

Stonehaven at Rockingham South Traffic Impact Statement

March 2018

Prepared for
Servant Dunbrack McKenzie & MacDonald Ltd

JRL consulting

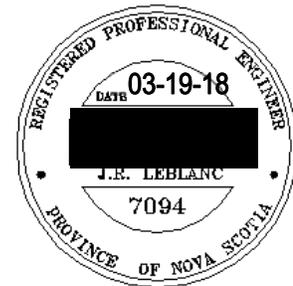
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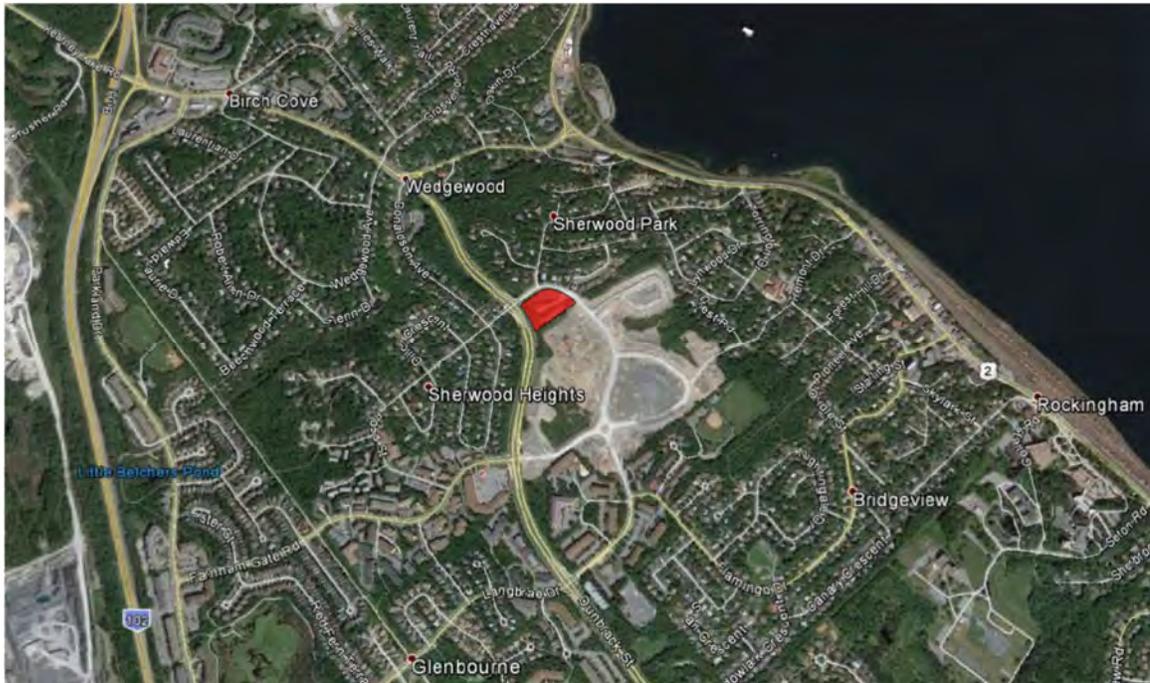
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1 Introduction

1.1 Background

Servant Dunbrack McKenzie & MacDonald Ltd., on behalf of the owner, are working on a proposal to develop a parcel of land at the southeast corner of the Dunbrack Street/Wentworth Drive/Ross Street intersection in Halifax, Nova Scotia called Stonehaven at Rockingham South. Exhibit 1.1 shows the site in red in the context of the surrounding area.

Exhibit 1.1 – Stonehaven at Rockingham South in Halifax, Nova Scotia

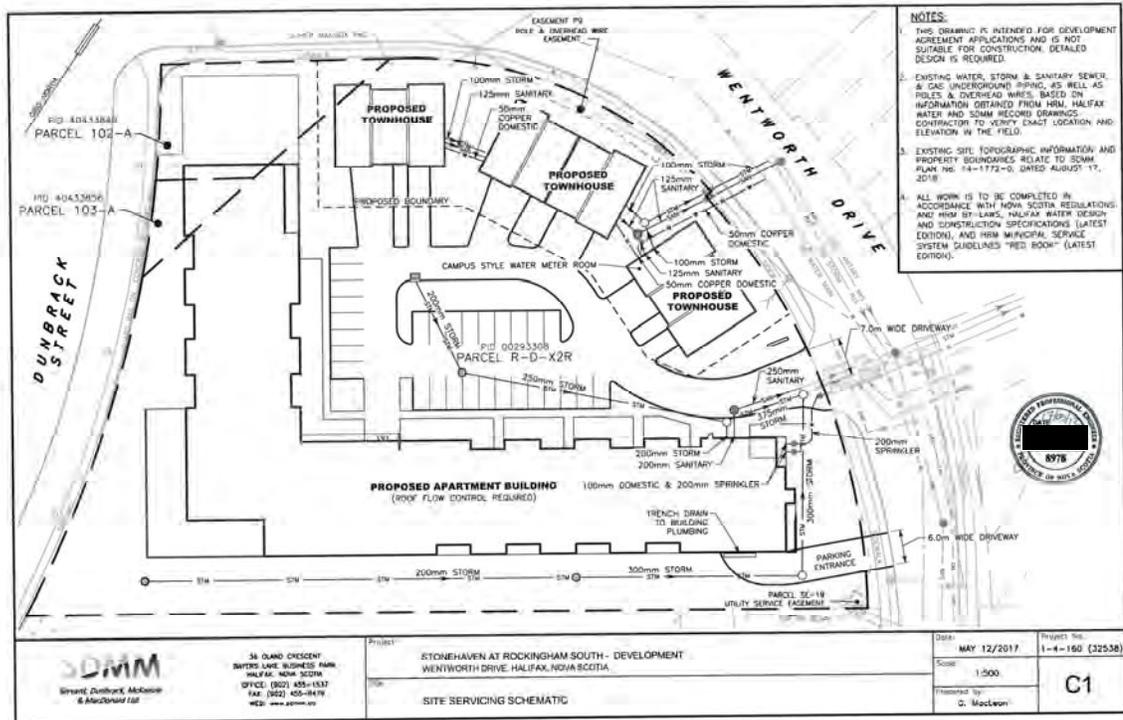


Source: Google Earth

The proposed development will be a mixture of residential land uses including 98 apartment units and 10 townhouses. The townhouses and surface parking for the apartments will be accessed from a proposed driveway on Wentworth Drive with a 2nd driveway for the underground parking associated with the apartment building.

Refer to the following Exhibit 1.2 for a proposed site plan prepared by Servant Dunbrack McKenzie & MacDonald Ltd and ekistics plan+design.

Exhibit 1.2 – Stonehaven at Rockingham South Proposed Site Plan



2 Existing Traffic Conditions

2.1 Description

The principal routes affected by this development are Dunbrack Street and Wentworth Drive. 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 |

Dunbrack Street is an arterial street that runs in a general north-south direction from Kearney Lake Road at the north to Highway 102 at the south where it becomes Northwest Arm Drive to Old Sambro Road. There are two lanes in each direction with a full median and dedicated left turn auxiliary lanes at a number of intersections. Access to Dunbrack Street is restricted to roads only and there is a posted speed limit of 60km/hr near the proposed development. There are concrete sidewalks on both sides of Dunbrack Street in this area.

Wentworth Drive is a minor collector that now extends from its intersection with Dunbrack Street through the new Rockingham South development to a new roundabout that connects to Kinghsridge Drive. It has a single marked yellow center line. There are concrete sidewalks on both sides and the posted limit speed limit is 50 km/hr.

Refer to Exhibit 2.2 for photos of the Study Area near Stonehaven at Rockingham South.

Exhibit 2.2 – Study Area Photos



Wentworth Drive looking northwest to Stonehaven on left



Wentworth Drive looking southeast at proposed driveway to Stonehaven



Stonehaven property from south corner



Wentworth Drive at proposed entrance looking southeast



Wentworth Drive at proposed entrance looking northwest



Wentworth Drive at Dunbrack Street



Dunbrack Street at Wentworth Drive/Ross Street



Dunbrack Street at Wentworth Drive/Ross Street looking northwest



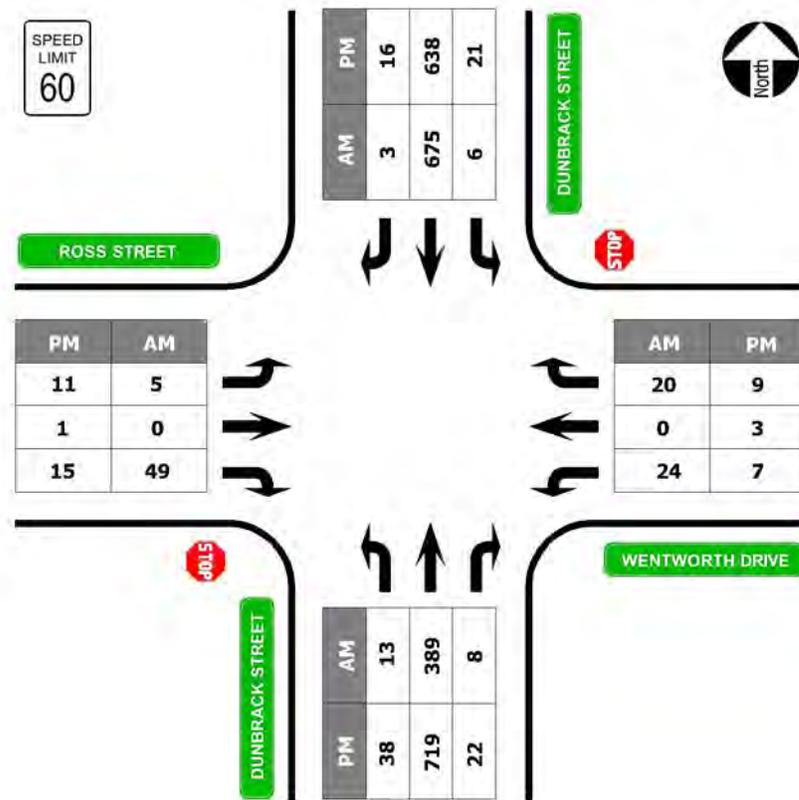
Dunbrack Street at Wentworth Drive/Ross Street looking southeast

2.2 Existing Traffic Volumes

We completed a site review at the proposed Stonehaven development at Rockingham South and the unsignalized Dunbrack Street at Wentworth Drive/Ross Street intersection will be impacted.

HRM completed AM and PM peak hour manual turning movement counts at this intersection in June 2009. These counts provide an estimate of the traffic on Dunbrack Street near the development in the AM and PM peak hours. We applied an annual background growth rate of 2% to estimate the peak hour traffic in 2016 as summarized in Exhibit 2.3.

Exhibit 2.3 – Dunbrack Street at Wentworth Drive/Ross Street Estimated Existing Traffic 2016



HRM also completed 24-hour tube counts on Dunbrack Street in 2012 and the two-way Annual Average Weekday Traffic (AAWT) was 11,144 with 5,468 southbound and 5,676 northbound.

2.3 Existing Trip Distribution

HRM counts at the Dunbrack Street/Wentworth Drive/Ross Street intersection provide an accurate picture of current trip distribution in the study area and we expect that traffic generated by the proposed Stonehaven development at Rockingham South will follow similar patterns.

2.4 Stopping Site Distance

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."

For a design speed of 50 km/h, the minimum stopping site distance is 65 m.

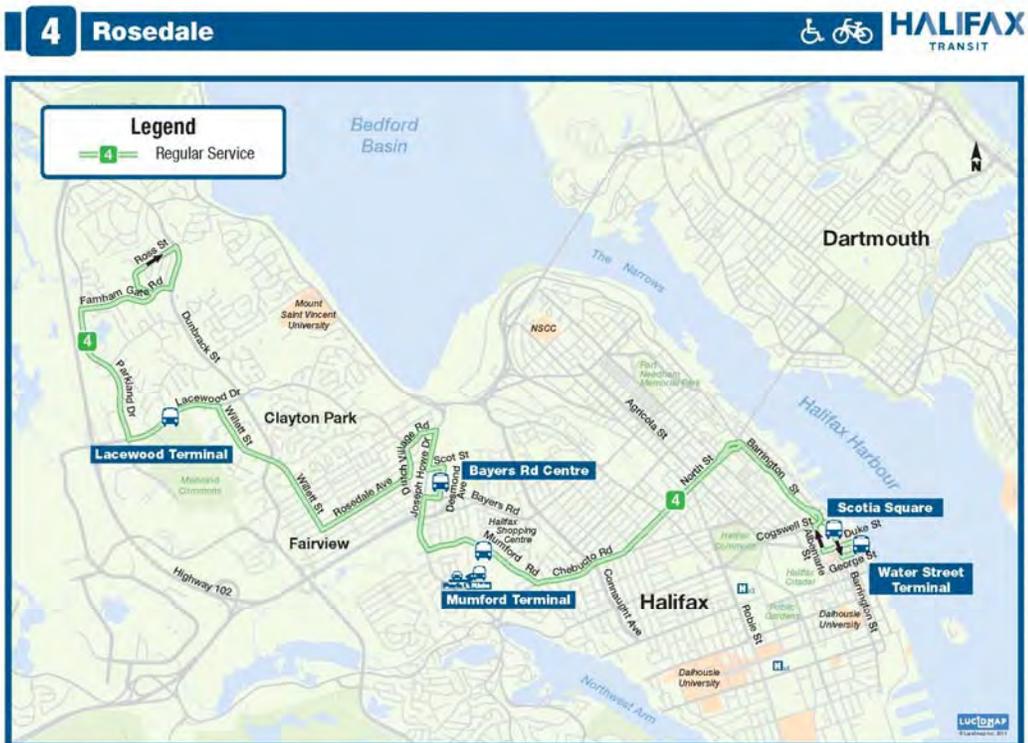
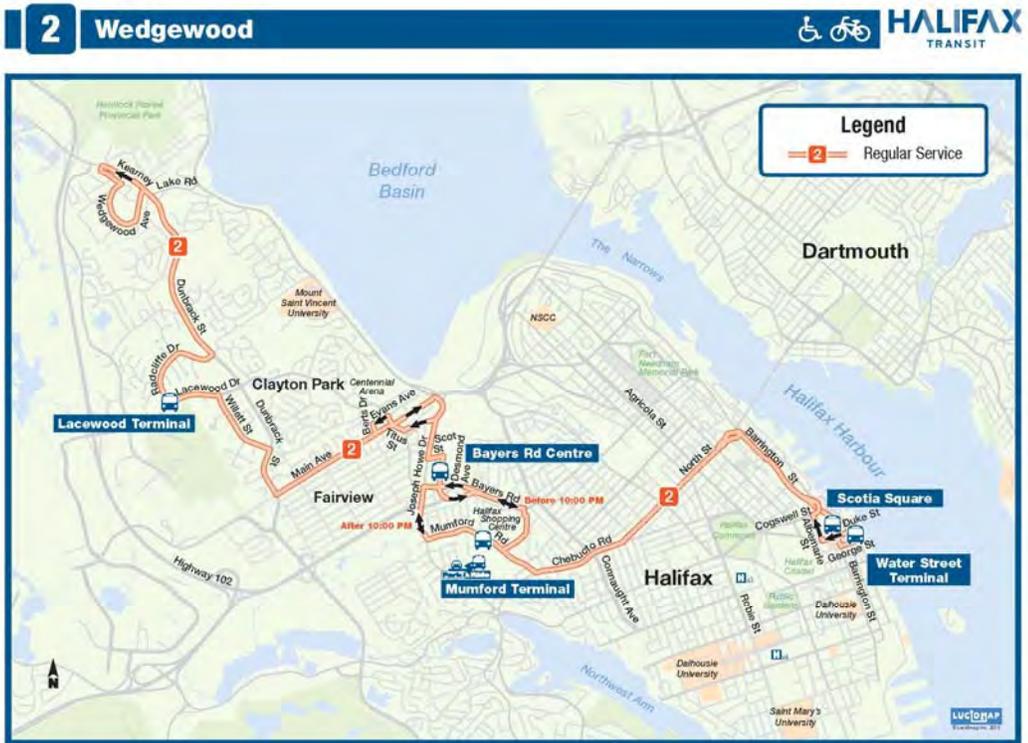
The proposed driveway is in place and we completed a visual assessment during our site visit as shown in Exhibit 2.2. There are no issues with stopping site distance for northbound traffic on Wentworth Drive at the proposed driveway as the visibility is good. The driveway is located on a horizontal curve and there is a vertical crest on Wentworth Drive to the north of the driveway so we recommend that adequate stopping site distance be confirmed on Wentworth Drive for southbound traffic with a survey.

2.5 Transit and Pedestrians

The study area is well serviced by Halifax Transit on Route 2 Wedgewood and Route 4 Rosedale (see Exhibit 2.4).

There are concrete sidewalks on both sides of Dunbrack Street and Wentworth Drive near at the proposed Stonehaven development at Rockingham South. There is a marked RA-5 crosswalk on Dunbrack Street at Wentworth Drive/Ross Street with pedestrian actuated overhead amber warning lights.

Exhibit 2.4 – Halifax Transit Route Maps



3 Site Generated Traffic

3.1 Trip Generation

The proposed Stonehaven development will be a mixture of residential land uses including 98 apartments and 10 townhouses.

We completed trip generation estimates using equations provided in Institute for Transportation Engineer’s Trip Generation Manual Ninth Edition. We used the following ITE Land Use Code to assess site generated trips:

- 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 220 Apartment

"Apartments are rental dwelling units that are located within the same building with at least three other dwelling units, for examples quadraplexes and all types of apartment buildings." The unit of measurement for average vehicle trip ends is dwelling units.

Exhibit 3.1 – Stonehaven at Rockingham South Site Generated Traffic Volumes

| LAND USE | QUANTITY | AM PEAK | | | PM PEAK | | |
|--------------------------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | TOTAL | ENTER | EXIT | TOTAL | ENTER | EXIT |
| Single Family Detached Housing | 10 | 17 | 25% | 75% | 13 | 63% | 37% |
| | | | 4 | 13 | | 8 | 5 |
| Apartments | 98 | 52 | 20% | 80% | 72 | 65% | 35% |
| | | | 10 | 42 | | 47 | 25 |
| TOTAL | | 68 | 15 | 54 | 85 | 55 | 30 |

4 Conclusions and Recommendations

- This Traffic Impact Statement has provided a high level overview of the proposed Stonehaven at Rockingham South residential development in Halifax, Nova Scotia.
- It includes an estimate of existing site generated trips as well as an analysis of existing traffic volumes in the surrounding area.
- We estimate that the proposed development creates **68** vehicles trips in the AM peak hour period and **85** vehicle trips in the PM peak hour period.
- Site generated traffic will most likely follow existing trip distribution patterns along Dunbrack Street in the AM and PM peak hours.
- We recommend that Stopping Site Distance on Wentworth Drive at the proposed Stonehaven site entrance be confirmed by survey.