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Transportation Impact Study

PROPOSED TRANSPORTATION TERMINAL/TRAILER PARKING FACILITY DEVELOPMENT

5961 County Road 34
Township of South Glengarry, United Counties of Stormont-Dundas-Glengarry, Ontario

November 20, 2024
Project No: NT-23-206

520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8
Phone: 905-503-2563
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nexTrans CONSULTING ENGINEERS
NextEng Consulting Group Inc.

November 20, 2024

1733286 Ontario Inc.
1221 North Service Road East
Oakville, ON L6H 1A7

Attention: **Ken Gill**

Re: **Transportation Impact Study**
Proposed Transportation Terminal/Trailer Parkinng Facility Development
5961 County Road 34, Township of South Glengarry
Our Project No. NT-23-206

NexTrans Consulting Engineers (a Division of NextEng Consulting Group Inc.) is pleased to present the enclosed Transportation Impact Study for the above noted site in support of Official Plan and Zoning By-law Amendment Applications for a proposed transportation terminal/trailer parking facility development.

The subject lands are located south of Concession Road 1 and east of County Road 34 and are municipally addressed as 5961 County Road 34, in the Township of South Glengarry, United Counties of Stormont-Dundas-Glengarry, Ontario. The existing subject lands will be redeveloped to construct a transportation terminal with 270m^2 GFA and associated repair bay with 312m^2 GFA. A total of 139 truck/trailer parking spaces will be provided on-site, as well as 11 automobile parking spaces. Vehicular access is envisioned via a full movement driveway onto County Road 34.

The results of the capacity analysis indicate that the proposed development will have a negligible traffic impact to the surrounding road network. 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

Prepared by:

Kristian Aviles

Kristian Aviles, B.Eng.
Transportation Analyst

Approved by:

Richard Pernicky, MITE
Principal

Issues and Revisions Registry

Identification	Date	Description of issued and/or revision
Final Report	November 20, 2024	For first submission

EXECUTIVE SUMMARY

NexTrans Consulting Engineers (a Division of NextEng Consulting Group Inc.) is pleased to present the enclosed Transportation Impact Study for the above noted site in support of Official Plan and Zoning By-law Amendment Applications for a proposed transportation terminal/trailer parking facility development.

Development Proposal

The subject lands are located south of Concession Road 1 and east of County Road 34 and are municipally addressed as 5961 County Road 34, in the Township of South Glengarry, United Counties of Stormont-Dundas-Glengarry, Ontario. The existing subject lands will be redeveloped to construct a transportation terminal with 270m^2 GFA and associated repair bay with 312m^2 GFA. A total of 139 truck/trailer parking spaces will be provided on-site, as well as 11 automobile parking spaces. Vehicular access is envisioned via a full movement driveway onto County Road 34.

Capacity Analysis

Based on the trip generation calculations, the proposed development is projected to generate a total of 18 two-way trips during AM peak hour (nine (9) inbound and nine (9) outbound) and 49 two-way trips during PM peak hour (27 inbound and 22 outbound).

Under future total traffic conditions, all movements of the study area intersection analyzed, as well as the proposed site access onto County Road 34 are projected to operate with residual capacity, with excellent levels of service, and with manageable delay and queue lengths during both AM and PM peak hour.

Parking Review

Based on the rates prescribed in the governing zoning by-law for the proposed land use, the proposed development requires a minimum of 11 vehicle parking spaces. In comparison to the supply of 11 vehicle parking spaces proposed on-site, the proposed parking supply is compliant with the minimum requirements of the governing zoning by-law.

Vehicular Maneuverability Review

Given the proposed land use of transportation terminal/truck parking facility, the vehicle template for a WB-20 (TAC-2017) truck + trailer was used to confirm the maneuverability of the study and the swept path analysis demonstrates that the design vehicle can maneuver through the site unencumbered.

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APPENDICES

1.0 INTRODUCTION

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by 1733286 Ontario Inc. (the 'Client') to undertake a Transportation Impact Study in support of Official Plan and Zoning By-law Amendment applications for a proposed transportation terminal/trailer parking facility development.

The subject lands are located south of Concession Road 1 and east of County Road 34, municipally addressed as 5961 County Road 34 in the Township of South Glengarry, United Counties of Stormont-Dundas-Glengarry, Ontario. The location of the proposed development is illustrated in **Figure 1**.

Figure 1-1 – Subject Site Location

The development proposal is to redevelop the existing subject lands to construct a transportation terminal with 270m^2 GFA and associated repair bay with 312m^2 GFA. A total of 139 truck/trailer parking spaces will be provided on-site, as well as 11 automobile parking spaces. Vehicular access is envisioned via a full movement driveway onto County Road 34.

The proposed site plan is illustrated in **Figure 1-2** and provided in full detail in **Appendix A**.

Figure 1-2 – Proposed Site Plan

1.1. Study Approach

The weekday morning (AM) and weekday afternoon (PM) peak traffic periods were assessed. A baseline year of 2024 was considered for baseline conditions. For the purposes of this study, a five (5)-year horizon from baseline was assessed for a horizon year of 2029.

It is to be noted that a terms of reference was provided to the United Counties of Stormont-Dundas-Glengarry; however, no response was received within the timeline that this report was prepared. The terms of reference is enclosed in **Appendix B**.

2.0 EXISTING TRAFFIC CONDITIONS

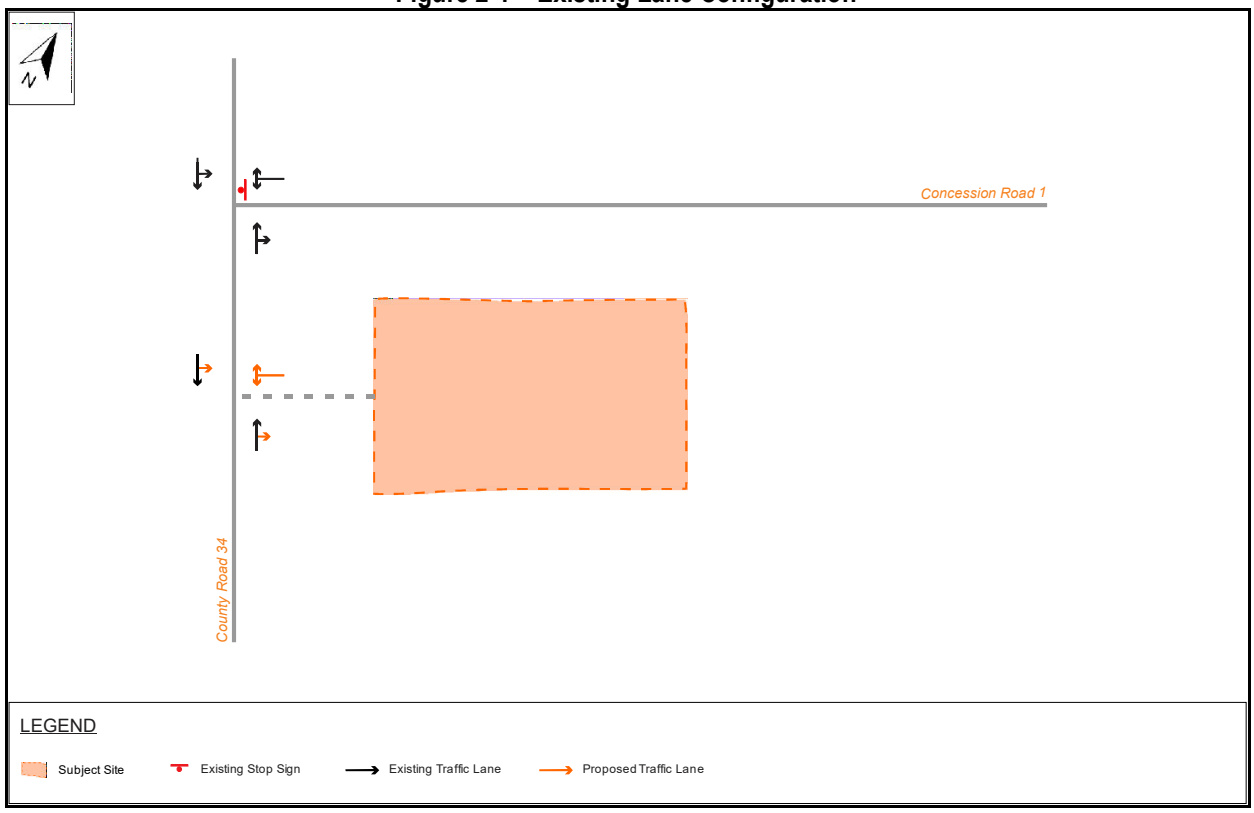
2.1. Existing Road Network

The existing road network, lane configuration and existing traffic control for the study area are described below.

- **County Road 34** is a north-south arterial road that is governed by the United Counties of Stormont-Dundas-Glengarry. County Road 34 operates with a two (2)-lane cross section (one (1)-travel lane per direction) in the vicinity of the study area, and maintains a posted speed limit of 80 km/h.
- **Concession Road 1** is an east-west arterial road. Peterborough County Road 36 operates with a two (2)-lane cross section (one (1)-travel lane per direction) in the vicinity of the study area. It generally maintains a posted speed limit of 50 km/h.

Existing road network lane configurations are illustrated in **Figure 2-1**.

Figure 2-1 – Existing Lane Configuration



2.2. Existing Active Transportation Network

Sidewalks

Currently, there are no sidewalks available within the comfortable walking distance from the subject site.

Cycling

Currently, there are no cycling facilities available within the surrounding area of the subject site.

2.3. Existing Transit Facilities

Currently, there are no existing transit facilities available within the surrounding area of the subject site.

2.4. Existing Traffic Volumes

Weekday morning and afternoon peak period turning movement counts (TMC) were undertaken by Spectrum Traffic for the study area intersection during the weekday AM and PM peak periods. TMC data is enclosed **Appendix C**. A summary of traffic data collection is provided in **Table 2.1**.

Table 2.1: Traffic Data Collection Summary

Intersection	Source	Survey Date
County Road 34 & Concession Road 1	Spectrum Traffic Inc.	December 6, 2023

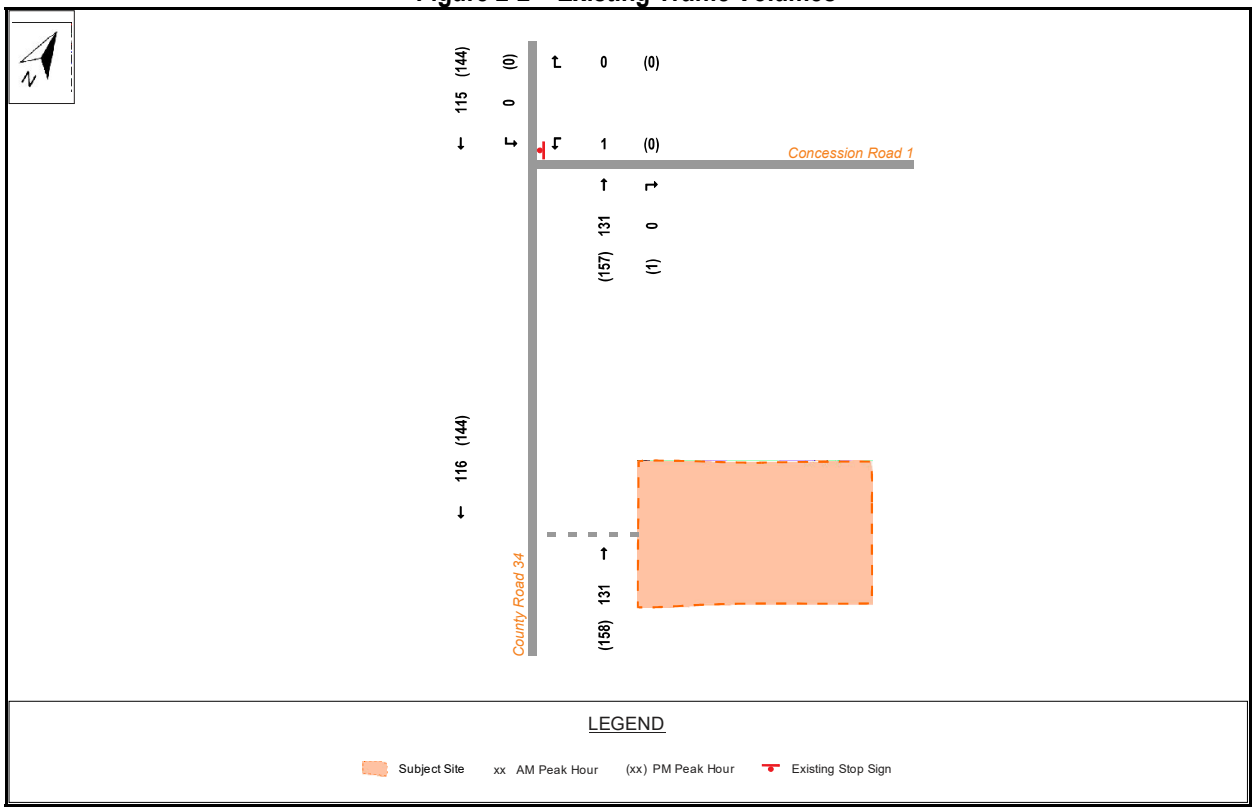
2.5. Existing Traffic Assessment

It is noted that the peak hour factor (PHF) was calculated for the study area intersection for both AM and PM peak hours. The calculated PHF was carried forward in all future scenarios as well. Peak hour factors were calculated and applied per intersection using the following equation:

$$PHF = \frac{total\ peak\ hour\ volume}{4 * peak\ 15\ minute\ volume}$$

Baseline existing traffic volumes are illustrated in **Figure 2-2.**

Figure 2-2 – Existing Traffic Volumes



The baseline existing traffic volumes were analyzed using Synchro 10 in accordance with the methodology outlined in the highway Capacity Manual (HCM 2000) published by the Transportation Research Board. The detailed results are enclosed in **Appendix D** and summarized in **Table 2.2**.

Table 2.2 – Level of Service – Existing Traffic Assessment

Intersection	Movement	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c	Delay (s)	LOS	Queue 95th	v/c	Delay (s)	LOS	Queue 95th
Unsignalized Intersections									
County Road 34 & Concession Road 1	WBLR	0.00	10.1	B	0	0.00	0.0	A	0

Based on the results of the capacity analysis under existing traffic conditions, the study area intersection currently operate with residual capacity (i.e., volume to capacity ratio or V/C < 1.00), with excellent levels of service and with minimal delay and queue lengths during both AM and PM peak hours.

3.0 FUTURE BACKGROUND CONDITIONS

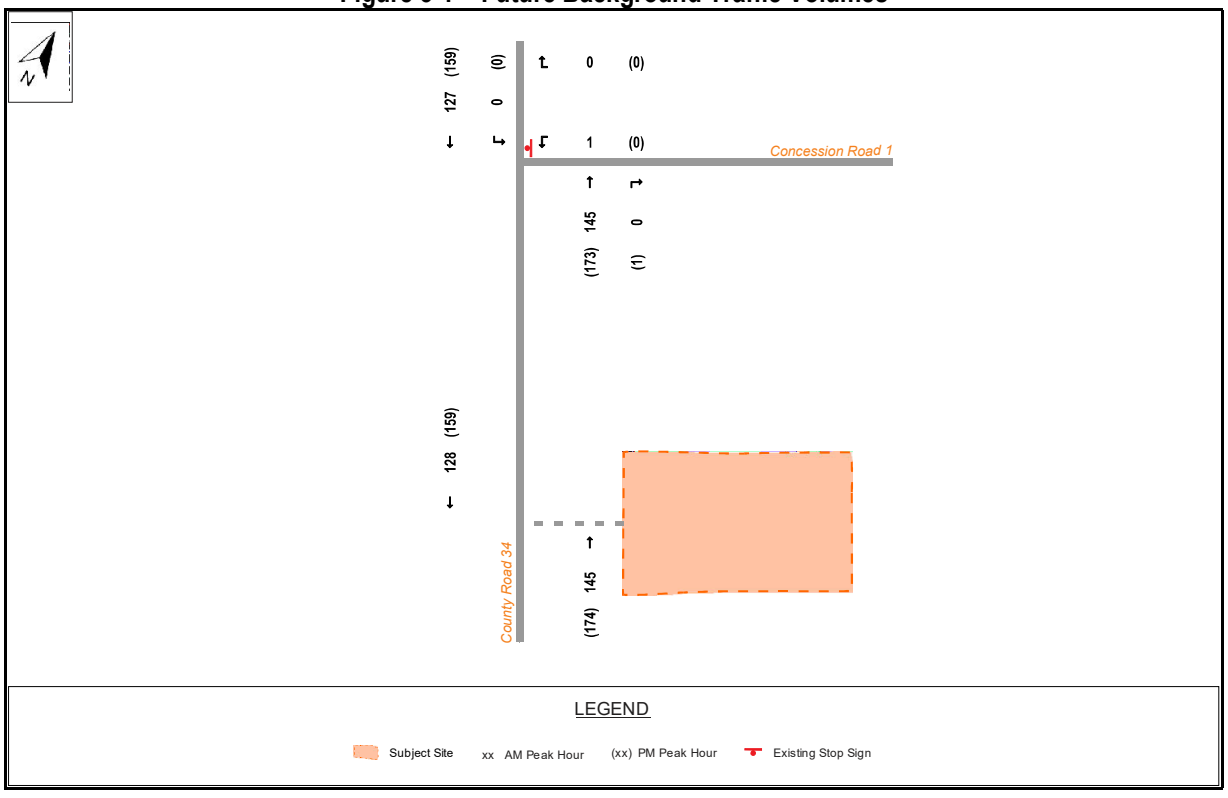
3.1. Future Corridor Growth

In lieu of the availability of historical AADT data within the study area, a conservative 2% growth rate per annum was applied to the through volumes of County Road 34 to model future traffic growth within the area. Given that Concession Road 1 is a low volume collector road, no growth was applied.

3.2. Future Background Traffic Assessment

The estimated future background traffic volumes are illustrated in **Figure 3-1**.

Figure 3-1 – Future Background Traffic Volumes



The detailed Synchro capacity analysis results for future are summarized in **Table 3.1** and the detailed reports are enclosed in **Appendix E**.

Table 3.1 – Future Background Traffic Assessment

Intersection	Movement	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c	Delay (s)	LOS	Queue 95th	v/c	Delay (s)	LOS	Queue 95th
Unsignalized Intersections									
County Road 34 & Concession Road 1	WBLR	0.00	10.3	B	0	0.00	0.0	A	0

Based on the results of the capacity analysis under future background traffic conditions, the study area intersection is projected to operate with residual capacity (i.e., volume to capacity ratio or V/C < 1.00), with excellent levels of service and with manageable delay and queue lengths during both AM and PM peak hours.

4.0 SITE TRAFFIC

4.1. ITE Trip Generation

The development proposal is to redevelop to construct a transportation terminal with 270m^2 GFA and associated repair bay with 312m^2 GFA. A total of 139 truck/trailer parking spaces will also be provided on-site. Typically, the *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE) is used to determine the number of trips that a site will generate; however, the trip generation manual does not contain information for transportation terminals/truck parking facilities.

In lieu of information available in the ITE Trip Generation Manual, Nextrans used turning movement count data that was collected at a proxy site located in the Town of Caledon, which has the same land use as the proposed development. the proxy site is municipally addressed as 6186 Mayfield Road and accommodates both truck and truck + trailer parking and has a repurposed detached house that operates as an office. The proxy site has an approximate lot area of 5.52 ha (13.65 ac). The proxy site trip generation surveys were conducted on September 21, 2023, and September 22, 2023 during morning peak period (7:00AM – 9:00AM) and afternoon peak period (4:00PM – 6:00PM).

The results of the proxy site trip generation surveys are summarized in **Appendix F** and the peak hour trip generation results from each day of surveys are detailed below in **Table 4.1**.

Table 4.1 – Table 4.2 – Proxy Site Turning Movement Counts

Time Period	Parameter	September 21, 2023			September 22, 2023		
		Inbound	Outbound	Total	Inbound	Outbound	Total
AM Peak Period	Gross Trips	9	7	16	**9**	**9**	**18**
	Trip Rate	1.63	1.27	2.90	**1.63**	**1.63**	**3.26**
PM Peak Period	Gross Trips	**28**	**23**	**51**	28	12	40
	Trip Rate	**5.07**	**4.17**	**9.24**	5.07	2.17	7.25s

The peak number of trips generated by the proxy site during AM peak hour occurred on the second survey day, with a total of 18 two-way trips or **3.26 trips/ha**.

The peak number of trips generated by the proxy site during PM peak hour occurred on the first survey day, with a total of 51 two-way trips or **9.24 trips/ha**.

Trip rates were prorated to account for the difference in size between the proxy site and the subject site. It is to be noted that the net developable site area is 2.4ha; however, as a conservative approach, the total site area of 5.36ha was instead considered. The prorated trip generation for the subject site is detailed in **Table 4.2**.

Table 4.3 – Site Traffic Trip Generation

Parameter	AM Peak Hour			PM Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Gross Trips	9	9	18	27	22	49

Based on the trip generation calculations, the proposed development is projected to generate a total of 18 two-way trips during AM peak hour (nine (9) inbound and nine (9) outbound) and 49 two-way trips during PM peak hour (27 inbound and 22 outbound).

4.2. Trip Distribution

The assumptions for trip distribution rates are based on the distributional splits of existing TMC data within the study area road network, as well as engineering judgement for routes that drivers would likely take to and from the site access. Trip distribution is summarized in **Table 4.2** and trip assignment is illustrated in **Figure 4-1**.

Table 4.4 – Site Traffic Trip Distribution

Corridor	Direction	AM		PM	
		Inbound	Outbound	Inbound	Outbound
County Road 34	N	47%	53%	48%	52%
	S	53%	47%	52%	48%
Total		**100%**	**100%**	**100%**	**100%**

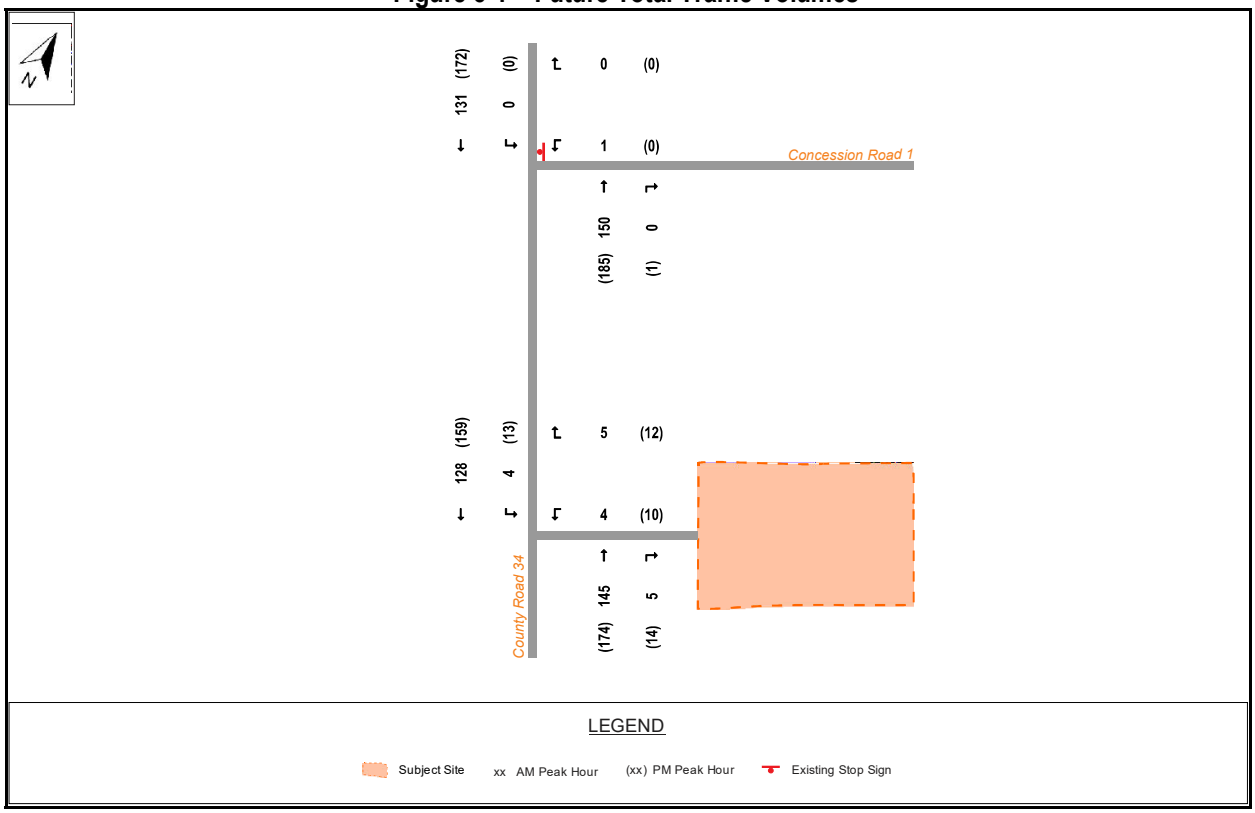
Figure 4-1 – Site Traffic Volumes

5.0 FUTURE TOTAL ANALYSIS

5.1. Future Total Traffic Assessment

The forecasted future total traffic volumes are defined as the sum of the distributed site-generated traffic and future background traffic volumes. The future total traffic volumes are illustrated in **Figure 5-1.**

Figure 5-1 – Future Total Traffic Volumes



The capacity analysis results are summarized in **Table 5.1** and detailed reports are provided in **Appendix G**.

Table 5.1 – Level of Service – Future Total Traffic Assessment

Intersection	Movement	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c	Delay (s)	LOS	Queue 95th	v/c	Delay (s)	LOS	Queue 95th
Unsignalized Intersections									
County Road 34 & Concession Road 1	WBLR	0.00	10.3	B	0.0	0.00	0.0	A	0.0
County Road 34 & Site Access	WBLR SBLT	0.01 0.00	9.6 0.2	A A	0.3 0.1	0.03 0.01	10.2 0.7	B A	0.8 0.2

Under future total traffic conditions, all movements of the study area intersection analyzed, as well as the proposed site access onto County Road 34 are projected to operate with residual capacity, with excellent levels of service, and with manageable delay and queue lengths during both AM and PM peak hour.

As such, the projected site traffic generated by the proposed development will have a negligible impact to the future operations of the study area road network.

5.2. Left Turn Lane Warrant Analysis

The MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads, April 2020, was reviewed to determine if left turn lanes are warranted on County Road 34 at the proposed site access.

For the purposes of this assessment, future total PM traffic volumes were used as this would provide a more conservative analysis in comparison to the use of future total AM traffic volumes. The following parameters were used to conduct the analysis:

V_A = 172 vehicles
V_O = 188 vehicles
% of advancing vehicles turning left = 7.5%
Design Speed = 90 km/h (posted 80 km/h + 10 km/h)

An excerpt of the MTO Design Supplement is enclosed in **Appendix H** that illustrates the above parameters.

Based on Exhibit 9A-19 of the MTO Design Supplement, auxiliary left turn lanes are not warranted for the proposed site access.

6.0 PARKING ASSESSMENT

6.1. Parking Requirements

6.1.1. Vehicle Parking Requirements

The subject lands are subject to the parking requirements stipulated within the Township of South Glengarry's Zoning By-law No. 38-09. Given that the proposed development consists of a transportation terminal and a repair bay, only the GFA of the transportation terminal was considered in the calculation of the minimum parking requirement. The technical parking requirement is detailed in **Table 6.1**.

Table 6.1 – Vehicle Parking Requirements (Zoning By-law 2014-070 Section 4.25)

Land Use*	GFA	Parking Rate	Min. Parking Requirement	Parking Supply
All other uses not listed above	59	1 space / 25m^2	11 spaces	11 spaces

* As stipulated in the zoning by-law

Based on the rates prescribed in the governing zoning by-law for the proposed land use, the proposed development requires a minimum of 11 vehicle parking spaces. In comparison to the supply of 11 vehicle parking spaces proposed on-site, the proposed parking supply is compliant with the minimum requirements of the governing zoning by-law.

7.0 SITE PLAN REVIEW

7.1. Site Circulation

AutoTURN software was used to generate a vehicular turning template to confirm and demonstrate the accessibility of the proposed study area. Given the proposed land use of transportation terminal/truck parking facility, the vehicle template for a WB-20 (TAC-2017) truck + trailer was used to confirm the maneuverability of the study and the swept path analysis demonstrates that the design vehicle can maneuver through the site unencumbered.

The AutoTURN analysis is illustrated in **Figure 7-1**.

8.0 CONCLUSION

8.1. Study Findings

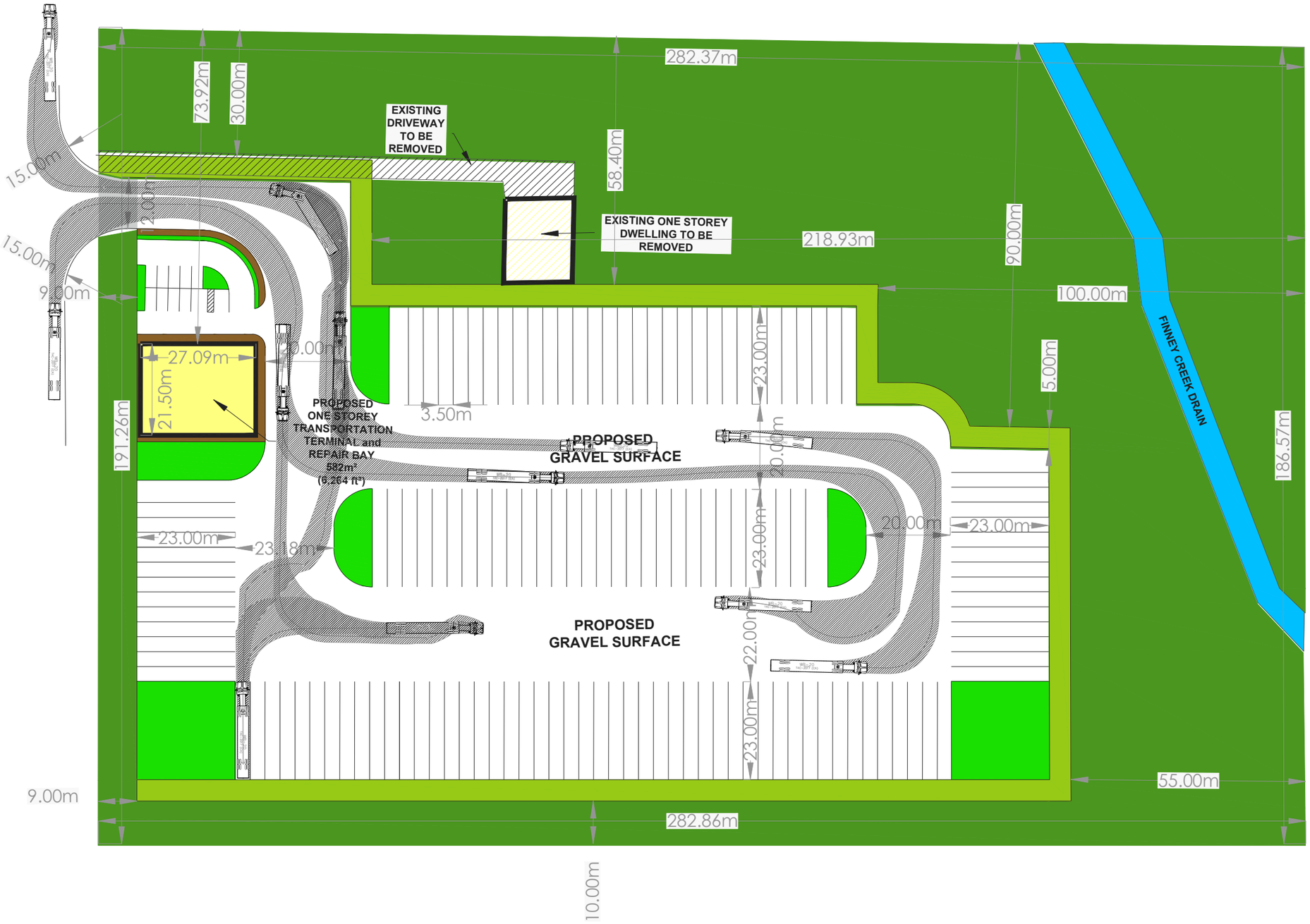
The findings of our analysis are as follows:

- The development proposal is to redevelop the existing subject lands to construct a transportation terminal with 270m^2 GFA and associated repair bay with 312m^2 GFA. A total of 139 truck/trailer parking spaces will be provided on-site, as well as 11 automobile parking spaces. Vehicular access is envisioned via a full movement driveway onto County Road 34.
- Based on the results of the capacity analysis under existing traffic conditions, all study area intersections currently operate with residual capacity (i.e., volume to capacity ratio or V/C < 1.00), with excellent levels of service and with minimal delay and queue lengths during both AM and PM peak hours.
- Based on the results of the capacity analysis under future background traffic conditions, all study area intersections are projected to operate with residual capacity (i.e., volume to capacity ratio or V/C < 1.00), with excellent levels of service and with minimal delay and queue lengths during both AM and PM peak hours.
- Based on the trip generation calculations, the proposed development is projected to generate a total of 18 two-way trips during AM peak hour (nine (9) inbound and nine (9) outbound) and 49 two-way trips during PM peak hour (27 inbound and 22 outbound).
- Under future total traffic conditions, all movements of the study area intersection analyzed, as well as the proposed site access onto County Road 34 are projected to operate with residual capacity, with excellent levels of service, and with manageable delay and queue lengths during both AM and PM peak hour.
- The MTO Design Supplement was reviewed to determine if auxiliary left turn lanes are warranted at the proposed site access. Based on the assessment, the warrants for an auxiliary left turn lane are not warranted.
- Based on the rates prescribed in the governing zoning by-law for the proposed land use, the proposed development requires a minimum of 11 vehicle parking spaces. In comparison to the supply of 11 vehicle parking spaces proposed on-site, the proposed parking supply is compliant with the minimum requirements of the governing zoning by-law.
- Given the proposed land use of transportation terminal/truck parking facility, the vehicle template for a WB-20 (TAC-2017) truck + trailer was used to confirm the maneuverability of the study and the swept path analysis demonstrates that the design vehicle can maneuver through the site unencumbered.

8.2. Study Conclusions and Recommendations

Based on the findings of our analysis, our conclusions and recommendations are as follows:

- The projected site traffic generated by the proposed development will have a negligible impact to the future operations of the study area road network.
- Based on the assessments completed in this study, auxiliary turning lanes are not required to support the development site traffic generated by the subject site.
- The proposed parking supply is compliant with the minimum requirements of the governing zoning by-law.
- The site plan is accessible for the intended design vehicles.



KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

STAMP

nexTrans
CONSULTING ENGINEERS
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Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:

Transportation Terminal & Truck Parking Facility

5961 County Road 34

Township of Glengarry

DRAWING TITLE:

AutoTURN Analysis
WB-20 TAC-2017

DESIGN BY: K.A.	DATE: February 21, 2024
CHECKED BY: R.P.	PROJECT NO. NT-23-206
DRAWN BY: K.A.	
SCALE: NTS	DRAWING NO. Figure 7-1

Appendix A – Site Plan

"PRELIMINARY"
FOR DISCUSSION
PURPOSES ONLY

COUNTY ROAD 34

282.37m
73.92m
30.00m
58.40m
90.00m
218.93m
100.00m
15.00m
2.00m
15.00m
9.00m
EXISTING DRIVEWAY TO BE REMOVED
EXISTING ONE STOREY DWELLING TO BE REMOVED
FINNEY CREEK DRAIN
5.00m
186.57m
20.00m
27.09m
21.50m
191.26m
3.50m
PROPOSED ONE STOREY TRANSPORTATION TERMINAL and REPAIR BAY 582m² (6,264 ft²)
PROPOSED GRAVEL SURFACE
23.00m
20.00m
20.00m
23.00m
23.00m
23.18m
PROPOSED GRAVEL SURFACE
22.00m
23.00m
55.00m
9.00m
282.86m
10.00m

SITE AREA:	**5.36 ha (13.24 ac)**
ENVIRONMENTAL FEATURES:	**2.96 ha (7.30 ac)**
NET DEVELOPABLE AREA:	**2.40 ha (5.94 ac)**

BUILDING AREA BREAKDOWN
PROPOSED ONE STOREY DWELLING: TRANSPORTATION TERMINAL

GROUND FLOOR

TRANSPORTATION TERMINAL:	270m² (2,906ft²)
REPAIR BAY:	312m² (3,358ft²)
TOTAL GROSS FLOOR AREA:	**582m² (6,264ft²)**

PARKING SPACE REQUIREMENTS:

TRANSPORTATION TERMINAL: (1 space per 25m²)	11 SPACES
TOTAL PARKING REQUIRED:	**11 SPACES**

PARKING PROVIDED:

AUTOMOBILE PARKING SPACES:	11 SPACES
TRUCK/TRAILER PARKING SPACES:	139 SPACES
TOTAL PARKING PROVIDED:	**150 SPACES**

LEGEND

- Finney Creek Drain
- Buffer Zone
- Landscaping
- Environmental Features
- Proposed Building
- Proposed Gravel Surface
- Existing Driveway
- Existing Building

Note: All information shown on this plan is Conceptual and is to be verified using an up-to-date Boundary and Topographic Survey Plan. Limits of Environmental Features to be determined with input from other consultants.

CONCEPTUAL SITE PLAN

5961 COUNTY ROAD 34
TOWNSHIP of SOUTH GLENGARRY,
UNITED COUNTIES of STORMONT-DUNDAS-GLENGARRY

P.N.: 22.3220.00	Date: June 27, 2023	CP
Scale: N.T.S	Revised:	
Drawn By: H.S.	File No.: PN 3220_ Concept Plan	

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Appendix B – Terms of Reference

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Aurora, Ontario L4G 6W8

Phone: 905-503-2563
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nexTrans CONSULTING ENGINEERS
NextEng Consulting Group Inc.

To: Benjamin de Haan, United Counties of Stormont, Dundas and Glengarry

From: Kristian Aviles, Nextrans Consulting Engineers

Date: November 21, 2023

Re: **Terms of Reference – Transportation Impact Study**
Proposed Transportation Depot and Truck / Trailer Parking Facility
5961 County Road 34, South Glengarry
Our Project No. NT-23-206

INTRODUCTION

We wish to confirm the following work plan for a Transportation Impact Study for a proposed transportation depot and truck / trailer parking facility located east of County Road 34 and south of Concession Road 2, (herein referred to as the "subject site"), in Town of South Glengarry. The subject site is designated in Zoning By-law 06-2023 as AG for agricultural. The proposed site plan is enclosed in **Appendix A** of this Terms of Reference. **Figure 1** illustrates the location of the subject site.

Figure 1: Subject Site Location

STUDY AREA

Nextrans proposes to collect turning movement count (TMC) data at the following study area intersections during AM (7:00 AM – 10:00 AM) and PM (4:00 PM – 7:00 PM) peak periods:

1. County Road 34 & Concession Road 1 (unsignalized)
2. County Road 34 & Site Access (unsignalized)

BACKGROUND TRAFFIC

General Corridor Growth Rate

Historical AADT data will be reviewed and Nextrans will consult with The United Counties of Stormont, Dundas & Glengarry to determine corridor growth rates. In lieu of the availability of historical AADT, Nextrans proposes to use a conservative growth rate of 2% per annum.

Road Network Improvements

Nextrans will note any road network improvements identified within the study area and account for any traffic diversions associated with these improvements within in our analysis.

Background Development Traffic

Nextrans requests that the United Counties of Stormont, Dundas and Glengarry provide the relevant traffic studies for background developments required for consideration in our study.

TRIP GENERATION, DISTRIBUTION, & ASSIGNMENT

Nextrans' standard approach in determining the projected number of trips that a proposed development will generate is to use the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition; however, the ITE Trip Generation Manual does not contain information for the proposed land use.

Nextrans has previously prepared Transportation Impact Studies for development proposals within the GTA similar to the proposed land use of the subject site. Our methodology to determine trip generation for the aforementioned developments was to conduct proxy site surveys of existing, operational truck parking facilities to determine an applicable trip rate based on lot size. As such, Nextrans proposes to apply the trip rates obtained from proxy sites to project the number of trips that the proposed development will generate.

The general trip distribution will be based on existing TMC data and trip assignment will be completed to reflect the configuration of the proposed site access, turning restrictions, and logical routings.

FUTURE TRAFFIC SCENARIOS

Future background and future total analyses for the study area intersections will be conducted over a five (5)-year horizon from present year. Given that this report will be prepared at the end of 2023, a future analysis year of 2029 will be analyzed.

REMEDIAL MEASURES

Under future total conditions, any through or shared through/turning movements at the studied intersections that exceed a V/C ratio of 0.90 or exclusive movements that exceed a V/C ratio of 1.00 will be identified. If remedial actions such as signal optimization are unsuccessful this will also be identified. If remedial measures are to be employed, a scenario will be provided demonstrating the change in intersection operations.

PARKING & LOADING

The site is currently subject to The Corporation of the Township of South glengarry By-law 06-2023, which will be reviewed for parking and loading requirements.

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

Kristian Aviles, B.Eng
Transportation Analyst

Appendix A – Site Plan

"PRELIMINARY"
FOR DISCUSSION
PURPOSES ONLY

COUNTY ROAD 34

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73.92m
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23.00m
23.00m
23.18m
PROPOSED GRAVEL SURFACE
22.00m
23.00m
55.00m
9.00m
282.86m
10.00m

SITE AREA:	**5.36 ha (13.24 ac)**
ENVIRONMENTAL FEATURES:	**2.96 ha (7.30 ac)**
NET DEVELOPABLE AREA:	**2.40 ha (5.94 ac)**

BUILDING AREA BREAKDOWN
PROPOSED ONE STOREY DWELLING: TRANSPORTATION TERMINAL

GROUND FLOOR

TRANSPORTATION TERMINAL:	270m² (2,906ft²)
REPAIR BAY:	312m² (3,358ft²)
TOTAL GROSS FLOOR AREA:	**582m² (6,264ft²)**

PARKING SPACE REQUIREMENTS:

TRANSPORTATION TERMINAL: (1 space per 25m²)	11 SPACES
TOTAL PARKING REQUIRED:	**11 SPACES**

PARKING PROVIDED:

AUTOMOBILE PARKING SPACES:	11 SPACES
TRUCK/TRAILER PARKING SPACES:	139 SPACES
TOTAL PARKING PROVIDED:	**150 SPACES**

LEGEND

- Finney Creek Drain
- Buffer Zone
- Landscaping
- Environmental Features
- Proposed Building
- Proposed Gravel Surface
- Existing Driveway
- Existing Building

Note: All information shown on this plan is Conceptual and is to be verified using an up-to-date Boundary and Topographic Survey Plan. Limits of Environmental Features to be determined with input from other consultants.

CONCEPTUAL SITE PLAN

5961 COUNTY ROAD 34
TOWNSHIP of SOUTH GLENGARRY,
UNITED COUNTIES of STORMONT-DUNDAS-GLENGARRY

P.N.: 22.3220.00	Date: June 27, 2023	CP
Scale: N.T.S	Revised:	
Drawn By: H.S.	File No.: PN 3220_ Concept Plan	

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Appendix C – Traffic Data

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Turning Movement Count (1 . COUNTY RD 34 & CONCESSION RD 1)

Start Time	Southbound COUNTY RD 34					Westbound CONCESSION RD 1					Northbound COUNTY RD 34					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
07:00:00	23	0	0	0	23	0	0	0	0	0	0	14	0	0	14	37	
07:15:00	30	0	0	0	30	0	0	0	0	0	0	25	0	0	25	55	
07:30:00	31	0	0	0	31	0	0	0	0	0	0	40	0	0	40	71	
07:45:00	23	0	0	0	23	0	0	0	0	0	0	29	0	0	29	52	215
08:00:00	28	0	0	0	28	0	1	0	0	1	0	27	0	0	27	56	234
08:15:00	33	0	0	0	33	0	0	0	0	0	0	35	0	0	35	68	247
08:30:00	24	0	0	0	24	0	0	0	0	0	0	26	0	0	26	50	226
08:45:00	28	0	0	0	28	0	0	0	0	0	0	21	0	0	21	49	223
09:00:00	26	0	0	0	26	0	0	0	0	0	0	19	0	0	19	45	212
09:15:00	20	0	0	0	20	0	0	0	0	0	0	27	0	0	27	47	191
09:30:00	30	0	0	0	30	0	0	0	0	0	0	23	0	0	23	53	194
09:45:00	32	0	0	0	32	0	0	0	0	0	0	30	0	0	30	62	207
BREAK																	
16:00:00	43	0	0	0	43	0	0	0	0	0	1	39	1	0	41	84	
16:15:00	37	0	0	0	37	0	0	0	0	0	0	51	0	0	51	88	
16:30:00	35	0	0	0	35	0	0	0	0	0	0	30	0	0	30	65	
16:45:00	29	0	0	0	29	0	0	0	0	0	0	37	0	0	37	66	303
17:00:00	42	0	0	0	42	0	0	0	0	0	0	33	0	0	33	75	294
17:15:00	31	1	0	0	32	0	0	0	0	0	0	35	0	0	35	67	273
17:30:00	38	0	0	0	38	0	0	0	0	0	0	27	0	0	27	65	273
17:45:00	22	0	0	0	22	0	0	0	0	0	0	18	0	0	18	40	247
18:00:00	19	0	0	0	19	0	0	0	0	0	0	21	0	0	21	40	212
18:15:00	14	0	0	0	14	0	0	0	0	0	0	12	0	0	12	26	171
18:30:00	15	0	0	0	15	0	0	0	0	0	0	12	0	0	12	27	133
18:45:00	13	0	0	0	13	0	0	0	0	0	0	18	0	0	18	31	124
Grand Total	666	1	0	0	667	0	1	0	0	1	1	649	1	0	651	**1319**	-
Approach%	99.9%	0.1%	0%		-	0%	100%	0%		-	0.2%	99.7%	0.2%		-	**-**	-
Totals %	50.5%	0.1%	0%		50.6%	0%	0.1%	0%		0.1%	0.1%	49.2%	0.1%		49.4%	**-**	-
Heavy	57	0	0		-	0	0	0		-	0	60	0		-	**-**	-
Heavy %	8.6%	0%	0%		-	0%	0%	0%		-	0%	9.2%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (-7.99 °C)

Start Time	Southbound COUNTY RD 34					Westbound CONCESSION RD 1					Northbound COUNTY RD 34					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
07:30:00	31	0	0	0	31	0	0	0	0	0	0	40	0	0	40	71
07:45:00	23	0	0	0	23	0	0	0	0	0	0	29	0	0	29	52
08:00:00	28	0	0	0	28	0	1	0	0	1	0	27	0	0	27	56
08:15:00	33	0	0	0	33	0	0	0	0	0	0	35	0	0	35	68
Grand Total	115	0	0	0	115	0	1	0	0	1	0	131	0	0	131	**247**
Approach%	100%	0%	0%		-	0%	100%	0%		-	0%	100%	0%		-	**-**
Totals %	46.6%	0%	0%		46.6%	0%	0.4%	0%		0.4%	0%	53%	0%		53%	**-**
PHF	0.87	0	0		0.87	0	0.25	0		0.25	0	0.82	0		0.82	**-**
Heavy	6	0	0		6	0	0	0		0	0	21	0		21	**-**
Heavy %	5.2%	0%	0%		5.2%	0%	0%	0%		0%	0%	16%	0%		16%	**-**
Lights	109	0	0		109	0	1	0		1	0	110	0		110	**-**
Lights %	94.8%	0%	0%		94.8%	0%	100%	0%		100%	0%	84%	0%		84%	**-**
Single-Unit Trucks	2	0	0		2	0	0	0		0	0	8	0		8	**-**
Single-Unit Trucks %	1.7%	0%	0%		1.7%	0%	0%	0%		0%	0%	6.1%	0%		6.1%	**-**
Buses	2	0	0		2	0	0	0		0	0	3	0		3	**-**
Buses %	1.7%	0%	0%		1.7%	0%	0%	0%		0%	0%	2.3%	0%		2.3%	**-**
Articulated Trucks	2	0	0		2	0	0	0		0	0	10	0		10	**-**
Articulated Trucks %	1.7%	0%	0%		1.7%	0%	0%	0%		0%	0%	7.6%	0%		7.6%	**-**

Peak Hour: 04:00 PM - 05:00 PM Weather: Broken Clouds (-7 °C)

Start Time	Southbound COUNTY RD 34					Westbound CONCESSION RD 1					Northbound COUNTY RD 34					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:00:00	43	0	0	0	43	0	0	0	0	0	1	39	1	0	41	84
16:15:00	37	0	0	0	37	0	0	0	0	0	0	51	0	0	51	88
16:30:00	35	0	0	0	35	0	0	0	0	0	0	30	0	0	30	65
16:45:00	29	0	0	0	29	0	0	0	0	0	0	37	0	0	37	66
Grand Total	144	0	0	0	144	0	0	0	0	0	1	157	1	0	159	**303**
Approach%	100%	0%	0%		-	0%	0%	0%		-	0.6%	98.7%	0.6%		-	**-**
Totals %	47.5%	0%	0%		47.5%	0%	0%	0%		0%	0.3%	51.8%	0.3%		52.5%	**-**
PHF	0.84	0	0		0.84	0	0	0		0	0.25	0.77	0.25		0.78	**-**
Heavy	15	0	0		15	0	0	0		0	0	4	0		4	**-**
Heavy %	10.4%	0%	0%		10.4%	0%	0%	0%		0%	0%	2.5%	0%		2.5%	**-**
Lights	129	0	0		129	0	0	0		0	1	153	1		155	**-**
Lights %	89.6%	0%	0%		89.6%	0%	0%	0%		0%	100%	97.5%	100%		97.5%	**-**
Single-Unit Trucks	5	0	0		5	0	0	0		0	0	1	0		1	**-**
Single-Unit Trucks %	3.5%	0%	0%		3.5%	0%	0%	0%		0%	0%	0.6%	0%		0.6%	**-**
Buses	3	0	0		3	0	0	0		0	0	1	0		1	**-**
Buses %	2.1%	0%	0%		2.1%	0%	0%	0%		0%	0%	0.6%	0%		0.6%	**-**
Articulated Trucks	7	0	0		7	0	0	0		0	0	2	0		2	**-**
Articulated Trucks %	4.9%	0%	0%		4.9%	0%	0%	0%		0%	0%	1.3%	0%		1.3%	**-**

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (-7.99 °C)

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Broken Clouds (-7 °C)

Appendix D – Existing Traffic Conditions – Capacity Analysis Results

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	0	131	0	0	115
Future Volume (Veh/h)	1	0	131	0	0	115
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	0	151	0	0	132
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	283	151			151	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	283	151			151	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	711	901			1442	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1	151	132
Volume Left	1	0	0
Volume Right	0	0	0
cSH	711	1700	1442
Volume to Capacity	0.00	0.09	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	10.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.1	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	157	1	0	144
Future Volume (Veh/h)	0	0	157	1	0	144
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	183	1	0	167
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	350	184			184	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	350	184			184	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	651	864			1403	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	184	167
Volume Left	0	0	0
Volume Right	0	1	0
cSH	1700	1700	1403
Volume to Capacity	0.00	0.11	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	11.7%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix E – Future Background Traffic Conditions - Capacity Analysis Results

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	0	145	0	0	127
Future Volume (Veh/h)	1	0	145	0	0	127
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	0	167	0	0	146
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	313	167			167	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	313	167			167	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	684	882			1423	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1	167	146
Volume Left	1	0	0
Volume Right	0	0	0
cSH	684	1700	1423
Volume to Capacity	0.00	0.10	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	10.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.3	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		17.6%	ICU Level of Service
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	173	1	0	159
Future Volume (Veh/h)	0	0	173	1	0	159
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	201	1	0	185
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	386	202			202	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	386	202			202	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	621	844			1382	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	202	185
Volume Left	0	0	0
Volume Right	0	1	0
cSH	1700	1700	1382
Volume to Capacity	0.00	0.12	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	12.5%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix F – Proxy Site Turning Movement Counts

6186 Mayfield Road Trip Generation Survey Results

	AM Peak																			
Date	21-Sep-23										22-Sep-23									
Time	Inbound					OUTBOUND					Inbound					OUTBOUND				
Vehicle	CAR	SU TRUCK	TRUCK	UCK+TRAIL	TOTAL	CAR	SU TRUCK	TRUCK	UCK+TRAIL	TOTAL	CAR	SU TRUCK	TRUCK	UCK+TRAIL	TOTAL	CAR	SU TRUCK	TRUCK	UCK+TRAIL	TOTAL
7:00	2	1	0	1	4	0	1	1	0	2	1	1	2	1	5	0	2	2	0	4
7:15	0	1	1	0	2	0	0	0	1	1	0	0	1	1	2	0	0	1	1	2
7:30	0	0	1	1	2	1	2	0	0	3	1	0	0	0	1	1	0	0	1	2
7:45	0	0	1	0	1	0	0	0	1	1	1	0	0	0	1	0	0	1	0	1
8:00	1	0	1	0	2	0	0	1	1	2	0	1	2	0	3	1	2	1	0	4
8:15	0	0	1	0	1	1	0	0	0	1	1	0	1	0	2	0	0	0	1	1
8:30	1	1	0	0	2	1	0	0	1	2	1	1	0	0	2	0	0	2	1	3
8:45	1	0	1	1	3	0	0	1	0	1	0	0	0	1	1	0	0	0	0	0
Total 1-way	9					7					9					9				
Total 2-way	16										18									

	PM Peak																			
Date	21-Sep-23										22-Sep-23									
Time	Inbound					OUTBOUND					Inbound					OUTBOUND				
Vehicle	CAR	SU TRUCK	TRUCK	UCK+TRAIL	TOTAL	CAR	SU TRUCK	TRUCK	UCK+TRAIL	TOTAL	CAR	SU TRUCK	TRUCK	UCK+TRAIL	TOTAL	CAR	SU TRUCK	TRUCK	UCK+TRAIL	TOTAL
16:00	3	0	1	1	5	2	0	1	0	3	1	0	2	0	3	1	0	0	0	1
16:15	2	4	1	0	7	3	0	1	0	4	1	1	2	1	5	1	0	1	0	2
16:30	0	2	1	1	4	2	0	0	0	2	4	2	3	3	12	1	0	2	1	4
16:45	2	1	2	1	6	2	0	0	0	2	0	1	2	1	4	0	0	1	1	2
17:00	3	4	0	3	10	6	1	2	0	9	2	0	2	3	7	1	0	1	1	3
17:15	4	3	1	0	8	4	0	1	1	6	3	1	1	0	5	0	2	1	0	3
17:30	1	3	1	3	8	3	0	1	0	4	2	1	3	2	8	0	1	1	0	2
17:45	0	1	1	0	2	3	0	0	1	4	1	0	1	0	2	0	0	0	2	2
Total 1-way	28					23					28					12				
Total 2-way	51										40									

Appendix G – Future Total Traffic Conditions - Capacity Analysis Results

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	0	150	0	0	131
Future Volume (Veh/h)	1	0	150	0	0	131
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	0	172	0	0	151
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	323	172			172	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	323	172			172	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	675	877			1417	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1	172	151
Volume Left	1	0	0
Volume Right	0	0	0
cSH	675	1700	1417
Volume to Capacity	0.00	0.10	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	10.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.3	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		17.9%	ICU Level of Service
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	5	145	5	4	128
Future Volume (Veh/h)	4	5	145	5	4	128
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	5	158	5	4	139
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	308	160			163	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	308	160			163	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			100	
cM capacity (veh/h)	687	890			1428	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	163	143
Volume Left	4	0	4
Volume Right	5	5	0
cSH	787	1700	1428
Volume to Capacity	0.01	0.10	0.00
Queue Length 95th (m)	0.3	0.0	0.1
Control Delay (s)	9.6	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		20.0%	ICU Level of Service
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	185	1	0	172
Future Volume (Veh/h)	0	0	185	1	0	172
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	215	1	0	200
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	416	216			216	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	416	216			216	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	597	829			1366	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	216	200
Volume Left	0	0	0
Volume Right	0	1	0
cSH	1700	1700	1366
Volume to Capacity	0.00	0.13	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		13.1%	ICU Level of Service A
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	12	174	14	13	159
Future Volume (Veh/h)	10	12	174	14	13	159
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)	11	13	189	15	14	173
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	398	196			204	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	398	196			204	
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	98			99	
cM capacity (veh/h)	606	850			1380	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	24	204	187
Volume Left	11	0	14
Volume Right	13	15	0
cSH	717	1700	1380
Volume to Capacity	0.03	0.12	0.01
Queue Length 95th (m)	0.8	0.0	0.2
Control Delay (s)	10.2	0.0	0.7
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	0.7
Approach LOS	B		

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		29.1%	ICU Level of Service A
Analysis Period (min)		15	

Appendix H – Left Turn Lane Warrant

Exhibit 9A-19