

March 3, 2025

Halifax Regional Municipality
PO Box 1749
Halifax, NS
B3J 3A5

Attention: Ashley Blissett
Email: blissea@halifax.ca

Dear Ashley:

RE: 24-560 – 344 Sackville Drive Traffic Impact Study – Scoping Document

Introduction

DesignPoint Engineering & Surveying has been retained to complete the traffic impact study for a proposed residential development located at 344 Sackville Drive in Lower Sackville. The development will consist of **431 residential units** and a 37,000 square ft of commercial space which is expected to be a grocery store. The proposed site location is shown in Figure 1. The need for a study is based on an expected site trip generation of greater than 100 peak hour vehicle trips.

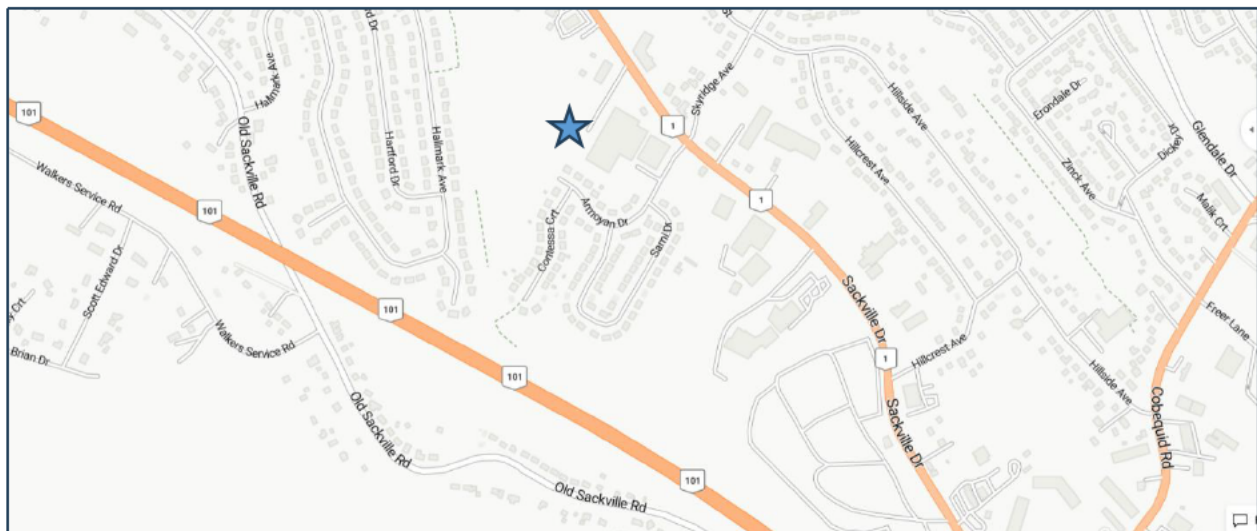


Figure 1 - Site Location

The proposed site is located off Sackville Drive, approximately 250 metres to the north of Skyridge Drive. A site plan is shown in Figure 2. It shows three driveways off Sackville Drive. Driveway #1 will be shared driveway with the commercial development. Driveway #2 will be a commercial access and will primarily be used for truck deliveries. Driveway #3 will be a residential driveway.

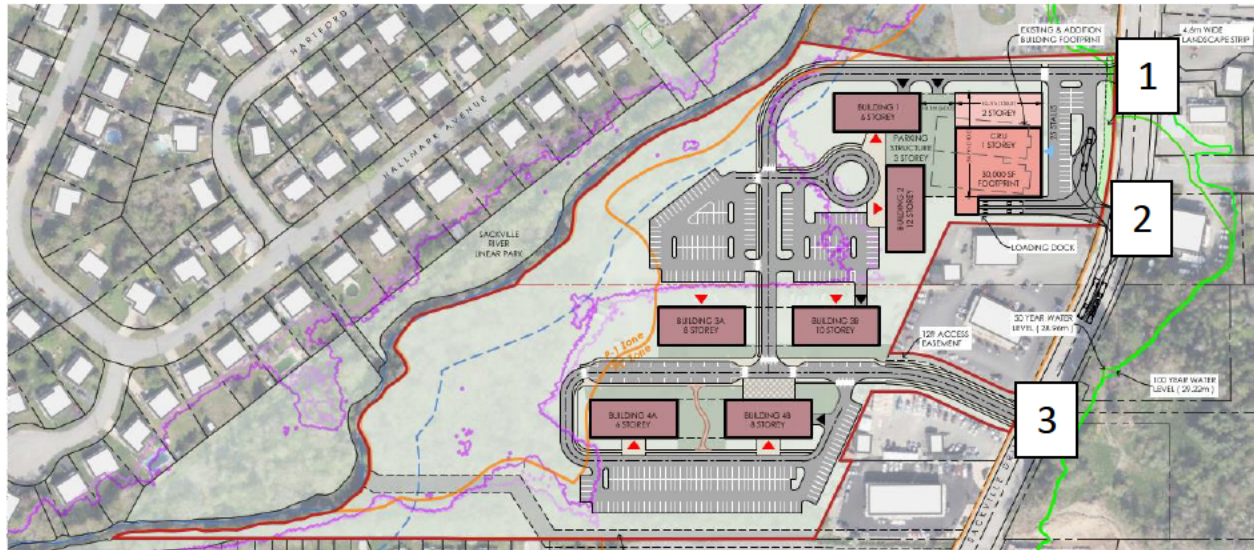


Figure 2-Site Plan

The purpose of this scoping document is to establish the level of detail required for the Traffic Impact Study (TIS) and to obtain consensus on the methodology and key assumptions.

Background

The Sackville Drive secondary planning strategy was adopted by Halifax Regional Council in 2002. The main objective of the plan was to provide guidance for growth along the commercial corridor of Sackville Drive from Cobequid Road to Beaver Bank Road.

The plan adopted several transportation policies. The Plan attempts to:

- Discourage new individual driveway access to Sackville Drive
- Encourage new developments next to existing developments to acquire the right-of-way to share the use of the existing driveway.
- Reduce the number of direct access points
- Introduce a grass median to reduce travel speeds and improve safety

It also recommends that HRM:

- Develop a long-range capital works program for Sackville Drive
- Consult with businesses to minimize adverse impacts during construction
- Improve transit along the corridor.

Key Assumptions

Base Year

The base year for this project will be 2024.

Horizon Year

The study horizon year will be full build out plus 5-years. For the purposes of this traffic study, it is assumed that full buildout will occur by 2028. The horizon year will be 2033.

Background Growth Rate

The background growth rate of 1% per year. This equates to a growth factor of 1.094 over a nine-year period.

Mode Choice

The 2016 transit mode choice for home-to-work commuting trips was 12%¹. The 2016 walking mode choice was 2%. The HRM Integrated Mobility Plan's 2031 target is 26% for transit and walking trips for suburban areas. For this study, we will assume a 26% mode choice. This will be applied to the residential site traffic generation.

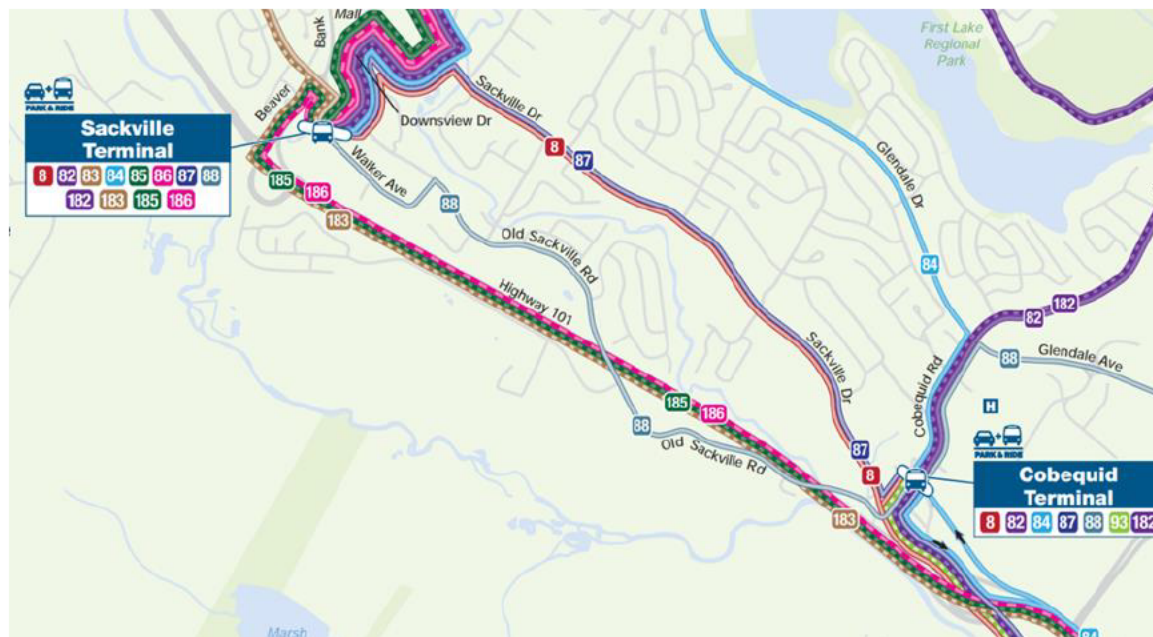


Figure 3 - Transit Routes Along Sackville Drive

Pass-by and Internal Trips

Since this is a mixed-use development, we propose to use a **10%** pass-by and **5%** internal trip rates. The 10% pass-by trip rate will be applied to the commercial site traffic generation. The internal trip rate will be applied to the residential site traffic generation.

¹ Source: 2016 Census

Methodology

We propose to follow the latest edition of the HRM Guidelines for the Preparation of Transportation Impact Studies. This Guide provides guidance on how development applications will be reviewed. One of the key considerations is to determine the extent to which a proposal is consistent with the objectives and policies of the Municipal Planning Strategies, Municipal Development Plans, and the Regional Plan.

Data Collection

We propose to collect peak hour traffic volume data for the following intersections:

- Sackville Drive at Skyridge Avenue
- Sackville Drive at Pinehill Drive

This data will be supplemented with HRM traffic volume data if available. We will also review HRM collision data on Sackville Drive near the proposed site entrances

Site Traffic Generation

Site generated traffic volumes for the proposed development will be determined using rates from ITE Trip Generation Manual (TGM), 11th Edition. For this study, we have used Land Use Code 221 Multi-Family Housing – Mid-Rise.² For this land use code, the TGM uses # of dwelling units as its independent variable.

Table 1-Site Traffic Generation

Land Use	Code	Units	Variable	Trip Generation Rates ¹						Trips Generated			
				AM Peak			PM Peak			AM Peak		PM Peak	
				Rate	In	Out	Rate	In	Out	In	Out	In	Out
Multifamily Housing (Mid-Rise)	221	413	Dwellings	0.46	23%	77%	0.46	61%	39%	44	146	116	74
Grocery Store	850	37	KGFA	2.86	59%	41%	8.95	50%	50%	62	43	166	166
						26% Mode Choice				11	38	30	19
						5% Internal Trips				2	7	6	4
						10% Passby Trips				6	4	17	17
Total Estimated Site Generated Trips										86	140	229	200
1. Trip generation rates calculated using ITE <i>Trip Generation Manual</i> , 11th Edition fitted curve equation.													

Trip Distribution and Assignment

Trips generated by the proposed development will be assigned and distributed to the existing roadway network based on travel patterns observed during the data collection.

² The ITE Trip Generation Manual defines mid-rise sites as having 4-10 floors.

Analysis

The PTV VISTRO 2023 software will be used to complete a level of service analysis at the following intersections:

- Sackville Drive at Pinehill Drive
- Sackville Drive at Entrance #1
- Sackville Drive at Entrance #2
- Sackville Drive at Entrance #3
- Sackville Drive at Skyridge Avenue

Using the HCM 7 methodology, the analysis will look at Level of Service (LOS) of the stop-controlled and signalized intersections, as well as its volume-to-capacity (v/c) ratio, queue lengths, and delay time. This analysis will be completed for the following scenarios:

- 2024 Existing Conditions Scenario
- 2033 Background Growth Scenario
- 2033 Total Volume Scenario

Level of Service Thresholds

The Highway Capacity Manual's (HCM) Level of Service (LOS) method is the most popular method to determine how well a transportation facility, typically an intersection, operates during a specified period. This is typically the weekday AM and PM peak hour periods.

The LOS method measures the average delay for a vehicle travelling through an intersection. Average delay is graded on a scale from A to F, with a LOS A associated with minimal delay, and LOS F associated with heavily congested conditions. Tables 2 and 3 provide the HCM LOS criteria for signalized and unsignalized intersections.

The HRM Guidelines for the Preparation of Transportation Impact Studies (8th Revision) will be used to analyze if vehicular traffic generated by the development, exceeds the following v/c thresholds:

- v/c ratio of 0.85 for a shared through movement at a signalized intersection
- v/c ratio of 1.00 for an exclusive turning movement at a signalized intersection
- v/c ratio of 0.85 for the overall intersection.

Table 2 - HCM Method for Signalized Intersections

Level of Service	Average Control Delay (seconds per vehicle)	General Description
A	≤ 10	Free flow
B	> 10 – 20	Stable flow (slight delays)
C	> 20 – 35	Stable flow (acceptable delays)
D	> 35 – 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	> 55 – 80	Unstable flow (intolerable delay)
F ¹	> 80	Forced flow (congested and queues fail to clear)

1. If the volume-to-capacity ratio for a lane group exceeds 1.0, LOS 'F' is assigned to the individual lane group. LOS for an overall approach or an intersection is determined solely by the control delay

Table 3 - HCM Method for Unsignalized Intersections

Level of Service	Average Control Delay (seconds per vehicle)
A	≤ 10
B	$> 10 - 20$
C	$> 20 - 35$
D	$> 35 - 55$
E	$> 55 - 80$
F ¹	> 80

1. If the volume-to-capacity ratio for a lane group exceeds 1.0, LOS 'F' is assigned to the individual lane group. LOS for an overall approach or an intersection is determined solely by the control delay

Mitigation Measures

Signals

We do not anticipate that traffic signals will be required at any of the driveway entrances. If the side street volumes meet the minimum threshold (75 vph over 6-hours), a signal warrant analysis will be carried out using the Transportation Association of Canada's (TAC) Canadian Signal Warrant Matrix Procedure.

Left Turn Lane Warrants

A Left turn warrant will be completed for the two residential entrances using the Ministry of Transportation Ontario (MTO) Geometric Design Standards for Ontario Highways. We do not anticipate that the truck entrance will require a left turn lane.

Right Turn Warrants

To determine the need for a right turn lane at the three entrances, the Ohio Department of Transportation's 4-lane Right Turn Lane Warrant for low speed (<70 km/h) highways will be used. We do not anticipate that the truck entrance will require a right turn lane.

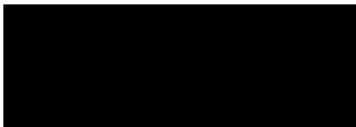
Site Design and Access Parameters

Sight distance will be measured at the three driveway entrances to confirm if the sight distance meets the TAC Guidelines.

Report Structure and Content

The traffic impact study will address all items above and will be emailed to you in PDF format.

Thank you,
DesignPoint Engineering & Surveying Ltd.



Paul V. Burgess, M.Eng .P.Eng.
Senior Transportation Engineer