

520 Industrial Parkway South, Suite 201
Aurora, ON, L4G6W8

Phone: 905-503-2563

www.nextrans.ca



NextEng Consulting Group Inc.

December 7, 2021

Nishan Transport Inc.
C/o: Rohan Sovig
160 Avenue Labrosse
Pointe-Claire, QC H9R 1A1

Attention: Mr. Raj Chahal

Re: Engineering Service – Traffic Brief
Proposed Transport Truck / Trailer Parking Facility
12434 Dixie Road, Town of Caledon
Our Project No. NT-20-105

1.0 INTRODUCTION

NexTrans Consulting Engineers (A Division of NextEng Consulting Group Ltd.) was retained through Raj Chahal (the 'Owner') to undertake a Traffic Brief in support of a temporary Zoning By-law Amendment for a proposed transport truck/ trailer parking facility. The subject property is located west of Dixie Road between Old School Road to the northwest and Spokane Street to the southeast, and is municipally known as 12434 Dixie Road, in the Town of Caledon. This Traffic Brief conforms to the Peel Region guidelines, see **Appendix A** for the terms of reference that was sent to the Region for review. Since the Region has not provided comments on the Terms of Reference in a timely manner, the Traffic Brief has been prepared in accordance to the **Appendix A**. The location of the proposed development is illustrated in **Figure 1-1**.

Figure 1-1 – Site Location



Traffic Brief

The subject property is currently occupied by an existing building and existing residential building with GFA's of approximately 1,000 ft² (92.9 m²) and 2,500 ft² (232.3 m²), respectively. Based on the proposed site plan, the development proposal is to develop a transport truck/trailer parking facility on the 10.7 Ha site. Vehicular access to the subject site is proposed through one (1) full movement entrance onto Dixie Road, and will also require road widening at the location of the entrance. The proposed site plan is provided in **Figure 1-2**, while **Appendix B** also provides a larger scale version of the proposed site plan.

Given the nature of the development proposal, the analysis will include the weekday morning and afternoon peak periods for traffic assessment purposes.

Figure 1-2 – Proposed Site Plan



2.0 EXISTING TRAFFIC CONDITIONS

2.1. Existing Road Network

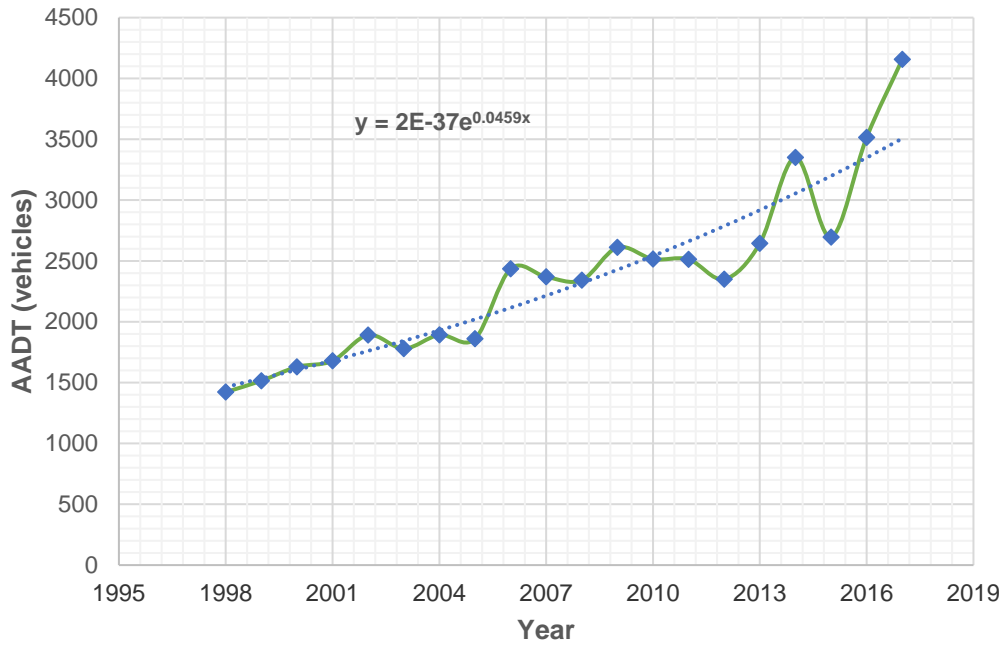
The existing subject lands are located west of Dixie Road between Old School Road and Spokane Street, in the Town of Caledon. The existing road network is described as follows:

Dixie Road/ Regional Road 4: is a north-south regional road under the jurisdiction of Peel Region within the Town of Caledon and is classified as a Major Arterial road. Dixie Road near the study area has an existing two-lane cross section (one lane per direction) and a posted speed limit of 80 km/h.

2.2. Existing Traffic Volumes

As such, historic traffic volumes at the Dixie Road and Mayfield Road Intersection were obtained from Spectrum on Thursday, October 3, 2019 during the morning (7:00 a.m. to 9:00 a.m.) and afternoon (3:00 p.m. to 6:00 p.m.) peak periods. Detailed traffic data sheets are provided in **Appendix C**. For the purposes of this assessment, a five-year horizon (2025) was selected to analyze the future background traffic volumes. The AADT data for years 1996 – 2017, shown in **Figure 2-1**, were provided by Peel Region and indicates a growth rate of 4.6%. As such, a conservative 5% growth rate per annum is taken for the north-south through traffic on Dixie Road.

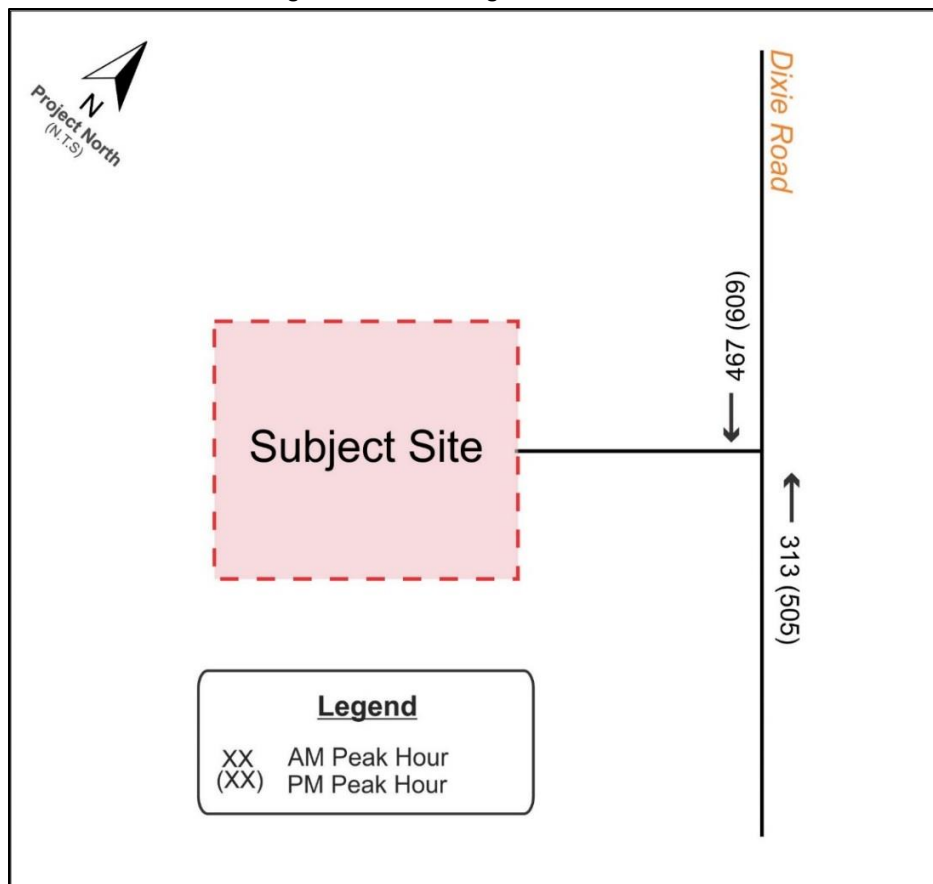
Figure 2-1 – AADT on Dixie Road Near Subject Site



2.3. Existing Traffic Volumes

The historic volumes with applied growth rates are illustrated in Figure 2-2.

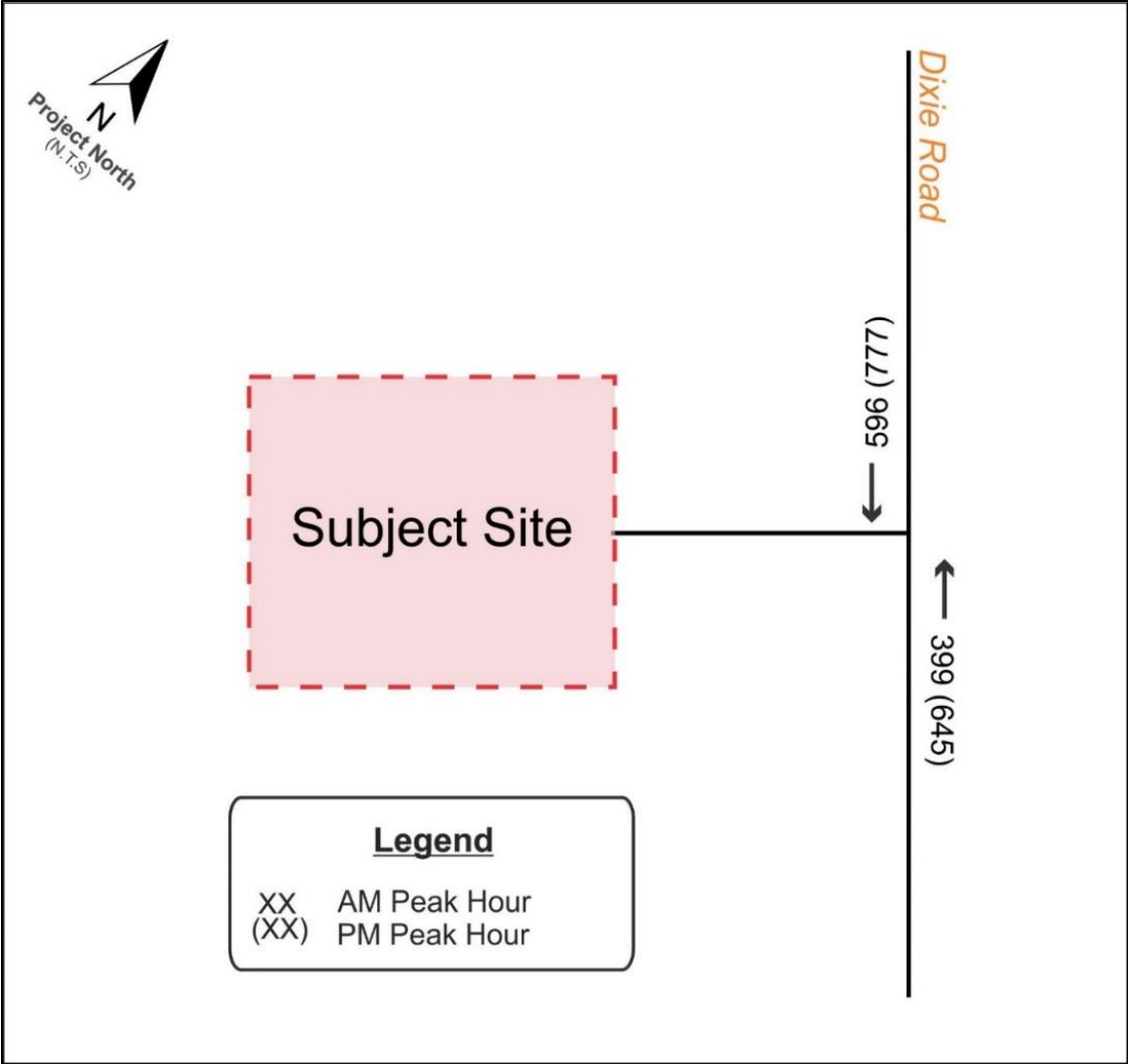
Figure 2-2 – Existing Traffic Volumes



3.0 FUTURE BACKGROUND CONDITIONS

As previously mentioned, a 5% growth rate was applied to the northbound and southbound through volumes along Dixie Road near the subject site. The future (2025) background traffic volumes are provided in **Figure 3-1**.

Figure 3-1 – Future Background Traffic Volumes



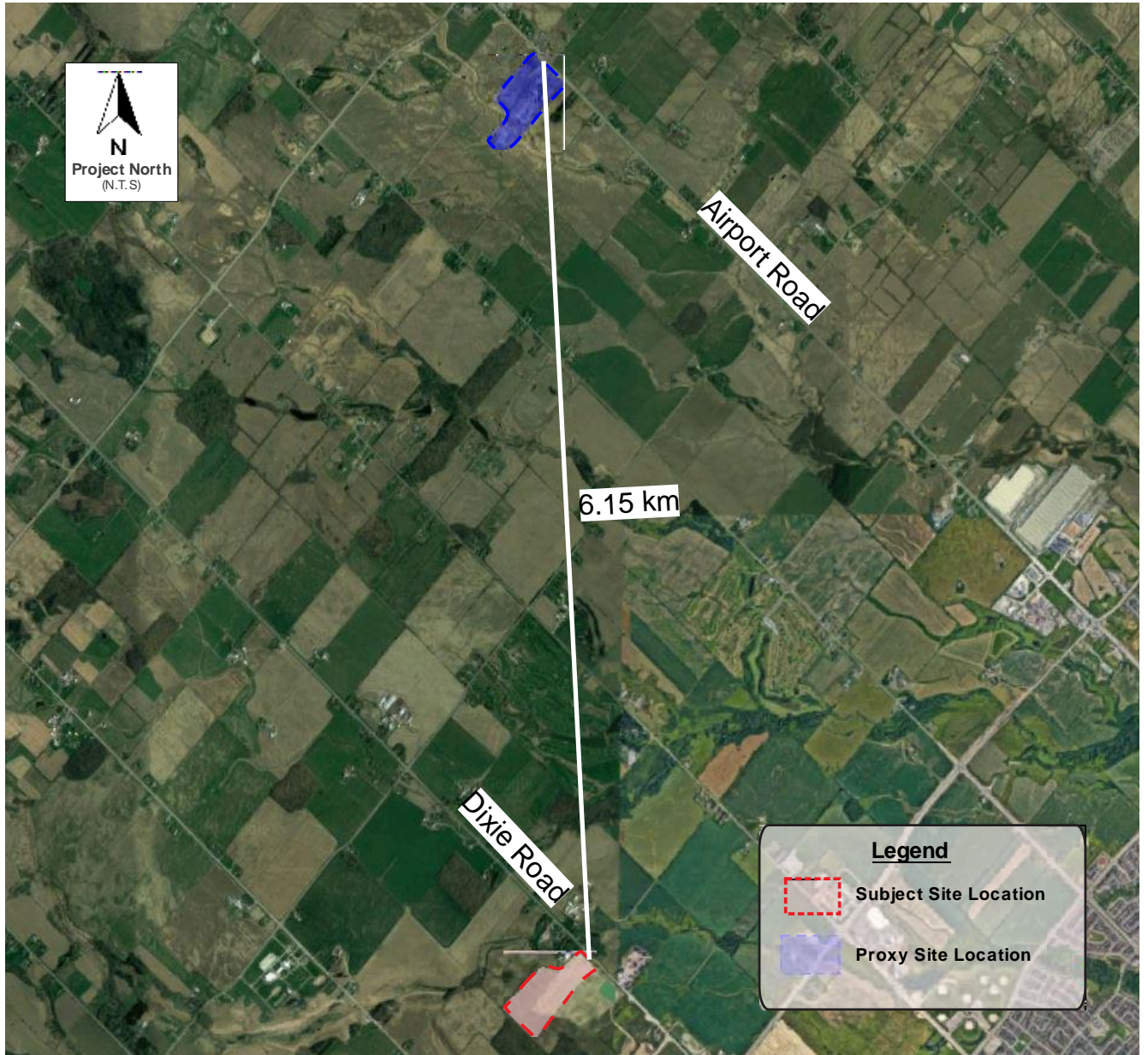
4.0 SITE TRAFFIC

The development proposal is to develop a truck trailer parking facility with a lot area of 107,000 m² and with an existing on-site building GFA of approximately 92.9 m². In addition, there is a residential building with a GFA of approximately 232.23 m². The proposed development is unique in the sense that the Trip Generation Manual, published by the Institute of Transportation Engineers (ITE), does not contain any information specific to land use case (truck/trailer parking facility).

To capture peak parking demand for the proposal, NexTrans Consulting Engineers opted to conduct driveway counts at an existing proxy site with a similar buildout as the proposed development. The proxy site is located approximately 8.3 km north of the subject site, municipally known as 13726 Airport Road and has a lot area of approximately 105,000 m² (10.5 ha). As Peel Region is currently under COVID-19 Phase 3 lockdown protocols, most businesses are functioning under regular hours of operation. Truck/trailer parking facilities are currently functioning, and it is our opinion

that the proxy driveway counts are acceptable. The proxy site locations, in comparison to the subject site location, are shown in **Figure 4-1** below.

Figure 4-1 – Proxy Site Survey Location



The proxy site driveway counts were conducted on Thursday, August 13, 2020 and Friday, August 14, 2020 during the morning (7:00 A.M. to 9:15 A.M.) and afternoon (4:00 P.M. to 6:00 P.M.) peak periods. The results of the morning peak and afternoon peak driveway counts at the proxy site (i.e. 13726 Airport Road) are shown in **Tables 4.1** and **4.2**, respectively.

Table 4.1 – Morning Peak Period

Movement	Thursday, August 13, 2020				Friday, August 14, 2020			
	In		Out		In		Out	
	Truck	Car	Truck	Car	Truck	Car	Truck	Car
7:00 a.m.	0	1	0	1	0	0	0	0
7:15 a.m.	0	0	0	0	0	0	1	0
7:30 a.m.	1	0	0	0	0	0	0	0
7:45 a.m.	0	3	1	1	0	1	1	0
8:00 a.m.	0	0	0	0	0	2	0	0
8:15 a.m.	0	2	0	0	0	1	0	0
8:30 a.m.	0	0	1	1	0	0	0	0
8:45 a.m.	1	1	0	1	1	1	0	1
Peak hour one-way Total	5		4		5		1	
Peak hour two-way Total	9				6			

The peak A.M. traffic volume from both days occurs on Thursday, August 13, 2020 from 7:45 A.M. to 8:45 A.M. with a total traffic volume of nine (9) vehicles during this time, or 0.86 trips/ ha.

Table 4.2 – Afternoon Peak Period

Movement	Thursday, August 13, 2020				Friday, August 14, 2020			
	In		Out		In		Out	
	Truck	Car	Truck	Car	Truck	Car	Truck	Car
4:00 p.m.	1	0	1	0	0	0	0	2
4:15 p.m.	0	2	0	5	0	0	0	0
4:30 p.m.	0	1	0	0	2	1	0	2
4:45 p.m.	2	3	1	3	1	1	0	3
5:00 p.m.	1	0	0	0	2	0	0	1
5:15 p.m.	1	1	0	1	3	1	0	2
5:30 p.m.	0	0	0	4	1	1	0	1
5:45 p.m.	0	0	0	0	0	1	0	3
Peak hour one-way Total	10		10		11		8	
Peak hour two-way Total	20				19			

The peak P.M. recorded traffic volume from the proxy site from both days occurs on Thursday, August 13, 2020 from 4:00 P.M. to 5:00 P.M. with a total traffic volume of 20 vehicles during this time, or 1.90 trips/ ha.

Traffic Brief

Based on the calculated proxy site trip rates, the proposed subject site is expected to generate 10 trips and 21 trips for the A.M. and P.M. peaks, respectively.

4.1. Site Trip Distribution and Assignment

The assumptions for trip distribution rates are based on the turning movement counts (TMC) obtained from Spectrum at a nearby trucking facility. The same distribution was used for the report NexTrans did for 12541 & 12577 Airport Road, and as the subject site is to be developed into a similar truck parking facility as 12541 & 12577 Airport Road, the same distribution was used to obtain similar results. As a result, the site traffic distribution is summarized in **Table 4.3**.

Table 4.3 – Site Traffic Trip Distribution

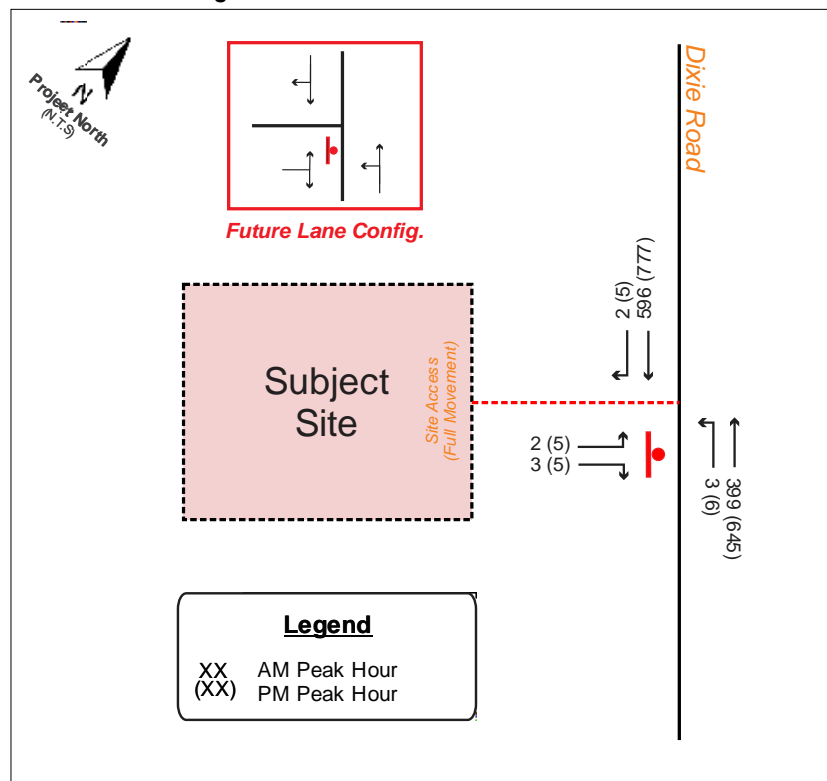
Direction	Via	AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
North	Dixie Road	50%	50%	43%	43%
South	Dixie Road	50%	50%	57%	57%
Total		100%	100%	100%	100%

5.0 FUTURE TOTAL TRAFFIC CONDITIONS

The forecasted future (2025) total traffic volumes (future background traffic volumes plus site generated traffic volumes) are illustrated in **Figure 5-1**, for A.M. and P.M. peak hour, respectively, and were analyzed using Synchro 10 software. Based on communications with the client, all outbound A.M. peak hour traffic, as well as all inbound P.M. peak hour traffic is expected to be heavy vehicles. Therefore, a heavy vehicle percentage of 100% was applied accordingly in the traffic analysis.

The detailed calculations are provided in **Appendix D** and summarized in **Table 5.1**.

Figure 5-1 – Future Total Traffic Volumes



Based on proxy surveys of similar, existing sites, the proposed development is anticipated to generate 10 two-way trips (five (5) inbound and five (5) outbound) and 21 two-way trips (10 inbound and 11 outbound) during A.M. and P.M. peak hours, respectively.

Table 5.1 – Future Total Traffic Assessments

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		LOS (v/c)	Delay (s)	Queue (95 th m)	LOS (v/c)	Delay (s)	Queue (95 th m)
Site Access and Dixie Road (Unsignalized)	EBLR	C (0.03)	17.0	0.8	C (0.05)	23.3	1.3
	NBTL	A (0.01)	0.4	0.3	A (0.03)	0.8	0.7

As summarized in **Table 5.1**, it is shown that during future total traffic conditions, the subject study area intersection as well as the future site access will to operate at excellent levels of services with only minor changes over Future Total Traffic conditions. The study area intersections continue operating at LOS 'C' or better during the peak hour periods. Based on above, it is our opinion that the proposed site entrance in the future will have negligible impact to the future operations of Airport Road and may remain in their current state.

6.0 SITE PLAN REVIEW

6.1. Vehicle Maneuverability Assessment

AutoTURN software was used to generate a vehicular turning template to confirm and demonstrate the accessibility of the proposed study area. As illustrated in **Figure 6-1**, the AutoTURN analysis demonstrates that a truck (WB-19 TAC-2017) can effectively maneuver through the study area.

6.2. Left Turn Storage Lane Warrant

The MTO Geometric Design Manual was consulted to determine whether a left turn storage lane was warranted at the site access, as there are relatively large advancing and opposing volumes. The graph used to determine whether a left turn storage lane was warranted or not is included in **Appendix E** and was selected based on design speed and the percent of left turns in the advancing volume for both A.M. and P.M. peak hours, respectively.

Based on the advancing and opposing volumes for both A.M. and P.M., a left turn lane is warranted. However, as the percent of vehicles making left turns during both A.M. and P.M. peak hours is less than five percent (5%) (i.e. 1.48% and 1.7% for the A.M. and P.M. peaks, respectively), it was determined that a left turn storage lane would not be warranted.

6.3. Sight Line Analysis

For the purpose of sight distance assessment, a design speed of 100 km/hr (unposted speed plus 20 km/hr) under stop control will be utilized. Sight distance requirements will be considered for passenger vehicles approaching the proposed site access. The criteria applied for vehicles approaching the intersection is stopping sight distance refer to TAC Figure 2.3.3.2, attached in **Appendix F**, Under the stopping sight distance assessment, the target height applied is 0.38m for vehicle taillights, and for intersection movements a top of car height of 1.3 m is applied. A driver eye height of 1.05 m is applied for all scenarios. A road grade of -1.14% has been applied from the North approach, and a road grade of 0.92% has been applied from the South approach along Dixie Road.

Required stopping distance, adjusted for effect of grade, is determined using the formula:

$$d = V^2 / 254(f +/- G)$$

Where:
 V = design speed
 f = Coefficient of friction (0.31) (TAC 1999, Table 1.2.5.2)

then: Stopping Sight Distance = 0.278tV + d

Where:
 t = perception / reaction time = 2.5s (TAC 1999, Table 1.2.5.3)
 G = the percent grade divided by 100

Stopping Sight Distance Along Dixie Road

Average G for North approach = -0.0114
 Average G for South approach = 0.0092

$$\text{Minimum sight distance for North approach} = [0.278 \times 2.5 \times 100] + [100^2 / 254 (0.31 + (-0.0114))]$$

$$= 201.35 \sim \mathbf{205 \text{ m}}$$

$$\text{Minimum sight distance for South approach} = [0.278 \times 2.5 \times 100] + [100^2 / 254 (0.31 + 0.0092)]$$

$$= 192.84 \sim \mathbf{195 \text{ m}}$$

Actual sight distances approaching the proposed site access via Dixie Road has been determined through on-site visit. The results at the proposed site access via Dixie Road are summarized in **Table 6.1**.

Table 6.1 – Stopping Sight Distance Assessment

Site Entrance	Movement	Stopping Sight Distance		
		Required	Achieved	Difference
North Approach	Left-Turn	205 m	400 m	+195 m
South Approach	Right-Turn	195 m	225 m	+30 m

The stopping sight distances for vehicles coming from both the North and South approaches are adequate, with a surplus distance of 195 m and 30 m, respectively. It is NexTrans' opinion that the existing access provides adequate sight lines.

7.0 CONCLUSION

The development proposal is to develop the 10.7 ha (107,000 m²) site to include a trucking facility. The site is currently occupied by an existing building and existing residential building with GFA's of approximately 1000 ft² (92.9 m²) and 2500 ft² (232.3 m²), respectively. Vehicular access to the subject site is proposed through one (1) full movement entrance located via Dixie Road.

The findings and conclusions of our analysis are as follows:

- Based on a proxy survey of a similar existing site, the proposed development is anticipated to generate 10 two-way trips (five (5) inbound and five (5) outbound) and 21 two-way trips (10 inbound and 11 outbound) during A.M. and P.M. peak hours, respectively.

Traffic Brief

- The subject study area intersection as well as the future site access will to operate at excellent levels of services with only minor changes over Future Total Traffic conditions. The study area intersections continue operating at LOS 'C' or better during the peak hour periods.
- AutoTURN software was used to generate vehicular turning template to confirm and demonstrate the accessibility of a truck (WB-19 TAC-2017) through the proposed study area/loading space.
- The MTO Geometric Design Manual was consulted to determine if a left turn storage lane was warranted, however, it was found that no left turn storage was required for this development.
- The TAC Design Guide was consulted to determine required stopping sight distances on Dixie Road for vehicles approaching the subject site. In addition, site surveys were conducted to determine achieved stopping sight distances and the results were compared to the required stopping sight distances. It was determined that the subject site has adequate stopping sight distances along Dixie Road.

The study concludes that the proposed development can adequately be accommodated by the existing transportation network with manageable traffic impact to the adjacent public roadways.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEXTRANS CONSULTING ENGINEERS

A Division of NextEng Consulting Group Inc.

Prepared by:



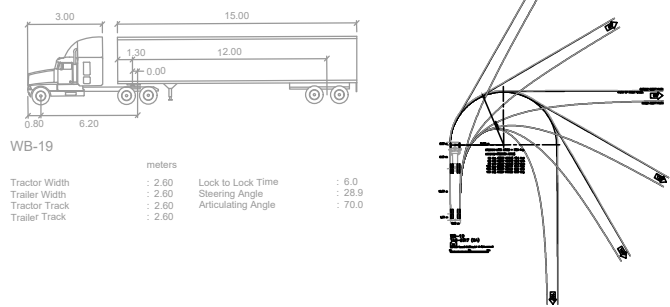
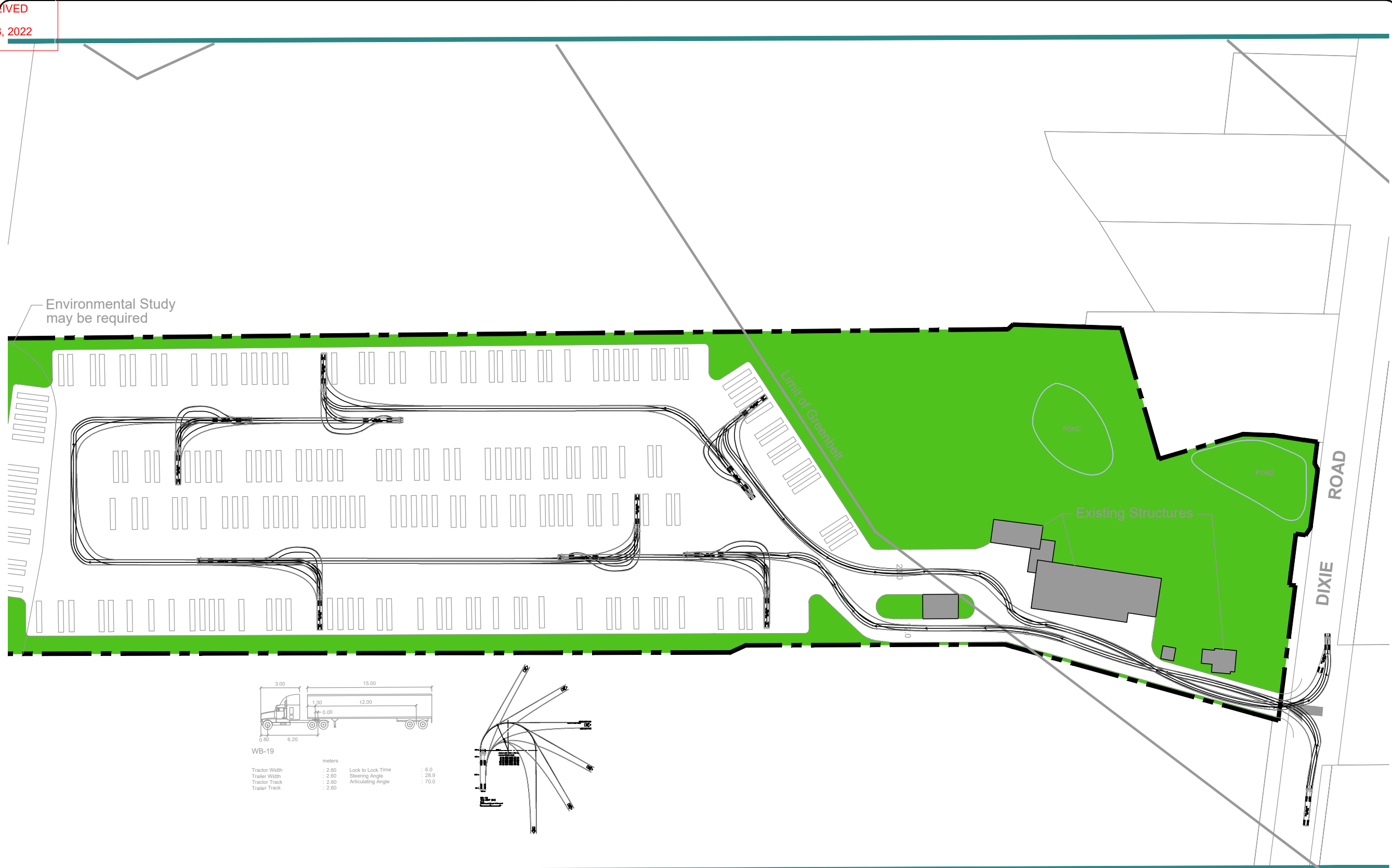
Kristian Aviles, B. Eng
Transportation Analyst

Approved by:

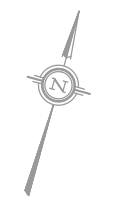


Richard Pernicky, MITE
Principal

TOWN OF CALEDON
 PLANNING
 RECEIVED
 Mar 18, 2022



— Subject Lands - 10.7 ha
 — Limit of Greenbelt



CONCEPTUAL TRANSPORT TRUCK / TRAILER PARKING
 12434 DIXIE ROAD
 Town of Caledon
 Regional Municipality of Peel

KEY PLAN

BENCHMARK

REVISIONS

NO	REVISION	DATE	BY

STAMP



PROJECT NAME:
TRANSPORT TRUCK/TRAILER PARKING FACILITY
 12434 DIXIE ROAD
 (TOWN OF CALEDON)

DRAWING TITLE:
AutoTURN Analysis (WB-19 TAC-2017)

DESIGN BY: A.S.	DATE: August 20, 2020
CHECKED BY: R.P.	PROJECT NO: NT-20-104
DRAWN BY: A.S.	DRAWING NO: Figure 6-1
SCALE: NTS	

Appendix A – Terms of Reference

520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8

Phone: 905-503-2563
www.nextrans.ca



NextEng Consulting Group Inc.

Terms of Reference

To: Dylan Prowse, Peel Region
From: Kristian Aviles, Transportation Analyst, Nextrans Consulting Engineers
Date: August 4, 2020
Re: 12434 Dixie Road, Transport Truck/ Trailer Parking Facility – TOR for Traffic Brief

These terms of reference have been prepared to outline (for the Town's and Region's review and approval) the intended scope of work for a Traffic Brief for a proposed transport truck/ trailer parking facility. The subject site is located along Dixie Road between Old School Road to the north and Spokane Street to the south, in the Town of Caledon.

Introduction

The report introduction will include:

1. Description of site location (along Dixie Road between Old School Road to the north and Spokane Street to the south)
2. Description of nature of application
3. Description of proposed development and land use
4. Proposed study area

Existing Traffic Assessment

The existing conditions within the study area will be summarized and documented. This will include, but not limited to:

- A description of key roads and intersections (lanes, speed limits)
- Identifying forms of traffic control, lane configurations, turning restrictions
- Noting the location of adjacent driveways and access points
- Identifying other traffic generators in the vicinity of the site

Historic turning movement counts will be requested from the Town / Region during the weekday AM (7am-9am) and weekday PM (3pm-6pm) peak periods at the following study area intersection:

- Dixie Road and Mayfield Road

Once traffic volumes have been collected, through volumes will be projected north to the site access location.

We understand that existing traffic volumes cannot be obtained due to the COVID-19 Pandemic, as counts do not represent typical conditions. However, would it be acceptable to obtain historic traffic data, and apply the appropriate growth rates to represent current conditions?

Future Background Traffic Assessment

Future Background consists of background growth and other background development traffic. Based on the Peel Region open data from years 1998 to 2017 a growth rate of 5% for NE and 4% for SW directions for the assumed full build-out year for the proposed development along with a 5-year time horizon period thereafter. As such, is it acceptable to use a growth rate of 4%?

We do understand that there is and may be further redevelopment applications, as such traffic generation associated with those developments will be included in our analysis to reflect our horizon year assessment.

Operational deficiencies as a result of future forecasted traffic volumes will be identified and mitigative measures will be proposed and documented in the final report.

Site Traffic Assessment

The weekday AM and PM peak hour traffic to be generated by the proposed development will be estimated based on information published in the *Trip Generation, 10th Edition*, by the Institute of Transportation Engineers (ITE), specifically LUC 030 Intermodal Truck Terminal.

The directional trip distribution and assignment for traffic approaching and departing the site will be determined based upon existing traffic patterns and Transportation Tomorrow Survey (TTS) 2016 data.

Future Total Traffic Assessment

Future total traffic consists of future background plus site traffic. Operational deficiencies as a result of site traffic will be identified and mitigative measures will be proposed and documented in the final report. We will develop and recommend appropriate intersection controls and geometric improvements for all key intersections as well as determine the appropriateness of the proposed site access location(s) and the lane requirements at these new locations.

Parking / On Site Circulation and Site Access Review

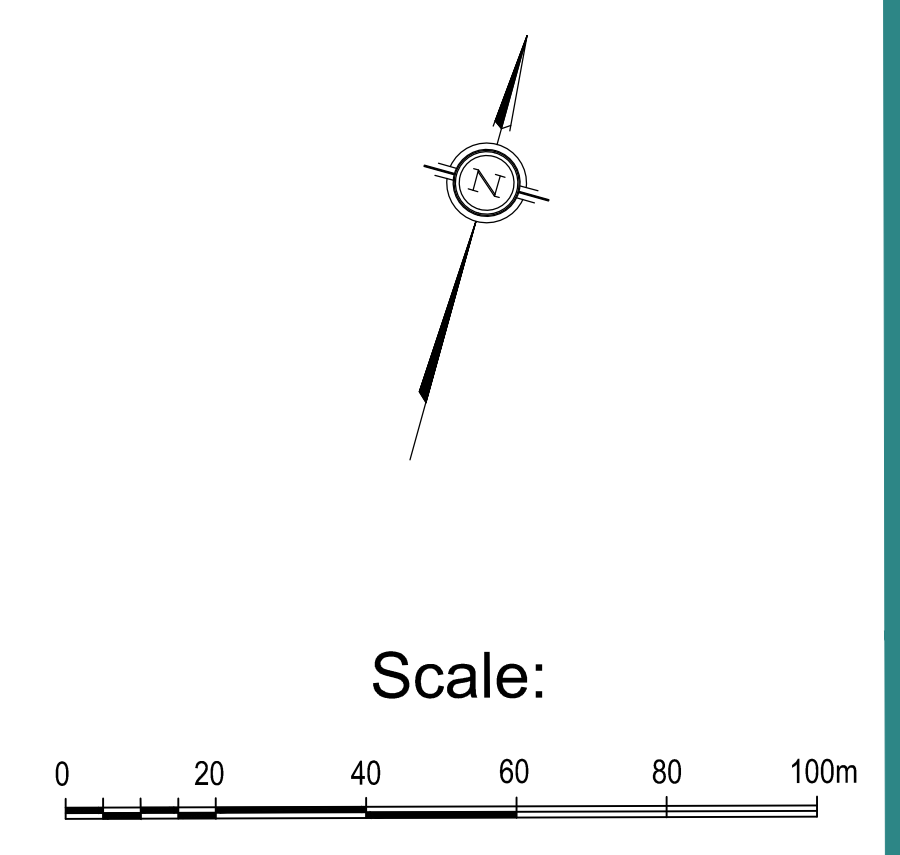
- Review the available parking to determine whether the proposed parking supply is sufficient to accommodate the parking demand of the proposed site and meets current by-law requirements.
- We will review and provide comment on the most recent site plan with respect to the functionality of the internal vehicular circulation to facilitate vehicle maneuvering, loading, servicing, parking and pick-up / drop-off activities.
- Using Auto TURN, we will confirm the turning radius requirements and site circulation for passenger and heavy vehicles.
- Determine the appropriateness of access location and ensure adequate connections to main corridors are provided.
- Assign appropriate internal signage to site plan.
- Sight distances in accordance with the TAC Manual to be prepared.

Appendix B – Preliminary Concept Plan



- Subject Lands - 10.7 ha
- Limit of Greenbelt
- Waterbody
- Wetland +30m
- Meanderbelt
- Meanderbelt +30m
- Staked Valleyland 10m Buffer
- Woodland 10m Buffer

Schedule of Land Use	
Gravel Parking Area	6.79 ha
Vegetation Groundcover	2.15 ha
Environmental Area	1.76 ha
Total Area	10.70 ha



CONCEPTUAL TRANSPORT TRUCK / TRAILER PARKING LAYOUT

12434 DIXIE ROAD
Town of Caledon
Regional Municipality of Peel

Date	Revision	By
Jan 6 / 21		

Prepared For:
MGP File: 19-2852



Appendix C – Existing Traffic Data

Turning Movement Count (88 . MAYFIELD RD & CONSERVATION / STONEGATE DRIVE) CustID: 00427526 MioID:

Start Time	Southbound						Westbound						Northbound						Eastbound						Int. Total (15 min)	
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total		
07:00:00	6	46	73	0	0	125	11	104	7	0	0	122	21	8	6	0	0	35	58	222	52	0	0	332	614	
07:15:00	6	60	104	0	0	170	10	105	6	0	0	121	23	14	2	0	0	39	58	259	72	0	0	389	719	
07:30:00	2	9	57	0	0	68	10	115	7	0	0	132	31	7	7	0	0	45	68	302	90	0	0	460	705	
07:45:00	4	22	56	0	0	82	18	163	3	0	0	184	27	12	11	0	0	50	50	412	94	0	0	556	872	
Hourly	18	137	290	0	0	445	49	487	23	0	0	559	102	41	26	0	0	169	234	1195	308	0	0	1737	2910	
08:00:00	10	21	39	0	0	70	22	152	2	0	0	176	40	13	11	0	0	64	61	299	108	0	0	468	778	
08:15:00	3	19	44	0	0	66	6	119	1	0	0	126	27	17	9	0	0	53	60	265	89	0	0	414	659	
08:30:00	3	14	50	0	0	67	6	92	7	0	0	105	46	13	5	0	0	64	47	266	65	0	0	378	614	
08:45:00	3	22	40	0	1	65	7	113	5	0	0	125	32	17	3	0	1	52	57	234	76	0	1	367	609	
Hourly	19	76	173	0	1	268	41	476	15	0	0	532	145	60	28	0	1	233	225	1064	338	0	1	1627	2660	
BREAK																										
11:00:00	4	14	59	0	0	77	8	112	2	0	0	122	14	9	6	0	0	29	37	131	26	1	0	195	423	
11:15:00	4	17	48	0	0	69	5	152	7	0	0	164	16	9	5	0	0	30	47	144	26	0	0	217	480	
11:30:00	6	15	39	0	0	60	2	95	4	0	0	101	29	16	11	0	0	56	46	140	26	0	0	212	429	
11:45:00	5	13	47	0	1	65	8	109	4	0	0	121	24	10	9	0	0	43	27	137	34	0	0	198	427	
Hourly	19	59	193	0	1	271	23	488	17	0	0	508	83	44	31	0	0	158	157	552	112	1	0	822	1759	
12:00:00	3	18	52	0	0	73	8	130	3	0	0	141	21	16	9	0	0	46	41	149	30	0	0	220	480	
12:15:00	3	25	73	0	1	101	13	128	2	0	0	143	31	6	6	0	1	43	46	158	26	0	0	230	517	
12:30:00	5	12	47	0	0	64	2	128	4	0	0	134	27	15	10	0	0	52	56	148	23	0	0	227	477	
12:45:00	3	13	53	0	0	69	8	117	5	0	0	130	10	14	7	0	0	31	45	156	26	0	0	227	457	
Hourly	14	68	225	0	1	307	31	503	14	0	0	548	89	51	32	0	1	172	188	611	105	0	0	904	1931	
13:00:00	8	23	63	0	0	94	2	107	1	0	0	110	18	11	8	0	0	37	56	151	29	0	0	236	477	
13:15:00	7	24	68	0	0	99	7	125	2	0	0	134	22	12	4	0	0	38	46	156	42	0	0	244	515	
13:30:00	8	16	69	0	0	93	3	126	3	0	0	132	20	13	7	0	0	40	55	159	32	1	0	247	512	
13:45:00	6	19	69	0	0	94	4	132	7	0	0	143	17	13	9	0	0	39	50	166	32	0	1	248	524	
Hourly	29	82	269	0	0	380	16	490	13	0	0	519	77	49	28	0	0	154	207	632	135	1	1	975	2028	
BREAK																										
15:00:00	6	17	70	0	0	93	9	219	6	0	0	234	49	22	11	0	0	82	67	152	51	0	0	270	679	
15:15:00	0	9	54	0	0	63	15	182	3	0	0	200	54	39	11	0	1	104	83	234	37	0	0	354	721	
15:30:00	3	19	75	0	0	97	0	190	2	0	0	192	82	45	11	0	0	138	67	179	50	0	0	296	723	
15:45:00	4	18	58	0	0	80	11	214	2	0	0	227	52	33	3	0	0	88	74	193	49	0	0	316	711	
Hourly	13	63	257	0	0	333	35	805	13	0	0	853	237	139	36	0	1	412	291	758	187	0	0	1236	2834	
16:00:00	6	46	66	0	0	118	10	171	6	0	0	187	70	59	10	0	0	139	79	209	57	0	0	345	789	
16:15:00	6	60	88	0	0	154	10	270	5	0	0	285	69	38	11	0	0	118	58	234	48	0	0	340	897	
16:30:00	6	73	78	0	0	157	18	233	4	0	0	255	80	57	8	0	0	145	70	212	49	1	0	332	889	
16:45:00	12	76	63	0	0	151	7	267	5	0	0	279	66	30	7	0	0	103	70	228	44	0	0	342	875	
Hourly	30	255	295	0	0	580	45	941	20	0	0	1006	285	184	36	0	0	505	277	883	198	1	0	1359	3450	
17:00:00	12	60	64	0	0	136	8	226	6	0	0	240	74	45	7	0	0	126	64	208	45	0	0	317	819	
17:15:00	12	41	56	0	0	109	8	262	7	0	0	277	55	27	19	0	0	101	73	197	42	0	0	312	799	
17:30:00	2	57	41	0	0	100	9	222	4	0	0	235	75	38	6	0	0	119	68	185	53	1	0	307	761	
17:45:00	3	30	47	0	0	80	12	238	7	0	0	257	50	34	12	0	0	96	63	201	50	1	0	315	748	
Hourly	29	188	208	0	0	425	37	948	24	0	0	1009	254	144	44	0	0	442	268	791	190	2	0	1251	3127	
Grand Total	171	928	1910	0	3	3009	277	5118	139	0	0	5534	1272	712	261	0	3	2245	1847	6486	1573	5	2	9911	20699	
Approach%	5.7%	30.8%	63.5%	0%	-	-	5%	92.5%	2.5%	0%	-	56.7%	31.7%	11.6%	0%	-	-	18.6%	65.4%	15.9%	0.1%	-	-	-	-	
Totals %	0.8%	4.5%	9.2%	0%	14.5%	1.3%	24.7%	0.7%	0%	26.7%	6.1%	3.4%	1.3%	0%	10.8%	8.9%	31.3%	7.6%	0%	47.9%	-	-	-	-		



Turning Movement Count
 Location Name: MAYFIELD RD & CONSERVATION / STONEGATE DRIVE
 Date: Thu, Oct 03, 2019 Deployment Lead: Patrick Filopoulos

Heavy	20	70	154	0	-	34	672	25	0	-	35	30	22	0	-	190	787	46	0	-	-
Heavy %	11.7%	7.5%	8.1%	0%	-	12.3%	13.1%	18%	0%	-	2.6%	4.2%	8.4%	0%	-	10.3%	12.1%	2.9%	0%	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 07:00 AM - 08:00 AM Weather: Moderate Rain (9.08 °C)

Start Time	Southbound						Westbound						Northbound						Eastbound						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
07:00:00	6	46	73	0	0	125	11	104	7	0	0	122	21	8	6	0	0	35	58	222	52	0	0	332	614
07:15:00	6	60	104	0	0	170	10	105	6	0	0	121	23	14	2	0	0	39	58	259	72	0	0	389	719
07:30:00	2	9	57	0	0	68	10	115	7	0	0	132	31	7	7	0	0	45	68	302	90	0	0	460	705
07:45:00	4	22	56	0	0	82	18	163	3	0	0	184	27	12	11	0	0	50	50	412	94	0	0	556	872
Grand Total	18	137	290	0	0	445	49	487	23	0	0	559	102	41	26	0	0	169	234	1195	308	0	0	1737	2910
Approach%	4%	30.8%	65.2%	0%		-	8.8%	87.1%	4.1%	0%		-	60.4%	24.3%	15.4%	0%		-	13.5%	68.8%	17.7%	0%		-	-
Totals %	0.6%	4.7%	10%	0%		15.3%	1.7%	16.7%	0.8%	0%		19.2%	3.5%	1.4%	0.9%	0%		5.8%	8%	41.1%	10.6%	0%		59.7%	-
PHF	0.75	0.57	0.7	0		0.65	0.68	0.75	0.82	0		0.76	0.82	0.73	0.59	0		0.85	0.86	0.73	0.82	0		0.78	-
Heavy	2	9	26	0		37	6	93	7	0		106	4	5	2	0		11	28	82	11	0		121	-
Heavy %	11.1%	6.6%	9%	0%		8.3%	12.2%	19.1%	30.4%	0%		19%	3.9%	12.2%	7.7%	0%		6.5%	12%	6.9%	3.6%	0%		7%	-
Lights	16	128	264	0		408	43	394	16	0		453	98	36	24	0		158	206	1113	297	0		1616	-
Lights %	88.9%	93.4%	91%	0%		91.7%	87.8%	80.9%	69.6%	0%		81%	96.1%	87.8%	92.3%	0%		93.5%	88%	93.1%	96.4%	0%		93%	-
Single-Unit Trucks	2	5	20	0		27	0	43	2	0		45	3	3	0	0		6	20	23	5	0		48	-
Single-Unit Trucks %	11.1%	3.6%	6.9%	0%		6.1%	0%	8.8%	8.7%	0%		8.1%	2.9%	7.3%	0%	0%		3.6%	8.5%	1.9%	1.6%	0%		2.8%	-
Buses	0	2	2	0		4	5	20	4	0		29	1	2	2	0		5	2	29	4	0		35	-
Buses %	0%	1.5%	0.7%	0%		0.9%	10.2%	4.1%	17.4%	0%		5.2%	1%	4.9%	7.7%	0%		3%	0.9%	2.4%	1.3%	0%		2%	-
Articulated Trucks	0	2	4	0		6	1	30	1	0		32	0	0	0	0		0	6	30	2	0		38	-
Articulated Trucks %	0%	1.5%	1.4%	0%		1.3%	2%	6.2%	4.3%	0%		5.7%	0%	0%	0%	0%		0%	2.6%	2.5%	0.6%	0%		2.2%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



Turning Movement Count
Location Name: MAYFIELD RD & CONSERVATION / STONEGATE DRIVE
Date: Thu, Oct 03, 2019 Deployment Lead: Patrick Filopoulos

Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (9.06 °C)

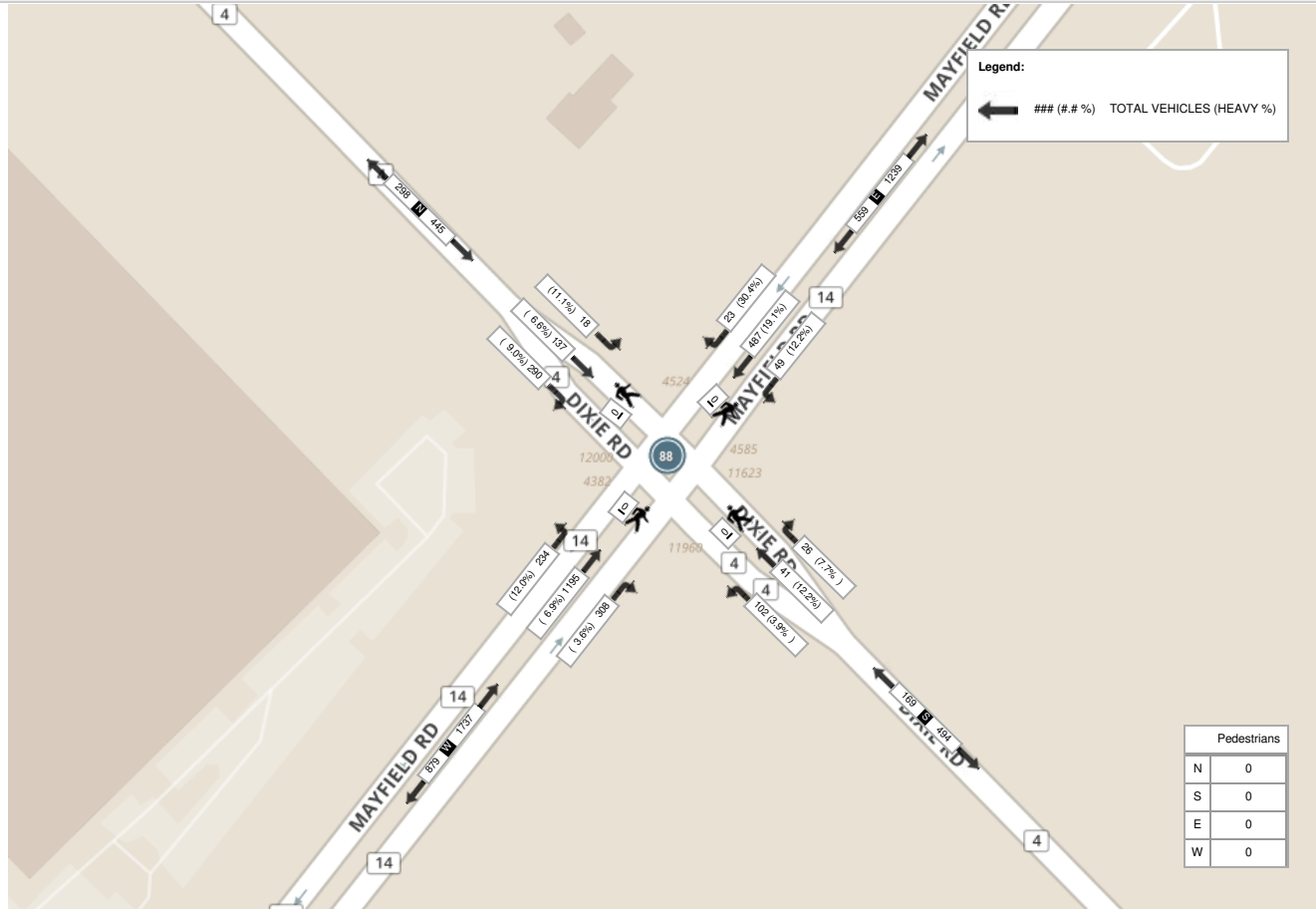
Start Time	Southbound						Westbound						Northbound						Eastbound						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
13:00:00	8	23	63	0	0	94	2	107	1	0	0	110	18	11	8	0	0	37	56	151	29	0	0	236	477
13:15:00	7	24	68	0	0	99	7	125	2	0	0	134	22	12	4	0	0	38	46	156	42	0	0	244	515
13:30:00	8	16	69	0	0	93	3	126	3	0	0	132	20	13	7	0	0	40	55	159	32	1	0	247	512
13:45:00	6	19	69	0	0	94	4	132	7	0	0	143	17	13	9	0	0	39	50	166	32	0	1	248	524
Grand Total	29	82	269	0	0	380	16	490	13	0	0	519	77	49	28	0	0	154	207	632	135	1	1	975	2028
Approach%	7.6%	21.6%	70.8%	0%		-	3.1%	94.4%	2.5%	0%		-	50%	31.8%	18.2%	0%		-	21.2%	64.8%	13.8%	0.1%		-	-
Totals %	1.4%	4%	13.3%	0%		18.7%	0.8%	24.2%	0.6%	0%		25.6%	3.8%	2.4%	1.4%	0%		7.6%	10.2%	31.2%	6.7%	0%		48.1%	-
PHF	0.91	0.85	0.97	0		0.96	0.57	0.93	0.46	0		0.91	0.88	0.94	0.78	0		0.96	0.92	0.95	0.8	0.25		0.98	-
Heavy	5	6	24	0		35	3	103	2	0		108	1	4	7	0		12	31	120	5	0		156	-
Heavy %	17.2%	7.3%	8.9%	0%		9.2%	18.8%	21%	15.4%	0%		20.8%	1.3%	8.2%	25%	0%		7.8%	15%	19%	3.7%	0%		16%	-
Lights	24	76	245	0		345	13	387	11	0		411	76	45	21	0		142	176	512	130	1		819	-
Lights %	82.8%	92.7%	91.1%	0%		90.8%	81.3%	79%	84.6%	0%		79.2%	98.7%	91.8%	75%	0%		92.2%	85%	81%	96.3%	100%		84%	-
Single-Unit Trucks	4	4	21	0		29	2	59	0	0		61	1	3	5	0		9	21	54	3	0		78	-
Single-Unit Trucks %	13.8%	4.9%	7.8%	0%		7.6%	12.5%	12%	0%	0%		11.8%	1.3%	6.1%	17.9%	0%		5.8%	10.1%	8.5%	2.2%	0%		8%	-
Buses	1	2	3	0		6	1	14	1	0		16	0	1	0	0		1	0	4	2	0		6	-
Buses %	3.4%	2.4%	1.1%	0%		1.6%	6.3%	2.9%	7.7%	0%		3.1%	0%	2%	0%	0%		0.6%	0%	0.6%	1.5%	0%		0.6%	-
Articulated Trucks	0	0	0	0		0	0	30	1	0		31	0	0	2	0		2	10	62	0	0		72	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	6.1%	7.7%	0%		6%	0%	0%	7.1%	0%		1.3%	4.8%	9.8%	0%	0%		7.4%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	100%	-	-



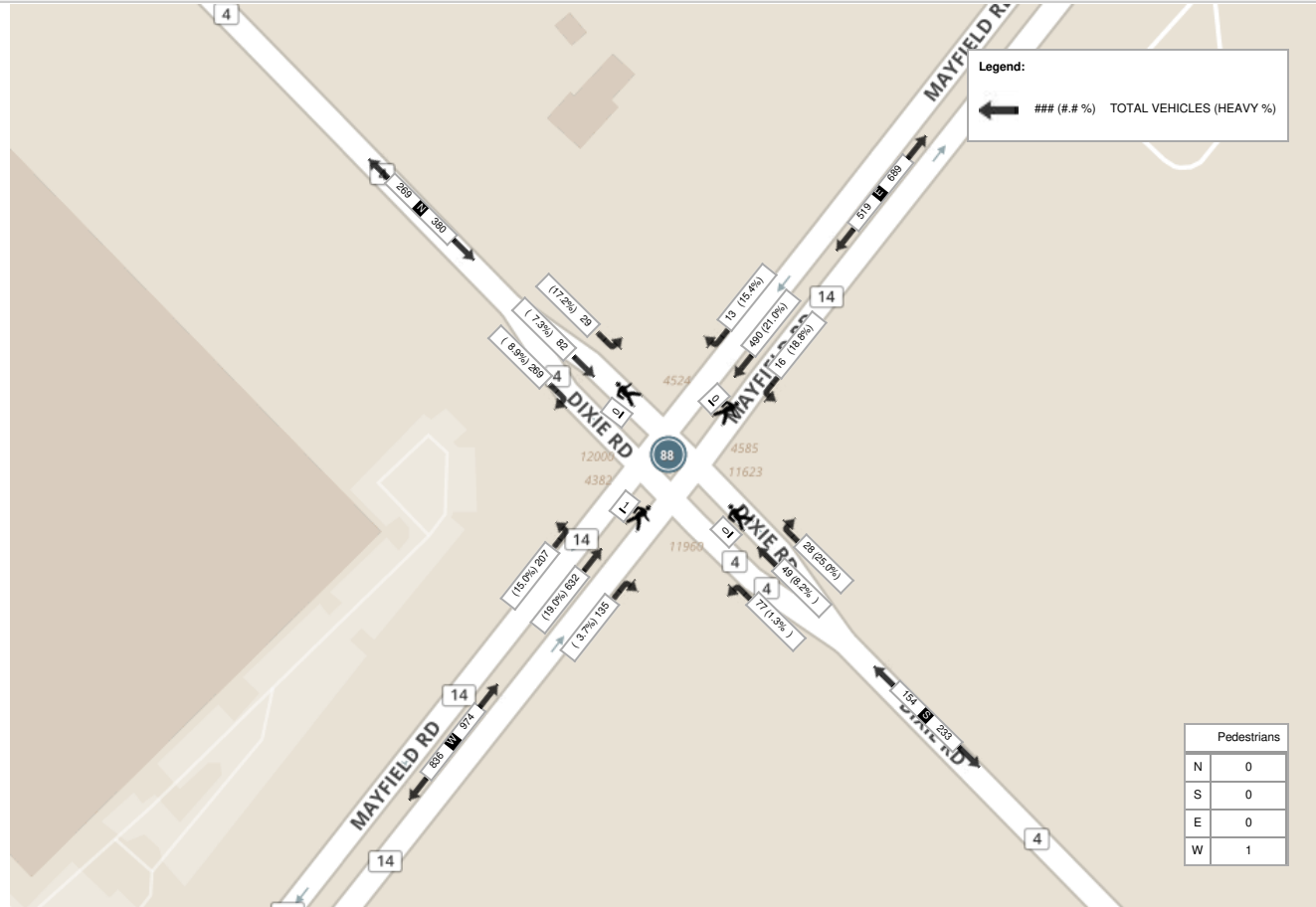
Peak Hour: 04:00 PM - 05:00 PM Weather: Light Rain (10.54 °C)

Start Time	Southbound						Westbound						Northbound						Eastbound						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
16:00:00	6	46	66	0	0	118	10	171	6	0	0	187	70	59	10	0	0	139	79	209	57	0	0	345	789
16:15:00	6	60	88	0	0	154	10	270	5	0	0	285	69	38	11	0	0	118	58	234	48	0	0	340	897
16:30:00	6	73	78	0	0	157	18	233	4	0	0	255	80	57	8	0	0	145	70	212	49	1	0	332	889
16:45:00	12	76	63	0	0	151	7	267	5	0	0	279	66	30	7	0	0	103	70	228	44	0	0	342	875
Grand Total	30	255	295	0	0	580	45	941	20	0	0	1006	285	184	36	0	0	505	277	883	198	1	0	1359	3450
Approach%	5.2%	44%	50.9%	0%		-	4.5%	93.5%	2%	0%		-	56.4%	36.4%	7.1%	0%		-	20.4%	65%	14.6%	0.1%		-	-
Totals %	0.9%	7.4%	8.6%	0%		16.8%	1.3%	27.3%	0.6%	0%		29.2%	8.3%	5.3%	1%	0%		14.6%	8%	25.6%	5.7%	0%		39.4%	-
PHF	0.63	0.84	0.84	0		0.92	0.63	0.87	0.83	0		0.88	0.89	0.78	0.82	0		0.87	0.88	0.94	0.87	0.25		0.98	-
Heavy	3	12	10	0		25	14	64	1	0		79	7	1	1	0		9	12	105	4	0		121	-
Heavy %	10%	4.7%	3.4%	0%		4.3%	31.1%	6.8%	5%	0%		7.9%	2.5%	0.5%	2.8%	0%		1.8%	4.3%	11.9%	2%	0%		8.9%	-
Lights	27	243	285	0		555	31	877	19	0		927	278	183	35	0		496	265	778	194	1		1238	-
Lights %	90%	95.3%	96.6%	0%		95.7%	68.9%	93.2%	95%	0%		92.1%	97.5%	99.5%	97.2%	0%		98.2%	95.7%	88.1%	98%	100%		91.1%	-
Single-Unit Trucks	2	8	10	0		20	12	30	0	0		42	2	0	0	0		2	10	29	0	0		39	-
Single-Unit Trucks %	6.7%	3.1%	3.4%	0%		3.4%	26.7%	3.2%	0%	0%		4.2%	0.7%	0%	0%	0%		0.4%	3.6%	3.3%	0%	0%		2.9%	-
Buses	1	3	0	0		4	0	8	1	0		9	4	1	1	0		6	0	21	4	0		25	-
Buses %	3.3%	1.2%	0%	0%		0.7%	0%	0.9%	5%	0%		0.9%	1.4%	0.5%	2.8%	0%		1.2%	0%	2.4%	2%	0%		1.8%	-
Articulated Trucks	0	1	0	0		1	2	26	0	0		28	1	0	0	0		1	2	55	0	0		57	-
Articulated Trucks %	0%	0.4%	0%	0%		0.2%	4.4%	2.8%	0%	0%		2.8%	0.4%	0%	0%	0%		0.2%	0.7%	6.2%	0%	0%		4.2%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians %	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

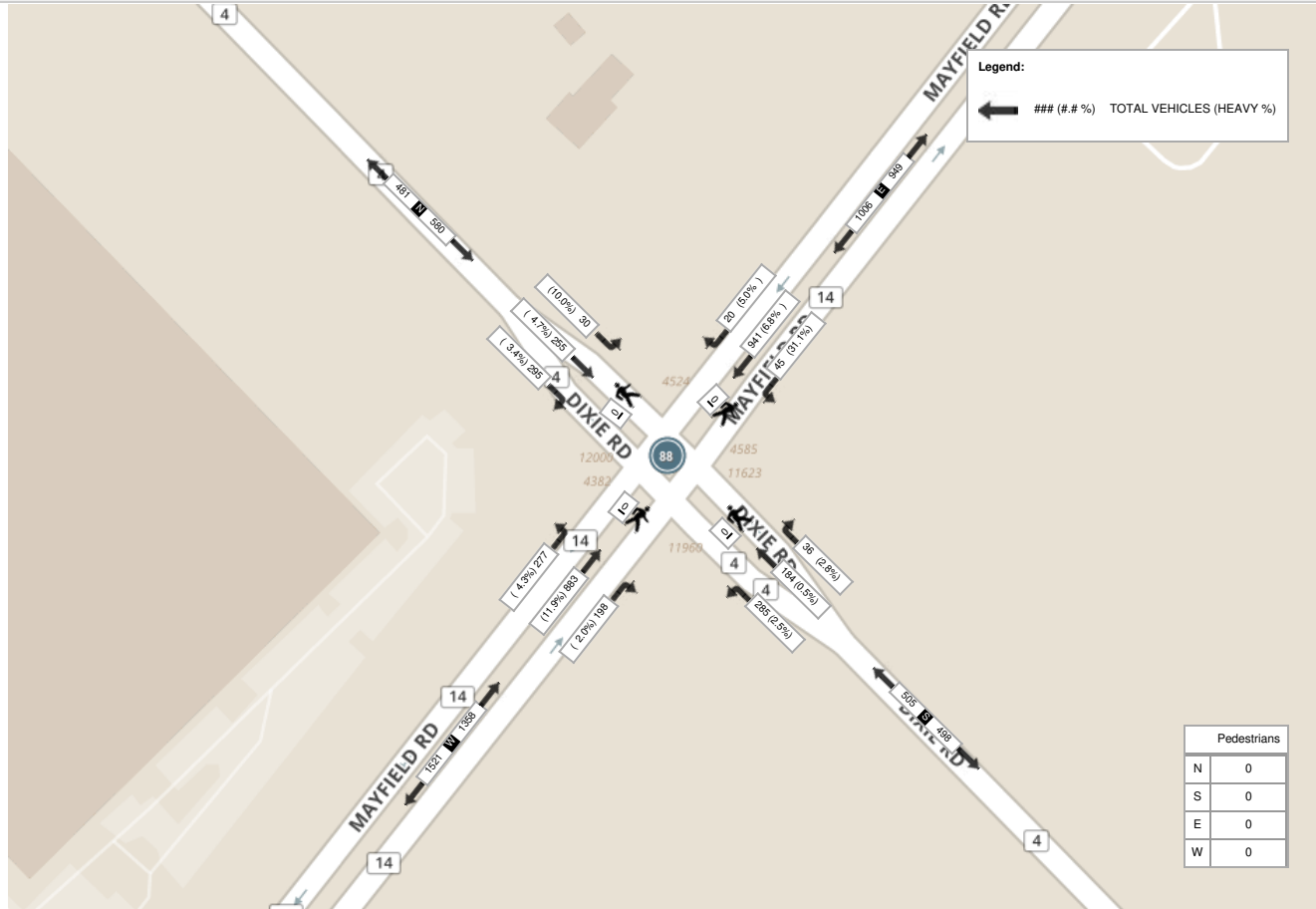
Peak Hour: 07:00 AM - 08:00 AM Weather: Moderate Rain (9.08 °C)



Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (9.06 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Light Rain (10.54 °C)



Appendix D – Future Total Traffic Assessment

ICM Unsignalized Intersection Capacity Analysis
 3: Dixie Road & Site Access

08/24/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	11	399	596	10
Future Volume (Veh/h)	5	5	11	399	596	10
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)	5	5	12	434	648	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1112	654	659			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1112	654	659			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	230	471	939			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	10	446	659			
Volume Left	5	12	0			
Volume Right	5	0	11			
cSH	309	939	1700			
Volume to Capacity	0.03	0.01	0.39			
Queue Length 95th (m)	0.8	0.3	0.0			
Control Delay (s)	17.0	0.4	0.0			
Lane LOS	C	A				
Approach Delay (s)	17.0	0.4	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			42.0%	ICU Level of Service		A
Analysis Period (min)			15			

ICM Unsignalized Intersection Capacity Analysis
 3: Dixie Road & Site Access

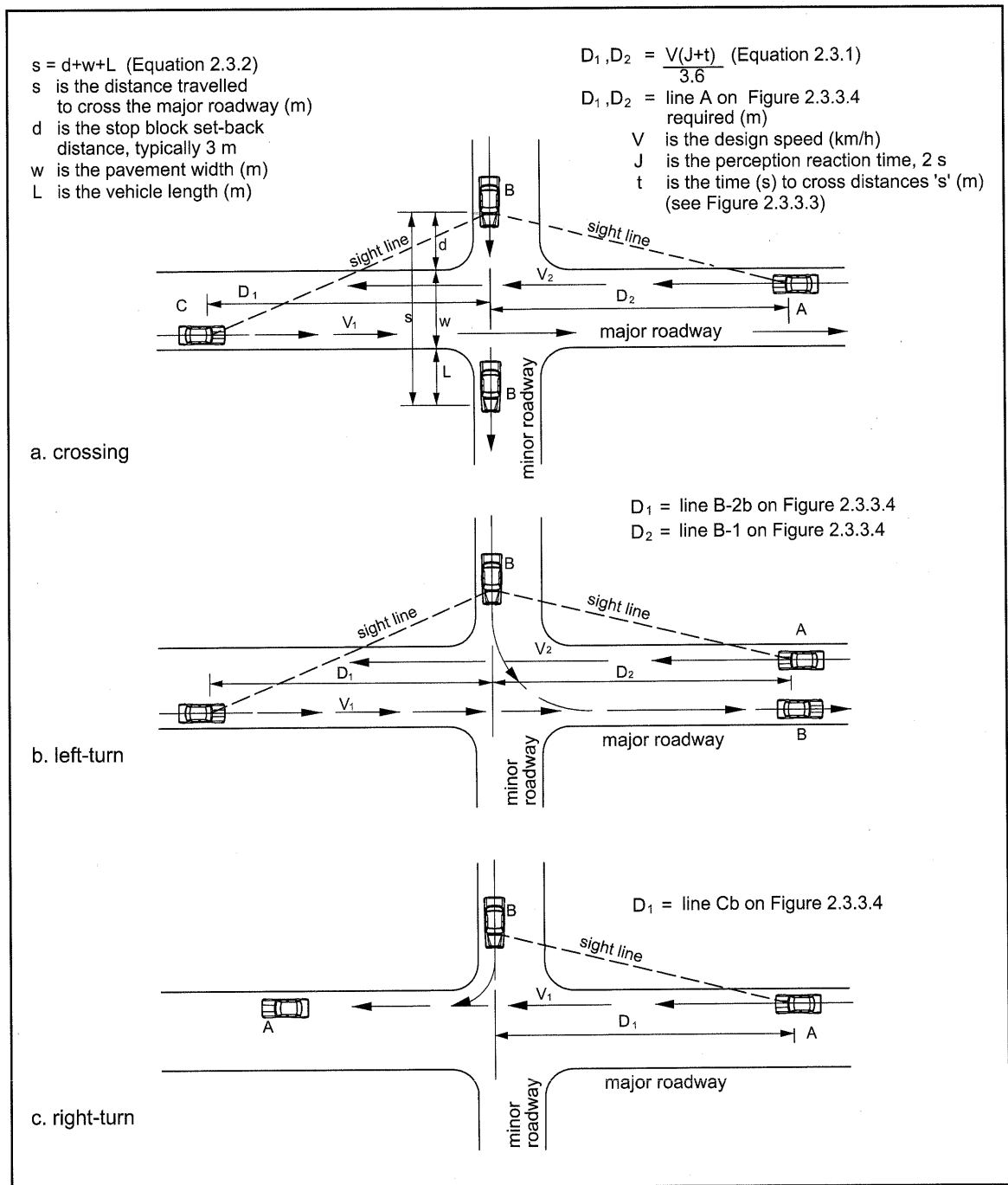
08/24/2020



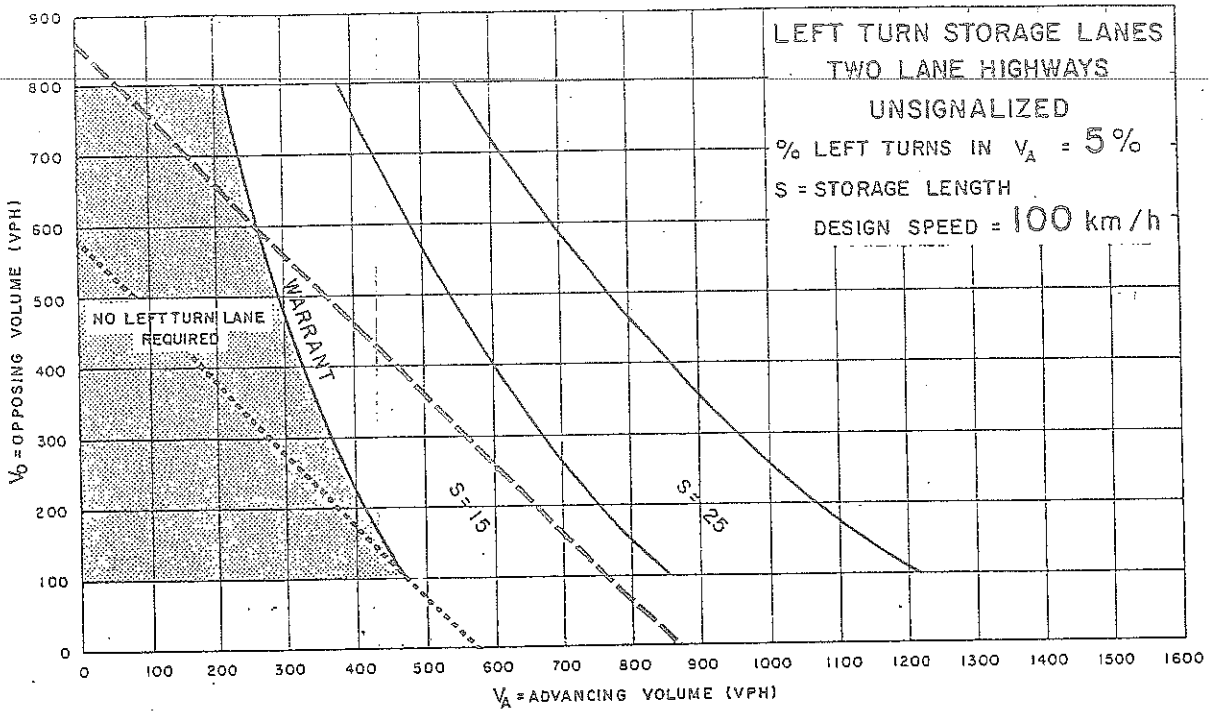
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	6	12	645	777	10
Future Volume (Veh/h)	4	6	12	645	777	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	7	13	701	845	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1578	850	856			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1578	850	856			
tC, single (s)	6.4	6.2	5.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	3.1			
p0 queue free %	97	98	97			
cM capacity (veh/h)	119	363	488			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	11	714	856			
Volume Left	4	13	0			
Volume Right	7	0	11			
cSH	207	488	1700			
Volume to Capacity	0.05	0.03	0.50			
Queue Length 95th (m)	1.3	0.7	0.0			
Control Delay (s)	23.3	0.8	0.0			
Lane LOS	C	A				
Approach Delay (s)	23.3	0.8	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			53.6%	ICU Level of Service	A	
Analysis Period (min)			15			

Appendix E – Left Turn Storage Lane Warrant

Figure 2.3.3.2 Departure Sight Triangles



Appendix F – TAC Figure 2.3.3.2



--- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

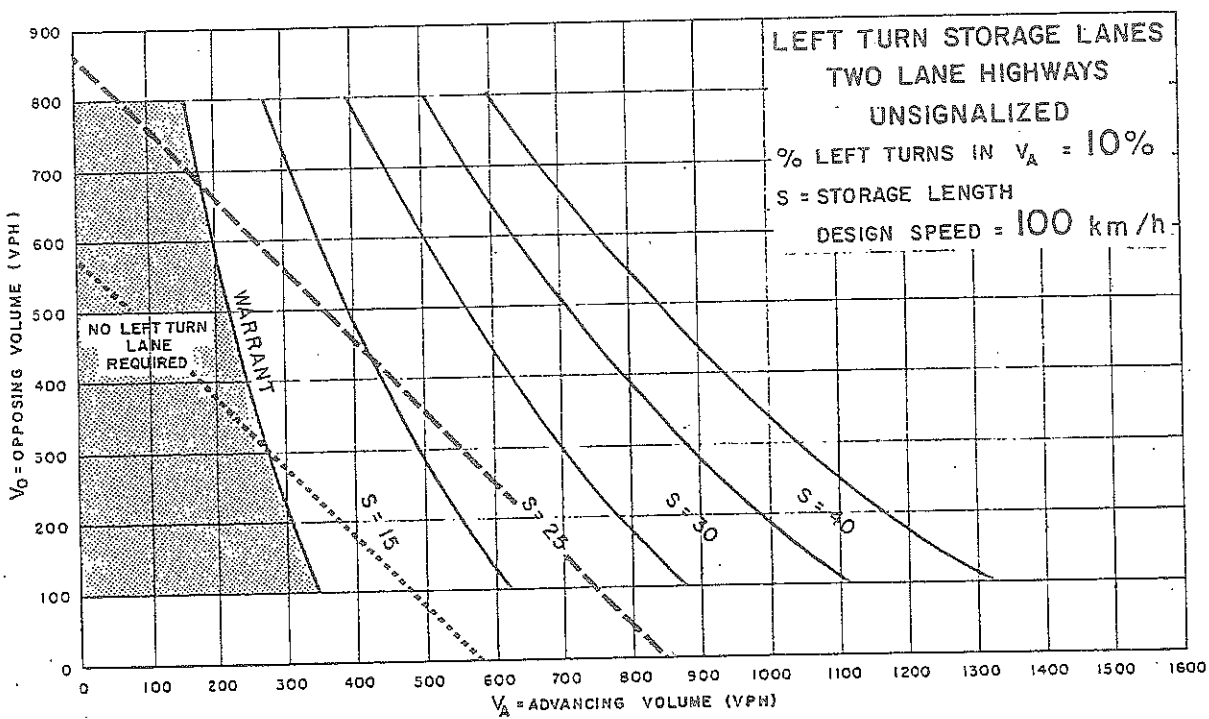


Figure EA-22