	28	2	0	517	49	7	22	0	0	78	8	440	2	0	4	450	13	18	18	0	0	49	1094	4164	
08:45:00	11	474	26	0	0	511	64	13	20	0	0	97	9	370	5	0	8	384	12	15	22	0	6	49	1041	4174	
BREAK																											
16:00:00	17	344	46	0	4	407	51	10	19	0	4	80	12	476	6	0	4	494	9	19	16	0	2	44	1025		
16:15:00	33	438	36	0	2	507	39	13	30	0	1	82	12	532	4	0	2	548	8	16	8	0	3	32	1169		
16:30:00	21	399	40	2	1	462	33	21	22	0	0	76	13	471	14	0	4	498	7	13	15	0	2	35	1071		
16:45:00	23	384	47	0	1	454	62	15	30	0	1	107	14	450	11	0	0	475	6	20	18	0	0	44	1080	4345	
17:00:00	19	429	44	1	4	493	36	10	19	0	3	65	27	524	4	0	2	555	10	25	8	0	4	43	1156	4476	
17:15:00	20	421	55	2	0	498	58	19	18	0	0	95	19	440	12	0	2	471	11	12	25	0	0	48	1112	4419	
17:30:00	14	374	39	1	0	428	57	15	19	0	0	91	14	488	4	2	0	508	7	27	15	0	1	49	1076	4424	
17:45:00	18	422	49	0	0	489	47	7	22	0	0	76	16	432	8	0	7	456	8	25	15	1	9	49	1070	4414	
Grand Total	240	6544	497	10	19	7291	779	170	310	0	13	1259	188	6726	82	2	40	6998	165	251	286	1	36	703	16251	-	
Approach%	3.3%	89.8%	6.8%	0.1%		-	61.9%	13.5%	24.6%	0%		-	2.7%	96.1%	1.2%	0%		-	23.5%	35.7%	40.7%	0.1%		-	-	-	
Totals %	1.5%	40.3%	3.1%	0.1%		44.9%	4.8%	1%	1.9%	0%		7.7%	1.2%	41.4%	0.5%	0%		43.1%	1%	1.5%	1.8%	0%		4.3%	-	-	
Heavy	3	212	8	1		-	14	2	13	0		-	9	245	1	0		-	6	12	4	0		-	-	-	
Heavy %	1.3%	3.2%	1.6%	10%		-	1.8%	1.2%	4.2%	0%		-	4.8%	3.6%	1.2%	0%		-	3.6%	4.8%	1.4%	0%		-	-	-	
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	



Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (0.96 °C)

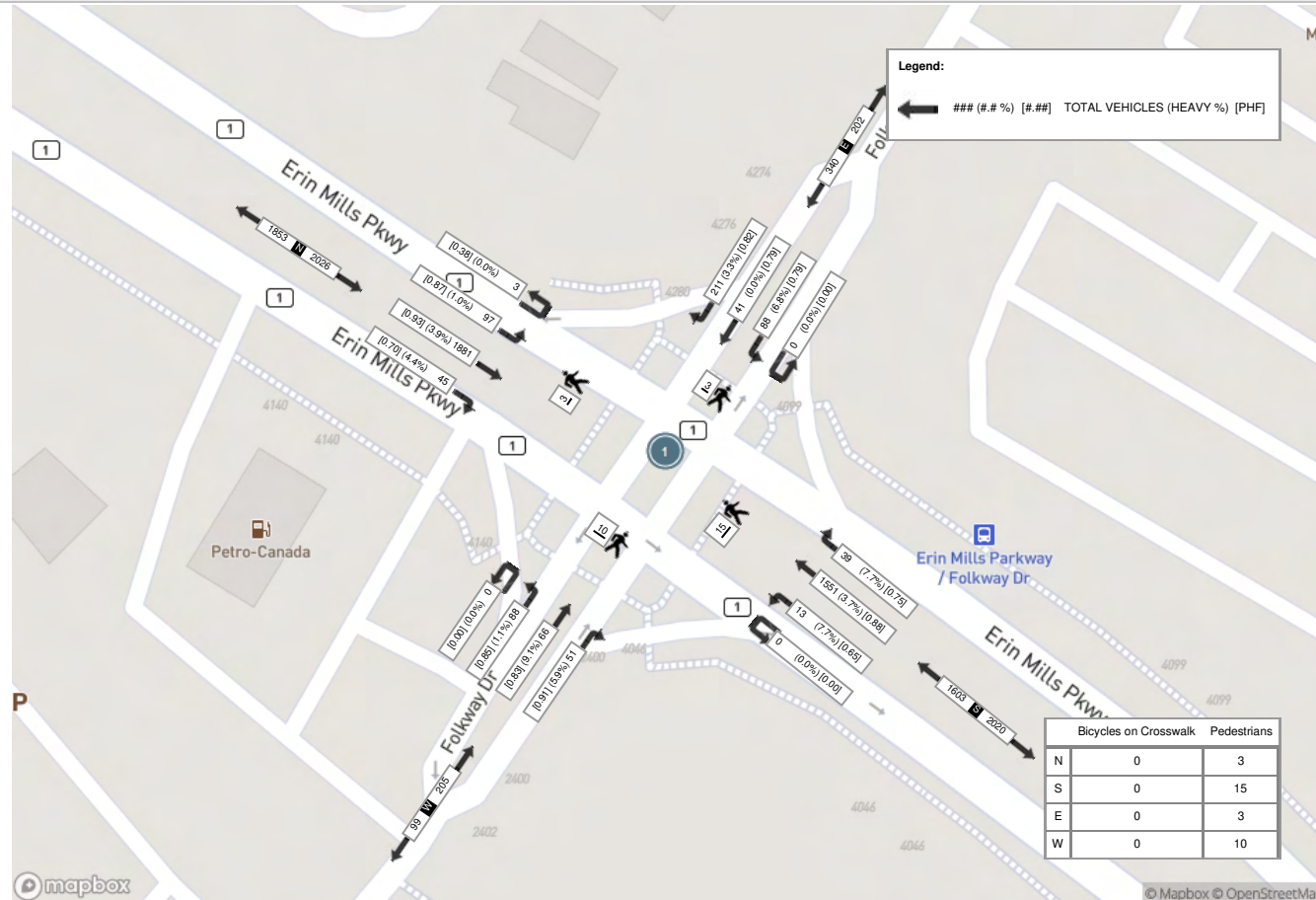
Start Time	N Approach ERIN MILLS PKWY						E Approach FOLKWAY DR						S Approach ERIN MILLS PKWY						W Approach FOLKWAY DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	9	422	18	0	2	449	43	9	28	0	2	80	13	339	5	0	2	357	14	13	26	0	3	53	939
08:15:00	16	507	25	1	1	549	55	12	18	0	1	85	9	402	1	0	1	412	12	20	22	0	1	54	1100
08:30:00	9	478	28	2	0	517	49	7	22	0	0	78	8	440	2	0	4	450	13	18	18	0	0	49	1094
08:45:00	11	474	26	0	0	511	64	13	20	0	0	97	9	370	5	0	8	384	12	15	22	0	6	49	1041
Grand Total	45	1881	97	3	3	2026	211	41	88	0	3	340	39	1551	13	0	15	1603	51	66	88	0	10	205	4174
Approach%	2.2%	92.8%	4.8%	0.1%		-	62.1%	12.1%	25.9%	0%		-	2.4%	96.8%	0.8%	0%		-	24.9%	32.2%	42.9%	0%		-	-
Totals %	1.1%	45.1%	2.3%	0.1%		48.5%	5.1%	1%	2.1%	0%		8.1%	0.9%	37.2%	0.3%	0%		38.4%	1.2%	1.6%	2.1%	0%		4.9%	-
PHF	0.7	0.93	0.87	0.38		0.92	0.82	0.79	0.79	0		0.88	0.75	0.88	0.65	0		0.89	0.91	0.83	0.85	0		0.95	-
Heavy	2	74	1	0		77	7	0	6	0		13	3	57	1	0		61	3	6	1	0		10	-
Heavy %	4.4%	3.9%	1%	0%		3.8%	3.3%	0%	6.8%	0%		3.8%	7.7%	3.7%	7.7%	0%		3.8%	5.9%	9.1%	1.1%	0%		4.9%	-
Lights	43	1807	96	3		1949	204	41	82	0		327	36	1494	12	0		1542	48	60	87	0		195	-
Lights %	95.6%	96.1%	99%	100%		96.2%	96.7%	100%	93.2%	0%		96.2%	92.3%	96.3%	92.3%	0%		96.2%	94.1%	90.9%	98.9%	0%		95.1%	-
Single-Unit Trucks	2	32	0	0		34	2	0	2	0		4	0	19	0	0		19	1	0	0	0		1	-
Single-Unit Trucks %	4.4%	1.7%	0%	0%		1.7%	0.9%	0%	2.3%	0%		1.2%	0%	1.2%	0%	0%		1.2%	2%	0%	0%	0%		0.5%	-
Buses	0	29	1	0		30	5	0	4	0		9	3	22	1	0		26	2	6	1	0		9	-
Buses %	0%	1.5%	1%	0%		1.5%	2.4%	0%	4.5%	0%		2.6%	7.7%	1.4%	7.7%	0%		1.6%	3.9%	9.1%	1.1%	0%		4.4%	-
Articulated Trucks	0	13	0	0		13	0	0	0	0		0	0	16	0	0		16	0	0	0	0		0	-
Articulated Trucks %	0%	0.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	1%	0%	0%		1%	0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	15	-	-	-	-	-	10	-	-
Pedestrians%	-	-	-	-	9.7%	-	-	-	-	-	9.7%	-	-	-	-	-	48.4%	-	-	-	-	-	32.3%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (8.31 °C)

Start Time	N Approach ERIN MILLS PKWY						E Approach FOLKWAY DR						S Approach ERIN MILLS PKWY						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	
16:15:00	33	438	36	0	2	507	39	13	30	0	1	82	12	532	4	0	2	548	8	16	8	0	3	32	1169
16:30:00	21	399	40	2	1	462	33	21	22	0	0	76	13	471	14	0	4	498	7	13	15	0	2	35	1071
16:45:00	23	384	47	0	1	454	62	15	30	0	1	107	14	450	11	0	0	475	6	20	18	0	0	44	1080
17:00:00	19	429	44	1	4	493	36	10	19	0	3	65	27	524	4	0	2	555	10	25	8	0	4	43	1156
Grand Total	96	1650	167	3	8	1916	170	59	101	0	5	330	66	1977	33	0	8	2076	31	74	49	0	9	154	4476
Approach%	5%	86.1%	8.7%	0.2%		-	51.5%	17.9%	30.6%	0%		-	3.2%	95.2%	1.6%	0%		-	20.1%	48.1%	31.8%	0%		-	-
Totals %	2.1%	36.9%	3.7%	0.1%		42.8%	3.8%	1.3%	2.3%	0%		7.4%	1.5%	44.2%	0.7%	0%		46.4%	0.7%	1.7%	1.1%	0%		3.4%	-
PHF	0.73	0.94	0.89	0.38		0.94	0.69	0.7	0.84	0		0.77	0.61	0.93	0.59	0		0.94	0.78	0.74	0.68	0		0.88	-
Heavy	0	34	1	0		35	2	1	0	0		3	1	53	0	0		54	2	1	2	0		5	-
Heavy %	0%	2.1%	0.6%	0%		1.8%	1.2%	1.7%	0%	0%		0.9%	1.5%	2.7%	0%	0%		2.6%	6.5%	1.4%	4.1%	0%		3.2%	-
Lights	96	1616	166	3		1881	168	57	101	0		326	65	1924	33	0		2022	29	73	47	0		149	-
Lights %	100%	97.9%	99.4%	100%		98.2%	98.8%	96.6%	100%	0%		98.8%	98.5%	97.3%	100%	0%		97.4%	93.5%	98.6%	95.9%	0%		96.8%	-
Single-Unit Trucks	0	16	1	0		17	1	1	0	0		2	0	23	0	0		23	0	1	1	0		2	-
Single-Unit Trucks %	0%	1%	0.6%	0%		0.9%	0.6%	1.7%	0%	0%		0.6%	0%	1.2%	0%	0%		1.1%	0%	1.4%	2%	0%		1.3%	-
Buses	0	13	0	0		13	1	0	0	0		1	1	15	0	0		16	2	0	1	0		3	-
Buses %	0%	0.8%	0%	0%		0.7%	0.6%	0%	0%	0%		0.3%	1.5%	0.8%	0%	0%		0.8%	6.5%	0%	2%	0%		1.9%	-
Articulated Trucks	0	5	0	0		5	0	0	0	0		0	0	15	0	0		15	0	0	0	0		0	-
Articulated Trucks %	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.7%	0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	5	-	-	-	-	-	8	-	-	-	-	-	7	-	-
Pedestrians%	-	-	-	-	26.7%	-	-	-	-	-	16.7%	-	-	-	-	-	26.7%	-	-	-	-	-	23.3%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	6.7%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (0.96 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (8.31 °C)





Turning Movement Count (2 . FOLKWAY DR & 4099 ERIN MILLS PKWY 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	36	2	0	0	38	0	5	0	3	5	3	13	0	0	16	59	
07:15:00	54	1	0	0	55	1	1	0	0	2	2	17	0	0	19	76	
07:30:00	68	0	0	1	68	1	7	0	3	8	3	22	0	0	25	101	
07:45:00	73	0	0	0	73	3	3	0	2	6	10	23	0	0	33	112	348
08:00:00	72	4	0	0	76	0	5	0	0	5	2	42	0	0	44	125	414
08:15:00	80	1	0	0	81	4	3	0	1	7	8	42	0	0	50	138	476
08:30:00	74	3	0	0	77	3	10	0	2	13	14	44	0	0	58	148	523
08:45:00	76	5	0	0	81	3	11	0	7	14	6	39	0	0	45	140	551
BREAK																	
16:00:00	36	0	0	0	36	4	36	0	3	40	22	54	0	0	76	152	
16:15:00	38	6	0	0	44	9	44	0	5	53	23	40	0	0	63	160	
16:30:00	51	2	0	0	53	6	31	0	3	37	23	44	0	0	67	157	
16:45:00	55	2	0	0	57	3	41	0	5	44	24	49	2	0	75	176	645
17:00:00	31	3	0	0	34	4	36	0	2	40	24	74	0	0	98	172	665
17:15:00	49	3	0	0	52	12	37	0	2	49	24	62	0	0	86	187	692
17:30:00	53	1	0	0	54	6	36	0	1	42	34	44	0	0	78	174	709
17:45:00	47	4	0	0	51	9	36	0	4	45	28	62	0	0	90	186	719
Grand Total	893	37	0	1	930	68	342	0	43	410	250	671	2	0	923	2263	-
Approach%	96%	4%	0%		-	16.6%	83.4%	0%		-	27.1%	72.7%	0.2%		-	-	-
Totals %	39.5%	1.6%	0%		41.1%	3%	15.1%	0%		18.1%	11%	29.7%	0.1%		40.8%	-	-
Heavy	27	0	0		-	0	2	0		-	5	25	0		-	-	-
Heavy %	3%	0%	0%		-	0%	0.6%	0%		-	2%	3.7%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (0.96 °C)

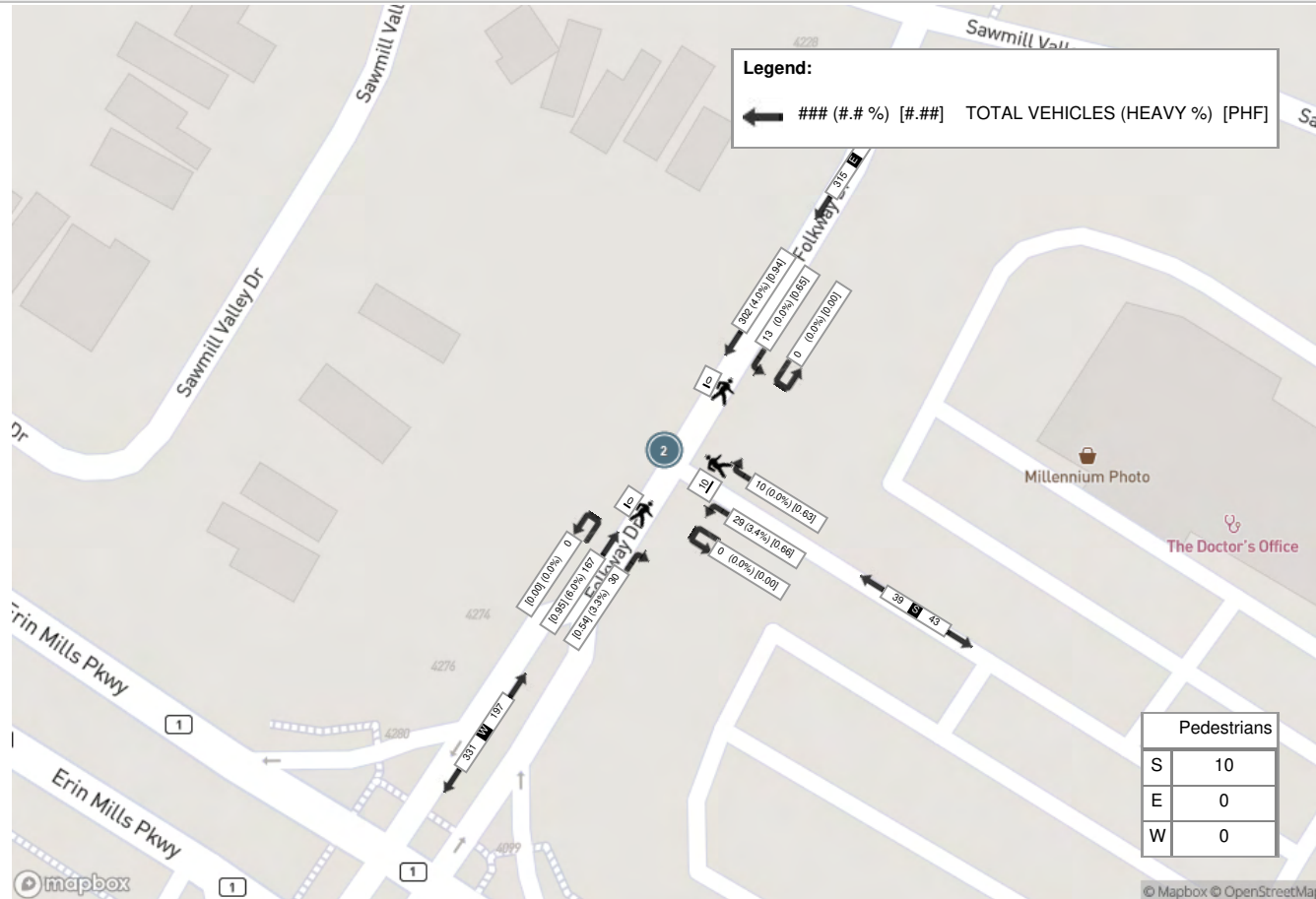
Start Time	E Approach FOLKWAY DR					S Approach 4099 ERIN MILLS RETAIL PLAZA					W Approach FOLKWAY DR					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:00:00	72	4	0	0	76	0	5	0	0	5	2	42	0	0	44	125
08:15:00	80	1	0	0	81	4	3	0	1	7	8	42	0	0	50	138
08:30:00	74	3	0	0	77	3	10	0	2	13	14	44	0	0	58	148
08:45:00	76	5	0	0	81	3	11	0	7	14	6	39	0	0	45	140
Grand Total	302	13	0	0	315	10	29	0	10	39	30	167	0	0	197	551
Approach%	95.9%	4.1%	0%		-	25.6%	74.4%	0%		-	15.2%	84.8%	0%		-	-
Totals %	54.8%	2.4%	0%		57.2%	1.8%	5.3%	0%		7.1%	5.4%	30.3%	0%		35.8%	-
PHF	0.94	0.65	0		0.97	0.63	0.66	0		0.7	0.54	0.95	0		0.85	-
Heavy	12	0	0		12	0	1	0		1	1	10	0		11	-
Heavy %	4%	0%	0%		3.8%	0%	3.4%	0%		2.6%	3.3%	6%	0%		5.6%	-
Lights	290	13	0		303	10	28	0		38	29	157	0		186	-
Lights %	96%	100%	0%		96.2%	100%	96.6%	0%		97.4%	96.7%	94%	0%		94.4%	-
Single-Unit Trucks	3	0	0		3	0	1	0		1	0	0	0		0	-
Single-Unit Trucks %	1%	0%	0%		1%	0%	3.4%	0%		2.6%	0%	0%	0%		0%	-
Buses	9	0	0		9	0	0	0		0	1	9	0		10	-
Buses %	3%	0%	0%		2.9%	0%	0%	0%		0%	3.3%	5.4%	0%		5.1%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	1	0		1	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.6%	0%		0.5%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	10	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	100%	-	-	-	-	0%	-	-



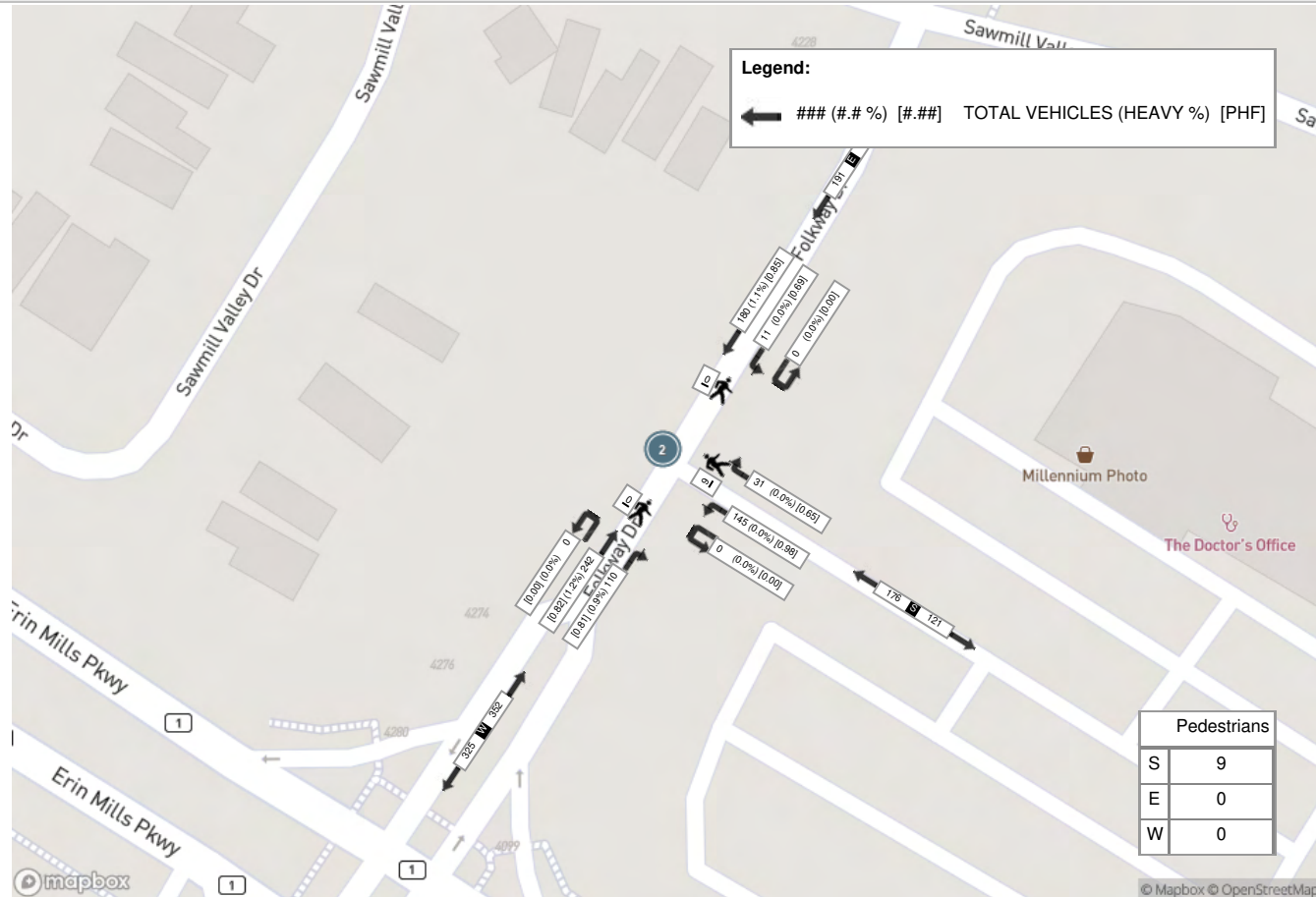
Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (8.31 °C)

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	
17:00:00	31	3	0	0	34	4	36	0	2	40	24	74	0	0	98	172
17:15:00	49	3	0	0	52	12	37	0	2	49	24	62	0	0	86	187
17:30:00	53	1	0	0	54	6	36	0	1	42	34	44	0	0	78	174
17:45:00	47	4	0	0	51	9	36	0	4	45	28	62	0	0	90	186
Grand Total	180	11	0	0	191	31	145	0	9	176	110	242	0	0	352	719
Approach%	94.2%	5.8%	0%		-	17.6%	82.4%	0%		-	31.3%	68.8%	0%		-	-
Totals %	25%	1.5%	0%		26.6%	4.3%	20.2%	0%		24.5%	15.3%	33.7%	0%		49%	-
PHF	0.85	0.69	0		0.88	0.65	0.98	0		0.9	0.81	0.82	0		0.9	-
Heavy	2	0	0		2	0	0	0		0	1	3	0		4	-
Heavy %	1.1%	0%	0%		1%	0%	0%	0%		0%	0.9%	1.2%	0%		1.1%	-
Lights	177	11	0		188	31	145	0		176	109	238	0		347	-
Lights %	98.3%	100%	0%		98.4%	100%	100%	0%		100%	99.1%	98.3%	0%		98.6%	-
Single-Unit Trucks	2	0	0		2	0	0	0		0	1	3	0		4	-
Single-Unit Trucks %	1.1%	0%	0%		1%	0%	0%	0%		0%	0.9%	1.2%	0%		1.1%	-
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%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Bicycles on Road	1	0	0		1	0	0	0		0	0	1	0		1	-
Bicycles on Road %	0.6%	0%	0%		0.5%	0%	0%	0%		0%	0%	0.4%	0%		0.3%	-
Pedestrians	-	-	-	0	-	-	-	-	9	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	100%	-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (0.96 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (8.31 °C)





Turning Movement Count (3 . 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	6	2	0	0	1	8	0	16	0	0	0	16	0	0	16	0	3	16	5	4	4	0	0	13	53		
07:15:00	14	2	0	0	0	16	0	19	2	0	0	21	0	0	23	0	1	23	9	4	5	0	0	18	78		
07:30:00	9	3	0	0	1	12	0	26	3	0	0	29	2	1	33	0	3	36	16	6	1	0	0	23	100		
07:45:00	16	1	1	0	2	18	0	27	4	0	1	31	3	1	29	0	7	33	17	7	2	0	4	26	108	339	
08:00:00	15	1	0	0	1	16	0	30	1	0	1	31	2	1	31	0	0	34	21	10	7	0	2	38	119	405	
08:15:00	12	5	0	0	1	17	0	24	6	0	2	30	5	3	46	0	2	54	29	12	8	0	0	49	150	477	
08:30:00	10	3	0	0	0	13	0	28	5	0	0	33	2	5	39	0	0	46	28	13	6	0	2	47	139	516	
08:45:00	8	2	1	0	0	11	0	30	4	0	0	34	3	1	44	0	11	48	26	12	4	0	0	42	135	543	
BREAK																											
16:00:00	8	1	0	0	3	9	2	12	0	0	2	14	5	5	16	0	1	26	20	21	12	0	2	53	102		
16:15:00	8	1	0	0	1	9	1	19	7	0	0	27	4	1	18	0	3	23	21	27	6	0	2	54	113		
16:30:00	8	1	0	0	0	9	0	21	0	0	0	21	3	1	23	0	2	27	14	23	13	0	3	50	107		
16:45:00	8	1	0	0	0	9	0	28	1	0	2	29	2	0	21	0	9	23	17	26	9	0	2	52	113	435	
17:00:00	2	0	0	0	1	2	0	16	0	0	0	16	3	2	16	0	3	21	33	32	13	0	2	78	117	450	
17:15:00	8	0	1	0	0	9	0	17	0	1	4	18	3	1	28	0	4	32	28	27	14	0	1	69	128	465	
17:30:00	6	2	0	0	0	8	0	20	2	0	2	22	1	1	27	0	6	29	22	25	7	0	0	54	113	471	
17:45:00	4	1	1	0	0	6	0	25	1	0	3	26	2	3	22	0	4	27	30	29	11	0	0	70	129	487	
Grand Total	142	26	4	0	11	172	3	358	36	1	17	398	40	26	432	0	59	498	336	278	122	0	20	736	1804	-	
Approach%	82.6%	15.1%	2.3%	0%		-	0.8%	89.9%	9%	0.3%		-	8%	5.2%	86.7%	0%		-	45.7%	37.8%	16.6%	0%		-	-	-	
Totals %	7.9%	1.4%	0.2%	0%		9.5%	0.2%	19.8%	2%	0.1%		22.1%	2.2%	1.4%	23.9%	0%		27.6%	18.6%	15.4%	6.8%	0%		40.8%	-	-	
Heavy	7	1	0	0		-	0	10	4	0		-	2	1	11	0		-	10	7	8	0		-	-	-	
Heavy %	4.9%	3.8%	0%	0%		-	0%	2.8%	11.1%	0%		-	5%	3.8%	2.5%	0%		-	3%	2.5%	6.6%	0%		-	-	-	
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	



Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (0.96 °C)

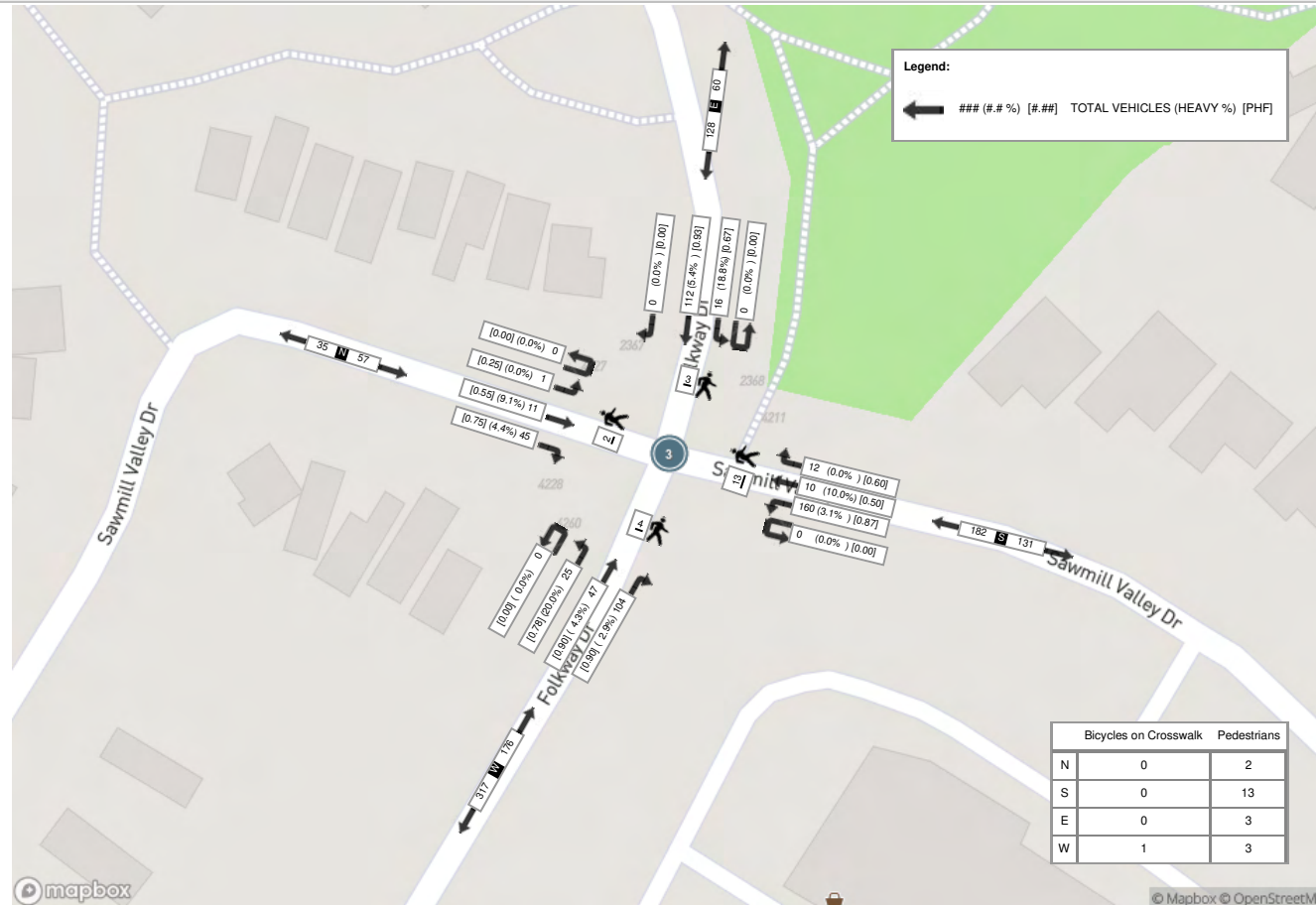
Start Time	N Approach SAWMILL VALLEY DR						E Approach FOLKWAY DR						S Approach SAWMILL VALLEY DR						W Approach FOLKWAY DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	15	1	0	0	1	16	0	30	1	0	1	31	2	1	31	0	0	34	21	10	7	0	2	38	119
08:15:00	12	5	0	0	1	17	0	24	6	0	2	30	5	3	46	0	2	54	29	12	8	0	0	49	150
08:30:00	10	3	0	0	0	13	0	28	5	0	0	33	2	5	39	0	0	46	28	13	6	0	2	47	139
08:45:00	8	2	1	0	0	11	0	30	4	0	0	34	3	1	44	0	11	48	26	12	4	0	0	42	135
Grand Total	45	11	1	0	2	57	0	112	16	0	3	128	12	10	160	0	13	182	104	47	25	0	4	176	543
Approach%	78.9%	19.3%	1.8%	0%		-	0%	87.5%	12.5%	0%		-	6.6%	5.5%	87.9%	0%		-	59.1%	26.7%	14.2%	0%		-	-
Totals %	8.3%	2%	0.2%	0%		10.5%	0%	20.6%	2.9%	0%		23.6%	2.2%	1.8%	29.5%	0%		33.5%	19.2%	8.7%	4.6%	0%		32.4%	-
PHF	0.75	0.55	0.25	0		0.84	0	0.93	0.67	0		0.94	0.6	0.5	0.87	0		0.84	0.9	0.9	0.78	0		0.9	-
Heavy	2	1	0	0		3	0	6	3	0		9	0	1	5	0		6	3	2	5	0		10	-
Heavy %	4.4%	9.1%	0%	0%		5.3%	0%	5.4%	18.8%	0%		7%	0%	10%	3.1%	0%		3.3%	2.9%	4.3%	20%	0%		5.7%	-
Lights	43	10	1	0		54	0	106	13	0		119	12	9	155	0		176	101	45	20	0		166	-
Lights %	95.6%	90.9%	100%	0%		94.7%	0%	94.6%	81.3%	0%		93%	100%	90%	96.9%	0%		96.7%	97.1%	95.7%	80%	0%		94.3%	-
Single-Unit Trucks	0	0	0	0		0	0	3	0	0		3	0	1	1	0		2	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	2.7%	0%	0%		2.3%	0%	10%	0.6%	0%		1.1%	0%	0%	0%	0%		0%	-
Buses	2	1	0	0		3	0	3	3	0		6	0	0	4	0		4	3	2	4	0		9	-
Buses %	4.4%	9.1%	0%	0%		5.3%	0%	2.7%	18.8%	0%		4.7%	0%	0%	2.5%	0%		2.2%	2.9%	4.3%	16%	0%		5.1%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	4%	0%		0.6%	-
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%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	13	-	-	-	-	-	3	-	-
Pedestrians%	-	-	-	-	9.1%	-	-	-	-	-	13.6%	-	-	-	-	-	59.1%	-	-	-	-	-	13.6%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	4.5%	-	-



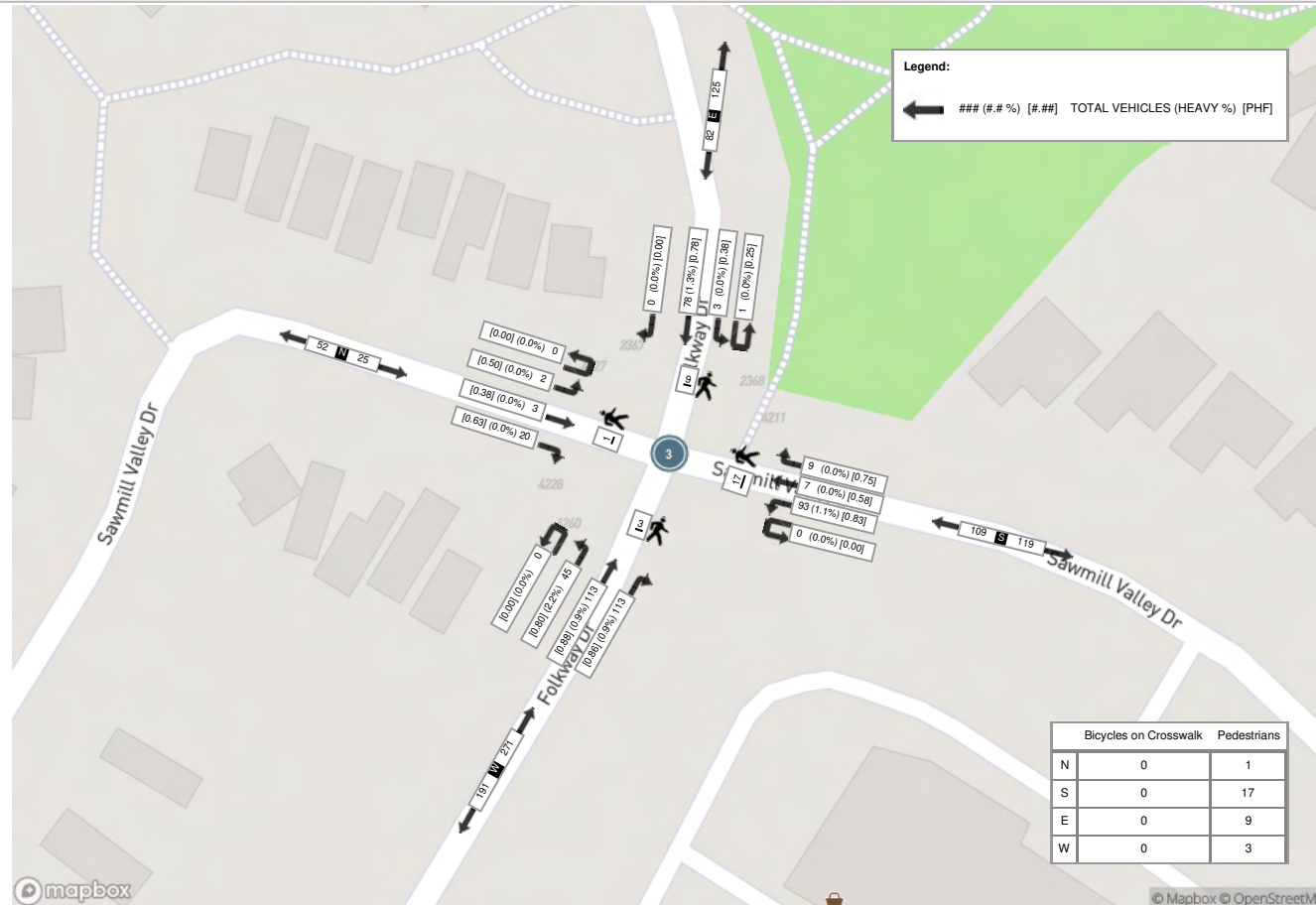
Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (8.31 °C)

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	
17:00:00	2	0	0	0	1	2	0	16	0	0	0	16	3	2	16	0	3	21	33	32	13	0	2	78	117
17:15:00	8	0	1	0	0	9	0	17	0	1	4	18	3	1	28	0	4	32	28	27	14	0	1	69	128
17:30:00	6	2	0	0	0	8	0	20	2	0	2	22	1	1	27	0	6	29	22	25	7	0	0	54	113
17:45:00	4	1	1	0	0	6	0	25	1	0	3	26	2	3	22	0	4	27	30	29	11	0	0	70	129
Grand Total	20	3	2	0	1	25	0	78	3	1	9	82	9	7	93	0	17	109	113	113	45	0	3	271	487
Approach%	80%	12%	8%	0%		-	0%	95.1%	3.7%	1.2%		-	8.3%	6.4%	85.3%	0%		-	41.7%	41.7%	16.6%	0%		-	-
Totals %	4.1%	0.6%	0.4%	0%		5.1%	0%	16%	0.6%	0.2%		16.8%	1.8%	1.4%	19.1%	0%		22.4%	23.2%	23.2%	9.2%	0%		55.6%	-
PHF	0.63	0.38	0.5	0		0.69	0	0.78	0.38	0.25		0.79	0.75	0.58	0.83	0		0.85	0.86	0.88	0.8	0		0.87	-
Heavy	0	0	0	0		0	0	1	0	0		1	0	0	1	0		1	1	1	1	0		3	-
Heavy %	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.2%	0%	0%	1.1%	0%		0.9%	0.9%	0.9%	2.2%	0%		1.1%	-
Lights	19	3	2	0		24	0	77	3	1		81	9	7	92	0		108	112	111	44	0		267	-
Lights %	95%	100%	100%	0%		96%	0%	98.7%	100%	100%		98.8%	100%	100%	98.9%	0%		99.1%	99.1%	98.2%	97.8%	0%		98.5%	-
Single-Unit Trucks	0	0	0	0		0	0	1	0	0		1	0	0	1	0		1	1	1	1	0		3	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.2%	0%	0%	1.1%	0%		0.9%	0.9%	0.9%	2.2%	0%		1.1%	-
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%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Bicycles on Road	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	-
Bicycles on Road %	5%	0%	0%	0%		4%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.4%	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	9	-	-	-	-	-	17	-	-	-	-	-	3	-	-
Pedestrians%	-	-	-	-	3.3%	-	-	-	-	-	30%	-	-	-	-	-	56.7%	-	-	-	-	-	10%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (0.96 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (8.31 °C)



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 19:30-00:00	OFF	160	2
	15:00-19:30	PM	160	118

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								
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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 19:30-00:00	OFF	160	117
	15:00-19:30	PM	160	88

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%	0.6%	0.0%	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%	0.2%	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%	1.3%	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%	0.1%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
PD 1 of Toronto	134	134		90%		10%			0.0%	0.0%	0.4%	0.0%	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%			80%	10%		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													

TRIP DISTRIBUTION - INBOUND - RESIDENTIAL

ORIGIN	ESTIMATE	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%	0.3%	0.3%	0.0%	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%	0.2%	0.0%	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%	1.4%	0.0%	0.0%	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%	1.2%	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%	0.3%	0.0%	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%	0.3%	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%			0.0%	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%	1.1%	0.0%	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%			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													

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 r	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 r	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



Queues

2023 Existing (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	65	50	90	40	210	15	1605	40	100	1895	45
Future Volume (vph)	90	65	50	90	40	210	15	1605	40	100	1895	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	45.0		0.0	55.0		0.0	90.0		105.0	185.0		140.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.935			0.874				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1796	0	1785	1679	0	1785	5245	1597	1785	5245	1597
Flt Permitted	0.604			0.553			0.084			0.950		
Satd. Flow (perm)	1135	1796	0	1039	1679	0	158	5245	1597	1785	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			174				119			85
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		148.3			82.7			162.6			534.9	
Travel Time (s)		11.1			6.2			12.2			40.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	90	65	50	90	40	210	15	1605	40	100	1895	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	115	0	90	250	0	15	1605	40	100	1895	45
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm

Queues

2023 Existing (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	38.5	38.5		10.0	51.5		8.0	68.8	68.8	21.0	81.8	81.8
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Walk Time (s)	15.0	15.0			12.0			12.0	12.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0			25.0			28.0	28.0	13.0	13.0	13.0
Pedestrian Calls (#/hr)	0	0			0			0	0	0	0	0
Act Effct Green (s)	15.6	15.6		32.6	28.1		80.2	71.0	71.0	12.6	83.9	83.9
Actuated g/C Ratio	0.12	0.12		0.25	0.22		0.61	0.54	0.54	0.10	0.64	0.64
v/c Ratio	0.66	0.49		0.29	0.50		0.08	0.56	0.04	0.58	0.56	0.04
Control Delay	79.0	50.4		41.6	18.0		9.2	21.6	0.1	71.6	15.5	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.0	50.4		41.6	18.0		9.2	21.6	0.1	71.6	15.5	0.3
LOS	E	D		D	B		A	C	A	E	B	A
Approach Delay		63.0			24.3			21.0			17.9	
Approach LOS		E			C			C			B	
Queue Length 50th (m)	22.1	21.9		17.9	15.8		1.1	96.1	0.0	24.6	83.1	0.0
Queue Length 95th (m)	42.5	43.1		34.2	42.6		4.0	136.7	0.0	46.2	147.3	0.6
Internal Link Dist (m)		124.3			58.7			138.6			510.9	
Turn Bay Length (m)	45.0			55.0			90.0		105.0	185.0		140.0
Base Capacity (vph)	337	550		317	772		197	2852	922	289	3371	1057
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	0.27	0.21		0.28	0.32		0.08	0.56	0.04	0.35	0.56	0.04

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 130.5

Natural Cycle: 140

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 21.8

Intersection LOS: C

Intersection Capacity Utilization 86.8%

ICU Level of Service E

Analysis Period (min) 15

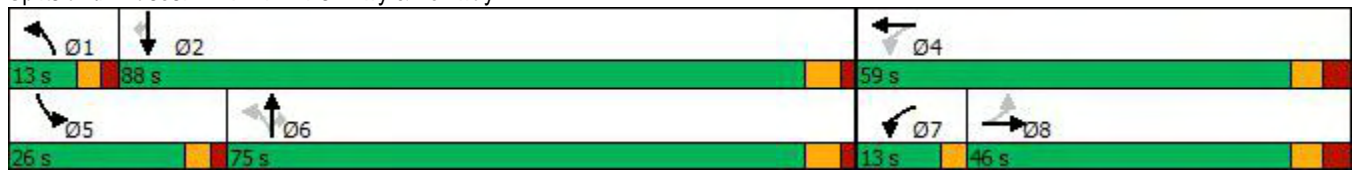
Queues

1: Erin Mills Pkwy & Folkway Dr

2023 Existing (AM)

09-09-2024

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



HCM Signalized Intersection Capacity Analysis

1: Erin Mills Pkwy & Folkway Dr

2023 Existing (AM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	65	50	90	40	210	15	1605	40	100	1895	45
Future Volume (vph)	90	65	50	90	40	210	15	1605	40	100	1895	45
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
Flt Protected	1.00	0.93		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1796		1785	1679		1785	5245	1597	1785	5245	1597
Satd. Flow (perm)	1135	1796		1040	1679		158	5245	1597	1785	5245	1597
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)	90	65	50	90	40	210	15	1605	40	100	1895	45
RTOR Reduction (vph)	0	20	0	0	137	0	0	0	18	0	0	17
Lane Group Flow (vph)	90	95	0	90	113	0	15	1605	22	100	1895	28
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)	15.7	15.7		28.1	28.1		77.1	74.2	74.2	12.6	83.9	83.9
Effective Green, g (s)	15.7	15.7		28.1	28.1		77.1	74.2	74.2	12.6	83.9	83.9
Actuated g/C Ratio	0.12	0.12		0.21	0.21		0.58	0.56	0.56	0.09	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)	133	211		271	353		126	2913	886	168	3293	1002
v/s Ratio Prot		0.05		c0.02	0.07		0.00	0.31		c0.06	c0.36	
v/s Ratio Perm	c0.08			0.05			0.07		0.01			0.02
v/c Ratio	0.68	0.45		0.33	0.32		0.12	0.55	0.03	0.60	0.58	0.03
Uniform Delay, d1	56.5	54.9		43.9	44.7		13.0	19.0	13.4	58.1	14.5	9.4
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	12.8	1.5		0.7	0.5		0.4	0.8	0.1	5.6	0.7	0.1
Delay (s)	69.3	56.4		44.6	45.2		13.4	19.8	13.4	63.6	15.2	9.5
Level of Service	E	E		D	D		B	B	B	E	B	A
Approach Delay (s)		62.1			45.0			19.6			17.5	
Approach LOS		E			D			B			B	
Intersection Summary												
HCM 2000 Control Delay		22.7					HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio		0.58										
Actuated Cycle Length (s)		133.6					Sum of lost time (s)		21.7			
Intersection Capacity Utilization		86.8%					ICU Level of Service		E			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Erin Mills Pkwy & Site Access

2023 Existing (AM)

09-09-2024

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations			  			  		
Traffic Volume (veh/h)	0	5	1655	35	0	2035		
Future Volume (Veh/h)	0	5	1655	35	0	2035		
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	1655	35	0	2035		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			None					None
Median storage veh								
Upstream signal (m)							162	
pX, platoon unblocked	0.78							
vC, conflicting volume	2333	552			1690			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1731	552			1690			
tC, single (s)	6.8	6.9			4.1			
tC, 2 stage (s)								
tF (s)	3.5	3.3			2.2			
p0 queue free %	100	99			100			
cM capacity (veh/h)	63	483			383			
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	5	552	552	552	35	678	678	678
Volume Left	0	0	0	0	0	0	0	0
Volume Right	5	0	0	0	35	0	0	0
cSH	483	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.32	0.32	0.32	0.02	0.40	0.40	0.40
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	12.5	0.0				0.0		
Approach LOS	B							
Intersection Summary								
Average Delay			0.0					
Intersection Capacity Utilization			42.7%		ICU Level of Service		A	
Analysis Period (min)			15					

Queues

2023 Existing (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  			  	
Traffic Volume (vph)	200	625	295	325	400	130	120	1360	210	205	1600	230
Future Volume (vph)	200	625	295	325	400	130	120	1360	210	205	1600	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	100.0		12.0	95.0		140.0	175.0		200.0	160.0		180.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.952				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	4993	0	1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.950			0.135			0.089			0.083		
Satd. Flow (perm)	1785	4993	0	254	3650	1597	167	5245	1597	156	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79				130			210			230
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		163.0			189.8			379.9			552.1	
Travel Time (s)		12.2			14.2			28.5			41.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	200	625	295	325	400	130	120	1360	210	205	1600	230
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	920	0	325	400	130	120	1360	210	205	1600	230
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

Queues

2023 Existing (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	26.0	52.1		27.0	51.1	51.1	8.0	42.9	42.9	17.0	51.9	51.9
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		15.0			15.0	15.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		36.0			36.0	36.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	19.5	31.0		60.8	32.6	32.6	57.3	45.1	45.1	67.3	52.2	52.2
Actuated g/C Ratio	0.14	0.23		0.45	0.24	0.24	0.42	0.33	0.33	0.50	0.39	0.39
v/c Ratio	0.78	0.77		0.86	0.46	0.27	0.72	0.78	0.31	0.79	0.79	0.30
Control Delay	77.2	49.2		55.8	45.9	8.0	50.6	46.0	6.1	54.0	41.7	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	77.2	49.2		55.8	45.9	8.0	50.6	46.0	6.1	54.0	41.7	4.9
LOS	E	D		E	D	A	D	D	A	D	D	A
Approach Delay		54.2			43.9			41.4			38.7	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	52.7	79.0		63.5	48.3	0.0	17.3	124.7	0.0	37.1	140.4	0.0
Queue Length 95th (m)	83.0	96.3		#112.8	67.1	15.9	#52.9	160.5	18.6	#81.7	181.0	17.8
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)	344	1977		421	1383	685	166	1747	671	282	2019	756
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	0.58	0.47		0.77	0.29	0.19	0.72	0.78	0.31	0.73	0.79	0.30

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 135.5

Natural Cycle: 135

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 43.3

Intersection LOS: D

Intersection Capacity Utilization 93.5%

ICU Level of Service F

Analysis Period (min) 15

Queues

2023 Existing (AM)

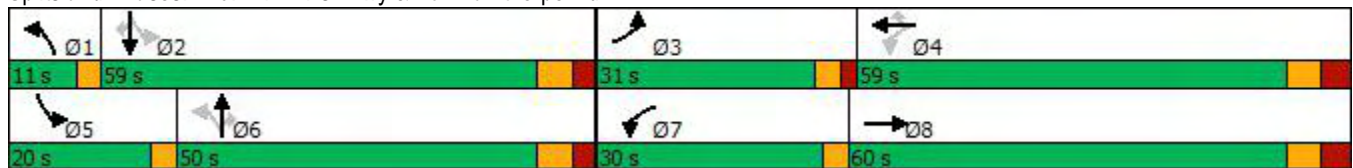
3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

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

Queue shown is maximum after two cycles.

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

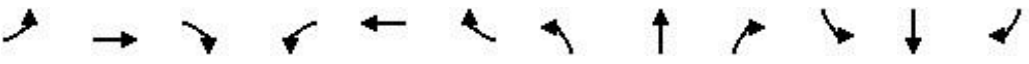


HCM Signalized Intersection Capacity Analysis

3: Erin Mills Pkwy & Burnhamthorpe Rd W

2023 Existing (AM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	625	295	325	400	130	120	1360	210	205	1600	230
Future Volume (vph)	200	625	295	325	400	130	120	1360	210	205	1600	230
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
Frt	1.00	0.95		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)	1785	4992		1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.95	1.00		0.14	1.00	1.00	0.09	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1785	4992		254	3650	1597	167	5245	1597	156	5245	1597
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)	200	625	295	325	400	130	120	1360	210	205	1600	230
RTOR Reduction (vph)	0	61	0	0	0	99	0	0	140	0	0	141
Lane Group Flow (vph)	200	859	0	325	400	31	120	1360	70	205	1600	89
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	19.5	31.0		55.9	32.7	32.7	53.1	45.1	45.1	63.2	52.2	52.2
Effective Green, g (s)	19.5	31.0		55.9	32.7	32.7	53.1	45.1	45.1	63.2	52.2	52.2
Actuated g/C Ratio	0.14	0.23		0.41	0.24	0.24	0.39	0.33	0.33	0.47	0.39	0.39
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)	257	1142		367	881	385	161	1747	531	254	2022	615
v/s Ratio Prot	0.11	0.17		c0.15	0.11		0.04	0.26		c0.09	0.31	
v/s Ratio Perm				c0.21		0.02	0.25		0.04	c0.29		0.06
v/c Ratio	0.78	0.75		0.89	0.45	0.08	0.75	0.78	0.13	0.81	0.79	0.14
Uniform Delay, d1	55.9	48.6		36.2	43.7	39.7	30.4	40.7	31.5	34.9	36.8	27.1
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	13.8	2.8		21.6	0.4	0.1	17.0	3.5	0.5	16.9	3.3	0.5
Delay (s)	69.6	51.5		57.8	44.1	39.8	47.4	44.2	32.0	51.7	40.0	27.6
Level of Service	E	D		E	D	D	D	D	C	D	D	C
Approach Delay (s)		54.7			48.7			42.9			39.8	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			45.0			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			135.4			Sum of lost time (s)				23.0		
Intersection Capacity Utilization			93.5%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Site Access & Folkway Dr

2023 Existing (AM)
09-09-2024

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	175	30	15	310	30	10
Future Volume (Veh/h)	175	30	15	310	30	10
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)	186	32	16	330	32	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	83					
pX, platoon unblocked						
vC, conflicting volume			218		564	202
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			218		564	202
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		93	99
cM capacity (veh/h)			1364		485	844
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	218	346	43			
Volume Left	0	16	32			
Volume Right	32	0	11			
cSH	1700	1364	544			
Volume to Capacity	0.13	0.01	0.08			
Queue Length 95th (m)	0.0	0.3	1.9			
Control Delay (s)	0.0	0.5	12.2			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.5	12.2			
Approach LOS			B			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			38.5%	ICU Level of Service		A
Analysis Period (min)			15			

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

2023 Existing (AM)
09-09-2024

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Sign Control		Stop			Stop			Stop			Stop									
Traffic Volume (vph)	25	55	105	15	120	0	160	10	10	0	10	45								
Future Volume (vph)	25	55	105	15	120	0	160	10	10	0	10	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)	27	59	112	16	128	0	170	11	11	0	11	48								
Direction, Lane #	EB 1	WB 1	NB 1	SB 1																
Volume Total (vph)	198	144	192	59																
Volume Left (vph)	27	16	170	0																
Volume Right (vph)	112	0	11	48																
Hadj (s)	-0.31	0.02	0.14	-0.49																
Departure Headway (s)	4.4	4.8	4.9	4.5																
Degree Utilization, x	0.24	0.19	0.26	0.07																
Capacity (veh/h)	762	701	687	720																
Control Delay (s)	8.8	8.9	9.7	7.8																
Approach Delay (s)	8.8	8.9	9.7	7.8																
Approach LOS	A	A	A	A																
Intersection Summary																				
Delay			9.0																	
Level of Service			A																	
Intersection Capacity Utilization			38.5%	ICU Level of Service						A										
Analysis Period (min)			15																	

HCM Unsignalized Intersection Capacity Analysis

6: Sawmill Valley Dr & Site Access

2023 Existing (AM)

09-09-2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	180	130	0
Future Volume (Veh/h)	0	0	0	180	130	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	217	157	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	374	157	157			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	374	157	157			
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)	631	894	1435			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	217	157			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1435	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		12.8%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

2023 Existing (PM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	95	30	100	60	170	35	1995	65	170	1685	95
Future Volume (vph)	50	95	30	100	60	170	35	1995	65	170	1685	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	45.0		0.0	55.0		0.0	90.0		105.0	185.0		140.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Fr't		0.964			0.889				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1852	0	1785	1708	0	1785	5245	1597	1785	5245	1597
Flt Permitted	0.615			0.496			0.116			0.950		
Satd. Flow (perm)	1156	1852	0	932	1708	0	218	5245	1597	1785	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			94				119			95
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		148.3			89.0			162.6			464.4	
Travel Time (s)		11.1			6.7			12.2			34.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	50	95	30	100	60	170	35	1995	65	170	1685	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	125	0	100	230	0	35	1995	65	170	1685	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm

Queues

2023 Existing (PM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	38.5	38.5		10.0	51.5		9.0	68.8	68.8	21.0	80.8	80.8
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Walk Time (s)	15.0	15.0			12.0			12.0	12.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0			25.0			28.0	28.0	13.0	13.0	13.0
Pedestrian Calls (#/hr)	0	0			0			0	0	0	0	0
Act Effct Green (s)	13.7	13.7		30.7	26.2		79.5	70.3	70.3	17.3	82.5	82.5
Actuated g/C Ratio	0.10	0.10		0.23	0.20		0.60	0.53	0.53	0.13	0.62	0.62
v/c Ratio	0.42	0.63		0.36	0.56		0.16	0.72	0.07	0.73	0.52	0.09
Control Delay	67.6	67.7		45.6	33.3		9.5	26.5	0.2	74.5	15.7	2.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	67.7		45.6	33.3		9.5	26.5	0.2	74.5	15.7	2.5
LOS	E	E		D	C		A	C	A	E	B	A
Approach Delay		67.7			37.0			25.4			20.1	
Approach LOS		E			D			C			C	
Queue Length 50th (m)	12.6	30.0		21.7	32.3		2.5	143.4	0.0	43.7	91.2	0.0
Queue Length 95th (m)	26.1	50.9		37.6	58.7		6.5	182.9	0.0	69.8	114.4	7.3
Internal Link Dist (m)		124.3			65.0			138.6			440.4	
Turn Bay Length (m)	45.0			55.0			90.0		105.0	185.0		140.0
Base Capacity (vph)	336	546		280	722		239	2779	902	283	3263	1029
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	0.15	0.23		0.36	0.32		0.15	0.72	0.07	0.60	0.52	0.09

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 132.6

Natural Cycle: 150

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 25.6

Intersection LOS: C

Intersection Capacity Utilization 90.1%

ICU Level of Service E

Analysis Period (min) 15

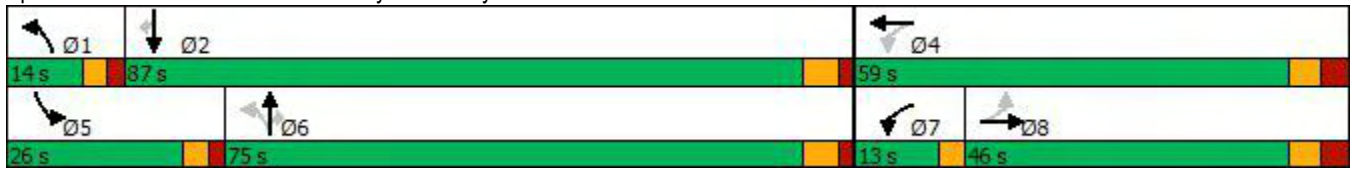
Queues

1: Erin Mills Pkwy & Folkway Dr

2023 Existing (PM)

09-09-2024

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



HCM Signalized Intersection Capacity Analysis

1: Erin Mills Pkwy & Folkway Dr

2023 Existing (PM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	95	30	100	60	170	35	1995	65	170	1685	95
Future Volume (vph)	50	95	30	100	60	170	35	1995	65	170	1685	95
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
Frt	1.00	0.96		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)	1785	1852		1785	1708		1785	5245	1597	1785	5245	1597
Flt Permitted	0.62	1.00		0.50	1.00		0.12	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1156	1852		932	1708		217	5245	1597	1785	5245	1597
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)	50	95	30	100	60	170	35	1995	65	170	1685	95
RTOR Reduction (vph)	0	8	0	0	76	0	0	0	30	0	0	36
Lane Group Flow (vph)	50	117	0	100	154	0	35	1995	35	170	1685	59
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)	13.7	13.7		26.3	26.3		77.6	71.4	71.4	17.3	82.5	82.5
Effective Green, g (s)	13.7	13.7		26.3	26.3		77.6	71.4	71.4	17.3	82.5	82.5
Actuated g/C Ratio	0.10	0.10		0.20	0.20		0.58	0.53	0.53	0.13	0.62	0.62
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)	118	189		244	335		198	2800	852	230	3236	985
v/s Ratio Prot		c0.06		0.03	c0.09		0.01	c0.38		c0.10	0.32	
v/s Ratio Perm	0.04			0.05			0.09		0.02			0.04
v/c Ratio	0.42	0.62		0.41	0.46		0.18	0.71	0.04	0.74	0.52	0.06
Uniform Delay, d1	56.3	57.5		45.8	47.4		12.4	23.4	14.8	56.0	14.4	10.2
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	2.4	5.9		1.1	1.0		0.4	1.6	0.1	11.7	0.6	0.1
Delay (s)	58.7	63.4		46.9	48.4		12.8	25.0	14.9	67.8	15.0	10.3
Level of Service	E	E		D	D		B	C	B	E	B	B
Approach Delay (s)		62.1			48.0			24.5			19.4	
Approach LOS		E			D			C			B	
Intersection Summary												
HCM 2000 Control Delay	25.5			HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio	0.68											
Actuated Cycle Length (s)	133.7			Sum of lost time (s)					21.7			
Intersection Capacity Utilization	90.1%			ICU Level of Service					E			
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Erin Mills Pkwy & Site Access

2023 Existing (PM)

09-09-2024

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations			  			  		
Traffic Volume (veh/h)	0	20	2075	85	0	1815		
Future Volume (Veh/h)	0	20	2075	85	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	2075	85	0	1815		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type	None				None			
Median storage veh)								
Upstream signal (m)	162							
pX, platoon unblocked	0.81							
vC, conflicting volume	2680	692				2160		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	2266	692				2160		
tC, single (s)	6.8	6.9				4.1		
tC, 2 stage (s)								
tF (s)	3.5	3.3				2.2		
p0 queue free %	100	95				100		
cM capacity (veh/h)	29	391				252		
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	20	692	692	692	85	605	605	605
Volume Left	0	0	0	0	0	0	0	0
Volume Right	20	0	0	0	85	0	0	0
cSH	391	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.05	0.41	0.41	0.41	0.05	0.36	0.36	0.36
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	14.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	14.7	0.0				0.0		
Approach LOS	B							
Intersection Summary								
Average Delay	0.1							
Intersection Capacity Utilization	50.1%				ICU Level of Service		A	
Analysis Period (min)	15							

Queues

2023 Existing (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  			  	
Traffic Volume (vph)	280	595	180	280	575	230	165	1650	195	180	1385	250
Future Volume (vph)	280	595	180	280	575	230	165	1650	195	180	1385	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	100.0		12.0	95.0		140.0	175.0		200.0	160.0		180.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.965				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	5061	0	1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.950			0.289			0.109			0.078		
Satd. Flow (perm)	1785	5061	0	543	3650	1597	205	5245	1597	147	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		50				184			195			250
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		163.0			189.8			379.9			552.1	
Travel Time (s)		12.2			14.2			28.5			41.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	280	595	180	280	575	230	165	1650	195	180	1385	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	280	775	0	280	575	230	165	1650	195	180	1385	250
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

Queues

2023 Existing (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	24.0	51.1		26.0	51.1	51.1	8.0	46.9	46.9	15.0	53.9	53.9
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	-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
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		15.0			15.0	15.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		36.0			36.0	36.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	24.0	35.8		53.6	29.2	29.2	64.6	49.9	48.4	68.9	54.0	54.0
Actuated g/C Ratio	0.17	0.26		0.39	0.21	0.21	0.47	0.36	0.35	0.50	0.39	0.39
v/c Ratio	0.90	0.58		0.73	0.75	0.48	0.79	0.87	0.28	0.77	0.68	0.32
Control Delay	88.0	43.9		36.2	57.3	14.3	49.9	48.0	5.6	52.2	37.6	4.6
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	88.0	43.9		36.2	57.3	14.3	49.9	48.0	5.6	52.2	37.6	4.6
LOS	F	D		D	E	B	D	D	A	D	D	A
Approach Delay		55.6			42.7			44.0			34.5	
Approach LOS		E			D			D			C	
Queue Length 50th (m)	75.9	63.5		48.4	78.0	10.3	23.5	156.1	0.0	30.9	114.0	0.0
Queue Length 95th (m)	#137.6	82.1		68.9	97.8	33.8	#65.1	#202.8	17.4	#69.0	143.7	17.7
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)	310	1903		470	1350	706	209	1894	685	251	2046	775
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	0.90	0.41		0.60	0.43	0.33	0.79	0.87	0.28	0.72	0.68	0.32

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 138.3

Natural Cycle: 145

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 42.9

Intersection LOS: D

Intersection Capacity Utilization 92.0%

ICU Level of Service F

Analysis Period (min) 15

Queues

2023 Existing (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

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

Queue shown is maximum after two cycles.

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



HCM Signalized Intersection Capacity Analysis

3: Erin Mills Pkwy & Burnhamthorpe Rd W

2023 Existing (PM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	595	180	280	575	230	165	1650	195	180	1385	250
Future Volume (vph)	280	595	180	280	575	230	165	1650	195	180	1385	250
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	0.91	1.00	1.00	0.91	1.00
Fr't	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)	1785	5062		1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.95	1.00		0.29	1.00	1.00	0.11	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1785	5062		544	3650	1597	205	5245	1597	146	5245	1597
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)	280	595	180	280	575	230	165	1650	195	180	1385	250
RTOR Reduction (vph)	0	37	0	0	0	145	0	0	127	0	0	152
Lane Group Flow (vph)	280	738	0	280	575	85	165	1650	68	180	1385	98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	24.0	35.8		48.8	29.3	29.3	56.5	48.5	48.5	65.1	54.1	54.1
Effective Green, g (s)	24.0	35.8		48.8	29.3	29.3	60.5	50.0	48.5	65.1	54.1	54.1
Actuated g/C Ratio	0.17	0.26		0.35	0.21	0.21	0.44	0.36	0.35	0.47	0.39	0.39
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)	309	1309		366	772	338	203	1894	559	229	2050	624
v/s Ratio Prot	c0.16	0.15		0.11	0.16		c0.06	c0.31		c0.08	0.26	
v/s Ratio Perm				c0.16		0.05	0.30		0.04	0.29		0.06
v/c Ratio	0.91	0.56		0.77	0.74	0.25	0.81	0.87	0.12	0.79	0.68	0.16
Uniform Delay, d1	56.1	44.5		34.5	51.1	45.4	27.0	41.2	30.5	35.5	34.9	27.3
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	28.3	0.6		9.2	3.9	0.4	21.4	5.8	0.4	16.1	1.8	0.5
Delay (s)	84.4	45.1		43.7	55.0	45.8	48.4	47.0	31.0	51.7	36.7	27.9
Level of Service	F	D		D	D	D	D	D	C	D	D	C
Approach Delay (s)		55.5			50.1			45.6			37.0	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			45.5			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			138.4			Sum of lost time (s)				21.5		
Intersection Capacity Utilization			92.0%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Site Access & Folkway Dr

2023 Existing (PM)
09-09-2024

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	220	110	10	185	145	30
Future Volume (Veh/h)	220	110	10	185	145	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)	234	117	11	197	154	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
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			351		512	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			292		461	230
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		71	96
cM capacity (veh/h)			1219		530	774
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	351	208	186			
Volume Left	0	11	154			
Volume Right	117	0	32			
cSH	1700	1219	561			
Volume to Capacity	0.21	0.01	0.33			
Queue Length 95th (m)	0.0	0.2	11.0			
Control Delay (s)	0.0	0.5	14.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.5	14.6			
Approach LOS			B			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			34.8%	ICU Level of Service		A
Analysis Period (min)			15			

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

2023 Existing (PM)
09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	45	90	115	5	80	0	95	5	10	0	5	20
Future Volume (vph)	45	90	115	5	80	0	95	5	10	0	5	20
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)	49	99	126	5	88	0	104	5	11	0	5	22
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	274	93	120	27								
Volume Left (vph)	49	5	104	0								
Volume Right (vph)	126	0	11	22								
Hadj (s)	-0.24	0.01	0.12	-0.49								
Departure Headway (s)	4.1	4.6	4.9	4.4								
Degree Utilization, x	0.31	0.12	0.16	0.03								
Capacity (veh/h)	841	743	689	738								
Control Delay (s)	9.0	8.2	8.8	7.5								
Approach Delay (s)	9.0	8.2	8.8	7.5								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				8.7								
Level of Service				A								
Intersection Capacity Utilization				40.4%	ICU Level of Service		A					
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

6: Sawmill Valley Dr & Site Access

2023 Existing (PM)

09-09-2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	110	125	0
Future Volume (Veh/h)	0	0	0	110	125	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	124	140	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	264	140	140			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264	140	140			
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)	729	913	1456			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	124	140			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1456	1700			
Volume to Capacity	0.00	0.00	0.08			
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		9.9%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

2029 Future Background (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	65	50	90	40	210	15	1645	40	100	1945	45
Future Volume (vph)	90	65	50	90	40	210	15	1645	40	100	1945	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	45.0		0.0	55.0		0.0	90.0		105.0	185.0		140.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Fr't		0.935			0.874				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1796	0	1785	1679	0	1785	5245	1597	1785	5245	1597
Flt Permitted	0.604			0.553			0.078			0.950		
Satd. Flow (perm)	1135	1796	0	1039	1679	0	147	5245	1597	1785	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			174				119			85
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		148.3			82.7			162.6			534.9	
Travel Time (s)		11.1			6.2			12.2			40.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	90	65	50	90	40	210	15	1645	40	100	1945	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	115	0	90	250	0	15	1645	40	100	1945	45
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm

Queues

2029 Future Background (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	38.5	38.5		10.0	51.5		8.0	68.8	68.8	21.0	81.8	81.8
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Walk Time (s)	15.0	15.0			12.0			12.0	12.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0			25.0			28.0	28.0	13.0	13.0	13.0
Pedestrian Calls (#/hr)	0	0			0			0	0	0	0	0
Act Effct Green (s)	15.6	15.6		32.6	28.1		80.2	71.0	71.0	12.6	83.9	83.9
Actuated g/C Ratio	0.12	0.12		0.25	0.22		0.61	0.54	0.54	0.10	0.64	0.64
v/c Ratio	0.66	0.49		0.29	0.50		0.08	0.58	0.04	0.58	0.58	0.04
Control Delay	79.0	50.4		41.6	18.0		9.3	21.9	0.1	71.6	15.7	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.0	50.4		41.6	18.0		9.3	21.9	0.1	71.6	15.7	0.3
LOS	E	D		D	B		A	C	A	E	B	A
Approach Delay		63.0			24.3			21.3			18.1	
Approach LOS		E			C			C			B	
Queue Length 50th (m)	22.1	21.9		17.9	15.8		1.1	99.5	0.0	24.6	86.5	0.0
Queue Length 95th (m)	42.5	43.1		34.2	42.6		4.0	141.5	0.0	46.2	153.1	0.6
Internal Link Dist (m)		124.3			58.7			138.6			510.9	
Turn Bay Length (m)	45.0			55.0			90.0		105.0	185.0		140.0
Base Capacity (vph)	337	550		317	772		191	2852	922	289	3371	1057
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	0.27	0.21		0.28	0.32		0.08	0.58	0.04	0.35	0.58	0.04

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 130.5

Natural Cycle: 140

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 22.0

Intersection LOS: C

Intersection Capacity Utilization 87.8%

ICU Level of Service E

Analysis Period (min) 15

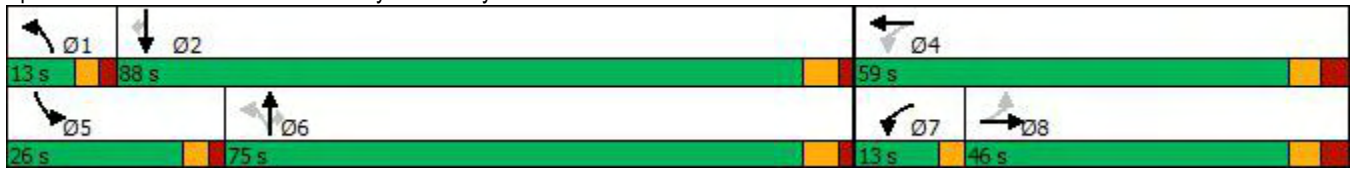
Queues

2029 Future Background (AM)

09-09-2024

1: Erin Mills Pkwy & Folkway Dr

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



HCM Signalized Intersection Capacity Analysis

2029 Future Background (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	65	50	90	40	210	15	1645	40	100	1945	45
Future Volume (vph)	90	65	50	90	40	210	15	1645	40	100	1945	45
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
Frt	1.00	0.93		1.00	0.87		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)	1785	1796		1785	1679		1785	5245	1597	1785	5245	1597
Flt Permitted	0.60	1.00		0.55	1.00		0.08	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1135	1796		1040	1679		147	5245	1597	1785	5245	1597
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)	90	65	50	90	40	210	15	1645	40	100	1945	45
RTOR Reduction (vph)	0	20	0	0	137	0	0	0	18	0	0	17
Lane Group Flow (vph)	90	95	0	90	113	0	15	1645	22	100	1945	28
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)	15.7	15.7		28.1	28.1		77.1	74.2	74.2	12.6	83.9	83.9
Effective Green, g (s)	15.7	15.7		28.1	28.1		77.1	74.2	74.2	12.6	83.9	83.9
Actuated g/C Ratio	0.12	0.12		0.21	0.21		0.58	0.56	0.56	0.09	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)	133	211		271	353		120	2913	886	168	3293	1002
v/s Ratio Prot		0.05		c0.02	0.07		0.00	0.31		c0.06	c0.37	
v/s Ratio Perm	c0.08			0.05			0.07		0.01			0.02
v/c Ratio	0.68	0.45		0.33	0.32		0.12	0.56	0.03	0.60	0.59	0.03
Uniform Delay, d1	56.5	54.9		43.9	44.7		13.2	19.2	13.4	58.1	14.7	9.4
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	12.8	1.5		0.7	0.5		0.5	0.8	0.1	5.6	0.8	0.1
Delay (s)	69.3	56.4		44.6	45.2		13.6	20.0	13.4	63.6	15.5	9.5
Level of Service	E	E		D	D		B	C	B	E	B	A
Approach Delay (s)		62.1			45.0			19.8			17.7	
Approach LOS		E			D			B			B	
Intersection Summary												
HCM 2000 Control Delay	22.8			HCM 2000 Level of Service			C					
HCM 2000 Volume to Capacity ratio	0.60											
Actuated Cycle Length (s)	133.6			Sum of lost time (s)			21.7					
Intersection Capacity Utilization	87.8%			ICU Level of Service			E					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Erin Mills Pkwy & Site Access

2029 Future Background (AM)

09-09-2024

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations			  			  		
Traffic Volume (veh/h)	0	5	1695	35	0	2085		
Future Volume (Veh/h)	0	5	1695	35	0	2085		
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	1695	35	0	2085		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			None				None	
Median storage veh								
Upstream signal (m)							162	
pX, platoon unblocked	0.77							
vC, conflicting volume	2390	565			1730			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1770	565			1730			
tC, single (s)	6.8	6.9			4.1			
tC, 2 stage (s)								
tF (s)	3.5	3.3			2.2			
p0 queue free %	100	99			100			
cM capacity (veh/h)	59	473			370			
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	5	565	565	565	35	695	695	695
Volume Left	0	0	0	0	0	0	0	0
Volume Right	5	0	0	0	35	0	0	0
cSH	473	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.33	0.33	0.33	0.02	0.41	0.41	0.41
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	12.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	12.7	0.0					0.0	
Approach LOS	B							
Intersection Summary								
Average Delay			0.0					
Intersection Capacity Utilization			43.6%		ICU Level of Service		A	
Analysis Period (min)			15					

Queues

2029 Future Background (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	645	295	325	410	130	120	1400	210	205	1650	230
Future Volume (vph)	200	645	295	325	410	130	120	1400	210	205	1650	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	100.0		12.0	95.0		140.0	175.0		200.0	160.0		180.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.953				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	4998	0	1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.950			0.130			0.089			0.083		
Satd. Flow (perm)	1785	4998	0	244	3650	1597	167	5245	1597	156	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		76				130			210			230
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		163.0			189.8			379.9			552.1	
Travel Time (s)		12.2			14.2			28.5			41.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	200	645	295	325	410	130	120	1400	210	205	1650	230
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	940	0	325	410	130	120	1400	210	205	1650	230
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

Queues

2029 Future Background (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	26.0	52.1		27.0	51.1	51.1	8.0	42.9	42.9	17.0	51.9	51.9
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		15.0			15.0	15.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		36.0			36.0	36.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	19.7	31.9		62.0	33.7	33.7	57.3	45.1	45.1	67.4	52.2	52.2
Actuated g/C Ratio	0.14	0.23		0.45	0.25	0.25	0.42	0.33	0.33	0.49	0.38	0.38
v/c Ratio	0.78	0.77		0.87	0.46	0.26	0.73	0.81	0.31	0.80	0.82	0.31
Control Delay	78.0	49.4		56.9	45.7	7.9	51.8	47.7	6.1	55.2	43.5	5.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.0	49.4		56.9	45.7	7.9	51.8	47.7	6.1	55.2	43.5	5.0
LOS	E	D		E	D	A	D	D	A	E	D	A
Approach Delay		54.4			44.2			43.0			40.4	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	53.2	81.9		64.5	49.7	0.0	17.6	131.3	0.0	37.6	148.9	0.0
Queue Length 95th (m)	83.3	99.0		#115.3	68.8	15.9	#53.1	#175.0	18.8	#82.8	190.5	18.0
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	1962		417	1372	681	165	1731	667	280	2002	751
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	0.59	0.48		0.78	0.30	0.19	0.73	0.81	0.31	0.73	0.82	0.31

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 136.7

Natural Cycle: 135

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 44.5

Intersection LOS: D

Intersection Capacity Utilization 94.8%

ICU Level of Service F

Analysis Period (min) 15

Queues

2029 Future Background (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

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

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



HCM Signalized Intersection Capacity Analysis

3: Erin Mills Pkwy & Burnhamthorpe Rd W

2029 Future Background (AM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	645	295	325	410	130	120	1400	210	205	1650	230
Future Volume (vph)	200	645	295	325	410	130	120	1400	210	205	1650	230
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
Flt Protected	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Permitted	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)	1785	4998		1785	3650	1597	1785	5245	1597	1785	5245	1597
Satd. Flow (perm)	1785	4998		245	3650	1597	167	5245	1597	156	5245	1597
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)	200	645	295	325	410	130	120	1400	210	205	1650	230
RTOR Reduction (vph)	0	58	0	0	0	98	0	0	141	0	0	142
Lane Group Flow (vph)	200	882	0	325	410	32	120	1400	69	205	1650	88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	19.7	31.9		57.2	33.7	33.7	53.1	45.1	45.1	63.2	52.2	52.2
Effective Green, g (s)	19.7	31.9		57.2	33.7	33.7	53.1	45.1	45.1	63.2	52.2	52.2
Actuated g/C Ratio	0.14	0.23		0.42	0.25	0.25	0.39	0.33	0.33	0.46	0.38	0.38
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)	257	1167		367	900	393	159	1731	527	252	2004	610
v/s Ratio Prot	0.11	0.18		c0.15	0.11		0.04	0.27		c0.09	c0.31	
v/s Ratio Perm				c0.22		0.02	0.25		0.04	0.29		0.06
v/c Ratio	0.78	0.76		0.89	0.46	0.08	0.75	0.81	0.13	0.81	0.82	0.14
Uniform Delay, d1	56.3	48.7		36.9	43.7	39.6	31.4	41.8	32.0	35.6	38.0	27.6
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	13.8	2.8		21.6	0.4	0.1	18.2	4.2	0.5	17.9	4.0	0.5
Delay (s)	70.1	51.6		58.5	44.0	39.6	49.6	46.0	32.6	53.5	42.0	28.1
Level of Service	E	D		E	D	D	D	D	C	D	D	C
Approach Delay (s)		54.8			48.8			44.6			41.6	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			46.2			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			136.6			Sum of lost time (s)				23.0		
Intersection Capacity Utilization			94.8%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Site Access & Folkway Dr

2029 Future Background (AM)

09-09-2024

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	175	30	15	310	30	10
Future Volume (Veh/h)	175	30	15	310	30	10
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)	186	32	16	330	32	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	83					
pX, platoon unblocked						
vC, conflicting volume			218		564	202
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			218		564	202
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		93	99
cM capacity (veh/h)			1364		485	844
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	218	346	43			
Volume Left	0	16	32			
Volume Right	32	0	11			
cSH	1700	1364	544			
Volume to Capacity	0.13	0.01	0.08			
Queue Length 95th (m)	0.0	0.3	1.9			
Control Delay (s)	0.0	0.5	12.2			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.5	12.2			
Approach LOS			B			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			38.5%	ICU Level of Service		A
Analysis Period (min)			15			

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

2029 Future Background (AM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	25	55	105	15	120	0	160	10	10	0	10	45
Future Volume (vph)	25	55	105	15	120	0	160	10	10	0	10	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)	27	59	112	16	128	0	170	11	11	0	11	48
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	198	144	192	59								
Volume Left (vph)	27	16	170	0								
Volume Right (vph)	112	0	11	48								
Hadj (s)	-0.31	0.02	0.14	-0.49								
Departure Headway (s)	4.4	4.8	4.9	4.5								
Degree Utilization, x	0.24	0.19	0.26	0.07								
Capacity (veh/h)	762	701	687	720								
Control Delay (s)	8.8	8.9	9.7	7.8								
Approach Delay (s)	8.8	8.9	9.7	7.8								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				9.0								
Level of Service				A								
Intersection Capacity Utilization				38.5%	ICU Level of Service		A					
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

6: Sawmill Valley Dr & Site Access

2029 Future Background (AM)

09-09-2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	180	130	0
Future Volume (Veh/h)	0	0	0	180	130	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	217	157	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	374	157	157			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	374	157	157			
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)	631	894	1435			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	217	157			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1435	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		12.8%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

2029 Future Background (PM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	95	30	100	60	170	35	2045	65	170	1725	95
Future Volume (vph)	50	95	30	100	60	170	35	2045	65	170	1725	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	45.0		0.0	55.0		0.0	90.0		105.0	185.0		140.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.964			0.889				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1852	0	1785	1708	0	1785	5245	1597	1785	5245	1597
Flt Permitted	0.615			0.496			0.109			0.950		
Satd. Flow (perm)	1156	1852	0	932	1708	0	205	5245	1597	1785	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			94				119			95
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		148.3			89.0			162.6			464.4	
Travel Time (s)		11.1			6.7			12.2			34.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	50	95	30	100	60	170	35	2045	65	170	1725	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	125	0	100	230	0	35	2045	65	170	1725	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm

Queues

2029 Future Background (PM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	38.5	38.5		10.0	51.5		9.0	68.8	68.8	21.0	80.8	80.8
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Walk Time (s)	15.0	15.0			12.0			12.0	12.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0			25.0			28.0	28.0	13.0	13.0	13.0
Pedestrian Calls (#/hr)	0	0			0			0	0	0	0	0
Act Effct Green (s)	13.7	13.7		30.7	26.2		79.5	70.3	70.3	17.3	82.5	82.5
Actuated g/C Ratio	0.10	0.10		0.23	0.20		0.60	0.53	0.53	0.13	0.62	0.62
v/c Ratio	0.42	0.63		0.36	0.56		0.16	0.74	0.07	0.73	0.53	0.09
Control Delay	67.6	67.7		45.6	33.3		9.6	27.1	0.2	74.5	15.9	2.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	67.7		45.6	33.3		9.6	27.1	0.2	74.5	15.9	2.5
LOS	E	E		D	C		A	C	A	E	B	A
Approach Delay		67.7			37.0			26.0			20.2	
Approach LOS		E			D			C			C	
Queue Length 50th (m)	12.6	30.0		21.7	32.3		2.5	149.3	0.0	43.7	94.5	0.0
Queue Length 95th (m)	26.1	50.9		37.6	58.7		6.5	190.0	0.0	69.8	118.2	7.3
Internal Link Dist (m)		124.3			65.0			138.6			440.4	
Turn Bay Length (m)	45.0			55.0			90.0		105.0	185.0		140.0
Base Capacity (vph)	336	546		280	722		232	2779	902	283	3263	1029
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	0.15	0.23		0.36	0.32		0.15	0.74	0.07	0.60	0.53	0.09

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 132.6

Natural Cycle: 150

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 25.9

Intersection LOS: C

Intersection Capacity Utilization 91.0%

ICU Level of Service F

Analysis Period (min) 15

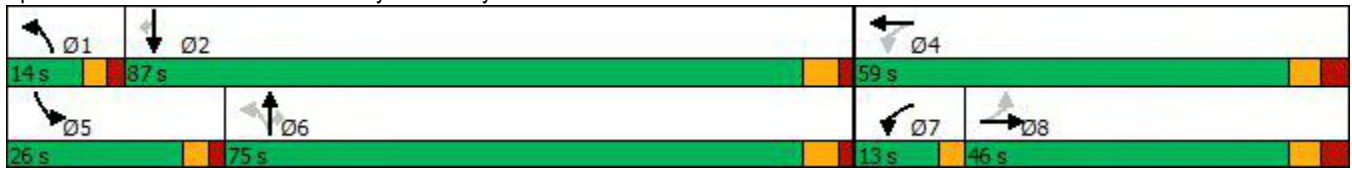
Queues

2029 Future Background (PM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

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



HCM Signalized Intersection Capacity Analysis

2029 Future Background (PM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	95	30	100	60	170	35	2045	65	170	1725	95
Future Volume (vph)	50	95	30	100	60	170	35	2045	65	170	1725	95
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
Fr't	1.00	0.96		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)	1785	1852		1785	1708		1785	5245	1597	1785	5245	1597
Flt Permitted	0.62	1.00		0.50	1.00		0.11	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1156	1852		932	1708		205	5245	1597	1785	5245	1597
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)	50	95	30	100	60	170	35	2045	65	170	1725	95
RTOR Reduction (vph)	0	8	0	0	76	0	0	0	30	0	0	36
Lane Group Flow (vph)	50	117	0	100	154	0	35	2045	35	170	1725	59
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)	13.7	13.7		26.3	26.3		77.6	71.4	71.4	17.3	82.5	82.5
Effective Green, g (s)	13.7	13.7		26.3	26.3		77.6	71.4	71.4	17.3	82.5	82.5
Actuated g/C Ratio	0.10	0.10		0.20	0.20		0.58	0.53	0.53	0.13	0.62	0.62
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)	118	189		244	335		192	2800	852	230	3236	985
v/s Ratio Prot		c0.06		0.03	c0.09		0.01	c0.39		c0.10	0.33	
v/s Ratio Perm	0.04			0.05			0.10		0.02			0.04
v/c Ratio	0.42	0.62		0.41	0.46		0.18	0.73	0.04	0.74	0.53	0.06
Uniform Delay, d1	56.3	57.5		45.8	47.4		12.5	23.8	14.8	56.0	14.6	10.2
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	2.4	5.9		1.1	1.0		0.5	1.7	0.1	11.7	0.6	0.1
Delay (s)	58.7	63.4		46.9	48.4		12.9	25.5	14.9	67.8	15.2	10.3
Level of Service	E	E		D	D		B	C	B	E	B	B
Approach Delay (s)		62.1			48.0			25.0			19.5	
Approach LOS		E			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			25.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			133.7			Sum of lost time (s)			21.7			
Intersection Capacity Utilization			91.0%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Erin Mills Pkwy & Site Access

2029 Future Background (PM)

09-09-2024

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations			  			  		
Traffic Volume (veh/h)	0	20	2125	85	0	1855		
Future Volume (Veh/h)	0	20	2125	85	0	1855		
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	2125	85	0	1855		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			None					None
Median storage veh								
Upstream signal (m)							162	
pX, platoon unblocked	0.81							
vC, conflicting volume	2743	708			2210			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	2325	708			2210			
tC, single (s)	6.8	6.9			4.1			
tC, 2 stage (s)								
tF (s)	3.5	3.3			2.2			
p0 queue free %	100	95			100			
cM capacity (veh/h)	26	382			241			
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	20	708	708	708	85	618	618	618
Volume Left	0	0	0	0	0	0	0	0
Volume Right	20	0	0	0	85	0	0	0
cSH	382	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.05	0.42	0.42	0.42	0.05	0.36	0.36	0.36
Queue Length 95th (m)	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	15.0	0.0			0.0			
Approach LOS	B							
Intersection Summary								
Average Delay			0.1					
Intersection Capacity Utilization			51.1%		ICU Level of Service		A	
Analysis Period (min)			15					

Queues

2029 Future Background (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  			  	
Traffic Volume (vph)	280	615	180	280	590	230	165	1700	195	180	1425	250
Future Volume (vph)	280	615	180	280	590	230	165	1700	195	180	1425	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	100.0		12.0	95.0		140.0	175.0		200.0	160.0		180.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.966				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	5066	0	1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.950			0.278			0.099			0.078		
Satd. Flow (perm)	1785	5066	0	522	3650	1597	186	5245	1597	147	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48				184			195			250
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		163.0			189.8			379.9			552.1	
Travel Time (s)		12.2			14.2			28.5			41.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	280	615	180	280	590	230	165	1700	195	180	1425	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	280	795	0	280	590	230	165	1700	195	180	1425	250
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

Queues

2029 Future Background (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	24.0	51.1		26.0	51.1	51.1	8.0	46.9	46.9	15.0	53.9	53.9
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	-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
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		15.0			15.0	15.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		36.0			36.0	36.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	24.0	36.5		54.3	29.9	29.9	64.6	50.0	48.5	69.0	54.0	54.0
Actuated g/C Ratio	0.17	0.26		0.39	0.22	0.22	0.46	0.36	0.35	0.50	0.39	0.39
v/c Ratio	0.91	0.58		0.73	0.75	0.47	0.82	0.90	0.29	0.78	0.70	0.32
Control Delay	89.2	44.1		36.6	57.4	14.1	56.8	50.5	5.6	52.8	38.6	4.7
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	89.2	44.1		36.6	57.4	14.1	56.8	50.5	5.6	52.8	38.6	4.7
LOS	F	D		D	E	B	E	D	A	D	D	A
Approach Delay		55.8			43.1			46.7			35.4	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	76.3	65.7		48.4	80.4	10.3	24.2	164.1	0.0	31.2	119.4	0.0
Queue Length 95th (m)	#138.8	84.6		68.9	100.5	33.5	#69.5	#215.9	17.3	#69.8	150.5	17.7
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)	308	1896		465	1344	704	201	1885	683	250	2037	773
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	0.91	0.42		0.60	0.44	0.33	0.82	0.90	0.29	0.72	0.70	0.32

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 139

Natural Cycle: 145

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 44.2

Intersection LOS: D

Intersection Capacity Utilization 93.4%

ICU Level of Service F

Analysis Period (min) 15

Queues

2029 Future Background (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

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

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

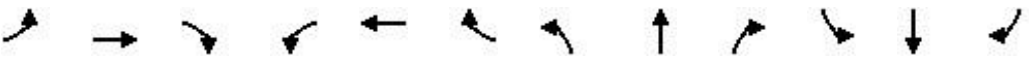


HCM Signalized Intersection Capacity Analysis

3: Erin Mills Pkwy & Burnhamthorpe Rd W

2029 Future Background (PM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	615	180	280	590	230	165	1700	195	180	1425	250
Future Volume (vph)	280	615	180	280	590	230	165	1700	195	180	1425	250
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	0.91	1.00	1.00	0.91	1.00
Fr't	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)	1785	5067		1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.95	1.00		0.28	1.00	1.00	0.10	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1785	5067		523	3650	1597	186	5245	1597	146	5245	1597
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)	280	615	180	280	590	230	165	1700	195	180	1425	250
RTOR Reduction (vph)	0	35	0	0	0	144	0	0	127	0	0	153
Lane Group Flow (vph)	280	760	0	280	590	86	165	1700	68	180	1425	97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	24.0	36.5		49.5	30.0	30.0	56.5	48.5	48.5	65.1	54.1	54.1
Effective Green, g (s)	24.0	36.5		49.5	30.0	30.0	60.5	50.0	48.5	65.1	54.1	54.1
Actuated g/C Ratio	0.17	0.26		0.36	0.22	0.22	0.43	0.36	0.35	0.47	0.39	0.39
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)	307	1329		363	787	344	195	1885	556	228	2039	621
v/s Ratio Prot	c0.16	0.15		0.11	0.16		c0.06	c0.32		c0.08	0.27	
v/s Ratio Perm				c0.17		0.05	0.31		0.04	0.29		0.06
v/c Ratio	0.91	0.57		0.77	0.75	0.25	0.85	0.90	0.12	0.79	0.70	0.16
Uniform Delay, d1	56.5	44.5		34.4	51.0	45.2	28.0	42.2	30.8	36.2	35.7	27.7
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	29.7	0.6		9.7	3.9	0.4	27.1	7.5	0.5	16.4	2.0	0.5
Delay (s)	86.2	45.1		44.2	55.0	45.6	55.1	49.7	31.3	52.6	37.7	28.2
Level of Service	F	D		D	D	D	E	D	C	D	D	C
Approach Delay (s)		55.8			50.3			48.4			37.9	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			46.8									
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			139.1									
Intersection Capacity Utilization			93.4%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Site Access & Folkway Dr

2029 Future Background (PM)

09-09-2024

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	220	110	10	185	145	30
Future Volume (Veh/h)	220	110	10	185	145	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)	234	117	11	197	154	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
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			351		512	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			292		461	230
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		71	96
cM capacity (veh/h)			1219		530	774
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	351	208	186			
Volume Left	0	11	154			
Volume Right	117	0	32			
cSH	1700	1219	561			
Volume to Capacity	0.21	0.01	0.33			
Queue Length 95th (m)	0.0	0.2	11.0			
Control Delay (s)	0.0	0.5	14.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.5	14.6			
Approach LOS			B			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			34.8%	ICU Level of Service		A
Analysis Period (min)			15			

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

2029 Future Background (PM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	90	115	5	80	0	95	5	10	0	5	20
Future Volume (vph)	45	90	115	5	80	0	95	5	10	0	5	20
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)	49	99	126	5	88	0	104	5	11	0	5	22
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	274	93	120	27								
Volume Left (vph)	49	5	104	0								
Volume Right (vph)	126	0	11	22								
Hadj (s)	-0.24	0.01	0.12	-0.49								
Departure Headway (s)	4.1	4.6	4.9	4.4								
Degree Utilization, x	0.31	0.12	0.16	0.03								
Capacity (veh/h)	841	743	689	738								
Control Delay (s)	9.0	8.2	8.8	7.5								
Approach Delay (s)	9.0	8.2	8.8	7.5								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				8.7								
Level of Service				A								
Intersection Capacity Utilization				40.4%	ICU Level of Service	A						
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

6: Sawmill Valley Dr & Site Access

2029 Future Background (PM)

09-09-2024

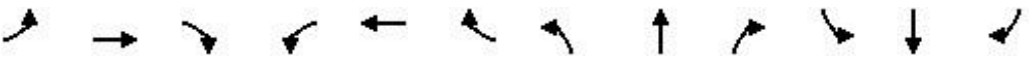
						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	110	125	0
Future Volume (Veh/h)	0	0	0	110	125	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	0	124	140	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	264	140	140			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264	140	140			
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)	729	913	1456			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	124	140			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1456	1700			
Volume to Capacity	0.00	0.00	0.08			
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		9.9%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

2029 Future Total (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	60	50	155	40	225	15	1710	30	115	1945	45
Future Volume (vph)	90	60	50	155	40	225	15	1710	30	115	1945	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	45.0		0.0	55.0		0.0	90.0		105.0	185.0		140.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.932			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1790	0	1785	1677	0	1785	5245	1597	1785	5245	1597
Flt Permitted	0.596			0.568			0.079			0.950		
Satd. Flow (perm)	1120	1790	0	1067	1677	0	148	5245	1597	1785	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			187				119			85
Link Speed (k/h)		48			48			48				48
Link Distance (m)		148.3			82.7			162.6				534.9
Travel Time (s)		11.1			6.2			12.2				40.1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	90	60	50	155	40	225	15	1710	30	115	1945	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	110	0	155	265	0	15	1710	30	115	1945	45
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm

Queues

2029 Future Total (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	38.5	38.5		10.0	51.5		8.0	68.8	68.8	21.0	81.8	81.8
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Walk Time (s)	15.0	15.0			12.0			12.0	12.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0			25.0			28.0	28.0	13.0	13.0	13.0
Pedestrian Calls (#/hr)	0	0			0			0	0	0	0	0
Act Effct Green (s)	15.9	15.9		33.5	29.0		79.6	70.3	70.3	13.8	84.3	84.3
Actuated g/C Ratio	0.12	0.12		0.25	0.22		0.60	0.53	0.53	0.10	0.64	0.64
v/c Ratio	0.67	0.46		0.48	0.52		0.08	0.61	0.03	0.62	0.58	0.04
Control Delay	79.8	48.2		46.0	17.7		9.5	23.6	0.1	72.3	16.0	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.8	48.2		46.0	17.7		9.5	23.6	0.1	72.3	16.0	0.3
LOS	E	D		D	B		A	C	A	E	B	A
Approach Delay		62.4			28.1			23.1			18.7	
Approach LOS		E			C			C			B	
Queue Length 50th (m)	22.4	20.4		32.5	16.4		1.1	108.3	0.0	28.6	87.3	0.0
Queue Length 95th (m)	42.6	40.5		54.9	44.0		4.0	153.2	0.0	51.7	153.9	0.6
Internal Link Dist (m)		124.3			58.7			138.6			510.9	
Turn Bay Length (m)	45.0			55.0			90.0		105.0	185.0		140.0
Base Capacity (vph)	328	543		325	772		189	2796	907	285	3354	1052
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	0.27	0.20		0.48	0.34		0.08	0.61	0.03	0.40	0.58	0.04

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 131.9

Natural Cycle: 140

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 23.3

Intersection LOS: C

Intersection Capacity Utilization 88.7%

ICU Level of Service E

Analysis Period (min) 15

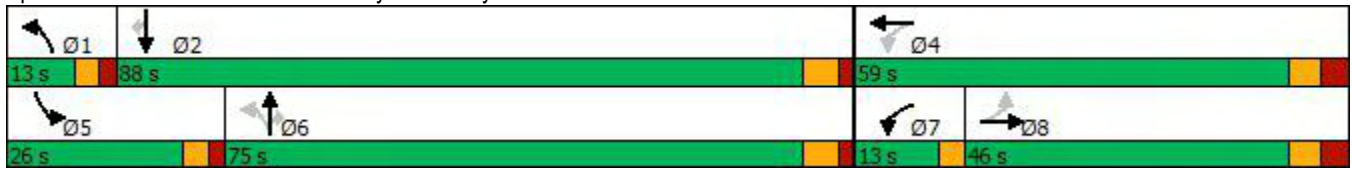
Queues

1: Erin Mills Pkwy & Folkway Dr

2029 Future Total (AM)

09-09-2024

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



HCM Signalized Intersection Capacity Analysis

2029 Future Total (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	60	50	155	40	225	15	1710	30	115	1945	45
Future Volume (vph)	90	60	50	155	40	225	15	1710	30	115	1945	45
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
Flt Protected	1.00	0.93		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1790		1785	1676		1785	5245	1597	1785	5245	1597
Satd. Flow (perm)	1119	1790		1068	1676		148	5245	1597	1785	5245	1597
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)	90	60	50	155	40	225	15	1710	30	115	1945	45
RTOR Reduction (vph)	0	22	0	0	147	0	0	0	14	0	0	17
Lane Group Flow (vph)	90	88	0	155	118	0	15	1710	16	115	1945	28
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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		29.0	29.0		76.3	73.4	73.4	13.8	84.3	84.3
Effective Green, g (s)	15.9	15.9		29.0	29.0		76.3	73.4	73.4	13.8	84.3	84.3
Actuated g/C Ratio	0.12	0.12		0.21	0.21		0.57	0.54	0.54	0.10	0.62	0.62
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)	131	210		283	360		118	2853	868	182	3277	997
v/s Ratio Prot		0.05		c0.04	0.07		0.00	0.33		c0.06	c0.37	
v/s Ratio Perm	c0.08			0.08			0.07		0.01			0.02
v/c Ratio	0.69	0.42		0.55	0.33		0.13	0.60	0.02	0.63	0.59	0.03
Uniform Delay, d1	57.1	55.2		45.6	44.7		13.9	20.8	14.2	58.1	15.1	9.7
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	13.9	1.4		2.2	0.5		0.5	0.9	0.0	7.0	0.8	0.1
Delay (s)	71.1	56.6		47.7	45.3		14.4	21.7	14.2	65.1	15.9	9.7
Level of Service	E	E		D	D		B	C	B	E	B	A
Approach Delay (s)		63.1			46.2			21.6			18.4	
Approach LOS		E			D			C			B	
Intersection Summary												
HCM 2000 Control Delay		24.3					HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		134.9					Sum of lost time (s)		21.7			
Intersection Capacity Utilization		88.7%					ICU Level of Service		E			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Erin Mills Pkwy & Site Access

2029 Future Total (AM)

09-09-2024

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations			  			  		
Traffic Volume (veh/h)	0	70	1685	45	0	2150		
Future Volume (Veh/h)	0	70	1685	45	0	2150		
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	70	1685	45	0	2150		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type								
Median storage veh								
Upstream signal (m)								
162								
pX, platoon unblocked	0.77							
vC, conflicting volume	2402	562				1730		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1779	562				1730		
tC, single (s)	6.8	6.9				4.1		
tC, 2 stage (s)								
tF (s)	3.5	3.3				2.2		
p0 queue free %	100	85				100		
cM capacity (veh/h)	58	476				370		
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	70	562	562	562	45	717	717	717
Volume Left	0	0	0	0	0	0	0	0
Volume Right	70	0	0	0	45	0	0	0
cSH	476	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.15	0.33	0.33	0.33	0.03	0.42	0.42	0.42
Queue Length 95th (m)	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	13.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	13.9	0.0				0.0		
Approach LOS	B							
Intersection Summary								
Average Delay			0.2					
Intersection Capacity Utilization			44.9%	ICU Level of Service			A	
Analysis Period (min)			15					

Queues

2029 Future Total (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  			  	
Traffic Volume (vph)	195	645	295	325	410	130	120	1405	210	215	1690	245
Future Volume (vph)	195	645	295	325	410	130	120	1405	210	215	1690	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	100.0		12.0	95.0		140.0	175.0		200.0	160.0		180.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.953				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	4998	0	1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.950			0.129			0.090			0.084		
Satd. Flow (perm)	1785	4998	0	242	3650	1597	169	5245	1597	158	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		76				130			210			245
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		163.0			189.8			379.9			552.1	
Travel Time (s)		12.2			14.2			28.5			41.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	195	645	295	325	410	130	120	1405	210	215	1690	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	940	0	325	410	130	120	1405	210	215	1690	245
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

Queues

2029 Future Total (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	26.0	52.1		27.0	51.1	51.1	8.0	42.9	42.9	17.0	51.9	51.9
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		15.0			15.0	15.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		36.0			36.0	36.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	19.4	31.9		62.2	33.9	33.9	56.7	44.6	44.6	67.4	52.2	52.2
Actuated g/C Ratio	0.14	0.23		0.46	0.25	0.25	0.41	0.33	0.33	0.49	0.38	0.38
v/c Ratio	0.77	0.77		0.87	0.45	0.26	0.73	0.82	0.32	0.81	0.84	0.32
Control Delay	77.3	49.4		57.0	45.5	7.9	51.6	48.6	6.2	56.8	44.4	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	77.3	49.4		57.0	45.5	7.9	51.6	48.6	6.2	56.8	44.4	4.9
LOS	E	D		E	D	A	D	D	A	E	D	A
Approach Delay		54.2			44.2			43.6			41.2	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	51.9	81.9		64.8	49.5	0.0	17.6	132.0	0.0	40.4	154.2	0.0
Queue Length 95th (m)	81.2	99.0		#115.7	68.8	15.9	#52.7	#176.1	18.8	#89.2	196.9	18.2
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)	341	1962		416	1372	681	165	1710	662	281	2002	760
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	0.57	0.48		0.78	0.30	0.19	0.73	0.82	0.32	0.77	0.84	0.32

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 136.7

Natural Cycle: 135

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 44.9

Intersection LOS: D

Intersection Capacity Utilization 95.5%

ICU Level of Service F

Analysis Period (min) 15

Queues

2029 Future Total (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

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

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



HCM Signalized Intersection Capacity Analysis

3: Erin Mills Pkwy & Burnhamthorpe Rd W

2029 Future Total (AM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	645	295	325	410	130	120	1405	210	215	1690	245
Future Volume (vph)	195	645	295	325	410	130	120	1405	210	215	1690	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	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
Frt	1.00	0.95		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)	1785	4998		1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.95	1.00		0.13	1.00	1.00	0.09	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1785	4998		242	3650	1597	169	5245	1597	158	5245	1597
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)	195	645	295	325	410	130	120	1405	210	215	1690	245
RTOR Reduction (vph)	0	58	0	0	0	98	0	0	141	0	0	151
Lane Group Flow (vph)	195	882	0	325	410	32	120	1405	69	215	1690	94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	19.4	31.9		57.5	34.0	34.0	52.6	44.6	44.6	63.3	52.3	52.3
Effective Green, g (s)	19.4	31.9		57.5	34.0	34.0	52.6	44.6	44.6	63.3	52.3	52.3
Actuated g/C Ratio	0.14	0.23		0.42	0.25	0.25	0.38	0.33	0.33	0.46	0.38	0.38
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	1166		367	907	397	159	1711	521	260	2006	610
v/s Ratio Prot	0.11	0.18		c0.15	0.11		0.04	0.27		c0.09	c0.32	
v/s Ratio Perm				c0.22		0.02	0.25		0.04	0.29		0.06
v/c Ratio	0.77	0.76		0.89	0.45	0.08	0.75	0.82	0.13	0.83	0.84	0.15
Uniform Delay, d1	56.5	48.8		37.1	43.5	39.4	31.9	42.4	32.4	36.6	38.4	27.7
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	13.5	2.8		21.6	0.4	0.1	18.2	4.6	0.5	18.9	4.5	0.5
Delay (s)	70.0	51.6		58.7	43.8	39.5	50.2	47.0	32.9	55.5	43.0	28.2
Level of Service	E	D		E	D	D	D	D	C	E	D	C
Approach Delay (s)		54.8			48.8			45.5			42.5	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			46.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			136.7			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

2029 Future Total (AM)

09-09-2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	180	25	5	325	95	5
Future Volume (Veh/h)	180	25	5	325	95	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)	191	27	5	346	101	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	83					
pX, platoon unblocked						
vC, conflicting volume				218	560	204
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				218	560	204
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	79	99
cM capacity (veh/h)				1364	491	841
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	218	351	106			
Volume Left	0	5	101			
Volume Right	27	0	5			
cSH	1700	1364	501			
Volume to Capacity	0.13	0.00	0.21			
Queue Length 95th (m)	0.0	0.1	6.0			
Control Delay (s)	0.0	0.1	14.1			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.1	14.1			
Approach LOS			B			
Intersection Summary						
Average Delay				2.3		
Intersection Capacity Utilization				33.3%	ICU Level of Service	A
Analysis Period (min)				15		

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

2029 Future Total (AM)
09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	25	55	105	15	120	0	165	10	10	0	10	45
Future Volume (vph)	25	55	105	15	120	0	165	10	10	0	10	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)	27	59	112	16	128	0	176	11	11	0	11	48
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	198	144	198	59								
Volume Left (vph)	27	16	176	0								
Volume Right (vph)	112	0	11	48								
Hadj (s)	-0.31	0.02	0.14	-0.49								
Departure Headway (s)	4.4	4.8	4.9	4.5								
Degree Utilization, x	0.24	0.19	0.27	0.07								
Capacity (veh/h)	758	698	687	718								
Control Delay (s)	8.8	9.0	9.8	7.9								
Approach Delay (s)	8.8	9.0	9.8	7.9								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				9.1								
Level of Service				A								
Intersection Capacity Utilization				38.7%	ICU Level of Service	A						
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

6: Sawmill Valley Dr & Site Access

2029 Future Total (AM)

09-09-2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	15	5	170	125	5
Future Volume (Veh/h)	15	15	5	170	125	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	205	151	6
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	371	154	157			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	371	154	157			
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)	631	897	1435			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	36	211	157			
Volume Left	18	6	0			
Volume Right	18	0	6			
cSH	741	1435	1700			
Volume to Capacity	0.05	0.00	0.09			
Queue Length 95th (m)	1.2	0.1	0.0			
Control Delay (s)	10.1	0.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.1	0.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization		23.0%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

2029 Future Total (PM)

1: Erin Mills Pkwy & Folkway Dr

09-05-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	70	30	115	20	120	35	2070	55	195	1725	95
Future Volume (vph)	50	70	30	115	20	120	35	2070	55	195	1725	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	45.0		0.0	55.0		0.0	90.0		105.0	185.0		140.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Fr't		0.955			0.871				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1835	0	1785	1673	0	1785	5245	1597	1785	5245	1597
Flt Permitted	0.668			0.552			0.118			0.950		
Satd. Flow (perm)	1255	1835	0	1037	1673	0	222	5245	1597	1785	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			120				119			95
Link Speed (k/h)		48			48			48				48
Link Distance (m)		148.3			89.0			162.6				464.4
Travel Time (s)		11.1			6.7			12.2				34.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	50	70	30	115	20	120	35	2070	55	195	1725	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	100	0	115	140	0	35	2070	55	195	1725	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm

Queues

2029 Future Total (PM)

1: Erin Mills Pkwy & Folkway Dr

09-05-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	38.5	38.5		10.0	51.5		9.0	68.8	68.8	21.0	80.8	80.8
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Walk Time (s)	15.0	15.0			12.0			12.0	12.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0			25.0			28.0	28.0	13.0	13.0	13.0
Pedestrian Calls (#/hr)	0	0			0			0	0	0	0	0
Act Effct Green (s)	11.8	11.8		29.0	24.5		78.2	69.0	69.0	18.9	85.3	85.3
Actuated g/C Ratio	0.09	0.09		0.22	0.19		0.60	0.53	0.53	0.14	0.65	0.65
v/c Ratio	0.45	0.56		0.40	0.34		0.15	0.75	0.06	0.76	0.51	0.09
Control Delay	69.8	62.8		47.3	13.3		8.9	27.2	0.1	73.7	13.7	2.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	62.8		47.3	13.3		8.9	27.2	0.1	73.7	13.7	2.4
LOS	E	E		D	B		A	C	A	E	B	A
Approach Delay		65.1			28.6			26.2			18.9	
Approach LOS		E			C			C			B	
Queue Length 50th (m)	12.7	22.3		25.4	4.4		2.4	154.2	0.0	49.1	90.2	0.0
Queue Length 95th (m)	25.9	40.9		42.7	21.8		6.1	185.9	0.0	#82.1	112.4	7.1
Internal Link Dist (m)		124.3			65.0			138.6			440.4	
Turn Bay Length (m)	45.0			55.0			90.0		105.0	185.0		140.0
Base Capacity (vph)	369	549		287	731		241	2758	896	286	3412	1071
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.18		0.40	0.19		0.15	0.75	0.06	0.68	0.51	0.09

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 131.1

Natural Cycle: 150

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 24.4

Intersection LOS: C

Intersection Capacity Utilization 87.8%

ICU Level of Service E

Analysis Period (min) 15

Queues

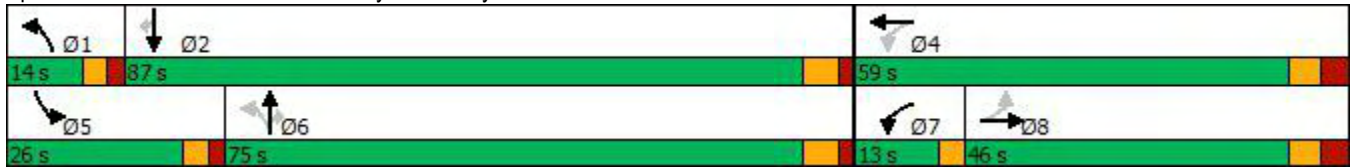
2029 Future Total (PM)

1: Erin Mills Pkwy & Folkway Dr

09-05-2024

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

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



HCM Signalized Intersection Capacity Analysis

2029 Future Total (PM)

1: Erin Mills Pkwy & Folkway Dr

09-05-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	70	30	115	20	120	35	2070	55	195	1725	95
Future Volume (vph)	50	70	30	115	20	120	35	2070	55	195	1725	95
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
Fr't	1.00	0.95		1.00	0.87		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)	1785	1835		1785	1674		1785	5245	1597	1785	5245	1597
Flt Permitted	0.67	1.00		0.55	1.00		0.12	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1254	1835		1037	1674		221	5245	1597	1785	5245	1597
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)	50	70	30	115	20	120	35	2070	55	195	1725	95
RTOR Reduction (vph)	0	12	0	0	98	0	0	0	26	0	0	34
Lane Group Flow (vph)	50	88	0	115	42	0	35	2070	29	195	1725	61
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)	11.8	11.8		24.5	24.5		75.6	71.0	71.0	18.9	85.3	85.3
Effective Green, g (s)	11.8	11.8		24.5	24.5		75.6	71.0	71.0	18.9	85.3	85.3
Actuated g/C Ratio	0.09	0.09		0.18	0.18		0.57	0.53	0.53	0.14	0.64	0.64
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)	111	162		245	308		179	2797	851	253	3361	1023
v/s Ratio Prot		0.05		c0.03	0.03		0.01	c0.39		c0.11	0.33	
v/s Ratio Perm	0.04			c0.05			0.10		0.02			0.04
v/c Ratio	0.45	0.54		0.47	0.14		0.20	0.74	0.03	0.77	0.51	0.06
Uniform Delay, d1	57.6	58.1		47.4	45.4		12.8	23.9	14.8	55.0	12.8	8.9
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	2.9	3.7		1.4	0.2		0.5	1.8	0.1	13.5	0.6	0.1
Delay (s)	60.5	61.8		48.8	45.7		13.3	25.7	14.8	68.5	13.4	9.0
Level of Service	E	E		D	D		B	C	B	E	B	A
Approach Delay (s)		61.3			47.1			25.3			18.5	
Approach LOS		E			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			24.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			133.1			Sum of lost time (s)			21.7			
Intersection Capacity Utilization			87.8%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Erin Mills Pkwy & Site Access

2029 Future Total (PM)

09-05-2024

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations			  			  		
Traffic Volume (veh/h)	0	45	2115	85	0	1870		
Future Volume (Veh/h)	0	45	2115	85	0	1870		
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	45	2115	85	0	1870		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type	None				None			
Median storage veh								
Upstream signal (m)	162							
pX, platoon unblocked	0.82							
vC, conflicting volume	2738	705			2200			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	2350	705			2200			
tC, single (s)	6.8	6.9			4.1			
tC, 2 stage (s)								
tF (s)	3.5	3.3			2.2			
p0 queue free %	100	88			100			
cM capacity (veh/h)	25	383			243			
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	45	705	705	705	85	623	623	623
Volume Left	0	0	0	0	0	0	0	0
Volume Right	45	0	0	0	85	0	0	0
cSH	383	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.12	0.41	0.41	0.41	0.05	0.37	0.37	0.37
Queue Length 95th (m)	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C							
Approach Delay (s)	15.6	0.0					0.0	
Approach LOS	C							
Intersection Summary								
Average Delay			0.2					
Intersection Capacity Utilization			50.9%	ICU Level of Service			A	
Analysis Period (min)			15					

Queues

2029 Future Total (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-05-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  			  	
Traffic Volume (vph)	290	615	180	280	590	230	165	1680	195	180	1440	250
Future Volume (vph)	290	615	180	280	590	230	165	1680	195	180	1440	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	100.0		12.0	95.0		140.0	175.0		200.0	160.0		180.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.966				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	5066	0	1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.950			0.278			0.096			0.078		
Satd. Flow (perm)	1785	5066	0	522	3650	1597	180	5245	1597	147	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48				182			195			250
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		163.0			189.8			379.9			552.1	
Travel Time (s)		12.2			14.2			28.5			41.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	290	615	180	280	590	230	165	1680	195	180	1440	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	290	795	0	280	590	230	165	1680	195	180	1440	250
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

Queues

2029 Future Total (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-05-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	24.0	51.1		26.0	51.1	51.1	8.0	46.9	46.9	15.0	53.9	53.9
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	-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
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		15.0			15.0	15.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		36.0			36.0	36.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	24.0	36.5		54.3	29.9	29.9	64.6	50.0	48.5	69.0	54.0	54.0
Actuated g/C Ratio	0.17	0.26		0.39	0.22	0.22	0.46	0.36	0.35	0.50	0.39	0.39
v/c Ratio	0.94	0.58		0.73	0.75	0.47	0.83	0.89	0.29	0.78	0.71	0.32
Control Delay	95.1	44.1		36.6	57.4	14.5	58.9	49.7	5.6	52.8	38.8	4.7
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	95.1	44.1		36.6	57.4	14.5	58.9	49.7	5.6	52.8	38.8	4.7
LOS	F	D		D	E	B	E	D	A	D	D	A
Approach Delay		57.7			43.1			46.2			35.6	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	79.6	65.7		48.4	80.4	10.8	24.9	161.4	0.0	31.2	121.2	0.0
Queue Length 95th (m)	#145.5	84.6		68.9	100.5	34.0	#70.8	#211.5	17.3	#69.8	152.3	17.7
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)	308	1896		465	1344	703	199	1885	683	250	2037	773
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	0.94	0.42		0.60	0.44	0.33	0.83	0.89	0.29	0.72	0.71	0.32

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 139

Natural Cycle: 145

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 44.4

Intersection LOS: D

Intersection Capacity Utilization 93.6%

ICU Level of Service F

Analysis Period (min) 15

Queues

2029 Future Total (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-05-2024

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

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



HCM Signalized Intersection Capacity Analysis

3: Erin Mills Pkwy & Burnhamthorpe Rd W

2029 Future Total (PM)

09-05-2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	615	180	280	590	230	165	1680	195	180	1440	250
Future Volume (vph)	290	615	180	280	590	230	165	1680	195	180	1440	250
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	0.91	1.00	1.00	0.91	1.00
Fr't	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)	1785	5067		1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.95	1.00		0.28	1.00	1.00	0.10	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1785	5067		523	3650	1597	180	5245	1597	146	5245	1597
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)	290	615	180	280	590	230	165	1680	195	180	1440	250
RTOR Reduction (vph)	0	35	0	0	0	143	0	0	127	0	0	153
Lane Group Flow (vph)	290	760	0	280	590	87	165	1680	68	180	1440	97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	24.0	36.5		49.5	30.0	30.0	56.5	48.5	48.5	65.1	54.1	54.1
Effective Green, g (s)	24.0	36.5		49.5	30.0	30.0	60.5	50.0	48.5	65.1	54.1	54.1
Actuated g/C Ratio	0.17	0.26		0.36	0.22	0.22	0.43	0.36	0.35	0.47	0.39	0.39
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)	307	1329		363	787	344	193	1885	556	228	2039	621
v/s Ratio Prot	c0.16	0.15		0.11	0.16		c0.06	c0.32		c0.08	0.27	
v/s Ratio Perm				c0.17		0.05	0.31		0.04	0.29		0.06
v/c Ratio	0.94	0.57		0.77	0.75	0.25	0.85	0.89	0.12	0.79	0.71	0.16
Uniform Delay, d1	56.9	44.5		34.4	51.0	45.3	28.2	42.0	30.8	36.1	35.8	27.7
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	36.6	0.6		9.7	3.9	0.4	28.9	6.9	0.5	16.4	2.1	0.5
Delay (s)	93.5	45.1		44.2	55.0	45.7	57.1	48.9	31.3	52.5	37.9	28.2
Level of Service	F	D		D	D	D	E	D	C	D	D	C
Approach Delay (s)		58.0			50.3			47.8			38.0	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			47.1			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			139.1			Sum of lost time (s)			21.5			
Intersection Capacity Utilization			93.6%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis4: Site Access & Folkway Dr

2029 Future Total (PM)
09-05-2024

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	230	90	5	190	65	5
Future Volume (Veh/h)	230	90	5	190	65	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)	245	96	5	202	69	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
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			341		505	293
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			306		475	257
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		87	99
cM capacity (veh/h)			1229		534	764
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	341	207	74			
Volume Left	0	5	69			
Volume Right	96	0	5			
cSH	1700	1229	545			
Volume to Capacity	0.20	0.00	0.14			
Queue Length 95th (m)	0.0	0.1	3.6			
Control Delay (s)	0.0	0.2	12.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.2	12.6			
Approach LOS			B			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			28.2%	ICU Level of Service	A	
Analysis Period (min)			15			

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

2029 Future Total (PM)
09-05-2024

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Sign Control		Stop			Stop			Stop			Stop									
Traffic Volume (vph)	45	80	110	5	85	0	90	5	10	0	5	20								
Future Volume (vph)	45	80	110	5	85	0	90	5	10	0	5	20								
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)	49	88	121	5	93	0	99	5	11	0	5	22								
Direction, Lane #	EB 1	WB 1	NB 1	SB 1																
Volume Total (vph)	258	98	115	27																
Volume Left (vph)	49	5	99	0																
Volume Right (vph)	121	0	11	22																
Hadj (s)	-0.24	0.01	0.11	-0.49																
Departure Headway (s)	4.1	4.5	4.8	4.4																
Degree Utilization, x	0.30	0.12	0.15	0.03																
Capacity (veh/h)	843	750	694	746																
Control Delay (s)	8.8	8.2	8.7	7.5																
Approach Delay (s)	8.8	8.2	8.7	7.5																
Approach LOS	A	A	A	A																
Intersection Summary																				
Delay			8.6																	
Level of Service			A																	
Intersection Capacity Utilization			39.3%	ICU Level of Service						A										
Analysis Period (min)			15																	

HCM Unsignalized Intersection Capacity Analysis

6: Sawmill Valley Dr & Site Access

2029 Future Total (PM)

09-05-2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	10	100	110	10
Future Volume (Veh/h)	5	5	10	100	110	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)	6	6	11	112	124	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	264	130	135			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264	130	135			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	99			
cM capacity (veh/h)	724	926	1462			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	12	123	135			
Volume Left	6	11	0			
Volume Right	6	0	11			
cSH	813	1462	1700			
Volume to Capacity	0.01	0.01	0.08			
Queue Length 95th (m)	0.3	0.2	0.0			
Control Delay (s)	9.5	0.7	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.5	0.7	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		22.5%		ICU Level of Service		A
Analysis Period (min)			15			

Queues

2034 Future Background (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	65	50	90	40	210	15	1680	40	100	1985	45
Future Volume (vph)	90	65	50	90	40	210	15	1680	40	100	1985	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	45.0		0.0	55.0		0.0	90.0		105.0	185.0		140.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.935			0.874				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1796	0	1785	1679	0	1785	5245	1597	1785	5245	1597
Flt Permitted	0.604			0.553			0.073			0.950		
Satd. Flow (perm)	1135	1796	0	1039	1679	0	137	5245	1597	1785	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			174				119			85
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		148.3			82.7			162.6			534.9	
Travel Time (s)		11.1			6.2			12.2			40.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	90	65	50	90	40	210	15	1680	40	100	1985	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	115	0	90	250	0	15	1680	40	100	1985	45
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm

09-09-2024

BA Group

Synchro 11 Report

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Queues

2034 Future Background (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	38.5	38.5		10.0	51.5		8.0	68.8	68.8	21.0	81.8	81.8
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Walk Time (s)	15.0	15.0			12.0			12.0	12.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0			25.0			28.0	28.0	13.0	13.0	13.0
Pedestrian Calls (#/hr)	0	0			0			0	0	0	0	0
Act Effct Green (s)	15.6	15.6		32.6	28.1		80.2	71.0	71.0	12.6	83.9	83.9
Actuated g/C Ratio	0.12	0.12		0.25	0.22		0.61	0.54	0.54	0.10	0.64	0.64
v/c Ratio	0.66	0.49		0.29	0.50		0.08	0.59	0.04	0.58	0.59	0.04
Control Delay	79.0	50.4		41.6	18.0		9.3	22.2	0.1	71.6	16.0	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.0	50.4		41.6	18.0		9.3	22.2	0.1	71.6	16.0	0.3
LOS	E	D		D	B		A	C	A	E	B	A
Approach Delay		63.0			24.3			21.6			18.2	
Approach LOS		E			C			C			B	
Queue Length 50th (m)	22.1	21.9		17.9	15.8		1.1	102.7	0.0	24.6	89.4	0.0
Queue Length 95th (m)	42.5	43.1		34.2	42.6		4.0	145.6	0.0	46.2	158.2	0.6
Internal Link Dist (m)		124.3			58.7			138.6			510.9	
Turn Bay Length (m)	45.0			55.0			90.0		105.0	185.0		140.0
Base Capacity (vph)	337	550		317	772		185	2852	922	289	3371	1057
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	0.27	0.21		0.28	0.32		0.08	0.59	0.04	0.35	0.59	0.04

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 130.5

Natural Cycle: 140

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 22.1

Intersection LOS: C

Intersection Capacity Utilization 88.6%

ICU Level of Service E

Analysis Period (min) 15

09-09-2024

BA Group

Synchro 11 Report

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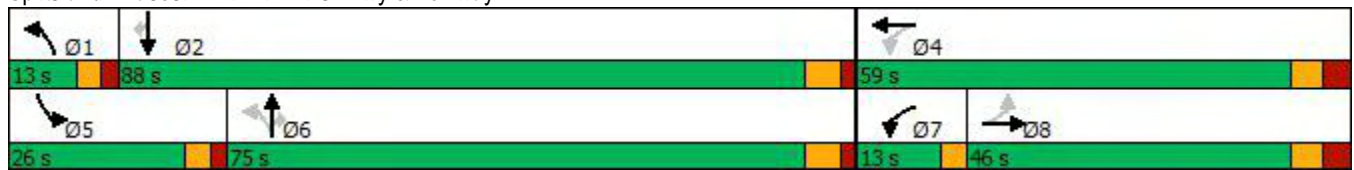
Queues

2034 Future Background (AM)

09-09-2024

1: Erin Mills Pkwy & Folkway Dr

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



HCM Signalized Intersection Capacity Analysis

2034 Future Background (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	65	50	90	40	210	15	1680	40	100	1985	45
Future Volume (vph)	90	65	50	90	40	210	15	1680	40	100	1985	45
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
Flt Protected	1.00	0.93		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1796		1785	1679		1785	5245	1597	1785	5245	1597
Satd. Flow (perm)	1135	1796		1040	1679		138	5245	1597	1785	5245	1597
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)	90	65	50	90	40	210	15	1680	40	100	1985	45
RTOR Reduction (vph)	0	20	0	0	137	0	0	0	18	0	0	17
Lane Group Flow (vph)	90	95	0	90	113	0	15	1680	22	100	1985	28
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)	15.7	15.7		28.1	28.1		77.1	74.2	74.2	12.6	83.9	83.9
Effective Green, g (s)	15.7	15.7		28.1	28.1		77.1	74.2	74.2	12.6	83.9	83.9
Actuated g/C Ratio	0.12	0.12		0.21	0.21		0.58	0.56	0.56	0.09	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)	133	211		271	353		115	2913	886	168	3293	1002
v/s Ratio Prot		0.05		c0.02	0.07		0.00	0.32		c0.06	c0.38	
v/s Ratio Perm	c0.08			0.05			0.07		0.01			0.02
v/c Ratio	0.68	0.45		0.33	0.32		0.13	0.58	0.03	0.60	0.60	0.03
Uniform Delay, d1	56.5	54.9		43.9	44.7		13.3	19.4	13.4	58.1	14.9	9.4
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	12.8	1.5		0.7	0.5		0.5	0.8	0.1	5.6	0.8	0.1
Delay (s)	69.3	56.4		44.6	45.2		13.9	20.3	13.4	63.6	15.7	9.5
Level of Service	E	E		D	D		B	C	B	E	B	A
Approach Delay (s)		62.1			45.0			20.1			17.8	
Approach LOS		E			D			C			B	
Intersection Summary												
HCM 2000 Control Delay		22.9										
HCM 2000 Volume to Capacity ratio		0.60										
Actuated Cycle Length (s)		133.6										
Intersection Capacity Utilization		88.6%										
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Erin Mills Pkwy & Site Access

2034 Future Background (AM)

09-09-2024

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations			  			  		
Traffic Volume (veh/h)	0	5	1730	35	0	2125		
Future Volume (Veh/h)	0	5	1730	35	0	2125		
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	1730	35	0	2125		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			None			None		
Median storage veh								
Upstream signal (m)						162		
pX, platoon unblocked	0.76							
vC, conflicting volume	2438	577			1765			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1804	577			1765			
tC, single (s)	6.8	6.9			4.1			
tC, 2 stage (s)								
tF (s)	3.5	3.3			2.2			
p0 queue free %	100	99			100			
cM capacity (veh/h)	55	465			358			
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	5	577	577	577	35	708	708	708
Volume Left	0	0	0	0	0	0	0	0
Volume Right	5	0	0	0	35	0	0	0
cSH	465	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.34	0.34	0.34	0.02	0.42	0.42	0.42
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	12.8	0.0				0.0		
Approach LOS	B							
Intersection Summary								
Average Delay			0.0					
Intersection Capacity Utilization			44.4%	ICU Level of Service			A	
Analysis Period (min)			15					

Queues

2034 Future Background (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  			  	
Traffic Volume (vph)	200	660	295	325	425	130	120	1435	210	205	1690	230
Future Volume (vph)	200	660	295	325	425	130	120	1435	210	205	1690	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	100.0		12.0	95.0		140.0	175.0		200.0	160.0		180.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.954				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	5003	0	1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.950			0.126			0.089			0.083		
Satd. Flow (perm)	1785	5003	0	237	3650	1597	167	5245	1597	156	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		75				130			210			230
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		163.0			189.8			379.9			552.1	
Travel Time (s)		12.2			14.2			28.5			41.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	200	660	295	325	425	130	120	1435	210	205	1690	230
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	955	0	325	425	130	120	1435	210	205	1690	230
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

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BA Group

Synchro 11 Report

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Queues

2034 Future Background (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	26.0	52.1		27.0	51.1	51.1	8.0	42.9	42.9	17.0	51.9	51.9
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		15.0			15.0	15.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		36.0			36.0	36.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	19.7	32.4		62.5	34.1	34.1	57.3	45.1	45.1	67.4	52.2	52.2
Actuated g/C Ratio	0.14	0.24		0.46	0.25	0.25	0.42	0.33	0.33	0.49	0.38	0.38
v/c Ratio	0.78	0.77		0.87	0.47	0.26	0.73	0.83	0.32	0.80	0.85	0.31
Control Delay	78.2	49.6		58.3	45.9	7.8	52.4	49.1	6.2	55.7	44.9	5.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.2	49.6		58.3	45.9	7.8	52.4	49.1	6.2	55.7	44.9	5.0
LOS	E	D		E	D	A	D	D	A	E	D	A
Approach Delay		54.6			44.9			44.2			41.6	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	53.5	83.9		65.4	51.8	0.0	17.9	137.2	0.0	38.0	155.8	0.0
Queue Length 95th (m)	83.7	101.0		#116.5	71.2	15.9	#53.5	#184.0	18.9	#82.9	#198.7	17.9
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)	340	1956		414	1366	679	164	1724	665	279	1994	749
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	0.59	0.49		0.79	0.31	0.19	0.73	0.83	0.32	0.73	0.85	0.31

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 137.2

Natural Cycle: 135

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 45.4

Intersection LOS: D

Intersection Capacity Utilization 95.8%

ICU Level of Service F

Analysis Period (min) 15

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BA Group

Synchro 11 Report

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Queues

2034 Future Background (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

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

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



HCM Signalized Intersection Capacity Analysis

3: Erin Mills Pkwy & Burnhamthorpe Rd W

2034 Future Background (AM)

09-09-2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	660	295	325	425	130	120	1435	210	205	1690	230
Future Volume (vph)	200	660	295	325	425	130	120	1435	210	205	1690	230
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
Fr't	1.00	0.95		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)	1785	5002		1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.95	1.00		0.13	1.00	1.00	0.09	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1785	5002		238	3650	1597	167	5245	1597	156	5245	1597
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)	200	660	295	325	425	130	120	1435	210	205	1690	230
RTOR Reduction (vph)	0	57	0	0	0	98	0	0	141	0	0	142
Lane Group Flow (vph)	200	898	0	325	425	32	120	1435	69	205	1690	88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	19.7	32.4		57.7	34.2	34.2	53.1	45.1	45.1	63.2	52.2	52.2
Effective Green, g (s)	19.7	32.4		57.7	34.2	34.2	53.1	45.1	45.1	63.2	52.2	52.2
Actuated g/C Ratio	0.14	0.24		0.42	0.25	0.25	0.39	0.33	0.33	0.46	0.38	0.38
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)	256	1182		365	910	398	159	1725	525	251	1997	608
v/s Ratio Prot	0.11	0.18		c0.15	0.12		0.04	0.27		c0.09	c0.32	
v/s Ratio Perm				c0.22		0.02	0.25		0.04	0.29		0.05
v/c Ratio	0.78	0.76		0.89	0.47	0.08	0.75	0.83	0.13	0.82	0.85	0.14
Uniform Delay, d1	56.6	48.7		37.6	43.7	39.4	32.0	42.5	32.3	36.1	38.8	27.8
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	14.3	2.9		22.6	0.4	0.1	18.2	4.9	0.5	18.2	4.6	0.5
Delay (s)	70.9	51.6		60.2	44.1	39.5	50.2	47.3	32.8	54.3	43.4	28.3
Level of Service	E	D		E	D	D	D	D	C	D	D	C
Approach Delay (s)		54.9			49.4			45.8			42.8	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			47.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			137.1			Sum of lost time (s)				23.0		
Intersection Capacity Utilization			95.8%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Site Access & Folkway Dr

2034 Future Background (AM)

09-09-2024

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	175	30	15	310	30	10
Future Volume (Veh/h)	175	30	15	310	30	10
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)	186	32	16	330	32	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	83					
pX, platoon unblocked						
vC, conflicting volume			218		564	202
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			218		564	202
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		93	99
cM capacity (veh/h)			1364		485	844
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	218	346	43			
Volume Left	0	16	32			
Volume Right	32	0	11			
cSH	1700	1364	544			
Volume to Capacity	0.13	0.01	0.08			
Queue Length 95th (m)	0.0	0.3	1.9			
Control Delay (s)	0.0	0.5	12.2			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.5	12.2			
Approach LOS			B			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			38.5%	ICU Level of Service	A	
Analysis Period (min)			15			

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

2034 Future Background (AM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	25	55	105	15	120	0	160	10	10	0	10	45
Future Volume (vph)	25	55	105	15	120	0	160	10	10	0	10	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)	27	59	112	16	128	0	170	11	11	0	11	48
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	198	144	192	59								
Volume Left (vph)	27	16	170	0								
Volume Right (vph)	112	0	11	48								
Hadj (s)	-0.31	0.02	0.14	-0.49								
Departure Headway (s)	4.4	4.8	4.9	4.5								
Degree Utilization, x	0.24	0.19	0.26	0.07								
Capacity (veh/h)	762	701	687	720								
Control Delay (s)	8.8	8.9	9.7	7.8								
Approach Delay (s)	8.8	8.9	9.7	7.8								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			9.0									
Level of Service			A									
Intersection Capacity Utilization			38.5%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: Sawmill Valley Dr & Site Access

2034 Future Background (AM)

09-09-2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	180	130	0
Future Volume (Veh/h)	0	0	0	180	130	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	217	157	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	374	157	157			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	374	157	157			
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)	631	894	1435			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	217	157			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1435	1700			
Volume to Capacity	0.05	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		12.8%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

2034 Future Background (PM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	95	30	100	60	170	35	2090	65	170	1765	95
Future Volume (vph)	50	95	30	100	60	170	35	2090	65	170	1765	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	45.0		0.0	55.0		0.0	90.0		105.0	185.0		140.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.964			0.889				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1852	0	1785	1708	0	1785	5245	1597	1785	5245	1597
Flt Permitted	0.615			0.496			0.103			0.950		
Satd. Flow (perm)	1156	1852	0	932	1708	0	194	5245	1597	1785	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			94				119			95
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		148.3			89.0			162.6			464.4	
Travel Time (s)		11.1			6.7			12.2			34.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	50	95	30	100	60	170	35	2090	65	170	1765	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	125	0	100	230	0	35	2090	65	170	1765	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm

Queues

2034 Future Background (PM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	38.5	38.5		10.0	51.5		9.0	68.8	68.8	21.0	80.8	80.8
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Walk Time (s)	15.0	15.0			12.0			12.0	12.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0			25.0			28.0	28.0	13.0	13.0	13.0
Pedestrian Calls (#/hr)	0	0			0			0	0	0	0	0
Act Effct Green (s)	13.7	13.7		30.7	26.2		79.5	70.3	70.3	17.3	82.5	82.5
Actuated g/C Ratio	0.10	0.10		0.23	0.20		0.60	0.53	0.53	0.13	0.62	0.62
v/c Ratio	0.42	0.63		0.36	0.56		0.17	0.75	0.07	0.73	0.54	0.09
Control Delay	67.6	67.7		45.6	33.3		9.7	27.6	0.2	74.5	16.1	2.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	67.7		45.6	33.3		9.7	27.6	0.2	74.5	16.1	2.5
LOS	E	E		D	C		A	C	A	E	B	A
Approach Delay		67.7			37.0			26.5			20.3	
Approach LOS		E			D			C			C	
Queue Length 50th (m)	12.6	30.0		21.7	32.3		2.5	154.9	0.0	43.7	97.8	0.0
Queue Length 95th (m)	26.1	50.9		37.6	58.7		6.5	196.7	0.0	69.8	122.2	7.3
Internal Link Dist (m)		124.3			65.0			138.6			440.4	
Turn Bay Length (m)	45.0			55.0			90.0		105.0	185.0		140.0
Base Capacity (vph)	336	546		280	722		225	2779	902	283	3263	1029
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	0.15	0.23		0.36	0.32		0.16	0.75	0.07	0.60	0.54	0.09

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 132.6

Natural Cycle: 150

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 26.1

Intersection LOS: C

Intersection Capacity Utilization 91.9%

ICU Level of Service F

Analysis Period (min) 15

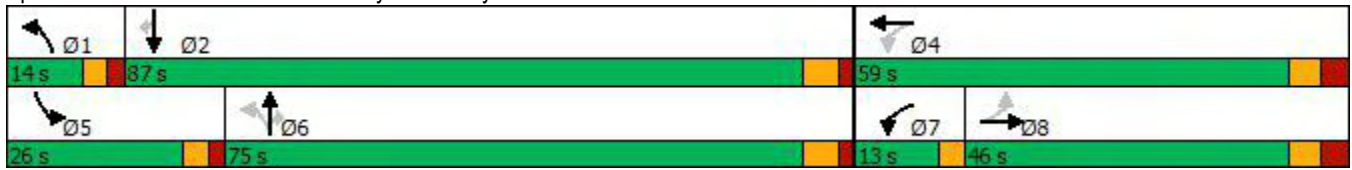
Queues

2034 Future Background (PM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

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



HCM Signalized Intersection Capacity Analysis

2034 Future Background (PM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	95	30	100	60	170	35	2090	65	170	1765	95
Future Volume (vph)	50	95	30	100	60	170	35	2090	65	170	1765	95
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
Frt	1.00	0.96		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)	1785	1852		1785	1708		1785	5245	1597	1785	5245	1597
Flt Permitted	0.62	1.00		0.50	1.00		0.10	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1156	1852		932	1708		193	5245	1597	1785	5245	1597
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)	50	95	30	100	60	170	35	2090	65	170	1765	95
RTOR Reduction (vph)	0	8	0	0	76	0	0	0	30	0	0	36
Lane Group Flow (vph)	50	117	0	100	154	0	35	2090	35	170	1765	59
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)	13.7	13.7		26.3	26.3		77.6	71.4	71.4	17.3	82.5	82.5
Effective Green, g (s)	13.7	13.7		26.3	26.3		77.6	71.4	71.4	17.3	82.5	82.5
Actuated g/C Ratio	0.10	0.10		0.20	0.20		0.58	0.53	0.53	0.13	0.62	0.62
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)	118	189		244	335		185	2800	852	230	3236	985
v/s Ratio Prot		c0.06		0.03	c0.09		0.01	c0.40		c0.10	0.34	
v/s Ratio Perm	0.04			0.05			0.10		0.02			0.04
v/c Ratio	0.42	0.62		0.41	0.46		0.19	0.75	0.04	0.74	0.55	0.06
Uniform Delay, d1	56.3	57.5		45.8	47.4		12.6	24.1	14.8	56.0	14.8	10.2
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	2.4	5.9		1.1	1.0		0.5	1.9	0.1	11.7	0.7	0.1
Delay (s)	58.7	63.4		46.9	48.4		13.1	26.0	14.9	67.8	15.4	10.3
Level of Service	E	E		D	D		B	C	B	E	B	B
Approach Delay (s)		62.1			48.0			25.5			19.6	
Approach LOS		E			D			C			B	
Intersection Summary												
HCM 2000 Control Delay	25.9			HCM 2000 Level of Service			C					
HCM 2000 Volume to Capacity ratio	0.71											
Actuated Cycle Length (s)	133.7			Sum of lost time (s)			21.7					
Intersection Capacity Utilization	91.9%			ICU Level of Service			F					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Erin Mills Pkwy & Site Access

2034 Future Background (PM)

09-09-2024

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations			  			  		
Traffic Volume (veh/h)	0	20	2170	85	0	1895		
Future Volume (Veh/h)	0	20	2170	85	0	1895		
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	2170	85	0	1895		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			None				None	
Median storage veh								
Upstream signal (m)							162	
pX, platoon unblocked	0.80							
vC, conflicting volume	2802	723			2255			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	2379	723			2255			
tC, single (s)	6.8	6.9			4.1			
tC, 2 stage (s)								
tF (s)	3.5	3.3			2.2			
p0 queue free %	100	95			100			
cM capacity (veh/h)	24	373			231			
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	20	723	723	723	85	632	632	632
Volume Left	0	0	0	0	0	0	0	0
Volume Right	20	0	0	0	85	0	0	0
cSH	373	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.05	0.43	0.43	0.43	0.05	0.37	0.37	0.37
Queue Length 95th (m)	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS								
Approach Delay (s)	15.2	0.0					0.0	
Approach LOS								
C								
Intersection Summary								
Average Delay			0.1					
Intersection Capacity Utilization			51.9%		ICU Level of Service		A	
Analysis Period (min)			15					

Queues

2034 Future Background (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  			  	
Traffic Volume (vph)	280	630	180	280	605	230	165	1745	195	180	1465	250
Future Volume (vph)	280	630	180	280	605	230	165	1745	195	180	1465	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	100.0		12.0	95.0		140.0	175.0		200.0	160.0		180.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.967				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	5072	0	1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.950			0.270			0.089			0.078		
Satd. Flow (perm)	1785	5072	0	507	3650	1597	167	5245	1597	147	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47				184			195			250
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		163.0			189.8			379.9			552.1	
Travel Time (s)		12.2			14.2			28.5			41.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	280	630	180	280	605	230	165	1745	195	180	1465	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	280	810	0	280	605	230	165	1745	195	180	1465	250
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

Queues

2034 Future Background (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	24.0	51.1		26.0	51.1	51.1	8.0	46.9	46.9	15.0	53.9	53.9
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	-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
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		15.0			15.0	15.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		36.0			36.0	36.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	24.0	37.1		54.9	30.5	30.5	64.5	49.9	48.4	69.0	54.0	54.0
Actuated g/C Ratio	0.17	0.27		0.39	0.22	0.22	0.46	0.36	0.35	0.49	0.39	0.39
v/c Ratio	0.91	0.59		0.74	0.76	0.47	0.85	0.93	0.29	0.78	0.72	0.32
Control Delay	90.2	44.1		37.0	57.5	13.9	65.4	53.6	5.7	53.4	39.6	4.7
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	90.2	44.1		37.0	57.5	13.9	65.4	53.6	5.7	53.4	39.6	4.7
LOS	F	D		D	E	B	E	D	A	D	D	A
Approach Delay		56.0			43.4			50.1			36.3	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	76.8	67.3		48.4	82.9	10.3	26.6	172.1	0.0	31.5	125.1	0.0
Queue Length 95th (m)	#140.1	86.5		68.9	103.2	33.5	#74.6	#227.8	17.5	#70.7	157.3	17.8
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)	307	1889		461	1338	702	193	1874	681	248	2028	771
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	0.91	0.43		0.61	0.45	0.33	0.85	0.93	0.29	0.73	0.72	0.32

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 139.6

Natural Cycle: 145

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 45.7

Intersection LOS: D

Intersection Capacity Utilization 94.7%

ICU Level of Service F

Analysis Period (min) 15

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

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



HCM Signalized Intersection Capacity Analysis

3: Erin Mills Pkwy & Burnhamthorpe Rd W

2034 Future Background (PM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  			  	
Traffic Volume (vph)	280	630	180	280	605	230	165	1745	195	180	1465	250
Future Volume (vph)	280	630	180	280	605	230	165	1745	195	180	1465	250
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	0.91	1.00	1.00	0.91	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)	1785	5070		1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.95	1.00		0.27	1.00	1.00	0.09	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1785	5070		508	3650	1597	168	5245	1597	146	5245	1597
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)	280	630	180	280	605	230	165	1745	195	180	1465	250
RTOR Reduction (vph)	0	35	0	0	0	144	0	0	127	0	0	153
Lane Group Flow (vph)	280	775	0	280	605	86	165	1745	68	180	1465	97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	24.0	37.1		50.1	30.6	30.6	56.4	48.4	48.4	65.0	54.0	54.0
Effective Green, g (s)	24.0	37.1		50.1	30.6	30.6	60.4	49.9	48.4	65.0	54.0	54.0
Actuated g/C Ratio	0.17	0.27		0.36	0.22	0.22	0.43	0.36	0.35	0.47	0.39	0.39
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)	306	1347		360	800	350	188	1874	553	227	2028	617
v/s Ratio Prot	c0.16	0.15		0.11	0.17		c0.06	c0.33		c0.08	0.28	
v/s Ratio Perm				c0.17		0.05	0.32		0.04	0.29		0.06
v/c Ratio	0.92	0.58		0.78	0.76	0.25	0.88	0.93	0.12	0.79	0.72	0.16
Uniform Delay, d1	56.8	44.4		34.2	51.0	45.0	28.9	43.2	31.1	36.7	36.4	27.9
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	30.3	0.6		10.1	4.1	0.4	33.7	9.9	0.5	17.1	2.3	0.5
Delay (s)	87.1	45.0		44.4	55.1	45.4	62.7	53.1	31.6	53.8	38.7	28.5
Level of Service	F	D		D	E	D	E	D	C	D	D	C
Approach Delay (s)		55.8			50.4			51.8			38.8	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay	48.3			HCM 2000 Level of Service			D					
HCM 2000 Volume to Capacity ratio	0.88											
Actuated Cycle Length (s)	139.6			Sum of lost time (s)			21.5					
Intersection Capacity Utilization	94.7%			ICU Level of Service			F					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Site Access & Folkway Dr

2034 Future Background (PM)

09-09-2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	220	110	10	185	145	30
Future Volume (Veh/h)	220	110	10	185	145	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)	234	117	11	197	154	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
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			351		512	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			292		461	230
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		71	96
cM capacity (veh/h)			1219		530	774
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	351	208	186			
Volume Left	0	11	154			
Volume Right	117	0	32			
cSH	1700	1219	561			
Volume to Capacity	0.21	0.01	0.33			
Queue Length 95th (m)	0.0	0.2	11.0			
Control Delay (s)	0.0	0.5	14.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.5	14.6			
Approach LOS			B			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			34.8%	ICU Level of Service		A
Analysis Period (min)			15			

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

2034 Future Background (PM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	90	115	5	80	0	95	5	10	0	5	20
Future Volume (vph)	45	90	115	5	80	0	95	5	10	0	5	20
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)	49	99	126	5	88	0	104	5	11	0	5	22
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	274	93	120	27								
Volume Left (vph)	49	5	104	0								
Volume Right (vph)	126	0	11	22								
Hadj (s)	-0.24	0.01	0.12	-0.49								
Departure Headway (s)	4.1	4.6	4.9	4.4								
Degree Utilization, x	0.31	0.12	0.16	0.03								
Capacity (veh/h)	841	743	689	738								
Control Delay (s)	9.0	8.2	8.8	7.5								
Approach Delay (s)	9.0	8.2	8.8	7.5								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				8.7								
Level of Service				A								
Intersection Capacity Utilization				40.4%	ICU Level of Service	A						
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

6: Sawmill Valley Dr & Site Access

2034 Future Background (PM)

09-09-2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	110	125	0
Future Volume (Veh/h)	0	0	0	110	125	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	124	140	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	264	140	140			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264	140	140			
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)	729	913	1456			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	124	140			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1456	1700			
Volume to Capacity	0.00	0.00	0.08			
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		9.9%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

2034 Future Total (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	60	50	155	40	225	15	1745	30	115	1985	45
Future Volume (vph)	90	60	50	155	40	225	15	1745	30	115	1985	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	45.0		0.0	55.0		0.0	90.0		105.0	185.0		140.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Fr't		0.932			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1790	0	1785	1677	0	1785	5245	1597	1785	5245	1597
Flt Permitted	0.596			0.568			0.074			0.950		
Satd. Flow (perm)	1120	1790	0	1067	1677	0	139	5245	1597	1785	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			187				119			85
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		148.3			82.7			162.6			534.9	
Travel Time (s)		11.1			6.2			12.2			40.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	90	60	50	155	40	225	15	1745	30	115	1985	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	110	0	155	265	0	15	1745	30	115	1985	45
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm

09-09-2024

BA Group

Synchro 11 Report

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Queues

2034 Future Total (AM)

1: Erin Mills Pkwy & Folkway Dr

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	38.5	38.5		10.0	51.5		8.0	68.8	68.8	21.0	81.8	81.8
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Walk Time (s)	15.0	15.0			12.0			12.0	12.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0			25.0			28.0	28.0	13.0	13.0	13.0
Pedestrian Calls (#/hr)	0	0			0			0	0	0	0	0
Act Effct Green (s)	15.9	15.9		33.5	29.0		79.6	70.3	70.3	13.8	84.3	84.3
Actuated g/C Ratio	0.12	0.12		0.25	0.22		0.60	0.53	0.53	0.10	0.64	0.64
v/c Ratio	0.67	0.46		0.48	0.52		0.08	0.62	0.03	0.62	0.59	0.04
Control Delay	79.8	48.2		46.0	17.7		9.6	23.9	0.1	72.3	16.2	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.8	48.2		46.0	17.7		9.6	23.9	0.1	72.3	16.2	0.3
LOS	E	D		D	B		A	C	A	E	B	A
Approach Delay		62.4			28.1			23.4			18.9	
Approach LOS		E			C			C			B	
Queue Length 50th (m)	22.4	20.4		32.5	16.4		1.1	111.6	0.0	28.6	90.1	0.0
Queue Length 95th (m)	42.6	40.5		54.9	44.0		4.0	157.5	0.0	51.7	158.9	0.6
Internal Link Dist (m)		124.3			58.7			138.6			510.9	
Turn Bay Length (m)	45.0			55.0			90.0		105.0	185.0		140.0
Base Capacity (vph)	328	543		325	772		184	2796	907	285	3354	1052
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	0.27	0.20		0.48	0.34		0.08	0.62	0.03	0.40	0.59	0.04

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 131.9

Natural Cycle: 140

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 23.4

Intersection LOS: C

Intersection Capacity Utilization 89.5%

ICU Level of Service E

Analysis Period (min) 15

09-09-2024

BA Group

Synchro 11 Report

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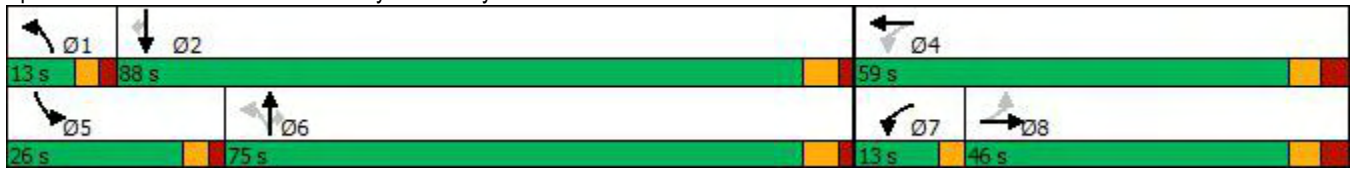
Queues

1: Erin Mills Pkwy & Folkway Dr

2034 Future Total (AM)

09-09-2024

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



HCM Signalized Intersection Capacity Analysis

1: Erin Mills Pkwy & Folkway Dr

2034 Future Total (AM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	60	50	155	40	225	15	1745	30	115	1985	45
Future Volume (vph)	90	60	50	155	40	225	15	1745	30	115	1985	45
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
Flt Protected	1.00	0.93		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1790		1785	1676		1785	5245	1597	1785	5245	1597
Satd. Flow (perm)	1119	1790		1068	1676		139	5245	1597	1785	5245	1597
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)	90	60	50	155	40	225	15	1745	30	115	1985	45
RTOR Reduction (vph)	0	22	0	0	147	0	0	0	14	0	0	17
Lane Group Flow (vph)	90	88	0	155	118	0	15	1745	16	115	1985	28
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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		29.0	29.0		76.3	73.4	73.4	13.8	84.3	84.3
Effective Green, g (s)	15.9	15.9		29.0	29.0		76.3	73.4	73.4	13.8	84.3	84.3
Actuated g/C Ratio	0.12	0.12		0.21	0.21		0.57	0.54	0.54	0.10	0.62	0.62
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)	131	210		283	360		114	2853	868	182	3277	997
v/s Ratio Prot		0.05		c0.04	0.07		0.00	0.33		c0.06	c0.38	
v/s Ratio Perm	c0.08			0.08			0.07		0.01			0.02
v/c Ratio	0.69	0.42		0.55	0.33		0.13	0.61	0.02	0.63	0.61	0.03
Uniform Delay, d1	57.1	55.2		45.6	44.7		14.0	21.0	14.2	58.1	15.3	9.7
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	13.9	1.4		2.2	0.5		0.5	1.0	0.0	7.0	0.8	0.1
Delay (s)	71.1	56.6		47.7	45.3		14.6	22.0	14.2	65.1	16.1	9.7
Level of Service	E	E		D	D		B	C	B	E	B	A
Approach Delay (s)		63.1			46.2			21.8			18.6	
Approach LOS		E			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			24.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			134.9			Sum of lost time (s)			21.7			
Intersection Capacity Utilization			89.5%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Erin Mills Pkwy & Site Access

2034 Future Total (AM)

09-09-2024

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations			  			  		
Traffic Volume (veh/h)	0	70	1720	45	0	2190		
Future Volume (Veh/h)	0	70	1720	45	0	2190		
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	70	1720	45	0	2190		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			None				None	
Median storage veh								
Upstream signal (m)						162		
pX, platoon unblocked	0.76							
vC, conflicting volume	2450	573			1765			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1813	573			1765			
tC, single (s)	6.8	6.9			4.1			
tC, 2 stage (s)								
tF (s)	3.5	3.3			2.2			
p0 queue free %	100	85			100			
cM capacity (veh/h)	54	467			358			
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	70	573	573	573	45	730	730	730
Volume Left	0	0	0	0	0	0	0	0
Volume Right	70	0	0	0	45	0	0	0
cSH	467	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.15	0.34	0.34	0.34	0.03	0.43	0.43	0.43
Queue Length 95th (m)	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	14.1	0.0					0.0	
Approach LOS	B							
Intersection Summary								
Average Delay			0.2					
Intersection Capacity Utilization			45.6%		ICU Level of Service		A	
Analysis Period (min)			15					

Queues

2034 Future Total (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	660	295	325	425	130	120	1440	210	215	1730	245
Future Volume (vph)	195	660	295	325	425	130	120	1440	210	215	1730	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	100.0		12.0	95.0		140.0	175.0		200.0	160.0		180.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.954				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	5003	0	1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.950			0.126			0.090			0.084		
Satd. Flow (perm)	1785	5003	0	237	3650	1597	169	5245	1597	158	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		75				130			210			245
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		163.0			189.8			379.9			552.1	
Travel Time (s)		12.2			14.2			28.5			41.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	195	660	295	325	425	130	120	1440	210	215	1730	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	955	0	325	425	130	120	1440	210	215	1730	245
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

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BA Group

Synchro 11 Report

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Queues

2034 Future Total (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	26.0	52.1		27.0	51.1	51.1	8.0	42.9	42.9	17.0	51.9	51.9
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		15.0			15.0	15.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		36.0			36.0	36.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	19.5	32.4		62.7	34.4	34.4	56.7	44.5	44.5	67.4	52.2	52.2
Actuated g/C Ratio	0.14	0.24		0.46	0.25	0.25	0.41	0.32	0.32	0.49	0.38	0.38
v/c Ratio	0.77	0.77		0.87	0.46	0.26	0.73	0.85	0.32	0.82	0.87	0.32
Control Delay	77.7	49.6		58.1	45.6	7.8	52.1	50.0	6.2	57.6	46.0	5.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	49.6		58.1	45.6	7.8	52.1	50.0	6.2	57.6	46.0	5.0
LOS	E	D		E	D	A	D	D	A	E	D	A
Approach Delay		54.4			44.6			44.9			42.5	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	52.2	83.9		65.4	51.6	0.0	17.9	137.9	0.0	40.8	161.3	0.0
Queue Length 95th (m)	81.6	101.0		#116.5	71.2	15.9	#53.1	#185.2	18.9	#90.0	#214.6	18.3
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)	340	1956		414	1366	679	164	1703	660	280	1994	759
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	0.57	0.49		0.79	0.31	0.19	0.73	0.85	0.32	0.77	0.87	0.32

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 137.2

Natural Cycle: 135

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 45.8

Intersection LOS: D

Intersection Capacity Utilization 96.6%

ICU Level of Service F

Analysis Period (min) 15

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BA Group

Synchro 11 Report

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Queues

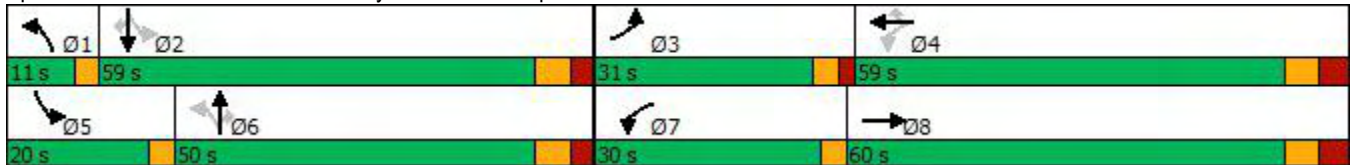
2034 Future Total (AM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-09-2024

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

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



HCM Signalized Intersection Capacity Analysis

3: Erin Mills Pkwy & Burnhamthorpe Rd W

2034 Future Total (AM)

09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	660	295	325	425	130	120	1440	210	215	1730	245
Future Volume (vph)	195	660	295	325	425	130	120	1440	210	215	1730	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	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
Fr't	1.00	0.95		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)	1785	5002		1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.95	1.00		0.13	1.00	1.00	0.09	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1785	5002		236	3650	1597	169	5245	1597	158	5245	1597
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)	195	660	295	325	425	130	120	1440	210	215	1730	245
RTOR Reduction (vph)	0	57	0	0	0	97	0	0	142	0	0	152
Lane Group Flow (vph)	195	898	0	325	425	33	120	1440	68	215	1730	93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	19.5	32.4		57.9	34.4	34.4	52.6	44.6	44.6	63.3	52.3	52.3
Effective Green, g (s)	19.5	32.4		57.9	34.4	34.4	52.6	44.6	44.6	63.3	52.3	52.3
Actuated g/C Ratio	0.14	0.24		0.42	0.25	0.25	0.38	0.33	0.33	0.46	0.38	0.38
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	1181		364	915	400	159	1705	519	259	1999	608
v/s Ratio Prot	0.11	0.18		c0.15	0.12		0.04	0.27		c0.09	c0.33	
v/s Ratio Perm				c0.22		0.02	0.25		0.04	0.29		0.06
v/c Ratio	0.77	0.76		0.89	0.46	0.08	0.75	0.84	0.13	0.83	0.87	0.15
Uniform Delay, d1	56.7	48.8		37.7	43.6	39.3	32.5	43.1	32.6	37.0	39.2	27.9
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	13.5	2.9		23.0	0.4	0.1	18.2	5.3	0.5	19.7	5.3	0.5
Delay (s)	70.2	51.7		60.7	44.0	39.4	50.7	48.4	33.2	56.7	44.5	28.4
Level of Service	E	D		E	D	D	D	D	C	E	D	C
Approach Delay (s)		54.8			49.5			46.8			43.9	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			47.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			137.2			Sum of lost time (s)				23.0		
Intersection Capacity Utilization			96.6%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Site Access & Folkway Dr

2034 Future Total (AM)

09-09-2024

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	180	25	5	325	95	5
Future Volume (Veh/h)	180	25	5	325	95	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)	191	27	5	346	101	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	83					
pX, platoon unblocked						
vC, conflicting volume			218		560	204
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			218		560	204
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		79	99
cM capacity (veh/h)			1364		491	841
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	218	351	106			
Volume Left	0	5	101			
Volume Right	27	0	5			
cSH	1700	1364	501			
Volume to Capacity	0.13	0.00	0.21			
Queue Length 95th (m)	0.0	0.1	6.0			
Control Delay (s)	0.0	0.1	14.1			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.1	14.1			
Approach LOS			B			
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			33.3%	ICU Level of Service		A
Analysis Period (min)			15			

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

2034 Future Total (AM)
09-09-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	25	55	105	15	120	0	165	10	10	0	10	45
Future Volume (vph)	25	55	105	15	120	0	165	10	10	0	10	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)	27	59	112	16	128	0	176	11	11	0	11	48
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	198	144	198	59								
Volume Left (vph)	27	16	176	0								
Volume Right (vph)	112	0	11	48								
Hadj (s)	-0.31	0.02	0.14	-0.49								
Departure Headway (s)	4.4	4.8	4.9	4.5								
Degree Utilization, x	0.24	0.19	0.27	0.07								
Capacity (veh/h)	758	698	687	718								
Control Delay (s)	8.8	9.0	9.8	7.9								
Approach Delay (s)	8.8	9.0	9.8	7.9								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				9.1								
Level of Service				A								
Intersection Capacity Utilization				38.7%	ICU Level of Service	A						
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

6: Sawmill Valley Dr & Site Access

2034 Future Total (AM)

09-09-2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	15	5	170	125	5
Future Volume (Veh/h)	15	15	5	170	125	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	205	151	6
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	371	154	157			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	371	154	157			
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)	631	897	1435			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	36	211	157			
Volume Left	18	6	0			
Volume Right	18	0	6			
cSH	741	1435	1700			
Volume to Capacity	0.05	0.00	0.09			
Queue Length 95th (m)	1.2	0.1	0.0			
Control Delay (s)	10.1	0.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.1	0.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization		23.0%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

2034 Future Total (PM)

1: Erin Mills Pkwy & Folkway Dr

09-05-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	70	30	115	20	120	35	2115	55	195	1765	95
Future Volume (vph)	50	70	30	115	20	120	35	2115	55	195	1765	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	45.0		0.0	55.0		0.0	90.0		105.0	185.0		140.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Fr't		0.955			0.871				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1835	0	1785	1673	0	1785	5245	1597	1785	5245	1597
Flt Permitted	0.668			0.552			0.111			0.950		
Satd. Flow (perm)	1255	1835	0	1037	1673	0	209	5245	1597	1785	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			120				119			95
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		148.3			89.0			162.6			464.4	
Travel Time (s)		11.1			6.7			12.2			34.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	50	70	30	115	20	120	35	2115	55	195	1765	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	100	0	115	140	0	35	2115	55	195	1765	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm

Queues

2034 Future Total (PM)

1: Erin Mills Pkwy & Folkway Dr

09-05-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	38.5	38.5		10.0	51.5		9.0	68.8	68.8	21.0	80.8	80.8
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
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Walk Time (s)	15.0	15.0			12.0			12.0	12.0	7.0	7.0	7.0
Flash Dont Walk (s)	36.0	36.0			25.0			28.0	28.0	13.0	13.0	13.0
Pedestrian Calls (#/hr)	0	0			0			0	0	0	0	0
Act Effct Green (s)	11.8	11.8		29.0	24.5		78.2	69.0	69.0	18.9	85.3	85.3
Actuated g/C Ratio	0.09	0.09		0.22	0.19		0.60	0.53	0.53	0.14	0.65	0.65
v/c Ratio	0.45	0.56		0.40	0.34		0.16	0.77	0.06	0.76	0.52	0.09
Control Delay	69.8	62.8		47.3	13.3		9.1	27.8	0.1	73.7	13.9	2.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	62.8		47.3	13.3		9.1	27.8	0.1	73.7	13.9	2.4
LOS	E	E		D	B		A	C	A	E	B	A
Approach Delay		65.1			28.6			26.8			19.0	
Approach LOS		E			C			C			B	
Queue Length 50th (m)	12.7	22.3		25.4	4.4		2.4	159.8	0.0	49.1	93.4	0.0
Queue Length 95th (m)	25.9	40.9		42.7	21.8		6.1	192.5	0.0	#82.1	116.0	7.1
Internal Link Dist (m)		124.3			65.0			138.6			440.4	
Turn Bay Length (m)	45.0			55.0			90.0		105.0	185.0		140.0
Base Capacity (vph)	369	549		287	731		234	2758	896	286	3412	1071
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.18		0.40	0.19		0.15	0.77	0.06	0.68	0.52	0.09

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 131.1

Natural Cycle: 150

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 24.7

Intersection LOS: C

Intersection Capacity Utilization 88.6%

ICU Level of Service E

Analysis Period (min) 15

Queues

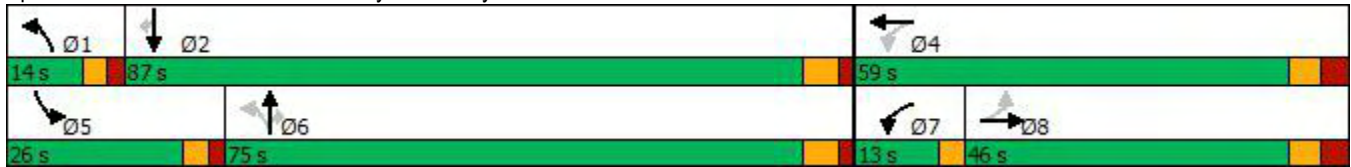
2034 Future Total (PM)

1: Erin Mills Pkwy & Folkway Dr

09-05-2024

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

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



HCM Signalized Intersection Capacity Analysis

2034 Future Total (PM)

1: Erin Mills Pkwy & Folkway Dr

09-05-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	70	30	115	20	120	35	2115	55	195	1765	95
Future Volume (vph)	50	70	30	115	20	120	35	2115	55	195	1765	95
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
Flt Protected	1.00	0.95		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1785	1835		1785	1674		1785	5245	1597	1785	5245	1597
Satd. Flow (perm)	1254	1835		1037	1674		209	5245	1597	1785	5245	1597
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)	50	70	30	115	20	120	35	2115	55	195	1765	95
RTOR Reduction (vph)	0	12	0	0	98	0	0	0	26	0	0	34
Lane Group Flow (vph)	50	88	0	115	42	0	35	2115	29	195	1765	61
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)	11.8	11.8		24.5	24.5		75.6	71.0	71.0	18.9	85.3	85.3
Effective Green, g (s)	11.8	11.8		24.5	24.5		75.6	71.0	71.0	18.9	85.3	85.3
Actuated g/C Ratio	0.09	0.09		0.18	0.18		0.57	0.53	0.53	0.14	0.64	0.64
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)	111	162		245	308		173	2797	851	253	3361	1023
v/s Ratio Prot		0.05		c0.03	0.03		0.01	c0.40		c0.11	0.34	
v/s Ratio Perm	0.04			c0.05			0.11		0.02			0.04
v/c Ratio	0.45	0.54		0.47	0.14		0.20	0.76	0.03	0.77	0.53	0.06
Uniform Delay, d1	57.6	58.1		47.4	45.4		12.8	24.3	14.8	55.0	12.9	8.9
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	2.9	3.7		1.4	0.2		0.6	2.0	0.1	13.5	0.6	0.1
Delay (s)	60.5	61.8		48.8	45.7		13.4	26.2	14.8	68.5	13.5	9.0
Level of Service	E	E		D	D		B	C	B	E	B	A
Approach Delay (s)		61.3			47.1			25.8			18.5	
Approach LOS		E			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			24.9									
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			133.1									
Intersection Capacity Utilization			88.6%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Erin Mills Pkwy & Site Access

2034 Future Total (PM)

09-05-2024

										
Movement	WBL	WBR	NBT	NBR	SBL	SBT				
Lane Configurations			  			  				
Traffic Volume (veh/h)	0	45	2160	85	0	1910				
Future Volume (Veh/h)	0	45	2160	85	0	1910				
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	45	2160	85	0	1910				
Pedestrians										
Lane Width (m)										
Walking Speed (m/s)										
Percent Blockage										
Right turn flare (veh)										
Median type	None				None					
Median storage veh										
Upstream signal (m)					162					
pX, platoon unblocked	0.81									
vC, conflicting volume	2797	720			2245					
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	2404	720			2245					
tC, single (s)	6.8	6.9			4.1					
tC, 2 stage (s)										
tF (s)	3.5	3.3			2.2					
p0 queue free %	100	88			100					
cM capacity (veh/h)	23	375			233					
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3		
Volume Total	45	720	720	720	85	637	637	637		
Volume Left	0	0	0	0	0	0	0	0		
Volume Right	45	0	0	0	85	0	0	0		
cSH	375	1700	1700	1700	1700	1700	1700	1700		
Volume to Capacity	0.12	0.42	0.42	0.42	0.05	0.37	0.37	0.37		
Queue Length 95th (m)	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Control Delay (s)	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Lane LOS	C									
Approach Delay (s)	15.9	0.0					0.0			
Approach LOS	C									
Intersection Summary										
Average Delay			0.2							
Intersection Capacity Utilization			51.7%	ICU Level of Service			A			
Analysis Period (min)			15							

Queues

2034 Future Total (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-05-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  			  	
Traffic Volume (vph)	290	630	180	280	605	230	165	1725	195	180	1480	250
Future Volume (vph)	290	630	180	280	605	230	165	1725	195	180	1480	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	100.0		12.0	95.0		140.0	175.0		200.0	160.0		180.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt		0.967				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	5072	0	1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.950			0.270			0.086			0.078		
Satd. Flow (perm)	1785	5072	0	507	3650	1597	162	5245	1597	147	5245	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47				182			195			250
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		163.0			189.8			379.9			552.1	
Travel Time (s)		12.2			14.2			28.5			41.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	290	630	180	280	605	230	165	1725	195	180	1480	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	290	810	0	280	605	230	165	1725	195	180	1480	250
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

Queues

2034 Future Total (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-05-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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%
Maximum Green (s)	24.0	51.1		26.0	51.1	51.1	8.0	46.9	46.9	15.0	53.9	53.9
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	-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
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		15.0			15.0	15.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		36.0			36.0	36.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	24.0	37.1		54.9	30.5	30.5	64.5	49.9	48.4	69.0	54.0	54.0
Actuated g/C Ratio	0.17	0.27		0.39	0.22	0.22	0.46	0.36	0.35	0.49	0.39	0.39
v/c Ratio	0.94	0.59		0.74	0.76	0.47	0.86	0.92	0.29	0.78	0.73	0.32
Control Delay	96.2	44.1		37.0	57.5	14.3	67.5	52.5	5.7	53.4	39.8	4.7
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	96.2	44.1		37.0	57.5	14.3	67.5	52.5	5.7	53.4	39.8	4.7
LOS	F	D		D	E	B	E	D	A	D	D	A
Approach Delay		57.9			43.4			49.3			36.5	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	80.1	67.3		48.4	82.9	10.8	27.4	169.2	0.0	31.5	126.9	0.0
Queue Length 95th (m)	#146.8	86.5		68.9	103.2	34.0	#75.7	#223.5	17.5	#70.7	159.4	17.8
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)	307	1889		461	1338	700	191	1874	681	248	2028	771
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	0.94	0.43		0.61	0.45	0.33	0.86	0.92	0.29	0.73	0.73	0.32

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 139.6

Natural Cycle: 145

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 45.8

Intersection LOS: D

Intersection Capacity Utilization 94.8%

ICU Level of Service F

Analysis Period (min) 15

Queues

2034 Future Total (PM)

3: Erin Mills Pkwy & Burnhamthorpe Rd W

09-05-2024

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

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



HCM Signalized Intersection Capacity Analysis

3: Erin Mills Pkwy & Burnhamthorpe Rd W

2034 Future Total (PM)

09-05-2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	630	180	280	605	230	165	1725	195	180	1480	250
Future Volume (vph)	290	630	180	280	605	230	165	1725	195	180	1480	250
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	0.91	1.00	1.00	0.91	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)	1785	5070		1785	3650	1597	1785	5245	1597	1785	5245	1597
Flt Permitted	0.95	1.00		0.27	1.00	1.00	0.09	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1785	5070		508	3650	1597	162	5245	1597	146	5245	1597
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)	290	630	180	280	605	230	165	1725	195	180	1480	250
RTOR Reduction (vph)	0	35	0	0	0	142	0	0	127	0	0	153
Lane Group Flow (vph)	290	775	0	280	605	88	165	1725	68	180	1480	97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	24.0	37.1		50.1	30.6	30.6	56.4	48.4	48.4	65.0	54.0	54.0
Effective Green, g (s)	24.0	37.1		50.1	30.6	30.6	60.4	49.9	48.4	65.0	54.0	54.0
Actuated g/C Ratio	0.17	0.27		0.36	0.22	0.22	0.43	0.36	0.35	0.47	0.39	0.39
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)	306	1347		360	800	350	186	1874	553	227	2028	617
v/s Ratio Prot	c0.16	0.15		0.11	0.17		c0.06	c0.33		c0.08	0.28	
v/s Ratio Perm				c0.17		0.06	0.32		0.04	0.29		0.06
v/c Ratio	0.95	0.58		0.78	0.76	0.25	0.89	0.92	0.12	0.79	0.73	0.16
Uniform Delay, d1	57.2	44.4		34.2	51.0	45.0	29.8	43.0	31.1	36.6	36.6	27.9
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	37.3	0.6		10.1	4.1	0.4	36.0	8.9	0.5	17.1	2.4	0.5
Delay (s)	94.5	45.0		44.4	55.1	45.4	65.8	51.9	31.6	53.7	38.9	28.5
Level of Service	F	D		D	E	D	E	D	C	D	D	C
Approach Delay (s)		58.1			50.4			51.1			38.9	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			48.5			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			139.6			Sum of lost time (s)				21.5		
Intersection Capacity Utilization			94.8%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Site Access & Folkway Dr

2034 Future Total (PM)

09-05-2024

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	230	90	5	190	65	5
Future Volume (Veh/h)	230	90	5	190	65	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)	245	96	5	202	69	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
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			341		505	293
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			306		475	257
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		87	99
cM capacity (veh/h)			1229		534	764
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	341	207	74			
Volume Left	0	5	69			
Volume Right	96	0	5			
cSH	1700	1229	545			
Volume to Capacity	0.20	0.00	0.14			
Queue Length 95th (m)	0.0	0.1	3.6			
Control Delay (s)	0.0	0.2	12.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.2	12.6			
Approach LOS			B			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			28.2%	ICU Level of Service		A
Analysis Period (min)			15			

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

2034 Future Total (PM)
09-05-2024

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Sign Control		Stop			Stop			Stop			Stop									
Traffic Volume (vph)	45	80	110	5	85	0	90	5	10	0	5	20								
Future Volume (vph)	45	80	110	5	85	0	90	5	10	0	5	20								
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)	49	88	121	5	93	0	99	5	11	0	5	22								
Direction, Lane #	EB 1	WB 1	NB 1	SB 1																
Volume Total (vph)	258	98	115	27																
Volume Left (vph)	49	5	99	0																
Volume Right (vph)	121	0	11	22																
Hadj (s)	-0.24	0.01	0.11	-0.49																
Departure Headway (s)	4.1	4.5	4.8	4.4																
Degree Utilization, x	0.30	0.12	0.15	0.03																
Capacity (veh/h)	843	750	694	746																
Control Delay (s)	8.8	8.2	8.7	7.5																
Approach Delay (s)	8.8	8.2	8.7	7.5																
Approach LOS	A	A	A	A																
Intersection Summary																				
Delay			8.6																	
Level of Service			A																	
Intersection Capacity Utilization			39.3%	ICU Level of Service						A										
Analysis Period (min)			15																	

HCM Unsignalized Intersection Capacity Analysis

6: Sawmill Valley Dr & Site Access

2034 Future Total (PM)

09-05-2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	10	100	110	10
Future Volume (Veh/h)	5	5	10	100	110	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)	6	6	11	112	124	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	264	130	135			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264	130	135			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	99			
cM capacity (veh/h)	724	926	1462			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	12	123	135			
Volume Left	6	11	0			
Volume Right	6	0	11			
cSH	813	1462	1700			
Volume to Capacity	0.01	0.01	0.08			
Queue Length 95th (m)	0.3	0.2	0.0			
Control Delay (s)	9.5	0.7	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.5	0.7	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		22.5%		ICU Level of Service		A
Analysis Period (min)		15				

APPENDIX H:

Functional Intersection Design

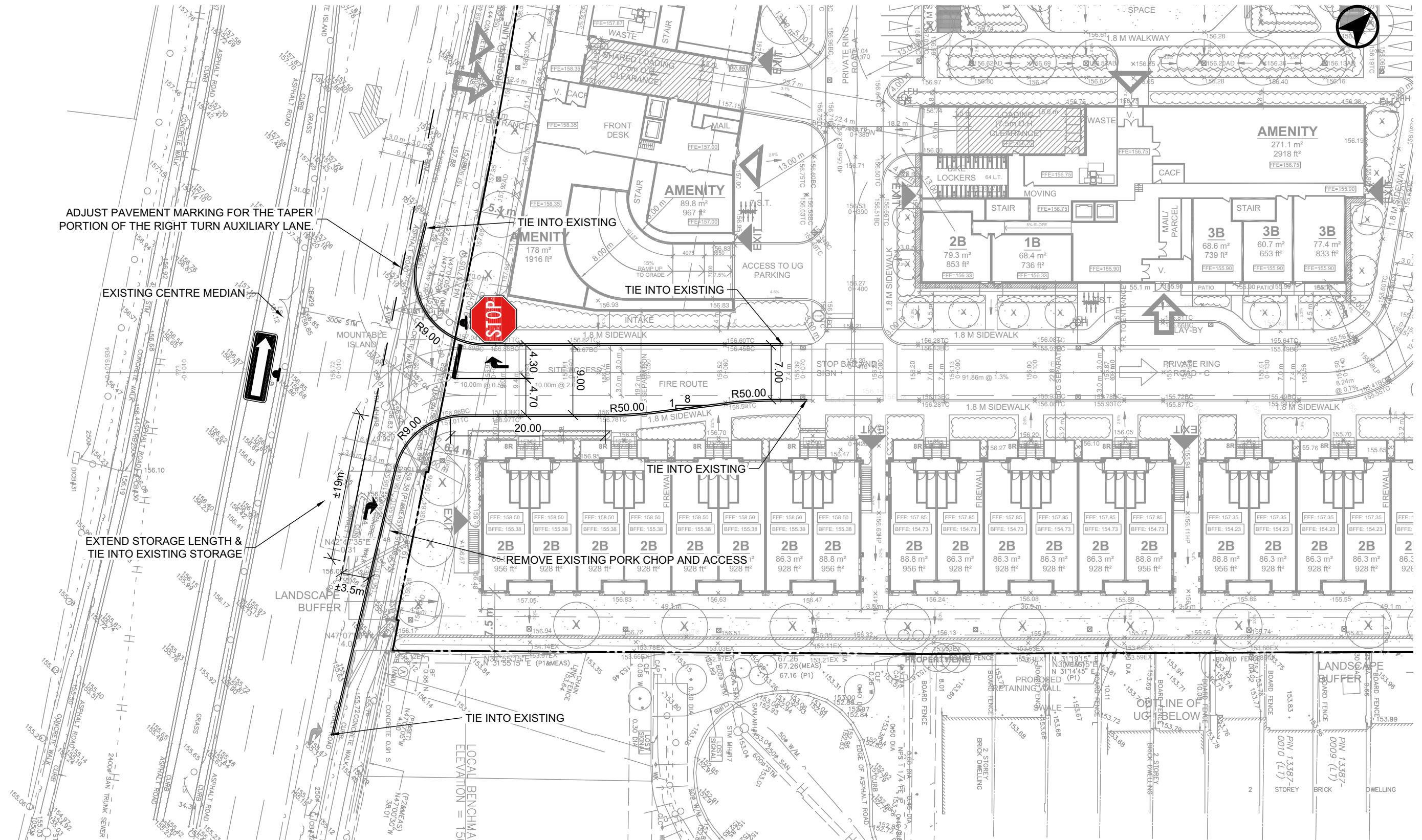




4099 ERIN MILLS PARKWAY
FUNCTIONAL ROAD PLAN
PROPOSED ACCESS OFF OF ERIN MILLS PARKWAY
PEEL REGION STANDARD 5-1-5 WITH MODIFICATIONS

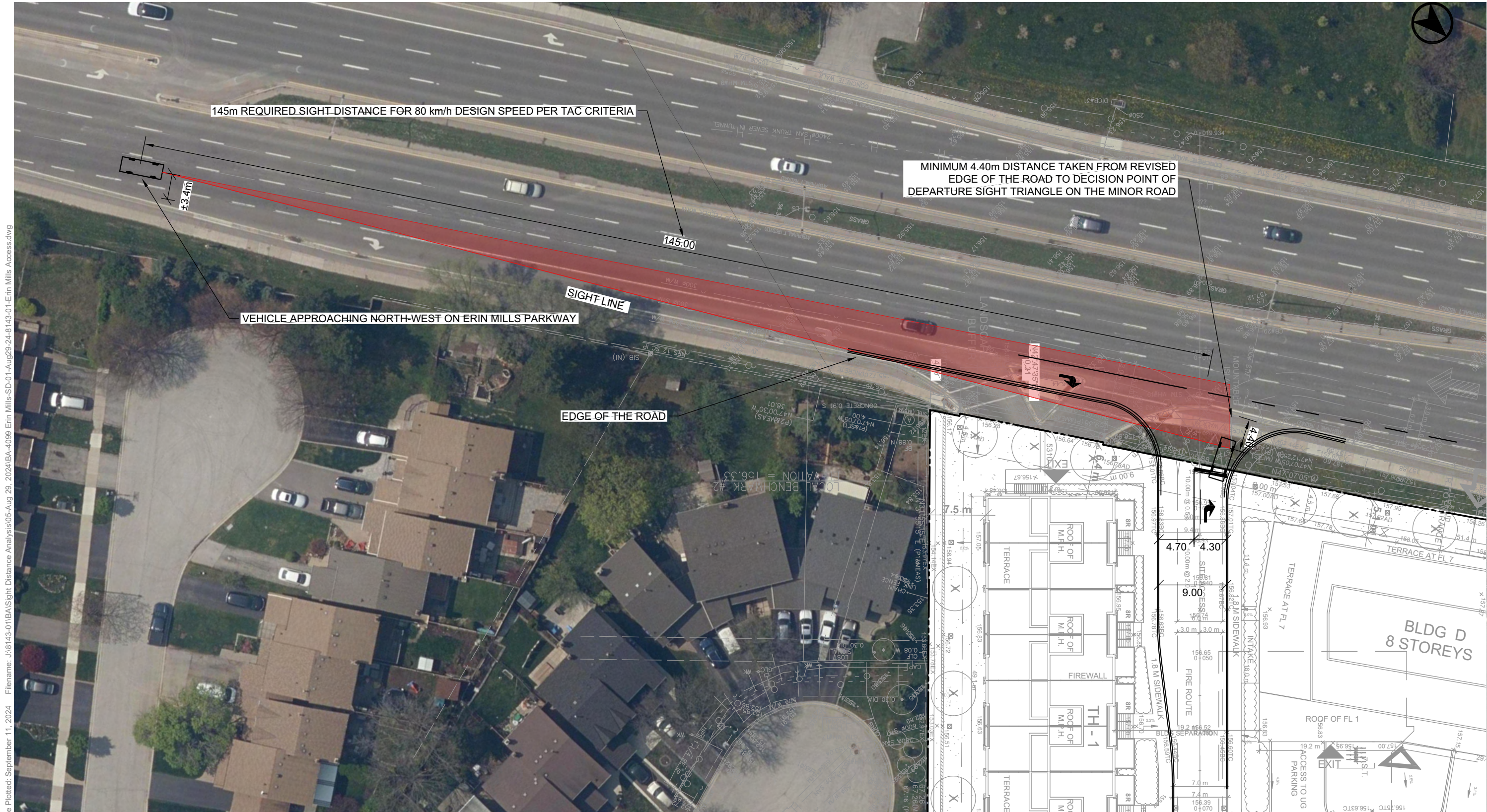
Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: JULY 14, 2022
Revised: SEPTEMBER 11, 2024

Scale 0 5 10 15 20m
1:500
Drawing No. FD-02



APPENDIX I: Sight Distance Assessment





Date Plotted: September 11, 2024 Filename: J:\8143-01\BA\Sight Distance Analysis\05-Aug 29, 2024\BA-4099 Erin Mills-SD-01-Aug29-24-8143-01-Erin Mills Access.dwg



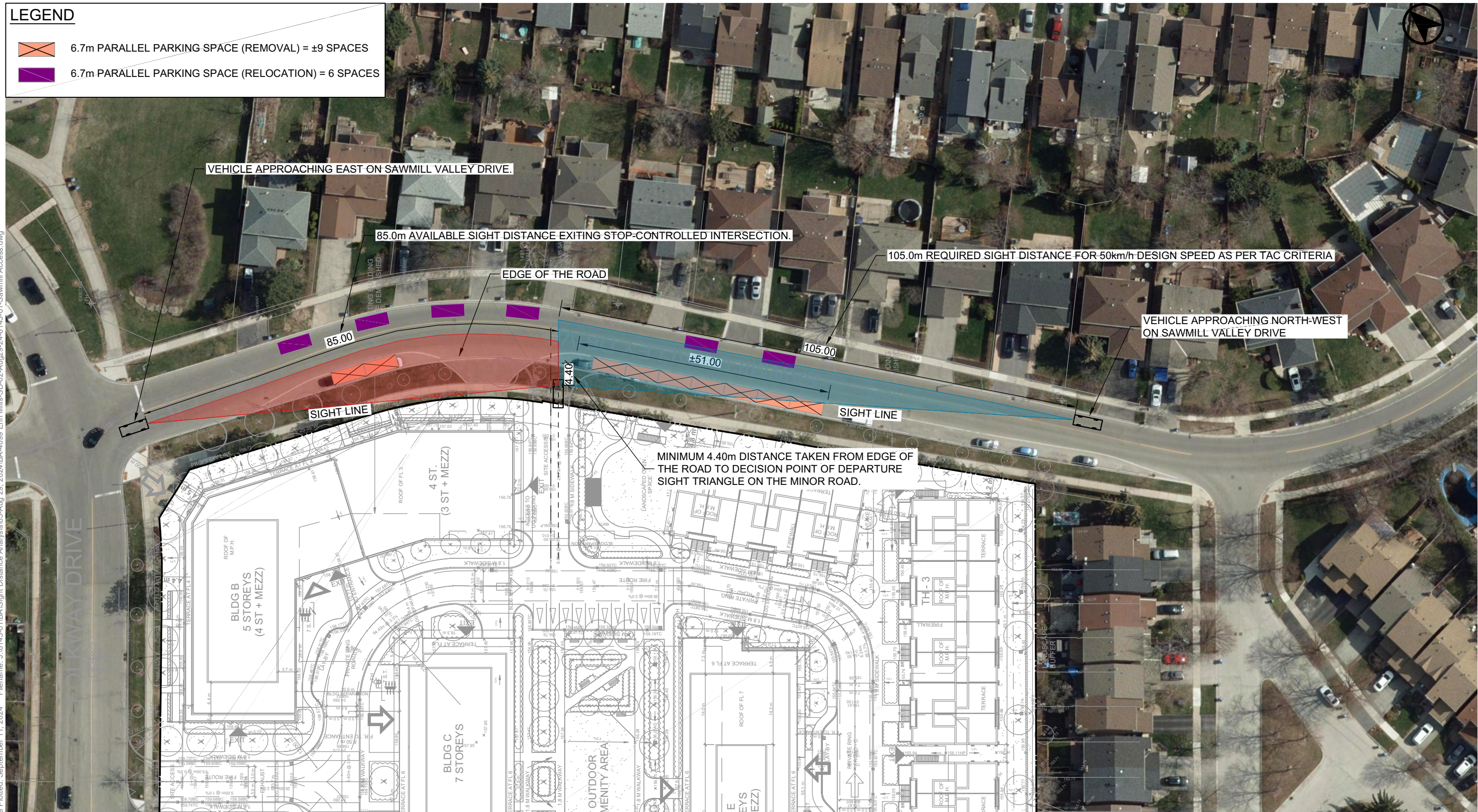
4099 ERIN MILLS PARKWAY
RIGHT-IN / RIGHT OUT ACCESS OFF OF ERIN MILLS PARKWAY
TAC MINIMUM SIGHT LINE REVIEW
CASE B2 - RIGHT TURN FROM THE MINOR ROAD

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: AUGUST 02, 2022
Revised: SEPTEMBER 11, 2024

Scale 0 5 10 15 20m
1:500

Drawing No. **SD-01**

LEGEND	
	6.7m PARALLEL PARKING SPACE (REMOVAL) = ±9 SPACES
	6.7m PARALLEL PARKING SPACE (RELOCATION) = 6 SPACES



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: SEPTEMBER 11, 2024

Scale	
Drawing No.	SD-02



Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: AUGUST 02, 2022
Revised: SEPTEMBER 11, 2024

Scale 0 15 30m
1:750

Drawing No. SD-03

APPENDIX J:

Terms of Reference

Revised Memorandum

TO:

Rosalie Shan

Technical Analyst
Traffic Development and Permits
Region of Peel
e-mail: Rosalie.shan@peelregion.ca

Bo Yang Yu

Technologist
City of Mississauga
e-mail: boyang.yu@mississauga.ca

John Salvino

Development Engineering
City of Mississauga
e-mail: john.salvino@mississauga.ca

FROM:

Deanna Green, P.Eng.

PROJECT:

4099 Erin Mills Parkway
Proposed Multi-Use
Redevelopment

DATE:

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 m² GFA of retail gross floor area (GFA). The development proposal also includes eliminating the existing approximately 6,692 m² 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 m² 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 m² 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 proposed 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 proposed retail component of the development only has a Gross Floor Area (GFA) of 890 m², 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).



APPENDIX K: BA Group Right-of-Way Memorandum

July 9, 2024

To: Hashim Hamdani, Supervisor,
Traffic Development & Permits
Region of Peel
hashim.hamdani@peelregion.ca

Copy: David Ferro, Lead Planner,
Development & Design
City of Mississauga
david.ferro@mississauga.ca

Ida Assogna, M.P.I, MCIP, RPP
Queenscorp
Vice President, Real Estate Development & Planning
iassogna@queenscorp.com

**RE: UPDATED Right-of-Way Justification for Proposed Development at 4099 Erin Mills Parkway
File No OZ/OPA 22-25**

Dear Hashim,

BA Group was 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”).

BA Group completed a report entitled “Urban Transportation Considerations” in September 2022 as part of the applicant’s **Official Plan Amendment (OPA)** and **Zoning By-law Amendment ZBA)** application. Since that time, to address the City’s comments and revisions to the site plan, BA Group’s report and traffic analysis have been updated and will be submitted as part of the applicant’s upcoming resubmission for the site.

Prior to resubmission, the Region has requested that the right-of-way requirements along Erin Mills Parkway adjacent to the site, be confirmed by the Region. This letter is intended to justify that the existing right-of-way along Erin Mills Parkway adjacent to the site is appropriate.

We trust that the attached information is satisfactory. Please contact me directly if you have any questions.

Sincerely,



Deanna Green, MSc.P.Eng.
Senior Associate

1.0 INTRODUCTION

BA Group was 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”). 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 597 residential condominium units and 776 m² GFA of retail, and 112 residential townhouse units. The total number of residential units proposed for the site (condominium units plus stacked townhouses) is 709 units. Parking for the development will be located with levels of below-grade parking, with some at-grade parking for the retail component and visitors to the site. The Site Plan is attached in Appendix D.

On October 26, 2022 an Official Plan Amendment and Rezoning Application was filed with the City of Mississauga. As a result, comments were received from the Region including request for a road widening dedication on Erin Mill Parkway. Their comment dated January 25th, 2023 states:

"The Region requests the gratuitous dedication of lands to meet the Regional Official Plan requirement for Regional Road 1 (Erin Mills Parkway) which has a right of way of 50.5 metres, 25.25 metres from the centreline of the road allowance, within 245 metres of intersections to protect for the provision of but not limited to: utilities, sidewalks, multiuse pathways and transit bay/shelters; The Region will require the gratuitous dedication of a 15 x 15 metre daylight triangle at the intersection of Erin Mills Parkway and Folkway Drive; The Region will require the gratuitous dedication of a 0.3 metre reserve along the frontage Regional Road 1 (Erin Mills Parkway) behind the property line and daylight triangle, except at any approved access point; The applicant is required to gratuitously dedicate these lands to the Region, free and clear of all encumbrances. All costs associated with the transfer are the responsibility of the applicant. The applicant must provide the Region with the necessary title documents and reference plan(s) to confirm the Regions right-of-way;"

Prior to a resubmission of the application, the Region has requested that the right-of-way requirements along Erin Mills Parkway adjacent to the site, be confirmed by the Region.

The Region of Peel Official Plan (September 2021) states the following in regard to the protection of additional right-of-way along Regional roads:

Section 5.9.4.2.5. "Within 245 metres (804 feet) of a Regional Road intersection, protect an additional 5.5 metres (18 feet) over that identified on Schedule F for a single left turn configuration, right turn lanes, multi-purpose pathways or transit-related improvements. Intersection right-of-way requirements shall be confirmed by a Traffic Impact Study and/or functional design acceptable to the Region."

According to Schedule 8 of the City's Official Plan, Erin Mills Parkway has a designated right-of-way width of 45.0 metres. A drawing created by BA Group of the existing Erin Mills Parkway from Folkway Drive to the southern limits of the site is provided in **Appendix A**. The drawing illustrates that the existing right-of-way on Erin Mills Parkway is 45.9 metres.

The discussion at a meeting with City and Regional staff on June 6, 2024 noted that there are no confirmed plans at this time to upgrade the section of Erin Mills Parkway adjacent to the site, nor are there any confirmed plans that would require additional right-of-way beyond the existing 45.9 metres. It was also confirmed at this meeting that the intent of Section 5.9.4.2.5, is for the protection of an additional **total** of 5.5 metres with 2.25 metres on each side of Erin Mills Parkway.

This letter is intended to justify that the existing right-of-way along Erin Mills Parkway adjacent to the site is appropriate based upon 1) the existing cross-section and lane configuration of Erin Mills Parkway and 2) the results of BA Group's comprehensive traffic analysis under future total conditions.

2.0 ERIN MILLS PARKWAY

2.1 EXISTING CROSS-SECTION AND RIGHT-OF-WAY

The existing cross-section of Erin Mills Parkway at Folkway Drive, along the boundary of the site includes the following lane configuration:

- 3 northbound through lanes (and 3 southbound through lanes);
- 1 dedicated northbound left-turn lane (85 metres of storage);
- 1 dedicated northbound right-turn lane with a channel (120 metres of storage);
- Sidewalk along west side of Erin Mills Parkway adjacent to site (1.5 metres to be widened to 1.8 metres as part of the development); and
- Splash strip of 1.2 metres with buffer from sidewalk to property line of 2.3 metres.

2.2 FUTURE MULTI-USE PATHWAY

As Figure 15 in the City of Mississauga 2018 Cycling Master Plan includes long-term plans for a multi-use pathway along Erin Mills Parkway in the vicinity of the site, a drawing has been provided in Appendix B (Drawing CP-01) that illustrates that a future 3.0 metre wide multi-use pathway could be accommodated within the existing right-of-way on the west side of Erin Mills Parkway.

As shown in Appendix C (Drawing CP-02), the west side of Erin Mills Parkway is likely the preferred location for a future multi-use pathway due to opportunities to connect to the existing multi-use pathway along the west side of Erin Mills Road at Burnhamthorpe Road, as well as connectivity to numerous existing trails along the west side of Erin Mills Parkway that provide access to Arbour Green, Dunn Park and adjacent residential areas.

It is therefore our opinion that additional right-of-way is not required across the site frontage to accommodate the implementation of future active transportation facilities, including the multi-use pathway, along Erin Mills Parkway.

3.0 TRAFFIC ANALYSIS

BA Group completed a report entitled “Urban Transportation Considerations” in September 2022 as part of the applicant’s **Official Plan Amendment (OPA)** and **Zoning By-law Amendment ZBA)** application. Since that time, to address the City’s comments and revisions to the site plan, BA Group’s report and traffic analysis have been updated and will be included as part of the applicant’s upcoming resubmission for the site.

A summary of the results of the updated traffic analysis for the intersection of Erin Mills Parkway at Folkway Drive, are provided in the following sections and confirm that the existing lane configuration and existing right-of-way on Erin Mills Parkway at Folkway Drive are appropriate.

3.1 SITE 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 buildings with less than 10 floors and LUC 222 – Multifamily Housing (High-Rise) was adopted for buildings with 10 or more floors. For the future retail uses on site, a trip generation rate was calculated using the existing trip generation from the existing retail on the site. Site trip generation rates and forecasts are outlined below in **Table 1**.

TABLE 1 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 (High-Rise) (LUC 222) ^{1,2}	-	0.07	0.20	0.27	0.20	0.12	0.32
Multifamily Housing (Mid-Rise) (LUC 221)	-	0.09	0.28	0.37	0.24	0.15	0.39
Condominiums (High-Rise)	256 units	20	50	70	50	30	80
Condominiums (Mid-Rise)	341 units	30	95	125	80	50	130
Townhomes ³	112 units	10	30	40	25	15	40
Total New Residential Trips	709 units	60	175	235	155	95	250
Retail Trip Generation							
Existing Trips (retail GFA)	6,692 m ²	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
New Retail Trips	776 m ²	5	5	10	20	20	40
Total Trips Generated							
Total Site Vehicle Volumes		65	180	245	175	115	290
Existing Site Vehicle Volumes to be Removed		-60	-25	-85	-180	-190	-370
Net-New Site Traffic Volumes		+5	+155	+160	-5	-75	-80

Notes:

1. Trips per residential unit.
2. Adopted only for the building with greater than 10 storeys.
3. The trip generation rate for “mid-rise” buildings has been adopted for townhomes in this context, as with the previous submission.
4. All trips have been rounded to the nearest 5.



It is projected that the site will generate in the order of **160** net-new two-way vehicle trips in the morning peak hour. In the afternoon peak hour, the site is projected to generate **80 less** two-way vehicle trips than the existing retail site.

3.2 CAPACITY ANALYSIS SUMMARY

The traffic analysis has been undertaken for the surrounding area for the following three planning horizons:

- Baseline existing conditions
- Site build-out (2029); and
- 5-years post site build-out (2034).

By 2027, it is expected that the site will be completed, inclusive of 709 residential units and 776 m² of retail gross floor area (GFA). An additional horizon year of 2034 was studied to account for road network conditions 5-years post build-out of the site.

Estimated compounded annual growth rate (CAGR) values for Erin Mills Parkway were provided by the Region of Peel 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, ATR and land use/forecasts data.”* The CAGRs are summarized in **Table 2** and have been applied to traffic volumes on Erin Mills Parkway for each horizon year (from 2023 to remain conservative) to account for general corridor growth.

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

TABLE 2 CORRIDOR GROWTH RATES

Year	Erin Mills Parkway Compounded Annual Growth Rate (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 2034 horizon year, the same growth rates were conservatively adopted for 2031 onwards.

A figure that illustrates the 2034 future total traffic volumes, inclusive of background traffic and site traffic, is provided in **Appendix D**. The results of the traffic analysis for the intersection of Erin Mills Parkway / Folkway Drive are summarized in **Table 3**.

Under existing conditions, the intersection functions well, with a maximum overall v/c ratio of 0.70 during the afternoon peak hour.

In the 2029 future background scenario, the maximum overall v/c ratio is 0.70 indicating that the intersection remains within its theoretical capacity. The addition of site traffic results in only a minor increase in the

maximum overall v/c ratio in the morning peak hour. The maximum overall v/c ratio remains at 0.70 under 2029 future total conditions.

In the 2034 horizon year, conditions are very similar to 2029, with only the northbound and southbound through movements becoming slightly busier but still well within their theoretical capacity. The maximum overall v/c ratio for the 2034 future total scenario is 0.71.

Based on the results of the capacity analysis at the intersection of Erin Mills Parkway and Folkway Drive, it was confirmed that the existing lane configuration and existing right-of-way on Erin Mills Parkway at Folkway Drive is appropriate and will be able to accommodate future travel demands up to 2034. For this reason, additional right-of-way on Erin Mills is not required for reasons related to vehicle capacity.



TABLE 3 CAPACITY ANALYSIS: ERIN MILLS PARKWAY/ FOLKWAY DRIVE

	Baseline Existing		2029 Future Background		2029 Future Total		2034 Future Background		2034 Future Total	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBL	0.68 (0.42)	E (E)	0.68 (0.42)	E (E)	0.69 (0.45)	E (E)	0.68 (0.42)	E (E)	0.69 (0.45)	E (E)
EBTR	0.45 (0.62)	E (E)	0.45 (0.62)	E (E)	0.42 (0.54)	E (E)	0.45 (0.62)	E (E)	0.42 (0.54)	E (E)
WBL	0.33 (0.41)	D (D)	0.33 (0.41)	D (D)	0.55 (0.47)	D (D)	0.33 (0.41)	D (D)	0.55 (0.47)	D (D)
WBTR	0.32 (0.46)	D (D)	0.32 (0.46)	D (D)	0.33 (0.13)	D (D)	0.32 (0.46)	D (D)	0.33 (0.13)	D (D)
NBL	0.12 (0.18)	B (B)	0.12 (0.18)	B (B)	0.13 (0.20)	B (B)	0.13 (0.19)	B (B)	0.13 (0.20)	B (B)
NBT	0.55 (0.71)	B (C)	0.56 (0.73)	C (C)	0.60 (0.74)	C (C)	0.58 (0.75)	C (C)	0.61 (0.76)	C (C)
NBR	0.03 (0.04)	B (B)	0.03 (0.04)	B (B)	0.02 (0.03)	B (B)	0.03 (0.04)	B (B)	0.02 (0.03)	B (B)
SBL	0.60 (0.74)	E (E)	0.60 (0.74)	E (E)	0.63 (0.77)	E (E)	0.60 (0.74)	E (E)	0.63 (0.77)	E (E)
SBT	0.58 (0.52)	B (B)	0.59 (0.53)	B (B)	0.59 (0.51)	B (B)	0.60 (0.55)	B (B)	0.61 (0.53)	B (B)
SBR	0.03 (0.06)	A (B)	0.03 (0.06)	A (B)	0.03 (0.06)	A (A)	0.03 (0.06)	A (B)	0.03 (0.06)	A (A)
Overall	0.58 (0.68)	C (C)	0.60 (0.70)	C (C)	0.62 (0.70)	C (C)	0.60 (0.71)	C (C)	0.63 (0.71)	C (C)

Notes:

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



3.3 QUEUEING ASSESSMENT

In addition to capacity assessment, queue lengths were also assessed at Erin Mills Parkway / Folkway Drive. **Table 4** provides a summary of 50th and 95th percentile queue lengths at the intersection of Erin Mills Parkway / Folkway Drive. Future queue lengths were compared for the 2034 horizon year to assess the worst-case scenario.

TABLE 4 SIGNALIZED INTERSECTION QUEUEING ASSESSMENT

Movement	Available Turn-Lane Storage (m)	Existing		2034 Future Background		2034 Future Total	
		50 th Percentile Queue (m)	95 th Percentile Queue (m)	50 th Percentile Queue (m)	95 th Percentile Queue (m)	50 th Percentile Queue (m)	95 th Percentile Queue (m)
Erin Mills Parkway / Folkway Drive							
EBL	35	22 (12)	42 (26)	22 (12)	42 (26)	22 (12)	42 (25)
EBT	-	21 (30)	43 (50)	21 (30)	43 (50)	20 (22)	40 (40)
WBL	60 ²	17 (21)	34 (37)	17 (21)	34 (37)	32 (25)	54 (42)
WBT	-	15 (32)	42 (58)	15 (32)	42 (58)	16 (4)	44 (21)
NBL	85	1 (2)	4 (6)	1 (2)	4 (6)	1 (2)	4 (6)
NBT	-	96 (143)	136 (182)	102 (154)	145 (196)	111 (159)	157 (192)
SBL	170	24 (43)	46 (69)	24 (43)	46 (69)	28 (49)	51 (82)
SBT	-	83 (91)	147 (114)	89 (97)	158 (122)	90 (93)	158 (116)
SBR	120	0 (0)	0 (7)	0 (0)	0 (7)	0 (0)	0 (7)

Notes:

1. Queue lengths are rounded down to the nearest metre.
2. Approximately 67 metres from stop bar at Erin Mills to proposed site driveway on Folkway Drive.

As demonstrated above, any queueing issues under future conditions are existing and will not be caused as a result of the development of the site. Notably, all 50th percentile queues can be contained within existing storage provisions.

95th percentile queues are based on the 95th percentile arrival rate of traffic and are therefore only expected to occur a very limited number of times during the peak hour. Based on a 160 second cycle length, there are approximately 22 cycles during a peak hour. If the 95th percentile arrival rate occurs on average during 5% of the cycles, it is likely that 95th percentile queue lengths may only occur during 1 – 2 cycles during peak hours.

The results of the updated queueing assessment for the intersection of Erin Mills Parkway at Folkway Drive, confirm that the existing lane configuration and existing right-of-way on Erin Mills Parkway at Folkway Drive are appropriate and will be able to accommodate future queues up to 2034. Additional lanes, or the extension of existing dedicated turning lanes, are not required for the intersection to function appropriately in the future, hence additional right-of-way along Erin Mills Parkway in the vicinity of the site is not required.

4.0 SUMMARY AND CONCLUSIONS

Prior to resubmission of the OPA/ZBA applications, the Region has requested that the right-of-way requirements along Erin Mills Parkway adjacent to the site, be confirmed by the Region. The Region of Peel Official Plan (September 2021) states the following in regard to the protection of additional right-of-way along Regional roads:

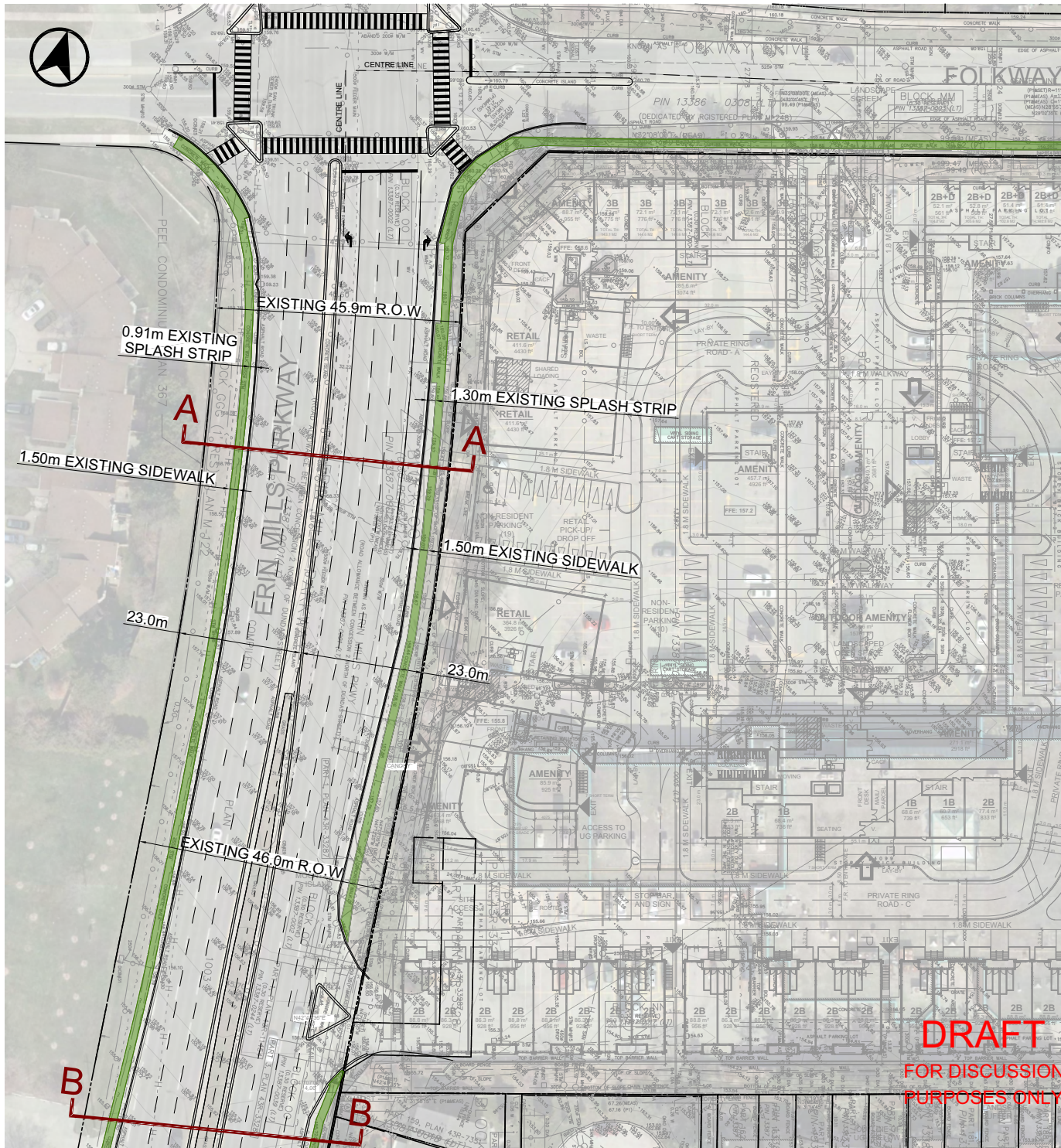
Section 5.9.4.2.5. "Within 245 metres (804 feet) of a Regional Road intersection, protect an additional 5.5 metres (18 feet) over that identified on Schedule F for a single left turn configuration, right turn lanes, multi-purpose pathways or transit-related improvements. Intersection right-of-way requirements shall be confirmed by a Traffic Impact Study and/or functional design acceptable to the Region."

A summary of BA Group's review of the appropriateness of the existing right-of-way is provided as follows:

- The discussion at a meeting with City and Regional staff on June 6, 2024 noted that there are no confirmed plans at this time to upgrade the section of Erin Mills Parkway adjacent to the site, nor are there any confirmed plans that would require additional right-of-way beyond the existing 45.9 metres.
- The west side of Erin Mills Parkway is likely the preferred location for a future multi-use pathway due to opportunities to connect to the existing multi-use pathway along the west side of Erin Mills Road at Burnhamthorpe Road, as well as connectivity to numerous existing trails along the west side of Erin Mills Parkway that provide access to Arbour Green, Dunn Park and adjacent residential areas. It is therefore our opinion that additional right-of-way (as specified in the ROP), is not required across the site frontage to accommodate the implementation of future active transportation facilities along the east side Erin Mills Parkway. Therefore, no additional land dedication from the subject site is required.
- Based on the results of the capacity analysis at the intersection of Erin Mills Parkway and Folkway Drive, it was confirmed that the existing lane configuration and existing right-of-way on Erin Mills Parkway at Folkway Drive are appropriate and will be able to accommodate future travel demands up to 2034. For this reason, additional right-of-way on Erin Mills is not required for reasons related to vehicle capacity.
- The results of the updated queuing assessment for the intersection of Erin Mills Parkway at Folkway Drive, confirm that the existing lane configuration and existing right-of-way on Erin Mills Parkway at Folkway Drive are appropriate and will be able to accommodate future queues up to 2034. Additional lanes, or the extension of existing dedicated turning lanes, are not required for the intersection to function appropriately in the future, hence additional right-of-way along Erin Mills Parkway in the vicinity of the site is not required.
- BA Group's review confirms that the existing right-of-way along Erin Mills Parkway adjacent to the site is appropriate based upon 1) the existing cross-section and lane configuration of Erin Mills Parkway and 2) the results of BA Group's comprehensive traffic analysis under future total conditions.

Appendix A: Existing Road Plan





LEGEND

EXISTING SIDEWALK



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MOVEMENT
IN URBAN
ENVIRONMENTS
BAGROUP.COM

4099 ERIN MILLS PARKWAY

EXISTING ROAD PLAN

Date: July 5, 2024

Project No.: 8143-01

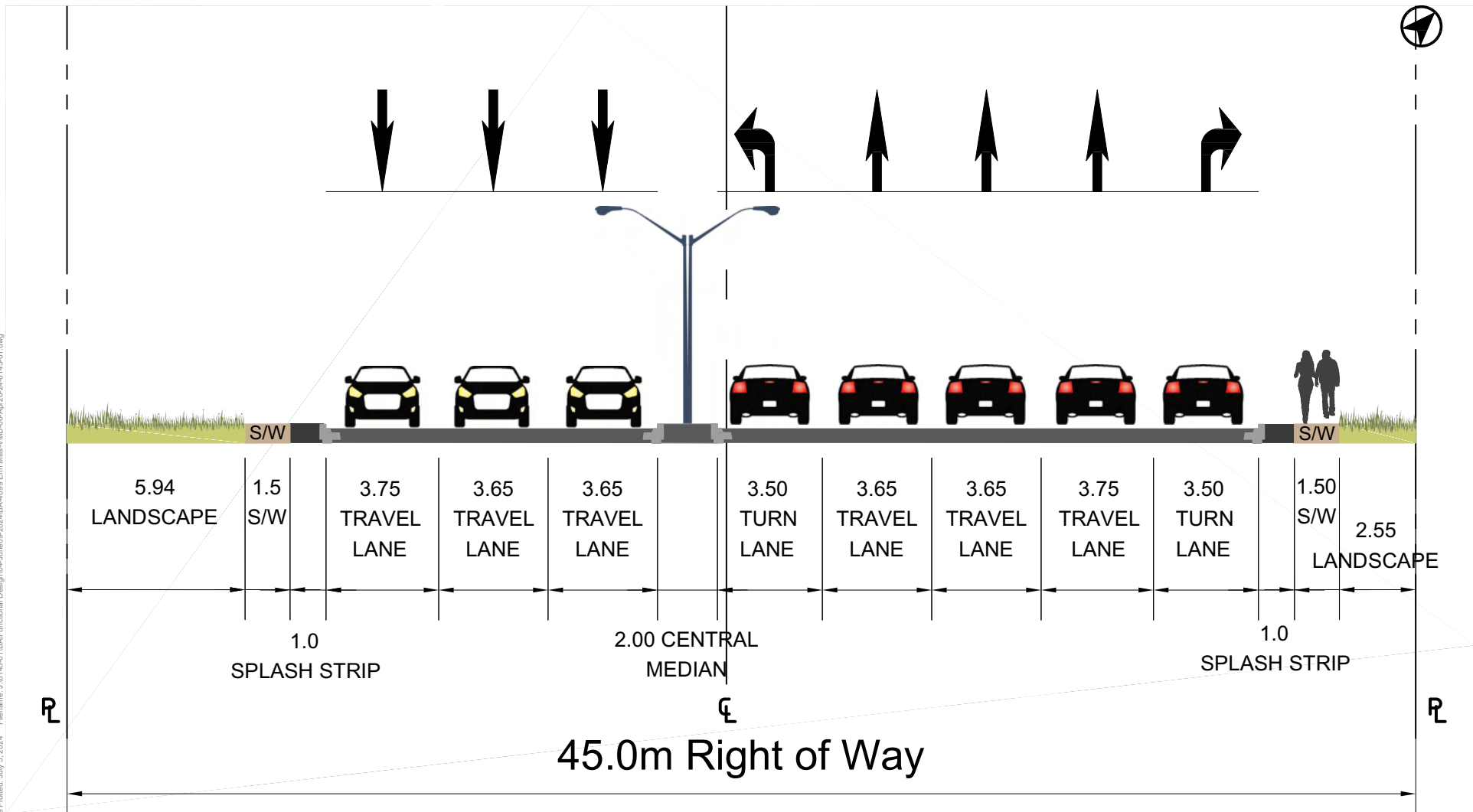
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RP-01

Appendix B: Conceptual Road Plan



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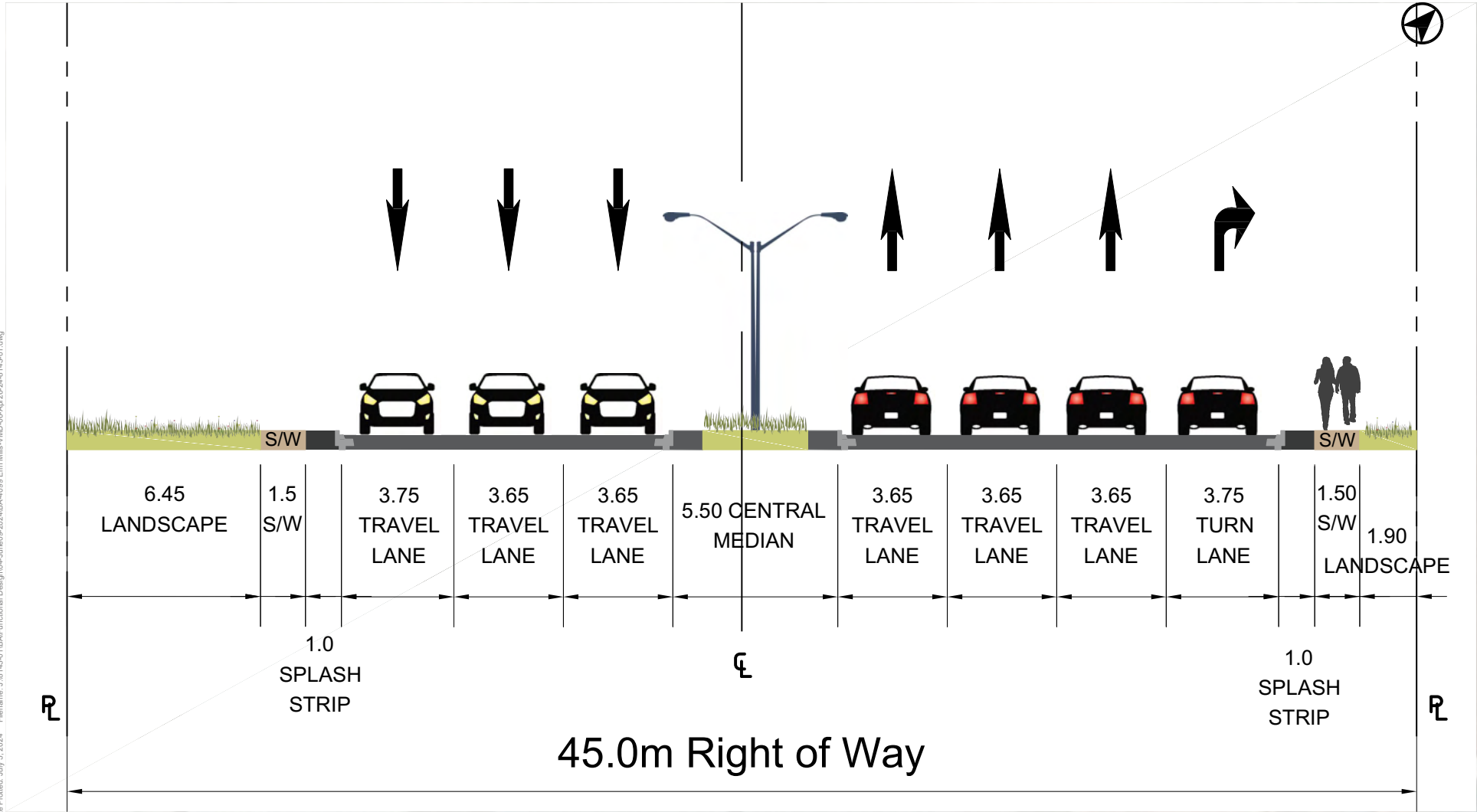


4099 ERIN MILLS PARKWAY
EXISTING ROAD PLAN
SECTION A-A

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: July 5, 2024
Revised:

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Drawing No. SECTION A-A

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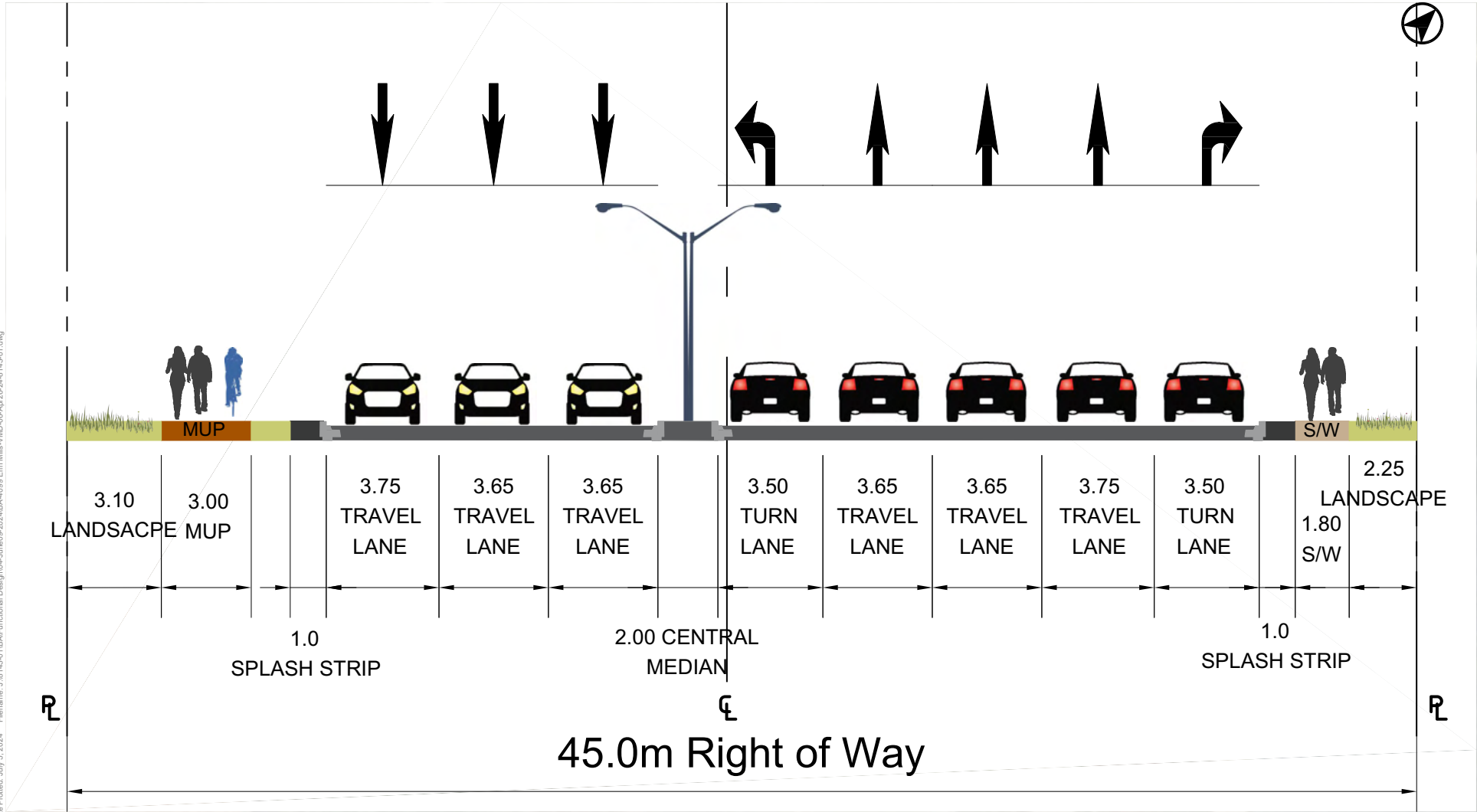


4099 ERIN MILLS PARKWAY
EXISTING ROAD PLAN
SECTION B-B

Project: 4099 ERIN MILLS PKWY
Project No. 8143-01
Date: July 5, 2024
Revised:

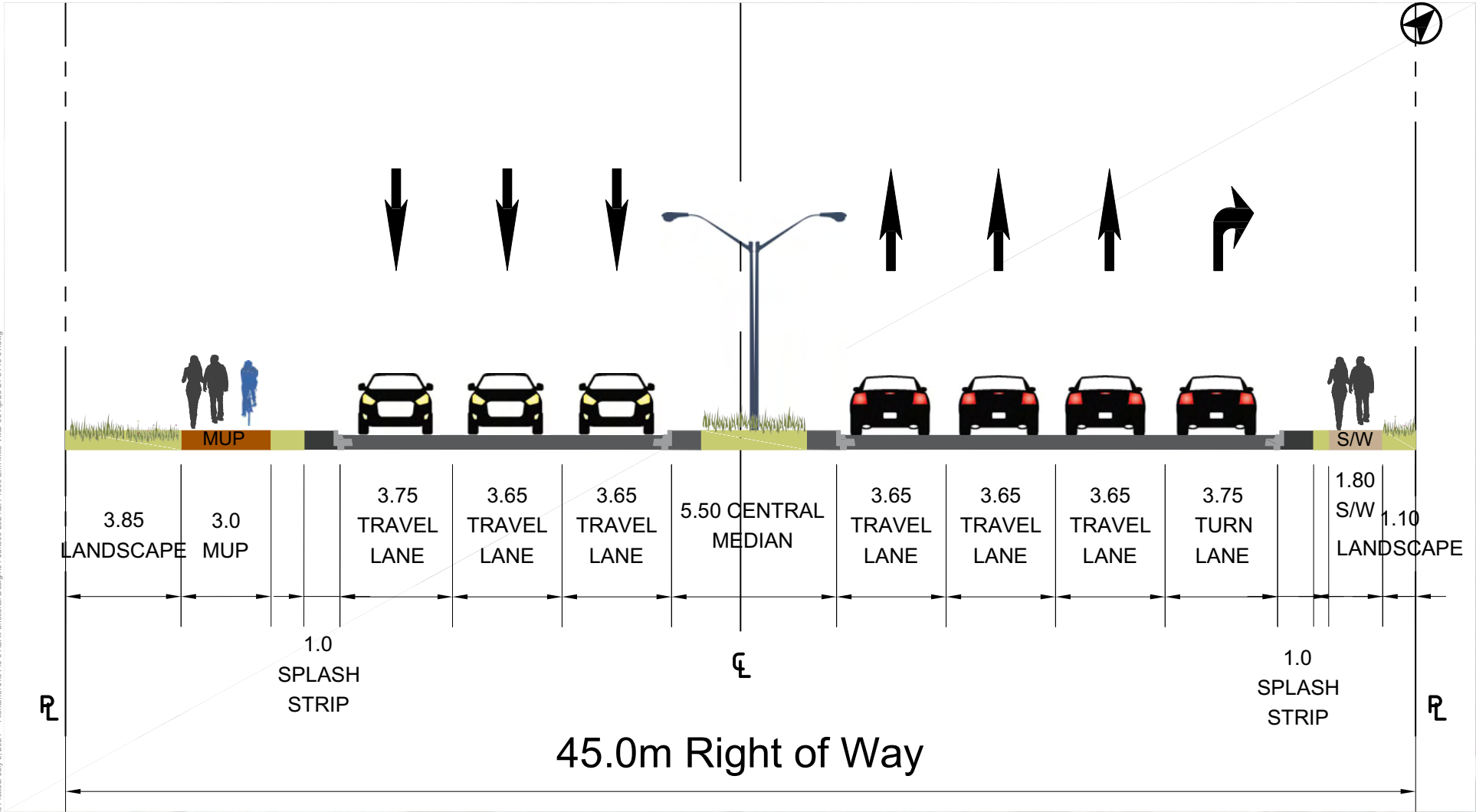
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		Project No. 8143-01	1:500 
		Date: July 5, 2024	Drawing No.
		Revised:	SECTION C-C

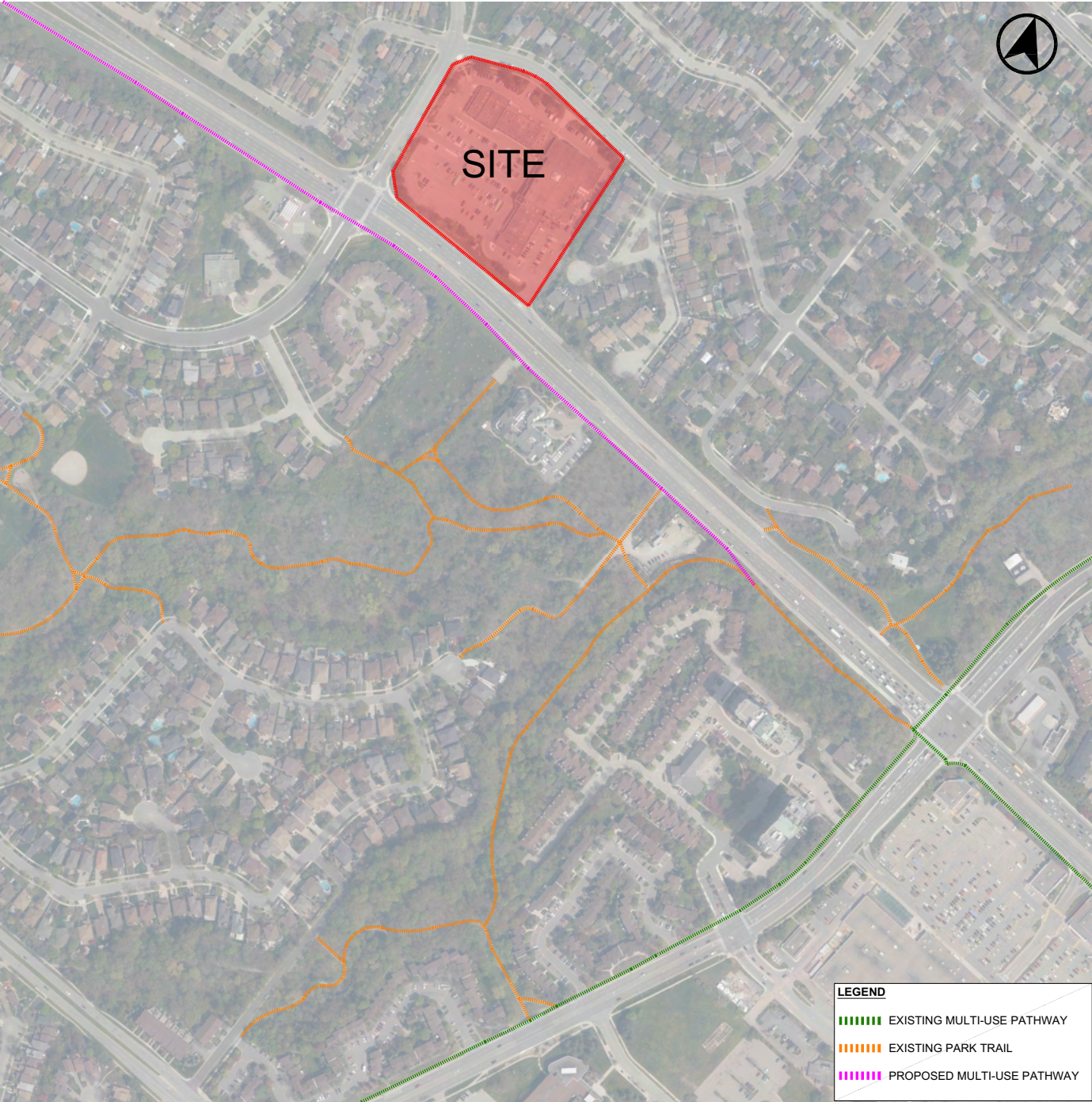
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	4099 ERIN MILLS PARKWAY CONCEPTUAL ROAD PLAN SECTION D-D	Project: 4099 ERIN MILLS PKWY	Scale: 0 5 10 15 20m
		Project No. 8143-01	1:500 
		Date: July 5, 2024	Drawing No.
		Revised:	SECTION D-D

Appendix C: Existing Cycling Facilities and Trails





GENERAL NOTES

- 1. DESCRIPTION
- 2. DESCRIPTION

00	MM-DD-YR	INT REVISION NOTE



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4099 ERIN MILLS

EXISTING MULTI-USE PATHWAYS

Date: June 12, 2024

Project No.: 8143-01

Scale: 1:2,000