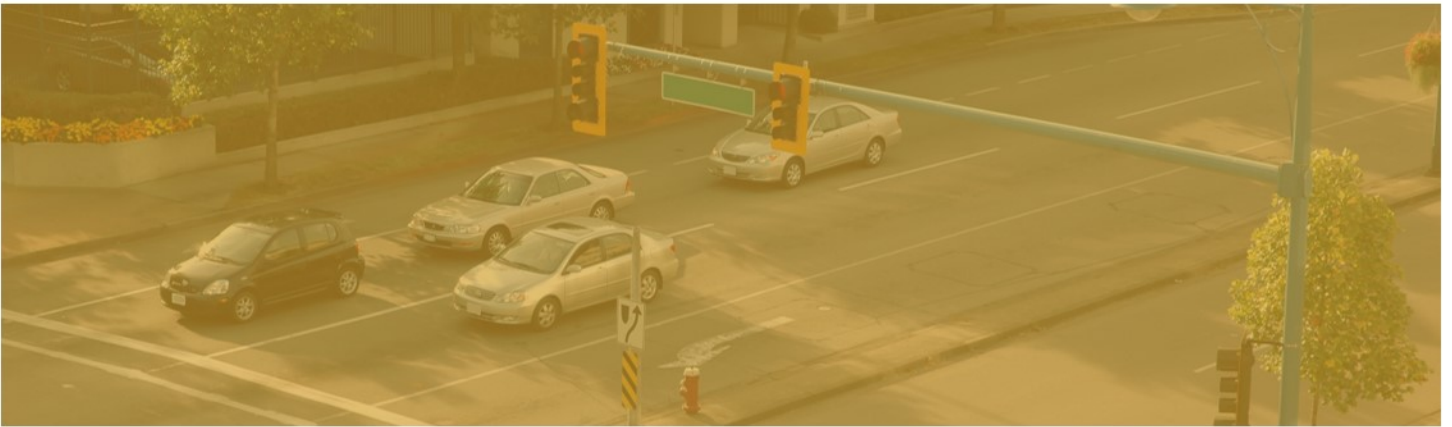




Enhancing our communities



192 County Road 4

TRANSPORTATION IMPACT BRIEF

2832425 Ontario Inc.

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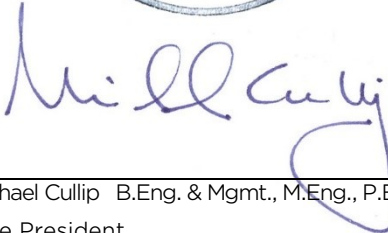
May
3, 2024

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Issue	Date	Description
1	May 3, 2024	Final Report

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1 Introduction

Tatham Engineering Limited was retained by 2832425 Ontario Inc. to prepare a transportation impact study in support of a Zoning By-Law Amendment and Site Plan Approval for a proposed expansion to the existing Parkhill Storage facility located at 192 County Road 4 in the Township of Douro-Dummer, County of Peterborough. The location of the development 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 County and Town with respect to the potential transportation impacts of the proposed self storage facility expansion on the adjacent road network.

Recognizing that the trip generation associated with the development will not be significant, the scope of the study has been reduced to that of a transportation impact brief, with a focus on following:

- the operations of the road system through the study area prior to the proposed expansion;
- the number of new trips the proposed expansion is likely to generate;
- the operations of the study area road system upon completion of the expansion; and
- the resulting impacts and need for mitigating measures (if required) to ensure acceptable overall road operations.

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: proposed development and associated details including land use, access and traffic volumes;
- Chapter 4: future conditions and corresponding traffic operations, considering background traffic growth and additional site-generated traffic; and
- Chapter 5: summary of the report and key findings



2 Existing Conditions

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

2.1 ROAD NETWORK

The road network to be addressed by this study consists of County Road 4 (Warsaw Road) across the frontage of the site. Aerial mapping and photographs of the road system are provided in Figure 2.

County Road 4

County Road 4 is a Class A (arterial) County road under the jurisdiction of the County of Peterborough. The road is oriented east-west through the study area and has a 2-lane rural cross-section (including 1.5 metre paved shoulders, gravel shoulders and open ditches) providing one travel lane per direction. County Road 4 has a speed limit is 60 km/h through the area and thus an 80 km/h design speed has been assumed (posted +20 km/h for county roads).

Site Access

The existing storage site has two access points to County Road 4. All of the approaches are single lane approaches (i.e. there are no separate turn lanes provided) with the access points operating under stop control.

2.2 TRAFFIC VOLUMES

Traffic Counts

To determine the existing traffic volumes on the study area road network, traffic counts were conducted at the existing site accesses on Wednesday December 6, 2023 (7:00 to 10:00 and 15:00 to 18:00). The observed peak hour volumes are illustrated in Figure 3, whereas count details are provided in Appendix A. It is noted that while the site is served by two access points, the volumes entering and exiting the site are minimal and thus have been consolidated to consider the total site volumes at a single access point.

Seasonal Adjustment

Recognizing that the traffic counts were conducted in December, consideration has been given to a seasonal adjustment to reflect peak conditions. Spring, summer and fall traffic volumes collected along County Road 4 in 2023 were obtained from the County. The count station was located approximately 1.6 km west of the site and thus considered reflective of traffic patterns



within the study area. The daily volumes are summarized in Table 1, whereas detailed count sheets are provided in Appendix A.

Table 1: County Road 4 – Average Daily Traffic Volumes

ROAD SECTION	YEAR	AVERAGE DAILY TRAFFIC (ADT)		
		Spring	Summer	Fall
County Road 4 (1.6 km west of site)	2023	9,972	9,738	9,663

Based on a review of the seasonal data, the spring traffic volumes reflect the peak conditions (2.4% greater than the summer volumes and 3.2% greater than the fall volumes). It is noted that the spring volumes were collected in mid-June, whereas the summer and fall volumes were collected in early and late September, respectively. Given that the traffic counts at the site access counts were collected in December (and thus reflective of winter conditions) and to ensure a conservative approach, an adjustment factor of 15% has been applied to the December volumes.

Annual Adjustment

In addition to the seasonal adjustment, a background growth rate of 2% was also applied to the 2023 volumes to reflect 2024 existing conditions (additional discussion on background growth is provided in Section 4.2.1).

2024 Volumes

The resulting 2024 volumes are illustrated in Figure 4.

2.3 TRAFFIC OPERATIONS

The assessment of existing conditions provides the baseline from which the future traffic operations can be assessed. As the capacity, and hence operations, of a road system is effectively dictated by its intersections the assessment focuses on the access operations considering:

- the 2024 peak hour traffic volumes;
- the existing access configuration and control; and
- procedures outlined in the *Highway Capacity Manual 6th Edition*¹ (using Synchro v.11).

¹ *Highway Capacity Manual, 6th Edition*. Transportation Research Board, October 2016.



For unsignalized intersections, the analysis considers:

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

With respect to the noted metrics:

- a level of service ‘A’ corresponds to the best operating conditions with minimal delays, whereas level of service ‘F’ corresponds to poor operations resulting from high intersection delays (detailed LOS definitions are provided in Appendix B); and
- a v/c ratio of less than 1.0 indicates the intersection movement/ approach is operating at less than capacity while a v/c ratio of 1.0 indicates capacity has been reached.

A summary of the analysis is provided in Table 2, whereas detailed worksheets are included in Appendix C.

Table 2: Intersection Operations – 2024

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 4 & Site Access	EB LT	free	8	A	0.00	8	A	0.00
	SB LR	stop	0	A	0.00	11	B	0.00

L - left T - thru R - right LT - left-thru TR - thru-right LTR - left-thru-right LR - left-right

Based on the existing volumes, the site access on County Road 4 currently provides excellent operations (LOS B or better) with marginal delays during the AM and PM peak hours.

Given that the site provides excellent operations assuming only 1 access point, similar (if not better) operations will be provided when considering 2 access points.

2.4 ROAD NETWORK IMPROVEMENTS

Based on the results of the operational analysis under existing conditions, no improvements are required to accommodate the existing traffic volumes on the study area road network.



3 Proposed Development

This chapter will provide additional details with respect to the proposed storage site expansion, including its location, parking provision, the projected site generated traffic volumes and the assignment of such to the adjacent road network.

3.1 LOCATION

As previously noted, the subject site is located at 192 County Road 4 in the Township of Douro-Dummer as illustrated Figure 1.

3.2 LAND USE

The proposed expansion will consist of 7 new self-storage buildings with a total gross floor area of approximately 3,418 m² (36,787 ft²). A corresponding site plan is provided in Figure 5.

3.3 PARKING

As per the site plan, the site will provide 22 parking spaces. Justification for the proposed parking supply is being addressed by others.

3.4 ACCESS & ON-SITE CIRCULATION

Access to the development will be provided via the existing access points on County Road 4. The existing west access will be improved to serve as the primary access to the site, whereas the east access will be maintained as is and will serve as a secondary access to the site.

3.4.1 Configuration

As per the Transportation Association of Canada's (TAC) *Geometric Design Guide for Canadian Roads*², an access serving a commercial development should have a width in the order of 7.2 to 12.0 metres, with a right turn radius between 4.5 and 12.0 metres. The TAC guidelines are consistent with design standards illustrated in the Ontario Provincial Standard Drawing (OPSD) 350.010 for industrial, commercial and apartment entrances.

As per the site plan, the site access will be upgraded to provide a 9.0 metre width with 7.5 metre right turn radii. The proposed design is consistent with the TAC guidelines and OPSD design standard and thus considered appropriate.

² *Geometric Design Guide for Canadian Roads. Chapter 8 – Access.* Transportation Association of Canada, June 2017.



It is noted that the County of Peterborough's *By-Law No. 2012-26 - Entrance Permit, Schedule A* provides design standard guidance for high-volume commercial entrances. The County's *Entrance Permit* by-law notes that a high-volume commercial driveway must be constructed in accordance with the applicable MTO *Commercial Site Access Standard Design* or in accordance with an alternative standard approved by the Director of Public Works. The subject development, while commercial in nature, is not a high-volume entrance given the limited volumes to be generated by the site. As such, the MTO CSAS design standards are considered conservative for the subject development. Regardless, the proposed access design does satisfy TAC and OPSD design standards, which are somewhat consistent with MTO CSAS standards, particularly with respect to access width.

3.4.2 Circulation

The main internal drive aisle circulating the site (and serving as the fire route) will maintain a minimum width of 9.0 metres with a centre radius of 12.0 metres. The aisles providing access between the individual buildings will have a minimum width of 7.5 metres. The aisle layout as proposed is considered sufficient with respect to the circulation of site generated traffic and the manoeuvring requirements of typical design vehicles (moving vans, trucks, fire truck, etc.).

3.5 SIGHT LINE ASSESSMENT

The sightline assessment has considered the minimum visibility requirements as provided in the County's *Entrance Permit By-law*. As per the by-law, the minimum sight distance for a speed limit of 60 km/h is 130 metres (to be provided in both directions).

The sight lines along County Road 4 were established through field measurements. Given the relatively straight and flat nature of the road in the immediate vicinity of the site, the available sight lines to/from the east and west are in excess of 150 metres, thus satisfying the County's minimum sight distance requirements.

3.6 SITE TRAFFIC

3.6.1 Trip Generation

The number of trips generated by the proposed expansion has been determined based on the type of use, development size and trip generation rates published in the *ITE Trip Generation Manual, 11th Edition*³. Based on the proposed development, trip rates for the *mini warehouse* (ITE code 151) have been applied. The associated trip rates and trip estimates are provided in Table

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



3. As indicated, the proposed expansion is expected to generate 3 new trips during the AM peak hour and 6 new trips during the PM peak hour (total of inbound and outbound trips).

Table 3: Trip Generation - Self-Storage Facility Expansion

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 ft ² GFA	0.05	0.04	0.09	0.07	0.08	0.15
	estimate	36,787 ft ²	2	1	3	3	3	6

3.6.2 Trip Distribution & Assignment

The distribution and assignment of the site generated trips to the road network has been established based on the existing distribution observed at the site access points during the traffic counts. Based on the existing patterns, the following distribution has been applied:

- to/from the east on County Road 4 - 40%; and
- to/from the west on County Road 4 - 60%.

The resulting assignment of the new site traffic to the road network is illustrated in Figure 6. As previously noted, all site traffic has been assigned to a single access to ensure a conservative approach.



4 Future Conditions

This chapter will address the future conditions on the study area road network for the 2029 and 2034 horizons, reflecting 5 and 10-year planning horizons. The following areas will be addressed:

- future traffic volumes;
- operations of the site access point; and
- potential improvements to the study area road network, if necessary.

4.1 ROAD NETWORK

No changes to the study area road network are expected within the considered planning horizons

4.2 TRAFFIC VOLUMES

Traffic volumes have been established for 2029 and 2034 horizons, based on the 2024 traffic volumes, historical and projected growth, and the additional traffic volumes to be generated by the proposed expansion.

4.2.1 Background Growth

Historic census data for the Township of Douro-Dummer indicates that the population decreased from 6,805 persons in 2011 to 6,709 persons in 2016, translating to an annual decrease of 0.3%. The 2021 data indicates a population of 7,632 persons, translating to an annual growth rate of 2.6% when compared to the 2016 population level. For the period 2011 to 2021, the population increased at an annual rate of 1.2%.

The *County of Peterborough Growth Analysis Report*⁴ projects the population of the Township to increase to 8,160 persons by 2036. In considering the 2021 census population of 7,632 persons, this translates to an annual growth rate of 0.45%. The *Growth Analysis Report* also projects employment within the Township to increase from 1,450 jobs in 2021 to 1,850 by 2036, or 1.6% per annum.

Based on the above, an annual growth rate of 2.0% has been assumed to adopt a conservative approach, applied to the through volumes on County Road 4.

⁴ *County of Peterborough Growth Analysis Report*. Hemson, March 28, 2022.



4.2.2 Background Developments

No other planned developments were identified within the study area that would otherwise contribute any meaningful traffic volumes to the adjacent road network.

4.2.3 Future Total Volumes

The resulting 2029 and 2034 volumes, which reflect the 2024 volumes, a background growth rate of 2.0% and the additional traffic volumes to be generated by the proposed expansion, are illustrated in Figure 7 and Figure 8, respectively.

4.3 TRAFFIC OPERATIONS

The operations of the site access have been reassessed for the 2029 and 2034 horizon years, the results of which are provided in Table 4 and Table 5, whereas detailed worksheets are provided in Appendix D.

Table 4: Intersection Operations - 2029

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 4 & Site Access	EB LT	free	8	A	0.00	8	A	0.00
	SB LR	stop	11	B	0.00	12	B	0.01

L - left T - thru R - right LT - left-thru TR - thru-right LTR - left-thru-right LR - left-right

Table 5: Intersection Operations - 2034

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 4 & Site Access	EB LT	free	8	A	0.00	8	A	0.00
	SB LR	stop	11	A	0.00	12	B	0.01

L - left T - thru R - right LT - left-thru TR - thru-right LTR - left-thru-right LR - left-right

Based on the above assessment, site access will continue to provide excellent operations (LOS B or better) through the 2034 horizon.



4.4 ROAD NETWORK IMPROVEMENTS

4.4.1 Access Operations

Based on the results of the operational analysis under future conditions, no improvements are required to accommodate the additional site traffic to be generated by the proposed expansion of the existing self-storage facility.

4.4.2 Turn Lane Requirements

Despite the otherwise excellent operations provided at the site access, the need for exclusive turn lanes on County Road 4 at the site access has been reviewed based on the following:

- the 2034 total traffic volumes (the critical horizon);
- MTO guidelines⁵ for auxiliary lanes at unsignalized intersections; and
- a design speed of 80 km/h (reflective of 60 km/h speed limit on County Road 4).

Right Turn Lane

MTO guidelines suggest that an exclusive right turn lane be considered where right turn volumes exceed 60 vehicles per hour and/or impede the operations of through traffic.

As illustrated in Figure 8, the projected volume right turning vehicles accessing the site will be relatively minor (less than 5 vehicles per hour). As such, a right turn lane on County Road 4 is not warranted.

Left Turn Lane

For unsignalized intersections on two-lane undivided highways, MTO warrants are based on design speed, the volume of left turning traffic, advancing volume (i.e. traffic travelling in the same direction as the left-turning traffic) and opposing volume (i.e. traffic travelling in the opposite direction as the left-turning traffic).

Given the low left turning volumes (less than 5 vehicles), a left turn lane on County Road 4 is not warranted.

⁵ *MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads*. Ministry of Transportation of Ontario Design Standards & Specifications Office, April 2020.



5 Summary

Proposed Development

The study has addressed the transportation impacts associated with the proposed expansion of the existing self-storage development located at 192 County Road 4 in the Township of Douro-Dummer. Upon completion, the development is expected to generate 3 additional trips during the AM peak and 6 additional trips during the PM peak hour.

Transportation Impacts

In addressing the study area traffic operations, the site access was analysed under existing (2024) and future (2029 and 2034) horizon periods. It was concluded that the existing road system can readily accommodate the site generated volumes and thus no improvements are required to support the proposed development.

Sight Line Assessment

Sight lines along County Road 4 at the site access were reviewed in consideration of the County's minimum visibility requirements. The available sight lines satisfy the County's minimum requirements.

Turn Lane Requirements

Given the limited volumes accessing the site, exclusive turn lanes are not warranted on County Road 4 to support the proposed development.





192 COUNTY ROAD 4, TRANSPORTATION IMPACT BRIEF

Figure 1: Site Location





192 COUNTY ROAD 4, TRANSPORTATION IMPACT BRIEF

Figure 2A: Area Road Network





Looking west along County Road 4 from the west access



Looking east along County Road 4 from the west access



Looking west along County Road 4 from the east access



Looking east along County Road 4 from the east access

192 COUNTY ROAD 4, TRANSPORTATION IMPACT BRIEF

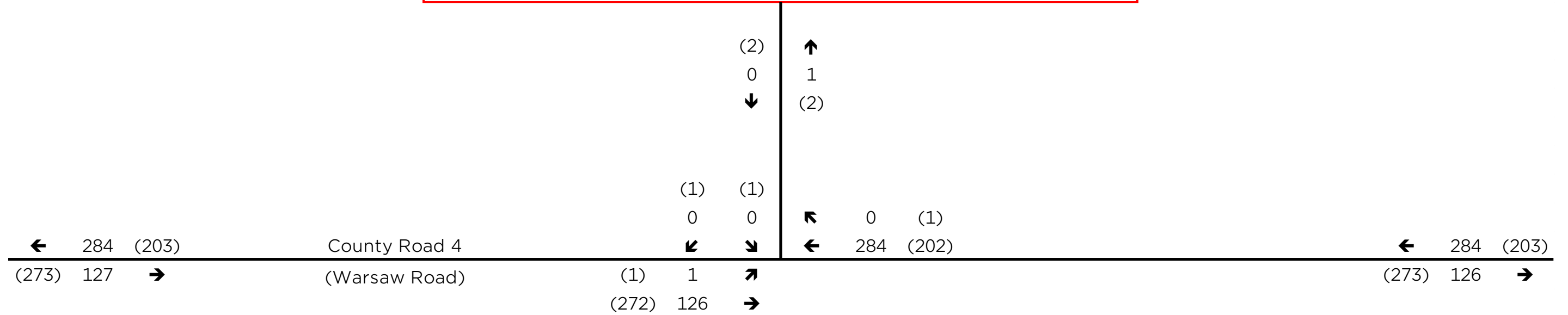
Figure 2B: Area Road Network





99 AM Peak Hour
 (99) PM Peak Hour

192 County Road 4



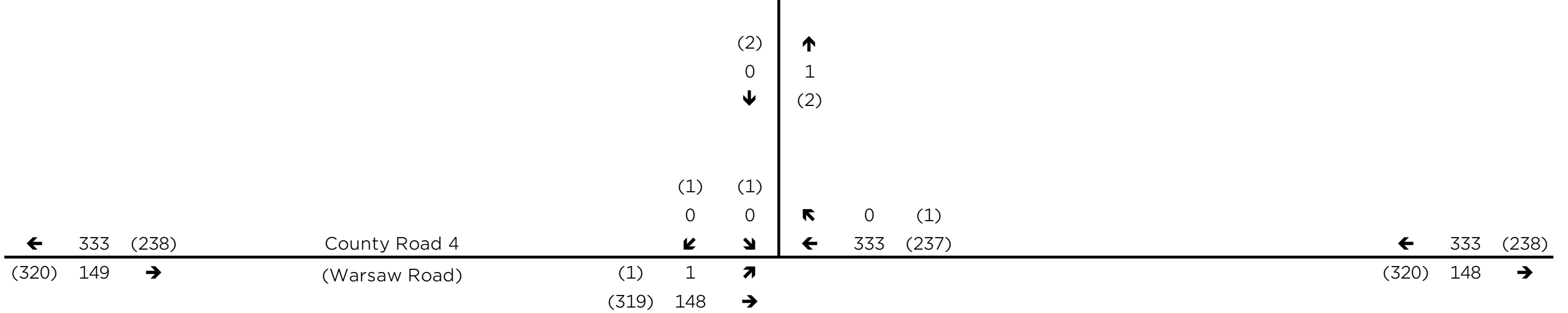
192 COUNTY ROAD 4, TRANSPORTATION IMPACT BRIEF
 Figure 3: Traffic Volumes - 2023 Counts





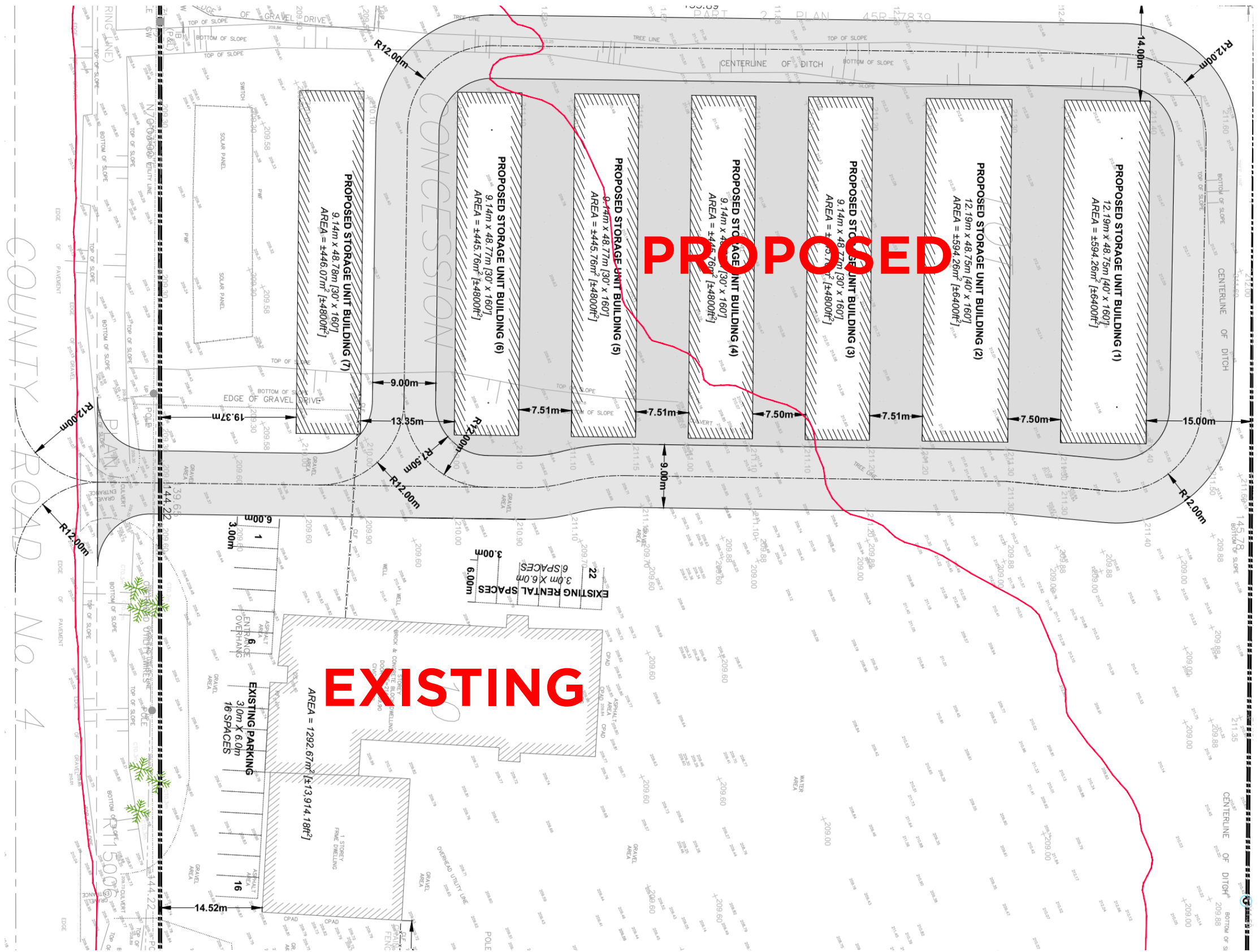
99 AM Peak Hour
 (99) PM Peak Hour

192 County Road 4



192 COUNTY ROAD 4, TRANSPORTATION IMPACT BRIEF
 Figure 4: Traffic Volumes - 2024





192 COUNTY ROAD 4, TRANSPORTATION IMPACT BRIEF

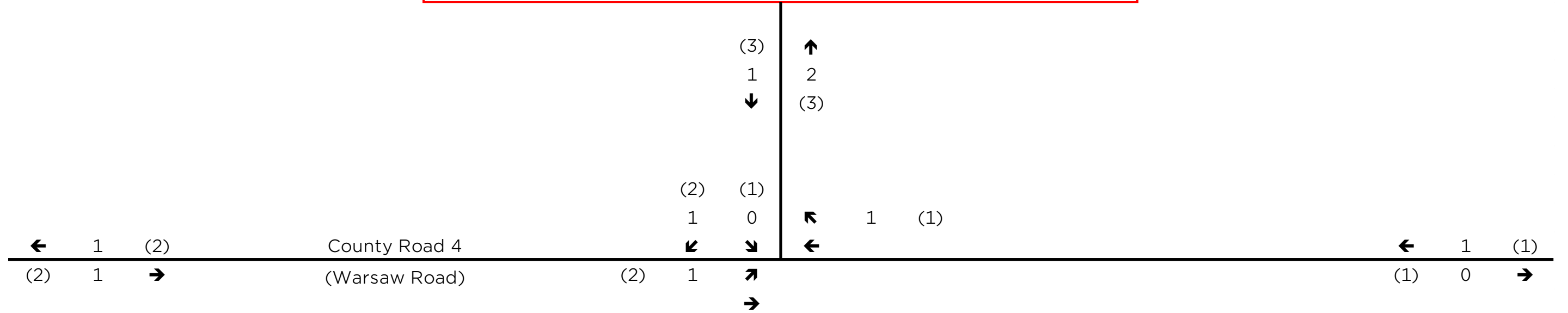
Figure 5: Site Plan





99 AM Peak Hour
 (99) PM Peak Hour

192 County Road 4



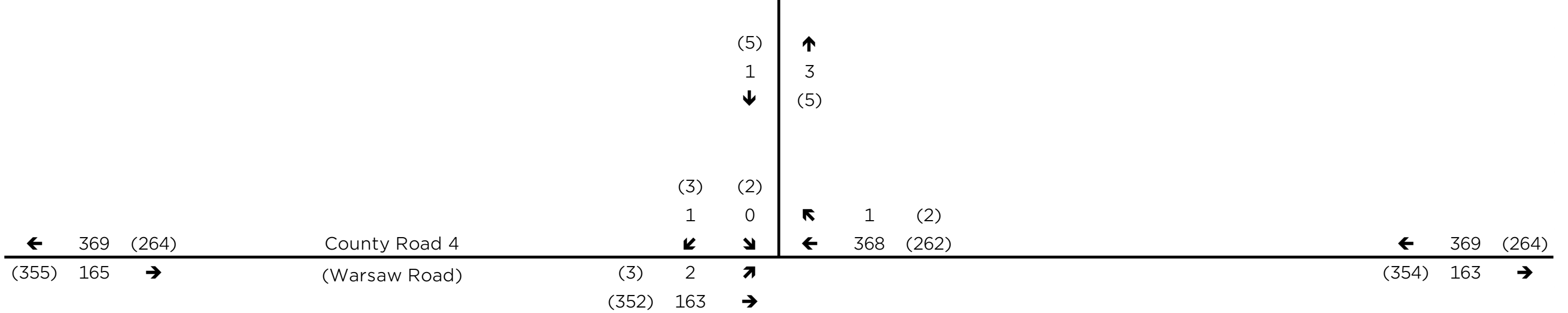
192 COUNTY ROAD 4, TRANSPORTATION IMPACT BRIEF
 Figure 6: New Site Traffic





99 AM Peak Hour
 (99) PM Peak Hour

192 County Road 4



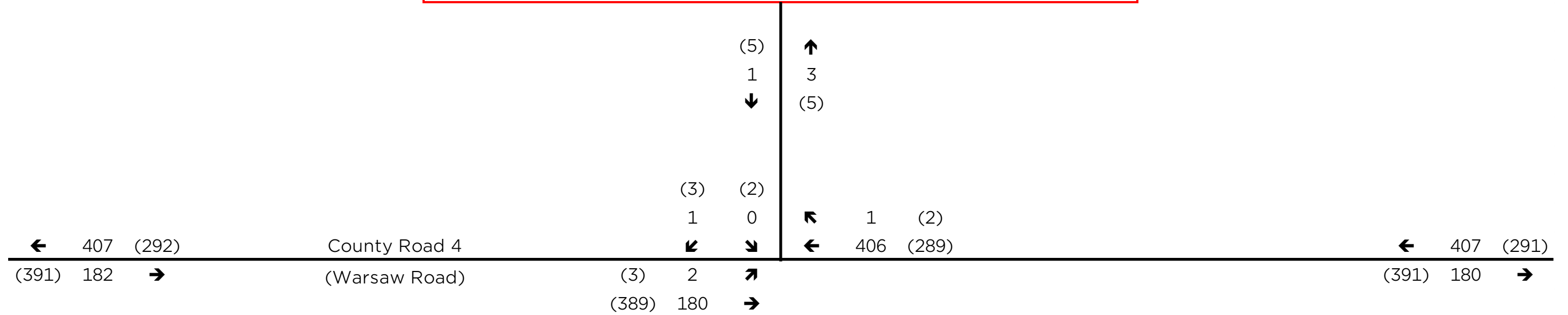
192 COUNTY ROAD 4, TRANSPORTATION IMPACT BRIEF
 Figure 7: Traffic Volumes - 2029 Total





99 AM Peak Hour
 (99) PM Peak Hour

192 County Road 4



192 COUNTY ROAD 4, TRANSPORTATION IMPACT BRIEF
 Figure 8: Traffic Volumes - 2034 Total



Appendix A: Traffic Counts



Project #23-397 - Tatham Engineering Ltd

Intersection Count Report

Intersection: 192 CR 4 (west access)
Municipality: Douro-Dummer
Count Date: Wednesday, Dec 06, 2023
Site Code: 2339700002
Count Categories: Cars, Trucks, Bicycles, Pedestrians
Count Period: 07:00-10:00, 15:00-18:00
Weather: Clear
Comments:

Traffic Count Map

Intersection: 192 CR 4 (west access)
Site Code: 2339700002
Municipality: Douro-Dummer
Count Date: Dec 06, 2023



Traffic Count Summary

Intersection: 192 CR 4 (west access)
 Site Code: 2339700002
 Municipality: Douro-Dummer
 Count Date: Dec 06, 2023

CR 4 - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	0	207	0	0	207	0	0	110	0	0	110	0	317
08:00 - 09:00	0	285	0	0	285	0	1	105	0	0	106	0	391
09:00 - 10:00	0	205	1	0	206	0	0	106	0	0	106	0	312
BREAK													
15:00 - 16:00	0	152	0	0	152	0	1	198	0	0	199	0	351
16:00 - 17:00	0	202	0	0	202	0	1	272	0	0	273	0	475
17:00 - 18:00	0	196	0	0	196	0	0	183	0	0	183	0	379
GRAND TOTAL	0	1247	1	0	1248	0	3	974	0	0	977	0	2225



Traffic Count Data

Intersection: 192 CR 4 (west access)
 Site Code: 2339700002
 Municipality: Douro-Dummer
 Count Date: Dec 06, 2023

East Approach - CR 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	26	0	0	26	0	0	0	0	0	0	0	0	0	0	0
07:15	0	47	0	0	47	0	1	0	0	1	0	0	0	0	0	0
07:30	0	56	0	0	56	0	4	0	0	4	0	0	0	0	0	0
07:45	0	70	0	0	70	0	3	0	0	3	0	0	0	0	0	0
08:00	0	61	0	0	61	0	1	0	0	1	0	0	0	0	0	0
08:15	0	86	0	0	86	0	3	0	0	3	0	0	0	0	0	0
08:30	0	61	0	0	61	0	3	0	0	3	0	0	0	0	0	0
08:45	0	67	0	0	67	0	3	0	0	3	0	0	0	0	0	0
09:00	0	46	0	0	46	0	2	0	0	2	0	0	0	0	0	0
09:15	0	50	1	0	51	0	2	0	0	2	0	0	0	0	0	0
09:30	0	62	0	0	62	0	2	0	0	2	0	0	0	0	0	0
09:45	0	39	0	0	39	0	2	0	0	2	0	0	0	0	0	0
SUBTOTAL	0	671	1	0	672	0	26	0	0	26	0	0	0	0	0	0



Traffic Count Data

Intersection: 192 CR 4 (west access)
 Site Code: 2339700002
 Municipality: Douro-Dummer
 Count Date: Dec 06, 2023

East Approach - CR 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	0	19	0	0	19	0	1	0	0	1	0	0	0	0	0	0
15:15	0	40	0	0	40	0	2	0	0	2	0	0	0	0	0	0
15:30	0	45	0	0	45	0	0	0	0	0	0	0	0	0	0	0
15:45	0	44	0	0	44	0	1	0	0	1	0	0	0	0	0	0
16:00	0	42	0	0	42	0	1	0	0	1	0	0	0	0	0	0
16:15	0	48	0	0	48	0	0	0	0	0	0	0	0	0	0	0
16:30	0	55	0	0	55	0	1	0	0	1	0	0	0	0	0	0
16:45	0	55	0	0	55	0	0	0	0	0	0	0	0	0	0	0
17:00	0	58	0	0	58	0	0	0	0	0	0	0	0	0	0	0
17:15	0	51	0	0	51	0	0	0	0	0	0	0	0	0	0	0
17:30	0	28	0	0	28	0	0	0	0	0	0	0	0	0	0	0
17:45	0	58	0	0	58	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	0	543	0	0	543	0	7	0	0	7	0	0	0	0	0	0
GRAND TOTAL	0	1214	1	0	1215	0	33	0	0	33	0	0	0	0	0	0



Traffic Count Data

Intersection: 192 CR 4 (west access)
 Site Code: 2339700002
 Municipality: Douro-Dummer
 Count Date: Dec 06, 2023

West Approach - CR 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0
07:15	0	28	0	0	28	0	1	0	0	1	0	0	0	0	0	0
07:30	0	30	0	0	30	0	0	0	0	0	0	0	0	0	0	0
07:45	0	34	0	0	34	0	2	0	0	2	0	0	0	0	0	0
08:00	1	27	0	0	28	0	2	0	0	2	0	0	0	0	0	0
08:15	0	29	0	0	29	0	2	0	0	2	0	0	0	0	0	0
08:30	0	23	0	0	23	0	2	0	0	2	0	0	0	0	0	0
08:45	0	20	0	0	20	0	0	0	0	0	0	0	0	0	0	0
09:00	0	17	0	0	17	0	3	0	0	3	0	0	0	0	0	0
09:15	0	20	0	0	20	0	3	0	0	3	0	0	0	0	0	0
09:30	0	24	0	0	24	0	2	0	0	2	0	0	0	0	0	0
09:45	0	34	0	0	34	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	1	301	0	0	302	0	20	0	0	20	0	0	0	0	0	0



Traffic Count Data

Intersection: 192 CR 4 (west access)
 Site Code: 2339700002
 Municipality: Douro-Dummer
 Count Date: Dec 06, 2023

West Approach - CR 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	0	37	0	0	37	0	1	0	0	1	0	0	0	0	0	0
15:15	0	44	0	0	44	0	1	0	0	1	0	0	0	0	0	0
15:30	1	48	0	0	49	0	1	0	0	1	0	0	0	0	0	0
15:45	0	64	0	0	64	0	2	0	0	2	0	0	0	0	0	0
16:00	0	55	0	0	55	0	4	0	0	4	0	0	0	0	0	0
16:15	0	68	0	0	68	0	1	0	0	1	0	0	0	0	0	0
16:30	0	68	0	0	68	0	1	0	0	1	0	0	0	0	0	0
16:45	1	73	0	0	74	0	2	0	0	2	0	0	0	0	0	0
17:00	0	38	0	0	38	0	0	0	0	0	0	0	0	0	0	0
17:15	0	52	0	0	52	0	0	0	0	0	0	0	0	0	0	0
17:30	0	62	0	0	62	0	3	0	0	3	0	0	0	0	0	0
17:45	0	28	0	0	28	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	2	637	0	0	639	0	16	0	0	16	0	0	0	0	0	0
GRAND TOTAL	3	938	0	0	941	0	36	0	0	36	0	0	0	0	0	0

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00




Intersection: 192 CR 4 (west access)
Site Code: 2339700002
Count Date: Dec 06, 2023

Weather conditions: Clear




**** Unsignalized Intersection ****

Major Road: CR 4 runs E/W




North Approach

	Out	In	Total
	0	1	1
	0	0	0
	0	0	0
Totals	0	1	1




192 CR 4 (west access)

	0	0	0
	0	0	0
	0	0	0
Totals	0	0	0

East Approach

	Out	In	Total
	273	120	393
	11	6	17
	0	0	0
Totals	284	126	410

CR 4

				Totals
	0	0	0	0
	0	0	1	1
	0	6	120	126

Peds: 0




Peds: 0






Peds: 0

Peds: 0

CR 4

Totals			
0	0	0	0
0	0	0	0
284	273	11	0

West Approach

	Out	In	Total
	121	273	394
	6	11	17
	0	0	0
Totals	127	284	411

 - Cars

 - Trucks

 - Bicycles

Comments



Peak Hour Summary

Intersection: 192 CR 4 (west access)
 Site Code: 2339700002
 Count Date: Dec 06, 2023
 Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach 192 CR 4 (west access)						South Approach				East Approach CR 4						West Approach CR 4						Total Vehic es			
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻		Peds	Total	
07:30	0		0	0	0	0					0			60	0	0	0	60	0	30		0	0	0	30	90
07:45	0		0	0	0	0					0			73	0	0	0	73	0	36		0	0	0	36	109
08:00	0		0	0	0	0					0			62	0	0	0	62	1	29		0	0	0	30	92
08:15	0		0	0	0	0					0			89	0	0	0	89	0	31		0	0	0	31	120
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	284	0	0	0	284	1	126	0	0	0	0	127	411	
Approach %	0	0	0	-	-	-	-	-	-	-	-	-	100	0	0	-	-	0.8	99.2	0	-	-	-	-	-	
Totals %	0	0	0	0	0	0	0	0	0	0	0	0	69.1	0	0	69.1	69.1	0.2	30.7	0	0	0	0	30.9	30.9	
PHF	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0	0	0.8	0.8	0.25	0.88	0	0	0	0	0.88	0.86	
Cars	0	0	0	0	0	0	0	0	0	0	0	0	273	0	0	273	273	1	120	0	0	0	0	121	394	
% Cars	0	0	0	0	0	0	0	0	0	0	0	0	96.1	0	0	96.1	96.1	100	95.2	0	0	0	0	95.3	95.9	
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11	11	0	6	0	0	0	0	6	17	
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	3.9	0	0	3.9	3.9	0	4.8	0	0	0	0	4.7	4.1	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peds					0	-				0	-						0	-					0	-	0	
% Peds					0	-				0	-						0	-					0	-	0	

Peak Hour Diagram

Specified Period

From: 15:00:00
To: 18:00:00

One Hour Peak

From: 16:00:00
To: 17:00:00




Intersection: 192 CR 4 (west access)
Site Code: 2339700002
Count Date: Dec 06, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: CR 4 runs E/W




North Approach

	Out	In	Total
	1	1	2
	0	0	0
	0	0	0
Totals	1	1	2




192 CR 4 (west access)

	0	0	0
	0	0	0
	1	0	0
Totals	1	0	0

East Approach

	Out	In	Total
	200	264	464
	2	8	10
	0	0	0
Totals	202	272	474

CR 4

				Totals
	0	0	0	0
	0	0	1	1
	0	8	264	272




Peds: 0

Peds: 0






Peds: 0

CR 4


Totals			
0	0	0	0
0	0	0	0
202	200	2	0

Peds: 0

West Approach

	Out	In	Total
	265	201	466
	8	2	10
	0	0	0
Totals	273	203	476

 - Cars

 - Trucks

 - Bicycles

Comments



Peak Hour Summary

Intersection: 192 CR 4 (west access)
 Site Code: 2339700002
 Count Date: Dec 06, 2023
 Period: 15:00 - 18:00

Peak Hour Data (16:00 - 17:00)

Start Time	North Approach 192 CR 4 (west access)						South Approach				East Approach CR 4						West Approach CR 4						Total Vehicles		
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻		Peds	Total
16:00	0		0	0	0	0					0			43	0	0	0	43	0	59		0	0	59	102
16:15	0		0	0	0	0					0			48	0	0	0	48	0	69		0	0	69	117
16:30	0		0	0	0	0					0			56	0	0	0	56	0	69		0	0	69	125
16:45	0		1	0	0	1					0			55	0	0	0	55	1	75		0	0	76	132
Grand Total	0	1	0	0	0	1					0	0		202	0	0	0	202	1	272		0	0	273	476
Approach %	0	100	0	-	-	-					-	-		100	0	0	-	-	0.4	99.6		0	-	-	
Totals %	0	0.2	0	0.2	-	-					0	-		42.4	0	0	42.4	-	0.2	57.1		0	-	57.4	
PHF	0	0.25	0	0.25	0	0					0	0		0.9	0	0	0.9	0.25	0.91		0	0	0.9	0.9	
Cars	0	1	0	1	0	1					0	0		200	0	0	200	1	264		0	0	265	466	
% Cars	0	100	0	100	0	100					0	0		99	0	0	99	100	97.1		0	0	97.1	97.9	
Trucks	0	0	0	0	0	0					0	0		2	0	0	2	0	8		0	0	8	10	
% Trucks	0	0	0	0	0	0					0	0		1	0	0	1	0	2.9		0	0	2.9	2.1	
Bicycles	0	0	0	0	0	0					0	0		0	0	0	0	0	0		0	0	0	0	
% Bicycles	0	0	0	0	0	0					0	0		0	0	0	0	0	0		0	0	0	0	
Peds					0	-					0	-						0	-			0	-	0	
% Peds					0	-					0	-						0	-			0	-	0	



Project #23-397 - Tatham Engineering Ltd

Intersection Count Report

Intersection: 192 CR 4 (east access)
Municipality: Douro
Count Date: Wednesday, Dec 06, 2023
Site Code: 2339700001
Count Categories: Cars, Trucks, Bicycles, Pedestrians
Count Period: 07:00-10:00, 15:00-18:00
Weather: Clear
Comments:

Traffic Count Map

Intersection: 192 CR 4 (east access)
Site Code: 2339700001
Municipality: Douro
Count Date: Dec 06, 2023



Traffic Count Summary

Intersection: 192 CR 4 (east access)
 Site Code: 2339700001
 Municipality: Douro
 Count Date: Dec 06, 2023

CR 4 - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	0	207	0	0	207	0	0	110	0	0	110	0	317
08:00 - 09:00	0	285	0	0	285	0	0	105	0	0	105	0	390
09:00 - 10:00	0	206	0	0	206	0	0	106	0	0	106	0	312
BREAK													
15:00 - 16:00	0	152	0	0	152	0	0	198	0	0	198	0	350
16:00 - 17:00	0	202	1	0	203	0	0	272	0	0	272	0	475
17:00 - 18:00	0	196	0	0	196	0	0	184	0	0	184	0	380
GRAND TOTAL	0	1248	1	0	1249	0	0	975	0	0	975	0	2224



Traffic Count Data

Intersection: 192 CR 4 (east access)
 Site Code: 2339700001
 Municipality: Douro
 Count Date: Dec 06, 2023

East Approach - CR 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	26	0	0	26	0	0	0	0	0	0	0	0	0	0	0
07:15	0	47	0	0	47	0	1	0	0	1	0	0	0	0	0	0
07:30	0	56	0	0	56	0	4	0	0	4	0	0	0	0	0	0
07:45	0	70	0	0	70	0	3	0	0	3	0	0	0	0	0	0
08:00	0	61	0	0	61	0	1	0	0	1	0	0	0	0	0	0
08:15	0	86	0	0	86	0	3	0	0	3	0	0	0	0	0	0
08:30	0	61	0	0	61	0	3	0	0	3	0	0	0	0	0	0
08:45	0	67	0	0	67	0	3	0	0	3	0	0	0	0	0	0
09:00	0	46	0	0	46	0	2	0	0	2	0	0	0	0	0	0
09:15	0	51	0	0	51	0	2	0	0	2	0	0	0	0	0	0
09:30	0	62	0	0	62	0	2	0	0	2	0	0	0	0	0	0
09:45	0	39	0	0	39	0	2	0	0	2	0	0	0	0	0	0
SUBTOTAL	0	672	0	0	672	0	26	0	0	26	0	0	0	0	0	0



Traffic Count Data

Intersection: 192 CR 4 (east access)
 Site Code: 2339700001
 Municipality: Douro
 Count Date: Dec 06, 2023

East Approach - CR 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	0	19	0	0	19	0	1	0	0	1	0	0	0	0	0	0
15:15	0	40	0	0	40	0	2	0	0	2	0	0	0	0	0	0
15:30	0	45	0	0	45	0	0	0	0	0	0	0	0	0	0	0
15:45	0	44	0	0	44	0	1	0	0	1	0	0	0	0	0	0
16:00	0	42	1	0	43	0	1	0	0	1	0	0	0	0	0	0
16:15	0	48	0	0	48	0	0	0	0	0	0	0	0	0	0	0
16:30	0	55	0	0	55	0	1	0	0	1	0	0	0	0	0	0
16:45	0	55	0	0	55	0	0	0	0	0	0	0	0	0	0	0
17:00	0	58	0	0	58	0	0	0	0	0	0	0	0	0	0	0
17:15	0	51	0	0	51	0	0	0	0	0	0	0	0	0	0	0
17:30	0	28	0	0	28	0	0	0	0	0	0	0	0	0	0	0
17:45	0	58	0	0	58	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	0	543	1	0	544	0	7	0	0	7	0	0	0	0	0	0
GRAND TOTAL	0	1215	1	0	1216	0	33	0	0	33	0	0	0	0	0	0



Traffic Count Data

Intersection: 192 CR 4 (east access)
 Site Code: 2339700001
 Municipality: Douro
 Count Date: Dec 06, 2023

West Approach - CR 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0
07:15	0	28	0	0	28	0	1	0	0	1	0	0	0	0	0	0
07:30	0	30	0	0	30	0	0	0	0	0	0	0	0	0	0	0
07:45	0	34	0	0	34	0	2	0	0	2	0	0	0	0	0	0
08:00	0	27	0	0	27	0	2	0	0	2	0	0	0	0	0	0
08:15	0	29	0	0	29	0	2	0	0	2	0	0	0	0	0	0
08:30	0	23	0	0	23	0	2	0	0	2	0	0	0	0	0	0
08:45	0	20	0	0	20	0	0	0	0	0	0	0	0	0	0	0
09:00	0	17	0	0	17	0	3	0	0	3	0	0	0	0	0	0
09:15	0	20	0	0	20	0	3	0	0	3	0	0	0	0	0	0
09:30	0	24	0	0	24	0	2	0	0	2	0	0	0	0	0	0
09:45	0	34	0	0	34	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	0	301	0	0	301	0	20	0	0	20	0	0	0	0	0	0



Traffic Count Data

Intersection: 192 CR 4 (east access)
 Site Code: 2339700001
 Municipality: Douro
 Count Date: Dec 06, 2023

West Approach - CR 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	0	37	0	0	37	0	1	0	0	1	0	0	0	0	0	0
15:15	0	44	0	0	44	0	1	0	0	1	0	0	0	0	0	0
15:30	0	48	0	0	48	0	1	0	0	1	0	0	0	0	0	0
15:45	0	64	0	0	64	0	2	0	0	2	0	0	0	0	0	0
16:00	0	55	0	0	55	0	4	0	0	4	0	0	0	0	0	0
16:15	0	68	0	0	68	0	1	0	0	1	0	0	0	0	0	0
16:30	0	68	0	0	68	0	1	0	0	1	0	0	0	0	0	0
16:45	0	73	0	0	73	0	2	0	0	2	0	0	0	0	0	0
17:00	0	39	0	0	39	0	0	0	0	0	0	0	0	0	0	0
17:15	0	52	0	0	52	0	0	0	0	0	0	0	0	0	0	0
17:30	0	62	0	0	62	0	3	0	0	3	0	0	0	0	0	0
17:45	0	28	0	0	28	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	638	0	0	638	0	16	0	0	16	0	0	0	0	0	0
GRAND TOTAL	0	939	0	0	939	0	36	0	0	36	0	0	0	0	0	0

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00




Intersection: 192 CR 4 (east access)
Site Code: 2339700001
Count Date: Dec 06, 2023

Weather conditions: Clear



**** Unsignalized Intersection ****

Major Road: CR 4 runs E/W




North Approach

	Out	In	Total
	0	0	0
	0	0	0
	0	0	0
Totals	0	0	0




192 CR 4 (east access)

	0	0	0
	0	0	0
	0	0	0
Totals	0	0	0

East Approach

	Out	In	Total
	273	120	393
	11	6	17
	0	0	0
Totals	284	126	410

CR 4

				Totals
	0	0	0	0
	0	0	0	0
	0	6	120	126




Peds: 0

Peds: 0






Peds: 0

CR 4


Totals			
0	0	0	0
0	0	0	0
284	273	11	0

Peds: 0

West Approach

	Out	In	Total
	120	273	393
	6	11	17
	0	0	0
Totals	126	284	410

 - Cars

 - Trucks

 - Bicycles

Comments



Peak Hour Summary

Intersection: 192 CR 4 (east access)
 Site Code: 2339700001
 Count Date: Dec 06, 2023
 Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach 192 CR 4 (east access)						South Approach				East Approach CR 4						West Approach CR 4						Total Vehi cles			
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻		Peds	Total	
07:30	0		0	0	0	0					0			60	0	0	0	60	0	30		0	0	0	30	90
07:45	0		0	0	0	0					0			73	0	0	0	73	0	36		0	0	0	36	109
08:00	0		0	0	0	0					0			62	0	0	0	62	0	29		0	0	0	29	91
08:15	0		0	0	0	0					0			89	0	0	0	89	0	31		0	0	0	31	120
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	284	0	0	0	284	0	126	0	0	0	126	410		
Approach %	0	0	0	-	-	-	100	0	0	-	0	100	0	-	-	-	0	100	0	-	-	-	-	-	-	
Totals %	0	0	0	0	0	0	69.3	0	0	69.3	0	30.7	0	30.7	0	30.7	0	30.7	0	30.7	0	30.7	0	30.7	30.7	
PHF	0	0	0	0	0	0	0.8	0	0	0.8	0	0.88	0	0.88	0	0.88	0	0.88	0	0.88	0	0.88	0	0.88	0.85	
Cars	0	0	0	0	0	0	273	0	0	273	0	120	0	120	0	120	0	120	0	120	0	120	0	120	393	
% Cars	0	0	0	0	0	0	96.1	0	0	96.1	0	95.2	0	95.2	0	95.2	0	95.2	0	95.2	0	95.2	0	95.2	95.9	
Trucks	0	0	0	0	0	0	11	0	0	11	0	6	0	6	0	6	0	6	0	6	0	6	0	6	17	
% Trucks	0	0	0	0	0	0	3.9	0	0	3.9	0	4.8	0	4.8	0	4.8	0	4.8	0	4.8	0	4.8	0	4.8	4.1	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peds					0	-					0	-								0	-		0	-	0	
% Peds					0	-					0	-								0	-		0	-	0	

Peak Hour Diagram

Specified Period

From: 15:00:00
To: 18:00:00

One Hour Peak

From: 16:00:00
To: 17:00:00




Intersection: 192 CR 4 (east access)
Site Code: 2339700001
Count Date: Dec 06, 2023

Weather conditions: Clear




**** Unsignalized Intersection ****

Major Road: CR 4 runs E/W




North Approach

	Out	In	Total
	1	1	2
	0	0	0
	0	0	0
Totals	1	1	2




192 CR 4 (east access)

	0	0	0
	0	0	0
	0	1	0
Totals	0	1	0

East Approach

	Out	In	Total
	201	265	466
	2	8	10
	0	0	0
Totals	203	273	476

CR 4

				Totals
	0	0	0	0
	0	0	0	0
	0	8	264	272

Peds: 0




Peds: 0






Peds: 0

Peds: 0


CR 4

Totals			
0	0	0	0
1	1	0	0
202	200	2	0

West Approach

	Out	In	Total
	264	200	464
	8	2	10
	0	0	0
Totals	272	202	474

 - Cars

 - Trucks

 - Bicycles

Comments



Peak Hour Summary

Intersection: 192 CR 4 (east access)
 Site Code: 2339700001
 Count Date: Dec 06, 2023
 Period: 15:00 - 18:00

Peak Hour Data (16:00 - 17:00)

Start Time	North Approach 192 CR 4 (east access)						South Approach				East Approach CR 4						West Approach CR 4						Total Vehicles		
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻		Peds	Total
16:00	0		0	0	0	0					0			43	1	0	0	44	0	59		0	0	59	103
16:15	0		0	0	0	0					0			48	0	0	0	48	0	69		0	0	69	117
16:30	0		0	0	0	0					0			56	0	0	0	56	0	69		0	0	69	125
16:45	1		0	0	0	1					0			55	0	0	0	55	0	75		0	0	75	131
Grand Total	1	0	0	0	0	1					0	0		202	1	0	0	203	0	272		0	0	272	476
Approach %	100	0	0	-	-	-					-	-		99.5	0.5	0	-	-	0	100	0	-	-	-	
Totals %	0.2	0	0	0.2							0			42.4	0.2	0	42.6		0	57.1		0	57.1		
PHF	0.25	0	0	0.25							0			0.9	0.25	0	0.91		0	0.91		0	0.91	0.91	
Cars	1	0	0	1							0			200	1	0	201		0	264		0	264	466	
% Cars	100	0	0	100							0			99	100	0	99		0	97.1		0	97.1	97.9	
Trucks	0	0	0	0							0			2	0	0	2		0	8		0	8	10	
% Trucks	0	0	0	0							0			1	0	0	1		0	2.9		0	2.9	2.1	
Bicycles	0	0	0	0							0			0	0	0	0		0	0		0	0	0	
% Bicycles	0	0	0	0							0			0	0	0	0		0	0		0	0	0	
Peds					0	-					0	-									0	-		0	
% Peds					0	-					0	-									0	-		0	

Basic Volume Report: 004-00800

Station ID : 004-00800

Info Line 1 : CR 4, 0.25 km E of CR 35
 Info Line 2 : on EB curve/inter. ahead sign

GPS Lat/Lon :

DB File : 004-00800.DB

Last Connected Device Type : Phoenix

Version Number : 2.94

Serial Number : 37365

Number of Lanes : 2

Posted Speed Limit : 0.0 kph

Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.	W	WB	Normal	Veh.	No	

Lane #1 Basic Volume Data From: 00:00 - 06/15/2023 To: 23:59 - 06/17/2023

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
061523	T	8	7	6	15	53	156	266	397	393	304	320	286	269	267	290	327	335	358	228	196	146	85	56	27	4795
061623	F	7	11	11	7	39	129	235	324	387	283	273	287	253	309	283	305	315	252	238	153	120	94	57	45	4417
061723	S	18	12	8	8	15	39	72	135	225	304	316	315	295	333	311	312	340	288	303	226	224	167	87	63	4416
Month Total :		33	30	25	30	107	324	573	856	1005	891	909	888	817	909	884	944	990	898	769	575	490	346	200	135	13628
Percent :		0%	0%	0%	0%	1%	2%	4%	6%	7%	7%	7%	7%	6%	7%	6%	7%	7%	7%	6%	4%	4%	3%	1%	1%	
ADT :		11	10	8	10	36	108	191	285	335	297	303	296	272	303	295	315	330	299	256	192	163	115	67	45	4542

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	0	4795	4417	4416	Weekday (Mon-Fri) :	9212	68%
# Days :	0.0	0.0	0.0	0.0	1.0	1.0	1.0	ADT :	4606	
ADT :	0	0	0	0	4795	4417	4416	Weekend (Sat-Sun) :	4416	32%
Percent :	0%	0%	0%	0%	35%	32%	32%	ADT :	4416	

Lane #2 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
2.	E	EB	Normal	Veh.	No	

Lane #2 Basic Volume Data From: 00:00 - 06/15/2023 To: 23:59 - 06/17/2023

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
061523	T	22	16	6	4	11	49	131	220	260	239	223	295	285	291	307	390	433	442	297	271	242	197	126	50	4807
061623	F	35	14	15	8	18	50	131	191	251	256	234	302	353	340	435	495	573	588	458	384	300	261	147	85	5924
061723	S	49	24	19	16	17	42	64	113	222	314	404	449	421	387	344	350	277	273	226	178	131	119	108	59	4606
Month Total :		106	54	40	28	46	141	326	524	733	809	861	1046	1059	1018	1086	1235	1283	1303	981	833	673	577	381	194	15337
Percent :		1%	0%	0%	0%	0%	1%	2%	3%	5%	5%	6%	7%	7%	7%	7%	8%	8%	8%	6%	5%	4%	4%	2%	1%	
ADT :		35	18	13	9	15	47	109	175	244	270	287	349	353	339	362	412	428	434	327	278	224	192	127	65	5112

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals :	0	0	0	0	4807	5924	4606	Weekday (Mon-Fri) :	10731 70%
# Days :	0.0	0.0	0.0	0.0	1.0	1.0	1.0	ADT :	5366
ADT :	0	0	0	0	4807	5924	4606	Weekend (Sat-Sun) :	4606 30%
Percent :	0%	0%	0%	0%	31%	39%	30%	ADT :	4606

Basic Volume Summary: 004-00800

Grand Total For Data From: 00:00 - 06/15/2023 To: 23:59 - 06/17/2023

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	33	30	25	30	107	324	573	856	1005	891	909	888	817	909	884	944	990	898	769	575	490	346	200	135	13628
Lane #2	106	54	40	28	46	141	326	524	733	809	861	1046	1059	1018	1086	1235	1283	1303	981	833	673	577	381	194	15337
TOTAL	139	84	65	58	153	465	899	1380	1738	1700	1770	1934	1876	1927	1970	2179	2273	2201	1750	1408	1163	923	581	329	28965

Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Lane #1	0%	0%	0%	0%	1%	2%	4%	6%	7%	7%	7%	7%	6%	7%	6%	7%	7%	7%	6%	4%	4%	3%	1%	1%	
Lane #2	1%	0%	0%	0%	0%	1%	2%	3%	5%	5%	6%	7%	7%	7%	7%	8%	8%	8%	6%	5%	4%	4%	2%	1%	
TOTAL	0%	0%	0%	0%	1%	2%	3%	5%	6%	6%	6%	7%	6%	7%	7%	8%	8%	8%	6%	5%	4%	3%	2%	1%	

ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	11	10	8	10	36	108	191	285	335	297	303	296	272	303	295	315	330	299	256	192	163	115	67	45	4542
Lane #2	35	18	13	9	15	47	109	175	244	270	287	349	353	339	362	412	428	434	327	278	224	192	127	65	5112
TOTAL	46	28	21	19	51	155	300	460	579	567	590	645	625	642	657	727	758	733	583	470	387	307	194	110	9654

LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	0	4795	4417	4416	Weekday (Mon-Fri) :	9212	68%
# Days :	0.0	0.0	0.0	0.0	1.0	1.0	1.0	ADT :	4606	
ADT :	0	0	0	0	4795	4417	4416	Weekend (Sat-Sun) :	4416	32%
Percent :	0%	0%	0%	0%	35%	32%	32%	ADT :	4416	

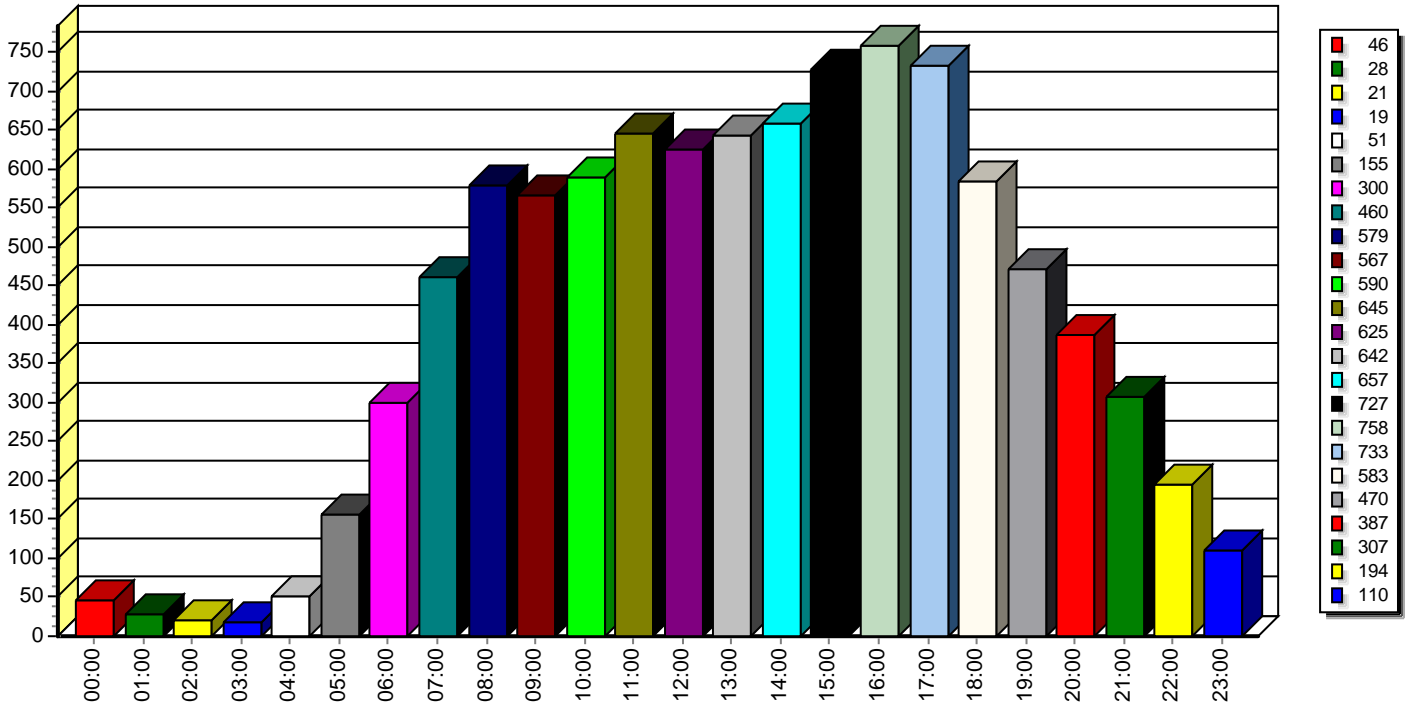
LANE #2

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	0	4807	5924	4606	Weekday (Mon-Fri) :	10731	70%
# Days :	0.0	0.0	0.0	0.0	1.0	1.0	1.0	ADT :	5366	
ADT :	0	0	0	0	4807	5924	4606	Weekend (Sat-Sun) :	4606	30%
Percent :	0%	0%	0%	0%	31%	39%	30%	ADT :	4606	

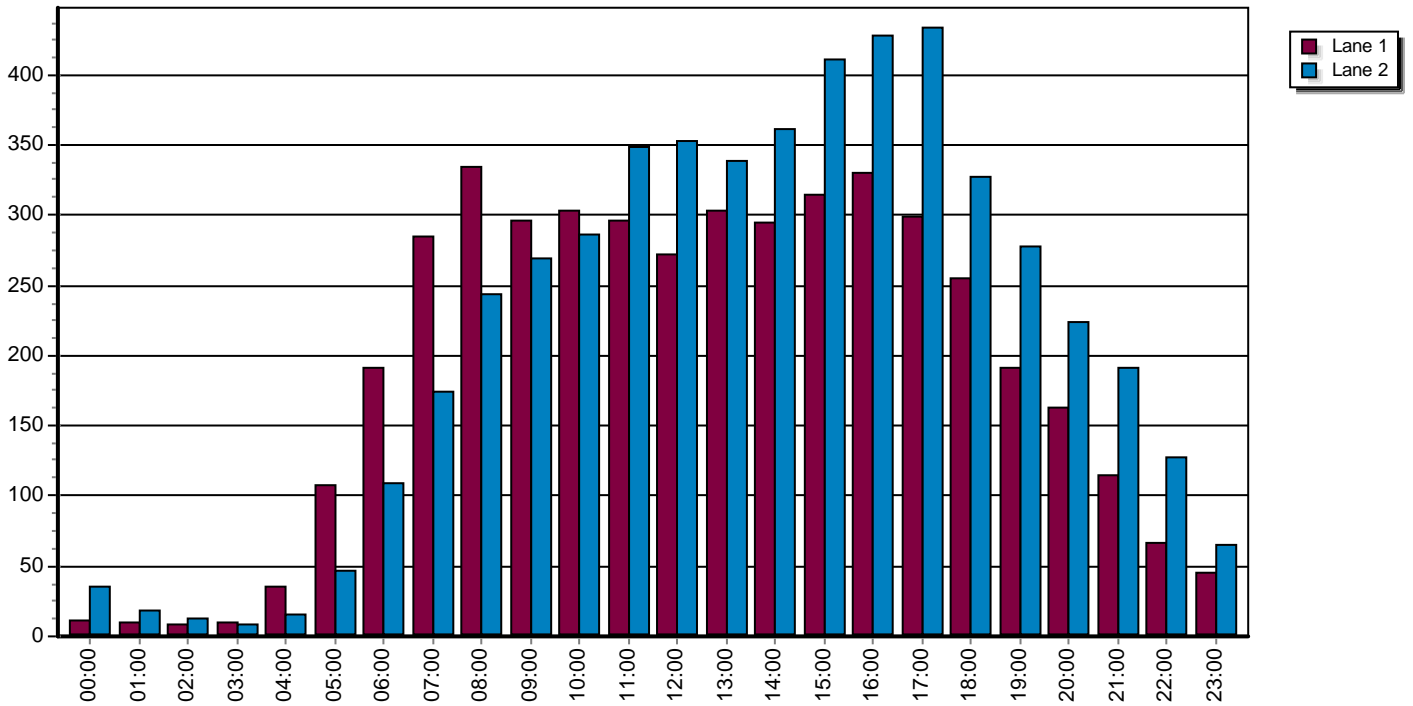
ALL LANES

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	0	9602	10341	9022	Weekday (Mon-Fri) :	19943	69%
# Days :	0.0	0.0	0.0	0.0	1.0	1.0	1.0	ADT :	9972	
ADT :	0	0	0	0	9602	10341	9022	Weekend (Sat-Sun) :	9022	31%
Percent :	0%	0%	0%	0%	33%	36%	31%	ADT :	9022	

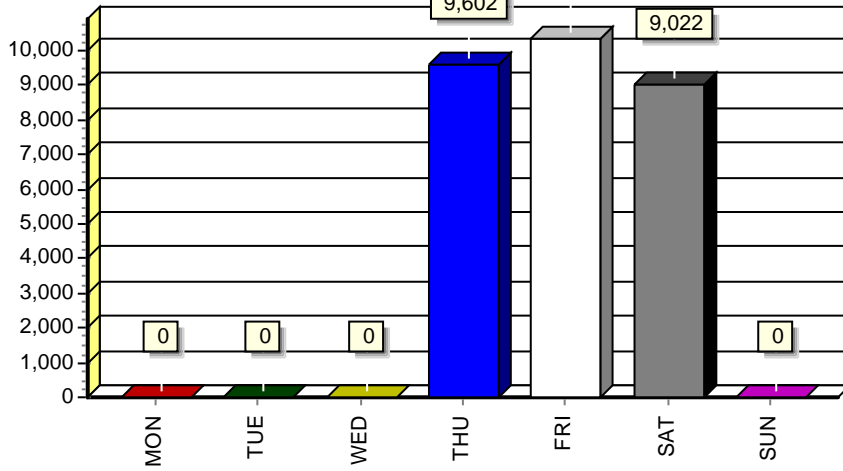
ADT Volume vs. Time (all lanes combined)



ADT Volume vs. Time (lane comparison)

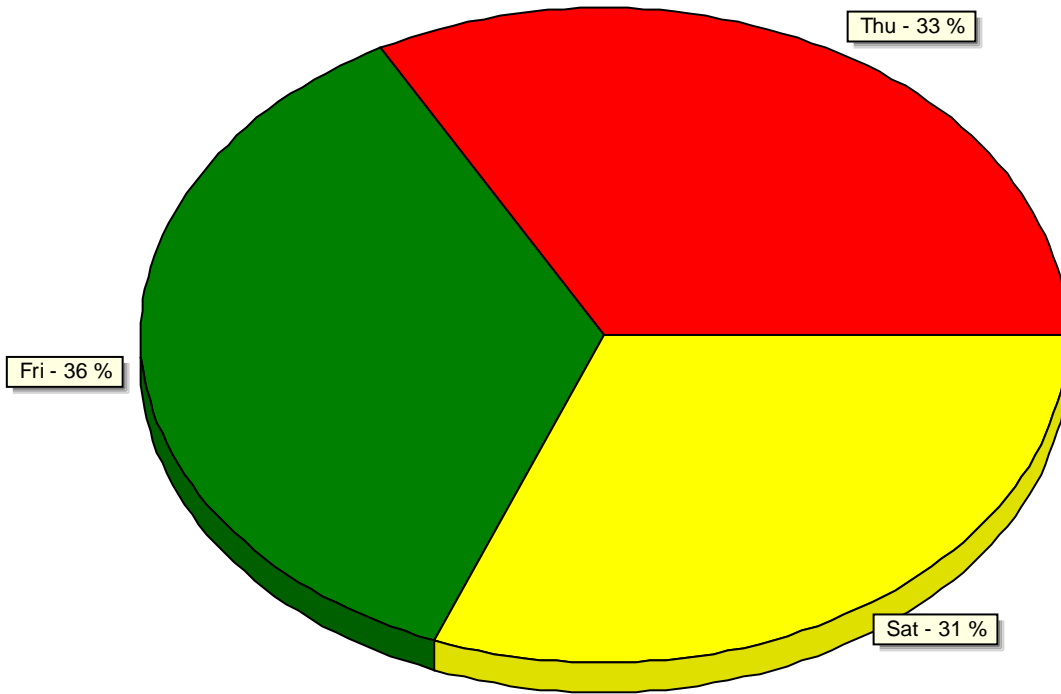


ADT By Day of Week (s)



DAY	ADT	TOTAL	# DAYS
Mon	-	-	-
Tue	-	-	-
Wed	-	-	-
Thu	9602	9602	1.0
Fri	10341	10341	1.0
Sat	9022	9022	1.0
Sun	-	-	-

Percent of Totals by Day of Week



Appendix B: LOS Definitions

CAPACITY ANALYSIS AT UNSIGNALIZED INTERSECTIONS

Highway Capacity Manual Methodology

The level of service at an unsignalized intersection is determined on the basis of control delay for each critical lane. This method of analysis is taken from the Highway Capacity Manual, Special Report 209, by the Transportation Research Board, 1997.

The average control delay for any particular critical movement (control delay includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay) is a function of the service rate or capacity of the approach and degree of saturation. The level of service criteria for unsignalized intersections is outlined below and is related to ranges in vehicle delay.

Level of Service	Expected Delay to Minor Street Traffic	Average Control Delay 'd' (sec/veh)
A	Little or no delays	$0 < d \leq 10$
B	Short traffic delays	$10 \leq d \leq 15$
C	Average traffic delays	$15 \leq d \leq 25$
D	Long traffic delays	$25 \leq d \leq 35$
E	Very long traffic delays	$35 \leq d \leq 50$
F	Extreme delays with queuing which may cause congestion affecting other traffic movements in the intersection	$d > 50$

Appendix C: Traffic Operations - Existing

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	1	148	333	0	0	0
Future Vol, veh/h	1	148	333	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	1	172	387	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	387	0	-	0	561 387
Stage 1	-	-	-	-	387 -
Stage 2	-	-	-	-	174 -
Critical Hdwy	4.14	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.236	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1161	-	-	-	489 661
Stage 1	-	-	-	-	686 -
Stage 2	-	-	-	-	856 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1161	-	-	-	489 661
Mov Cap-2 Maneuver	-	-	-	-	489 -
Stage 1	-	-	-	-	685 -
Stage 2	-	-	-	-	856 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1161	-	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-
HCM Control Delay (s)	8.1	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	1	319	237	1	1	1
Future Vol, veh/h	1	319	237	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	354	263	1	1	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	264	0	0	620	264
Stage 1	-	-	-	264	-
Stage 2	-	-	-	356	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1300	-	-	452	775
Stage 1	-	-	-	780	-
Stage 2	-	-	-	709	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1300	-	-	452	775
Mov Cap-2 Maneuver	-	-	-	452	-
Stage 1	-	-	-	779	-
Stage 2	-	-	-	709	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1300	-	-	-	571
HCM Lane V/C Ratio	0.001	-	-	-	0.004
HCM Control Delay (s)	7.8	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Appendix D: Traffic Operations – Future

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	2	163	368	1	0	1
Future Vol, veh/h	2	163	368	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	2	190	428	1	0	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	429	0	-	0	623
Stage 1	-	-	-	-	429
Stage 2	-	-	-	-	194
Critical Hdwy	4.14	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.236	-	-	-	3.518
Pot Cap-1 Maneuver	1120	-	-	-	450
Stage 1	-	-	-	-	657
Stage 2	-	-	-	-	839
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1120	-	-	-	449
Mov Cap-2 Maneuver	-	-	-	-	449
Stage 1	-	-	-	-	656
Stage 2	-	-	-	-	839

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1120	-	-	-	626
HCM Lane V/C Ratio	0.002	-	-	-	0.002
HCM Control Delay (s)	8.2	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	3	352	262	2	2	3
Future Vol, veh/h	3	352	262	2	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	391	291	2	2	3

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	293	0	0	689	292
Stage 1	-	-	-	292	-
Stage 2	-	-	-	397	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1269	-	-	412	747
Stage 1	-	-	-	758	-
Stage 2	-	-	-	679	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1269	-	-	411	747
Mov Cap-2 Maneuver	-	-	-	411	-
Stage 1	-	-	-	756	-
Stage 2	-	-	-	679	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1269	-	-	-	563
HCM Lane V/C Ratio	0.003	-	-	-	0.01
HCM Control Delay (s)	7.8	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	2	180	406	1	0	1
Future Vol, veh/h	2	180	406	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	2	209	472	1	0	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	473	0	-	0	686 473
Stage 1	-	-	-	-	473 -
Stage 2	-	-	-	-	213 -
Critical Hdwy	4.14	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.236	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1079	-	-	-	413 591
Stage 1	-	-	-	-	627 -
Stage 2	-	-	-	-	823 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1079	-	-	-	412 591
Mov Cap-2 Maneuver	-	-	-	-	412 -
Stage 1	-	-	-	-	626 -
Stage 2	-	-	-	-	823 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1079	-	-	-	591
HCM Lane V/C Ratio	0.002	-	-	-	0.002
HCM Control Delay (s)	8.3	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	3	389	289	2	2	3
Future Vol, veh/h	3	389	289	2	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	432	321	2	2	3

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	323	0	-	0	760 322
Stage 1	-	-	-	-	322 -
Stage 2	-	-	-	-	438 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1237	-	-	-	374 719
Stage 1	-	-	-	-	735 -
Stage 2	-	-	-	-	651 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1237	-	-	-	373 719
Mov Cap-2 Maneuver	-	-	-	-	373 -
Stage 1	-	-	-	-	733 -
Stage 2	-	-	-	-	651 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1237	-	-	-	524
HCM Lane V/C Ratio	0.003	-	-	-	0.011
HCM Control Delay (s)	7.9	0	-	-	11.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0