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TRANSPORTATION SOLUTIONS LIMITED

Pretty River Estates Collingwood Transportation Impact Study

Paradigm Transportation Solutions Limited

2026-05
260062



ptsl.com

Project Summary

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Executive Summary

Content

Paradigm Transportation Solutions Limited has been retained to conduct this Transportation Impact Study (TIS) for a proposed residential development located on the south end of Dey Drive in the Town of Collingwood, Simcoe County.

This study includes an analysis of existing traffic conditions, a description of the proposed development, traffic forecasts for the year of full build-out (2032) and five years beyond full build out (2037), and an assessment of traffic impacts with recommendations to accommodate the proposed development as appropriate.

Development Concept

The subject site is located south of the Kirby Avenue and Dey Drive intersection. The proposed development consists of 33 townhouse units. Vehicular access is proposed via an all-moves access opposite of Dey Drive and Kirby Avenue, forming the fourth leg of the intersection.

The development is anticipated to be completed by 2032.

Conclusions

Based on the investigations carried out, it is concluded that:

- ▶ **Existing Traffic Conditions:** Kirby Avenue and Dey Drive is operating with acceptable levels of service.
- ▶ **Development Trip Generation:** The development is forecast to generate 16 AM peak hour trips and 17 PM peak hour trips.
- ▶ **Sight Distance:** The proposed site access on Kirby Avenue meets the TAC required sight distance criteria for a design speed of 60 km/h.
- ▶ **2032 Background and Total Traffic Conditions:** Kirby Avenue and Dey Drive / the proposed site access is forecast to operate within acceptable levels of service.
- ▶ **2037 Background and Total Traffic Conditions:** Kirby Avenue and Dey Drive / the proposed site access is forecast to operate within acceptable levels of service.



- ▶ **Remedial Measures:** A westbound left-turn lane is not warranted on Kirby Avenue at the proposed site access under 2032 and 2037 total traffic conditions.

Recommendations

Based on the findings of this study, it is recommended that the proposed development be approved with no conditions related to off-site transportation improvements.



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1 Introduction

1.1 Overview

Paradigm Transportation Solutions Limited has been retained to conduct this Transportation Impact Study (TIS) for a proposed residential development located on the south end of Dey Drive in the Town of Collingwood, Simcoe County. **Figure 1.1** illustrates the subject development location.

1.2 Purpose and Scope

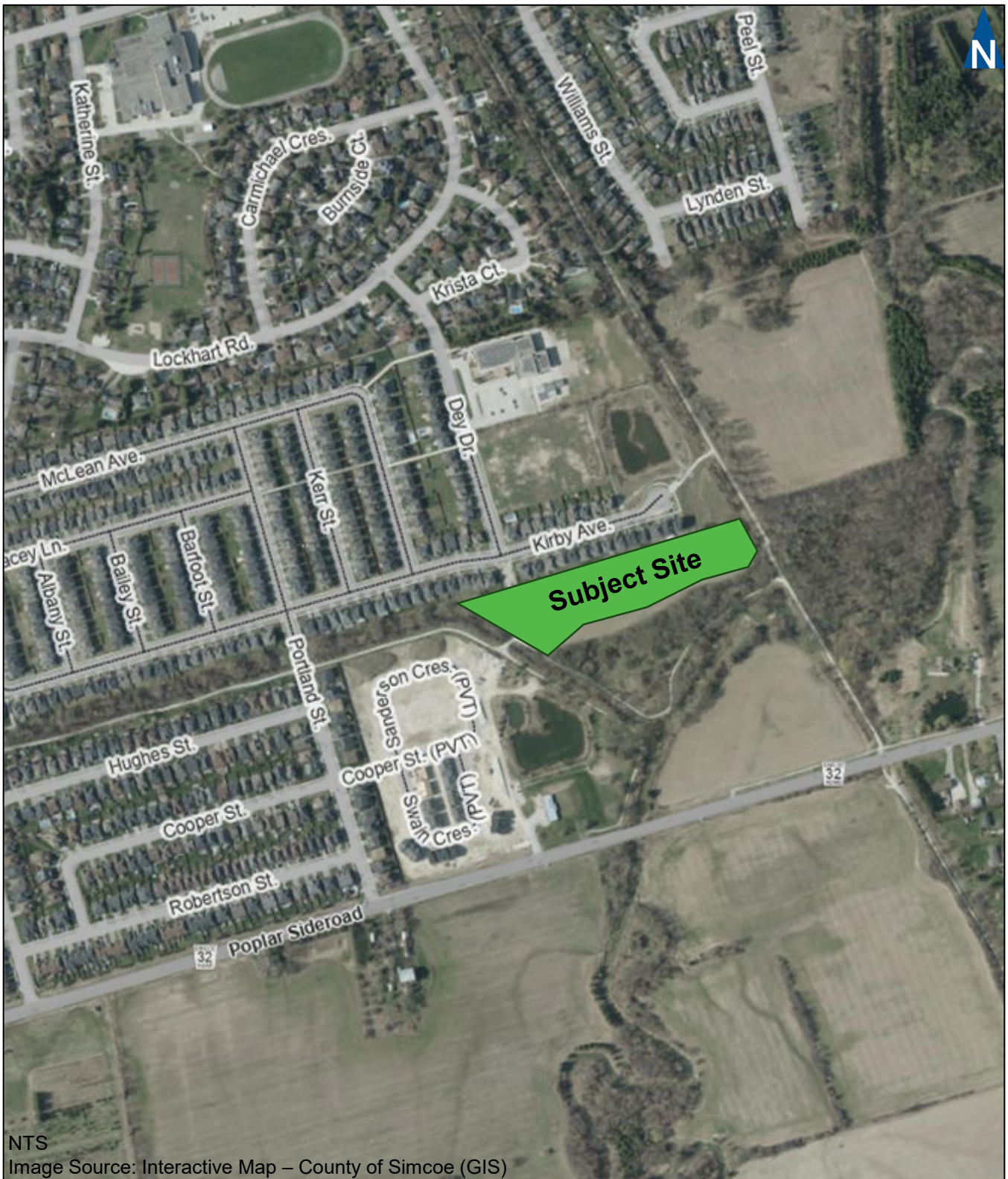
The purpose of this report is to identify and assess the potential traffic impact resulting from the proposed development. The scope of the study, developed in consultation with Town of Collingwood staff via e-mail in March 2026, includes:

- ▶ Assessment of the current traffic and site conditions within the study area;
- ▶ Estimates of background traffic growth for build-out (2032) and five years beyond build-out (2037);
- ▶ Estimates of additional traffic generated by the subject site;
- ▶ Analyses of the impact of future traffic on the surrounding road network, including Kirby Avenue and Dey Drive / the proposed site access;
- ▶ Recommendations necessary to mitigate the site generated traffic in a satisfactory manner.

This study has been prepared in accordance with the requirements detailed by the Town of Collingwood Traffic Impact Study Guidelines¹.

¹ Town of Collingwood, *Guidelines for the Preparation of Traffic Impact Studies (TIS)*, March 2025.





Location of Subject Site

Pretty River Estates, Collingwood TIS
260062

Figure 1.1

2 Existing Conditions

2.1 Existing Roadways

The main roadways near the subject site considered in assessing the traffic impacts of the development include:

- ▶ **Dey Drive** is a north-south local road² with a two-lane cross section and a posted speed limit of 40 km/h.
- ▶ **Kirby Avenue** is an east-west local road with a two-lane cross section, and an assumed speed limit of 50 km/h.

Figure 2.1 illustrates the existing lane configuration and traffic control at Kirby Avenue and Dey Drive.

² Town of Collingwood, *Official Plan of the Town of Collingwood Schedule '6' Transportation Plan*, July 2024.





2.2 Active Transportation

Sidewalks are available on both sides of Kirby Avenue and Dey Drive. While no dedicated cycling facilities are currently available within the study area, there exists two trails near the subject site including the Train Trail and the Hamilton Drain Trail. The Train Trail is a north-south, unpaved, multi-use pathway that extends from Millennium Overlook Park to the southern limits of town. The Hamilton Drain Trail is an east-west, unpaved, multi-use pathway that extends from Stephens Street to Poplar Sideroad with a connection to the Train Trail.

In addition to the existing infrastructure, the Town's Cycling Plan³ proposes a shared on-street bike route on Dey Drive starting at the Admiral Collingwood Elementary School. The Cycling Plan also recommends paving the existing Train Trail and Hamilton Drain Trail.

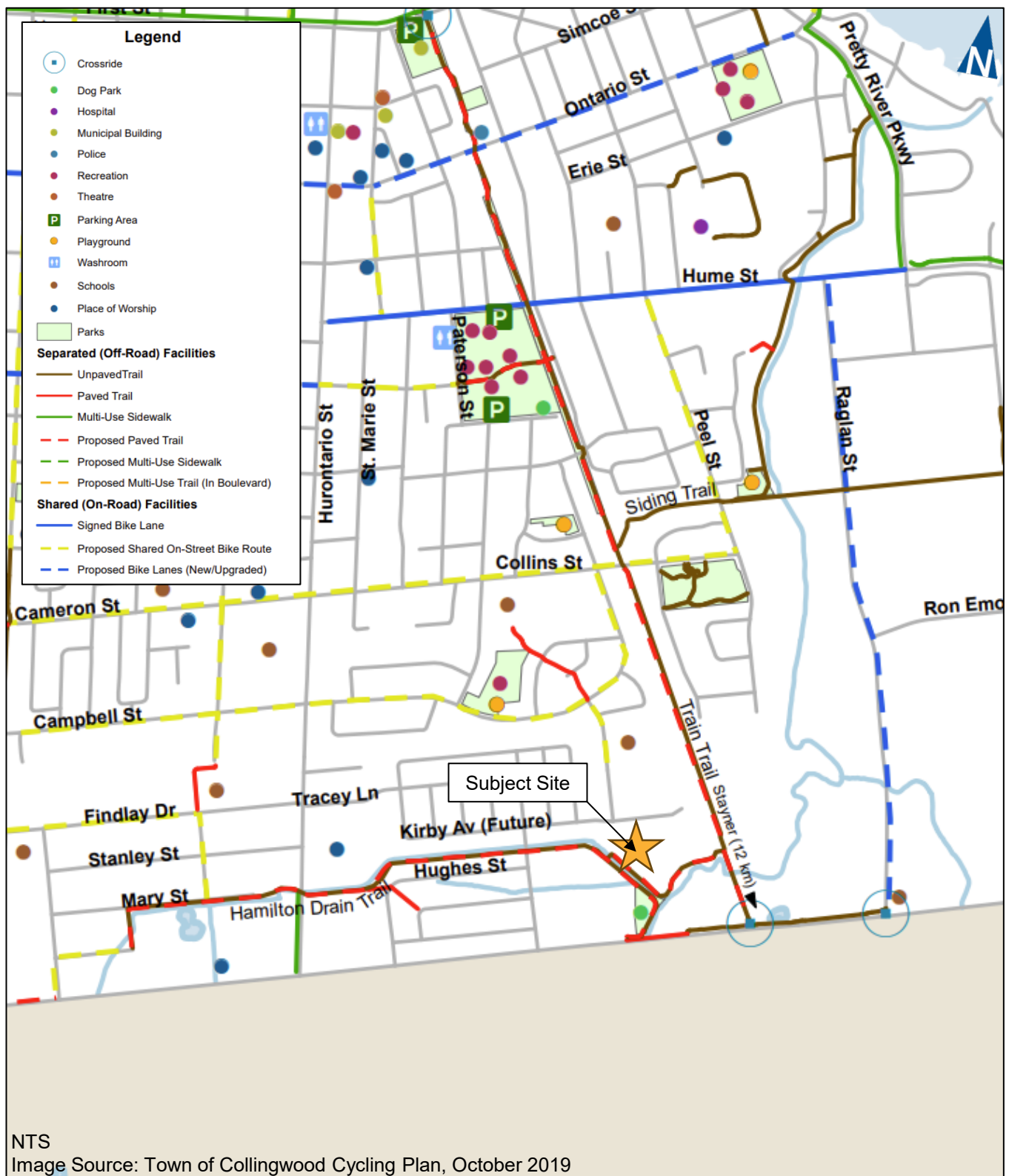
The subject site has a Walk Score⁴ of 11 out of 100, indicating almost all errands require a car and a Bike Score of 53 out of 100 which indicates there is some bike infrastructure in the area.

Figure 2.2 illustrates the future cycling network.

³ Town of Collingwood, *Cycling Plan*, October 2019.

⁴ "Walk Score", n.d., <https://www.walkscore.com/score/dey-drive-and-kirby-avenue-collingwood>





2.3 Transit Service

Transit service in Collingwood is provided by Coltrans⁵. The nearest bus stop (Stop # 447) is located 800 metres (or a 10-minute walk) from the subject site. The bus stop is part of the East Route which has stops at Collingwood General and Marine Hospital, Collingwood Collegiate Institute and YMCA. East Route operates Monday to Sunday from 6:30 AM to 11 PM with 60-minute headways.

Figure 2.3 illustrates the existing transit service.

2.4 Traffic Volumes

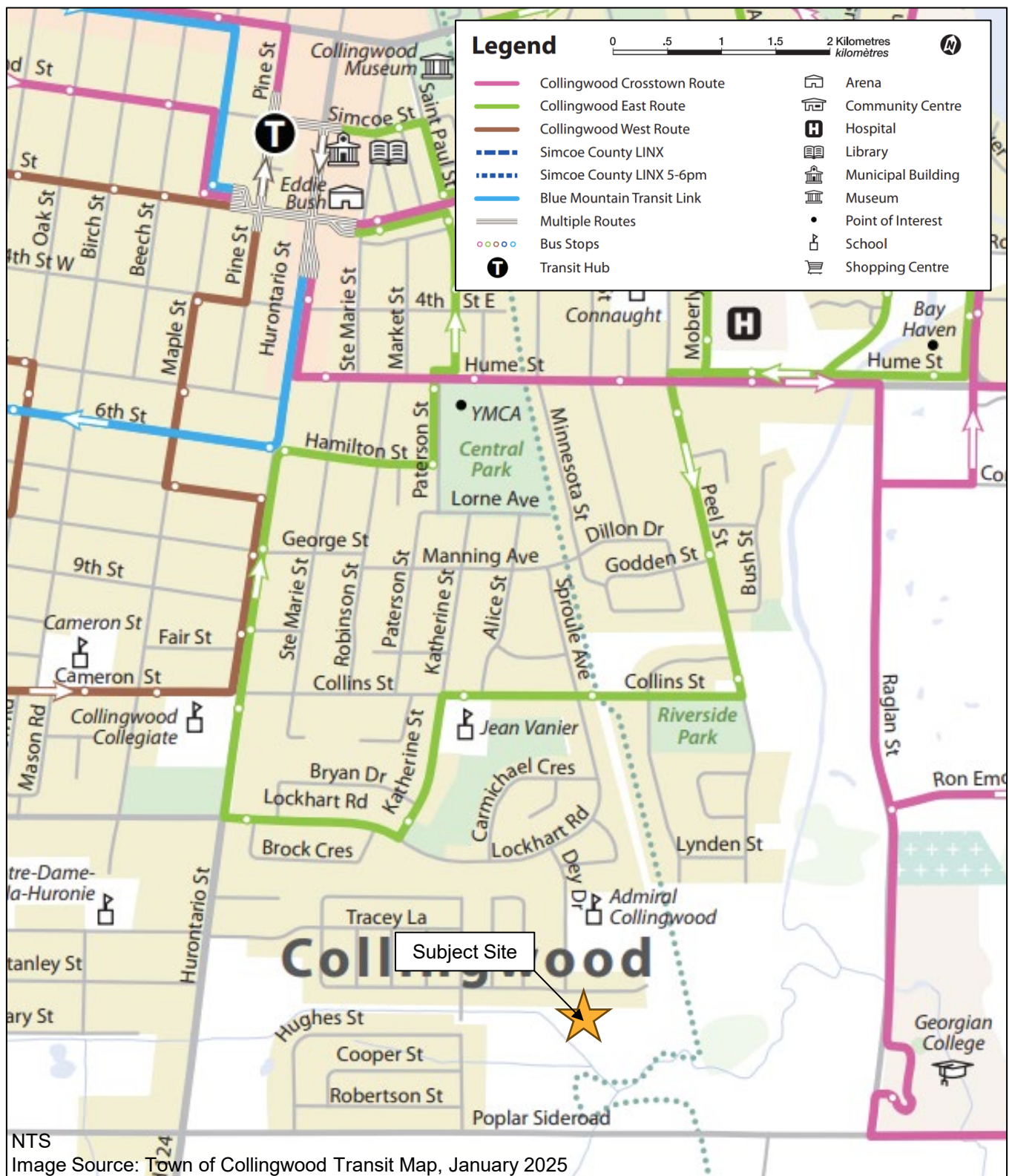
Turning movement counts at Kirby Avenue and Dey Drive were collected by Paradigm on 2026-02-24.

Figure 2.4 illustrates the existing AM and PM weekday peak hour traffic volumes.

Appendix A contains the detailed traffic counts for Kirby Avenue and Dey Drive.

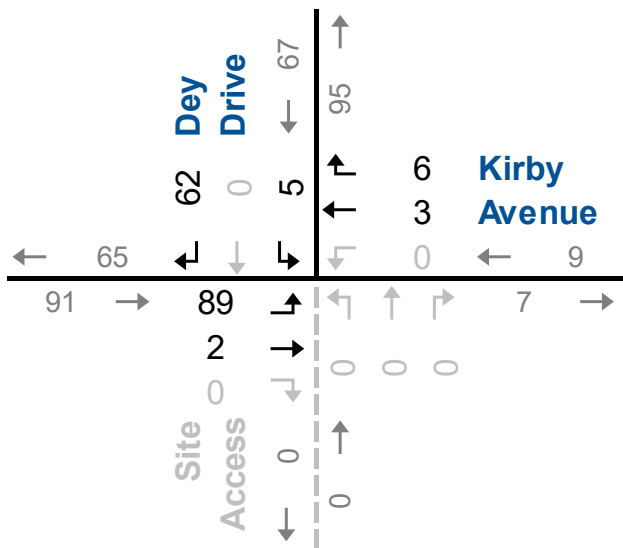
⁵ "Transit", Town of Collingwood, n.d., <https://www.collingwood.ca/community-access-mobility/transit>



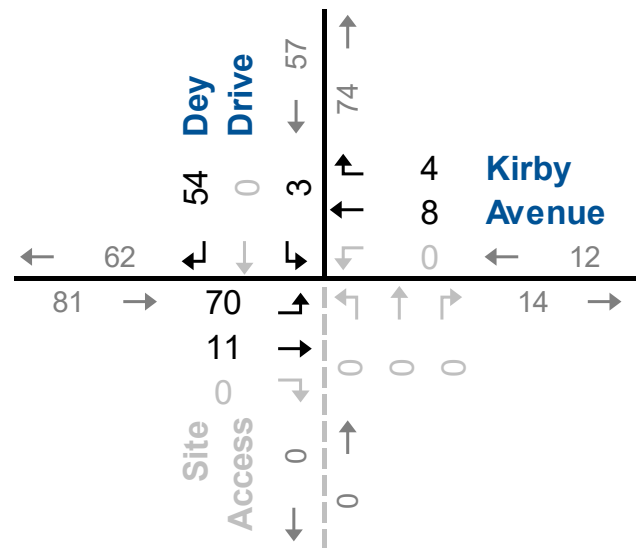




AM Peak Hour



PM Peak Hour



2.5 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the average delay experienced by drivers at intersections. It is based on the delay experienced by individual vehicles executing various movements. The delay is related to the number of vehicles intending to make a particular movement, compared to the estimated capacity for that movement. The capacity is based on a number of criteria related to the opposing traffic flows and intersection geometry.

The highest possible rating is LOS A, under which the average total delay is equal to or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity ratio is greater than 1.0, the movement is classed as LOS F and remedial measures are usually implemented, if they are feasible. LOS E is usually used as a guideline for the determination of road improvement needs on through lanes, while LOS F may be acceptable for left-turn movements at peak times, depending on delays.

The operations at the study area intersections have been assessed using Synchro 12. Movements are considered critical under the following conditions:

- ▶ LOS, based on average delay per vehicle, on individual movements at LOS “E” or “F”; and
- ▶ The estimated 95th percentile queue length for an individual movement exceeds the available queue storage.

Table 2.2 summarizes the results of the intersection operational analysis under existing conditions, including the AM and PM peak hour LOS, v/c ratios, and 95th percentile queues.

The results indicate that the intersection of Kirby Avenue and Dey Drive is operating with acceptable levels of service, and with no problem movements.

Appendix B contains the detailed Synchro 12 reports.



TABLE 2.2: EXISTING TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Kirby Avenue & Dey Drive	TWSC	LOS Delay V/C Q	< < < <	A 7 0.06 2		A 7		A 0 0.00 0	> > > >	A 0					A 9 0.07 2	> > > >	A 9		
PM Peak Hour	Kirby Avenue & Dey Drive	TWSC	LOS Delay V/C Q	< < < <	A 8 0.05 2		A 6		A 0 0.00 0	> > > >	A 0					A 9 0.06 2	> > > >	A 9		

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

</> - Shared with through movement



3 Development Concept

3.1 Development Description

The subject site is located south of the Kirby Avenue and Dey Drive intersection. The proposed development consists of 33 townhouse units. Vehicular access is proposed via an all-moves access opposite of Dey Drive and Kirby Avenue, forming the fourth leg of the intersection.

The development is anticipated to be completed by 2032.

Figure 3.1 shows the proposed Concept Plan.

3.2 Connectivity to Active Transportation Infrastructure

To connect the development to the existing pedestrian infrastructure, the Concept Plan shows a proposed sidewalk on the north side of the internal roadway. This sidewalk will connect to the existing sidewalk along Kirby Avenue.

The Concept Plan also shows connections to the Train Trail and Hamilton Drain Trail through Block 35. An additional connection to the Train Trail is also proposed through Block 36 which will connect to a proposed trail that will ultimately connect to the Train Trail.

3.3 Sight Distance Review

The Transportation Association of Canada's Geometric Design Guide (TAC Guide)⁶ was used to determine the minimum sight distance requirements at the site access intersection on Kirby Avenue opposite Dey Drive.

Using a design speed of 60 km/h (10 km/h over the assumed speed limit of 50 km/h), the following sight distances apply:

- ▶ Minimum stopping sight distance⁷: 85 metres
- ▶ Intersection sight distance – left turn from stop (looking east)⁸: 130 metres

⁶ Transportation Association of Canada, *Geometric Design Guide for Canadian Roads*, (Ottawa: TAC, 2017).

⁷ Ibid. Table 2.5.2: Stopping Sight Distance on Level Roadways for Automobiles.

⁸ Ibid. Table 9.9.4: Design Intersection Sight Distance – Case B1, Left Turn from Stop.



- ▶ Intersection sight distance – right turn from stop (looking west)⁹: 110 metres

Kirby Avenue is flat and relatively straight at the proposed site access. There is minimal bend to Kirby Avenue just west of the site access / Dey Drive. However, the available sight distance at the site access still exceeds the requirements given in the TAC Guide. It is also worth noting that sight distances are not expected to be a concern since the site access will connect to the already existing intersection of Kirby Avenue and Dey Drive.

⁹ Ibid. Table 9.9.6: Design Intersection Sight Distance – Case B2, Right Turn from Stop, and Case B3 Crossing Maneuver



3.4 Development Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual¹⁰ provides rates and equations used to estimate the peak hour traffic volumes generated by the Land Use Code (LUC) 215 (Single-Family Attached Housing).

Table 3.1 summarizes the forecast number of net new trips generated by the proposed development.

TABLE 3.1: TRIP GENERATION

Land Use	Number of Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
LUC 215 - Single-Family Attached Housing	33	0.47	4	12	16	0.51	10	7	17
Total Trip Generation			4	12	16		10	7	17

3.5 Development Trip Distribution and Assignment

The trip distribution was determined based on likely origins / destinations relative to the proposed development. It is forecast that the majority of trips will travel to / from the commercial areas at the north end of town or to / from the industrial areas along Hume Street and Highway 26.

Table 3.2 displays the breakdown of trip distributions used in this study. Kirby Avenue currently ends to the east of Dey Drive, but is proposed to be extended through the future IndigO2 development (as noted in Section 4.1.1 below), and therefore some trips are expected to use that new connection.

TABLE 3.2: ESTIMATED TRIP DISTRIBUTION

Origin/Destination	Percentage
North via Dey Drive	30%
West via Kirby Avenue	60%
East via Kirby Avenue	10%
Total	100%

Using the trip distributions shown above, most of the site trips have been assigned to travel west via Kirby Avenue as Kirby Avenue connects to Poplar Sideroad via Portland Street, and to Hurontario Street via Tracey Lane. Poplar Sideroad connects Collingwood to Wasaga Beach and to the Town of the Blue Mountains and Nottawa. Hurontario Street provides a direct route to the downtown core. **Figure**

¹⁰ Institute of Transportation Engineers, *Trip Generation Manual*, 12th ed., (Washington, DC: ITE, 2025).

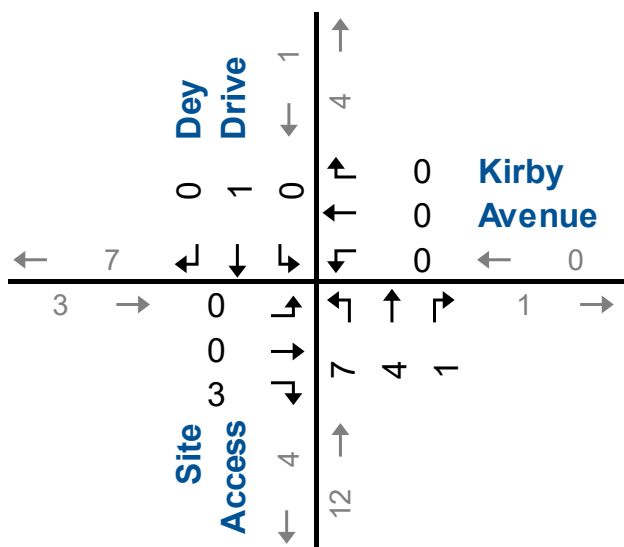


3.2 illustrates the site-generated traffic volumes for the AM and PM peak hours.

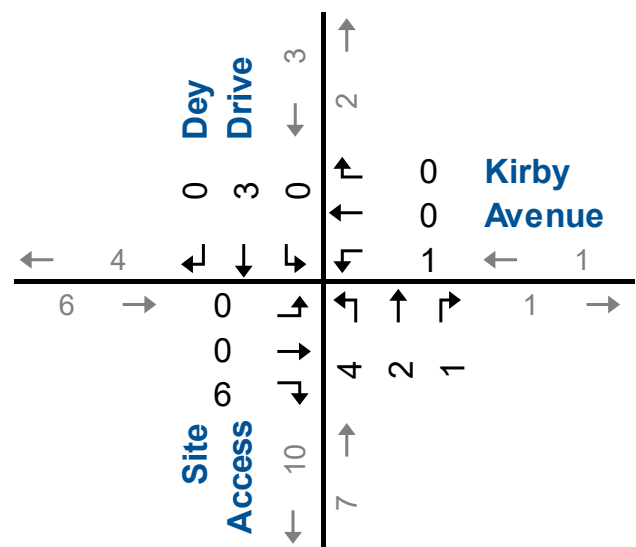




AM Peak Hour



PM Peak Hour



4 Evaluation of Future Traffic Conditions

The assessment of future traffic conditions in this section includes estimates of future background and total traffic volumes, and the analyses for the 2032 and 2037 horizons.

4.1 Background Traffic Forecasts

To derive the generalized background traffic volumes, a growth rate of 2% was applied to the existing roadway traffic volumes. This growth rate was confirmed during the pre-study consultation.

4.1.1 Other Area Development

In addition to the above general traffic growth, the traffic generated by the proposed IndigO2 development has been included in the background traffic forecasts. The IndigO2 development is a proposed residential development located at 452 Raglan Street with vehicular access via the extension of Kirby Avenue, Peel Street and Williams Street.

Figure 4.1 illustrates the location of the IndigO2 development with respect to the subject site.

The analyses included in the TIS¹¹ for the IndigO2 development was based on a development proposal consisting of 21 single detached units and 98 townhouse units. According to these site statistics, the IndigO2 development is forecast to generate 67 AM peak hour trips and 81 PM peak hour trips.

Appendix C contains the other area development traffic volumes.

4.1.2 Redistribution of Traffic

Kirby Avenue currently extends from Tracey Lane to approximately 200 metres east of Dey Drive. As part of the IndigO2 development, Kirby Avenue, Williams Street and Peel Street will be extended to connect the development to the existing road network. These new connections to the IndigO2 development will provide an alternate route for drivers traveling north / south to / from Hume Street. The route to Hume Street through the IndigO2 development is not significantly advantageous compared to the existing route to Hume Street via Dey Drive. Therefore, 10% of the west approach traffic at Dey Drive and

¹¹ C.F. Crozier & Associates Inc., *Traffic Impact Study IndigO2 Eden Oak (Raglan) Inc. Town of Collingwood*, December 2021.



Kirby Avenue have been redistributed to travel through the IndigO2 development.





4.2 2032 (Full Build-Out) Horizon

4.2.1 Background Traffic Operations

Figure 4.2 illustrates the 2032 background traffic volumes, including road traffic growth.

The 2032 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions.

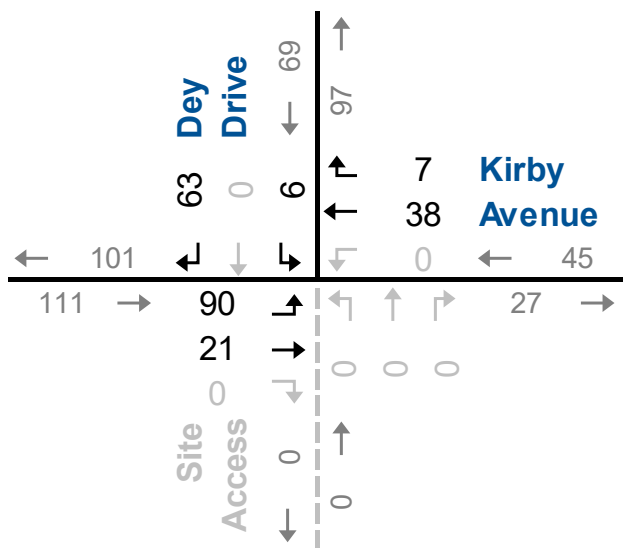
Table 4.1 summarizes the results of the 2032 background traffic operations. The results indicate that Kirby Avenue and Dey Drive is forecast to operate with acceptable levels of service during the AM and PM peak hours.

Appendix D contains the supporting detailed Synchro 12 reports.





AM Peak Hour



PM Peak Hour

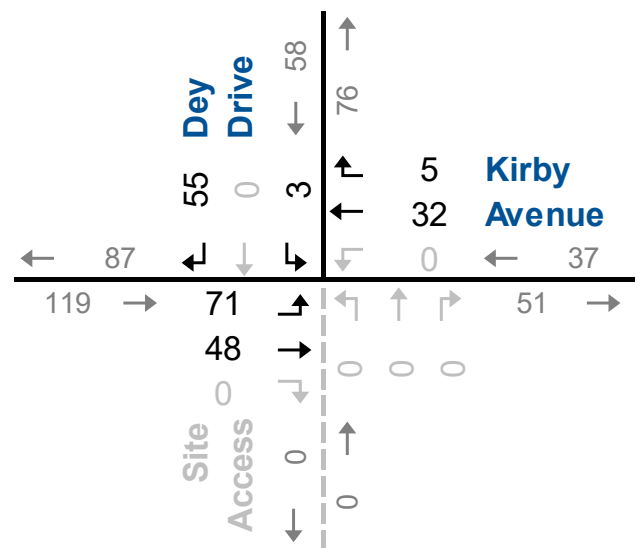


TABLE 4.1: 2032 BACKGROUND TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Kirby Avenue & Dey Drive	TWSC	LOS Delay V/C Q	< < < <	A 8 0.06 2		A 6		A 0 0.00 0	> > > >	A 0					A 9 0.08 2	> > > >	A 9		
PM Peak Hour	Kirby Avenue & Dey Drive	TWSC	LOS Delay V/C Q	< < < <	A 8 0.05 2		A 4		A 0 0.00 0	> > > >	A 0					A 9 0.07 2	> > > >	A 9		

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

</> - Shared with through movement



4.2.2 Total Traffic Operations

Figure 4.3 illustrates the 2032 total traffic volumes, including trips generated by the proposed development.

The 2032 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions.

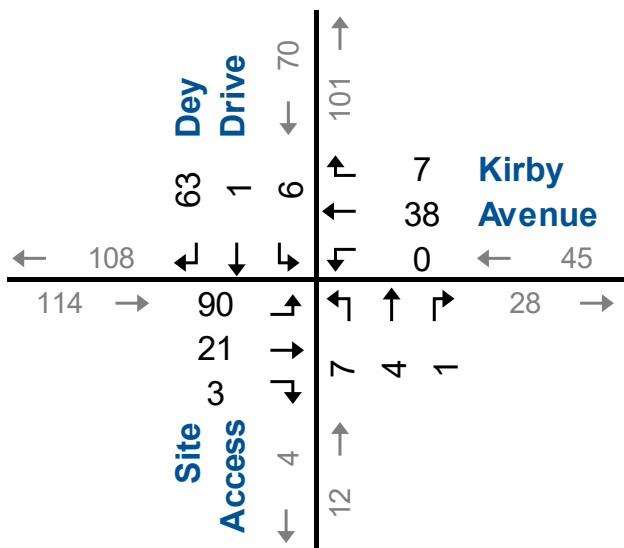
Table 4.2 summarizes the results of the 2032 total traffic operations. The results indicate that Kirby Avenue and Dey Drive / the proposed site access is forecast to operate with acceptable levels of service during the AM and PM peak hours.

Appendix E contains the supporting detailed Synchro 12 reports.





AM Peak Hour



PM Peak Hour

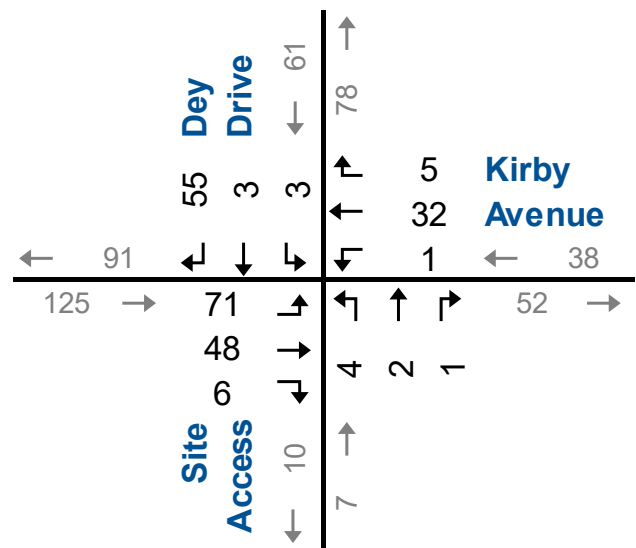


TABLE 4.2: 2032 TOTAL TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Site Access/Dey Drive & Kirby Avenue	TWSC	LOS Delay V/C Q	< < < <	A 8 0.06 2	> > > >	A 6 A 0 A 0 A 0	< < < <	A 0 0 0 0	> > > >	A 0 A 0 A 0 A 0	< < < <	B 11 0.02 1	> > > >	B 11 B 11 B 11 B 11	< < < <	A 9 0.08 2	> > > >	A 9 A 9 A 9 A 9	
PM Peak Hour	Site Access/Dey Drive & Kirby Avenue	TWSC	LOS Delay V/C Q	< < < <	A 8 0.05 2	> > > >	A 4 A 0 A 0 A 0	< < < <	A 0 7 0.00 0	> > > >	A 0 A 0 A 0 A 0	< < < <	B 11 0.01 0	> > > >	B 11 B 11 B 11 B 11	< < < <	A 9 0.07 2	> > > >	A 9 A 9 A 9 A 9	

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

</> - Shared with through movement



4.3 2037 (Five Year) Horizon

4.3.1 Background Traffic Operations

Figure 4.4 illustrates the 2037 background traffic volumes, including road traffic growth.

The 2037 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions.

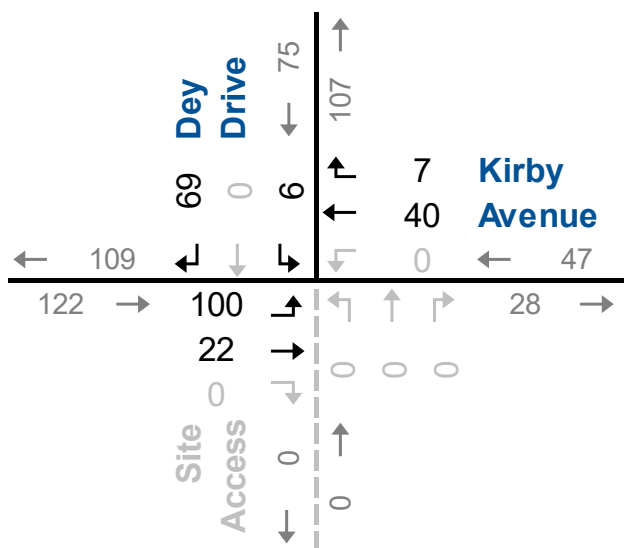
Table 4.3 summarizes the results of the 2037 background traffic operations. The results indicate that Kirby Avenue and Dey Drive is forecast to operate with acceptable levels of service during the AM and PM peak hours.

Appendix F contains the supporting detailed Synchro 12 reports.





AM Peak Hour



PM Peak Hour

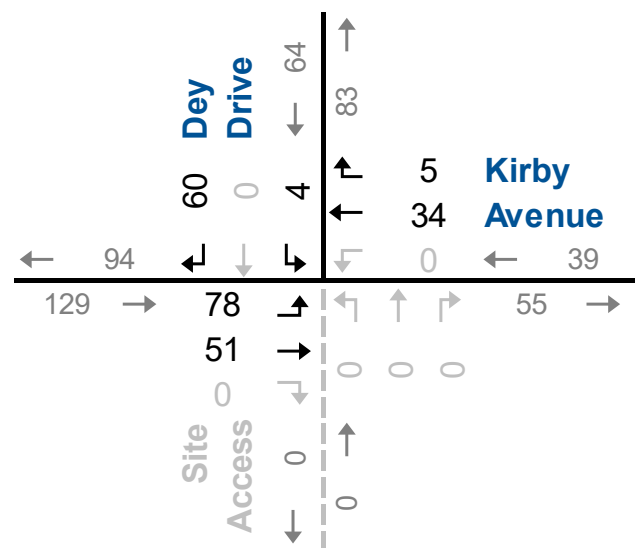


TABLE 4.3: 2037 BACKGROUND TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Kirby Avenue & Dey Drive	TWSC	LOS Delay V/C Q	< < < <	A 8 0.07 2	 	A 6	 	A 0 0.00 0	> > > >	A 0	 	 	 	A 9 0.09 2	 	> > > >	A 9	 	
PM Peak Hour	Kirby Avenue & Dey Drive	TWSC	LOS Delay V/C Q	< < < <	A 8 0.06 2	 	A 5	 	A 0 0.00 0	> > > >	A 0	 	 	 	A 9 0.07 2	 	> > > >	A 9	 	

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

</> - Shared with through movement



4.3.2 Total Traffic Operations

Figure 4.5 illustrates the 2037 total traffic volumes, including trips generated by the proposed development.

The 2037 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions.

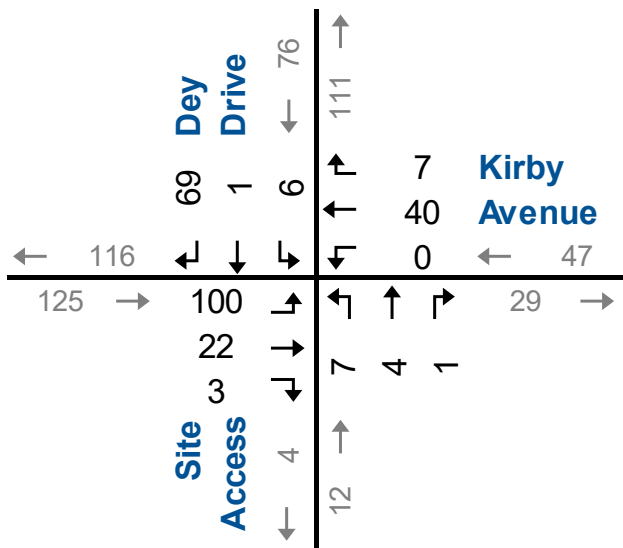
Table 4.4 summarizes the results of the 2037 total traffic operations. The results indicate that Kirby Avenue and Dey Drive / the proposed site access is forecast to operate with acceptable levels of service during the AM and PM peak hours.

Appendix G contains the supporting detailed Synchro 12 reports.





AM Peak Hour



PM Peak Hour

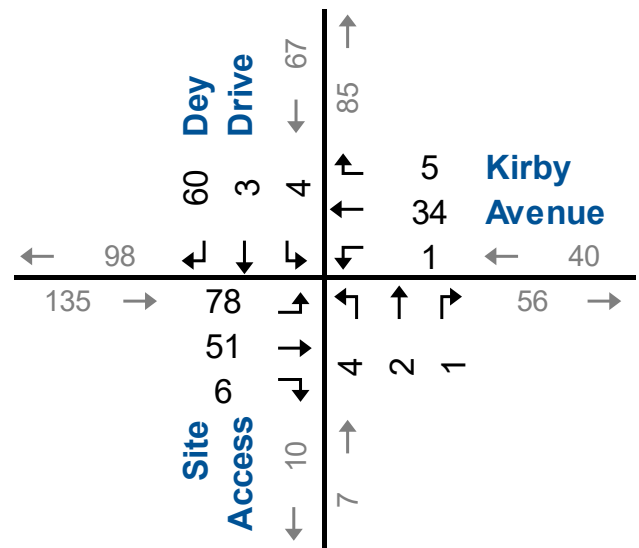


TABLE 4.4: 2037 TOTAL TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Site Access/Dey Drive & Kirby Avenue	TWSC	LOS Delay V/C Q	< < < <	A 8 0.07 2	> > > >	A 6	< < < <	A 0 0.00 0	> > > >	A 0	< < < <	B 11 0.02 1	> > > >	B 11	< < < <	A 9 0.09 2	> > > >	A 9	
PM Peak Hour	Site Access/Dey Drive & Kirby Avenue	TWSC	LOS Delay V/C Q	< < < <	A 8 0.06 2	> > > >	A 4	< < < <	A 7 0.00 0	> > > >	A 0	< < < <	B 11 0.01 0	> > > >	B 11	< < < <	A 9 0.08 2	> > > >	A 9	

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

</> - Shared with through movement



5 Remedial Measures

5.1 Left-Turn Lanes

The Ministry of Transportation Design Supplement for the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads¹² provides guidance on the assessment and / or need for auxiliary left-turn lanes.

Warrant nomographs are used to determine if a left-turn lane is required based on a criterion such as design speed, advancing volume, opposing volume and percent of advancing vehicles performing a left-turn. As nomographs are only provided for 5% increments, a minimum threshold of greater than 2.5% of advancing left-turning vehicles is used in assessing the requirement of a left-turn lane.

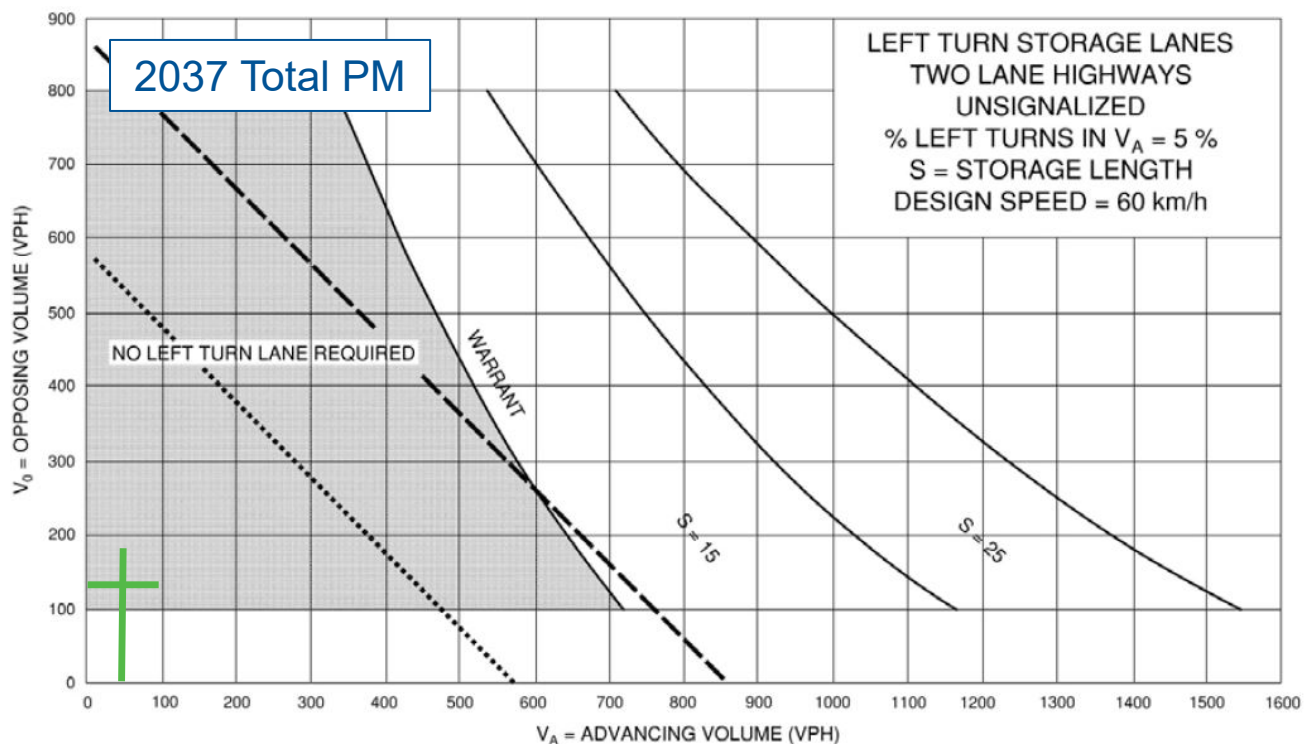
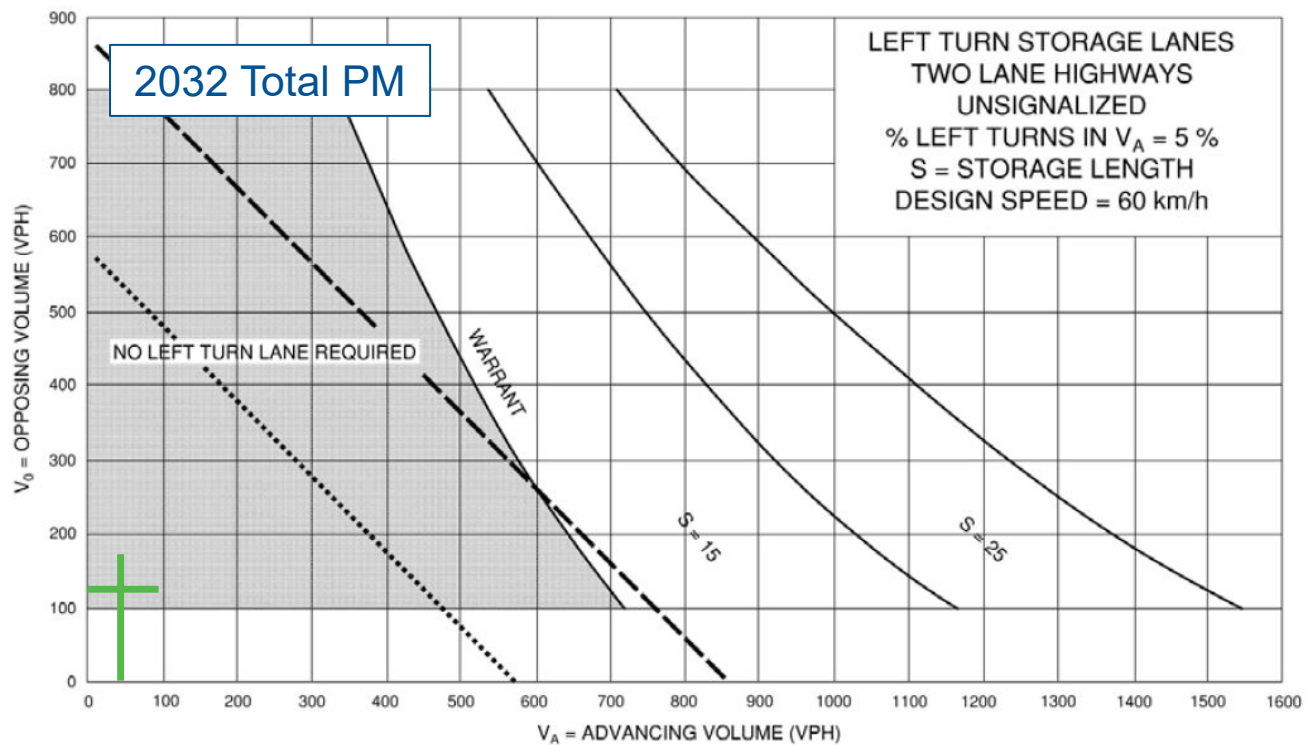
Warrants have been calculated for westbound left-turns at Kirby Avenue and Dey Drive / the proposed site access. The warrant was calculated using the nomographs for left-turn lanes on a two-lane undivided highway at an unsignalized intersection with a design speed of 60 km/h (10 km/h over the assumed speed limit). The warrant was only calculated for the PM peak hour as the percentage of advancing left-turning vehicles is less than 2.5% during the AM peak hour.

Based on the above, a westbound left-turn lane is not warranted on Kirby Avenue at Dey Drive / the proposed site access under 2032 or 2037 total traffic conditions.

Figure 5.1 illustrates the warrant nomographs.

¹² MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads, October 2023.





6 Conclusions and Recommendations

6.1 Conclusions

Based on the investigations carried out, it is concluded that:

- ▶ **Existing Traffic Conditions:** Kirby Avenue and Dey Drive is operating with acceptable levels of service.
- ▶ **Development Trip Generation:** The development is forecast to generate 16 AM peak hour trips and 17 PM peak hour trips.
- ▶ **Sight Distance:** The proposed site access on Kirby Avenue meets the TAC required sight distance criteria for a design speed of 60 km/h.
- ▶ **2032 Background and Total Traffic Conditions:** Kirby Avenue and Dey Drive / the proposed site access is forecast to operate within acceptable levels of service.
- ▶ **2037 Background and Total Traffic Conditions:** Kirby Avenue and Dey Drive / the proposed site access is forecast to operate within acceptable levels of service.
- ▶ **Remedial Measures:** A westbound left-turn lane is not warranted on Kirby Avenue at the proposed site access under 2032 and 2037 total traffic conditions.

6.2 Recommendations

Based on the findings of this study, it is recommended that the proposed development be approved with no conditions related to off-site transportation improvements.



Appendix A

Existing Traffic Data





Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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519-896-3163 cbowness@pts1.com

Count Name: Dey Drive & Kirby Avenue
Site Code: 260062
Start Date: 02/24/2026
Page No: 1

Turning Movement Data

Start Time	Kirby Avenue Eastbound					Kirby Avenue Westbound					Dey Drive Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
7:15 AM	1	0	0	0	1	0	0	0	0	0	1	4	0	0	5	6
7:30 AM	11	1	0	0	12	1	1	0	0	2	0	3	0	0	3	17
7:45 AM	14	1	0	1	15	2	2	0	0	4	0	9	0	0	9	28
Hourly Total	26	3	0	1	29	3	3	0	0	6	1	18	0	0	19	54
8:00 AM	7	1	0	0	8	2	0	0	0	2	1	4	0	0	5	15
8:15 AM	13	0	0	2	13	1	0	0	0	1	0	4	0	3	4	18
8:30 AM	10	2	0	0	12	3	1	0	0	4	0	5	0	2	5	21
8:45 AM	17	0	0	0	17	1	0	0	0	1	0	5	1	0	6	24
Hourly Total	47	3	0	2	50	7	1	0	0	8	1	18	1	5	20	78
9:00 AM	29	2	0	4	31	0	2	0	0	2	3	20	1	0	24	57
9:15 AM	32	0	0	0	32	1	3	0	0	4	2	28	0	0	30	66
9:30 AM	11	0	0	0	11	1	1	0	1	2	0	9	0	1	9	22
9:45 AM	6	0	0	2	6	1	0	0	0	1	0	6	0	2	6	13
Hourly Total	78	2	0	6	80	3	6	0	1	9	5	63	1	3	69	158
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	4	0	0	3	4	1	0	0	0	1	0	8	0	0	8	13
11:45 AM	3	1	0	0	4	2	0	0	0	2	3	8	0	0	11	17
Hourly Total	7	1	0	3	8	3	0	0	0	3	3	16	0	0	19	30
12:00 PM	6	4	0	2	10	0	0	0	0	0	1	9	0	0	10	20
12:15 PM	5	2	0	2	7	0	4	0	0	4	1	4	0	2	5	16
12:30 PM	7	0	0	2	7	2	0	0	0	2	0	8	0	5	8	17
12:45 PM	5	0	0	1	5	1	2	0	0	3	0	6	0	0	6	14
Hourly Total	23	6	0	7	29	3	6	0	0	9	2	27	0	7	29	67
1:00 PM	4	3	0	0	7	1	1	0	1	2	1	6	0	1	7	16
1:15 PM	3	1	0	0	4	0	1	0	0	1	0	4	0	0	4	9
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	7	4	0	0	11	1	2	0	1	3	1	10	0	1	11	25
3:00 PM	15	1	0	0	16	2	0	0	0	2	1	7	1	0	9	27
3:15 PM	13	3	0	0	16	0	1	0	0	1	0	6	0	3	6	23
3:30 PM	25	6	0	0	31	1	3	0	0	4	1	7	3	7	11	46
3:45 PM	17	1	0	1	18	5	0	0	1	5	1	34	0	3	35	58
Hourly Total	70	11	0	1	81	8	4	0	1	12	3	54	4	13	61	154
4:00 PM	9	2	0	0	11	1	2	0	0	3	0	11	0	1	11	25
4:15 PM	4	2	0	2	6	0	0	0	0	0	2	6	0	0	8	14
4:30 PM	6	0	0	0	6	5	0	0	0	5	0	6	0	0	6	17

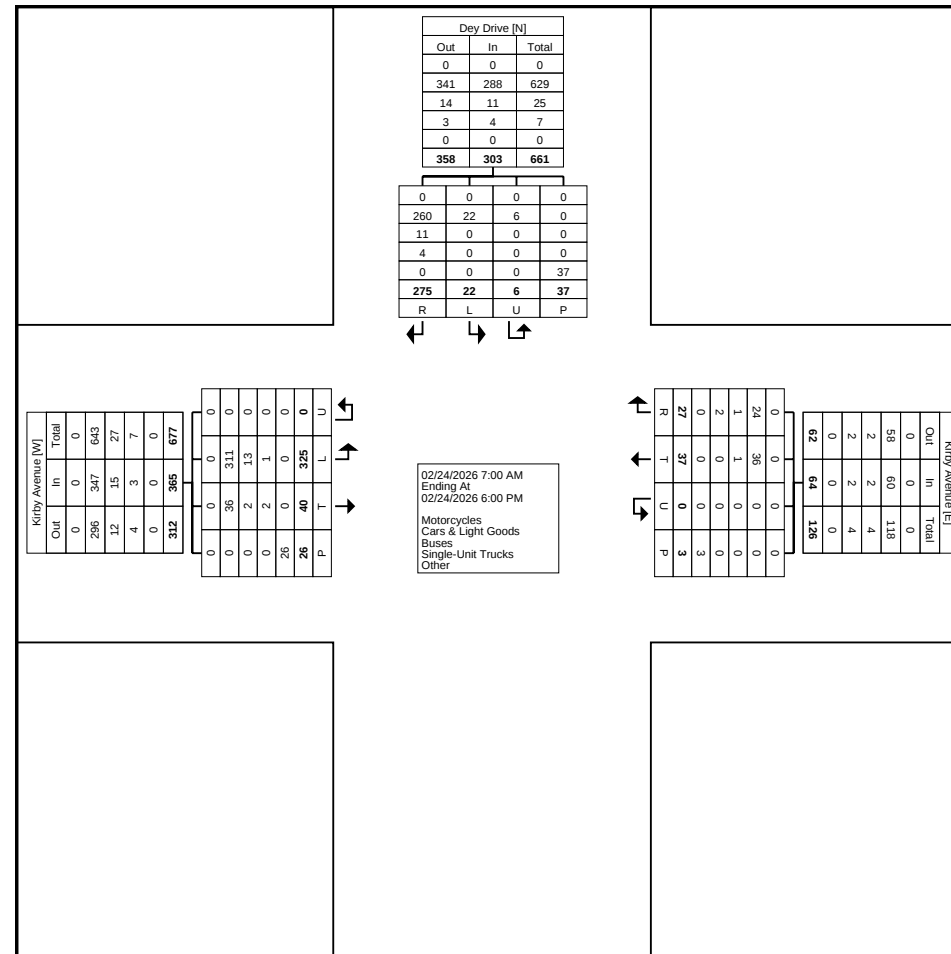
4:45 PM	8	0	0	0	8	0	0	0	0	0	1	7	0	1	8	16
Hourly Total	27	4	0	2	31	6	2	0	0	8	3	30	0	2	33	72
5:00 PM	7	1	0	0	8	1	1	0	0	2	1	11	0	1	12	22
5:15 PM	11	2	0	0	13	0	0	0	0	0	2	9	0	0	11	24
5:30 PM	8	1	0	2	9	0	1	0	0	1	0	9	0	2	9	19
5:45 PM	14	2	0	2	16	2	1	0	0	3	0	10	0	3	10	29
Hourly Total	40	6	0	4	46	3	3	0	0	6	3	39	0	6	42	94
Grand Total	325	40	0	26	365	37	27	0	3	64	22	275	6	37	303	732
Approach %	89.0	11.0	0.0	-	-	57.8	42.2	0.0	-	-	7.3	90.8	2.0	-	-	-
Total %	44.4	5.5	0.0	-	49.9	5.1	3.7	0.0	-	8.7	3.0	37.6	0.8	-	41.4	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	311	36	0	-	347	36	24	0	-	60	22	260	6	-	288	695
% Cars & Light Goods	95.7	90.0	-	-	95.1	97.3	88.9	-	-	93.8	100.0	94.5	100.0	-	95.0	94.9
Buses	13	2	0	-	15	1	1	0	-	2	0	11	0	-	11	28
% Buses	4.0	5.0	-	-	4.1	2.7	3.7	-	-	3.1	0.0	4.0	0.0	-	3.6	3.8
Single-Unit Trucks	1	2	0	-	3	0	2	0	-	2	0	4	0	-	4	9
% Single-Unit Trucks	0.3	5.0	-	-	0.8	0.0	7.4	-	-	3.1	0.0	1.5	0.0	-	1.3	1.2
Articulated Trucks	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	0.0
Bicycles on Road	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	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	26	-	-	-	-	3	-	-	-	-	37	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



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Count Name: Dey Drive & Kirby Avenue
Site Code: 260062
Start Date: 02/24/2026
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts1.com

Count Name: Dey Drive & Kirby Avenue
Site Code: 260062
Start Date: 02/24/2026
Page No: 4

Turning Movement Peak Hour Data (8:45 AM)

Start Time	Kirby Avenue Eastbound					Kirby Avenue Westbound					Dey Drive Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
8:45 AM	17	0	0	0	17	1	0	0	0	1	0	5	1	0	6	24
9:00 AM	29	2	0	4	31	0	2	0	0	2	3	20	1	0	24	57
9:15 AM	32	0	0	0	32	1	3	0	0	4	2	28	0	0	30	66
9:30 AM	11	0	0	0	11	1	1	0	1	2	0	9	0	1	9	22
Total	89	2	0	4	91	3	6	0	1	9	5	62	2	1	69	169
Approach %	97.8	2.2	0.0	-	-	33.3	66.7	0.0	-	-	7.2	89.9	2.9	-	-	-
Total %	52.7	1.2	0.0	-	53.8	1.8	3.6	0.0	-	5.3	3.0	36.7	1.2	-	40.8	-
PHF	0.695	0.250	0.000	-	0.711	0.750	0.500	0.000	-	0.563	0.417	0.554	0.500	-	0.575	0.640
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	85	2	0	-	87	3	6	0	-	9	5	58	2	-	65	161
% Cars & Light Goods	95.5	100.0	-	-	95.6	100.0	100.0	-	-	100.0	100.0	93.5	100.0	-	94.2	95.3
Buses	4	0	0	-	4	0	0	0	-	0	0	4	0	-	4	8
% Buses	4.5	0.0	-	-	4.4	0.0	0.0	-	-	0.0	0.0	6.5	0.0	-	5.8	4.7
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	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	0.0
Bicycles on Road	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	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	4	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data Plot (8:45 AM)

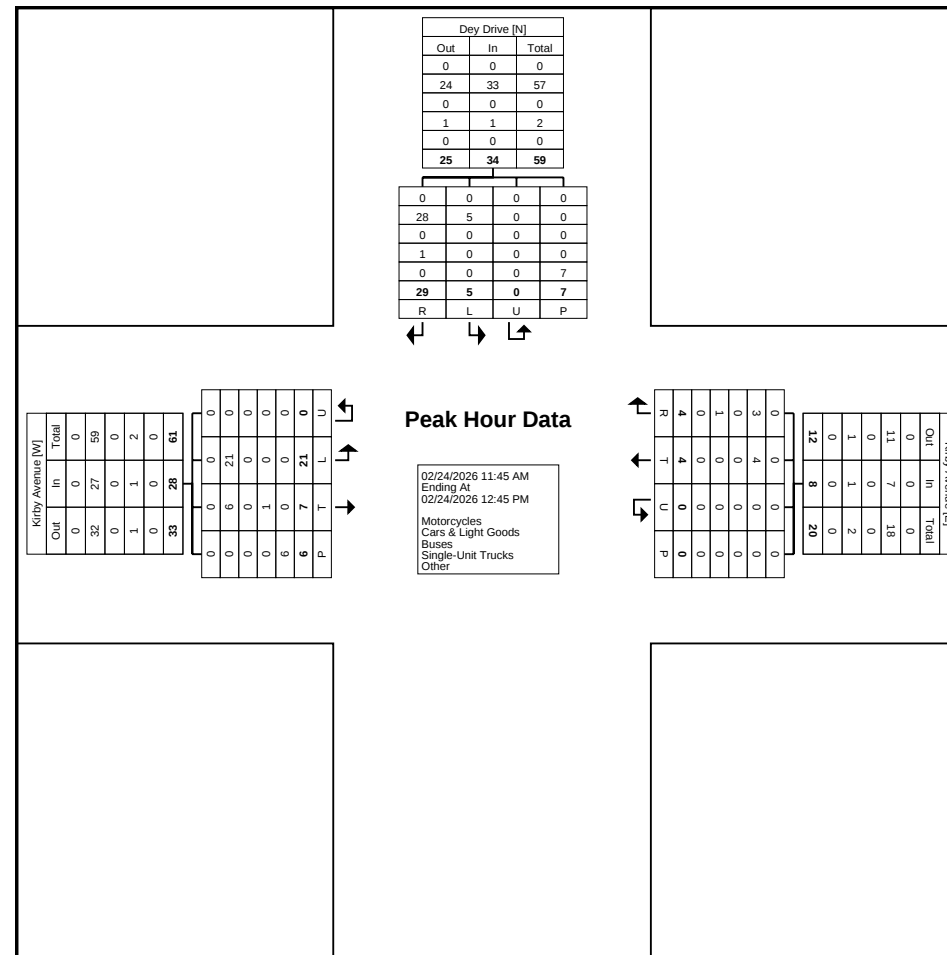
Start Time	Kirby Avenue Eastbound					Kirby Avenue Westbound					Dey Drive Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
11:45 AM	3	1	0	0	4	2	0	0	0	2	3	8	0	0	11	17
12:00 PM	6	4	0	2	10	0	0	0	0	0	1	9	0	0	10	20
12:15 PM	5	2	0	2	7	0	4	0	0	4	1	4	0	2	5	16
12:30 PM	7	0	0	2	7	2	0	0	0	2	0	8	0	5	8	17
Total	21	7	0	6	28	4	4	0	0	8	5	29	0	7	34	70
Approach %	75.0	25.0	0.0	-	-	50.0	50.0	0.0	-	-	14.7	85.3	0.0	-	-	-
Total %	30.0	10.0	0.0	-	40.0	5.7	5.7	0.0	-	11.4	7.1	41.4	0.0	-	48.6	-
PHF	0.750	0.438	0.000	-	0.700	0.500	0.250	0.000	-	0.500	0.417	0.806	0.000	-	0.773	0.875
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	21	6	0	-	27	4	3	0	-	7	5	28	0	-	33	67
% Cars & Light Goods	100.0	85.7	-	-	96.4	100.0	75.0	-	-	87.5	100.0	96.6	-	-	97.1	95.7
Buses	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
Single-Unit Trucks	0	1	0	-	1	0	1	0	-	1	0	1	0	-	1	3
% Single-Unit Trucks	0.0	14.3	-	-	3.6	0.0	25.0	-	-	12.5	0.0	3.4	-	-	2.9	4.3
Articulated Trucks	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	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
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	6	-	-	-	-	0	-	-	-	-	7	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-



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Count Name: Dey Drive & Kirby Avenue
Site Code: 260062
Start Date: 02/24/2026
Page No: 7



Turning Movement Peak Hour Data Plot (11:45 AM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts1.com

Count Name: Dey Drive & Kirby Avenue
Site Code: 260062
Start Date: 02/24/2026
Page No: 8

Turning Movement Peak Hour Data (3:00 PM)

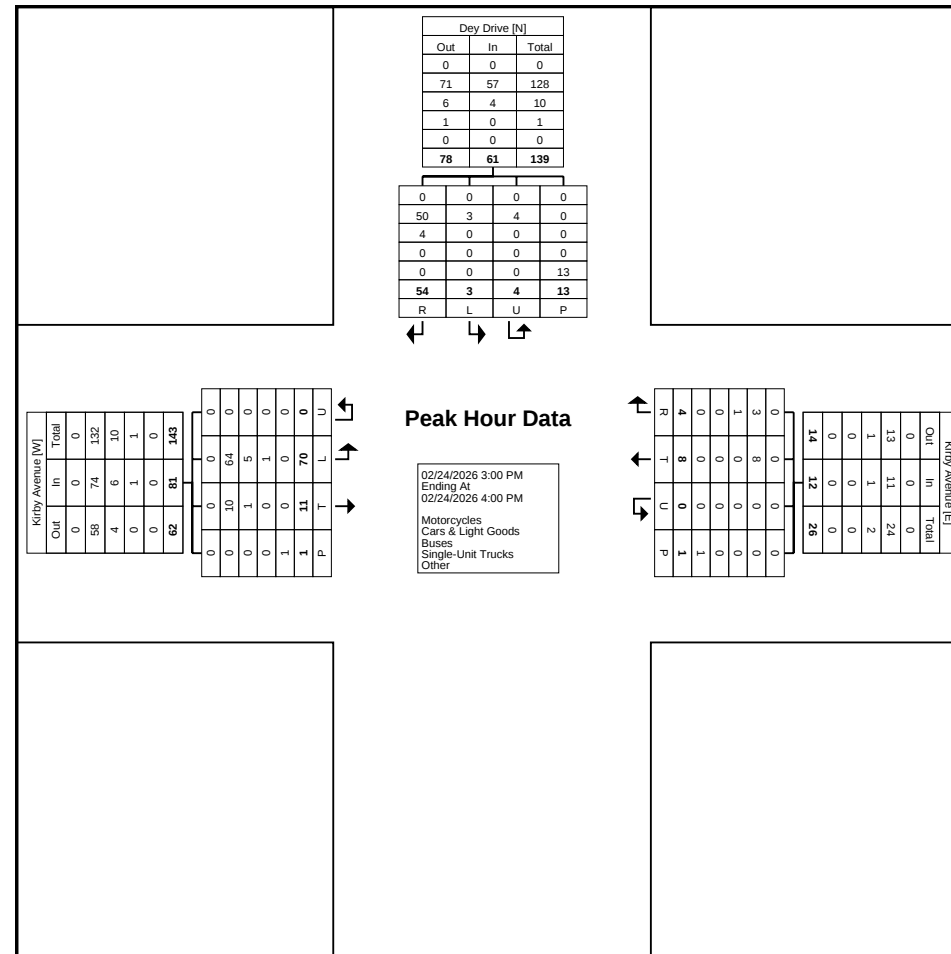
Start Time	Kirby Avenue Eastbound					Kirby Avenue Westbound					Dey Drive Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
3:00 PM	15	1	0	0	16	2	0	0	0	2	1	7	1	0	9	27
3:15 PM	13	3	0	0	16	0	1	0	0	1	0	6	0	3	6	23
3:30 PM	25	6	0	0	31	1	3	0	0	4	1	7	3	7	11	46
3:45 PM	17	1	0	1	18	5	0	0	1	5	1	34	0	3	35	58
Total	70	11	0	1	81	8	4	0	1	12	3	54	4	13	61	154
Approach %	86.4	13.6	0.0	-	-	66.7	33.3	0.0	-	-	4.9	88.5	6.6	-	-	-
Total %	45.5	7.1	0.0	-	52.6	5.2	2.6	0.0	-	7.8	1.9	35.1	2.6	-	39.6	-
PHF	0.700	0.458	0.000	-	0.653	0.400	0.333	0.000	-	0.600	0.750	0.397	0.333	-	0.436	0.664
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	64	10	0	-	74	8	3	0	-	11	3	50	4	-	57	142
% Cars & Light Goods	91.4	90.9	-	-	91.4	100.0	75.0	-	-	91.7	100.0	92.6	100.0	-	93.4	92.2
Buses	5	1	0	-	6	0	1	0	-	1	0	4	0	-	4	11
% Buses	7.1	9.1	-	-	7.4	0.0	25.0	-	-	8.3	0.0	7.4	0.0	-	6.6	7.1
Single-Unit Trucks	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Single-Unit Trucks	1.4	0.0	-	-	1.2	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.6
Articulated Trucks	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	0.0
Bicycles on Road	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	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	1	-	-	-	-	1	-	-	-	-	13	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



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Count Name: Dey Drive & Kirby Avenue
Site Code: 260062
Start Date: 02/24/2026
Page No: 9



Turning Movement Peak Hour Data Plot (3:00 PM)

Appendix B

Existing Traffic Operations Report



Lanes, Volumes, Timings
1: Kirby Avenue & Dey Drive

Existing AM Peak Hour
(260062) Dey Drive and Kirby Avenue, Collingwood TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	89	2	3	6	5	62
Future Volume (vph)	89	2	3	6	5	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.905		0.874	
Flt Protected		0.953			0.997	
Satd. Flow (prot)	0	1762	1739	0	1585	0
Flt Permitted		0.953			0.997	
Satd. Flow (perm)	0	1762	1739	0	1585	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		95.5	116.6		134.9	
Travel Time (s)		6.9	8.4		9.7	
Confl. Peds. (#/hr)	1			1	1	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	0%	0%	0%	0%	6%
Adj. Flow (vph)	97	2	3	7	5	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	99	10	0	72	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 24.0% ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	7.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	2	3	6	5	62
Future Vol, veh/h	89	2	3	6	5	62
Conflicting Peds, #/hr	1	0	0	1	1	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	0	0	0	6
Mvmt Flow	97	2	3	7	5	67
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	11	0	-	0	204	12
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	4.14	-	-	-	6.4	6.26
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.354
Pot Cap-1 Maneuver	1596	-	-	-	789	1058
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1594	-	-	-	739	1053
Mov Cap-2 Maneuver	-	-	-	-	739	-
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	841	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	7.24	0		8.8		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1592	-	-	-	1020	
HCM Lane V/C Ratio	0.061	-	-	-	0.071	
HCM Ctrl Dly (s/v)	7.4	0	-	-	8.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	

Lanes, Volumes, Timings
1: Kirby Avenue & Dey Drive

Existing PM Peak Hour
(260062) Dey Drive and Kirby Avenue, Collingwood TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	70	11	8	4	3	54
Future Volume (vph)	70	11	8	4	3	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.958		0.872	
Flt Protected		0.959			0.998	
Satd. Flow (prot)	0	1690	1709	0	1567	0
Flt Permitted		0.959			0.998	
Satd. Flow (perm)	0	1690	1709	0	1567	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		95.5	116.6		134.9	
Travel Time (s)		6.9	8.4		9.7	
Confl. Peds. (#/hr)	13			13	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	0%	25%	0%	7%
Adj. Flow (vph)	76	12	9	4	3	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	88	13	0	62	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.7% ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	6.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	70	11	8	4	3	54
Future Vol, veh/h	70	11	8	4	3	54
Conflicting Peds, #/hr	13	0	0	13	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	0	25	0	7
Mvmt Flow	76	12	9	4	3	59
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	26	0	-	0	189	25
Stage 1	-	-	-	-	24	-
Stage 2	-	-	-	-	165	-
Critical Hdwy	4.19	-	-	-	6.4	6.27
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.281	-	-	-	3.5	3.363
Pot Cap-1 Maneuver	1544	-	-	-	805	1037
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	869	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1523	-	-	-	744	1022
Mov Cap-2 Maneuver	-	-	-	-	744	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	858	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	6.47	0		8.83		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1513	-	-	-	1003	
HCM Lane V/C Ratio	0.05	-	-	-	0.062	
HCM Ctrl Dly (s/v)	7.5	0	-	-	8.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	

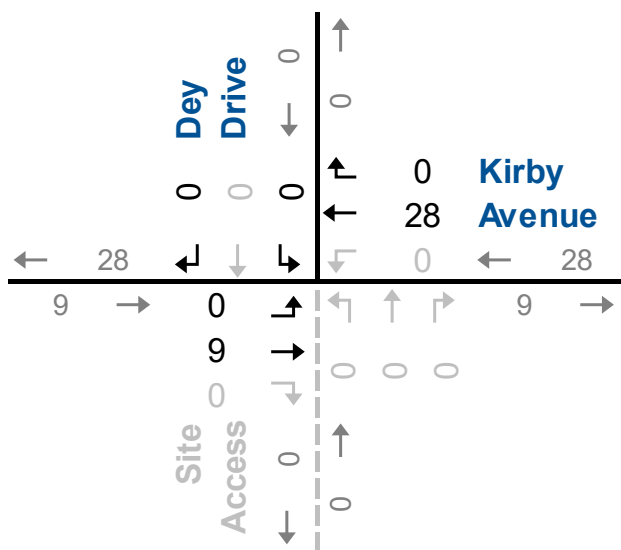
Appendix C

Other Area Development Traffic Volumes

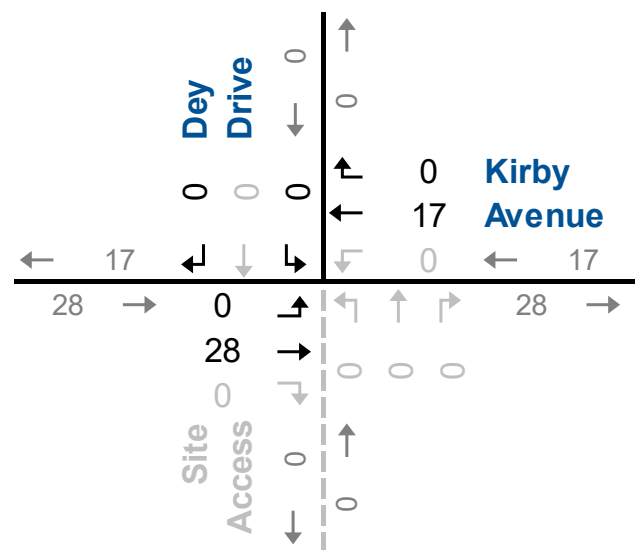




AM Peak Hour



PM Peak Hour



Appendix D

2032 Background Traffic Operations



Lanes, Volumes, Timings
1: Kirby Avenue & Dey Drive

2032 Background AM Peak Hour
(260062) Dey Drive and Kirby Avenue, Collingwood TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	21	38	7	6	63
Future Volume (vph)	90	21	38	7	6	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.978		0.878	
Flt Protected		0.961			0.995	
Satd. Flow (prot)	0	1788	1879	0	1592	0
Flt Permitted		0.961			0.995	
Satd. Flow (perm)	0	1788	1879	0	1592	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		95.5	116.6		134.9	
Travel Time (s)		6.9	8.4		9.7	
Confl. Peds. (#/hr)	1			1	1	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	0%	0%	0%	0%	6%
Adj. Flow (vph)	98	23	41	8	7	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	121	49	0	75	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 25.1% ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	5.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	90	21	38	7	6	63
Future Vol, veh/h	90	21	38	7	6	63
Conflicting Peds, #/hr	1	0	0	1	1	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	0	0	0	6
Mvmt Flow	98	23	41	8	7	68
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	50	0	-	0	266	50
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	219	-
Critical Hdwy	4.14	-	-	-	6.4	6.26
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.354
Pot Cap-1 Maneuver	1544	-	-	-	728	1007
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	822	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1542	-	-	-	680	1002
Mov Cap-2 Maneuver	-	-	-	-	680	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	821	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	6.07	0		9.06		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1459	-	-	-	962	
HCM Lane V/C Ratio	0.063	-	-	-	0.078	
HCM Ctrl Dly (s/v)	7.5	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3	

Lanes, Volumes, Timings
1: Kirby Avenue & Dey Drive

2032 Background PM Peak Hour
(260062) Dey Drive and Kirby Avenue, Collingwood TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	71	48	32	5	3	55
Future Volume (vph)	71	48	32	5	3	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.983		0.871	
Flt Protected		0.971			0.998	
Satd. Flow (prot)	0	1711	1831	0	1566	0
Flt Permitted		0.971			0.998	
Satd. Flow (perm)	0	1711	1831	0	1566	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		95.5	116.6		134.9	
Travel Time (s)		6.9	8.4		9.7	
Confl. Peds. (#/hr)	13			13	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	0%	25%	0%	7%
Adj. Flow (vph)	77	52	35	5	3	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	129	40	0	63	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 23.8% ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	71	48	32	5	3	55
Future Vol, veh/h	71	48	32	5	3	55
Conflicting Peds, #/hr	13	0	0	13	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	0	25	0	7
Mvmt Flow	77	52	35	5	3	60
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	53	0	-	0	258	52
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	208	-
Critical Hdwy	4.19	-	-	-	6.4	6.27
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.281	-	-	-	3.5	3.363
Pot Cap-1 Maneuver	1509	-	-	-	735	1002
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1489	-	-	-	678	988
Mov Cap-2 Maneuver	-	-	-	-	678	-
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	821	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	4.5	0		8.99		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1074	-	-	-	965	
HCM Lane V/C Ratio	0.052	-	-	-	0.065	
HCM Ctrl Dly (s/v)	7.6	0	-	-	9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	

Appendix E

2032 Total Traffic Operations



Lanes, Volumes, Timings

2032 Total AM Peak Hour

1: Site Access/Dey Drive & Kirby Avenue(260062) Dey Drive and Kirby Avenue, Collingwood TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	21	3	0	38	7	7	4	1	6	1	63
Future Volume (vph)	90	21	3	0	38	7	7	4	1	6	1	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.978			0.990			0.879	
Flt Protected		0.962						0.970			0.995	
Satd. Flow (prot)	0	1786	0	0	1879	0	0	1845	0	0	1595	0
Flt Permitted		0.962						0.970			0.995	
Satd. Flow (perm)	0	1786	0	0	1879	0	0	1845	0	0	1595	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		95.5			116.6			84.2			134.9	
Travel Time (s)		6.9			8.4			6.1			9.7	
Confl. Peds. (#/hr)	1					1	4		1	1		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%
Adj. Flow (vph)	98	23	3	0	41	8	8	4	1	7	1	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	49	0	0	13	0	0	76	0
Sign Control	Free Free Stop Stop											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	25.3%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	90	21	3	0	38	7	7	4	1	6	1	63
Future Vol, veh/h	90	21	3	0	38	7	7	4	1	6	1	63
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	1	1	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	0	0	0	0	0	0	0	0	0	0	6
Mvmt Flow	98	23	3	0	41	8	8	4	1	7	1	68
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	50	0	0	26	0	0	266	270	25	268	268	50
Stage 1	-	-	-	-	-	-	220	220	-	46	46	-
Stage 2	-	-	-	-	-	-	46	50	-	222	222	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.354
Pot Cap-1 Maneuver	1544	-	-	1601	-	-	691	640	1056	689	642	1007
Stage 1	-	-	-	-	-	-	787	725	-	973	860	-
Stage 2	-	-	-	-	-	-	973	857	-	785	724	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1542	-	-	1601	-	-	599	598	1055	638	600	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	599	598	-	638	600	-
Stage 1	-	-	-	-	-	-	736	678	-	972	860	-
Stage 2	-	-	-	-	-	-	902	856	-	729	677	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	5.91			0			10.92			9.13		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	621	1386	-	-	1601	-	-	947				
HCM Lane V/C Ratio	0.021	0.063	-	-	-	-	-	0.08				
HCM Ctrl Dly (s/v)	10.9	7.5	0	-	0	-	-	9.1				
HCM Lane LOS	B	A	A	-	A	-	-	A				
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.3				

Lanes, Volumes, Timings

2032 Total PM Peak Hour

1: Site Access/Dey Drive & Kirby Avenue(260062) Dey Drive and Kirby Avenue, Collingwood TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	48	6	1	32	5	4	2	1	3	3	55
Future Volume (vph)	71	48	6	1	32	5	4	2	1	3	3	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.984			0.981			0.877	
Flt Protected		0.972			0.999			0.972			0.998	
Satd. Flow (prot)	0	1708	0	0	1833	0	0	1832	0	0	1581	0
Flt Permitted		0.972			0.999			0.972			0.998	
Satd. Flow (perm)	0	1708	0	0	1833	0	0	1832	0	0	1581	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		95.5			116.6			74.6			134.9	
Travel Time (s)		6.9			8.4			5.4			9.7	
Confl. Peds. (#/hr)	13					13	1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	0%	0%	0%	25%	0%	0%	0%	0%	0%	7%
Adj. Flow (vph)	77	52	7	1	35	5	4	2	1	3	3	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	41	0	0	7	0	0	66	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	24.3%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	48	6	1	32	5	4	2	1	3	3	55
Future Vol, veh/h	71	48	6	1	32	5	4	2	1	3	3	55
Conflicting Peds, #/hr	13	0	0	0	0	13	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	0	0	0	25	0	0	0	0	0	7
Mvmt Flow	77	52	7	1	35	5	4	2	1	3	3	60
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	59	0	0	249	265	56	261	266	52
Stage 1	-	-	-	-	-	-	210	210	-	53	53	-
Stage 2	-	-	-	-	-	-	40	55	-	209	213	-
Critical Hdwy	4.19	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.281	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.363
Pot Cap-1 Maneuver	1509	-	-	1558	-	-	708	644	1016	696	643	1002
Stage 1	-	-	-	-	-	-	797	732	-	965	855	-
Stage 2	-	-	-	-	-	-	980	853	-	798	730	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1489	-	-	1558	-	-	625	601	1015	646	600	988
Mov Cap-2 Maneuver	-	-	-	-	-	-	625	601	-	646	600	-
Stage 1	-	-	-	-	-	-	754	693	-	952	843	-
Stage 2	-	-	-	-	-	-	916	841	-	751	691	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	4.29			0.19			10.57			9.15		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	654	1000	-	-	46	-	-	934				
HCM Lane V/C Ratio	0.012	0.052	-	-	0.001	-	-	0.071				
HCM Ctrl Dly (s/v)	10.6	7.6	0	-	7.3	0	-	9.1				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	0.2				

Appendix F

2037 Background Traffic Operations



Lanes, Volumes, Timings
1: Kirby Avenue & Dey Drive

2037 Background AM Peak Hour
(260062) Dey Drive and Kirby Avenue, Collingwood TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	100	22	40	7	6	69
Future Volume (vph)	100	22	40	7	6	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.979		0.877	
Flt Protected		0.961			0.996	
Satd. Flow (prot)	0	1788	1881	0	1591	0
Flt Permitted		0.961			0.996	
Satd. Flow (perm)	0	1788	1881	0	1591	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		95.5	116.6		134.9	
Travel Time (s)		6.9	8.4		9.7	
Confl. Peds. (#/hr)	1			1	1	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	0%	0%	0%	0%	6%
Adj. Flow (vph)	109	24	43	8	7	75
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	133	51	0	82	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 26.1% ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	5.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	100	22	40	7	6	69
Future Vol, veh/h	100	22	40	7	6	69
Conflicting Peds, #/hr	1	0	0	1	1	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	0	0	0	6
Mvmt Flow	109	24	43	8	7	75
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	52	0	-	0	291	52
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	242	-
Critical Hdwy	4.14	-	-	-	6.4	6.26
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.354
Pot Cap-1 Maneuver	1541	-	-	-	704	1004
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	803	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1540	-	-	-	653	999
Mov Cap-2 Maneuver	-	-	-	-	653	-
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	802	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	6.16	0		9.1		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1475	-	-	-	959	
HCM Lane V/C Ratio	0.071	-	-	-	0.085	
HCM Ctrl Dly (s/v)	7.5	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3	

Lanes, Volumes, Timings
1: Kirby Avenue & Dey Drive

2037 Background PM Peak Hour
(260062) Dey Drive and Kirby Avenue, Collingwood TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	78	51	34	5	4	60
Future Volume (vph)	78	51	34	5	4	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.873	
Flt Protected		0.971			0.997	
Satd. Flow (prot)	0	1711	1836	0	1569	0
Flt Permitted		0.971			0.997	
Satd. Flow (perm)	0	1711	1836	0	1569	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		95.5	116.6		134.9	
Travel Time (s)		6.9	8.4		9.7	
Confl. Peds. (#/hr)	13			13	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	0%	25%	0%	7%
Adj. Flow (vph)	85	55	37	5	4	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	140	42	0	69	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 24.7% ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	78	51	34	5	4	60
Future Vol, veh/h	78	51	34	5	4	60
Conflicting Peds, #/hr	13	0	0	13	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	0	25	0	7
Mvmt Flow	85	55	37	5	4	65
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	55	0	-	0	279	54
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	4.19	-	-	-	6.4	6.27
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.281	-	-	-	3.5	3.363
Pot Cap-1 Maneuver	1506	-	-	-	715	1000
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	816	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1486	-	-	-	656	985
Mov Cap-2 Maneuver	-	-	-	-	656	-
Stage 1	-	-	-	-	905	-
Stage 2	-	-	-	-	806	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	4.58	0		9.06		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1088	-	-	-	955	
HCM Lane V/C Ratio	0.057	-	-	-	0.073	
HCM Ctrl Dly (s/v)	7.6	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	

Appendix G

2037 Total Traffic Operations



Lanes, Volumes, Timings

2037 Total AM Peak Hour

1: Site Access/Dey Drive & Kirby Avenue(260062) Dey Drive and Kirby Avenue, Collingwood TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	22	3	0	40	7	7	4	1	6	1	69
Future Volume (vph)	100	22	3	0	40	7	7	4	1	6	1	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.979			0.990			0.878	
Flt Protected		0.961						0.970			0.996	
Satd. Flow (prot)	0	1783	0	0	1881	0	0	1845	0	0	1594	0
Flt Permitted		0.961						0.970			0.996	
Satd. Flow (perm)	0	1783	0	0	1881	0	0	1845	0	0	1594	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		95.5			116.6			84.2			134.9	
Travel Time (s)		6.9			8.4			6.1			9.7	
Confl. Peds. (#/hr)	1					1	4		1	1		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%
Adj. Flow (vph)	109	24	3	0	43	8	8	4	1	7	1	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	51	0	0	13	0	0	83	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	26.3%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	22	3	0	40	7	7	4	1	6	1	69
Future Vol, veh/h	100	22	3	0	40	7	7	4	1	6	1	69
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	1	1	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	0	0	0	0	0	0	0	0	0	0	6
Mvmt Flow	109	24	3	0	43	8	8	4	1	7	1	75
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	52	0	0	27	0	0	291	295	27	293	293	52
Stage 1	-	-	-	-	-	-	243	243	-	48	48	-
Stage 2	-	-	-	-	-	-	48	52	-	244	245	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.354
Pot Cap-1 Maneuver	1541	-	-	1600	-	-	665	620	1055	663	621	1004
Stage 1	-	-	-	-	-	-	765	709	-	970	859	-
Stage 2	-	-	-	-	-	-	970	855	-	764	707	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1540	-	-	1600	-	-	568	575	1054	610	576	999
Mov Cap-2 Maneuver	-	-	-	-	-	-	568	575	-	610	576	-
Stage 1	-	-	-	-	-	-	710	658	-	969	858	-
Stage 2	-	-	-	-	-	-	893	855	-	703	657	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	6.01			0			11.21			9.19		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	593	1406	-	-	1600	-	-	943				
HCM Lane V/C Ratio	0.022	0.071	-	-	-	-	-	0.088				
HCM Ctrl Dly (s/v)	11.2	7.5	0	-	0	-	-	9.2				
HCM Lane LOS	B	A	A	-	A	-	-	A				
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.3				

Lanes, Volumes, Timings

2037 Total PM Peak Hour

1: Site Access/Dey Drive & Kirby Avenue(260062) Dey Drive and Kirby Avenue, Collingwood TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	51	6	1	34	5	4	2	1	4	3	60
Future Volume (vph)	78	51	6	1	34	5	4	2	1	4	3	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.984			0.981			0.878	
Flt Protected		0.972			0.999			0.972			0.997	
Satd. Flow (prot)	0	1710	0	0	1835	0	0	1832	0	0	1582	0
Flt Permitted		0.972			0.999			0.972			0.997	
Satd. Flow (perm)	0	1710	0	0	1835	0	0	1832	0	0	1582	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		95.5			116.6			74.6			134.9	
Travel Time (s)		6.9			8.4			5.4			9.7	
Confl. Peds. (#/hr)	13					13	1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	0%	0%	0%	25%	0%	0%	0%	0%	0%	7%
Adj. Flow (vph)	85	55	7	1	37	5	4	2	1	4	3	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	0	0	43	0	0	7	0	0	72	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	25.2%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	78	51	6	1	34	5	4	2	1	4	3	60
Future Vol, veh/h	78	51	6	1	34	5	4	2	1	4	3	60
Conflicting Peds, #/hr	13	0	0	0	0	13	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	0	0	0	25	0	0	0	0	0	7
Mvmt Flow	85	55	7	1	37	5	4	2	1	4	3	65
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	55	0	0	62	0	0	270	286	60	282	286	54
Stage 1	-	-	-	-	-	-	228	228	-	55	55	-
Stage 2	-	-	-	-	-	-	42	58	-	227	232	-
Critical Hdwy	4.19	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.281	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.363
Pot Cap-1 Maneuver	1506	-	-	1554	-	-	687	627	1012	674	627	1000
Stage 1	-	-	-	-	-	-	779	719	-	962	853	-
Stage 2	-	-	-	-	-	-	978	851	-	780	717	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1486	-	-	1554	-	-	599	582	1010	622	581	985
Mov Cap-2 Maneuver	-	-	-	-	-	-	599	582	-	622	581	-
Stage 1	-	-	-	-	-	-	733	676	-	949	841	-
Stage 2	-	-	-	-	-	-	908	839	-	730	674	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	4.37			0.18			10.78			9.23		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	630	1019	-	-	44	-	-	924				
HCM Lane V/C Ratio	0.012	0.057	-	-	0.001	-	-	0.079				
HCM Ctrl Dly (s/v)	10.8	7.6	0	-	7.3	0	-	9.2				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	0.3				