4261-A14 Highway 7 East, Suite 489
Markham, ON, L3R 9W6

Phone: 416.274-7036
Fax: 1-877-957-2929
www.nextrans.ca

NexTrans Incorporated

January 15, 2016

Mr. Rohan Sovig, BES

Saleville Developments Ltd.
c/o Malone Given Parsons Ltd.
140 Renfrew Drive, Suite 201
Markham ON L3R 6B3

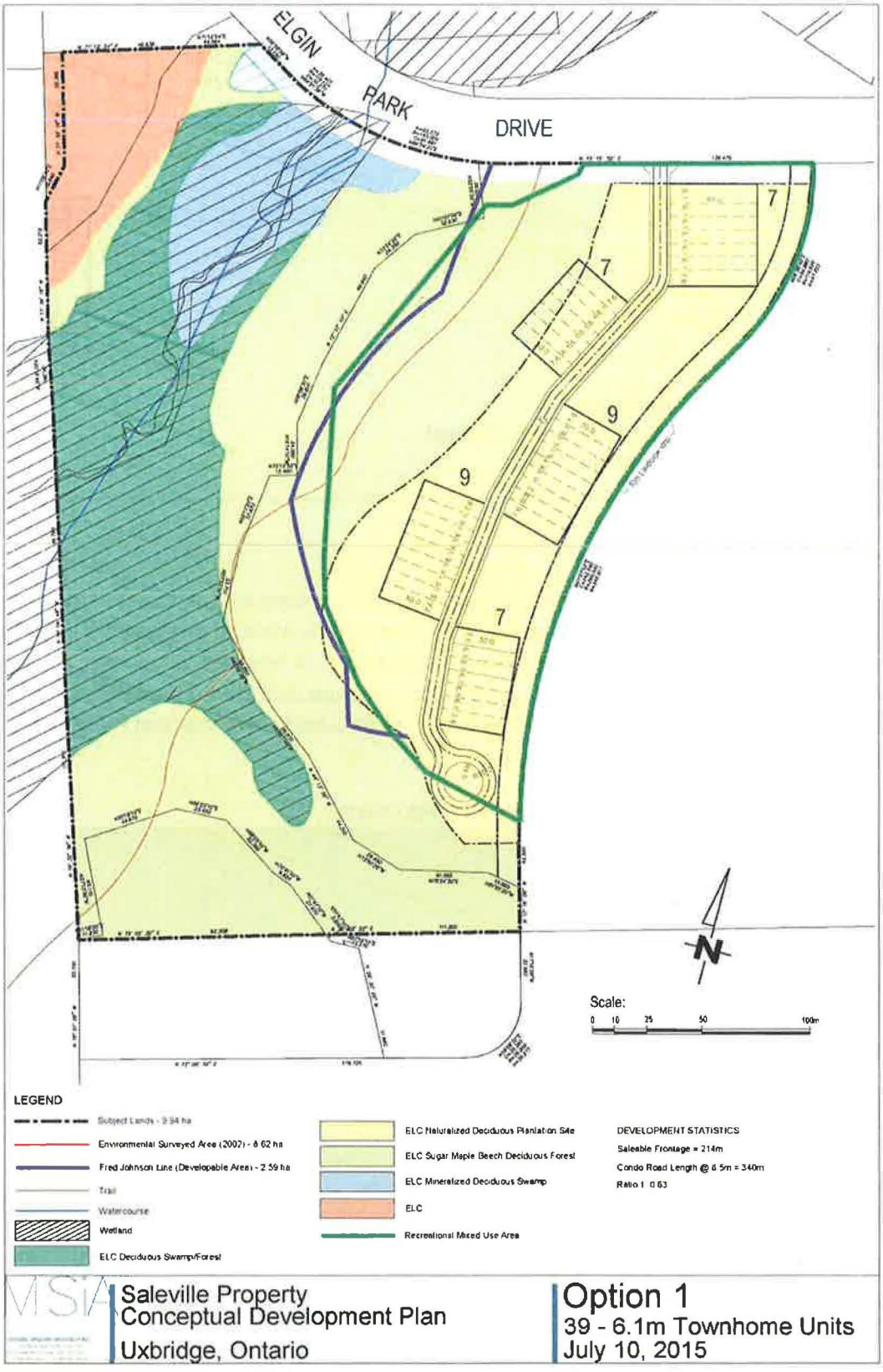
Re: Site Access Study – Traffic Brief
Proposed Residential Townhouse Development
Township of Uxbridge, Durham Region
Our Project No. NT-15-010

1.0 INTRODUCTION

NexTrans Engineering was retained by Saleville Developments Ltd. to prepare this Site Access Study – Traffic Brief in support of the above noted development proposal. The subject property is located directly east of Elgin Park Drive and Toronto Street South intersection, in the Township of Uxbridge. In reference to the latest site plan dated September 11, 2015, the development proposal consists of 39 townhouse units and it will be serviced by constructing one full movement access via Elgin Park Drive. The location of the subject site is illustrated in **Figure 1-1** and the proposed site plan is provided in **Figure 1-2**.

Figure 1-1 – Site Location

Figure 1-2 – Proposed Site Plan



2.0 EXISTING TRAFFIC CONDITIONS

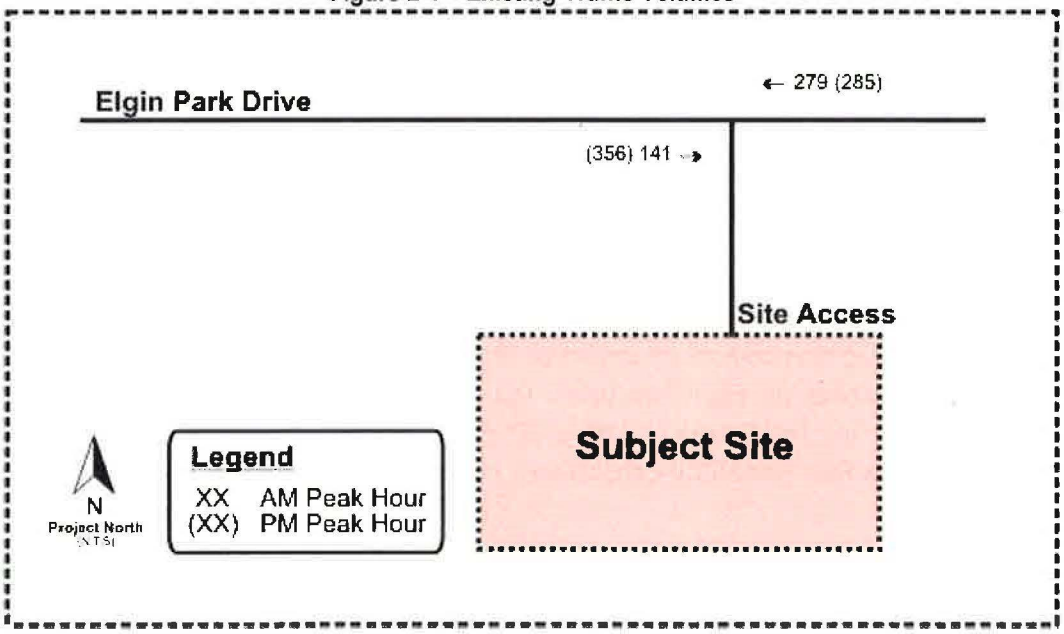
2.1. Existing Road Network

The existing road network for the study area is described below:

- **Elgin Park Drive**: is an east-west local road under the jurisdictional control of the Town of Uxbridge. It has two (2) general purpose lanes, and it maintains a posted speed limit of 50 km/h in the vicinity of the subject site.

Existing traffic volumes at Toronto Street / Elgin Park Drive were undertaken by Accu-Traffic Inc. on Thursday September 17, 2015 during the morning (7:00 a.m. to 9:00 a.m.) and afternoon (4:00 p.m. to 6:00 p.m.) peak hours, and are provided in **Appendix A**. The link volumes were utilized and they are illustrated in **Figure 2-1.**

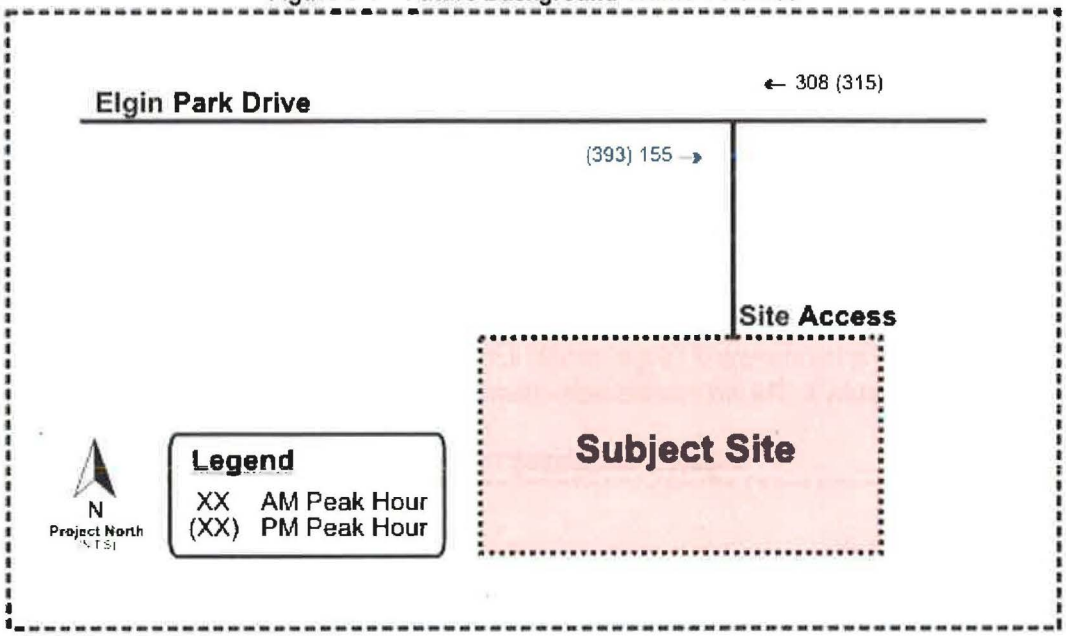
Figure 2-1 – Existing Traffic Volumes



3.0 FUTURE BACKGROUND CONDITIONS

A five (5)-year (2020) horizon period was selected and assumed in this analysis, which generally coincides with the full build out of the proposed development. As recommended by the Town of Uxbridge, a 2% growth rate per annum for the north-south and east-west traffic at the studied area intersections was applied. No other road improvements are being proposed within the study area. The future (2020) background traffic volumes are provided in **Figure 3-1.**

Figure 3-1 – Future Background Traffic Volumes



4.0 FUTURE TOTAL TRAFFIC CONDITIONS

4.1. Trip Generation and Distribution

To reiterate, the proposed development will consist of 39 townhouse units and will be accommodated by a single full movement access via Elgin Park Drive. Trip generation forecasts were undertaken using the information contained in the *Trip Generation Manual, 9th Edition* published by the Institute of Transportation Engineers (ITE) for Low-Rise Residential Condominium / Townhouse (LUC 231). Detailed calculations are summarized in **Table 4.1**.

Based on the location of the subject development, existing travel patterns determined that the majority of the site traffic will travel westbound during both the AM and PM peak hours. The site trip distribution is summarized as follows:

AM Peak & PM Peak

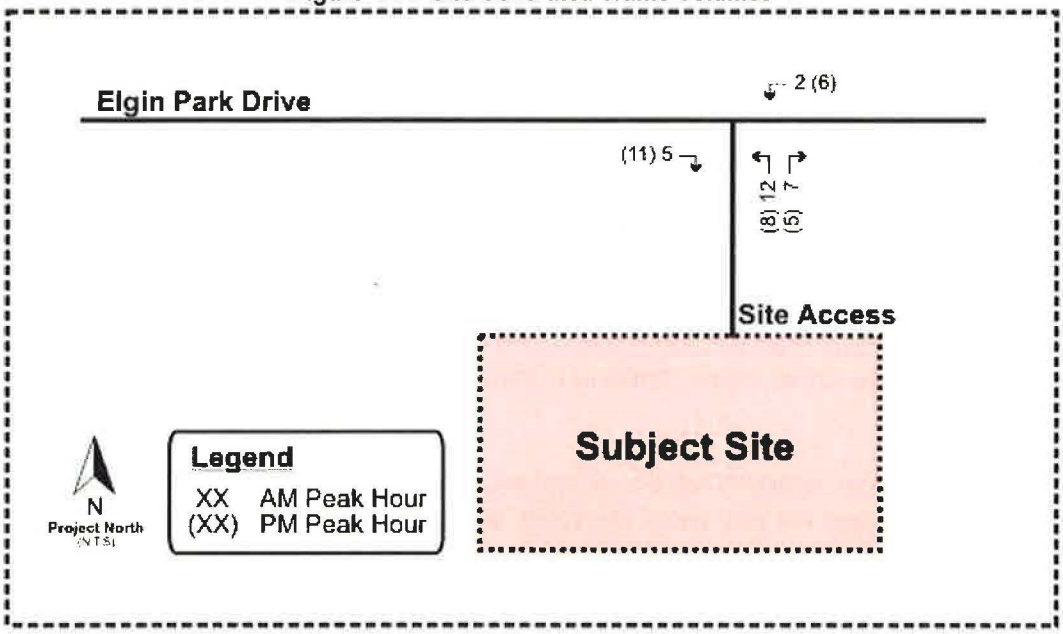
- East - Elgin Park Drive: 35%
- West - Eglin Park Drive: 65%

Table 4.1 – Proposed Development Trip Generation Summary

Land Use	Parameter	Morning Peak			Afternoon Peak		
		In	Out	Total	In	Out	Total
Townhouse (39 units)	Total Trips	7	19	26	17	13	30
	Rate (trips / unit)	0.18	0.49	0.67	0.44	0.33	0.77

Based on the foregoing, the proposed development is expected to generate 26 two-way trips (7 inbound and 19 outbound) during the roadway morning peak hour and 30 two-way trips (17 inbound and 13 outbound) during the roadway afternoon peak hour. The trip assignment is illustrated in **Figure 4-1**.

Figure 4-1 – Site Generated Traffic Volumes



4.2. Future Traffic Operations

The estimated future total traffic volumes are illustrated in **Figure 4-2**. The traffic volumes at the Proposed Site Access and Elgin Park Drive were analyzed using Synchro 8.0 software, the detailed calculations are provided in **Appendix B** and it is summarized in **Table 4.2.**

Figure 4-2 – Future Total Traffic Volumes

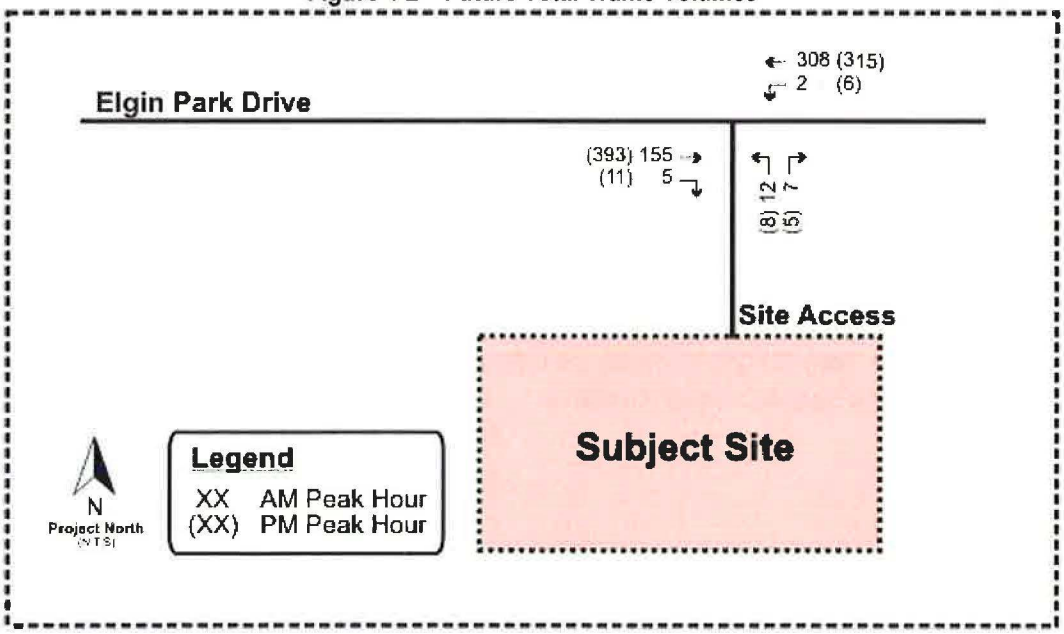


Table 4.2 – Future (2020) Total Traffic Level of Service

Intersection	Key Movement	AM Peak Hour			PM Peak Hour		
		LOS (v/c)	Delay (s)	Queue - 95th (m)	LOS (v/c)	Delay (s)	Queue - 95th (m)
Elgin Park Drive / Proposed Site Access (unsignalized)	EB-TR	A (0.10)	0.0	0.0	A (0.26)	0.0	0.0
	WB-LT	A (0.00)	0.1	0.0	A (0.01)	0.2	0.1
	NB-LR	B (0.03)	11.1	0.8	B (0.03)	13.7	0.8

The proposed site access is expected to operate with sufficient capacity (below v/c ratio of 0.26) and excellent level of service (LOS 'B' or better) during both peak periods, with no failing movements. No critical movements were identified. As shown in **Table 4.2**, the 95th percentile queue length for the northbound movements at the Elgin Park Drive and Proposed Site Access intersection does not reach beyond 1.0m. Similarly, the 95th queue for the eastbound through-right and westbound left-through movements is less than 0.1 meters. This indicates that queued vehicles within the proposed access center turn line will be virtually non-existent. The distance between the proposed site access and the immediate westerly intersection at Toronto Street is approximately 350 meters, while the distance between the proposed site access and the immediate easterly intersection at Confederation Drive is approximately 250 meters.

The subject site can function adequately with one inbound and outbound lane, respectively. Considering the site trip generation is minor, the east and west bound movements will not have any queue compilation along Elgin Park Drive.

As such, it is our opinion that the location of the proposed site access is feasible as the subject site will not conflict with any critical movements within the site development or on to Elgin Park Drive.

5.0 ACCESS REVIEW & ON-SITE CIRCULATION

5.1. Access Review

The subject site can function adequately with one inbound and outbound lane, respectively. The design dimensions are required to meet the Durham Road Design Guidelines. According to the guidelines, a curb radius of 6m is required. The site access is equipped with a curb radius of 7.25m and centerline is 12m which sufficiently meets the Durham Road Design Guidelines.

5.2. Sight Line Analysis

Based on our site visit and proposed site plan, it has been determined that an appropriate sight distance exists for the location of the proposed access via Elgin Park Drive. **Figure 5-1** shows the vision of drivers along the proposed access heading east and west on Elgin Park Drive. The "Stopping Sight" distance obtained from TAC's Geometric Design Guide for Canadian Roads provides the correlation between design speeds versus distances for various situations. Summarized in **Table 5.1** below indicates the minimum stopping sight distance (m) as a function of design speed (km/hr) as per TAC's Geometric Design Guidelines.

Figure 5-1 – Sight Distance Review

Table 5.1 –Minimum Stopping Sight Distance

Design Speed (km/hr)	40	50	60	70	80	90	100	110
Minimum Stopping Sight Distance (m)	45	65	85	110	135	160	185	215

The design speed of Elgin Park Drive fluctuates between of 60 km/hr and 70 km/hr, and therefore the minimum requirement for stopping distance is between 85 meters and 110 meters considering it is a straight line of vision in both eastbound and westbound direction. The approximate available sight distance from the site access in the westbound direction is 110m and the eastbound direction is 125m. It should be further noted that this portion of Elgin Park Drive has a posted speed limit of 50km/hr, which correlates to a minimum stopping sight distance of 65m. As a result, there is sufficient amount of room provided for the vehicle driver at the given posted and design speeds to react and bring the vehicle to a safe stop.

6.0 CONCLUSIONS AND SUMMARY

The findings and conclusions of our analysis are as follows:

- Based on the latest site plan, the development proposal consists of 39 townhouse units.
- The proposed development is expected to generate 26 two-way trips (7 inbound and 19 outbound) during the roadway morning peak hour and 30 two-way trips (17 inbound and 13 outbound) during the roadway afternoon peak hour.
- The intersection capacity analysis results (based on the methodology and procedures outlined in the Highway Capacity Manual, HCM 2000, published by the Transportation Research Board) indicate that the study area will generally operate with excellent LOS.
- As demonstrated from the operation analysis, the 95th percentile queue length for all movements at the Elgin Park Drive / Proposed Site Access intersection will not result in significant queue both internal to the site and on Elgin Park Drive.
- The proposed development has provided a turnaround area within the site to be used by the City's fire/garbage trucks servicing the existing neighbourhood.
- There is ample sight line distances in both the eastbound and westbound directions along the Elgin Park Drive, at the proposed site access
- There is adequate spacing between the proposed site access and the adjacent upstream and downstream intersections.

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

Yours truly,

NEXTRANS ENGINEERING

Richard Pernicky, CET, MITE
Principal