

247 Main Street Traffic Impact Statement

April 2023

Prepared for
Cornerstone Developments Limited





TABLE OF CONTENTS

1	INTRODUCTION	2
1.1	BACKGROUND	2
2	EXISTING TRAFFIC CONDITIONS	5
2.1	DESCRIPTION	5
2.2	EXISTING TRAFFIC VOLUMES.....	10
2.3	TRIP DISTRIBUTION	10
2.4	TRANSIT AND PEDESTRIANS.....	11
2.5	STOPPING SITE DISTANCE (SSD)	12
3	SITE GENERATED TRAFFIC.....	13
3.1	TRIP GENERATION	13
4	CONCLUSIONS AND RECOMMENDATIONS.....	15



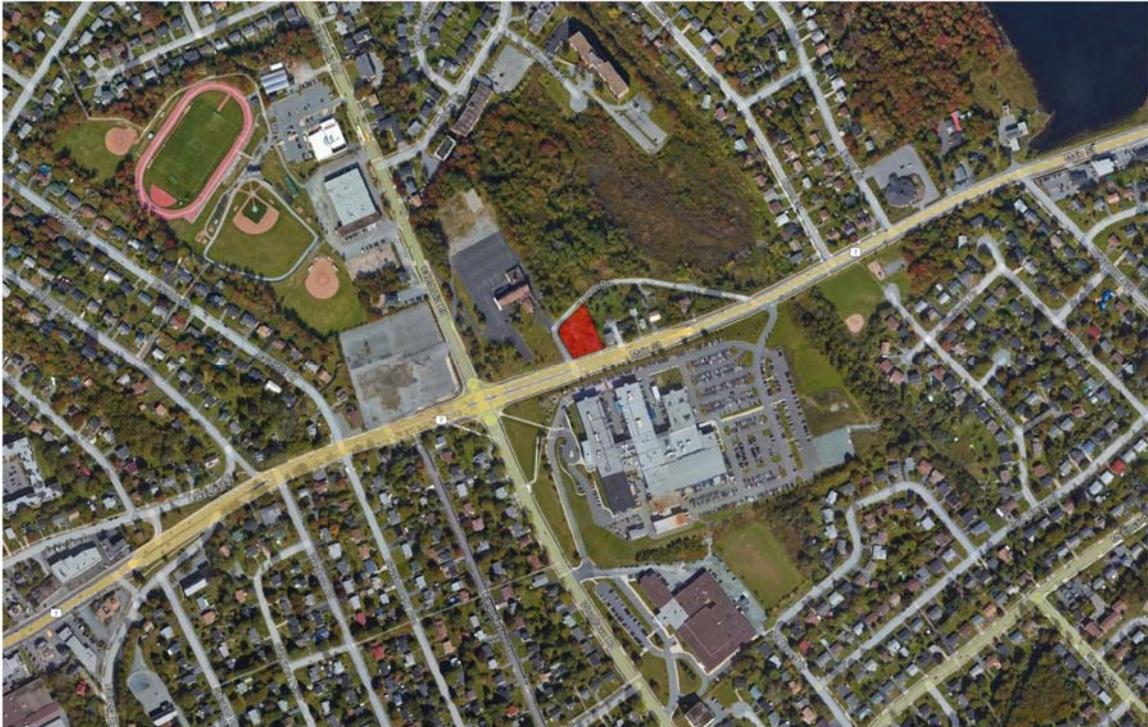
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1 Introduction

1.1 Background

JHAL Ltd., on behalf of the owner Cornerstone Developments Limited, is working on a proposal to redevelop their property on the northeast corner of Kuhn Drive and Main Street in Dartmouth, Nova Scotia with a 14-story multifamily residential building. The project has been branded as "Gardens on Main" and Exhibit 1.1 shows the site in red in the context of the surrounding area.

Exhibit 1.1 – Proposed Residential Development at 247 Main Street in Dartmouth, Nova Scotia



Source: Google Earth

The developer has proposed to redevelop this property with a 14-story building that will include 148 apartment units as well as two commercial units (1,725 sqft) that will serve the building's residents such as a confectionary store or medical office. There will be a mix apartments including bachelor, one-bedroom, one-bedroom with a den and two-bedroom units. It will replace an existing single family home that is currently vacant.

Access to the property will be from a new driveway on Kuhn Road to an underground parking area that will have 144 parking spaces for vehicles along with a dedicated parking area for bicycles and electric scooters.

The site is located approximately 100 meters from the signalized Main Street/Woodlawn Road/Caledonia Road intersection and directly across from the Nova Scotia Community College Akerley Campus.

Refer to Exhibit 1.2 for a proposed Site Plan and Servicing Schematic as provided by Servant Dunbrack McKenzie & MacDonald Limited (SDMM), Exhibit 1.3 for a 3D rendering of the proposed development provided by JHAL Ltd., and Exhibit 1.4 for a view of the existing property.

Exhibit 1.2 – 247 Main Street Proposed Servicing and Site Plan

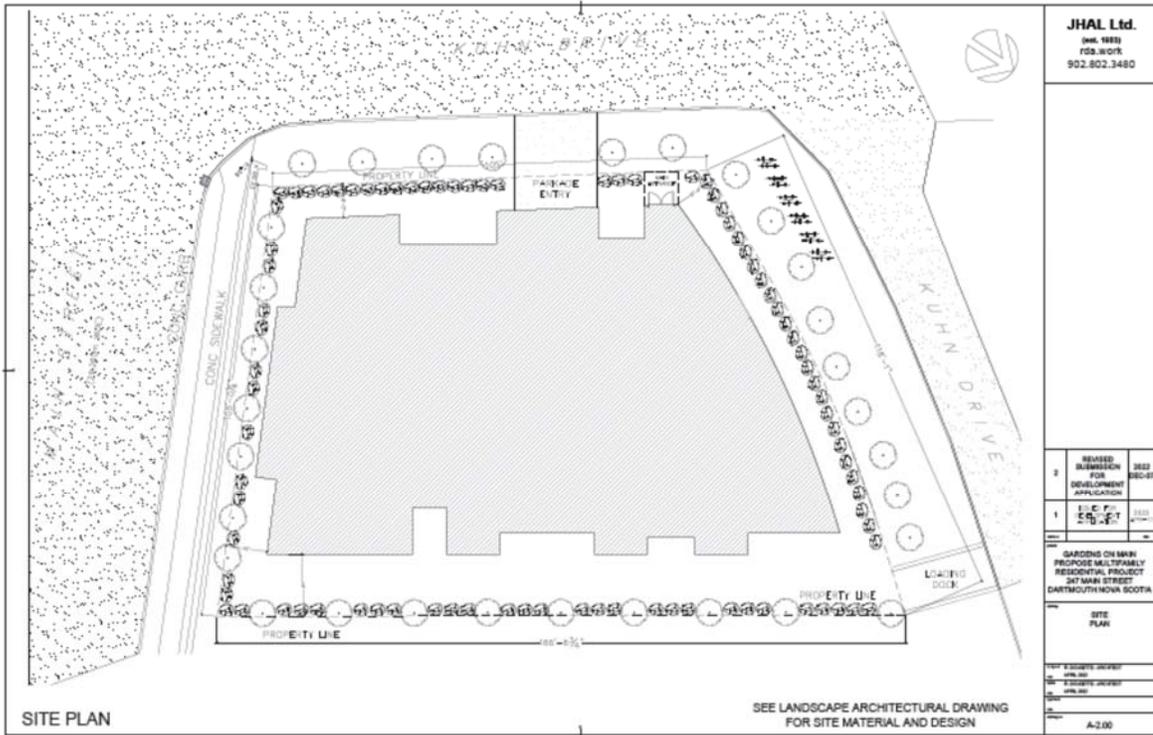


Exhibit 1.3 – 247 Main Street 3D Rendering



Exhibit 1.4 – 247 Main Street in Dartmouth, Nova Scotia



JRL consulting inc. was retained by the owner to prepare a Traffic Impact Statement (TIS) to assess the potential traffic impacts of the proposed residential apartment development in Dartmouth, Nova Scotia.

The purpose of a Traffic Impact Statement is to provide a high level overview of a proposed development including estimates of site-generated traffic along with an initial review of existing traffic counts in the general area of the proposed development. This information will form part of the initial application to HRM which will be reviewed by staff and council. We are pleased to submit this report which summarizes our findings and provides the information required by HRM for review.

2 Existing Traffic Conditions

2.1 Description

The principal routes affected by this development are Main Street and Kuhn Road. Exhibit 2.1 summarizes HRM's Characteristics of Street Classes from HRM's Municipal Service Systems Design Guidelines.

Exhibit 2.1 - HRM Characteristics of Street Classes

Characteristic	Arterial Street	Major Collector	Minor Collector	Local Industrial	Local Street
1. Traffic Service Function	First Consideration	Traffic movement primary consideration, land access secondary consideration, some parking	Traffic movement of equal importance with land access, parking permitted	Traffic movement secondary consideration with land access primary consideration, parking permitted	Traffic movement secondary consideration with land access primary consideration, parking permitted
2. Land Access Function	Limited Access with no parking				
3. Range of design traffic average daily volume	More than 20,000	12,000 to 20,000 or more	Up to 12,000	Less than 3,000	Less than 3,000
4. Characteristics of traffic flow	Uninterrupted flow except at signals; w/ pedestrian overpass	Uninterrupted flow except at signals and crosswalks	Interrupted flow	Interrupted flow	Interrupted flow
5. Average running speed in off-peak conditions	50-70 km/hr	40-60 km/hr	30-50 km/hr	15-30 km/hr	15-30 km/hr
6. Vehicle types	All types	All types but trucks may be limited	All types with truck limitation	All types	Passenger and service vehicles, transit buses; large vehicles restricted
7. Connects to	Expressways, arterials, major collectors, minor collectors	Expressways, arterials, major collectors, minor collectors, some locals	Arterials, major collectors, minor collectors, locals	Some major collectors, minor collectors, locals	Some major collectors, minor collectors, locals

Main Street is an arterial road also known as NS Highway 7 that runs in a general east-west direction from downtown Dartmouth to the Eastern Shore. It has two eastbound and two westbound lanes in front of the proposed development. An eastbound left turn auxiliary lane with 30 meters storage is in place on Main Street at Kuhn Road. There are concrete sidewalks on both sides on Main Street in this area. Marked bicycle lanes are installed on both sides of Main Street. The posted speed limit is 50 km/hr. Its signalized intersection with Caledonia Road and Woodlawn Road is located just over 100 meters west of Kuhn Road.

Kuhn Road is short, narrow graveled local road with two access points from Main Street located approximately 225 meters apart. It provides access to four existing residential dwellings as well as the rear entrance of Sir Thomas Moore Roman Catholic Church. The portion that connects to the church is paved and there are no sidewalks.

Refer to Exhibit 2.2 for photos of the Study Area around the proposed development.

Exhibit 2.2 – Study Area Photos



247 Main Street at Kuhn Road



Main Street at Kuhn Road looking east



Main Street at Kuhn Road looking west



Main Street at Kuhn Road looking north



Eastbound Left Turn Auxiliary Lane on Main Street at Kuhn Road



Kuhn Road at Main Street looking south



Kuhn Road looking east at Rear Entrance to Church



Main Street/Woodlawn Road/Caledonia Road Intersection looking northwest



Woodlawn Road at Main Street looking north



Main Street at Woodlawn Road/Caledonia Road looking east



Caledonia Road at Main Street looking south

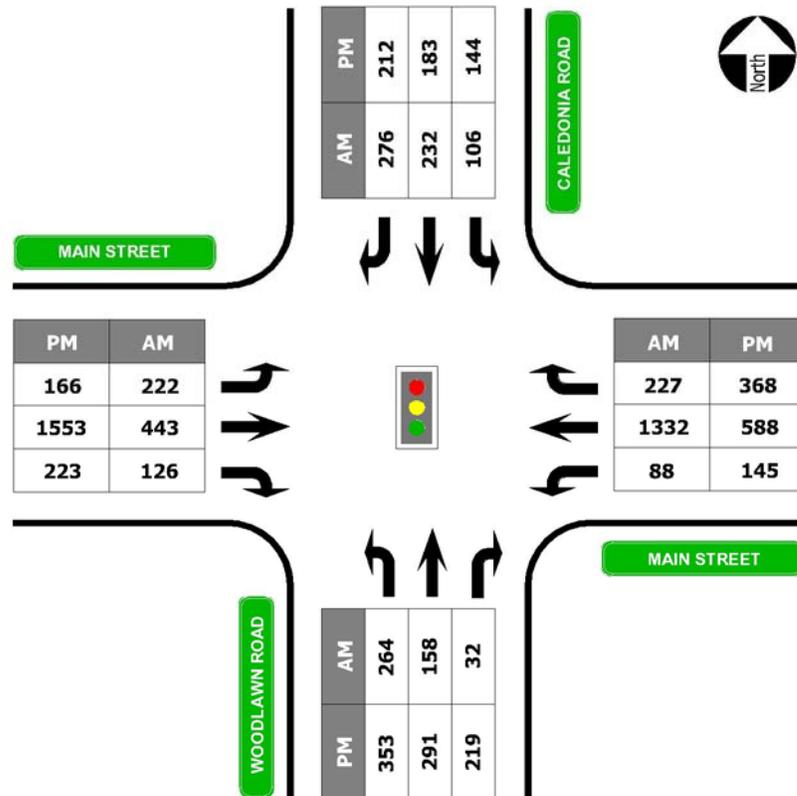


Main Street at Woodlawn Road/Caledonia Road looking west

2.2 Existing Traffic Volumes

We completed a site review on December 31, 2022. The proposed development on Kuhn Road is located just west of the signalized Main Street/Caledonia Road/Woodlawn Road intersection. HRM completed turning movement counts this intersection in September 2017. We applied an annual background growth rate of 2% to estimate traffic in 2022 as summarized in Exhibit 2.3.

Exhibit 2.3 – Main Street at Caledonia Road/Woodlawn Road Estimated Existing Traffic 2022



Based on these counts we estimate that the traffic on Main Street in front of the development in the AM peak hour will be 1647 vehicles westbound towards downtown Dartmouth and Halifax and 581 vehicles eastbound. In the PM peak hour we estimate 1101 vehicles westbound towards downtown Dartmouth and Halifax and 1916 vehicles eastbound in front of 247 Main Street.

2.3 Trip Distribution

HRM's counts at the Main Street/Caledonia Road/Woodlawn Road intersection provide an indication of trip distribution in the area and we expect that traffic generated by the proposed residential development will follow the same patterns. The majority of vehicles in the AM peak hour are heading west towards Halifax (74%) and this reverses in the PM peak as people return home eastbound (64%).

2.4 Transit and Pedestrians

The area around the proposed development is well serviced by Halifax Transit on Route 10 Dalhousie that provides regular service 7 days a week with connections to the rest of the transit network in Halifax and Dartmouth.

There are concrete sidewalks on both sides of Main Street near the proposed development. The Main Street/Caledonia Road/Woodlawn Road intersection to the west offers opportunities for pedestrians to safely cross Main Street and there is a marked crosswalk with overhead beacons on Main Street located approximately 320 meters east of Kuhn Road.

Exhibit 2.4 – Halifax Transit Route 10 Dalhousie



2.5 Stopping Site Distance (SSD)

As per the Transportation of Canada Geometric Design Guide for Canadian Roads, adequate stopping site distance *"is essential for safe operation that the vehicle operator be able to see far enough ahead to stop if necessary. Conditions that would force a vehicle operator to stop are for example, an object on the roadway, a culvert washout or other fault in the roadway. Adequate stopping site distance is required throughout the length of the roadway. Minimum stopping site distance is the sum of two distances namely:*

- *Brake reaction distance*

The distance travelled during the brake reaction time, that is the time that elapses from the instant an object, for which the driver decides to stop, comes into view to the instant the driver takes remedial action (contacts brake pedal).

- *Braking distance*

The distance travelled from the time that braking begins to the time the vehicle comes to a stop."

The proposed driveway to the underground parking in the building is located on existing paved portion of Kuhn Road which connects to the church driveway and is approximately 40 meters in length from Main Street to the graveled portion which is close to a 90 degree turn. As a result northbound vehicle speeds on Kuhn Road will be low due to the short distance from Main Street.

There is no posted speed on Kuhn Road today. A design speed of 40 km/h has a minimum stopping site distance of 45 m while a design speed of 50 km/hr requires a stopping site distance of 65 m. Vehicles existing from the proposed driveway will have good visibility to Main Street to the south.

3 Site Generated Traffic

3.1 Trip Generation

The proposed development will include 148 apartment units as well as two commercial units (1,725 sqft) that will serve the building’s residents such as a confectionary store or medical office. The two small commercial units are intended to serve building residents only so we don’t expect them to draw traffic from the surrounding transportation network, however, we have included trip generation estimates for assessment. The existing site has a single family home which is currently vacant.

We completed trip generation estimates using equations provided in Institute for Transportation Engineer’s Trip Generation Manual 11th Edition for the existing and proposed land uses with the following Land Use Codes.

- ITE Land Use 210 Single Family Detached Housing

"Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision." The unit of measurement for average vehicle trip ends is dwelling units.

- ITE Land Use 222 Multifamily Housing (High-Rise)

"Mid-rise multifamily housing includes apartments, townhouses, and condominiums. Each building has more than 10 floors of living space. Access to individual units is through and outside building entrance, a lobby, elevators and a set of hallways." The unit of measurement for average vehicle trip ends is dwelling units.

- ITE Land Use 822 Retail Plaza (<40K)

"A strip retail plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, the GLA is the same as the gross floor area of the building. The 40,000 square feet GFA threshold between strip retail plaza and shopping plaza (Land Use 821) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA." The unit of measurement for average vehicle trip ends is 1,000 Square Feet Gross Floor Area. We used the average rate provided for the AM and PM peak hours.

Exhibit 3.1 – Estimated Existing Site Generated Traffic Volumes

LAND USE	QUANTITY	AM PEAK			PM PEAK		
		TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT
Single Family ITE Land Use 210	1	1	26%	74%	1	63%	37%
			0	1		1	0
TOTAL		1	0	1	1	1	0

Exhibit 3.2 – Estimated Future Site Generated Traffic Volumes

LAND USE	QUANTITY	AM PEAK			PM PEAK		
		TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT
Apartments ITE Land Use 221	148	51	26%	74%	62	62%	38%
			13	38		38	23
Commercial/Retail ITE Land Use 822	1,725 sqft	4	60%	40%	11	50%	50%
			2	2		6	6
TOTAL		55	15	40	73	44	29

We estimate that the proposed development will generate additional net new traffic volumes of **54** vehicles in the AM peak hour and **72** vehicles in the PM peak hour.

4 Conclusions and Recommendations

- This Traffic Impact Statement has provided a high level overview of the proposed redevelopment of 247 Main Street in Dartmouth, Nova Scotia. The proposed development will replace a single family home with a new 14 storey apartment building that will have 148 units with a mixture of bachelor, 1 and 2 bedroom units as well as two small commercial units that are intended to serve building residents only (1,725 sqft).
- It includes an estimate of new site generated trips and an analysis of existing traffic volumes in the surrounding area.
- Based on ITE Trip Generation Rates, we estimate that the proposed development will generate **54** new vehicle trips in the AM Peak Hour and **72** new vehicles in the PM Peak Hour.
- Site generated traffic will most likely follow existing trip distribution patterns along Main Street in the AM and PM peak hours with the majority of traffic traveling west towards downtown Dartmouth and Halifax in the AM peak hour and this reverses in the PM peak hour as people return home from work.
- The location is well served by Halifax Transit on Route 10 Dalhousie with connections to various key transit terminals in the area
- The site is also located in a pedestrian and bicycle friendly area so it fits well with HRM's Active Transportation Program that aims to help residents bike, walk and use other human power ways to move around the city. HRM's Integrated Mobility Plan (IMP) has set a target that at least 30% of trips will be made by walking, bicycling or transit while no more than 70% will be made by private vehicles.
- We recommend that Kuhn Road be upgraded to Transportation Association of Canada and HRM Guidelines and that vegetation be removed in the right of way near the proposed development to ensure maximum visibility for vehicles exiting the property from the underground parking area.
- A new stop sign will be required at the intersection of Kuhn Road and the rear driveway of the Church and we recommend that this stop be installed on Kuhn Road at the intersection with the Church Driveway for westbound traffic. Consideration should be given to a lower speed limit (40 km/hr) on this short local road as we expect speeds to be low based on the proposed configuration. All new signs and pavement markings should be installed in accordance with TAC's Manual of Uniform Traffic Control Devices for Canada (MUTCDC).
- Our assessment of future visibility at the proposed site access driveway indicates that Stopping Site Distance on Kuhn Road is adequate to the east and west.