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496857 Grey Road 2

TRANSPORTATION IMPACT STUDY

Homefield Communities

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	 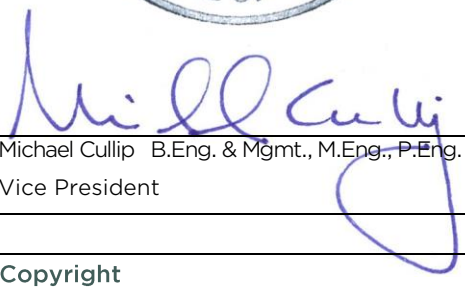
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Issue	Date	Description
1	September 12, 2024	Final Report

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1 Introduction

Tatham Engineering Limited was retained by Homefield Communities to prepare a Transportation Impact Study in support of the proposed development of 496857 Grey Road 2 in the Town of The Blue Mountains. The location of the development site is illustrated in Figure 1.

1.1 REPORT OBJECTIVE

The objective of this report is to present the findings of the transportation impact study and address the requirements of the Town, County and MTO with respect to the potential transportation impacts of the proposed development on the area road network. In particular, the following will be discussed:

- the operations of the study area road system prior to the proposed development;
- the growth in the traffic volumes not otherwise attributed to the development (i.e. from overall growth in the area and/or other developments);
- the number of new trips the proposed development is likely to generate;
- the operations of the study area road system upon the completion of the proposed development; and
- the resulting impacts and need for mitigating measures (if required) to ensure acceptable overall road operations, including during the construction of the proposed development.

A Terms of Reference was submitted for review and subsequently approved by the County and MTO (as provided in Appendix A).

1.2 REPORT STRUCTURE

The report is structured as follows:

- Chapter 1: introduction and study purpose;
- Chapter 2: existing conditions, detailing the road system and corresponding traffic operations;
- Chapter 3: future conditions, prior to the completion of the proposed development (referred to as future background conditions), the expected growth in traffic levels and the resulting operating conditions;
- Chapter 4: proposed development and associated details including land use, access, traffic volumes and parking provision;
- Chapter 5: future conditions, with completion of the proposed development (referred to as future total conditions); and
- Chapter 6: summary of the report and key findings.

2 Existing Conditions

This chapter will describe the road network, traffic volumes and operations for the existing conditions.

2.1 ROAD NETWORK

The road network to be addressed by this study consists of Grey Road 2, Grey Road 40, Clark Street, Highway 26 and the following intersections:

- Grey Road 2 and Highway 26;
- Grey Road 2 and Clark Street; and
- Grey Road 2 and Grey Road 40.

The area road network is illustrated in Figure 2.

2.1.1 Roads

Highway 26

Highway 26 is a provincial highway under the jurisdiction of the Ministry of Transportation (MTO). As per MTO's *Highway Corridor Management Manual*[1], Highway 26 is designated as Class 2B arterial highway. For the purpose of this study, the highway is assumed to have an east-west orientation. The posted speed limit across the intersection with Grey Road 2 is 70 km/h, thus a design speed of 90 km/h (+ 20 km/h for higher speed roads) has been assumed.

Grey Road 2

As per *The County of Grey Official Plan*[2], Grey Road 2 is classified as an arterial County road. The road is oriented north-south through the study area and has a 2-lane rural cross section. Grey Road 2 has a posted speed limit of 80 km/h and thus a design speed of 100 km/h has been assumed.

Grey Road 40

Grey Road 40 is classified as an arterial road under the jurisdiction of the County. The road is oriented east-west through the study area and has a 2-lane rural cross-section providing one lane

[1] *Highway Corridor Management Manual.* Ministry of Transportation. April 2022.
[2] *Recolour Grey – County of Grey Official Plan*. Grey County Planning & Development Department. June 2019

of travel per direction. Grey Road 40 has a posted speed limit of 80 km/h and thus a design speed of 100 km/h has been assumed.

Clark Street

As per the *Town of The Blue Mountains Official Plan*[3], Clark Street is classified as a major collector road. The road is oriented east-west through the study area and has a 2-lane rural cross-section. Clark Street has a posted speed limit of 80 km/h, with an assumed 100 km/h design speed.

2.1.2 Intersections

Highway 26 & Grey Road 2

The intersection of Grey Road 2 with Highway 26 is a 3-leg intersection with stop control on Grey Road 2. The west approach (Highway 26) consists of a through lane and a right turn lane, whereas the east approach consists of a left turn lane and a through lane. The south approach (Grey Road 2) has a single shared left-right turn lane.

Grey Road 2 & Grey Road 40

The intersection of Grey Road 2 and Grey Road 40 is a 4-leg, unsignalized intersection with stop control on Grey Road 40. Each approach consists of a single shared left-through-right turn lane.

Grey Road 2 & Clark Street

The intersection of Clark Street with Grey Road 2 is a 3-leg 'T' intersection with stop control on Clark Street. All approaches are single lane approaches (i.e. no exclusive turn lanes are provided). The intersection is located approximately 125 metres south of the Grey Road 2 intersection with Highway 26.

2.2 TRAFFIC VOLUMES

To determine existing traffic volumes, traffic counts were conducted at the study area intersections on Thursday July 18, 2024, from 7:00 to 9:00, 11:00 to 14:00 and 15:00 to 18:00. The observed peak hour traffic volumes, considered reflective of typical summer weekday conditions, are illustrated in Figure 3 with detailed count sheets provided in Appendix B.

[3] *Town of The Blue Mountains Official Plan*. June 2016.

2.3 TRAFFIC OPERATIONS

The capacity, and hence operations, of a road system is effectively governed by its intersections. To provide a baseline from which the future traffic operations can be assessed, the existing intersections operations were reviewed based on the following:

- the 2024 summer traffic volumes;
- the existing intersection configurations and controls; and
- procedures outlined in the *2000 Highway Capacity Manual*[4] (using Synchro v.11 software).

For unsignalized intersections, the analysis considers:

- the average delay (measured in seconds);
- level of service (LOS); and
- volume to capacity (v/c) for critical movements (i.e. those operating under stop control and those including left turns).

With respect to the noted metrics:

- level of service A corresponds to the best operating condition with minimal delays whereas level of service F corresponds to poor operations resulting from high intersection delays (additional details regarding Level of Service definitions are provided in Appendix C); and
- a v/c ratio of less than 1.0 indicates the intersection movement/approach is operating at less than capacity while v/c of 1.0 indicates capacity has been reached.

A summary of the analysis is provided in Table 1 with detailed operational worksheets provided in Appendix D.

[4] *Highway Capacity Manual.* Transportation Research Board, Washington DC, 2000.

Table 1: Intersection Operations – 2024

INTERSECTION, MOVEMENTS & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			DELAY	LOS	V/C	DELAY	LOS	V/C
Highway 26 & Grey Road 2	WB L	free	9	A	0.05	10	A	0.08
	NB LR	stop	22	C	0.42	48	E	0.66
Grey Road 2 & Clark Street	EB LR	stop	10	B	0.11	11	B	0.14
	NB LT	free	2	A	0.02	2	A	0.03
Grey Road 2 & Grey Road 40	EB LTR	stop	12	B	0.20	12	B	0.20
	WB LTR	stop	12	B	0.14	12	B	0.23
	NB LTR	free	1	A	0.01	1	A	0.01
	SB LTR	free	2	A	0.01	1	A	0.01

L left lane T through lane R right lane LT left-through TR through-right LTR left-through-right

As indicated, all intersections currently provide acceptable operations (LOS E or better) with average delays during the peak times.

2.4 NEED FOR IMPROVEMENTS

Based on the results of the operations assessment, no intersection improvements are required to support the existing conditions.

3 Future Background Conditions

This chapter will describe the road network and background traffic volumes expected for the years 2030, 2035 and 2040. The 2030 horizon year has been adopted to reflect full build-out of the proposed development, whereas the 2035 and 2040 horizons will address the longer-term impacts (5 and 10 years beyond build-out).

3.1 ROAD NETWORK

With regards to the future road system within the study area, the *Highway 26/Grey Road 2 Intersection Improvements – Municipal Class EA – Schedule B*[5] provided a number of recommendations including:

- signalize the Grey Road 2/Highway 26 intersection and provide left turn lanes on all approaches;
- close the existing Lakeshore Road access to Highway 26 and relocate it to the Grey Road 2/ Highway 26 intersection, thus forming the north leg; and
- realign the Clark Street/Grey Road 2 intersection to south of the fire hall to improve the available sight lines upon approach from Highway 26.

In July 2024, MTO issued a Notice of Commencement for the detailed design of the proposed improvements, but the anticipated start and completion are unknown. As such, this report will assess each study horizon and implement the recommended improvements as warranted by the operations.

3.2 TRAFFIC VOLUMES

Future background traffic volumes expected for the 2030, 2035 and 2040 horizon years have been determined based on the existing traffic volumes, historical and projected growth, and additional increases in volumes due to other developments (if any) within the immediate area (apart from the subject development).

[5] *Highway 26/Grey Road 2 Intersection Improvements – Municipal Class EA – Schedule B.* The Town of The Blue Mountains, R.J. Burnside & Associates Ltd., May 2016.

3.2.1 Background Growth

Population Growth

Based on the Census data for the years 2011, 2016 and 2021, the population of the Town of The Blue Mountains increased from 6,453 to 7,025 to 9,390 persons, which translates to annual growth of 5.9% between 2016 and 2021, and 3.8% between 2011 and 2021.

As per the *Update to the Grey County Growth Management Strategy Update*[6], the Town's population is projected to increase from 9,550 in 2021 (slightly greater than the census data) to 16,300 by 2046, reflective of an annual growth of 2.1%.

Traffic Growth

Historical Annual Average Daily Traffic (AADT) and Summer Average Daily Traffic (SADT) volumes on Highway 26 between Grey Road 19 and Thornbury were reviewed as reported by MTO for the period 2014 to 2019 (the most current 5-year published period) and summarized in Table 2. The resulting annual growth rate for the 5-year period is in the order of 2.2 to 2.7%.

Table 2: Historical Traffic Volumes

ROAD SECTION		ANNUAL TRAFFIC VOLUME						ANNUAL GROWTH
		2014	2015	2016	2017	2018	2019	
Highway 26 Grey Road 19 (S) to Thornbury East Limit	AADT	8700	9100	9250	9400	9500	9650	2.2%
	SADT	10300	10700	10900	10900	11000	11700	2.7%

Overall Background Growth

In consideration of the above, and to maintain consistency with other reports in the area (as referenced in the following section), a 2% annual growth rate has been applied to all study area roads.

3.2.2 Background Developments

Through a review of the Town's online development mapping tool and in consultation with County staff, the following developments have been identified for consideration in the establishment of future background volumes:

[6] *Update to the Grey County Growth Management Strategy Memorandum*, Hemson Consulting Ltd. July 14, 2021.

- Thornbury Industrial Park Inc.;
- Thornbury Acres; and
- Wakeboard and Waterski Park.

The locations of the above noted background developments are illustrated in Appendix E, with additional details provided below. Visits to each of the background development sites indicate that none of the developments have progressed to the point of generating traffic. For the purpose of this report it has been assumed that all background development will be completed by the 2030 horizon.

Thornbury Industrial Park Inc.

The proposed Thornbury Industrial Park Inc. development will be located at 31 Clark Street and will consist of multiple self-storage/ industrial buildings. The trip estimates and distribution for the development are based on those provided in the *31 Clark Street Traffic Impact Brief*[7] (excerpts of which are provided in Appendix E) The development is estimated to generate 38 new trips during AM peak hour and 37 trips during the PM peak hour. The assignment of trips through the study area road network is illustrated in Appendix E. It is noted that *31 Clark Street Traffic Impact Brief* assumes 2% annual growth on Highway 26, Grey Road 2 and Clark Street.

Thornbury Acres

The proposed Thornbury Acres development will be located at the southeast corner of the intersection of Grey Road 2 and Grey Road 40 and will consist of 37 single family homes. The trip estimates and distribution for the development are based on those provided in the *Thornbury Acres Traffic Impact Brief*[8] (excerpts of which are provided in Appendix E) The development is estimated to generate 26 new trips during AM peak hour and 35 trips during the PM peak hour. The assignment of trips through the study area road network is illustrated in Appendix E. It is noted that *Thornbury Acres Traffic Impact Brief* assumes 2% annual growth on Highway 26 and Grey Road 40.

Wakeboard & Waterski Park

The proposed Wakeboard Cable Park is to be located approximately 525 metres west of the existing Clark Street and Grey Road 2 intersection (south side). The development is to consist of 2 wakeboard ponds and pro shop/office. The trip estimates and distribution for the development

[7] *31 Clark Street Traffic Impact Brief.* Tatham Engineering Limited. December 20, 2022.
[8] *Thornbury Acres Traffic Impact Brief.* Tatham Engineering Limited. December 20, 2022.

are based on those provided in the *Cedar Run Wakeboard Cable Park Traffic Review*[9] (excerpts of which are provided in Appendix E) The development is estimated to generate 27 new trips during AM peak hour and 53 trips during the PM peak hour. The assignment of trips through the study area road network is illustrated in Appendix E. It is noted that *Cedar Run Wakeboard Cable Park Traffic Review* assumes 2% annual growth on Highway 26 and 1% annual growth on Grey Road 2 and Clark Street.

3.2.3 Background Volumes

The total volume of background development traffic assigned through the study area is illustrated in Figure 4. It is noted that the volumes illustrated only reflect those trips assigned through the study area considered for this study.

The resulting background volumes for the 2030, 2035 and 2040 horizons (which consider the existing volumes adjusted to reflect the noted background growth rates and trips associates with the background developments) are illustrated in Figure 5 through Figure 7.

3.3 TRAFFIC OPERATIONS

The key intersections were again analyzed for each horizon year given the projected background volumes and maintaining the existing intersection configuration and control. The results of the operational assessment are summarized in Table 3 through Table 6 (detailed worksheets are provided in Appendix F).

Based on the results of the operations assessment for the 2030 horizon, the intersection of Highway 26 with Grey Road 2 will provide poor operations (LOS F) and very long delays. As such, the intersection has been re-assessed to consider the improvements recommended in the *Highway 26/Grey Road 2 Intersection Improvements – Municipal Class EA* (as described in Section 2.1) - namely the implementation of traffic signals and the provision of left turn lanes on all approaches. The resulting operations under 2030 background conditions with the improvements are summarized in Table 4. As indicated the improvements recommended in the Class EA result in acceptable operations. The improvements have been carried forward in the assessment of the remaining 2035 and 2040 horizons.

As indicated, all intersections will provide good operations (LOS C or better) with average delays during peak times.

[9] *Cedar Run Wakeboard Cable Park.* C.C. Tatham & Associates Ltd. November 2017.

Table 3: Intersection Operations – 2030 Background

INTERSECTION, MOVEMENTS & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			DELAY	LOS	V/C	DELAY	LOS	V/C
Highway 26 & Grey Road 2	WB L	free	9	A	0.08	10	B	0.39
	NB LR	stop	36	E	0.63	**213**	**F**	**1.27**
Grey Road 2 & Clark Street	EB LR	stop	11	B	0.15	13	B	0.28
	NB LT	free	2	A	0.02	3	A	0.16
Grey Road 2 & Grey Road 40	EB LTR	stop	13	B	0.25	13	B	0.25
	WB LTR	stop	13	B	0.18	14	B	0.29
	NB LTR	free	1	A	0.01	1	A	0.01
	SB LTR	free	2	A	0.01	1	A	0.01

L left lane T through lane R right lane LT left-through TR through-right LTR left-through-right

Table 4: Intersection Operations – 2030 Background (with improvements)

INTERSECTION, MOVEMENTS & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			DELAY	LOS	V/C	DELAY	LOS	V/C
Highway 26 & Grey Road 2	EB T	signal	9	A	0.46	11	B	0.63
	EB R	signal	6	A	0.06	6	A	0.10
	WB L	signal	4	A	0.15	5	A	0.24
	WB T	signal	4	A	0.35	5	A	0.49
	NB L	signal	23	C	0.47	24	C	0.52
	NB R	signal	21	C	0.05	21	C	0.05
	overall	signal	9	A	0.47	10	A	0.63

L left lane T through lane R right lane LT left-through TR through-right LTR left-through-right

Table 5: Intersection Operations – 2035 Background

INTERSECTION, MOVEMENTS & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			DELAY	LOS	V/C	DELAY	LOS	V/C
Highway 26 & Grey Road 2	EB T	signal	9	A	0.51	13	B	0.70
	EB R	signal	6	A	0.07	6	A	0.11
	WB L	signal	4	A	0.17	6	A	0.28
	WB T	signal	4	A	0.39	6	A	0.54
	NB L	signal	23	C	0.50	26	C	0.55
	NB R	signal	20	C	0.05	22	C	0.06
	overall	signal	9	A	0.52	11	B	0.68
Grey Road 2 & Clark Street	EB LR	stop	11	B	0.17	14	B	0.31
	NB LT	free	2	A	0.03	3	A	0.04
Grey Road 2 & Grey Road 40	EB LTR	stop	14	B	0.28	14	B	0.29
	WB LTR	stop	14	B	0.21	15	C	0.34
	NB LTR	free	1	A	0.01	1	A	0.01
	SB LTR	free	2	A	0.02	1	A	0.01

L left lane T through lane R right lane LT left-through TR through-right LTR left-through-right

Table 6: Intersection Operations – 2040 Background

INTERSECTION, MOVEMENTS & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			DELAY	LOS	V/C	DELAY	LOS	V/C
Highway 26 & Grey Road 2	EB T	signal	10	B	0.56	16	B	0.76
	EB R	signal	6	A	0.07	7	A	0.12
	WB L	signal	4	A	0.21	9	A	0.37
	WB T	signal	5	A	0.43	7	A	0.60
	NB L	signal	24	C	0.53	27	C	0.53
	NB R	signal	20	C	0.06	24	C	0.06
	overall	signal	9	A	0.56	13	B	0.72
Grey Road 2 & Clark Street	EB LR	stop	12	B	0.20	15	C	0.35
	NB LT	free	2	A	0.03	3	A	0.04
Grey Road 2 & Grey Road 40	EB LTR	stop	15	B	0.33	15	B	0.33
	WB LTR	stop	14	B	0.24	17	C	0.40
	NB LTR	free	1	A	0.01	1	A	0.01
	SB LTR	free	2	A	0.02	1	A	0.01

L left lane T through lane R right lane LT left-through TR through-right LTR left-through-right

3.4 NEED FOR IMPROVEMENTS

Based on the results of the operations assessment, no further intersection improvements are required to support the future background conditions (notwithstanding those recommended *Highway 26/Grey Road 2 Municipal Class EA*).

4 Proposed Development

This section will provide additional details with respect to the proposed residential development, including its location, the projected site generated traffic volumes and the assignment of such to the adjacent road network.

4.1 LOCATION

The subject site is located at 496857 Grey Road 2 in the Town of The Blue Mountains (as per Figure 1).

4.2 LAND USE

As per the site plan provided in Figure 8, the proposed development will consist of 376 townhouse units.

4.3 ACCESS

4.3.1 Configuration

Access to the site will be provided by a single access point to Grey Road 2. As per the National Fire Protection Association (NFPA), a residential development exceeding 100 units should be provided with two access points. Given the constraints of the subject property with respect to frontage on Grey Road 2, providing two access points is not feasible. As such, an alternative access design is proposed to improve accessibility to the site with respect to emergency services while providing a single access. As per the site plan, the access will have a 6.0 metre inbound lane and a 6.0 metre outbound lane separated by a raised landscaped median. The separation of the inbound and outbound lanes essentially provides two means of access for emergency vehicles (i.e. with a clear width of 6.0 metres, the inbound and outbound lanes each satisfy the minimum width requirements for a fire route). Should either lane be blocked, emergency services have a second means of access. This access design is present at several developments along Highway 26 and is also implemented at developments where a second access point cannot be provided until a later phase. It is our understanding that the proposed entrance is approved by Fire Services as per correspondence dated January 18, 2024.

4.3.2 Access Spacing

As per the MTO *Highway Corridor Management Manual*[10], where a public road intersects with a Class 2B - Arterial highway, MTO desires a minimum separation of 400 metres between the intersection with the highway and the next adjacent intersection along the public road (be it with another public road or a medium to high volume commercial access/private road). The access to the development is approximately 720 metres from the intersection of Grey Road 2 with Clark Street and approximately 880 metres from the intersection of Highway 26 with Grey Road 2 and thus satisfies the MTOs desired separation of 400 metres.

It is noted that MTO's spacing requirements are consistent with the County's *Entrance Permit Procedure Guide*[11]. The access to the development is approximately 1,000 metres from the intersection of Grey Road 2 with Grey Road 40 and thus does satisfy the County's desired separation of 400 metres.

4.3.3 Sight Lines

The assessment of sight lines at the site access has considered minimum stopping sight distance and intersection sight distance requirements as per the TAC *Geometric Design Guide for Canadian Roads*[12], in addition to minimum stopping sight distance requirements as per Grey County's *Entrance Permit Procedure Guide*, all of which are further explained below.

- Minimum stopping sight distance provides sufficient distance for an approaching motorist to observe a hazard in the road and bring their vehicle to a complete stop prior to the hazard.
- Intersection sight distance allows a vehicle to enter a main road from a side street (or site access) and attain the appropriate operating speed without significantly impacting the operating speed of an approaching vehicle.

Table 7 summarizes the sight distance requirements for a posted speed of 80 km/h (design speed of 100 km/h) as is currently posted on Grey Road 2 whereas the available sight lines to/from the site access are summarized in Table 8. As indicated, the available sight lines at the site access exceed the County and TAC requirements, thus no improvements are required.

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[10] *Highway Corridor Management Manual.* Corridor Management Office, Ministry of Transportation. April 2022.
[11] *Entrance Permit Corporate Procedure.* Clerk's Department of Grey County. October 23, 2014.
[12] *Geometric Design Guide for Canadian Roads, Chapter 9.* Transportation Association of Canada. June 2017.

Table 7: Sight Distance Requirements

POSTED SPEED	DESIGN SPEED	COUNTY SIGHT DISTANCE	TAC STOPPING SIGHT DISTANCE	TAC INTERSECTION SIGHT DISTANCE	
				Left Turn	Right Turn
80 km/h	100 km/h	175 m	185 m	210 m	185 m

Table 8: Sight Distances

ACCESS	AVAILABLE SIGHT DISTANCE TO/FROM	
	North (Left Turn)	South (Right Turn)
Site Access	>600 m	215 m

4.4 CIRCULATION

The site will be served by an 8.0 metre condo road with a 6.0 metre paved width and a 2.0 metre sidewalk. The site will maintain a minimum clear width of 6.0 metres to accommodate circulation of a fire truck.

With respect to the access median, one-way operations will be provided around the median. The internal road network to the east of the median will provide two-way operations. The drive aisle between the median and the centre block of townhouses will provide one-way travel in the northbound direction. This will allow residents of the townhouse units located along the north condominium road to access their units without having to circulate throughout the entire site. It will also reduce the potential distance that an emergency response vehicle would have to travel if the aisle between the median and the centre block was not provided.

4.5 PARKING

The parking requirement for townhomes, based on the Town's *Zoning By-law*[13], is as follows:

- 2 parking spaces per unit.

Each townhouse dwelling unit will be provided with a garage and driveway thus satisfying the Town's requirement. The site will also provide an additional 55 parking spaces in designated areas for visitor parking.

[13] *The Town of The Blue Mountains Zoning By-law 2018-65.* The Town of The Blue Mountains. November 28, 2018. (Office Consolidation Version: January 13, 2023).

4.6 SITE TRAFFIC

4.6.1 Trip Generation

The number of vehicle trips to be generated by the proposed development for the weekday AM and weekday PM peak hours has been determined based on the type of use, development size, and trip generation rates per the *ITE Trip Generation Manual*[14]. Based on the proposed development, trip rates for the *single family attached* (ITE land-use code 215) land-use have been applied. Trip rates and trip generation for the site are summarized in Table 9.

Table 9: Trip Estimates

LAND USE	VARIABLE/ SIZE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		In	Out	Total	In	Out	Total
single-family attached (ITE 215)	per unit	0.15	0.33	0.48	0.32	0.25	0.57
	376 units	56	125	181	122	92	214

As indicated, the proposed development is expected to generate 181 trips during the weekday AM peak hour and 214 trips during the weekday PM peak hour.

4.6.2 Trip Distribution & Assignment

The distribution of new trips generated by the site has been developed based on the proximity and location of the site in relation to major built-up areas (i.e. Thornbury and Collingwood), which are expected to be the main origin/destination of site-generated trips. The following distribution has been applied (primarily oriented to/from the north and east):

- to/from the north/west via Grey Road 2 and Highway 26 – 30%;
- to/from the north/west via Clark Street – 5%;
- to/from the south via Grey Road 2 – 15%;
- to/from the east via Grey Road 40 – 40%; and
- to/from the west via Grey Road 40 – 10%.

Assignment of the site trips to the road network is based on the noted trip distribution, the site layout and expected travel routes, the results of which are illustrated in Figure 9.

[14] *Trip Generation Manual, 11th Edition.* Institute of Transportation Engineers. September 2021.

5 Future Total Conditions

This chapter will address the future conditions with consideration for the proposed development, and the resulting impacts of such on the adjacent road system. The following areas will be addressed:

- total traffic volumes;
- intersection operations; and
- potential improvements to the study area road network, if necessary.

5.1 TRAFFIC VOLUMES

To assess the impacts of the increased traffic volumes resulting from the proposed development, the site generated traffic was combined with the 2030, 2035 and 2040 background traffic volumes. The resulting total traffic volumes are presented in Figure 10 to Figure 12.

5.2 TRAFFIC OPERATIONS

The operations at the key intersections were re-assessed to consider the total traffic volumes at each horizon year, assuming the improvements recommended under background conditions. The operations of the proposed site access have also been reviewed, assuming single lane approaches with stop control on the exit movement from the site. The results of the operational review are provided in Table 10 through Table 12, whereas detailed worksheets are provided in Appendix G. As indicated, all intersections will provide good operations (LOS C or better) with average delays during peak times.

Table 10: Intersection Operations – 2030 Total

INTERSECTION, MOVEMENTS & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			DELAY	LOS	V/C	DELAY	LOS	V/C
Highway 26 & Grey Road 2	EB T	signal	9	A	0.47	12	B	0.65
	EB R	signal	6	A	0.07	6	A	0.13
	WB L	signal	4	A	0.15	6	A	0.25
	WB T	signal	5	A	0.36	6	A	0.50
	NB L	signal	24	C	0.57	25	C	0.58
	NB R	signal	20	B	0.05	20	C	0.05
	overall	signal	9	A	0.50	10	B	0.65
Grey Road 2 & Clark Street	EB LR	stop	12	B	0.17	15	B	0.32
	NB LT	free	2	A	0.03	2	A	0.04
Grey Road 2 & Grey Road 40	EB LTR	stop	17	C	0.34	17	C	0.34
	WB LTR	stop	15	C	0.26	17	C	0.42
	NB LTR	free	1	A	0.01	1	A	0.01
	SB LTR	free	3	A	0.05	2	A	0.04
Grey Road 2 & Site Access	WB LR	stop	11	B	0.19	12	B	0.16
	NB LT	free	1	A	0.02	2	A	0.03

L left lane T through lane R right lane LT left-through TR through-right LTR left-through-right

Table 11: Intersection Operations – 2035 Total

INTERSECTION, MOVEMENTS & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			DELAY	LOS	V/C	DELAY	LOS	V/C
Highway 26 & Grey Road 2	EB T	signal	10	B	0.52	14	B	0.71
	EB R	signal	6	A	0.08	7	A	0.14
	WB L	signal	4	A	0.18	7	A	0.29
	WB T	signal	5	A	0.40	6	A	0.54
	NB L	signal	25	C	0.59	28	C	0.62
	NB R	signal	20	B	0.05	22	C	0.06
	overall	signal	10	A	0.55	12	B	0.70
Grey Road 2 & Clark Street	EB LR	stop	12	B	0.19	16	C	0.37
	NB LT	free	2	A	0.03	3	A	0.05
Grey Road 2 & Grey Road 40	EB LTR	stop	18	C	0.38	18	C	0.40
	WB LTR	stop	16	C	0.30	19	C	0.48
	NB LTR	free	1	A	0.01	1	A	0.01
	SB LTR	free	3	A	0.06	2	A	0.04
Grey Road 2 & Site Access	WB LR	stop	11	B	0.19	12	B	0.16
	NB LT	free	1	A	0.02	2	A	0.03

L left lane T through lane R right lane LT left-through TR through-right LTR left-through-right

Table 12: Intersection Operations – 2040 Total

INTERSECTION, MOVEMENTS & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			DELAY	LOS	V/C	DELAY	LOS	V/C
Highway 26 & Grey Road 2	EB T	signal	11	B	0.57	17	B	0.77
	EB R	signal	6	A	0.08	7	A	0.14
	WB L	signal	5	A	0.21	10	A	0.39
	WB T	signal	5	A	0.44	8	A	0.61
	NB L	signal	26	C	0.62	28	C	0.58
	NB R	signal	20	B	0.06	23	C	0.06
	overall	signal	10	B	0.59	14	B	0.74
Grey Road 2 & Clark Street	EB LR	stop	12	B	0.22	17	C	0.41
	NB LT	free	2	A	0.03	3	A	0.05
Grey Road 2 & Grey Road 40	EB LTR	stop	20	C	0.44	21	C	0.46
	WB LTR	stop	18	C	0.35	22	C	0.56
	NB LTR	free	1	A	0.01	1	A	0.01
	SB LTR	free	3	A	0.06	2	A	0.05
Grey Road 2 & Site Access	WB LR	stop	12	B	0.20	12	B	0.17
	NB LT	free	1	A	0.02	2	A	0.04

L left lane T through lane R right lane LT left-through TR through-right LTR left-through-right

5.3 NEED FOR IMPROVEMENTS

5.3.1 Intersection Operations

In consideration of the intersection operational analyses, no further improvements are required to accommodate the additional site-generated traffic under future total conditions.

5.3.2 Turn Lane Requirements

Notwithstanding the otherwise excellent operations at the site access, the need for exclusive turn lanes on Grey Road 2 at the site access point was also reviewed based on the following:

- MTO guidelines[15] for auxiliary turn lanes at unsignalized intersections;
- a design speed of 100 km/h (reflective of the 80 km/h speed limit) for Grey Road 2; and
- the 2040 total volumes (the critical horizon when volumes are greatest).

Right Turn Lane

With respect to right turn lanes, as per MTO standards, such are generally warranted where right turn volumes exceed 60 vehicles per hour (vph) and/or impede through traffic.

The northbound right turn volumes at the site access point on Grey Road 2 are in the order of 79 vph. While the turning volumes exceed the 60 vph threshold, such is not considered problematic given the excellent intersection operations of the site access and relatively low volumes on Grey Road 2 (i.e. the right turning site traffic will not impede through traffic). As such, a northbound right turn lane on Grey Road 2 is not required at the access point.

Left Turn Lanes

With respect to a left turn lane to serve the development, the need for such is based on the volume of left turning traffic, the volume of advancing and opposing traffic, and the design speed.

Based on the MTO warrant criteria, a left turn lane with 15 metres of storage is marginally warranted for the 2040 horizon under PM peak hour conditions. Despite the satisfied warrant, the volume of left turns (43 per hour, or 2 vehicles every 3 minutes) is minimal. With excellent operations provided, a left turn lane is not considered necessary to serve the site. The completed warrants are provided in Appendix H.

[15] *MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads.* Ontario Ministry of Transportation Design Standards & Specifications Office. April 2020.

6 Summary

Proposed Development

This study has addressed the transportation impacts associated with the development located at 496857 Grey Road 2 in the Town of the Blue Mountains. Upon completion, the development is expected to generate 181 trips during the AM peak hour and 214 trips during the PM peak hour.

Transportation Impacts

In addressing the study area traffic operations, the area road intersections were analysed under existing (2024) and future (2030, 2035 and 2040) horizon periods.

The results of the operational analyses indicate that area road intersections will provide good operations (LOS C or better with average delays) through the 2040 horizon under the background and total conditions, provided the improvements per *Highway 26/Grey Road 2 Intersection Improvements – Municipal Class EA* are implemented at the intersection of Highway 26 with Grey Road 2 (needed in 2030 under background conditions). It is assumed that MTO will proceed with the recommended improvements and as such, no further intersection improvements are required to support the proposed development from a traffic operations perspective. Likewise, the site access point will provide excellent operations through the 2040 horizon.

No improvements are required to support the proposed development from a traffic operations perspective.

Sight Line Assessment

The available sight lines along Grey Road 2 at site access point were reviewed in consideration of TAC and County sight and intersection distance requirements. In all instances, the available sight lines exceed the requirements.

Turn Lane Requirements

The site traffic will marginally satisfy the warrant thresholds for the provision of left and right turn lanes. However, given the limited volumes on the road network and the otherwise excellent operations to be provided at the site access, exclusive left and right turn lanes are not considered necessary.

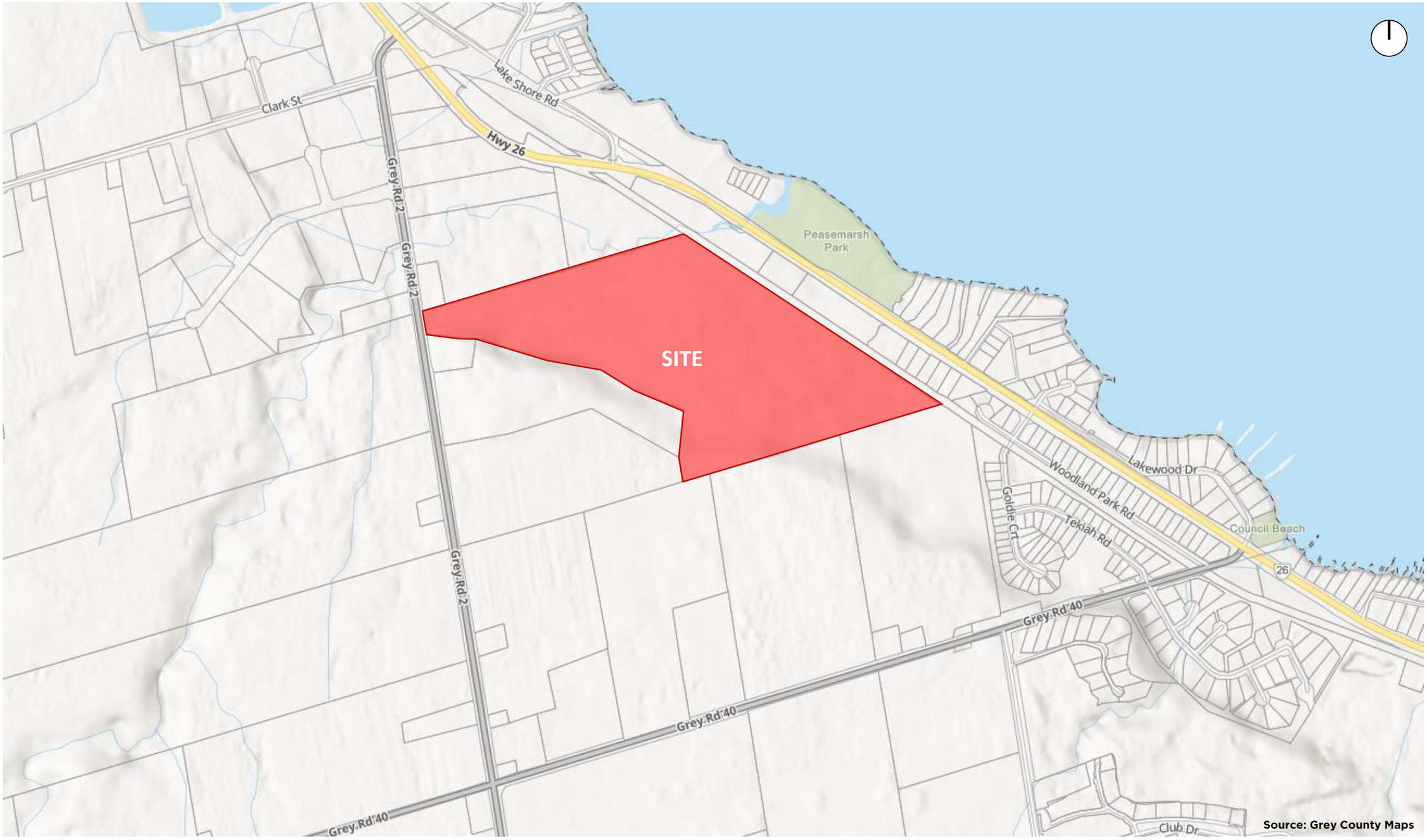


Figure 1: Site Location

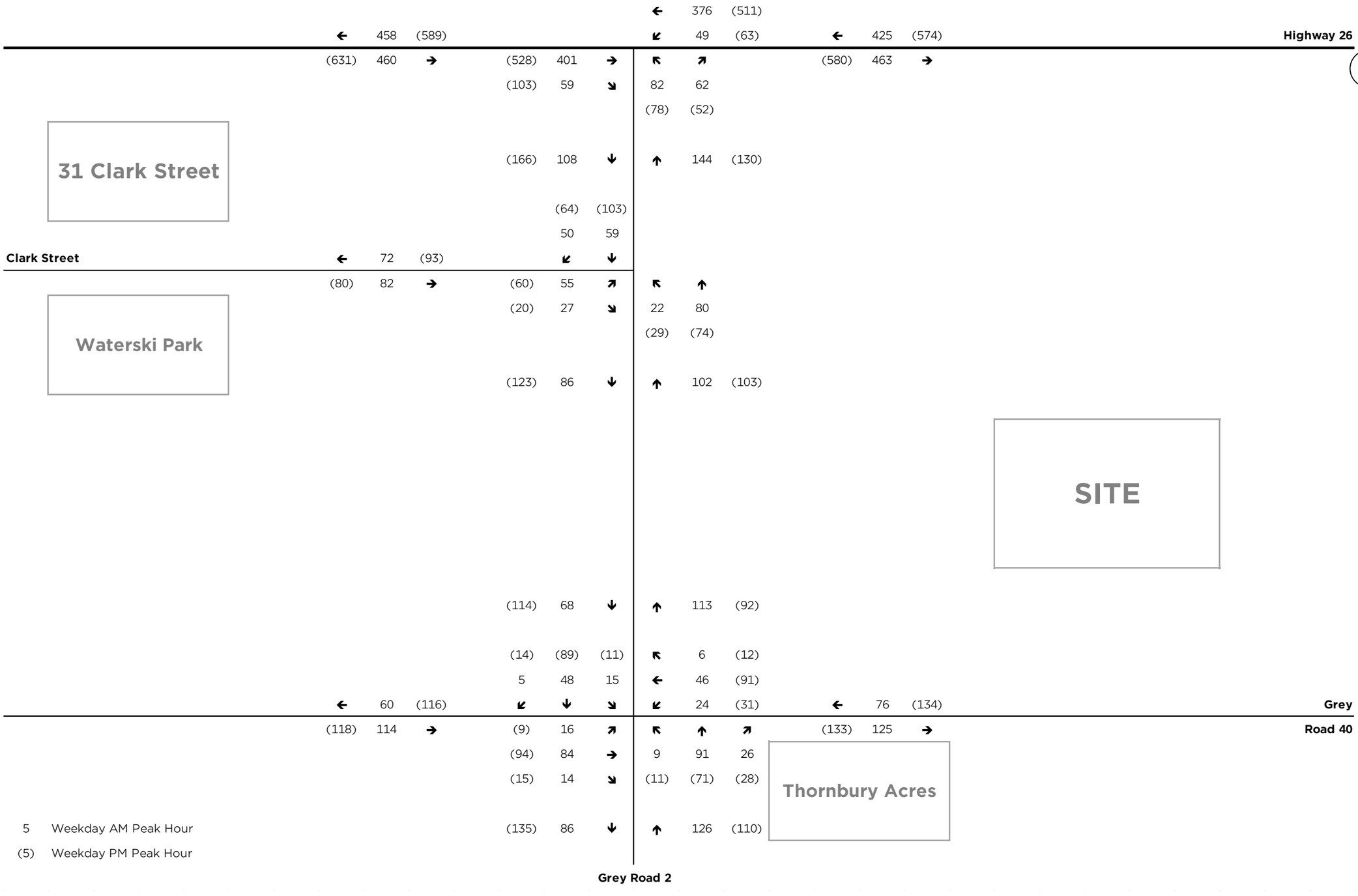
Figure 2: Area Road Network

Looking north along Grey Road 2 from site access

Looking south along Grey Road 2 from site access

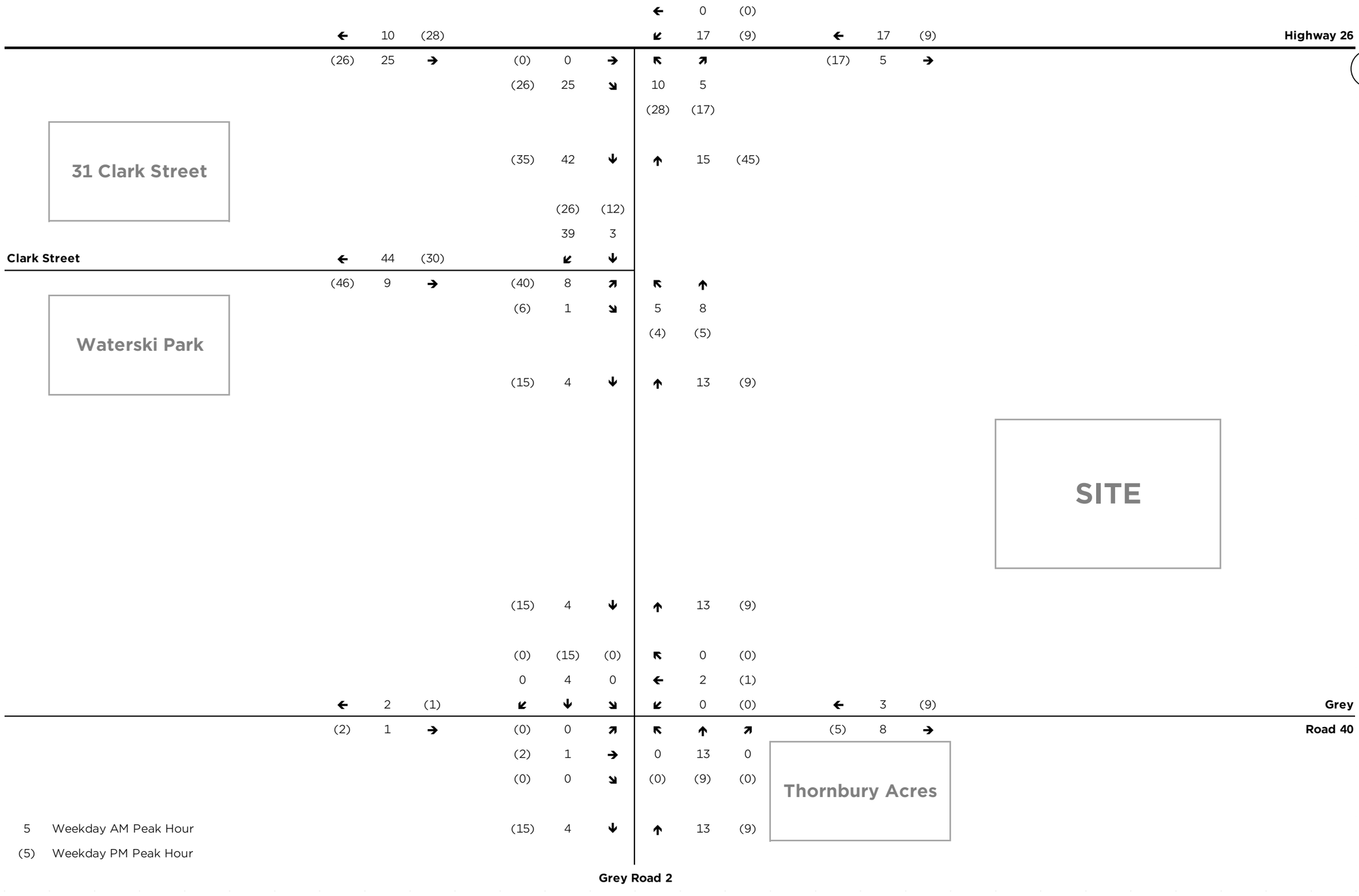
Looking south along Grey Road 2 towards site access

Looking north along Grey Road 2 towards site access



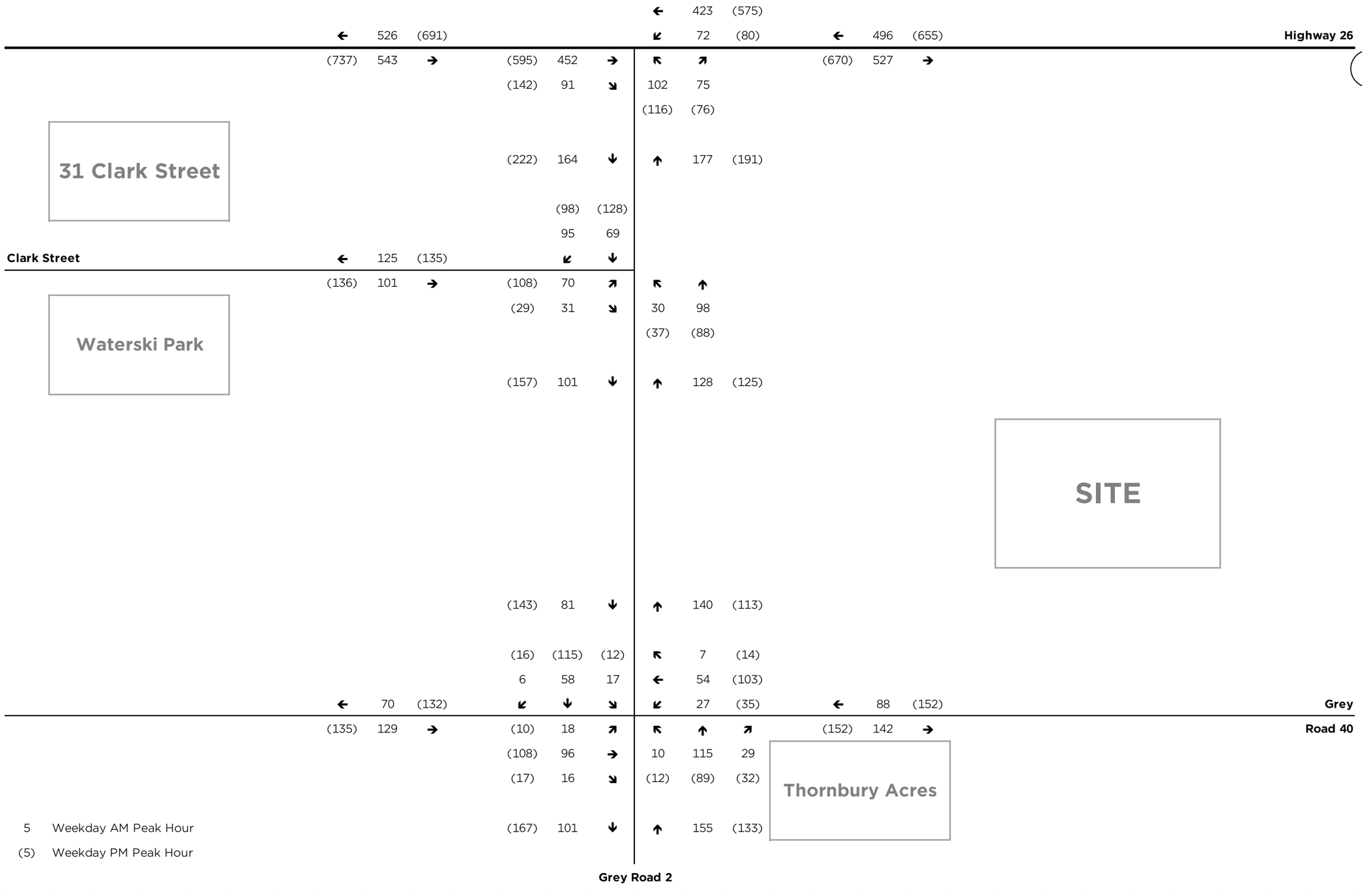
496857 GREY ROAD 2 – TRANSPORTATION IMPACT STUDY

Figure 3: Traffic Volumes – 2024 Counts



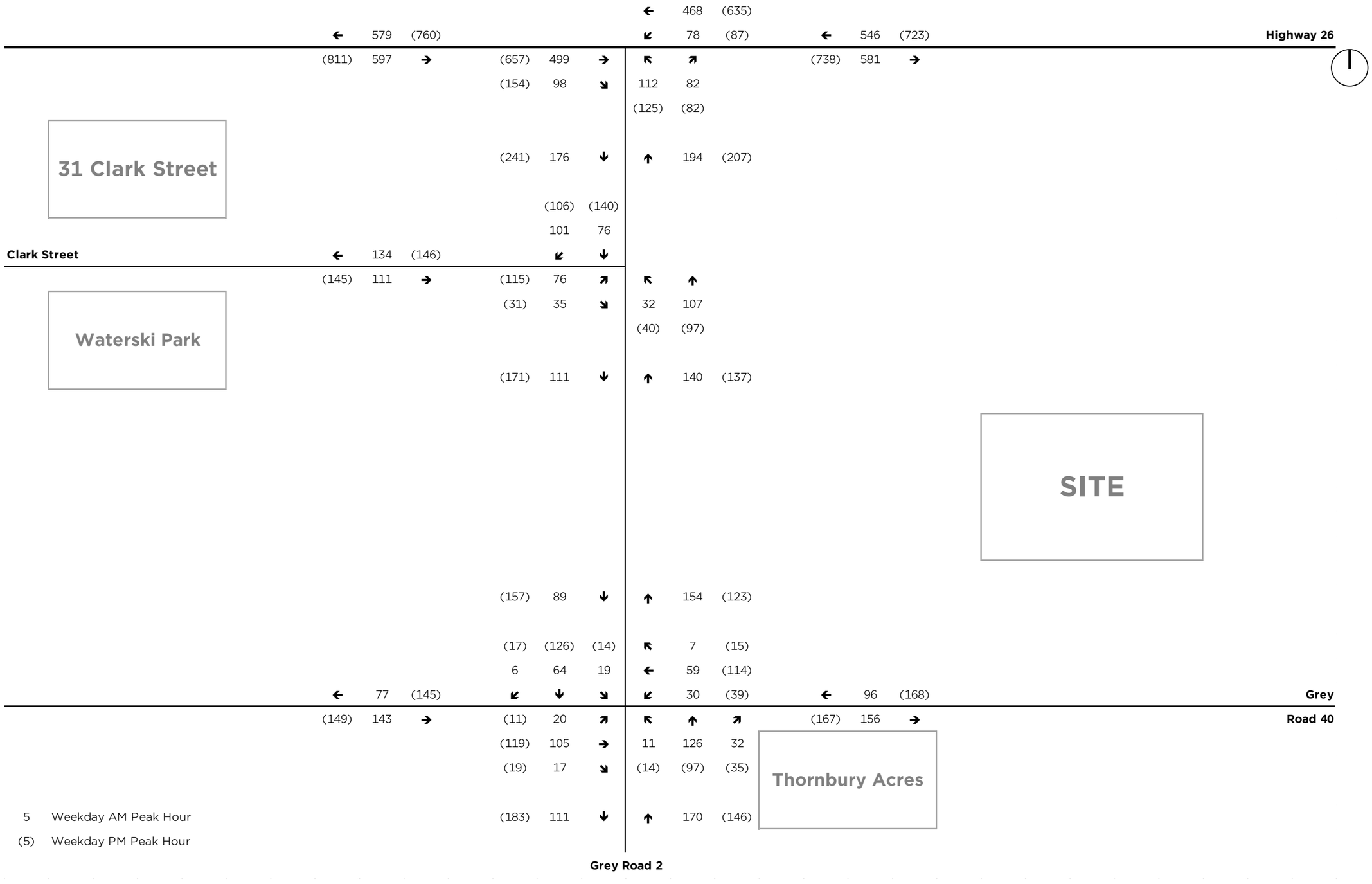
496857 GREY ROAD 2 – TRANSPORTATION IMPACT STUDY

Figure 4: Traffic Volumes – Background Developments



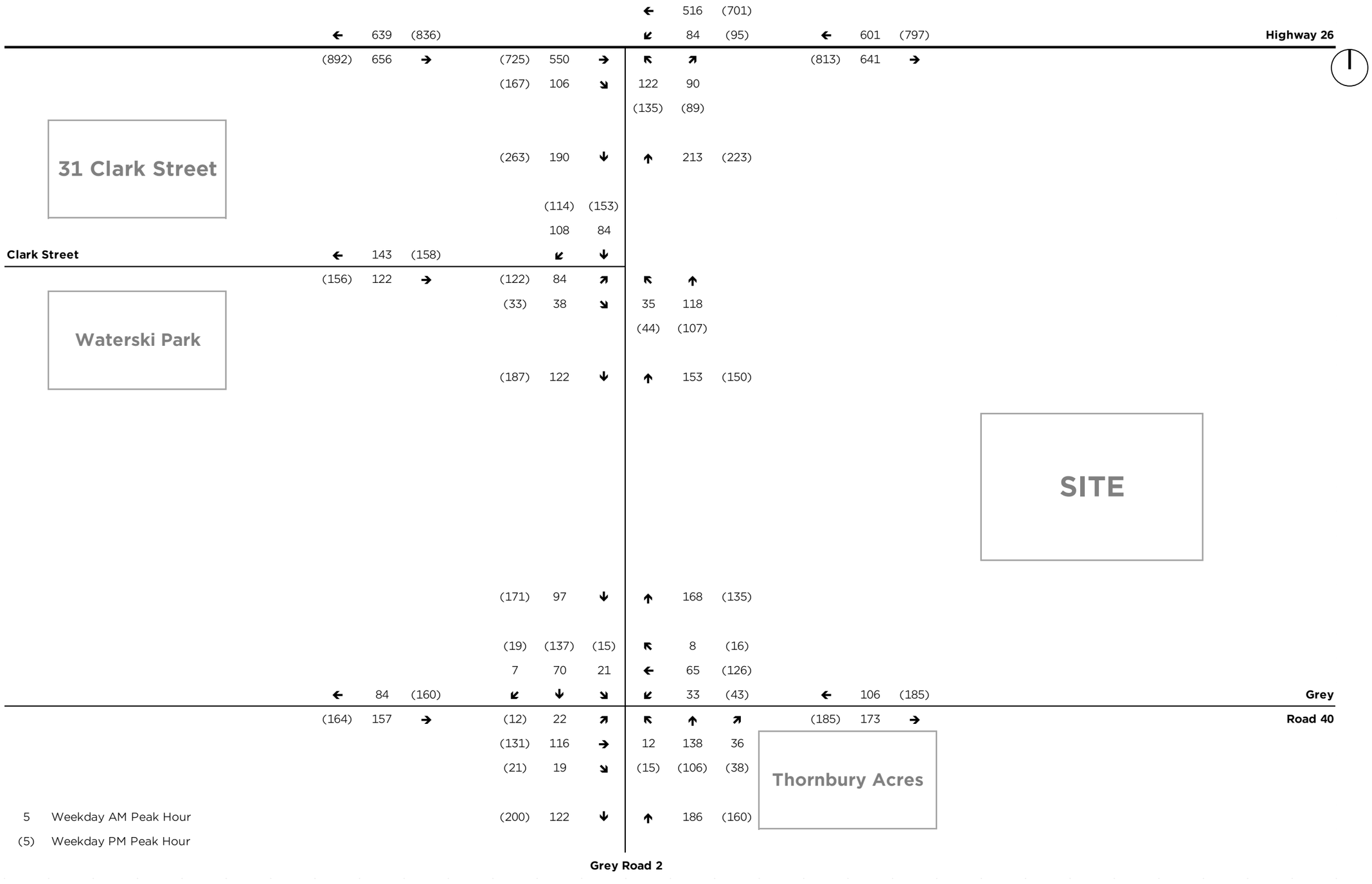
496857 GREY ROAD 2 – TRANSPORTATION IMPACT STUDY

Figure 5: Traffic Volumes – 2030 Background



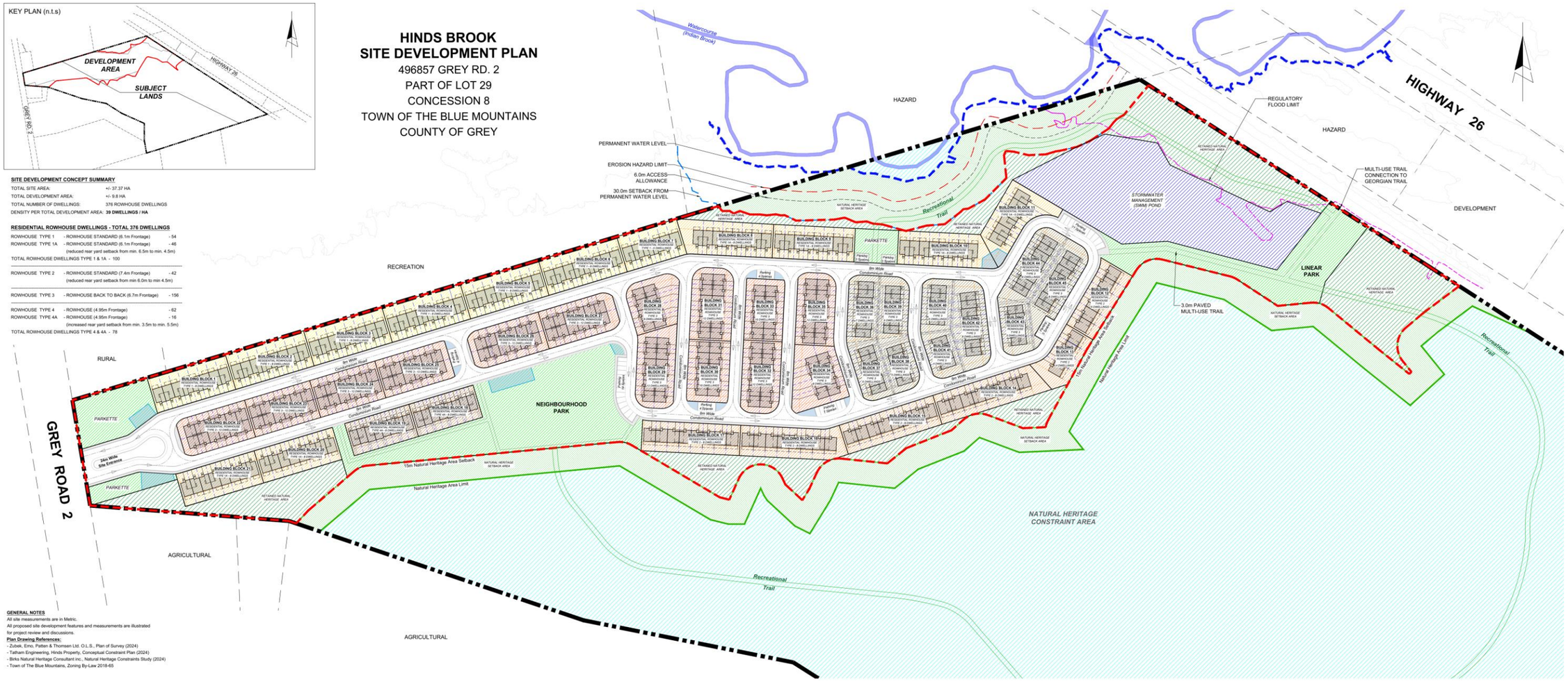
496857 GREY ROAD 2 – TRANSPORTATION IMPACT STUDY

Figure 6: Traffic Volumes – 2035 Background



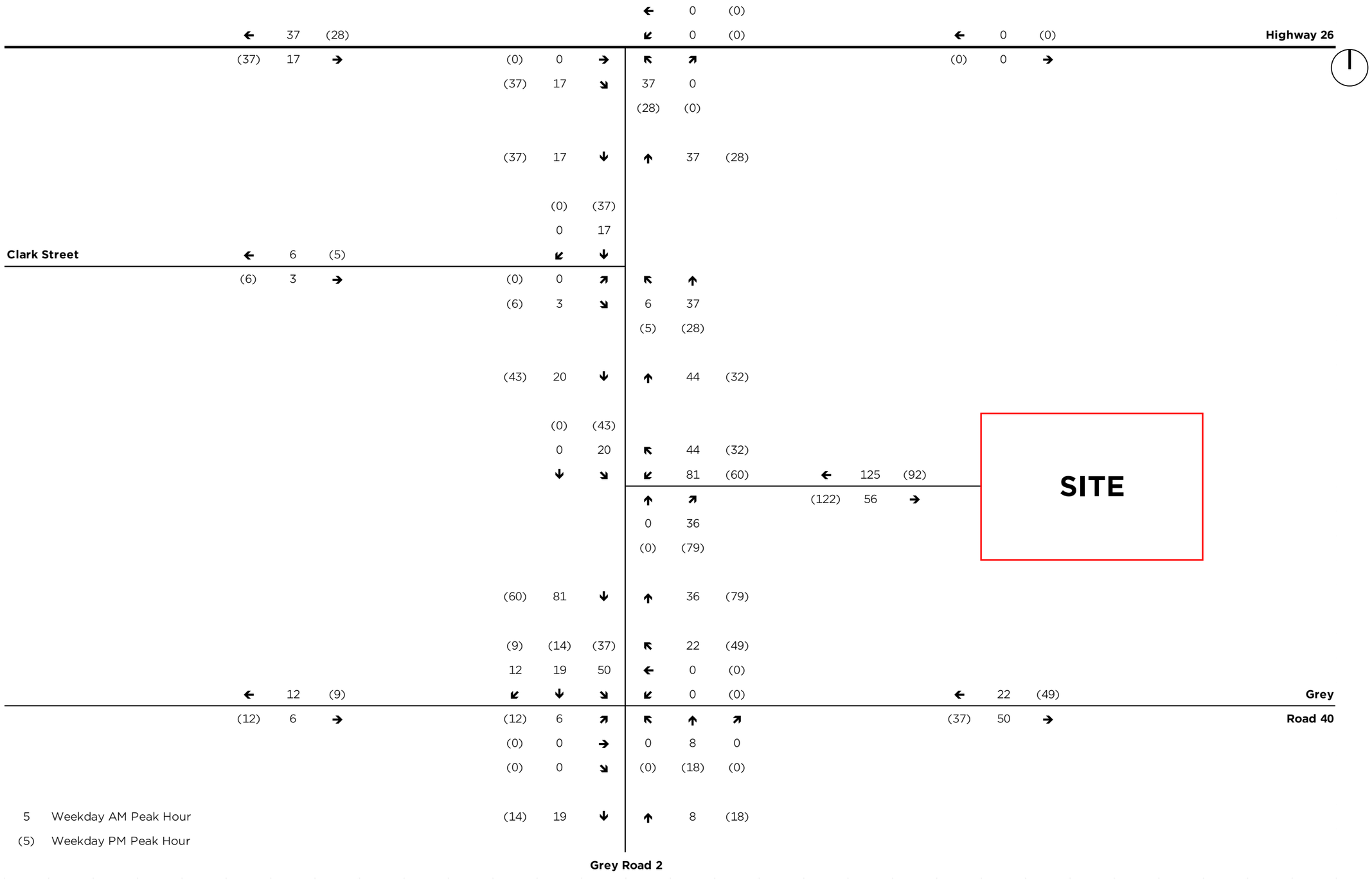
496857 GREY ROAD 2 – TRANSPORTATION IMPACT STUDY

Figure 7: Traffic Volumes – 2040 Background



496857 GREY ROAD 2 – TRANSPORTATION IMPACT STUDY

Figure 8: Site Plan



496857 GREY ROAD 2 – TRANSPORTATION IMPACT STUDY

Figure 9: Traffic Volumes – Site

Figure 10: Traffic Volumes – 2030 Total

Figure 11: Traffic Volumes – 2035 Total

Figure 12: Traffic Volumes – 2040 Total

Appendix A:
Terms of Reference

Karolina Kukielka

From: Scott Taylor <Scott.Taylor@grey.ca>
Sent: Monday, June 17, 2024 5:53 PM
To: Karolina Kukielka
Subject: RE: Terms of Reference - 496857 Grey Road 2, TOBM

Hi Karolina,
My apologies on the delayed response. Stephanie is now off on leave.

Our Transportation Services Staff have reviewed the below TOR and noted that they are adequate for their needs. Thanks for sharing these with us.

Just let me know if you have any further questions.
Thanks

Scott Taylor, *MCIP, RPP, (He/Him)*
Director of Planning and Development
Phone: +1 548-877-0856

Grey County
Colour It Your Way

From: Karolina Kukielka <kkukielka@tathameng.com>
Sent: Monday, June 17, 2024 9:16 AM
To: Stephanie Lacey-Avon <Stephanie.Lacey-Avon@grey.ca>
Cc: Group: Planning Dept Emails <planning@grey.ca>
Subject: RE: Terms of Reference - 496857 Grey Road 2, TOBM

Good morning Stephanie,

I would like to follow up on my previous email. Would you be able to confirm that the proposed scope of TIS is acceptable as per below TOR?

Kind Regards,

Karolina Kukielka C.E.T., EIT, rcsi
Engineering Intern

kkukielka@tathameng.com **T** 705-733-9037 x2238
41 King Street, Unit 4, Barrie, Ontario L4N 6B5

tathameng.com

From: Karolina Kukielka
Sent: Tuesday, June 11, 2024 3:38 PM
To: Stephanie Lacey-Avon <Stephanie.Lacey-Avon@grey.ca>
Cc: planning@grey.ca
Subject: Terms of Reference - 496857 Grey Road 2, TOBM

Good afternoon,

Tatham Engineering Limited was retained to prepare a Transportation Impact Study (TIS) in support of proposed residential development to be located at 496857 Grey Road 2. The development is proposed to consist of 403 townhouse units with a single access to Grey Road 2. The proposed TIS will be as per County's *TIS technical Guide.*

Our proposed scope is listed below:

1. The proposed study area is Grey Road 2 and the following intersections:

   - Grey Road 2 & Highway 26;
   - Grey Road 2 & Clark Street; and
   - Grey Road 2 & Grey Road 40.

2. Existing traffic volumes will be established based on the counts completed in August 2022 and November 2022 (within 2-3 years as per industry common practice) and will be adjusted to reflect 2024 summer traffic volumes (accounting for annual and summer growth in traffic) and include background development traffic not otherwise captured during 2022 counts (i.e., developments in the area built between 2022 and 2024 – if applicable).

3. The operations assessment will consider weekday AM and PM peak hour volumes.

4. Using projected growth for the area and in consideration of the *Grey County Transportation Master Plan* and *Town of the Blue Mountains Transportation Master Plan*, we will identify future background traffic volumes for the study area road network. Consideration will also be given to other planned developments in the area (after reviewing TOBM active developments map, Thornbury Acres and Thornbury Industrial Park Inc. are identified as background developments (but are in the planning process thus their anticipated buildout is unknown). **Please confirm if this is sufficient and should be included and/or should I include any other developments**). Projections will be developed for the year of full build-out of the proposed development (2030) in addition to 5-year (2035) and 10-year (2040) planning horizons beyond full build-out.
5. Determine the number of trips to be generated by the proposed development during the relevant peak hour periods and assign such to the road network based on existing traffic patterns, available distribution data and anticipated travel routes. Trip estimates will be based on trip rates published in the *ITE Trip Generation Manual, 11th Edition* for land-uses reflective of the one proposed.
6. Review the existing, background and total operations of the study area intersections and the site access point using Synchro traffic software.
7. Following the traffic analyses, identify any road network improvements/mitigating measures required to support the development and identify the timing of such.
8. Provide an assessment of the available sight lines at the proposed site access in context of County and/or TAC requirements.
9. Document the above into a TIS for submission to the Town/County for review and approval.

Please let me know if the above Terms of Reference is acceptable and do not hesitate to contact me if you have any comments/questions. I was also hoping the County has recent counts for the study area intersections (ATR and/or TMC) and would kindly provide me with the available data.

Regards,

TATHAM ENGINEERING

Karolina Kukielka C.E.T., EIT, rcsi
Engineering Intern

kkukielka@tathameng.com **T** 705-733-9037 x2238
41 King Street, Unit 4, Barrie, Ontario L4N 6B5

tathameng.com

Tatham Engineering's agreement to transfer digital documents electronically or otherwise is made under the following conditions: 1 Electronic documents made available by Tatham Engineering are supplied for the recipient's use only under authorization from the current owner and with consent of Tatham Engineering. It is the responsibility of the recipient to determine the accuracy, completeness and the appropriateness of the information provided. 2. It is agreed that only those hard copy documents bearing the professional seal and signature of the Tatham Engineering project engineer will govern the work of the project. In the event of any dispute concerning an electronic document, the appropriately dated hard copy will be the document used by Tatham Engineering to govern and resolve the dispute.

Karolina Kukielka

From: Pegelo, Jessica (MTO) <Jessica.Pegelo@ontario.ca>
Sent: Wednesday, July 10, 2024 9:27 AM
To: Karolina Kukielka
Subject: RE: 496857 Grey Road 2 - Terms of Reference
Attachments: 2019_Seasonal_Factors_for_2020.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning Karolina,

MTO have reviewed the TOR provided and have the following comments:

MTO require that the 2023 MTO TIS guidelines be followed.
- MTO accept the proposed study area.
- Any data collected must be by a RAQS qualified consultant /company.
- Counts from the local municipality or RAQS qualified consultant collection counts may be considered acceptable, however, only data collected within 18 months of the submission date for the study will be accepted.
- MTO accept the proposed study horizon years.
- MTO require that Digital Synchro version 12 files be submitted with the TIS.
- As part of the sightline analysis, MTO require that a field measured distance be provided and compared to TAC.
- As part of their comment, 'Following the traffic analyses, identify any road network improvements/mitigating measures required to support the development and identify the timing of such.'. MTO require that the need for geometric improvements be reviewed at all locations in the study area and for each proposed development stage. The TIS shall clearly identify transportation impacts by movement, the transportation system improvements that are needed to mitigate these impacts, and the timing of any recommended improvements.
- MTO require that a schematic representation of all geometric improvements be included as part of the TIS, identifying lane arrangements and intersection improvements for each horizon year.
- MTO require that the need for traffic signals and/or underground traffic signal utility provisions be reviewed at all locations affected by the proposed development and for each proposed development stage. Determination of whether traffic signals or provisions for signals are warranted shall be made according to the process described in OTM Book 12. Intersection

timing and traffic signal improvements required due to development or redevelopment shall be considered as improvements in the TIS. Specifically at Highway 26 and Grey Road 2.
- Please see latest seasonal factors attached.
- MTO require that a 2% growth rate be used.

For future reference, MTO generally require four to six weeks to review a TOR, TIS or engineering design submission.

If there are any questions, please let me know.

Kind Regards,

Jessica Pegelo
Corridor Management Planner | Corridor Management/Operations Division
Ministry of Transportation | Ontario Public Service
519-379-4397 | jessica.pegelo@ontario.ca

Ontario

Taking pride in strengthening Ontario, its places and its people

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From: Karolina Kukielka <kkukielka@tathameng.com>
Sent: Tuesday, July 9, 2024 2:15 PM
To: Pegelo, Jessica (MTO) <Jessica.Pegelo@ontario.ca>
Subject: RE: 496857 Grey Road 2 - Terms of Reference

Good afternoon Jessica,

I would like to follow up on my previous email. Would you have any estimate on how long it will take to get the TOR reviewed? Any information you provide will be greatly appreciated.

Kind Regards,

Karolina

TATHAM ENGINEERING

Karolina Kukielka C.E.T., EIT, rcsi
Engineering Intern

kkukielka@tathameng.com **T** 705-733-9037 x2238
645 Veterans Drive, Unit D, Barrie, Ontario L4N 9H8

tathameng.com

From: Karolina Kukielka <kkukielka@tathameng.com>
Sent: Tuesday, July 2, 2024 12:01 PM
To: Pegelo, Jessica (MTO) <Jessica.Pegelo@ontario.ca>
Cc: Adam Farr <afarr@thebluemountains.ca>
Subject: RE: 496857 Grey Road 2 - Terms of Reference

Good afternoon,

Thank you, Jessica. What would be the estimated time to get the comments back?

Kind Regards,

Karolina

Karolina Kukielka C.E.T., EIT, rcsi
Engineering Intern

kkukielka@tathameng.com **T** 705-733-9037 x2238
645 Veterans Drive, Unit D, Barrie, Ontario L4N 9H8

***We have moved! We look forward to welcoming you at our new Barrie location**

tathameng.com

From: Pegelo, Jessica (MTO) <Jessica.Pegelo@ontario.ca>
Sent: Tuesday, July 2, 2024 11:56 AM
To: Karolina Kukielka <kkukielka@tathameng.com>
Cc: Adam Farr <afarr@thebluemountains.ca>
Subject: RE: 496857 Grey Road 2 - Terms of Reference

Good morning Karolina,

Thank you for reaching out to MTO to review a TOR for an upcoming TIS. Adam Farr, copied on this e-mail, provided some supplementary information as well.

MTO will review and provide comments and/or concerns and data if available.

If there are any questions, please let me know.

Kind Regards,

Jessica Pegelo
Corridor Management Planner | Corridor Management/Operations Division
Ministry of Transportation | Ontario Public Service
519-379-4397 | jessica.pegelo@ontario.ca

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From: Karolina Kukielka <kkukielka@tathameng.com>
Sent: Tuesday, June 18, 2024 1:06 PM
To: Pegelo, Jessica (MTO) <Jessica.Pegelo@ontario.ca>
Subject: 496857 Grey Road 2 - Terms of Reference

Good afternoon Jessica,

Tatham Engineering Limited was retained to prepare a Transportation Impact Study (TIS) in support of proposed residential development to be located at 496857 Grey Road 2. The development is proposed to consist of 403 townhouse units with a single access to Grey Road 2. The proposed TIS will be as per MTO's *General Guidelines for the Preparation of Traffic Impact Studies.*

Our proposed scope is listed below:

1. The proposed study area is Grey Road 2 and the following intersections:

   - Grey Road 2 & Highway 26;
   - Grey Road 2 & Clark Street; and
   - Grey Road 2 & Grey Road 40.

2. Existing traffic volumes will be established based on the counts completed in August 2022 and November 2022 (within 2 years as per industry common practice) and will be adjusted to reflect 2024 summer traffic volumes (accounting for annual and summer growth in traffic) and include background development traffic not otherwise captured during 2022 counts (i.e., developments in the area built between 2022 and 2024 – if applicable).

3. The operations assessment will consider weekday AM and PM peak hour volumes.

4. Using projected growth for the area and in consideration of the *Grey County Transportation Master Plan* and *Town of the Blue Mountains Transportation Master Plan*, we will identify future background traffic volumes for the study area road network. Consideration will also be given to other planned developments in the area (after reviewing TOBM active developments map, Thornbury Acres and Thornbury Industrial Park Inc. are identified as background developments. Projections will be developed for the year of full build-out of the proposed development (2030) in addition to 5-year (2035) and 10-year (2040) planning horizons beyond full build-out.
5. Determine the number of trips to be generated by the proposed development during the relevant peak hour periods and assign such to the road network based on existing traffic patterns, available distribution data and anticipated travel routes. Trip estimates will be based on trip rates published in the *ITE Trip Generation Manual, 11th Edition* for land-uses reflective of the one proposed.
6. Review the existing, background and total operations of the study area intersections and the site access point using Synchro traffic software.
7. Following the traffic analyses, identify any road network improvements/mitigating measures required to support the development and identify the timing of such.
8. Provide an assessment of the available sight lines at the proposed site access in context of County and/or TAC requirements.
9. Document the above into a TIS for submission to the Town/County/MTO for review and approval.

Please let me know if the above Terms of Reference is acceptable and do not hesitate to contact me if you have any comments/questions. I was also hoping the MTO has recent counts for the study area intersections (ATR and/or TMC) and would kindly provide me with the available data.

Regards,

TATHAM ENGINEERING

Karolina Kukielka C.E.T., EIT, rcsi
Engineering Intern

kkukielka@tathameng.com **T** 705-733-9037 x2238
41 King Street, Unit 4, Barrie, Ontario L4N 6B5

tathameng.com

Appendix B:
Traffic Counts

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

Municipality: The Blue Mountains
Site #: 2413300001
Intersection: HWY 26 & Grey Rd 2
TFR File #: 1
Count date: 18-Jul-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: HWY 26 runs W/E

East Leg Total: 888
East Entering: 425
East Peds: 0
Peds Cross: ⧖

Buses	Trucks	Cars	Totals
0	28	430	458

HWY 26

Buses	Trucks	Cars	Totals
1	13	387	401
0	4	55	59
1	17	442	

N
W E
S

Cars	Trucks	Buses	Totals
356	20	0	376
44	4	1	49
400	24	1	

HWY 26

Cars	Trucks	Buses	Totals
446	15	2	463

Grey Rd 2

Peds Cross: ⧖
West Peds: 0
West Entering: 460
West Leg Total: 918

Cars	99
Trucks	8
Buses	1
Totals	108

Cars	74	59	133
Trucks	8	2	10
Buses	0	1	1
Totals	82	62	

Peds Cross: ⋈
South Peds: 0
South Entering: 144
South Leg Total: 252

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:45:00
To: 12:45:00

Municipality: The Blue Mountains
Site #: 2413300001
Intersection: HWY 26 & Grey Rd 2
TFR File #: 1
Count date: 18-Jul-24

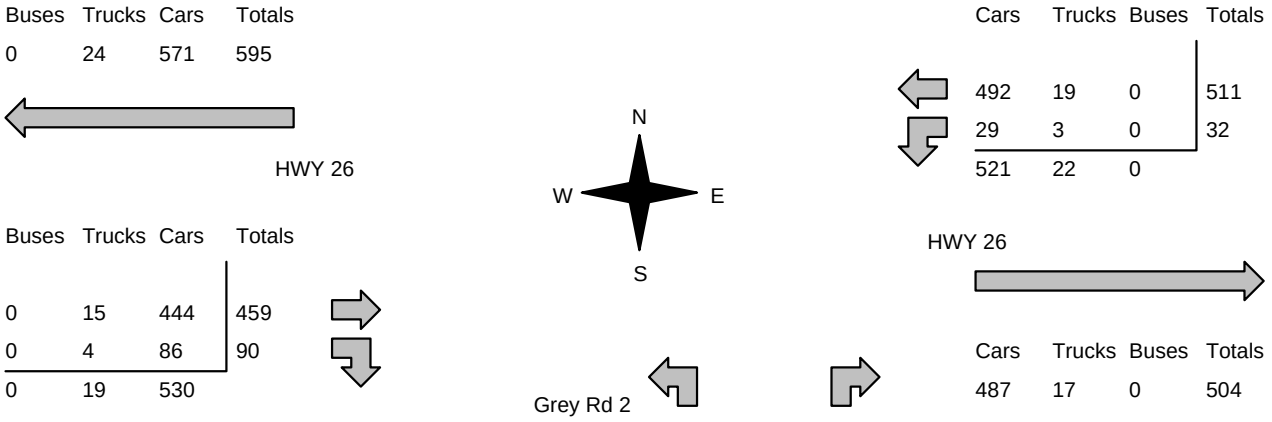
Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: HWY 26 runs W/E

East Leg Total: 1047
East Entering: 543
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 549
West Leg Total: 1144

Cars 115
Trucks 7
Buses 0
Totals 122

Cars 79 43 122
Trucks 5 2 7
Buses 0 0 0
Totals 84 45

Peds Cross: ⋈
South Peds: 0
South Entering: 129
South Leg Total: 251

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:15:00
To: 17:15:00

Municipality: The Blue Mountains
Site #: 2413300001
Intersection: HWY 26 & Grey Rd 2
TFR File #: 1
Count date: 18-Jul-24

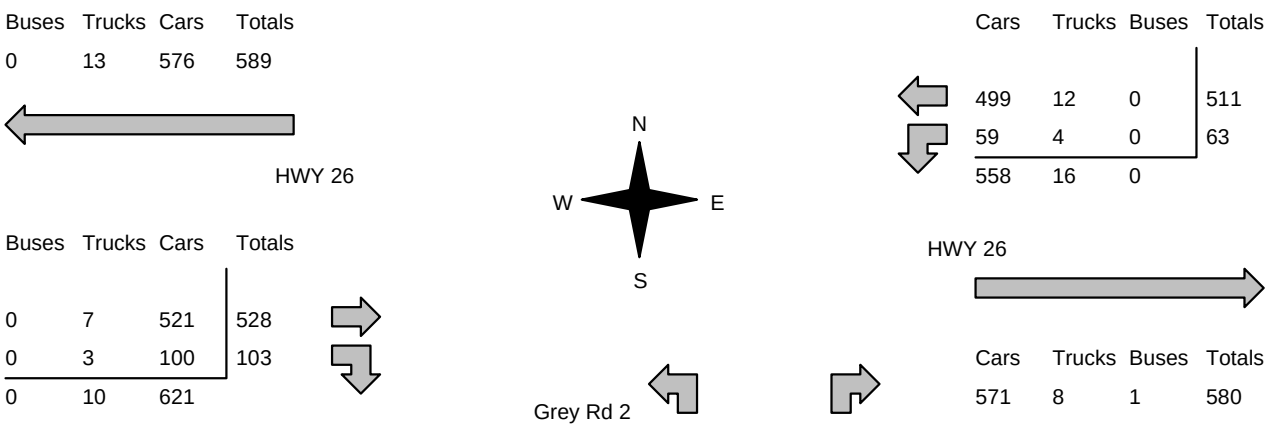
Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: HWY 26 runs W/E

East Leg Total: 1154
East Entering: 574
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 631
West Leg Total: 1220

Cars 159
Trucks 7
Buses 0
Totals 166

Cars 77 50 127
Trucks 1 1 2
Buses 0 1 1
Totals 78 52

Peds Cross: ⋈
South Peds: 0
South Entering: 130
South Leg Total: 296

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Total Count Diagram

Municipality: The Blue Mountains
Site #: 2413300001
Intersection: HWY 26 & Grey Rd 2
TFR File #: 1
Count date: 18-Jul-24

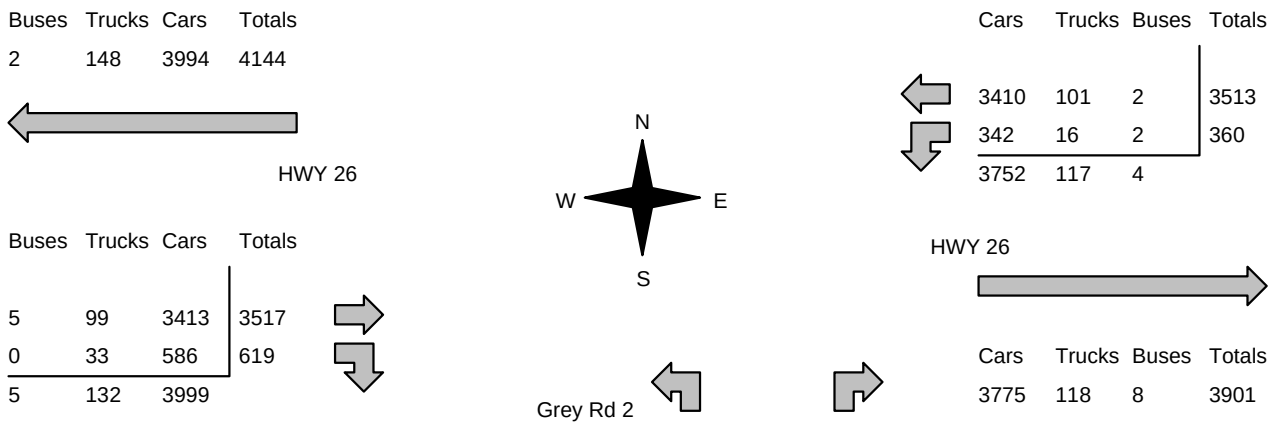
Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: HWY 26 runs W/E

East Leg Total: 7774
East Entering: 3873
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 4136
West Leg Total: 8280

Cars 928
Trucks 49
Buses 2
Totals 979

Cars 584 362 946
Trucks 47 19 66
Buses 0 3 3
Totals 631 384

Peds Cross: ⋈
South Peds: 1
South Entering: 1015
South Leg Total: 1994

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Traffic Count Summary

Intersection: HWY 26 & Grey Rd 2 | **Count Date:** 18-Jul-24 | **Municipality:** The Blue Mountains

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0
9:00:00	0	0	0	0	0
11:00:00	0	0	0	0	0
12:00:00	0	0	0	0	0
13:00:00	0	0	0	0	0
14:00:00	0	0	0	0	0
15:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0
18:00:00	0	0	0	0	0
Totals:	0	0	0	0	0

North/South Total Approaches: 1015

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	72	0	41	113	1
9:00:00	82	0	62	144	0
11:00:00	0	0	0	0	0
12:00:00	93	0	45	138	0
13:00:00	79	0	45	124	0
14:00:00	73	0	46	119	0
15:00:00	0	0	0	0	0
16:00:00	78	0	60	138	0
17:00:00	67	0	54	121	0
18:00:00	87	0	31	118	0
S Totals:	631	0	384	1015	1

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	25	255	0	280	0
9:00:00	49	376	0	425	0
11:00:00	0	0	0	0	0
12:00:00	41	471	0	512	0
13:00:00	43	477	0	520	0
14:00:00	40	433	0	473	0
15:00:00	0	0	0	0	0
16:00:00	47	492	0	539	0
17:00:00	62	500	0	562	0
18:00:00	53	509	0	562	0
Totals:	360	3513	0	3873	0

East/West Total Approaches: 8009

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	0	294	49	343	0
9:00:00	0	401	59	460	0
11:00:00	0	0	0	0	0
12:00:00	0	418	69	487	0
13:00:00	0	470	94	564	0
14:00:00	0	470	77	547	0
15:00:00	0	0	0	0	0
16:00:00	0	489	77	566	0
17:00:00	0	516	104	620	0
18:00:00	0	459	90	549	0
W Totals:	0	3517	619	4136	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00
Crossing Values:	72	82	93	79	73	78	67	87

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300001

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Buses - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300001

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Buses - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	5	5	46	46	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
7:30:00	12	7	107	61	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0
7:45:00	20	8	165	58	0	0	0	0	7	3	0	0	0	0	0	0	0	0	0	0
8:00:00	25	5	247	82	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0
8:15:00	34	9	313	66	0	0	0	0	11	3	0	0	0	0	0	0	0	0	0	0
8:30:00	44	10	407	94	0	0	2	2	16	5	0	0	0	0	0	0	0	0	0	0
8:45:00	59	15	507	100	0	0	4	2	21	5	0	0	1	1	0	0	0	0	0	0
9:00:00	69	10	603	96	0	0	4	0	28	7	0	0	1	0	0	0	0	0	0	0
9:15:00	69	0	603	0	0	0	4	0	28	0	0	0	1	0	0	0	0	0	0	0
11:00:00	69	0	603	0	0	0	4	0	28	0	0	0	1	0	0	0	0	0	0	0
11:15:00	80	11	694	91	0	0	4	0	32	4	0	0	1	0	0	0	0	0	0	0
11:30:00	92	12	816	122	0	0	4	0	37	5	0	0	1	0	0	0	0	0	0	0
11:45:00	105	13	925	109	0	0	4	0	41	4	0	0	1	0	0	0	0	0	0	0
12:00:00	109	4	1057	132	0	0	5	1	45	4	0	0	1	0	0	0	0	0	0	0
12:15:00	116	7	1186	129	0	0	6	1	52	7	0	0	1	0	0	0	0	0	0	0
12:30:00	120	4	1291	105	0	0	6	0	56	4	0	0	1	0	0	0	0	0	0	0
12:45:00	134	14	1417	126	0	0	7	1	60	4	0	0	1	0	0	0	0	0	0	0
13:00:00	150	16	1515	98	0	0	7	0	63	3	0	0	1	0	1	1	0	0	0	0
13:15:00	157	7	1633	118	0	0	7	0	65	2	0	0	1	0	1	0	0	0	0	0
13:30:00	172	15	1728	95	0	0	8	1	67	2	0	0	1	0	1	0	0	0	0	0
13:45:00	179	7	1822	94	0	0	8	0	74	7	0	0	1	0	1	0	0	0	0	0
14:00:00	189	10	1936	114	0	0	8	0	75	1	0	0	1	0	1	0	0	0	0	0
14:15:00	189	0	1936	0	0	0	8	0	75	0	0	0	1	0	1	0	0	0	0	0
15:00:00	189	0	1936	0	0	0	8	0	75	0	0	0	1	0	1	0	0	0	0	0
15:15:00	201	12	2056	120	0	0	9	1	75	0	0	0	1	0	1	0	0	0	0	0
15:30:00	209	8	2181	125	0	0	9	0	77	2	0	0	1	0	1	0	0	0	0	0
15:45:00	226	17	2306	125	0	0	9	0	80	3	0	0	1	0	2	1	0	0	0	0
16:00:00	233	7	2420	114	0	0	11	2	82	2	0	0	1	0	2	0	0	0	0	0
16:15:00	245	12	2549	129	0	0	11	0	85	3	0	0	2	1	2	0	0	0	0	0
16:30:00	257	12	2678	129	0	0	12	1	88	3	0	0	2	0	2	0	0	0	0	0
16:45:00	276	19	2805	127	0	0	14	2	88	0	0	0	2	0	2	0	0	0	0	0
17:00:00	290	14	2910	105	0	0	15	1	92	4	0	0	2	0	2	0	0	0	0	0
17:15:00	304	14	3048	138	0	0	15	0	97	5	0	0	2	0	2	0	0	0	0	0
17:30:00	314	10	3188	140	0	0	16	1	98	1	0	0	2	0	2	0	0	0	0	0
17:45:00	328	14	3305	117	0	0	16	0	100	2	0	0	2	0	2	0	0	0	0	0
18:00:00	342	14	3410	105	0	0	16	0	101	1	0	0	2	0	2	0	0	0	0	0
18:15:00	342	0	3410	0	0	0	16	0	101	0	0	0	2	0	2	0	0	0	0	0
18:15:15	342	0	3410	0	0	0	16	0	101	0	0	0	2	0	2	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300001

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Buses - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	6	6	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	1	1
7:30:00	19	13	0	0	13	9	2	2	0	0	2	2	0	0	0	0	0	0	1	0
7:45:00	38	19	0	0	26	13	11	9	0	0	2	0	0	0	0	0	0	0	1	0
8:00:00	57	19	0	0	39	13	15	4	0	0	2	0	0	0	0	0	0	0	1	0
8:15:00	73	16	0	0	48	9	19	4	0	0	3	1	0	0	0	0	0	0	1	0
8:30:00	99	26	0	0	57	9	23	4	0	0	4	1	0	0	0	0	0	0	1	0
8:45:00	109	10	0	0	78	21	23	0	0	0	4	0	0	0	0	0	0	0	1	0
9:00:00	131	22	0	0	98	20	23	0	0	0	4	0	0	0	0	0	1	1	1	0
9:15:00	131	0	0	0	98	0	23	0	0	0	4	0	0	0	0	0	1	0	1	0
11:00:00	131	0	0	0	98	0	23	0	0	0	4	0	0	0	0	0	1	0	1	0
11:15:00	155	24	0	0	104	6	23	0	0	0	6	2	0	0	0	0	1	0	1	0
11:30:00	181	26	0	0	114	10	27	4	0	0	6	0	0	0	0	0	1	0	1	0
11:45:00	197	16	0	0	126	12	28	1	0	0	6	0	0	0	0	0	1	0	1	0
12:00:00	218	21	0	0	141	15	29	1	0	0	6	0	0	0	0	0	1	0	1	0
12:15:00	240	22	0	0	150	9	31	2	0	0	6	0	0	0	0	0	1	0	1	0
12:30:00	255	15	0	0	157	7	31	0	0	0	6	0	0	0	0	0	1	0	1	0
12:45:00	276	21	0	0	169	12	33	2	0	0	8	2	0	0	0	0	1	0	1	0
13:00:00	290	14	0	0	182	13	36	3	0	0	10	2	0	0	0	0	1	0	1	0
13:15:00	309	19	0	0	189	7	36	0	0	0	11	1	0	0	0	0	1	0	1	0
13:30:00	325	16	0	0	205	16	39	3	0	0	12	1	0	0	0	0	1	0	1	0
13:45:00	348	23	0	0	217	12	41	2	0	0	13	1	0	0	0	0	1	0	1	0
14:00:00	358	10	0	0	225	8	41	0	0	0	13	0	0	0	0	0	1	0	1	0
14:15:00	358	0	0	0	225	0	41	0	0	0	13	0	0	0	0	0	1	0	1	0
15:00:00	358	0	0	0	225	0	41	0	0	0	13	0	0	0	0	0	1	0	1	0
15:15:00	377	19	0	0	240	15	44	3	0	0	14	1	0	0	0	0	1	0	1	0
15:30:00	400	23	0	0	250	10	45	1	0	0	15	1	0	0	0	0	2	1	1	0
15:45:00	421	21	0	0	260	10	45	0	0	0	16	1	0	0	0	0	2	0	1	0
16:00:00	432	11	0	0	279	19	45	0	0	0	18	2	0	0	0	0	2	0	1	0
16:15:00	450	18	0	0	295	16	45	0	0	0	18	0	0	0	0	0	2	0	1	0
16:30:00	472	22	0	0	312	17	45	0	0	0	19	1	0	0	0	0	3	1	1	0
16:45:00	488	16	0	0	321	9	45	0	0	0	19	0	0	0	0	0	3	0	1	0
17:00:00	499	11	0	0	331	10	45	0	0	0	19	0	0	0	0	0	3	0	1	0
17:15:00	527	28	0	0	345	14	46	1	0	0	19	0	0	0	0	0	3	0	1	0
17:30:00	548	21	0	0	353	8	46	0	0	0	19	0	0	0	0	0	3	0	1	0
17:45:00	568	20	0	0	358	5	46	0	0	0	19	0	0	0	0	0	3	0	1	0
18:00:00	584	16	0	0	362	4	47	1	0	0	19	0	0	0	0	0	3	0	1	0
18:15:00	584	0	0	0	362	0	47	0	0	0	19	0	0	0	0	0	3	0	1	0
18:15:15	584	0	0	0	362	0	47	0	0	0	19	0	0	0	0	0	3	0	1	0

Count Date: 18-Jul-24 Site #: 2413300001

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Buses - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	50	50	6	6	0	0	1	1	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	113	63	15	9	0	0	4	3	3	3	0	0	0	0	0	0	0	0
7:45:00	0	0	197	84	27	12	0	0	7	3	4	1	0	0	0	0	0	0	0	0
8:00:00	0	0	284	87	43	16	0	0	10	3	6	2	0	0	0	0	0	0	0	0
8:15:00	0	0	383	99	56	13	0	0	17	7	6	0	0	0	1	1	0	0	0	0
8:30:00	0	0	485	102	70	14	0	0	20	3	8	2	0	0	1	0	0	0	0	0
8:45:00	0	0	584	99	85	15	0	0	20	0	8	0	0	0	1	0	0	0	0	0
9:00:00	0	0	671	87	98	13	0	0	23	3	10	2	0	0	1	0	0	0	0	0
9:15:00	0	0	671	0	98	0	0	0	23	0	10	0	0	0	1	0	0	0	0	0
11:00:00	0	0	671	0	98	0	0	0	23	0	10	0	0	0	1	0	0	0	0	0
11:15:00	0	0	754	83	114	16	0	0	27	4	12	2	0	0	1	0	0	0	0	0
11:30:00	0	0	849	95	129	15	0	0	28	1	13	1	0	0	2	1	0	0	0	0
11:45:00	0	0	971	122	141	12	0	0	31	3	13	0	0	0	2	0	0	0	0	0
12:00:00	0	0	1077	106	164	23	0	0	34	3	13	0	0	0	2	0	0	0	0	0
12:15:00	0	0	1183	106	184	20	0	0	39	5	15	2	0	0	2	0	0	0	0	0
12:30:00	0	0	1290	107	200	16	0	0	43	4	16	1	0	0	2	0	0	0	0	0
12:45:00	0	0	1415	125	227	27	0	0	46	3	17	1	0	0	2	0	0	0	0	0
13:00:00	0	0	1531	116	252	25	0	0	50	4	19	2	0	0	2	0	0	0	0	0
13:15:00	0	0	1646	115	263	11	0	0	54	4	19	0	0	0	2	0	0	0	0	0
13:30:00	0	0	1761	115	281	18	0	0	60	6	19	0	0	0	2	0	0	0	0	0
13:45:00	0	0	1864	103	307	26	0	0	65	5	19	0	0	0	2	0	0	0	0	0
14:00:00	0	0	1979	115	326	19	0	0	71	6	22	3	0	0	3	1	0	0	0	0
14:15:00	0	0	1979	0	326	0	0	0	71	0	22	0	0	0	3	0	0	0	0	0
15:00:00	0	0	1979	0	326	0	0	0	71	0	22	0	0	0	3	0	0	0	0	0
15:15:00	0	0	2086	107	340	14	0	0	73	2	23	1	0	0	3	0	0	0	0	0
15:30:00	0	0	2202	116	355	15	0	0	81	8	26	3	0	0	3	0	0	0	0	0
15:45:00	0	0	2335	133	367	12	0	0	83	2	26	0	0	0	3	0	0	0	0	0
16:00:00	0	0	2455	120	396	29	0	0	84	1	29	3	0	0	3	0	0	0	0	0
16:15:00	0	0	2581	126	428	32	0	0	88	4	29	0	0	0	4	1	0	0	0	0
16:30:00	0	0	2707	126	450	22	0	0	89	1	29	0	0	0	4	0	0	0	0	0
16:45:00	0	0	2846	139	474	24	0	0	90	1	31	2	0	0	4	0	0	0	0	0
17:00:00	0	0	2961	115	497	23	0	0	93	3	32	1	0	0	4	0	0	0	0	0
17:15:00	0	0	3102	141	528	31	0	0	95	2	32	0	0	0	4	0	0	0	0	0
17:30:00	0	0	3216	114	549	21	0	0	98	3	33	1	0	0	4	0	0	0	0	0
17:45:00	0	0	3339	123	571	22	0	0	99	1	33	0	0	0	4	0	0	0	0	0
18:00:00	0	0	3413	74	586	15	0	0	99	0	33	0	0	0	5	1	0	0	0	0
18:15:00	0	0	3413	0	586	0	0	0	99	0	33	0	0	0	5	0	0	0	0	0
18:15:15	0	0	3413	0	586	0	0	0	99	0	33	0	0	0	5	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

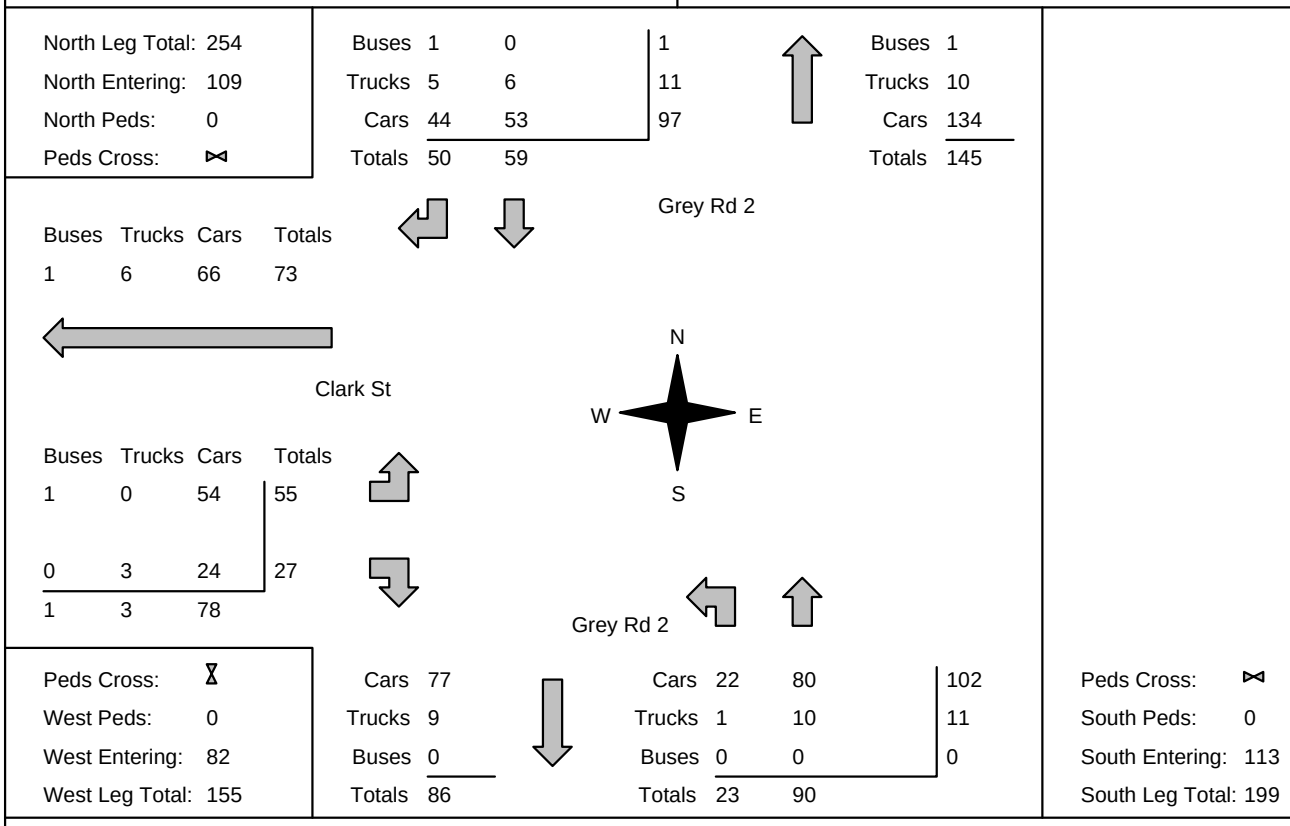
Municipality: The Blue Mountains
Site #: 2413300002
Intersection: Grey Rd 2 & Clark St
TFR File #: 1
Count date: 18-Jul-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Grey Rd 2 runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:30:00
To: 13:30:00

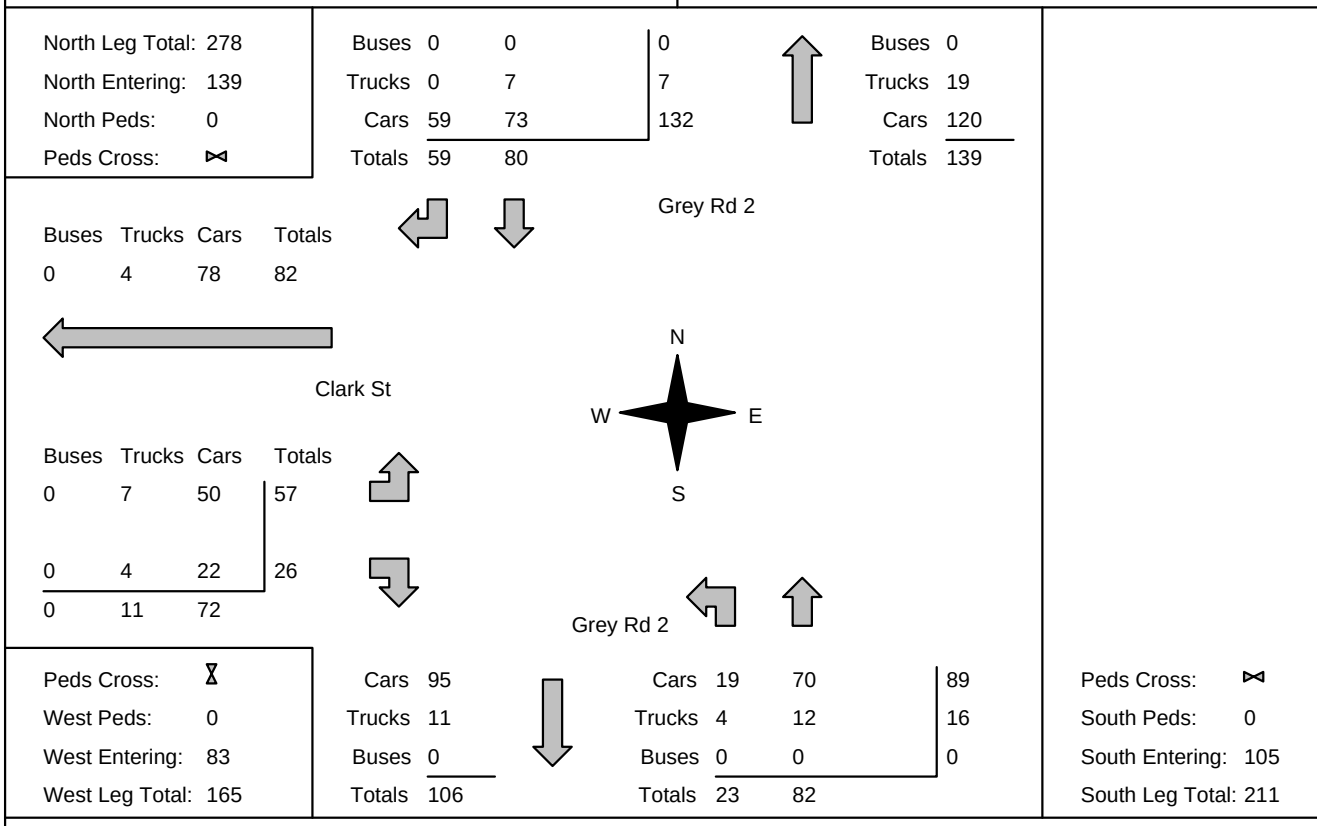
Municipality: The Blue Mountains
Site #: 2413300002
Intersection: Grey Rd 2 & Clark St
TFR File #: 1
Count date: 18-Jul-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Grey Rd 2 runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 15:45:00
To: 16:45:00

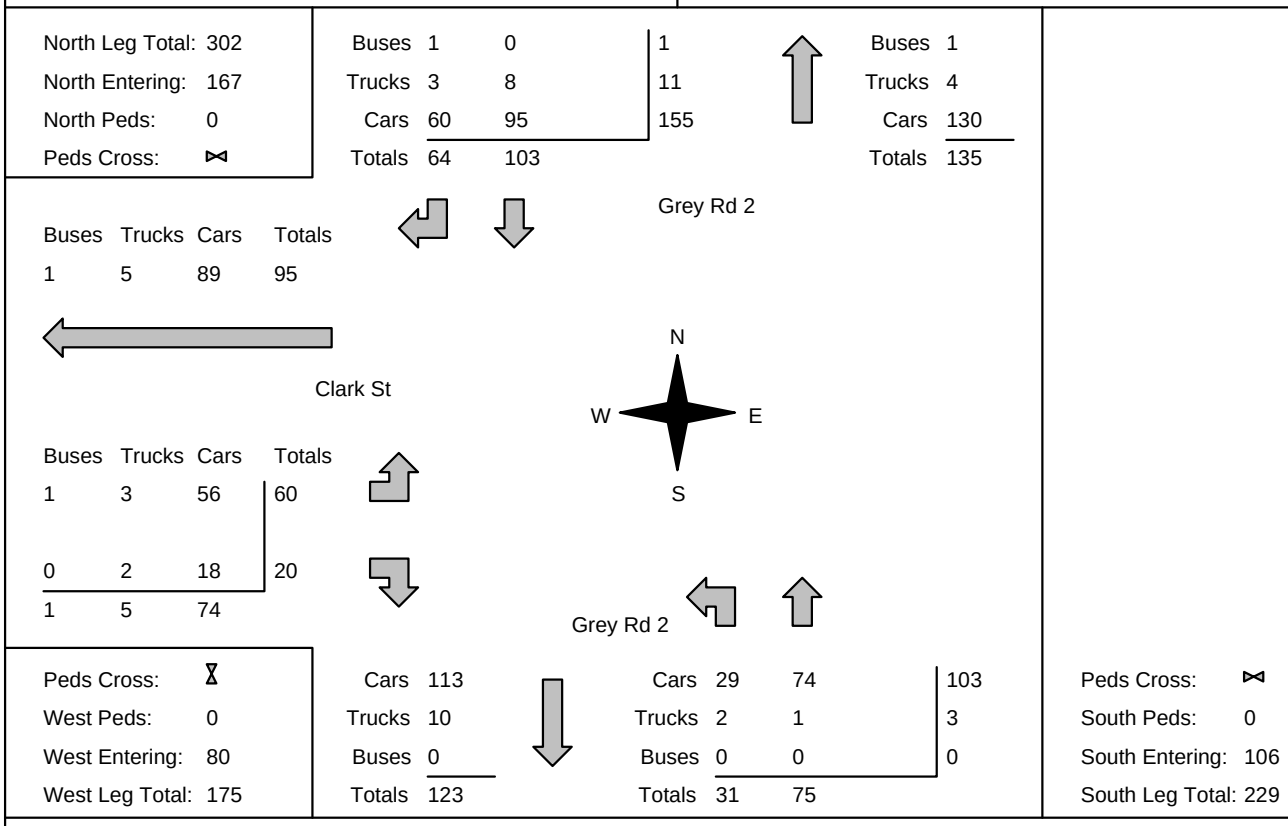
Municipality: The Blue Mountains
Site #: 2413300002
Intersection: Grey Rd 2 & Clark St
TFR File #: 1
Count date: 18-Jul-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Grey Rd 2 runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Total Count Diagram

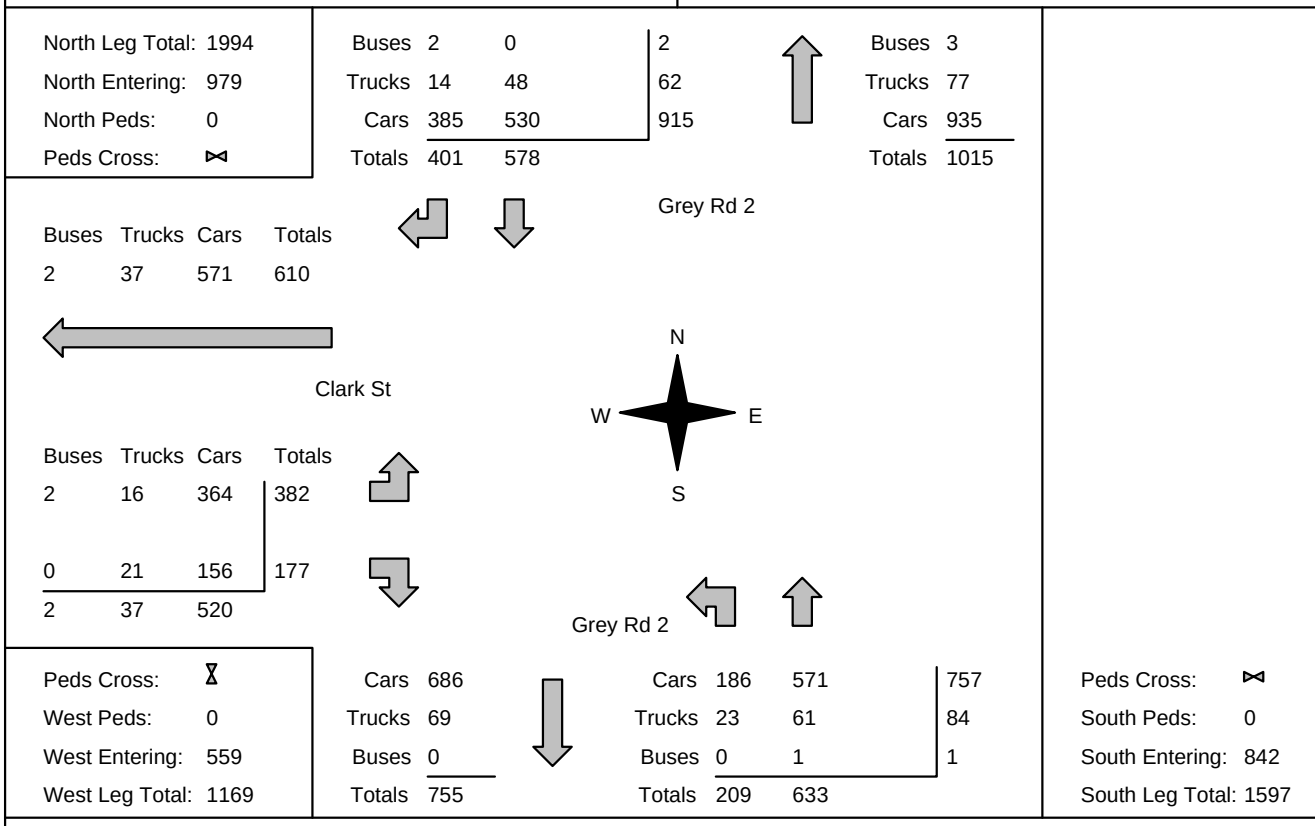
Municipality: The Blue Mountains
Site #: 2413300002
Intersection: Grey Rd 2 & Clark St
TFR File #: 1
Count date: 18-Jul-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Grey Rd 2 runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Traffic Count Summary

Intersection: Grey Rd 2 & Clark St | **Count Date:** 18-Jul-24 | **Municipality:** The Blue Mountains

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	0	43	30	73	0
9:00:00	0	59	50	109	0
11:00:00	0	0	0	0	0
12:00:00	0	62	47	109	0
13:00:00	0	87	49	136	0
14:00:00	0	70	49	119	0
15:00:00	0	0	0	0	0
16:00:00	0	65	58	123	0
17:00:00	0	104	64	168	0
18:00:00	0	88	54	142	0
Totals:	0	578	401	979	0

North/South Total Approaches: 1821

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	9	78	0	87	0
9:00:00	23	90	0	113	0
11:00:00	0	0	0	0	0
12:00:00	23	87	0	110	0
13:00:00	17	73	0	90	0
14:00:00	28	74	0	102	0
15:00:00	0	0	0	0	0
16:00:00	28	75	0	103	0
17:00:00	36	72	0	108	0
18:00:00	45	84	0	129	0
S Totals:	209	633	0	842	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0
9:00:00	0	0	0	0	0
11:00:00	0	0	0	0	0
12:00:00	0	0	0	0	0
13:00:00	0	0	0	0	0
14:00:00	0	0	0	0	0
15:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0
18:00:00	0	0	0	0	0
Totals:	0	0	0	0	0

East/West Total Approaches: 559

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	36	0	17	53	0
9:00:00	55	0	27	82	0
11:00:00	0	0	0	0	0
12:00:00	50	0	28	78	0
13:00:00	47	0	27	74	0
14:00:00	47	0	22	69	0
15:00:00	0	0	0	0	0
16:00:00	61	0	17	78	0
17:00:00	52	0	19	71	0
18:00:00	34	0	20	54	0
W Totals:	382	0	177	559	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00
Crossing Values:	36	55	50	47	47	61	52	34

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300002

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Buses - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	5	5	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	12	7	13	6	0	0	4	4	1	1	0	0	0	0	0	0	0	0
7:45:00	0	0	22	10	23	10	0	0	5	1	1	0	0	0	0	0	0	0	0	0
8:00:00	0	0	36	14	29	6	0	0	7	2	1	0	0	0	0	0	0	0	0	0
8:15:00	0	0	48	12	38	9	0	0	7	0	1	0	0	0	0	0	0	0	0	0
8:30:00	0	0	62	14	49	11	0	0	11	4	3	2	0	0	0	0	0	0	0	0
8:45:00	0	0	75	13	65	16	0	0	11	0	6	3	0	0	0	0	1	1	0	0
9:00:00	0	0	89	14	73	8	0	0	13	2	6	0	0	0	0	0	1	0	0	0
9:15:00	0	0	89	0	73	0	0	0	13	0	6	0	0	0	0	0	1	0	0	0
11:00:00	0	0	89	0	73	0	0	0	13	0	6	0	0	0	0	0	1	0	0	0
11:15:00	0	0	104	15	83	10	0	0	16	3	6	0	0	0	0	0	1	0	0	0
11:30:00	0	0	119	15	97	14	0	0	17	1	6	0	0	0	0	0	1	0	0	0
11:45:00	0	0	130	11	108	11	0	0	18	1	6	0	0	0	0	0	1	0	0	0
12:00:00	0	0	146	16	118	10	0	0	18	0	8	2	0	0	0	0	1	0	0	0
12:15:00	0	0	164	18	127	9	0	0	20	2	9	1	0	0	0	0	1	0	0	0
12:30:00	0	0	177	13	133	6	0	0	23	3	9	0	0	0	0	0	1	0	0	0
12:45:00	0	0	199	22	152	19	0	0	25	2	9	0	0	0	0	0	1	0	0	0
13:00:00	0	0	223	24	166	14	0	0	28	3	9	0	0	0	0	0	1	0	0	0
13:15:00	0	0	233	10	175	9	0	0	29	1	9	0	0	0	0	0	1	0	0	0
13:30:00	0	0	250	17	192	17	0	0	30	1	9	0	0	0	0	0	1	0	0	0
13:45:00	0	0	271	21	204	12	0	0	30	0	9	0	0	0	0	0	1	0	0	0
14:00:00	0	0	288	17	215	11	0	0	33	3	9	0	0	0	0	0	1	0	0	0
14:15:00	0	0	288	0	215	0	0	0	33	0	9	0	0	0	0	0	1	0	0	0
15:00:00	0	0	288	0	215	0	0	0	33	0	9	0	0	0	0	0	1	0	0	0
15:15:00	0	0	300	12	229	14	0	0	35	2	9	0	0	0	0	0	1	0	0	0
15:30:00	0	0	314	14	238	9	0	0	37	2	10	1	0	0	0	0	1	0	0	0
15:45:00	0	0	325	11	257	19	0	0	37	0	10	0	0	0	0	0	1	0	0	0
16:00:00	0	0	345	20	271	14	0	0	41	4	11	1	0	0	0	0	1	0	0	0
16:15:00	0	0	375	30	287	16	0	0	41	0	11	0	0	0	0	0	2	1	0	0
16:30:00	0	0	393	18	302	15	0	0	41	0	12	1	0	0	0	0	2	0	0	0
16:45:00	0	0	420	27	317	15	0	0	45	4	13	1	0	0	0	0	2	0	0	0
17:00:00	0	0	444	24	331	14	0	0	46	1	14	1	0	0	0	0	2	0	0	0
17:15:00	0	0	471	27	345	14	0	0	46	0	14	0	0	0	0	0	2	0	0	0
17:30:00	0	0	494	23	355	10	0	0	48	2	14	0	0	0	0	0	2	0	0	0
17:45:00	0	0	516	22	370	15	0	0	48	0	14	0	0	0	0	0	2	0	0	0
18:00:00	0	0	530	14	385	15	0	0	48	0	14	0	0	0	0	0	2	0	0	0
18:15:00	0	0	530	0	385	0	0	0	48	0	14	0	0	0	0	0	2	0	0	0
18:15:15	0	0	530	0	385	0	0	0	48	0	14	0	0	0	0	0	2	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300002

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Buses - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300002

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Buses - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	1	1	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	2	1	21	15	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
7:45:00	4	2	40	19	0	0	0	0	14	10	0	0	0	0	0	0	0	0	0	0
8:00:00	7	3	61	21	0	0	2	2	17	3	0	0	0	0	0	0	0	0	0	0
8:15:00	15	8	78	17	0	0	2	0	23	6	0	0	0	0	0	0	0	0	0	0
8:30:00	23	8	104	26	0	0	2	0	27	4	0	0	0	0	0	0	0	0	0	0
8:45:00	24	1	115	11	0	0	2	0	27	0	0	0	0	0	0	0	0	0	0	0
9:00:00	29	5	141	26	0	0	3	1	27	0	0	0	0	0	0	0	0	0	0	0
9:15:00	29	0	141	0	0	0	3	0	27	0	0	0	0	0	0	0	0	0	0	0
11:00:00	29	0	141	0	0	0	3	0	27	0	0	0	0	0	0	0	0	0	0	0
11:15:00	32	3	160	19	0	0	4	1	29	2	0	0	0	0	0	0	0	0	0	0
11:30:00	38	6	187	27	0	0	5	1	33	4	0	0	0	0	0	0	0	0	0	0
11:45:00	44	6	202	15	0	0	6	1	35	2	0	0	0	0	0	0	0	0	0	0
12:00:00	48	4	219	17	0	0	7	1	36	1	0	0	0	0	0	0	0	0	0	0
12:15:00	49	1	239	20	0	0	7	0	38	2	0	0	0	0	0	0	0	0	0	0
12:30:00	55	6	253	14	0	0	8	1	38	0	0	0	0	0	0	0	0	0	0	0
12:45:00	60	5	268	15	0	0	8	0	40	2	0	0	0	0	0	0	0	0	0	0
13:00:00	64	4	285	17	0	0	8	0	43	3	0	0	0	0	0	0	0	0	0	0
13:15:00	69	5	302	17	0	0	10	2	45	2	0	0	0	0	0	0	0	0	0	0
13:30:00	74	5	323	21	0	0	12	2	50	5	0	0	0	0	0	0	0	0	0	0
13:45:00	80	6	341	18	0	0	14	2	52	2	0	0	0	0	0	0	0	0	0	0
14:00:00	85	5	349	8	0	0	15	1	53	1	0	0	0	0	0	0	0	0	0	0
14:15:00	85	0	349	0	0	0	15	0	53	0	0	0	0	0	0	0	0	0	0	0
15:00:00	85	0	349	0	0	0	15	0	53	0	0	0	0	0	0	0	0	0	0	0
15:15:00	88	3	364	15	0	0	19	4	55	2	0	0	0	0	0	0	0	0	0	0
15:30:00	91	3	383	19	0	0	19	0	56	1	0	0	0	0	1	1	0	0	0	0
15:45:00	102	11	404	21	0	0	19	0	57	1	0	0	0	0	1	0	0	0	0	0
16:00:00	108	6	419	15	0	0	20	1	57	0	0	0	0	0	1	0	0	0	0	0
16:15:00	120	12	439	20	0	0	20	0	57	0	0	0	0	0	1	0	0	0	0	0
16:30:00	127	7	463	24	0	0	20	0	58	1	0	0	0	0	1	0	0	0	0	0
16:45:00	131	4	478	15	0	0	21	1	58	0	0	0	0	0	1	0	0	0	0	0
17:00:00	143	12	490	12	0	0	21	0	58	0	0	0	0	0	1	0	0	0	0	0
17:15:00	152	9	514	24	0	0	23	2	60	2	0	0	0	0	1	0	0	0	0	0
17:30:00	167	15	538	24	0	0	23	0	60	0	0	0	0	0	1	0	0	0	0	0
17:45:00	179	12	556	18	0	0	23	0	60	0	0	0	0	0	1	0	0	0	0	0
18:00:00	186	7	571	15	0	0	23	0	61	1	0	0	0	0	1	0	0	0	0	0
18:15:00	186	0	571	0	0	0	23	0	61	0	0	0	0	0	1	0	0	0	0	0
18:15:15	186	0	571	0	0	0	23	0	61	0	0	0	0	0	1	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300002

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Buses - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	11	7	0	0	2	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0
7:45:00	23	12	0	0	6	4	0	0	0	0	2	1	0	0	0	0	0	0	0	0
8:00:00	35	12	0	0	14	8	1	1	0	0	3	1	0	0	0	0	0	0	0	0
8:15:00	44	9	0	0	21	7	1	0	0	0	3	0	0	0	0	0	0	0	0	0
8:30:00	51	7	0	0	29	8	1	0	0	0	3	0	0	0	0	0	0	0	0	0
8:45:00	72	21	0	0	32	3	1	0	0	0	4	1	0	0	0	0	0	0	0	0
9:00:00	89	17	0	0	38	6	1	0	0	0	6	2	1	1	0	0	0	0	0	0
9:15:00	89	0	0	0	38	0	1	0	0	0	6	0	1	0	0	0	0	0	0	0
11:00:00	89	0	0	0	38	0	1	0	0	0	6	0	1	0	0	0	0	0	0	0
11:15:00	98	9	0	0	45	7	2	1	0	0	7	1	1	0	0	0	0	0	0	0
11:30:00	107	9	0	0	49	4	2	0	0	0	8	1	1	0	0	0	0	0	0	0
11:45:00	121	14	0	0	54	5	2	0	0	0	8	0	1	0	0	0	0	0	0	0
12:00:00	138	17	0	0	64	10	2	0	0	0	8	0	1	0	0	0	0	0	0	0
12:15:00	147	9	0	0	69	5	2	0	0	0	9	1	1	0	0	0	0	0	0	0
12:30:00	154	7	0	0	73	4	3	1	0	0	9	0	1	0	0	0	0	0	0	0
12:45:00	169	15	0	0	79	6	7	4	0	0	10	1	1	0	0	0	0	0	0	0
13:00:00	178	9	0	0	88	9	9	2	0	0	11	1	1	0	0	0	0	0	0	0
13:15:00	186	8	0	0	93	5	9	0	0	0	12	1	1	0	0	0	0	0	0	0
13:30:00	204	18	0	0	95	2	10	1	0	0	13	1	1	0	0	0	0	0	0	0
13:45:00	213	9	0	0	99	4	11	1	0	0	14	1	1	0	0	0	0	0	0	0
14:00:00	223	10	0	0	106	7	11	0	0	0	15	1	1	0	0	0	0	0	0	0
14:15:00	223	0	0	0	106	0	11	0	0	0	15	0	1	0	0	0	0	0	0	0
15:00:00	223	0	0	0	106	0	11	0	0	0	15	0	1	0	0	0	0	0	0	0
15:15:00	244	21	0	0	111	5	12	1	0	0	15	0	1	0	0	0	0	0	0	0
15:30:00	255	11	0	0	115	4	13	1	0	0	16	1	1	0	0	0	0	0	0	0
15:45:00	265	10	0	0	118	3	13	0	0	0	16	0	1	0	0	0	0	0	0	0
16:00:00	279	14	0	0	122	4	16	3	0	0	16	0	1	0	0	0	0	0	0	0
16:15:00	294	15	0	0	132	10	16	0	0	0	17	1	1	0	0	0	0	0	0	0
16:30:00	310	16	0	0	135	3	16	0	0	0	17	0	2	1	0	0	0	0	0	0
16:45:00	321	11	0	0	136	1	16	0	0	0	18	1	2	0	0	0	0	0	0	0
17:00:00	330	9	0	0	138	2	16	0	0	0	19	1	2	0	0	0	0	0	0	0
17:15:00	347	17	0	0	144	6	16	0	0	0	20	1	2	0	0	0	0	0	0	0
17:30:00	353	6	0	0	147	3	16	0	0	0	20	0	2	0	0	0	0	0	0	0
17:45:00	359	6	0	0	150	3	16	0	0	0	21	1	2	0	0	0	0	0	0	0
18:00:00	364	5	0	0	156	6	16	0	0	0	21	0	2	0	0	0	0	0	0	0
18:15:00	364	0	0	0	156	0	16	0	0	0	21	0	2	0	0	0	0	0	0	0
18:15:15	364	0	0	0	156	0	16	0	0	0	21	0	2	0	0	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:30:00
To: 8:30:00

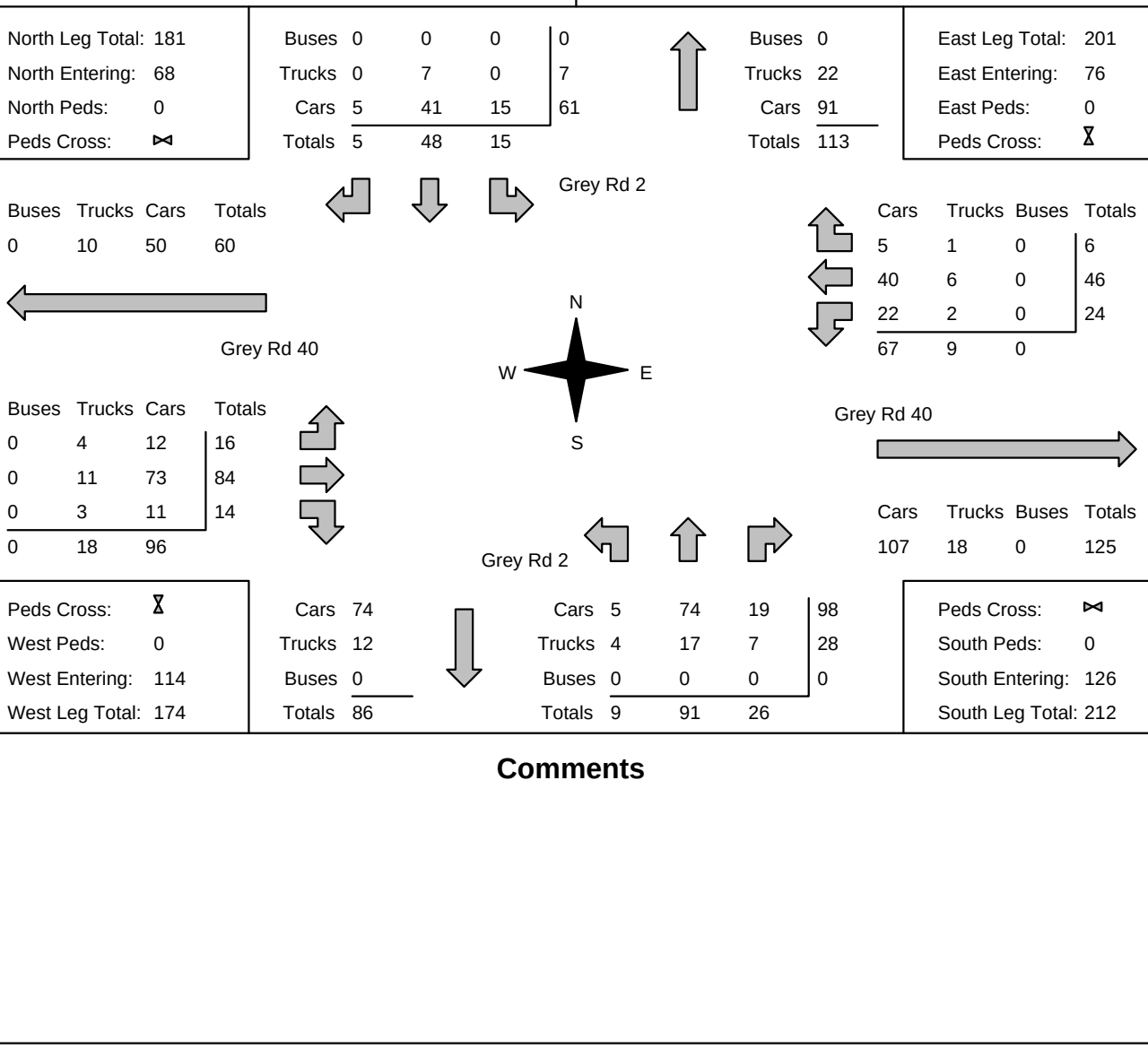
Municipality: The Blue Mountains
Site #: 2413300003
Intersection: Grey Rd 2 & Grey Rd 40
TFR File #: 1
Count date: 18-Jul-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Grey Rd 2 runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:15:00
To: 12:15:00

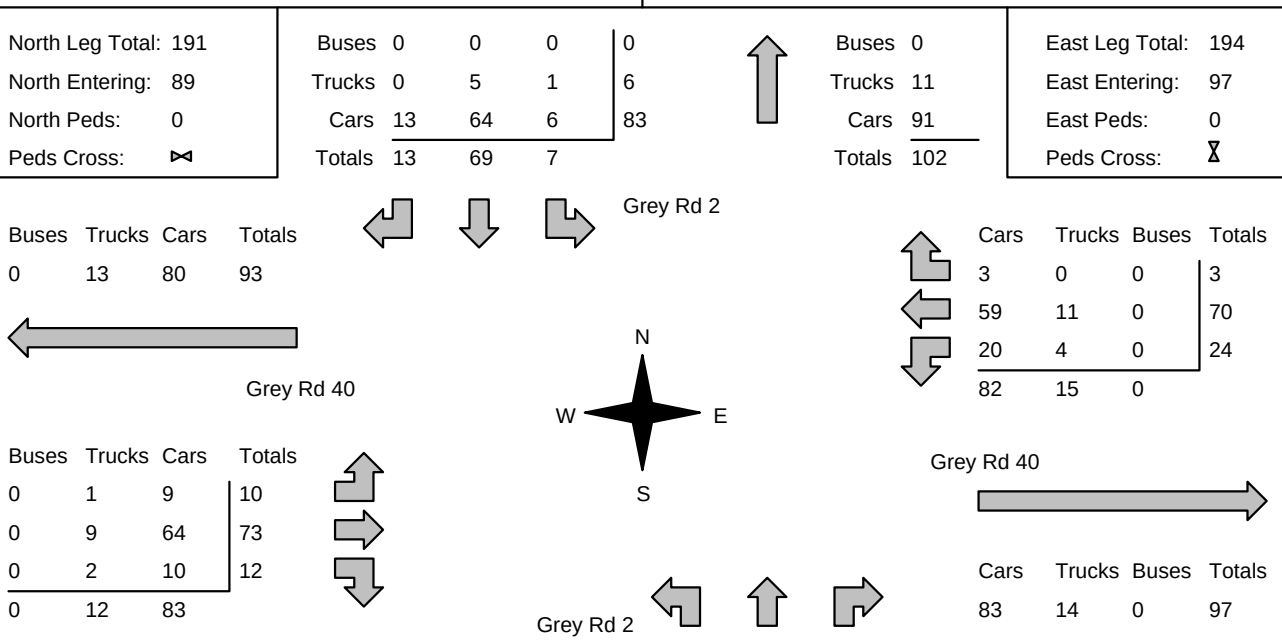
Municipality: The Blue Mountains
Site #: 2413300003
Intersection: Grey Rd 2 & Grey Rd 40
TFR File #: 1
Count date: 18-Jul-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Grey Rd 2 runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:15:00
To: 17:15:00

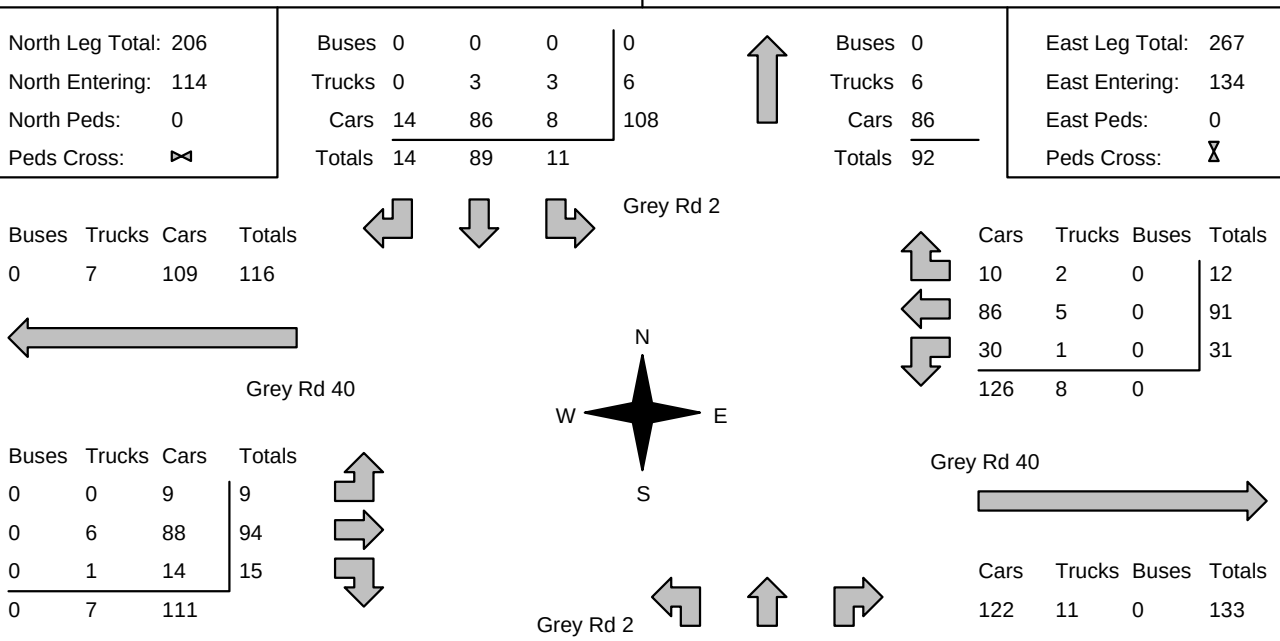
Municipality: The Blue Mountains
Site #: 2413300003
Intersection: Grey Rd 2 & Grey Rd 40
TFR File #: 1
Count date: 18-Jul-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Grey Rd 2 runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Total Count Diagram

Municipality: The Blue Mountains
Site #: 2413300003
Intersection: Grey Rd 2 & Grey Rd 40
TFR File #: 1
Count date: 18-Jul-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Grey Rd 2 runs N/S

North Leg Total: 1410
North Entering: 679
North Peds: 0
Peds Cross: ⋈

Buses	0	0	0	0
Trucks	5	44	10	59
Cars	70	488	62	620
Totals	75	532	72	

Buses	1
Trucks	68
Cars	662
Totals	731

East Leg Total: 1604
East Entering: 783
East Peds: 0
Peds Cross: ⧖

Grey Rd 2

Buses	Trucks	Cars	Totals
0	67	629	696

Grey Rd 40

Cars	Trucks	Buses	Totals
54	6	0	60
493	46	0	539
174	10	0	184
721	62	0	

N
W E
S

Buses	Trucks	Cars	Totals
0	8	67	75
0	60	497	557
0	16	84	100
0	84	648	

Grey Rd 40

Cars	Trucks	Buses	Totals
728	93	0	821

Grey Rd 2

Peds Cross: ⧖
West Peds: 0
West Entering: 732
West Leg Total: 1428

Cars	746
Trucks	70
Buses	0
Totals	816

Cars	66	541	169	776
Trucks	16	54	23	93
Buses	0	1	0	1
Totals	82	596	192	

Peds Cross: ⋈
South Peds: 0
South Entering: 870
South Leg Total: 1686

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Traffic Count Summary

Intersection: Grey Rd 2 & Grey Rd 40 | **Count Date:** 18-Jul-24 | **Municipality:** The Blue Mountains

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	7	37	7	51	0
9:00:00	15	51	9	75	0
11:00:00	0	0	0	0	0
12:00:00	7	73	6	86	0
13:00:00	11	70	15	96	0
14:00:00	7	70	5	82	0
15:00:00	0	0	0	0	0
16:00:00	4	63	8	75	0
17:00:00	11	84	17	112	0
18:00:00	10	84	8	102	0
Totals:	72	532	75	679	0

North/South Total Approaches: 1549

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	7	58	21	86	0
9:00:00	12	77	30	119	0
11:00:00	0	0	0	0	0
12:00:00	10	84	18	112	0
13:00:00	9	62	29	100	0
14:00:00	14	77	22	113	0
15:00:00	0	0	0	0	0
16:00:00	7	80	21	108	0
17:00:00	11	70	27	108	0
18:00:00	12	88	24	124	0
S Totals:	82	596	192	870	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	16	50	5	71	0
9:00:00	21	41	7	69	0
11:00:00	0	0	0	0	0
12:00:00	28	64	3	95	0
13:00:00	15	65	5	85	0
14:00:00	23	60	14	97	0
15:00:00	0	0	0	0	0
16:00:00	21	77	4	102	0
17:00:00	37	88	13	138	0
18:00:00	23	94	9	126	0
Totals:	184	539	60	783	0

East/West Total Approaches: 1515

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Buses				Total Peds
	Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0
8:00:00	18	61	13	92	0
9:00:00	7	88	13	108	0
11:00:00	0	0	0	0	0
12:00:00	9	64	9	82	0
13:00:00	12	65	8	85	0
14:00:00	7	51	10	68	0
15:00:00	0	0	0	0	0
16:00:00	5	65	18	88	0
17:00:00	9	90	12	111	0
18:00:00	8	73	17	98	0
W Totals:	75	557	100	732	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00
Crossing Values:	95	116	101	92	90	103	136	125

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300003

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Buses - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	1	1	4	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	2	1	11	7	3	2	0	0	2	2	1	1	0	0	0	0	0	0	0	0
7:45:00	3	1	20	9	5	2	0	0	3	1	1	0	0	0	0	0	0	0	0	0
8:00:00	7	4	30	10	6	1	0	0	7	4	1	0	0	0	0	0	0	0	0	0
8:15:00	12	5	41	11	7	1	0	0	8	1	1	0	0	0	0	0	0	0	0	0
8:30:00	17	5	52	11	8	1	0	0	9	1	1	0	0	0	0	0	0	0	0	0
8:45:00	21	4	60	8	12	4	1	1	12	3	1	0	0	0	0	0	0	0	0	0
9:00:00	21	0	75	15	14	2	1	0	13	1	2	1	0	0	0	0	0	0	0	0
9:15:00	21	0	75	0	14	0	1	0	13	0	2	0	0	0	0	0	0	0	0	0
11:00:00	21	0	75	0	14	0	1	0	13	0	2	0	0	0	0	0	0	0	0	0
11:15:00	22	1	93	18	14	0	2	1	16	3	2	0	0	0	0	0	0	0	0	0
11:30:00	22	0	108	15	14	0	2	0	18	2	2	0	0	0	0	0	0	0	0	0
11:45:00	23	1	120	12	17	3	3	1	18	0	2	0	0	0	0	0	0	0	0	0
12:00:00	26	3	143	23	20	3	3	0	18	0	2	0	0	0	0	0	0	0	0	0
12:15:00	28	2	157	14	27	7	3	0	21	3	2	0	0	0	0	0	0	0	0	0
12:30:00	28	0	167	10	30	3	3	0	23	2	2	0	0	0	0	0	0	0	0	0
12:45:00	31	3	184	17	33	3	3	0	24	1	3	1	0	0	0	0	0	0	0	0
13:00:00	37	6	205	21	34	1	3	0	26	2	3	0	0	0	0	0	0	0	0	0
13:15:00	39	2	218	13	34	0	3	0	27	1	3	0	0	0	0	0	0	0	0	0
13:30:00	39	0	235	17	34	0	3	0	27	0	3	0	0	0	0	0	0	0	0	0
13:45:00	40	1	253	18	34	0	5	2	28	1	3	0	0	0	0	0	0	0	0	0
14:00:00	42	2	271	18	38	4	5	0	30	2	4	1	0	0	0	0	0	0	0	0
14:15:00	42	0	271	0	38	0	5	0	30	0	4	0	0	0	0	0	0	0	0	0
15:00:00	42	0	271	0	38	0	5	0	30	0	4	0	0	0	0	0	0	0	0	0
15:15:00	42	0	287	16	38	0	5	0	32	2	4	0	0	0	0	0	0	0	0	0
15:30:00	43	1	296	9	40	2	5	0	35	3	5	1	0	0	0	0	0	0	0	0
15:45:00	43	0	309	13	41	1	5	0	36	1	5	0	0	0	0	0	0	0	0	0
16:00:00	46	3	325	16	45	4	5	0	39	3	5	0	0	0	0	0	0	0	0	0
16:15:00	48	2	349	24	51	6	7	2	39	0	5	0	0	0	0	0	0	0	0	0
16:30:00	50	2	369	20	52	1	7	0	39	0	5	0	0	0	0	0	0	0	0	0
16:45:00	53	3	390	21	59	7	9	2	40	1	5	0	0	0	0	0	0	0	0	0
17:00:00	53	0	406	16	62	3	9	0	42	2	5	0	0	0	0	0	0	0	0	0
17:15:00	56	3	435	29	65	3	10	1	42	0	5	0	0	0	0	0	0	0	0	0
17:30:00	57	1	454	19	67	2	10	0	43	1	5	0	0	0	0	0	0	0	0	0
17:45:00	60	3	474	20	69	2	10	0	43	0	5	0	0	0	0	0	0	0	0	0
18:00:00	62	2	488	14	70	1	10	0	44	1	5	0	0	0	0	0	0	0	0	0
18:15:00	62	0	488	0	70	0	10	0	44	0	5	0	0	0	0	0	0	0	0	0
18:15:15	62	0	488	0	70	0	10	0	44	0	5	0	0	0	0	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300003

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Buses - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	1	1	4	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	3	2	18	14	3	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
7:45:00	8	5	31	13	4	1	0	0	4	3	0	0	0	0	0	0	0	0	0	0
8:00:00	15	7	45	14	4	0	1	1	5	1	1	1	0	0	0	0	0	0	0	0
8:15:00	21	6	50	5	7	3	2	1	6	1	1	0	0	0	0	0	0	0	0	0
8:30:00	25	4	58	8	8	1	2	0	7	1	1	0	0	0	0	0	0	0	0	0
8:45:00	29	4	69	11	9	1	2	0	8	1	1	0	0	0	0	0	0	0	0	0
9:00:00	35	6	80	11	11	2	2	0	11	3	1	0	0	0	0	0	0	0	0	0
9:15:00	35	0	80	0	11	0	2	0	11	0	1	0	0	0	0	0	0	0	0	0
11:00:00	35	0	80	0	11	0	2	0	11	0	1	0	0	0	0	0	0	0	0	0
11:15:00	39	4	92	12	11	0	3	1	11	0	1	0	0	0	0	0	0	0	0	0
11:30:00	45	6	112	20	13	2	4	1	15	4	1	0	0	0	0	0	0	0	0	0
11:45:00	52	7	121	9	14	1	6	2	17	2	1	0	0	0	0	0	0	0	0	0
12:00:00	59	7	135	14	14	0	6	0	20	3	1	0	0	0	0	0	0	0	0	0
12:15:00	59	0	151	16	14	0	7	1	22	2	1	0	0	0	0	0	0	0	0	0
12:30:00	62	3	169	18	15	1	7	0	22	0	1	0	0	0	0	0	0	0	0	0
12:45:00	68	6	186	17	16	1	7	0	23	1	1	0	0	0	0	0	0	0	0	0
13:00:00	73	5	196	10	19	3	7	0	24	1	1	0	0	0	0	0	0	0	0	0
13:15:00	80	7	211	15	20	1	7	0	25	1	2	1	0	0	0	0	0	0	0	0
13:30:00	85	5	225	14	23	3	7	0	27	2	3	1	0	0	0	0	0	0	0	0
13:45:00	91	6	239	14	29	6	7	0	27	0	3	0	0	0	0	0	0	0	0	0
14:00:00	96	5	251	12	31	2	7	0	29	2	3	0	0	0	0	0	0	0	0	0
14:15:00	96	0	251	0	31	0	7	0	29	0	3	0	0	0	0	0	0	0	0	0
15:00:00	96	0	251	0	31	0	7	0	29	0	3	0	0	0	0	0	0	0	0	0
15:15:00	99	3	266	15	31	0	8	1	31	2	3	0	0	0	0	0	0	0	0	0
15:30:00	107	8	288	22	33	2	8	0	32	1	3	0	0	0	0	0	0	0	0	0
15:45:00	113	6	305	17	34	1	8	0	36	4	3	0	0	0	0	0	0	0	0	0
16:00:00	116	3	319	14	34	0	8	0	38	2	4	1	0	0	0	0	0	0	0	0
16:15:00	125	9	337	18	37	3	8	0	39	1	4	0	0	0	0	0	0	0	0	0
16:30:00	133	8	362	25	40	3	8	0	42	3	5	1	0	0	0	0	0	0	0	0
16:45:00	142	9	381	19	42	2	9	1	42	0	5	0	0	0	0	0	0	0	0	0
17:00:00	152	10	402	21	45	3	9	0	43	1	6	1	0	0	0	0	0	0	0	0
17:15:00	155	3	423	21	47	2	9	0	44	1	6	0	0	0	0	0	0	0	0	0
17:30:00	160	5	443	20	51	4	10	1	45	1	6	0	0	0	0	0	0	0	0	0
17:45:00	168	8	469	26	52	1	10	0	46	1	6	0	0	0	0	0	0	0	0	0
18:00:00	174	6	493	24	54	2	10	0	46	0	6	0	0	0	0	0	0	0	0	0
18:15:00	174	0	493	0	54	0	10	0	46	0	6	0	0	0	0	0	0	0	0	0
18:15:15	174	0	493	0	54	0	10	0	46	0	6	0	0	0	0	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300003

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Buses - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	2	2	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	1	1	12	10	8	3	0	0	1	1	1	1	0	0	0	0	0	0	0	0
7:45:00	3	2	29	17	10	2	0	0	9	8	4	3	0	0	0	0	0	0	0	0
8:00:00	5	2	47	18	15	5	2	2	11	2	6	2	0	0	0	0	0	0	0	0
8:15:00	5	0	67	20	25	10	3	1	15	4	7	1	0	0	0	0	0	0	0	0
8:30:00	6	1	86	19	27	2	4	1	18	3	8	1	0	0	0	0	0	0	0	0
8:45:00	10	4	97	11	33	6	5	1	18	0	8	0	0	0	0	0	0	0	0	0
9:00:00	13	3	115	18	42	9	6	1	20	2	9	1	0	0	0	0	0	0	0	0
9:15:00	13	0	115	0	42	0	6	0	20	0	9	0	0	0	0	0	0	0	0	0
11:00:00	13	0	115	0	42	0	6	0	20	0	9	0	0	0	0	0	0	0	0	0
11:15:00	14	1	132	17	46	4	6	0	20	0	10	1	0	0	0	0	0	0	0	0
11:30:00	15	1	157	25	47	1	6	0	24	4	11	1	0	0	0	0	0	0	0	0
11:45:00	17	2	173	16	52	5	7	1	27	3	12	1	0	0	0	0	0	0	0	0
12:00:00	22	5	190	17	56	4	7	0	29	2	13	1	0	0	0	0	0	0	0	0
12:15:00	22	0	211	21	59	3	8	1	30	1	14	1	0	0	0	0	0	0	0	0
12:30:00	25	3	220	9	67	8	8	0	30	0	14	0	0	0	0	0	0	0	0	0
12:45:00	26	1	234	14	76	9	8	0	30	0	15	1	0	0	0	0	0	0	0	0
13:00:00	29	3	249	15	82	6	9	1	32	2	16	1	0	0	0	0	0	0	0	0
13:15:00	30	1	268	19	88	6	9	0	34	2	17	1	0	0	0	0	0	0	0	0
13:30:00	33	3	287	19	94	6	9	0	40	6	18	1	0	0	0	0	0	0	0	0
13:45:00	35	2	304	17	98	4	12	3	42	2	19	1	0	0	0	0	0	0	0	0
14:00:00	40	5	315	11	101	3	12	0	43	1	19	0	0	0	0	0	0	0	0	0
14:15:00	40	0	315	0	101	0	12	0	43	0	19	0	0	0	0	0	0	0	0	0
15:00:00	40	0	315	0	101	0	12	0	43	0	19	0	0	0	0	0	0	0	0	0
15:15:00	40	0	331	16	106	5	12	0	49	6	19	0	0	0	0	0	0	0	0	0
15:30:00	41	1	353	22	110	4	12	0	49	0	19	0	0	0	1	1	0	0	0	0
15:45:00	45	4	372	19	114	4	13	1	49	0	20	1	0	0	1	0	0	0	0	0
16:00:00	46	1	388	16	120	6	13	0	49	0	21	1	0	0	1	0	0	0	0	0
16:15:00	50	4	407	19	127	7	13	0	49	0	21	0	0	0	1	0	0	0	0	0
16:30:00	52	2	424	17	134	7	13	0	50	1	22	1	0	0	1	0	0	0	0	0
16:45:00	55	3	438	14	139	5	13	0	50	0	23	1	0	0	1	0	0	0	0	0
17:00:00	56	1	456	18	145	6	14	1	51	1	23	0	0	0	1	0	0	0	0	0
17:15:00	59	3	474	18	153	8	15	1	53	2	23	0	0	0	1	0	0	0	0	0
17:30:00	61	2	500	26	156	3	15	0	53	0	23	0	0	0	1	0	0	0	0	0
17:45:00	64	3	525	25	163	7	16	1	53	0	23	0	0	0	1	0	0	0	0	0
18:00:00	66	2	541	16	169	6	16	0	54	1	23	0	0	0	1	0	0	0	0	0
18:15:00	66	0	541	0	169	0	16	0	54	0	23	0	0	0	1	0	0	0	0	0
18:15:15	66	0	541	0	169	0	16	0	54	0	23	0	0	0	1	0	0	0	0	0

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Count Date: 18-Jul-24 Site #: 2413300003

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Buses - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	4	4	5	5	4	4	0	0	2	2	0	0	0	0	0	0	0	0	0	0
7:30:00	4	0	14	9	5	1	1	1	3	1	1	1	0	0	0	0	0	0	0	0
7:45:00	7	3	31	17	9	4	3	2	5	2	1	0	0	0	0	0	0	0	0	0
8:00:00	14	7	52	21	10	1	4	1	9	4	3	2	0	0	0	0	0	0	0	0
8:15:00	14	0	67	15	15	5	5	1	14	5	3	0	0	0	0	0	0	0	0	0
8:30:00	16	2	87	20	16	1	5	0	14	0	4	1	0	0	0	0	0	0	0	0
8:45:00	18	2	114	27	17	1	5	0	17	3	6	2	0	0	0	0	0	0	0	0
9:00:00	20	2	130	16	19	2	5	0	19	2	7	1	0	0	0	0	0	0	0	0
9:15:00	20	0	130	0	19	0	5	0	19	0	7	0	0	0	0	0	0	0	0	0
11:00:00	20	0	130	0	19	0	5	0	19	0	7	0	0	0	0	0	0	0	0	0
11:15:00	22	2	137	7	19	0	5	0	21	2	7	0	0	0	0	0	0	0	0	0
11:30:00	24	2	155	18	24	5	5	0	23	2	7	0	0	0	0	0	0	0	0	0
11:45:00	25	1	174	19	27	3	5	0	26	3	8	1	0	0	0	0	0	0	0	0
12:00:00	28	3	186	12	27	0	6	1	27	1	8	0	0	0	0	0	0	0	0	0
12:15:00	31	3	201	15	29	2	6	0	30	3	9	1	0	0	0	0	0	0	0	0
12:30:00	33	2	218	17	31	2	6	0	35	5	10	1	0	0	0	0	0	0	0	0
12:45:00	37	4	233	15	32	1	7	1	35	0	10	0	0	0	0	0	0	0	0	0
13:00:00	39	2	242	9	32	0	7	0	36	1	11	1	0	0	0	0	0	0	0	0
13:15:00	42	3	252	10	34	2	7	0	39	3	11	0	0	0	0	0	0	0	0	0
13:30:00	44	2	267	15	36	2	7	0	42	3	12	1	0	0	0	0	0	0	0	0
13:45:00	45	1	275	8	38	2	7	0	44	2	12	0	0	0	0	0	0	0	0	0
14:00:00	46	1	284	9	41	3	7	0	45	1	12	0	0	0	0	0	0	0	0	0
14:15:00	46	0	284	0	41	0	7	0	45	0	12	0	0	0	0	0	0	0	0	0
15:00:00	46	0	284	0	41	0	7	0	45	0	12	0	0	0	0	0	0	0	0	0
15:15:00	47	1	298	14	44	3	7	0	45	0	13	1	0	0	0	0	0	0	0	0
15:30:00	48	1	307	9	49	5	7	0	48	3	14	1	0	0	0	0	0	0	0	0
15:45:00	50	2	324	17	53	4	7	0	51	3	14	0	0	0	0	0	0	0	0	0
16:00:00	51	1	342	18	56	3	7	0	52	1	15	1	0	0	0	0	0	0	0	0
16:15:00	54	3	365	23	58	2	7	0	52	0	15	0	0	0	0	0	0	0	0	0
16:30:00	58	4	386	21	59	1	7	0	53	1	16	1	0	0	0	0	0	0	0	0
16:45:00	59	1	412	26	64	5	7	0	55	2	16	0	0	0	0	0	0	0	0	0
17:00:00	60	1	428	16	67	3	7	0	56	1	16	0	0	0	0	0	0	0	0	0
17:15:00	63	3	453	25	72	5	7	0	58	2	16	0	0	0	0	0	0	0	0	0
17:30:00	65	2	470	17	77	5	7	0	58	0	16	0	0	0	0	0	0	0	0	0
17:45:00	66	1	485	15	81	4	7	0	60	2	16	0	0	0	0	0	0	0	0	0
18:00:00	67	1	497	12	84	3	8	1	60	0	16	0	0	0	0	0	0	0	0	0
18:15:00	67	0	497	0	84	0	8	0	60	0	16	0	0	0	0	0	0	0	0	0
18:15:15	67	0	497	0	84	0	8	0	60	0	16	0	0	0	0	0	0	0	0	0

Appendix C:
LOS Definitions

TATHAM ENGINEERING

Level of Service – Unsignalized Intersections

Level of Service (LOS) for unsignalized intersections is defined in terms of control delay for each critical lane. Control delay includes initial deceleration, queue move-up time, stopped delay and final acceleration delay, and is a function of the service rate or capacity of the approach and degree of saturation.

The following table describes in detail the characteristics of each level of service, with A being the best and F being the worst.

LOS	EXPECTED DELAY TO STREET TRAFFIC	DELAY (sec/veh)
A	Little or no delays	$0 < d \leq 10$
B	Short traffic delays	$10 < d \leq 15$
C	Average traffic delays	$15 < d \leq 25$
D	Long traffic delays	$25 < d \leq 35$
E	Very long traffic delays	$35 < d \leq 50$
F	Extreme delays with queuing which may cause congestion affecting other traffic movements in the intersection	$50 < d$

source: 2010 Highway Capacity Manual

TATHAM ENGINEERING

Level of Service – Signalized Intersections

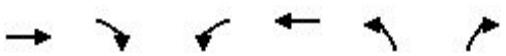
Level of Service (LOS) for signalized intersections is defined in terms of delay, which is made up of a number of factors that relate to control, geometrics, traffic and incidents. Only the portion of total delay attributed to the control facility is quantified. This control delay includes initial deceleration, queue move-up time, stopped delay and final acceleration delay.

The following table describes in detail the characteristics of each level of service, with A being the best and F being the worst.

LOS	EXPECTED DELAY TO STREET TRAFFIC	DELAY (sec/veh)
A	This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all at this LOS. Short cycle lengths may also contribute to low delay.	$0 < d \leq 10$
B	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop at this level than at LOS A, causing longer average delays.	$10 < d \leq 20$
C	These higher delays may result from fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.	$20 < d \leq 35$
D	At this level, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavourable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures become noticeable.	$35 < d \leq 55$
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.	$55 < d \leq 80$
F	At this level, oversaturation occurs when arrival flow rates exceed the design capacity of the intersection. It may also occur at high v/c ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such high delay levels. LOS F is considered to be unacceptable to most drivers.	$80 < d$

source: 2010 Highway Capacity Manual

Appendix D:
Traffic Operations - Existing



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	401	59	49	376	82	62
Future Volume (Veh/h)	401	59	49	376	82	62
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	422	62	52	396	86	65
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			484		922	422
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			484		922	422
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			95		69	90
cM capacity (veh/h)			1048		276	630

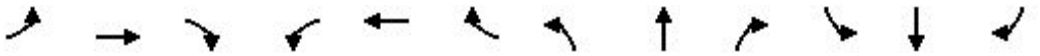
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	422	62	52	396	151
Volume Left	0	0	52	0	86
Volume Right	0	62	0	0	65
cSH	1700	1700	1048	1700	364
Volume to Capacity	0.25	0.04	0.05	0.23	0.42
Queue Length 95th (m)	0.0	0.0	1.2	0.0	15.1
Control Delay (s)	0.0	0.0	8.6	0.0	21.7
Lane LOS			A		C
Approach Delay (s)	0.0		1.0		21.7
Approach LOS					C

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	42.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	27	22	80	59	50
Future Volume (Veh/h)	55	27	22	80	59	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	61	30	24	89	66	56
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	231	94	122			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	231	94	122			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	92	97	98			
cM capacity (veh/h)	745	939	1447			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	91	113	122
Volume Left	61	24	0
Volume Right	30	0	56
cSH	799	1447	1700
Volume to Capacity	0.11	0.02	0.07
Queue Length 95th (m)	2.9	0.4	0.0
Control Delay (s)	10.1	1.7	0.0
Lane LOS	B	A	
Approach Delay (s)	10.1	1.7	0.0
Approach LOS	B		

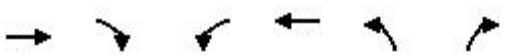
Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	84	14	24	46	6	9	91	26	15	48	5
Future Volume (Veh/h)	16	84	14	24	46	6	9	91	26	15	48	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	18	97	16	28	53	7	10	105	30	17	55	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	266	247	58	296	235	120	61			135		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	266	247	58	296	235	120	61			135		
tC, single (s)	7.3	6.6	6.4	7.2	6.6	6.4	4.5			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.5	3.6	4.1	3.5	2.6			2.2		
p0 queue free %	97	84	98	95	92	99	99			99		
cM capacity (veh/h)	588	625	957	550	634	893	1313			1449		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	131	88	145	78
Volume Left	18	28	10	17
Volume Right	16	7	30	6
cSH	647	618	1313	1449
Volume to Capacity	0.20	0.14	0.01	0.01
Queue Length 95th (m)	5.7	3.8	0.2	0.3
Control Delay (s)	12.0	11.8	0.6	1.7
Lane LOS	B	B	A	A
Approach Delay (s)	12.0	11.8	0.6	1.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	22.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	528	103	63	511	78	52
Future Volume (Veh/h)	528	103	63	511	78	52
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	593	116	71	574	88	58
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			709		1309	593
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			709		1309	593
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			92		45	89
cM capacity (veh/h)			872		161	506

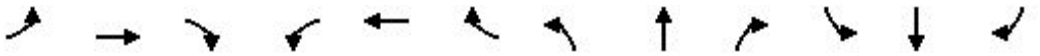
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	593	116	71	574	146
Volume Left	0	0	71	0	88
Volume Right	0	116	0	0	58
cSH	1700	1700	872	1700	221
Volume to Capacity	0.35	0.07	0.08	0.34	0.66
Queue Length 95th (m)	0.0	0.0	2.0	0.0	30.9
Control Delay (s)	0.0	0.0	9.5	0.0	48.1
Lane LOS			A		E
Approach Delay (s)	0.0		1.0		48.1
Approach LOS					E

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	20	29	74	103	64
Future Volume (Veh/h)	60	20	29	74	103	64
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	74	25	36	91	127	79
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	330	166	206			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	330	166	206			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	88	97	97			
cM capacity (veh/h)	641	857	1336			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	99	127	206
Volume Left	74	36	0
Volume Right	25	0	79
cSH	685	1336	1700
Volume to Capacity	0.14	0.03	0.12
Queue Length 95th (m)	3.8	0.6	0.0
Control Delay (s)	11.1	2.4	0.0
Lane LOS	B	A	
Approach Delay (s)	11.1	2.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	94	15	31	91	12	11	71	28	11	89	14
Future Volume (Veh/h)	9	94	15	31	91	12	11	71	28	11	89	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	10	103	16	34	100	13	12	78	31	12	98	15
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	310	262	106	314	254	94	113			109		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	310	262	106	314	254	94	113			109		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	84	98	94	84	99	99			99		
cM capacity (veh/h)	551	632	949	542	639	963	1476			1481		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	129	147	121	125
Volume Left	10	34	12	12
Volume Right	16	13	31	15
cSH	652	632	1476	1481
Volume to Capacity	0.20	0.23	0.01	0.01
Queue Length 95th (m)	5.6	6.8	0.2	0.2
Control Delay (s)	11.9	12.4	0.8	0.8
Lane LOS	B	B	A	A
Approach Delay (s)	11.9	12.4	0.8	0.8
Approach LOS	B	B		

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	28.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix E:
Background Developments

TATHAM ENGINEERING

Enhancing our communities

31 Clark Street

TRAFFIC IMPACT BRIEF

Pantone Investment Management Inc.

File 422451 | December 16, 2022

Document Control

File:	Prepared by:	Prepared for:
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Date: December 16, 2022	**T** 705 444-2565 tathameng.com	

Authored by:	Reviewed by:
	
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Issue	Date	Description
1	December 16, 2022	Final Report

3.5 SITE TRAFFIC

3.5.1 Trip Generation

The number of vehicle trips to be generated by the proposed development has been determined based on type of use, developments size and trip generation rates published in the *ITE Trip Generation Manual, 11th Edition*[7]. Based on the proposed development, trip rates for the mini *warehouse* (ITE code 151) and *general light industrial* (ITE code 110) have been applied.

The associated trip rates and trip estimates are provided in Table 3.

Table 3: Trip Generation

LAND USE	RATE/ ESTIMATE	VARIABLE/ SIZE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			In	Out	Total	In	Out	Total
mini warehouse (ITE 151)	rate	1000 ft² GFA	0.05	0.04	0.09	0.07	0.08	0.15
	estimate	45,714 ft²	2	2	4	3	4	7
general light industrial (ITE 110)	rate	1000 ft² GFA	0.65	0.09	0.74	0.09	0.56	0.65
	estimate	46,834 ft²	28	4	32	4	24	28
Total Trips			**30**	**6**	**36**	**7**	**28**	**35**

As indicated, the proposed development is expected to generate 36 new trips during the AM peak hour and 35 new trips during the PM peak hour (total of inbound and outbound trips).

3.5.2 Trip Distribution

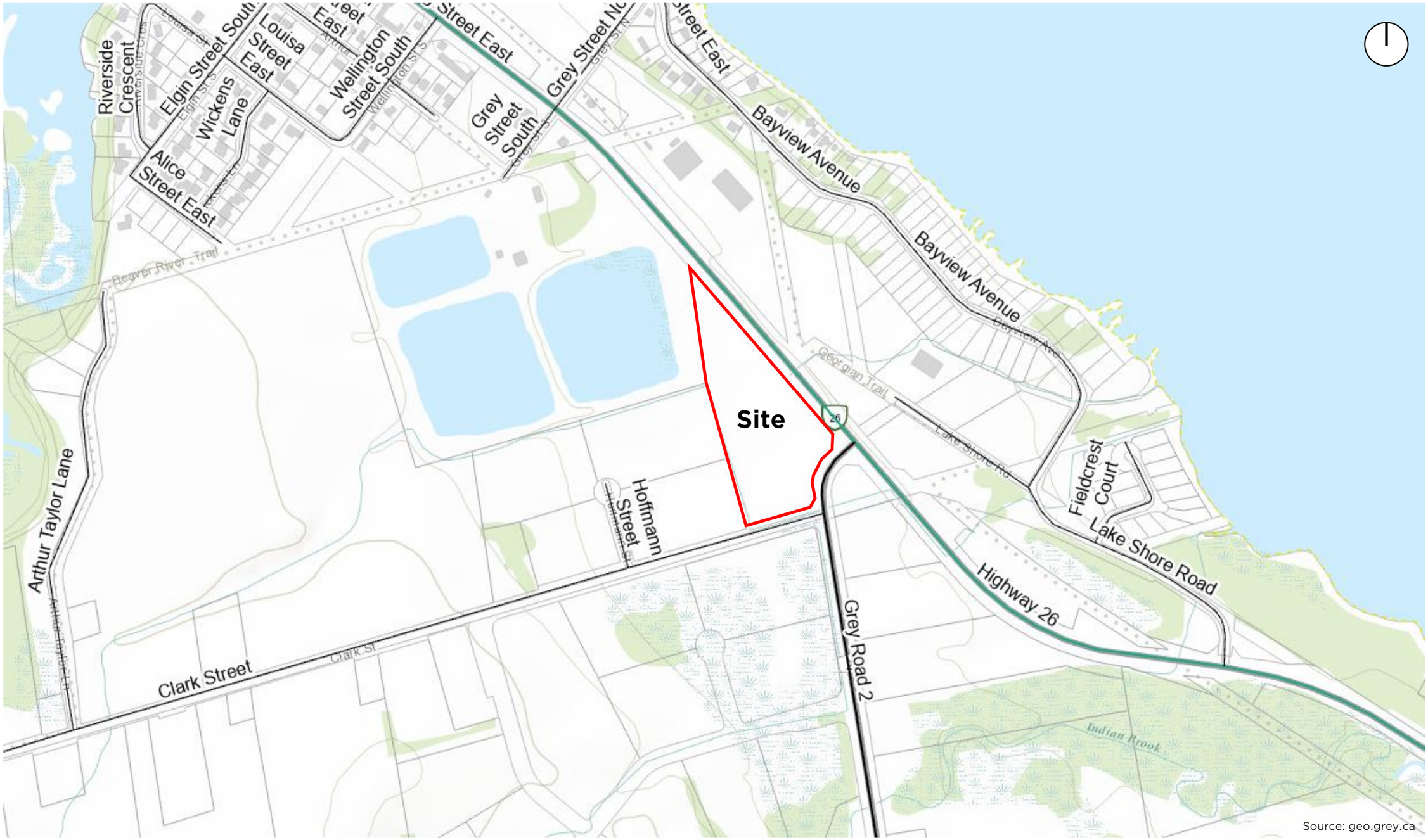
It is expected that the storage use will primarily serve storage needs of the local population (i.e. within Clarksburg/Thornbury), whereas the industrial use will likely attract trips (employment related) from a greater catchment area. The trip distribution has been established based on the location of the site in relation to surrounding built-up areas (Meaford, Thornbury. Craigleith, Collingwood, etc). Based on the above, following distribution has been assumed:

- 25% to/from the north/west via Highway 26;
- 40% to/from the east via Highway 26;

[7] *ITE Trip Generation Manual, 11th Edition.* Institute of Transportation Engineers. September 2021.

- 25% to/from the west via Clark Street; and
- 10% to/from the south via Grey Road 2.

The corresponding site generated traffic volumes on the area road system are illustrated in Figure 6.



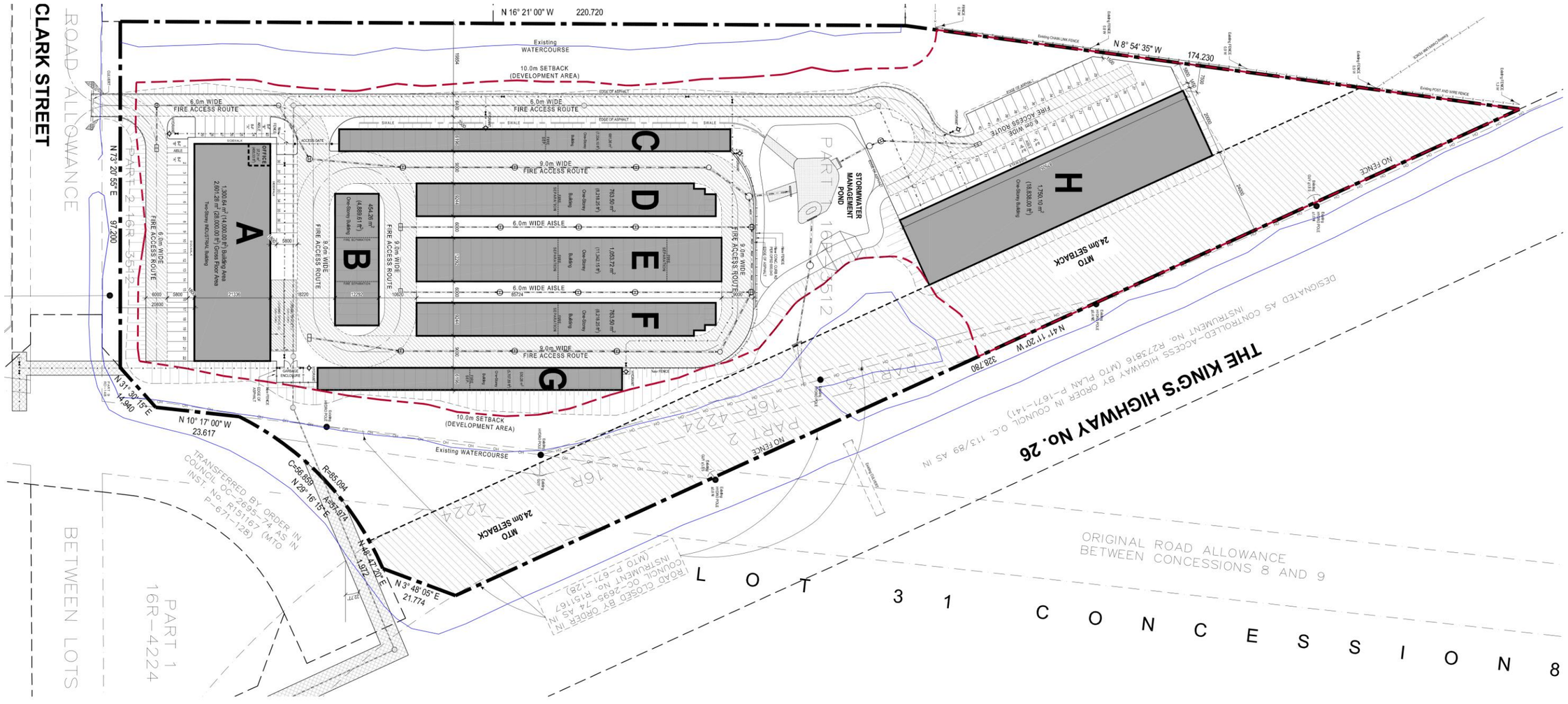
Source: geo.grey.ca

31 CLARK STREET

Figure 1: Site Location

31 CLARK STREET

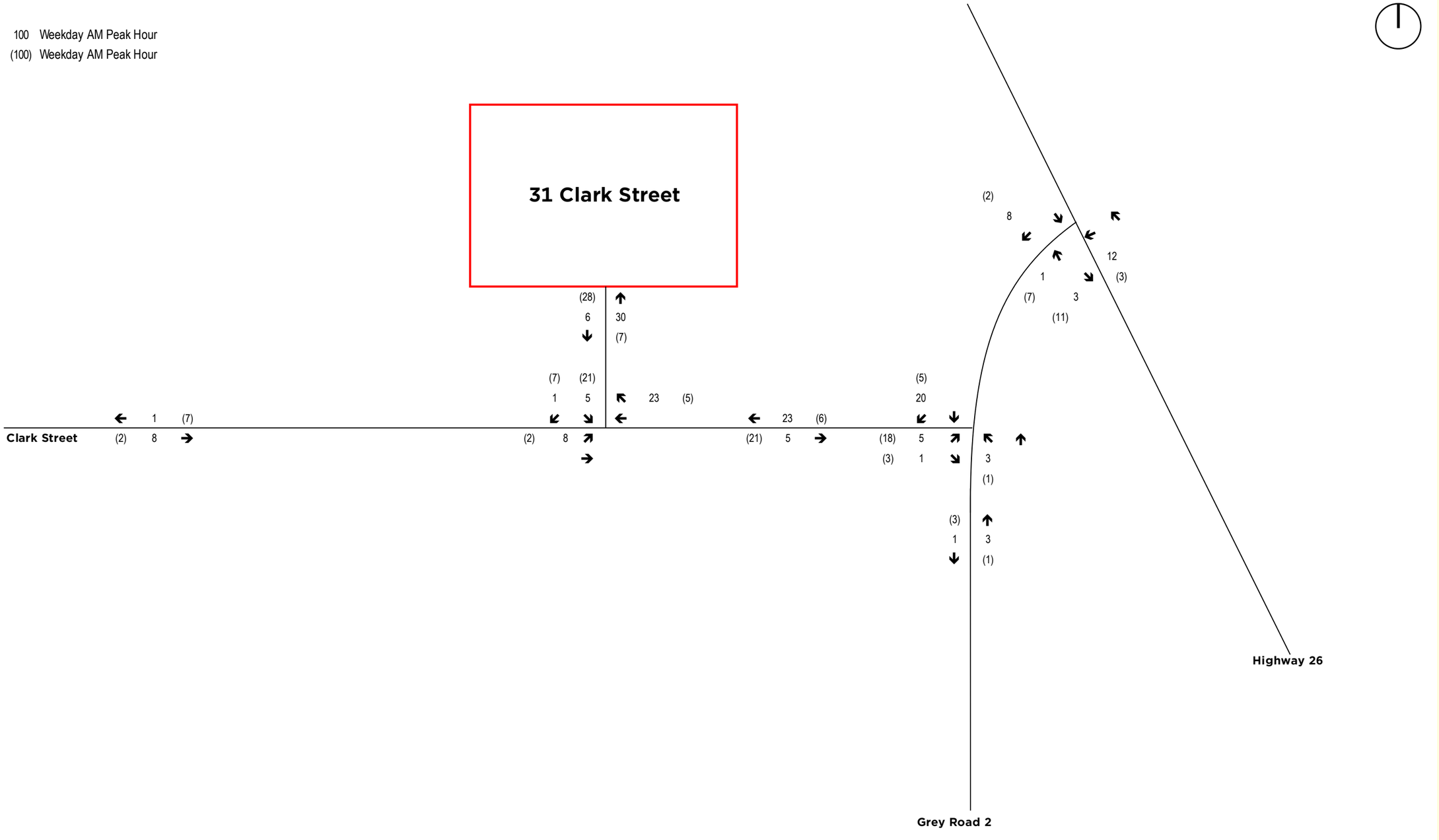
Figure 2A: Area Road Network



31 CLARK STREET

Figure 4: Site Plan

100 Weekday AM Peak Hour
(100) Weekday AM Peak Hour



31 CLARK STREET

Figure 5: Site Traffic Volumes

TATHAM ENGINEERING

Enhancing our communities

Thornbury Acres

TRAFFIC IMPACT BRIEF

Thornbury Acres Holding Inc.

File 120251 | December 20, 2022

Document Control

File:	Prepared by:	Prepared for:
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Date: December 20, 2022		

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	 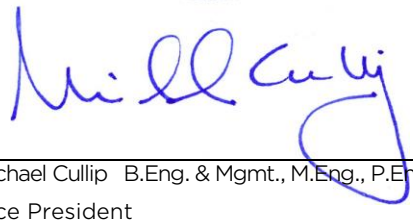
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Issue	Date	Description
1	December 20, 2022	Final Report

3.4 SITE TRAFFIC

3.4.1 Trip Generation

The number of vehicle trips to be generated by the proposed development for the weekday AM and weekday PM peak hours has been determined based on the type of use, development size, and trip generation rates per the *ITE Trip Generation Manual*[3]. Based on the proposed development, trip rates for the *single-family detached* (ITE land-use code 210) land-use have been applied. Trip rates and trip generation for the site are summarized in Table 2.

Table 2: Trip Estimates

LAND USE	VARIABLE/ SIZE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		In	Out	Total	In	Out	Total
single-family detached (ITE 210)	per unit	0.18	0.52	0.70	0.59	0.35	0.94
	37 units	7	19	26	22	13	35

As indicated, the proposed development is expected to generate 26 trips during the weekday AM peak hour and 35 trips during the weekday PM peak hour. It is noted that the community-operated amenities (i.e. greenhouses, orchards, trails and pavilions) are intended for internal use and thus not expected to generate any material volumes external to the subject site.

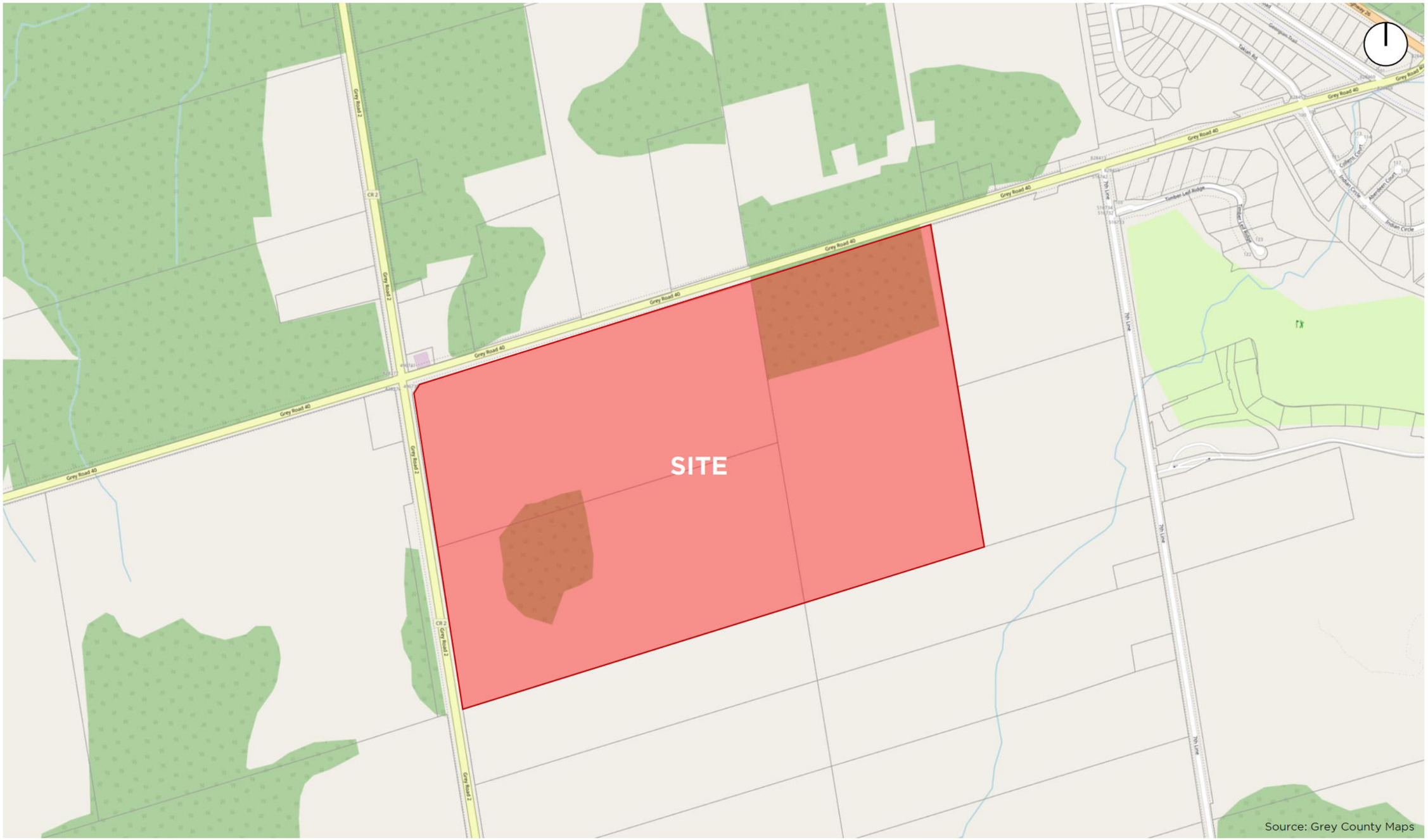
3.4.2 Trip Distribution & Assignment

The distribution of new trips generated by the site has been developed based on the proximity and location of the site in relation to major built-up areas (i.e. Thornbury and Collingwood), which are expected to be the main origin/destination of site-generated trips. The following distribution has been applied (primarily oriented to/from the north and east):

- to/from the north via Grey Road 2 – 40%;
- to/from the south via Grey Road 2 – 10%;
- to/from the east via Grey Road 40 – 40%; and
- to/from the west via Grey Road 40 – 10%.

Assignment of the site trips to the road network is based on the noted trip distribution, the site layout and expected travel routes, the results of which are illustrated in Figure 6.

[3] *Trip Generation Manual, 11th Edition.* Institute of Transportation Engineers. September 2021.

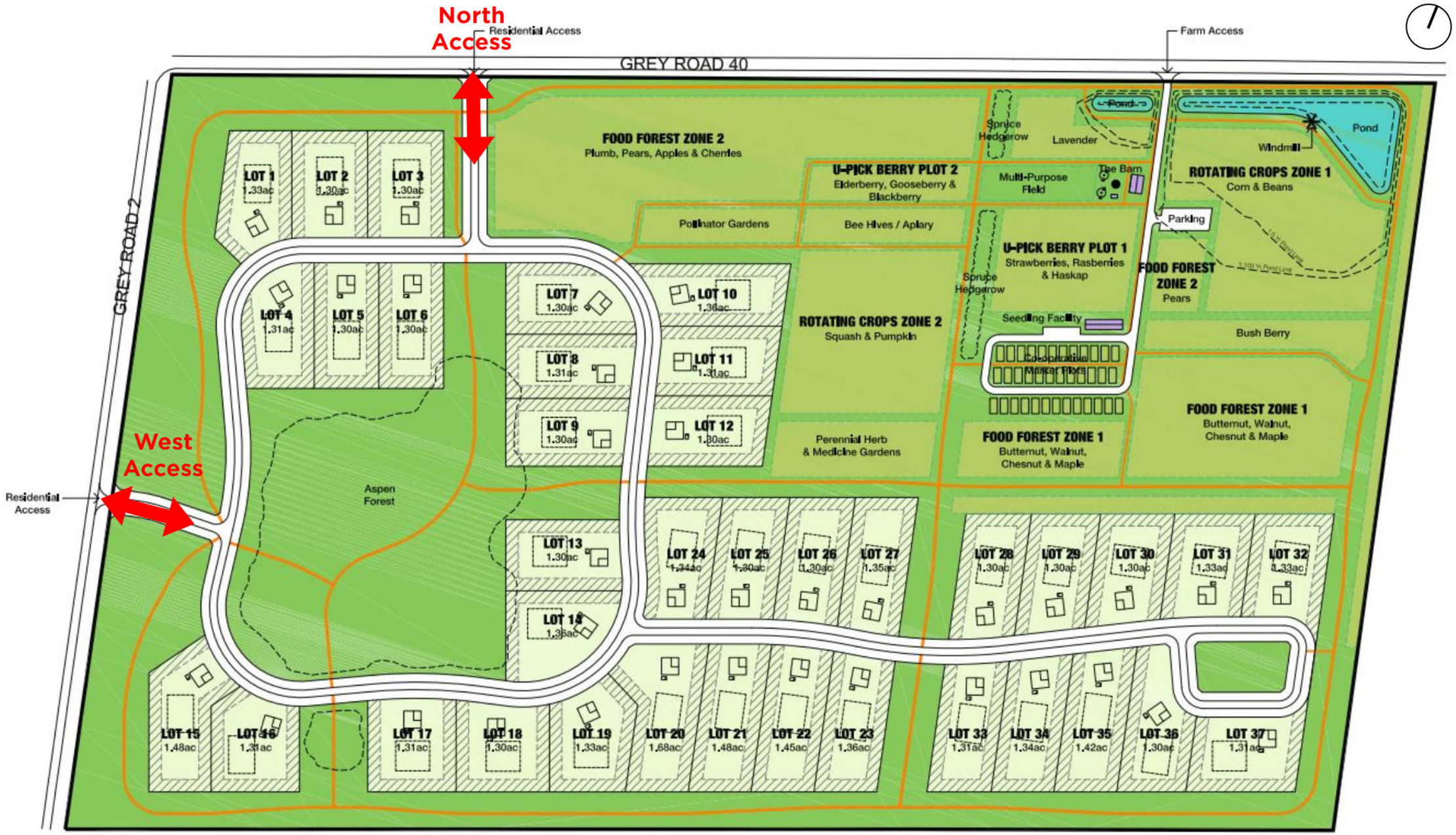


THORNBURY ACRES

Figure 1: Site Location

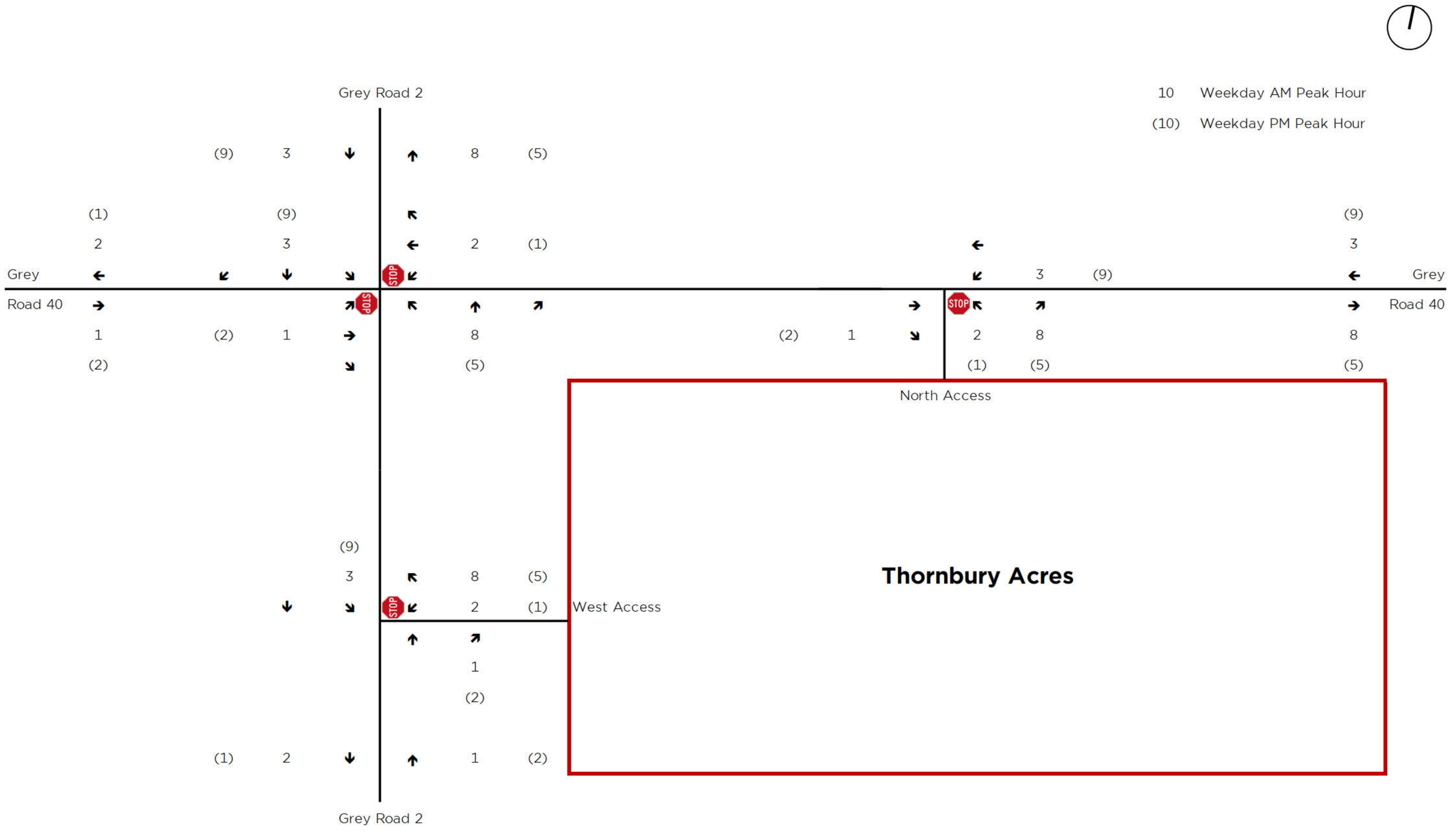
THORNBURY ACRES

Figure 2A: Road Network



THORNBURY ACRES

Figure 5: Site Plan



THORNBURY ACRES

Figure 6: Traffic Volumes – Site-Generated

C.C. Tatham & Associates Ltd.
Consulting Engineers

CEDAR RUN WAKEBOARD CABLE PARK

Town of The Blue Mountains

Traffic Review

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November 2017

CCTA File 115232

3 Wakeboard Cable Park

3.1 Proposed Land Use

The Cedar Run Wakeboard Cable Park is proposed to consist of a large circular wakeboard pond, a smaller multi-level wakeboard pond, a pro shop/office, a commercial plaza, overnight accommodation cottages, a passive recreation area and associated parking and access roads. A conceptual site plan is provided in Figure 4.

The current development plan is to construct the 2 wakeboard ponds, pro shop/office, parking areas and associated access roads in Phase 1. The commercial plaza and overnight accommodations would be completed in Phase 2, the timing of which has yet to be determined (suffice to say, these uses would be ancillary to the wakeboard cable pond uses). For purposes of this brief, both the Phase 1 and Phase 2 components have been considered.

3.2 Site Access & On-Site Circulation

The site will be served by a single access on the south side of Clark Street, located approximately 525 metres west of the existing Clark Street and Grey Road 2 intersection. The access will operate under stop control and will provide 1 inbound lane and 1 outbound lane.

With respect to on-site circulation, the site will be served by an internal private road with a width of 7.0 metres. As the final layout of the development is not finalized, the final layout of the road network is subject to change. However, it is recognized that the road must be able to support the on-site circulation of emergency vehicles.

3.3 Site Generated Traffic

Phase 1 Trips

Upon review of the land-uses provided in the *ITE Trip Generation Manual, 9th Edition*, it was determined that there are no comparable land-uses for the wakeboard cable park. Therefore, the trip estimates for the site have been established using a first principles approach based on the following information provided by the developer with respect to anticipated operations:

- the park will have 10 to 12 employees;
- park attendance is expected to be approximately 140 riders/spectators per day; and
- visits are to be scheduled throughout the day.

Given the recreational nature of the area, the peak operations will occur on the weekends, with the weekday volumes being somewhat less. However, to maintain a conservative approach, the same peak volumes for the site have been assumed for the weekday also (as the weekday volumes on the road system are greater than the weekend volumes, this will yield the maximum total volumes). It is further noted, that the site is assumed to operate from 10AM to 7PM and thus would not contribute volumes to the AM peak hour (in that it typically occurs between the hours of 7 to 9AM). Notwithstanding, it is assumed that the AM peak hour of the site will coincide with the AM peak hour of the road.

In determining the peak hour site generated traffic volumes, the following have been assumed:

- 15% of riders/spectators will arrive during the AM peak;
- 15% of riders/spectators will depart during the PM peak and a further 15% will arrive;
- 50% of employees will arrive during the AM peak hour;
- 50% of employees will arrive and 50% will depart during the PM peak hour; and
- 1.5 riders/spectators per vehicle and 1 employee per vehicle.

The associated trip estimates for Phase 1 are summarized in Table 2. As noted, the Wakeboard Cable Park is assumed to generate 20 vehicle trips during the AM peak hour and 40 vehicle trips during the PM peak hour (total of inbound and outbound trips).

Table 2: Phase 1 Trip Estimates

Land Use	Amount	Weekday PM Peak Hour			Saturday Peak Hour		
		In	Out	Total	In	Out	Total
riders/spectators	140 persons	14	-	14	14	14	28
employees	12 staff	6	-	6	6	6	12
Total		20	-	20	20	20	40

Phase 2 Trips

The number of vehicle trips to be generated by the proposed cabins and commercial space have been determined based on the development size, land use and trip generation rates provided in the *ITE Trip Generation Manual*, *9th Edition.* Based on the proposed land uses, the following have been considered:

- *motel* (ITE code 320);
- *resort hotel* (ITE code 330); and
- *shopping centre* (ITE code 820).

The associated trip rates are provided in Table 3 for the peak hour of each use.

Table 3: Phase 2 Trip Generation Rates

Land Use	Variable	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
motel	occupied rooms	0.23	0.41	0.64	0.31	0.27	0.58
resort hotel	occupied rooms	0.27	0.10	0.37	0.21	0.28	0.49
shopping centre	1000 ft^2	0.60	0.36	0.96	1.78	1.93	3.71

The motel land use was employed as it reflects a higher trip generation rate than the resort hotel land use. The corresponding trips for the Phase 2 development are summarized in Table 4.

Table 4: Phase 2 Trip Estimates

Land Use	Variable	Weekday PM Peak Hour			Saturday Peak Hour		
		In	Out	Total	In	Out	Total
cabins	13 cabins	3	5	8	4	4	8
commercial	5,200 ft^2	3	2	5	9	10	19
Total		6	7	13	13	14	27

Phase 1 + Phase 2 Trips

The total rip estimates of the cable wakeboard park development are summarized in Table 5, assuming completion of both Phases 1 and 2.

Given the nature of the development, it is expected that patrons of the cabin and commercial uses will also be patrons of the wakeboard cable park. As such, the Phase 2 uses would be considered ancillary in nature and thus would not result in new site traffic (over and above what would otherwise be generated by the wakeboard cable park). Notwithstanding, for purposes of this review, 50% pf the Phase 2 trip estimates have been maintained to consider other users of the cabins and customers of the commercial space that may not otherwise attend the cable park.

As indicated, the proposed development is expected to generate 27 trips during the weekday AM peak hour and 54 trips during the PM peak hour.

Table 5: Phase 1 + Phase 2 Trip Estimates

	Land Use	Variable	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Ph 1	riders/spectators	140 persons	14	-	14	14	14	28
	employees	12 staff	6	-	6	6	6	12
Ph 2	cabins[1]	13 cabins	1	3	4	2	2	4
	commercial[1]	5,200 ft^2	2	1	3	5	5	10
Total			23	4	27	27	27	54

[1] 50% of the Phase 2 trips are assumed to be made by patrons of the wakeboard cable park

Trip Distribution & Assignment

Given the relative uniqueness and recreational nature of the development, it is expected to draw visitors from a regional basis. In consideration of the surrounding built centres (including Thornbury, Collingwood, Meaford and areas beyond) and other recreational draws (Blue Mountain Village), the following distribution has been assumed:

- 60% to/from the east;
- 30% to/from the west; and
- 10% to/from the south.

In establishing the distribution of the site traffic to the road system, the following travel routes/assignments have been assumed:

- 60% via Highway 26 east;
- 20% via Highway 26 west;
- 10% via Clark Street; and
- 10% via Grey Road 2.

The corresponding site generated traffic volumes on the area road system are illustrated in Figure 5.

Comparison with Cedar Run Horse Park

Under the previous development plan, the subject site was to be developed as a horse park, including 3 outdoor horse event arenas, 230 horse stalls and 300 condotel units. As per the *Cedar Run, The Thornbury Horse Park Traffic Impact Assessment*, the development was projected to generate in the

order of 160 trips during a normal weekday PM peak hour and 200 trips during a Saturday peak hour. In addition to this, annual events were planned which were projected to attract 1000 to 2000 horses over the 1 to 2-week event duration.

In comparison, the Wakeboard Cable Park will generate approximately 1/3rd of the trips that were projected for the Horse Park use (and likely less still, recognizing that conservative assumptions have been made with regards to the trip estimates).

5 Conclusions

Given the traffic volumes to be generated by the proposed Wakeboard Cable Park and in consideration of the available capacity on Clark Street and Grey Road 2, the increase in traffic volumes will not have any appreciable impacts on the adjacent road system. Following a review of the 2 key study area intersections - Clark Street/Grey Road 2 and Grey Road 2/Highway 26 - each will provide acceptable operations with no need for further improvements. Similarly, the site access will provide acceptable operations under the existing lane configurations on Clark Street; no exclusive turn lanes are warranted.

Traffic queues were investigated at the Grey Road 2/Highway 26 intersection to determine if such would have implications on operations or sight lines at the Clark Street/Grey Road 2 intersection. Given the limited northbound queue anticipated for the 2018 horizon upon approach to the highway (17 metres), no issues are anticipated.

Sight lines were reviewed at the site access and deemed appropriate to ensure safe access to/from the site. Likewise, at the intersection of Clark Street/Grey Road 2, the sight lines are considered appropriate. While the sight line to/from the north does not meet the requirement for a 100 km/h design speed, it exceeds the requirement associated with the actual travel speeds anticipated (as dictated by the horizontal curve on Grey Road 2 and recognizing that vehicles will have just passed through the intersection with Highway 26).

It is acknowledged that the *Highway 26 / Grey Road 2 Intersection Improvements – Municipal Class Environmental Assessment* has recommended the realignment of Clark Street upon approach to Grey Road 2 and relocation of the respective intersection to better accommodate future traffic volumes and provide increased sight distances. The Class EA study further notes that the need for such should be monitored in context of area traffic volumes and development growth. As the Cedar Run Wakeboard Cable Park will generate less traffic than otherwise considered in the Class EA (which reflects the previous Cedar Run Horse Park), the noted improvements are not considered necessary at this time. Consideration however has been provided in the development plan to accommodate a future realignment in accordance with the recommendations of the Class EA.

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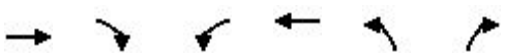
Appendix F:
Traffic Operations – Background



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	452	91	72	423	102	75
Future Volume (Veh/h)	452	91	72	423	102	75
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	476	96	76	445	107	79
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			572		1073	476
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			572		1073	476
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			92		51	87
cM capacity (veh/h)			972		217	587

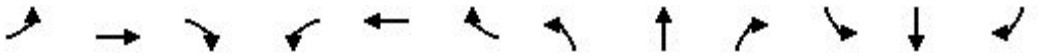
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	476	96	76	445	186
Volume Left	0	0	76	0	107
Volume Right	0	96	0	0	79
cSH	1700	1700	972	1700	296
Volume to Capacity	0.28	0.06	0.08	0.26	0.63
Queue Length 95th (m)	0.0	0.0	1.9	0.0	29.9
Control Delay (s)	0.0	0.0	9.0	0.0	35.6
Lane LOS			A		E
Approach Delay (s)	0.0		1.3		35.6
Approach LOS					E

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	31	30	98	69	95
Future Volume (Veh/h)	70	31	30	98	69	95
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	34	33	109	77	106
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	305	130	183			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305	130	183			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	88	96	98			
cM capacity (veh/h)	670	896	1374			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	112	142	183
Volume Left	78	33	0
Volume Right	34	0	106
cSH	726	1374	1700
Volume to Capacity	0.15	0.02	0.11
Queue Length 95th (m)	4.1	0.6	0.0
Control Delay (s)	10.9	1.9	0.0
Lane LOS	B	A	
Approach Delay (s)	10.9	1.9	0.0
Approach LOS	B		

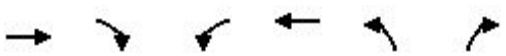
Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	96	16	27	54	7	10	115	29	17	58	6
Future Volume (Veh/h)	18	96	16	27	54	7	10	115	29	17	58	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	21	110	18	31	62	8	11	132	33	20	67	7
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	320	298	70	354	284	148	74			165		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	320	298	70	354	284	148	74			165		
tC, single (s)	7.3	6.6	6.4	7.2	6.6	6.4	4.5			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.5	3.6	4.1	3.5	2.6			2.2		
p0 queue free %	96	81	98	94	90	99	99			99		
cM capacity (veh/h)	529	583	942	486	593	860	1297			1413		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	149	101	176	94
Volume Left	21	31	11	20
Volume Right	18	8	33	7
cSH	602	569	1297	1413
Volume to Capacity	0.25	0.18	0.01	0.01
Queue Length 95th (m)	7.4	4.9	0.2	0.3
Control Delay (s)	12.9	12.7	0.6	1.7
Lane LOS	B	B	A	A
Approach Delay (s)	12.9	12.7	0.6	1.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	24.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	595	142	80	575	116	76
Future Volume (Veh/h)	595	142	80	575	116	76
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	669	160	90	646	130	85
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			829		1495	669
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			829		1495	669
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			89		0	81
cM capacity (veh/h)			786		120	458

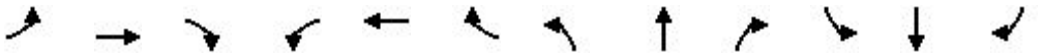
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	669	160	90	646	215
Volume Left	0	0	90	0	130
Volume Right	0	160	0	0	85
cSH	1700	1700	786	1700	169
Volume to Capacity	0.39	0.09	0.11	0.38	1.27
Queue Length 95th (m)	0.0	0.0	2.9	0.0	93.4
Control Delay (s)	0.0	0.0	10.2	0.0	213.1
Lane LOS			B		F
Approach Delay (s)	0.0		1.2		213.1
Approach LOS					F

Intersection Summary			
Average Delay	26.3		
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	108	29	37	88	128	98
Future Volume (Veh/h)	108	29	37	88	128	98
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	133	36	46	109	158	121
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	420	218	279			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	420	218	279			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	76	96	96			
cM capacity (veh/h)	563	802	1255			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	169	155	279
Volume Left	133	46	0
Volume Right	36	0	121
cSH	601	1255	1700
Volume to Capacity	0.28	0.04	0.16
Queue Length 95th (m)	8.7	0.9	0.0
Control Delay (s)	13.3	2.6	0.0
Lane LOS	B	A	
Approach Delay (s)	13.3	2.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	108	17	35	103	14	12	89	32	12	115	16
Future Volume (Veh/h)	10	108	17	35	103	14	12	89	32	12	115	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	11	119	19	38	113	15	13	98	35	13	126	18
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	320	135	381	312	116	144			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	374	320	135	381	312	116	144			133		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	80	98	92	81	98	99			99		
cM capacity (veh/h)	483	586	914	470	593	937	1438			1452		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	149	166	146	157
Volume Left	11	38	13	13
Volume Right	19	15	35	18
cSH	604	577	1438	1452
Volume to Capacity	0.25	0.29	0.01	0.01
Queue Length 95th (m)	7.3	9.0	0.2	0.2
Control Delay (s)	12.9	13.7	0.7	0.7
Lane LOS	B	B	A	A
Approach Delay (s)	12.9	13.7	0.7	0.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	7.1			
Intersection Capacity Utilization	33.9%	ICU Level of Service	A	
Analysis Period (min)	15			

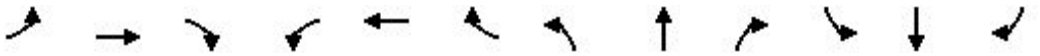
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	91	72	423	102	75
Future Volume (vph)	452	91	72	423	102	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1865	1526	1690	1830	1659	1585
Flt Permitted	1.00	1.00	0.37	1.00	0.95	1.00
Satd. Flow (perm)	1865	1526	657	1830	1659	1585
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	476	96	76	445	107	79
RTOR Reduction (vph)	0	42	0	0	0	68
Lane Group Flow (vph)	476	54	76	445	107	11
Heavy Vehicles (%)	3%	7%	8%	5%	10%	3%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	30.5	30.5	38.1	38.1	7.5	7.5
Effective Green, g (s)	30.5	30.5	38.1	38.1	7.5	7.5
Actuated g/C Ratio	0.56	0.56	0.70	0.70	0.14	0.14
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1041	852	517	1276	227	217
v/s Ratio Prot	c0.26		0.01	c0.24		
v/s Ratio Perm		0.04	0.09		c0.06	0.01
v/c Ratio	0.46	0.06	0.15	0.35	0.47	0.05
Uniform Delay, d1	7.1	5.5	3.4	3.3	21.7	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	0.1	0.8	1.5	0.1
Delay (s)	8.6	5.7	3.5	4.0	23.3	20.6
Level of Service	A	A	A	A	C	C
Approach Delay (s)	8.1			4.0	22.1	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	31	30	98	69	95
Future Volume (Veh/h)	70	31	30	98	69	95
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	34	33	109	77	106
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	305	130	183			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305	130	183			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	88	96	98			
cM capacity (veh/h)	670	896	1374			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	112	142	183
Volume Left	78	33	0
Volume Right	34	0	106
cSH	726	1374	1700
Volume to Capacity	0.15	0.02	0.11
Queue Length 95th (m)	4.1	0.6	0.0
Control Delay (s)	10.9	1.9	0.0
Lane LOS	B	A	
Approach Delay (s)	10.9	1.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	96	16	27	54	7	10	115	29	17	58	6
Future Volume (Veh/h)	18	96	16	27	54	7	10	115	29	17	58	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	21	110	18	31	62	8	11	132	33	20	67	7
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	320	298	70	354	284	148	74			165		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	320	298	70	354	284	148	74			165		
tC, single (s)	7.3	6.6	6.4	7.2	6.6	6.4	4.5			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.5	3.6	4.1	3.5	2.6			2.2		
p0 queue free %	96	81	98	94	90	99	99			99		
cM capacity (veh/h)	529	583	942	486	593	860	1297			1413		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	149	101	176	94
Volume Left	21	31	11	20
Volume Right	18	8	33	7
cSH	602	569	1297	1413
Volume to Capacity	0.25	0.18	0.01	0.01
Queue Length 95th (m)	7.4	4.9	0.2	0.3
Control Delay (s)	12.9	12.7	0.6	1.7
Lane LOS	B	B	A	A
Approach Delay (s)	12.9	12.7	0.6	1.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	24.9%	ICU Level of Service	A	
Analysis Period (min)	15			

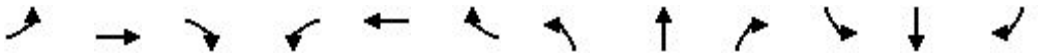
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	595	142	80	575	116	76
Future Volume (vph)	595	142	80	575	116	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1883	1585	1722	1883	1789	1601
Flt Permitted	1.00	1.00	0.24	1.00	0.95	1.00
Satd. Flow (perm)	1883	1585	442	1883	1789	1601
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	669	160	90	646	130	85
RTOR Reduction (vph)	0	70	0	0	0	73
Lane Group Flow (vph)	669	90	90	646	130	12
Heavy Vehicles (%)	2%	3%	6%	2%	2%	2%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	30.9	30.9	38.4	38.4	7.8	7.8
Effective Green, g (s)	30.9	30.9	38.4	38.4	7.8	7.8
Actuated g/C Ratio	0.56	0.56	0.70	0.70	0.14	0.14
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1054	887	377	1309	252	226
v/s Ratio Prot	c0.36		0.01	c0.34		
v/s Ratio Perm		0.06	0.15		c0.07	0.01
v/c Ratio	0.63	0.10	0.24	0.49	0.52	0.05
Uniform Delay, d1	8.3	5.7	4.8	3.9	22.0	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.2	0.3	1.3	1.8	0.1
Delay (s)	11.2	5.9	5.2	5.2	23.7	20.6
Level of Service	B	A	A	A	C	C
Approach Delay (s)	10.2			5.2	22.5	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	108	29	37	88	128	98
Future Volume (Veh/h)	108	29	37	88	128	98
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	133	36	46	109	158	121
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	420	218	279			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	420	218	279			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	76	96	96			
cM capacity (veh/h)	563	802	1255			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	169	155	279
Volume Left	133	46	0
Volume Right	36	0	121
cSH	601	1255	1700
Volume to Capacity	0.28	0.04	0.16
Queue Length 95th (m)	8.7	0.9	0.0
Control Delay (s)	13.3	2.6	0.0
Lane LOS	B	A	
Approach Delay (s)	13.3	2.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	108	17	35	103	14	12	89	32	12	115	16
Future Volume (Veh/h)	10	108	17	35	103	14	12	89	32	12	115	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	11	119	19	38	113	15	13	98	35	13	126	18
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	320	135	381	312	116	144			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	374	320	135	381	312	116	144			133		
tC, single (s)	7.1	6.6	6.3	7.1	6.5	6.4	4.3			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.1	3.4	3.5	4.0	3.5	2.4			2.4		
p0 queue free %	98	79	98	92	81	98	99			99		
cM capacity (veh/h)	481	579	901	467	587	898	1346			1311		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	149	166	146	157
Volume Left	11	38	13	13
Volume Right	19	15	35	18
cSH	597	571	1346	1311
Volume to Capacity	0.25	0.29	0.01	0.01
Queue Length 95th (m)	7.5	9.1	0.2	0.2
Control Delay (s)	13.0	13.9	0.8	0.7
Lane LOS	B	B	A	A
Approach Delay (s)	13.0	13.9	0.8	0.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	33.9%	ICU Level of Service	A	
Analysis Period (min)	15			

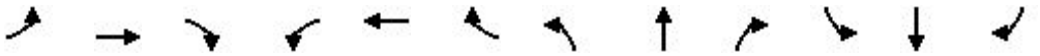
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	499	98	78	468	112	82
Future Volume (vph)	499	98	78	468	112	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1865	1526	1690	1830	1659	1585
Flt Permitted	1.00	1.00	0.33	1.00	0.95	1.00
Satd. Flow (perm)	1865	1526	594	1830	1659	1585
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	525	103	82	493	118	86
RTOR Reduction (vph)	0	46	0	0	0	74
Lane Group Flow (vph)	525	57	82	493	118	12
Heavy Vehicles (%)	3%	7%	8%	5%	10%	3%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	30.1	30.1	37.6	37.6	7.7	7.7
Effective Green, g (s)	30.1	30.1	37.6	37.6	7.7	7.7
Actuated g/C Ratio	0.55	0.55	0.69	0.69	0.14	0.14
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1033	845	471	1267	235	224
v/s Ratio Prot	c0.28		0.01	c0.27		
v/s Ratio Perm		0.04	0.11		c0.07	0.01
v/c Ratio	0.51	0.07	0.17	0.39	0.50	0.05
Uniform Delay, d1	7.5	5.6	3.7	3.5	21.5	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.2	0.2	0.9	1.7	0.1
Delay (s)	9.3	5.8	3.9	4.4	23.2	20.3
Level of Service	A	A	A	A	C	C
Approach Delay (s)	8.7			4.3	22.0	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	76	35	32	107	76	101
Future Volume (Veh/h)	76	35	32	107	76	101
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	84	39	36	119	84	112
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	331	140	196			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	331	140	196			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	87	96	97			
cM capacity (veh/h)	646	885	1359			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	123	155	196
Volume Left	84	36	0
Volume Right	39	0	112
cSH	707	1359	1700
Volume to Capacity	0.17	0.03	0.12
Queue Length 95th (m)	4.8	0.6	0.0
Control Delay (s)	11.2	2.0	0.0
Lane LOS	B	A	
Approach Delay (s)	11.2	2.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	105	17	30	59	7	11	126	32	19	64	6
Future Volume (Veh/h)	20	105	17	30	59	7	11	126	32	19	64	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	23	121	20	34	68	8	13	145	37	22	74	7
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	353	330	78	392	314	164	81			182		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	353	330	78	392	314	164	81			182		
tC, single (s)	7.3	6.6	6.4	7.2	6.6	6.4	4.5			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.5	3.6	4.1	3.5	2.6			2.2		
p0 queue free %	95	78	98	92	88	99	99			98		
cM capacity (veh/h)	495	557	933	445	568	843	1289			1393		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	164	110	195	103
Volume Left	23	34	13	22
Volume Right	20	8	37	7
cSH	575	535	1289	1393
Volume to Capacity	0.28	0.21	0.01	0.02
Queue Length 95th (m)	8.9	5.8	0.2	0.4
Control Delay (s)	13.7	13.5	0.6	1.7
Lane LOS	B	B	A	A
Approach Delay (s)	13.7	13.5	0.6	1.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	7.0			
Intersection Capacity Utilization	26.7%	ICU Level of Service	A	
Analysis Period (min)	15			

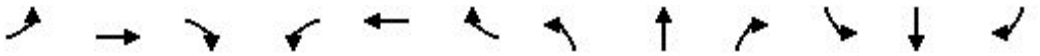
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	657	154	87	635	125	82
Future Volume (vph)	657	154	87	635	125	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1883	1585	1722	1883	1789	1601
Flt Permitted	1.00	1.00	0.20	1.00	0.95	1.00
Satd. Flow (perm)	1883	1585	365	1883	1789	1601
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	738	173	98	713	140	92
RTOR Reduction (vph)	0	76	0	0	0	79
Lane Group Flow (vph)	738	97	98	713	140	13
Heavy Vehicles (%)	2%	3%	6%	2%	2%	2%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	33.4	33.4	41.9	41.9	8.5	8.5
Effective Green, g (s)	33.4	33.4	41.9	41.9	8.5	8.5
Actuated g/C Ratio	0.56	0.56	0.71	0.71	0.14	0.14
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1058	891	348	1328	256	229
v/s Ratio Prot	c0.39		0.02	c0.38		
v/s Ratio Perm		0.06	0.18		c0.08	0.01
v/c Ratio	0.70	0.11	0.28	0.54	0.55	0.06
Uniform Delay, d1	9.4	6.1	5.9	4.1	23.7	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.2	0.4	1.6	2.4	0.1
Delay (s)	13.2	6.3	6.4	5.7	26.0	22.1
Level of Service	B	A	A	A	C	C
Approach Delay (s)	11.9			5.8	24.5	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	115	31	40	97	140	106
Future Volume (Veh/h)	115	31	40	97	140	106
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	142	38	49	120	173	131
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	456	238	304			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	456	238	304			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	73	95	96			
cM capacity (veh/h)	534	781	1229			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	180	169	304
Volume Left	142	49	0
Volume Right	38	0	131
cSH	572	1229	1700
Volume to Capacity	0.31	0.04	0.18
Queue Length 95th (m)	10.2	0.9	0.0
Control Delay (s)	14.1	2.6	0.0
Lane LOS	B	A	
Approach Delay (s)	14.1	2.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	119	19	39	114	15	14	97	35	14	126	17
Future Volume (Veh/h)	11	119	19	39	114	15	14	97	35	14	126	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	12	131	21	43	125	16	15	107	38	15	138	19
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	412	352	148	420	343	126	157			145		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	412	352	148	420	343	126	157			145		
tC, single (s)	7.1	6.6	6.3	7.1	6.5	6.4	4.3			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.1	3.4	3.5	4.0	3.5	2.4			2.4		
p0 queue free %	97	76	98	90	78	98	99			99		
cM capacity (veh/h)	440	553	886	425	562	886	1331			1298		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	164	184	160	172
Volume Left	12	43	15	15
Volume Right	21	16	38	19
cSH	570	538	1331	1298
Volume to Capacity	0.29	0.34	0.01	0.01
Queue Length 95th (m)	9.0	11.4	0.3	0.3
Control Delay (s)	13.8	15.1	0.8	0.8
Lane LOS	B	C	A	A
Approach Delay (s)	13.8	15.1	0.8	0.8
Approach LOS	B	C		

Intersection Summary				
Average Delay	7.8			
Intersection Capacity Utilization	36.8%	ICU Level of Service	A	
Analysis Period (min)	15			

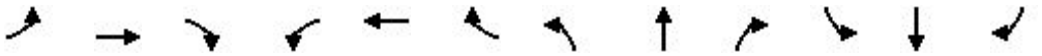
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	550	106	84	516	122	90
Future Volume (vph)	550	106	84	516	122	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1865	1526	1690	1830	1659	1585
Flt Permitted	1.00	1.00	0.30	1.00	0.95	1.00
Satd. Flow (perm)	1865	1526	531	1830	1659	1585
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	579	112	88	543	128	95
RTOR Reduction (vph)	0	50	0	0	0	81
Lane Group Flow (vph)	579	62	88	543	128	14
Heavy Vehicles (%)	3%	7%	8%	5%	10%	3%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	30.7	30.7	38.2	38.2	8.1	8.1
Effective Green, g (s)	30.7	30.7	38.2	38.2	8.1	8.1
Actuated g/C Ratio	0.56	0.56	0.69	0.69	0.15	0.15
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1035	847	429	1264	243	232
v/s Ratio Prot	c0.31		0.01	c0.30		
v/s Ratio Perm		0.04	0.13		c0.08	0.01
v/c Ratio	0.56	0.07	0.21	0.43	0.53	0.06
Uniform Delay, d1	7.9	5.7	4.2	3.8	21.8	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.2	0.2	1.1	2.1	0.1
Delay (s)	10.1	5.9	4.4	4.8	23.9	20.4
Level of Service	B	A	A	A	C	C
Approach Delay (s)	9.4			4.8	22.4	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	55.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	84	38	35	118	84	108
Future Volume (Veh/h)	84	38	35	118	84	108
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	93	42	39	131	93	120
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	362	153	213			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	362	153	213			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	85	95	97			
cM capacity (veh/h)	619	870	1340			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	135	170	213
Volume Left	93	39	0
Volume Right	42	0	120
cSH	680	1340	1700
Volume to Capacity	0.20	0.03	0.13
Queue Length 95th (m)	5.6	0.7	0.0
Control Delay (s)	11.6	2.0	0.0
Lane LOS	B	A	
Approach Delay (s)	11.6	2.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	116	19	33	65	8	12	138	36	21	70	7
Future Volume (Veh/h)	22	116	19	33	65	8	12	138	36	21	70	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	25	133	22	38	75	9	14	159	41	24	80	8
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	386	360	84	428	344	180	88			200		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	386	360	84	428	344	180	88			200		
tC, single (s)	7.3	6.6	6.4	7.2	6.6	6.4	4.5			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.5	3.6	4.1	3.5	2.6			2.2		
p0 queue free %	95	75	98	91	86	99	99			98		
cM capacity (veh/h)	462	534	925	407	546	826	1281			1372		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	180	122	214	112
Volume Left	25	38	14	24
Volume Right	22	9	41	8
cSH	551	505	1281	1372
Volume to Capacity	0.33	0.24	0.01	0.02
Queue Length 95th (m)	10.7	7.1	0.3	0.4
Control Delay (s)	14.7	14.4	0.6	1.8
Lane LOS	B	B	A	A
Approach Delay (s)	14.7	14.4	0.6	1.8
Approach LOS	B	B		

Intersection Summary				
Average Delay	7.5			
Intersection Capacity Utilization	28.8%	ICU Level of Service	A	
Analysis Period (min)	15			

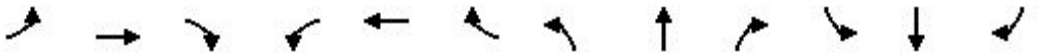
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	725	167	95	701	135	89
Future Volume (vph)	725	167	95	701	135	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1883	1585	1722	1883	1789	1601
Flt Permitted	1.00	1.00	0.16	1.00	0.95	1.00
Satd. Flow (perm)	1883	1585	292	1883	1789	1601
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	815	188	107	788	152	100
RTOR Reduction (vph)	0	80	0	0	0	84
Lane Group Flow (vph)	815	108	107	788	152	16
Heavy Vehicles (%)	2%	3%	6%	2%	2%	2%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	38.0	38.0	46.6	46.6	10.7	10.7
Effective Green, g (s)	38.0	38.0	46.6	46.6	10.7	10.7
Actuated g/C Ratio	0.57	0.57	0.70	0.70	0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1079	908	293	1323	288	258
v/s Ratio Prot	c0.43		0.02	c0.42		
v/s Ratio Perm		0.07	0.23		c0.08	0.01
v/c Ratio	0.76	0.12	0.37	0.60	0.53	0.06
Uniform Delay, d1	10.7	6.5	8.1	5.0	25.5	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9	0.3	0.8	2.0	1.7	0.1
Delay (s)	15.6	6.7	8.8	7.0	27.2	23.7
Level of Service	B	A	A	A	C	C
Approach Delay (s)	13.9			7.2	25.8	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	122	33	44	107	153	114
Future Volume (Veh/h)	122	33	44	107	153	114
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	151	41	54	132	189	141
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	500	260	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	500	260	330			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	70	95	96			
cM capacity (veh/h)	502	760	1202			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	192	186	330
Volume Left	151	54	0
Volume Right	41	0	141
cSH	541	1202	1700
Volume to Capacity	0.35	0.04	0.19
Queue Length 95th (m)	12.1	1.1	0.0
Control Delay (s)	15.3	2.6	0.0
Lane LOS	C	A	
Approach Delay (s)	15.3	2.6	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	131	21	43	126	16	15	106	38	15	137	19
Future Volume (Veh/h)	12	131	21	43	126	16	15	106	38	15	137	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	13	144	23	47	138	18	16	116	42	16	151	21
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	450	384	162	458	373	137	172			158		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	450	384	162	458	373	137	172			158		
tC, single (s)	7.1	6.6	6.3	7.1	6.5	6.4	4.3			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.1	3.4	3.5	4.0	3.5	2.4			2.4		
p0 queue free %	97	73	97	88	74	98	99			99		
cM capacity (veh/h)	401	530	870	387	539	873	1314			1283		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	180	203	174	188
Volume Left	13	47	16	16
Volume Right	23	18	42	21
cSH	545	510	1314	1283
Volume to Capacity	0.33	0.40	0.01	0.01
Queue Length 95th (m)	10.9	14.4	0.3	0.3
Control Delay (s)	14.8	16.7	0.8	0.8
Lane LOS	B	C	A	A
Approach Delay (s)	14.8	16.7	0.8	0.8
Approach LOS	B	C		

Intersection Summary				
Average Delay	8.5			
Intersection Capacity Utilization	39.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix G:
Traffic Operations – Total

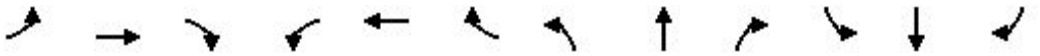
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	108	72	423	140	75
Future Volume (vph)	452	108	72	423	140	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1865	1526	1690	1830	1659	1585
Flt Permitted	1.00	1.00	0.36	1.00	0.95	1.00
Satd. Flow (perm)	1865	1526	645	1830	1659	1585
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	476	114	76	445	147	79
RTOR Reduction (vph)	0	52	0	0	0	67
Lane Group Flow (vph)	476	62	76	445	147	12
Heavy Vehicles (%)	3%	7%	8%	5%	10%	3%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	30.0	30.0	37.5	37.5	8.6	8.6
Effective Green, g (s)	30.0	30.0	37.5	37.5	8.6	8.6
Actuated g/C Ratio	0.54	0.54	0.68	0.68	0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1015	830	495	1245	258	247
v/s Ratio Prot	c0.26		0.01	c0.24		
v/s Ratio Perm		0.04	0.10		c0.09	0.01
v/c Ratio	0.47	0.07	0.15	0.36	0.57	0.05
Uniform Delay, d1	7.7	6.0	3.8	3.7	21.5	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.2	0.1	0.8	2.9	0.1
Delay (s)	9.2	6.1	3.9	4.5	24.4	19.9
Level of Service	A	A	A	A	C	B
Approach Delay (s)	8.6			4.4	22.8	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	34	36	135	86	95
Future Volume (Veh/h)	70	34	36	135	86	95
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	38	40	150	96	106
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	379	149	202			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	379	149	202			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	87	96	97			
cM capacity (veh/h)	604	874	1352			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	116	190	202
Volume Left	78	40	0
Volume Right	38	0	106
cSH	672	1352	1700
Volume to Capacity	0.17	0.03	0.12
Queue Length 95th (m)	4.7	0.7	0.0
Control Delay (s)	11.5	1.8	0.0
Lane LOS	B	A	
Approach Delay (s)	11.5	1.8	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	96	16	27	54	29	10	124	29	67	77	18
Future Volume (Veh/h)	24	96	16	27	54	29	10	124	29	67	77	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	28	110	18	31	62	33	11	143	33	77	89	21
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	499	452	100	508	446	160	110			176		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	499	452	100	508	446	160	110			176		
tC, single (s)	7.3	6.6	6.4	7.2	6.6	6.4	4.5			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.5	3.6	4.1	3.5	2.6			2.2		
p0 queue free %	92	76	98	91	87	96	99			95		
cM capacity (veh/h)	367	457	907	355	460	848	1256			1400		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	156	126	187	187
Volume Left	28	31	11	77
Volume Right	18	33	33	21
cSH	463	483	1256	1400
Volume to Capacity	0.34	0.26	0.01	0.05
Queue Length 95th (m)	11.2	7.9	0.2	1.3
Control Delay (s)	16.7	15.1	0.5	3.4
Lane LOS	C	C	A	A
Approach Delay (s)	16.7	15.1	0.5	3.4
Approach LOS	C	C		

Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	37.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	81	44	140	36	20	101
Future Volume (Veh/h)	81	44	140	36	20	101
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	88	48	152	39	22	110
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	326	172			191	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	326	172			191	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	94			98	
cM capacity (veh/h)	658	872			1383	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	136	191	132
Volume Left	88	0	22
Volume Right	48	39	0
cSH	720	1700	1383
Volume to Capacity	0.19	0.11	0.02
Queue Length 95th (m)	5.3	0.0	0.4
Control Delay (s)	11.2	0.0	1.4
Lane LOS	B		A
Approach Delay (s)	11.2	0.0	1.4
Approach LOS	B		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

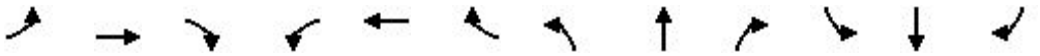
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	595	179	80	575	143	76
Future Volume (vph)	595	179	80	575	143	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1883	1585	1722	1883	1789	1601
Flt Permitted	1.00	1.00	0.24	1.00	0.95	1.00
Satd. Flow (perm)	1883	1585	429	1883	1789	1601
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	669	201	90	646	161	85
RTOR Reduction (vph)	0	91	0	0	0	72
Lane Group Flow (vph)	669	110	90	646	161	13
Heavy Vehicles (%)	2%	3%	6%	2%	2%	2%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	30.7	30.7	38.2	38.2	8.7	8.7
Effective Green, g (s)	30.7	30.7	38.2	38.2	8.7	8.7
Actuated g/C Ratio	0.55	0.55	0.68	0.68	0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1034	870	362	1286	278	249
v/s Ratio Prot	c0.36		0.01	c0.34		
v/s Ratio Perm		0.07	0.16		c0.09	0.01
v/c Ratio	0.65	0.13	0.25	0.50	0.58	0.05
Uniform Delay, d1	8.8	6.1	5.2	4.3	21.9	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.3	0.4	1.4	2.9	0.1
Delay (s)	11.9	6.4	5.6	5.7	24.8	20.2
Level of Service	B	A	A	A	C	C
Approach Delay (s)	10.7			5.7	23.2	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	108	35	41	116	165	98
Future Volume (Veh/h)	108	35	41	116	165	98
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	133	43	51	143	204	121
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	510	264	325			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	510	264	325			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	73	94	96			
cM capacity (veh/h)	496	755	1207			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	176	194	325
Volume Left	133	51	0
Volume Right	43	0	121
cSH	542	1207	1700
Volume to Capacity	0.32	0.04	0.19
Queue Length 95th (m)	10.6	1.0	0.0
Control Delay (s)	14.8	2.4	0.0
Lane LOS	B	A	
Approach Delay (s)	14.8	2.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	108	17	35	103	62	12	107	32	49	129	25
Future Volume (Veh/h)	22	108	17	35	103	62	12	107	32	49	129	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	24	119	19	38	113	68	13	118	35	54	142	27
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	550	442	156	504	438	136	169			153		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	550	442	156	504	438	136	169			153		
tC, single (s)	7.1	6.6	6.3	7.1	6.5	6.4	4.3			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.1	3.4	3.5	4.0	3.5	2.4			2.4		
p0 queue free %	93	75	98	90	77	92	99			96		
cM capacity (veh/h)	324	478	877	363	481	875	1317			1288		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	162	219	166	223
Volume Left	24	38	13	54
Volume Right	19	68	35	27
cSH	470	525	1317	1288
Volume to Capacity	0.34	0.42	0.01	0.04
Queue Length 95th (m)	11.5	15.5	0.2	1.0
Control Delay (s)	16.6	16.7	0.7	2.2
Lane LOS	C	C	A	A
Approach Delay (s)	16.6	16.7	0.7	2.2
Approach LOS	C	C		

Intersection Summary				
Average Delay	9.0			
Intersection Capacity Utilization	45.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	60	32	113	79	43	157
Future Volume (Veh/h)	60	32	113	79	43	157
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	35	123	86	47	171
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	431	166			209	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	431	166			209	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	96			97	
cM capacity (veh/h)	561	878			1362	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	100	209	218
Volume Left	65	0	47
Volume Right	35	86	0
cSH	642	1700	1362
Volume to Capacity	0.16	0.12	0.03
Queue Length 95th (m)	4.2	0.0	0.8
Control Delay (s)	11.6	0.0	1.9
Lane LOS	B		A
Approach Delay (s)	11.6	0.0	1.9
Approach LOS	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

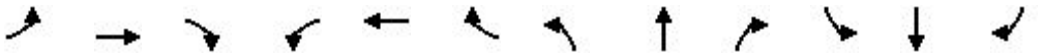
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	499	115	78	468	149	82
Future Volume (vph)	499	115	78	468	149	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1865	1526	1690	1830	1659	1585
Flt Permitted	1.00	1.00	0.33	1.00	0.95	1.00
Satd. Flow (perm)	1865	1526	581	1830	1659	1585
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	525	121	82	493	157	86
RTOR Reduction (vph)	0	56	0	0	0	72
Lane Group Flow (vph)	525	65	82	493	157	14
Heavy Vehicles (%)	3%	7%	8%	5%	10%	3%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	29.8	29.8	37.3	37.3	8.8	8.8
Effective Green, g (s)	29.8	29.8	37.3	37.3	8.8	8.8
Actuated g/C Ratio	0.54	0.54	0.68	0.68	0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1008	825	453	1238	264	253
v/s Ratio Prot	c0.28		0.01	c0.27		
v/s Ratio Perm		0.04	0.11		c0.09	0.01
v/c Ratio	0.52	0.08	0.18	0.40	0.59	0.05
Uniform Delay, d1	8.1	6.1	4.1	3.9	21.5	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.2	0.2	1.0	3.6	0.1
Delay (s)	10.0	6.3	4.3	4.9	25.1	19.7
Level of Service	B	A	A	A	C	B
Approach Delay (s)	9.3			4.8	23.2	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	76	37	39	145	93	101
Future Volume (Veh/h)	76	37	39	145	93	101
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	84	41	43	161	103	112
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	406	159	215			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	406	159	215			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	86	95	97			
cM capacity (veh/h)	582	863	1337			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	125	204	215
Volume Left	84	43	0
Volume Right	41	0	112
cSH	651	1337	1700
Volume to Capacity	0.19	0.03	0.13
Queue Length 95th (m)	5.4	0.8	0.0
Control Delay (s)	11.8	1.9	0.0
Lane LOS	B	A	
Approach Delay (s)	11.8	1.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	105	17	30	59	30	11	135	32	68	82	19
Future Volume (Veh/h)	25	105	17	30	59	30	11	135	32	68	82	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	29	121	20	34	68	34	13	155	37	78	94	22
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	528	479	105	541	472	174	116			192		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	528	479	105	541	472	174	116			192		
tC, single (s)	7.3	6.6	6.4	7.2	6.6	6.4	4.5			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.5	3.6	4.1	3.5	2.6			2.2		
p0 queue free %	92	72	98	90	85	96	99			94		
cM capacity (veh/h)	343	439	900	324	443	833	1249			1381		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	170	136	205	194
Volume Left	29	34	13	78
Volume Right	20	34	37	22
cSH	445	455	1249	1381
Volume to Capacity	0.38	0.30	0.01	0.06
Queue Length 95th (m)	13.4	9.4	0.2	1.4
Control Delay (s)	18.0	16.3	0.6	3.4
Lane LOS	C	C	A	A
Approach Delay (s)	18.0	16.3	0.6	3.4
Approach LOS	C	C		

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	39.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	81	44	154	36	20	111
Future Volume (Veh/h)	81	44	154	36	20	111
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	88	48	167	39	22	121
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	352	186			206	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	352	186			206	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	86	94			98	
cM capacity (veh/h)	636	856			1365	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	136	206	143
Volume Left	88	0	22
Volume Right	48	39	0
cSH	699	1700	1365
Volume to Capacity	0.19	0.12	0.02
Queue Length 95th (m)	5.5	0.0	0.4
Control Delay (s)	11.4	0.0	1.3
Lane LOS	B		A
Approach Delay (s)	11.4	0.0	1.3
Approach LOS	B		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

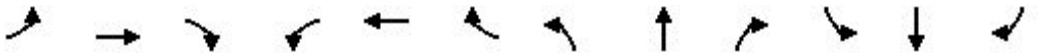
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	657	191	87	635	152	82
Future Volume (vph)	657	191	87	635	152	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1883	1585	1722	1883	1789	1601
Flt Permitted	1.00	1.00	0.20	1.00	0.95	1.00
Satd. Flow (perm)	1883	1585	355	1883	1789	1601
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	738	215	98	713	171	92
RTOR Reduction (vph)	0	96	0	0	0	78
Lane Group Flow (vph)	738	119	98	713	171	14
Heavy Vehicles (%)	2%	3%	6%	2%	2%	2%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	33.5	33.5	42.0	42.0	9.4	9.4
Effective Green, g (s)	33.5	33.5	42.0	42.0	9.4	9.4
Actuated g/C Ratio	0.55	0.55	0.70	0.70	0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1044	879	337	1309	278	249
v/s Ratio Prot	c0.39		0.02	c0.38		
v/s Ratio Perm		0.08	0.18		c0.10	0.01
v/c Ratio	0.71	0.14	0.29	0.54	0.62	0.06
Uniform Delay, d1	9.9	6.5	6.3	4.5	23.8	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.3	0.5	1.6	4.0	0.1
Delay (s)	13.9	6.8	6.8	6.1	27.8	21.8
Level of Service	B	A	A	A	C	C
Approach Delay (s)	12.3			6.2	25.7	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	115	37	45	125	177	106
Future Volume (Veh/h)	115	37	45	125	177	106
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	142	46	56	154	219	131
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	550	284	350			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	550	284	350			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	70	94	95			
cM capacity (veh/h)	467	736	1182			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	188	210	350
Volume Left	142	56	0
Volume Right	46	0	131
cSH	513	1182	1700
Volume to Capacity	0.37	0.05	0.21
Queue Length 95th (m)	12.7	1.1	0.0
Control Delay (s)	16.0	2.5	0.0
Lane LOS	C	A	
Approach Delay (s)	16.0	2.5	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	119	19	39	114	64	14	116	35	51	139	27
Future Volume (Veh/h)	23	119	19	39	114	64	14	116	35	51	139	27
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	25	131	21	43	125	70	15	127	38	56	153	30
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	588	475	168	542	471	146	183			165		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	588	475	168	542	471	146	183			165		
tC, single (s)	7.1	6.6	6.3	7.1	6.5	6.4	4.3			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.1	3.4	3.5	4.0	3.5	2.4			2.4		
p0 queue free %	91	71	98	87	73	92	99			96		
cM capacity (veh/h)	293	456	863	327	460	863	1301			1275		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	177	238	180	239
Volume Left	25	43	15	56
Volume Right	21	70	38	30
cSH	446	491	1301	1275
Volume to Capacity	0.40	0.48	0.01	0.04
Queue Length 95th (m)	14.2	19.8	0.3	1.0
Control Delay (s)	18.3	19.0	0.7	2.2
Lane LOS	C	C	A	A
Approach Delay (s)	18.3	19.0	0.7	2.2
Approach LOS	C	C		

Intersection Summary				
Average Delay	10.1			
Intersection Capacity Utilization	47.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	60	32	123	79	43	171
Future Volume (Veh/h)	60	32	123	79	43	171
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	35	134	86	47	186
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	457	177			220	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	457	177			220	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	96			97	
cM capacity (veh/h)	542	866			1349	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	100	220	233
Volume Left	65	0	47
Volume Right	35	86	0
cSH	624	1700	1349
Volume to Capacity	0.16	0.13	0.03
Queue Length 95th (m)	4.3	0.0	0.8
Control Delay (s)	11.9	0.0	1.8
Lane LOS	B		A
Approach Delay (s)	11.9	0.0	1.8
Approach LOS	B		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

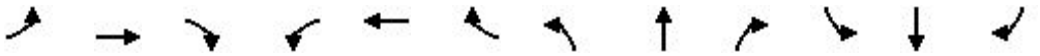
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	550	123	84	516	160	90
Future Volume (vph)	550	123	84	516	160	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1865	1526	1690	1830	1659	1585
Flt Permitted	1.00	1.00	0.29	1.00	0.95	1.00
Satd. Flow (perm)	1865	1526	518	1830	1659	1585
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	579	129	88	543	168	95
RTOR Reduction (vph)	0	59	0	0	0	79
Lane Group Flow (vph)	579	70	88	543	168	16
Heavy Vehicles (%)	3%	7%	8%	5%	10%	3%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	30.4	30.4	37.8	37.8	9.2	9.2
Effective Green, g (s)	30.4	30.4	37.8	37.8	9.2	9.2
Actuated g/C Ratio	0.54	0.54	0.67	0.67	0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1012	828	410	1235	272	260
v/s Ratio Prot	c0.31		0.01	c0.30		
v/s Ratio Perm		0.05	0.13		c0.10	0.01
v/c Ratio	0.57	0.08	0.21	0.44	0.62	0.06
Uniform Delay, d1	8.5	6.1	4.6	4.2	21.8	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.2	0.3	1.1	4.1	0.1
Delay (s)	10.8	6.3	4.9	5.3	25.9	19.8
Level of Service	B	A	A	A	C	B
Approach Delay (s)	10.0			5.3	23.7	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	84	41	41	155	101	108
Future Volume (Veh/h)	84	41	41	155	101	108
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	93	46	46	172	112	120
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					142	
pX, platoon unblocked						
vC, conflicting volume	436	172	232			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	436	172	232			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	83	95	97			
cM capacity (veh/h)	557	849	1318			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	139	218	232
Volume Left	93	46	0
Volume Right	46	0	120
cSH	629	1318	1700
Volume to Capacity	0.22	0.03	0.14
Queue Length 95th (m)	6.4	0.8	0.0
Control Delay (s)	12.3	1.9	0.0
Lane LOS	B	A	
Approach Delay (s)	12.3	1.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	116	19	33	65	31	12	146	36	70	89	19
Future Volume (Veh/h)	28	116	19	33	65	31	12	146	36	70	89	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	32	133	22	38	75	36	14	168	41	80	102	22
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	563	510	113	578	500	188	124			209		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	563	510	113	578	500	188	124			209		
tC, single (s)	7.3	6.6	6.4	7.2	6.6	6.4	4.5			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.5	3.6	4.1	3.5	2.6			2.2		
p0 queue free %	90	68	98	87	82	96	99			94		
cM capacity (veh/h)	317	420	891	292	425	816	1240			1362		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	187	149	223	204
Volume Left	32	38	14	80
Volume Right	22	36	41	22
cSH	423	425	1240	1362
Volume to Capacity	0.44	0.35	0.01	0.06
Queue Length 95th (m)	16.8	11.8	0.3	1.4
Control Delay (s)	20.1	18.0	0.6	3.4
Lane LOS	C	C	A	A
Approach Delay (s)	20.1	18.0	0.6	3.4
Approach LOS	C	C		

Intersection Summary				
Average Delay	9.5			
Intersection Capacity Utilization	41.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	81	44	168	36	20	122
Future Volume (Veh/h)	81	44	168	36	20	122
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	88	48	183	39	22	133
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	380	202			222	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	380	202			222	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	86	94			98	
cM capacity (veh/h)	612	838			1347	

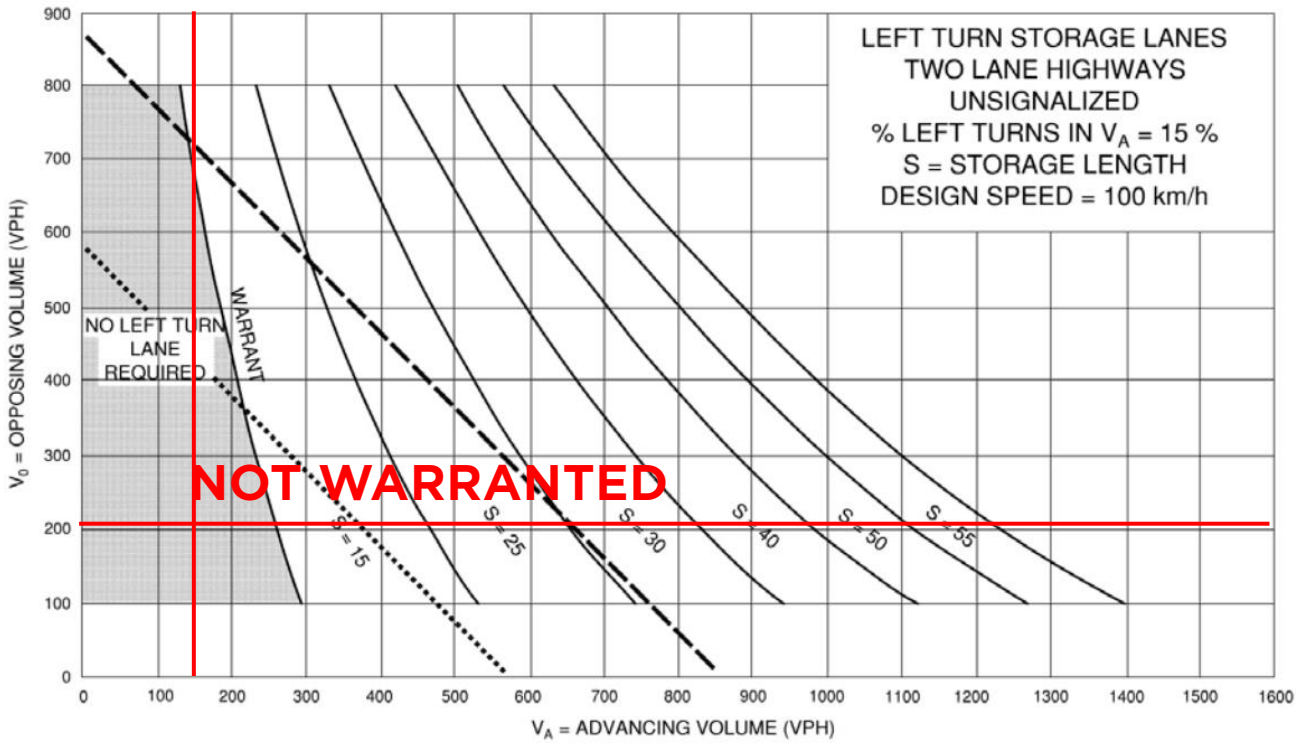
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	136	222	155
Volume Left	88	0	22
Volume Right	48	39	0
cSH	677	1700	1347
Volume to Capacity	0.20	0.13	0.02
Queue Length 95th (m)	5.7	0.0	0.4
Control Delay (s)	11.7	0.0	1.2
Lane LOS	B		A
Approach Delay (s)	11.7	0.0	1.2
Approach LOS	B		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

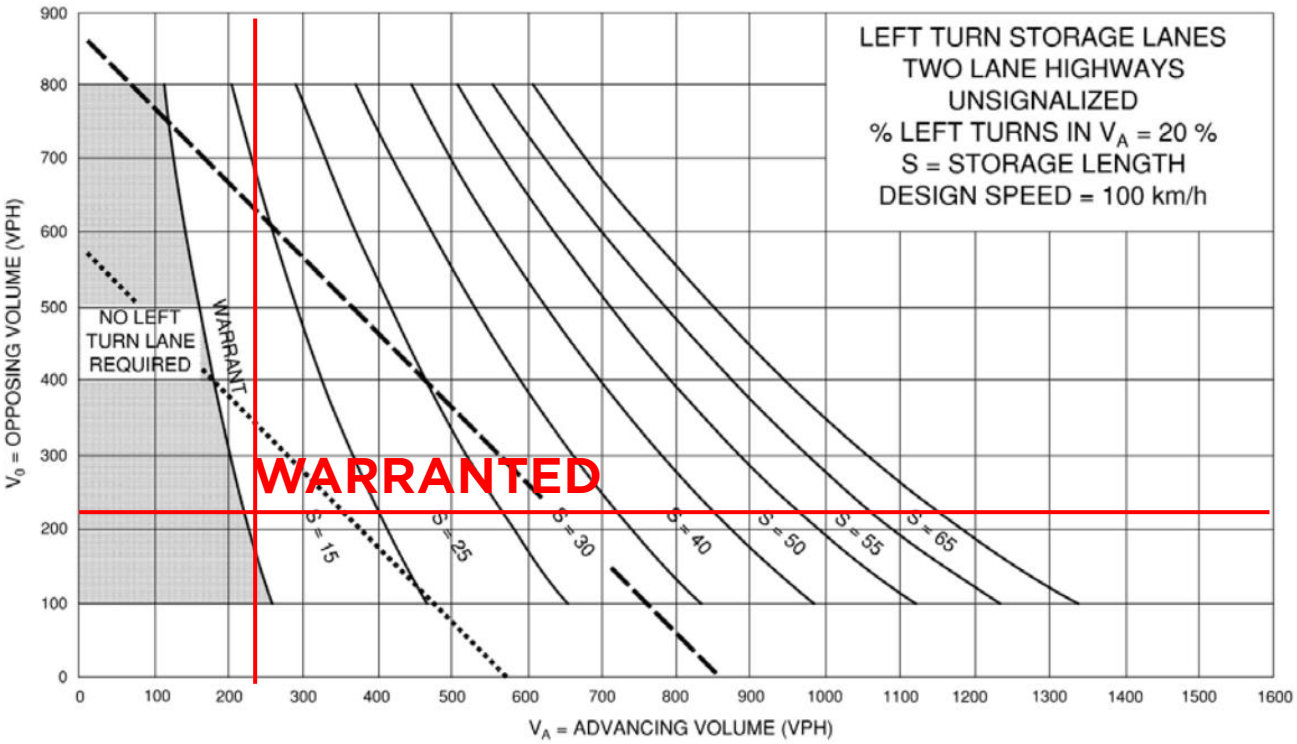
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	725	204	95	701	163	89
Future Volume (vph)	725	204	95	701	163	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1883	1585	1722	1883	1789	1601
Flt Permitted	1.00	1.00	0.15	1.00	0.95	1.00
Satd. Flow (perm)	1883	1585	275	1883	1789	1601
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	815	229	107	788	183	100
RTOR Reduction (vph)	0	100	0	0	0	82
Lane Group Flow (vph)	815	129	107	788	183	18
Heavy Vehicles (%)	2%	3%	6%	2%	2%	2%
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	38.0	38.0	46.6	46.6	12.0	12.0
Effective Green, g (s)	38.0	38.0	46.6	46.6	12.0	12.0
Actuated g/C Ratio	0.56	0.56	0.69	0.69	0.18	0.18
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1058	890	277	1298	317	284
v/s Ratio Prot	c0.43		0.02	c0.42		
v/s Ratio Perm		0.08	0.24		c0.10	0.01
v/c Ratio	0.77	0.14	0.39	0.61	0.58	0.06
Uniform Delay, d1	11.4	7.1	8.8	5.6	25.5	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	0.3	0.9	2.1	2.5	0.1
Delay (s)	16.9	7.4	9.7	7.7	28.0	23.2
Level of Service	B	A	A	A	C	C
Approach Delay (s)	14.8			8.0	26.3	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Appendix H:
Left Turn Monographs



AM Peak Hour



PM Peak Hour

PROJECT NAME

Figure D: 2040 Total Conditions