

Northwood LTC Bedford Traffic Impact Statement

February 2024

Prepared for
Servant Dunbrack McKenzie & MacDonald (SDMM) Ltd.





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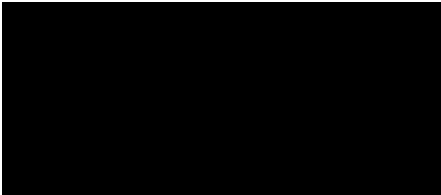
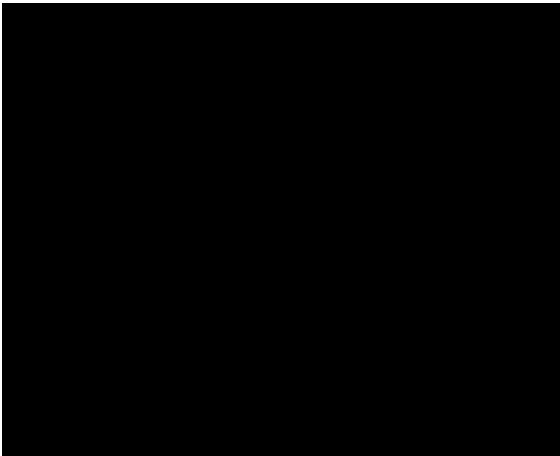
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1 Introduction

1.1 Background

Servant Dunbrack McKenzie & MacDonald (SDMM) Ltd, on behalf of the owner Northwood, is working on a proposal to develop a long term care facility in Bedford, Nova Scotia. Exhibit 1.1 shows the site in red in the context of the surrounding area.

Exhibit 1.1 – Proposed Northwood Long Term Care Facility in Bedford, Nova Scotia



Source: Google Earth

Northwood has proposed to create a new three-level long term care facility that will contain 48 units in addition to facilities for supporting staff (total area of 41,336 sqft).

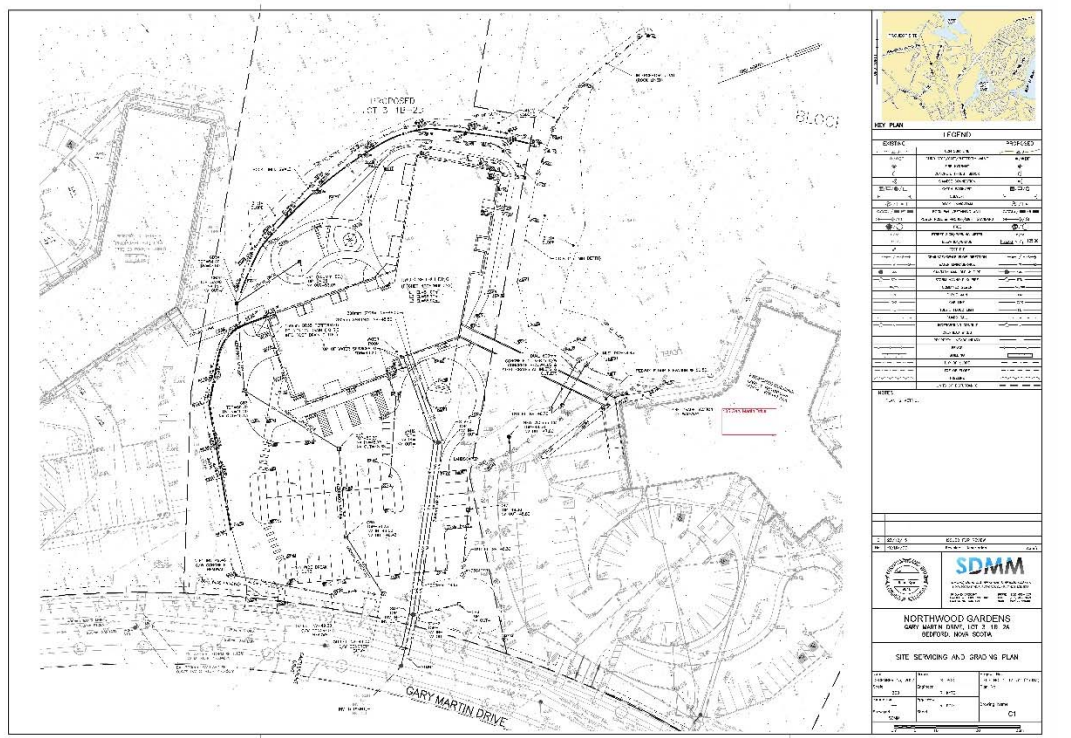
Access to the property will be from a new driveway on Gary Martin Drive located just west of the existing Northwood long-term care facility located at 123 Gary Martin Drive. Surface parking will be provided with 40 spaces along with 5 accessible parking spaces near the entrance.

Refer to Exhibit 1.2 for a photo of the site and Exhibit 1.3 for a proposed Site Plan as provided by SDMM and harveyARCHITECTURE.

Exhibit 1.2 – Northwood Long Term Care Bedford Property on Gary Martin Drive



Exhibit 1.3 – Northwood Long Term Care Bedford Proposed Site Plan



JRL consulting inc. was retained to prepare a Traffic Impact Statement (TIS) to assess the potential traffic impacts of the proposed long term care facility in Bedford, 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 route affected by this development is Gary Martin 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

Gary Martin Drive is a major collector road that runs in a north-south direction between Hammonds Plains Road (NS Highway 213) and Broad Street. It has two lanes in each direction between Hammonds Plains Road and Innovation Drive and one lane in each direction between Innovation Drive and Broad Street. A concrete sidewalk is located on the western side and a paved multi-use pathway is located on the eastern side throughout its entire length. Marked crosswalks on Gary Martin Drive are in place at Innovation Drive and at Capstone Crescent. The posted speed limit is 50 km/hr. Its intersection with Innovation Drive is located approximately 300 meters north of the proposed development.

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

Exhibit 2.2 – Study Area Photos



Castlestone Drive looking east to proposed Northwood LTC Facility



Gary Martin Drive looking south with proposed Northwood LTC Facility on right



Gary Martin Drive looking north with proposed Northwood LTC Facility on left



Castlestone Drive looking west from Northwood LTC Facility



Gary Martin Drive at Innovation Drive/Existing Northwood LTC Driveway looking north



Gary Martin Drive at Innovation Drive/Existing Northwood LTC Driveway looking south



Innovation Drive at Gary Martin Drive looking west



Existing Northwood LTC Driveway at Gary Martin Drive looking east



Existing Northwood Gardens Signage on site

2.2 Existing Traffic Volumes

We completed a site review on February 17, 2024. The proposed development will be accessed from a new driveway on Gary Martin Drive. HRM completed a speed study and 24 hour volume counts in June 2021 between Capstone Crescent and Innovation Drive located just north of the proposed development. The AM peak hour is from 8:00 AM to 9:00 AM and the PM peak hour is from 4:00 PM to 5:00 PM.

The 85th percentile speed at this location was 57 km/hr and Average Annual Weekday Traffic Volumes (AAWT) were 5724 vehicles in 2021. We applied a 2% annual growth factor to estimate traffic volumes in 2024 of 6074 vehicles.

Based on these counts we estimate that traffic on Gary Martin Drive in front of the development in the AM peak hour is 327 vehicles northbound towards downtown Halifax and Dartmouth and 176 vehicles southbound. In the PM peak hour we estimate 245 vehicles northbound towards Halifax and Dartmouth and 281 vehicles southbound.

2.3 Trip Distribution

HRM's counts on Gary Martin Drive 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 north towards Halifax (65%) and this reverses in the PM peak as people return home southbound (53%).

2.4 Transit and Pedestrians

The area around the proposed development is well serviced by Halifax Transit on Route 90 Larry Uteck, Route 91 Hemlock Ravine, Route 194 West Bedford Express and Route 433 Tantallon that provide regular service 7 days a week with connections to the rest of the transit network in Halifax and Dartmouth (refer to Exhibits 2.4 through 2.7). The West Bedford Park and Ride Transit Terminal is located on Innovation Drive within walking distance of the proposed development.

A concrete sidewalk is located on the western side and a paved multi-use pathway is located on the eastern side throughout its entire length. Marked crosswalks on Gary Martin Drive are in place at Innovation Drive and at Capstone Crescent.

Exhibit 2.4 – Halifax Transit Route 90 Larry Uteck

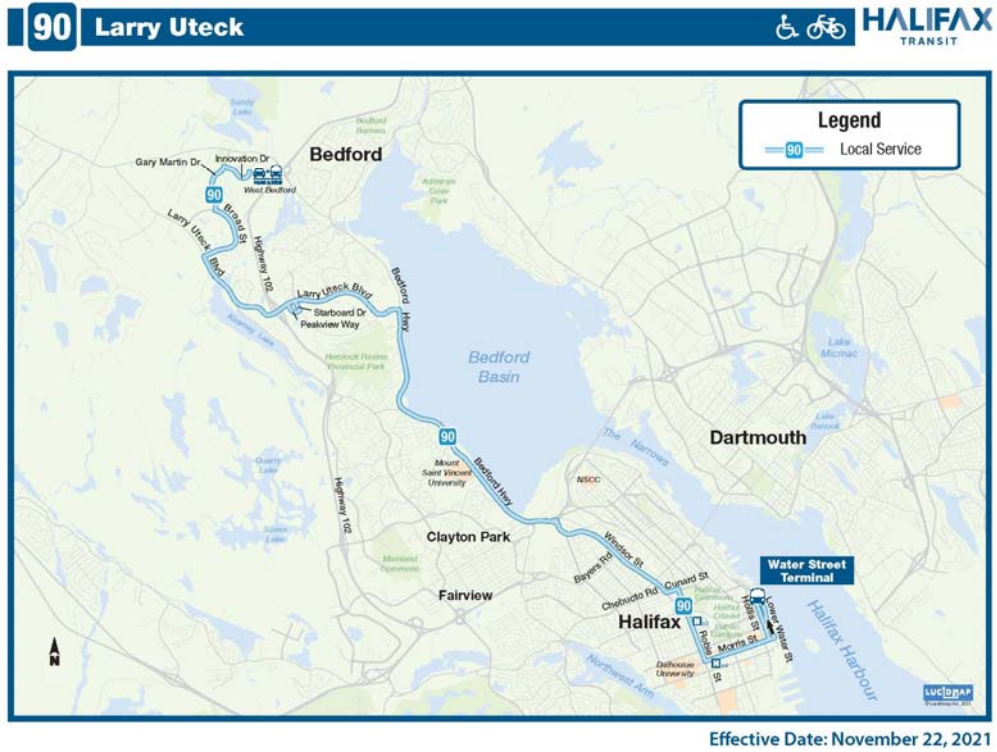


Exhibit 2.5 – Halifax Transit Route 91 Hemlock Ravine



Effective Date: November 22, 2021

Exhibit 2.6 – Halifax Transit Route 194 West Bedford Express

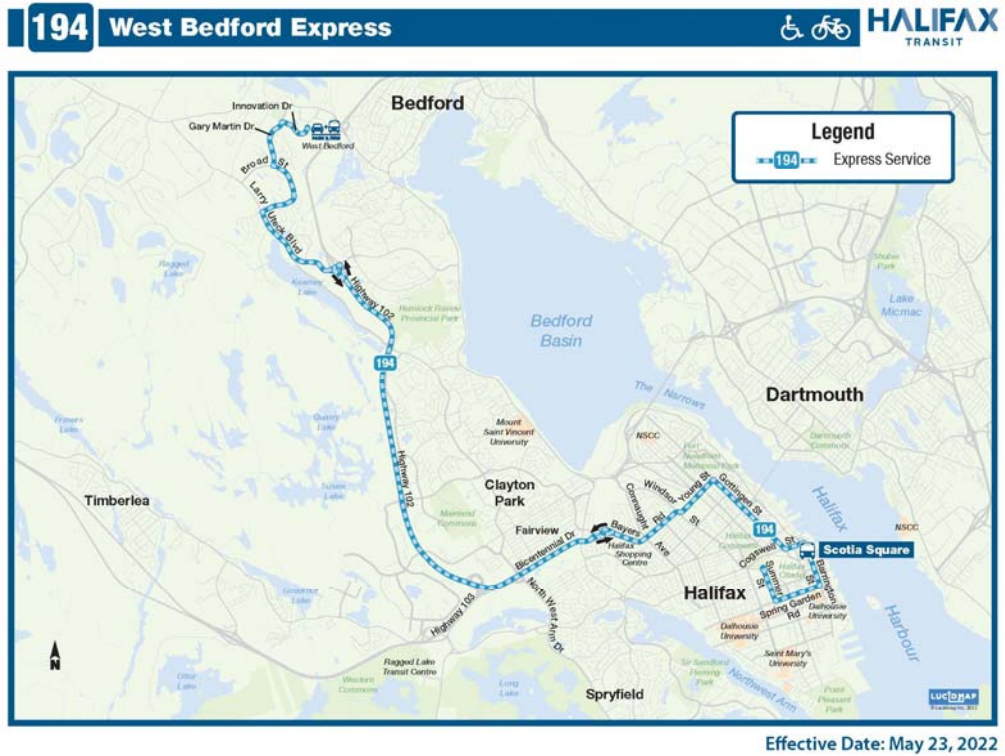


Exhibit 2.7 – Halifax Transit Route 433 Tantallon



2.5 Stopping Sight Distance

As per the Transportation of Canada Geometric Design Guide for Canadian Roads, adequate stopping sight 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 will be located on Gary Martin Drive just across from the existing Castlestone Drive. The posted speed limit is 50 km/hr which requires a stopping sight distance of 65 m. A design speed of 60 km/hr requires a minimum stopping sight distance of 85 m.

We completed a Stopping Sight Distance (SSD) review on February 18, 2024 on Gary Martin Drive at the proposed access point to the development. Field measurements were recorded using an object height of 0.6 m and a driver eye height of 1.05 m. Refer to Exhibit 2.8.

Exhibit 2.8 – Pylon used for Stopping Sight Distance Field Measurements



Visibility on Gary Martin Drive exceeds TAC requirements of 65 m and available SSD is greater than 85 m for northbound drivers and greater than 85 m for southbound drivers. Refer to Exhibit 2.9 for a summary of Stopping Sight Distance on Gary Martin Drive as well Exhibits 2.10 through 2.13 for photos from our field assessment.

Exhibit 2.9 – Stopping Sight Distance for on Gary Martin Drive at Proposed Development

Location	Direction	Minimum SSD	Available SSD
Gary Martin Drive at Site Access	Northbound	65 m	> 85 m
	Southbound	65 m	> 85 m

Exhibit 2.10 – Northbound Driver View on Gary Martin Drive to Site Access at 65 m

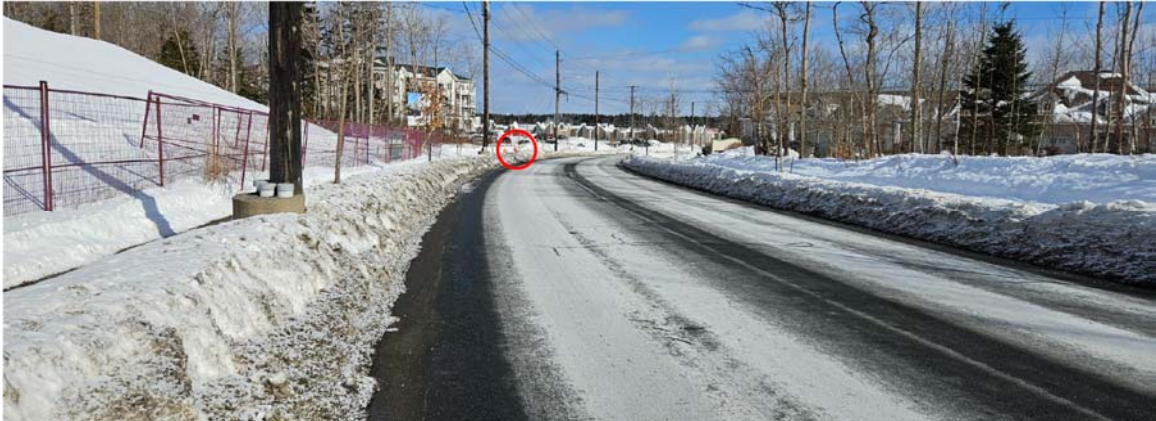


Exhibit 2.11 – Northbound Driver View on Gary Martin Drive to Site Access at 85 m

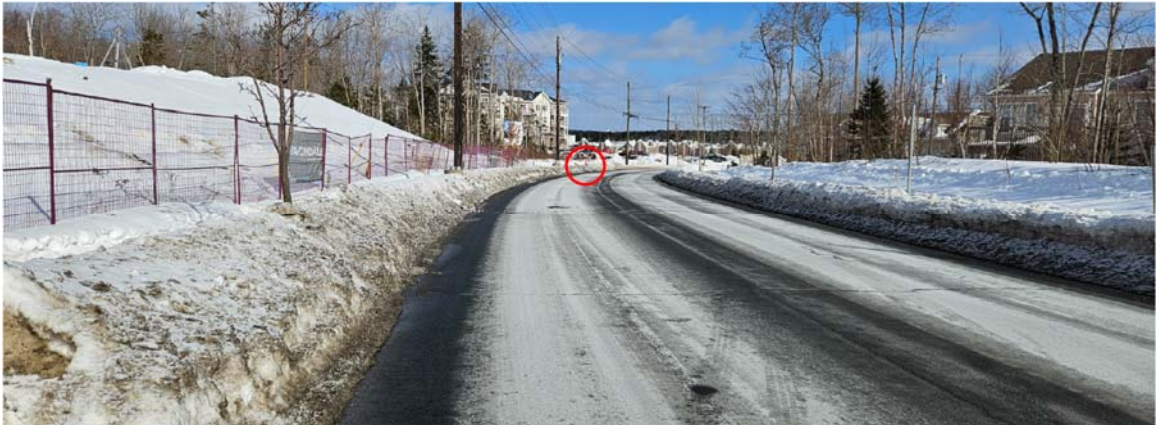


Exhibit 2.12 – Southbound Driver View on Gary Martin Drive to Site Access at 65 m



Exhibit 2.13 – Southbound Driver View on Gary Martin Drive to Site Access at 85 m



3 Site Generated Traffic

3.1 Trip Generation

The proposed long term care facility will have a total of 48 beds. We understand that shifts for workers at this type of facility, which has a 24-hour operation, generally range from 7am to 3pm, 3pm to 11pm and 11pm to 7am for staff that work 8-hour shifts and from 7am to 7pm and 7pm to 7am for staff that work 12 hour shifts.

Traffic for this type of development is generated by employees, visitors and deliveries and the peak hour for site generated traffic would not align to the peak hour for the adjacent street traffic. We have estimated net new traffic volumes for the peak hours of the generator as well the peak hours of adjacent street traffic. We completed trip generation estimates using equations provided in Institute for Transportation Engineer’s Trip Generation Manual 11th Edition with the following Land Use Code.

- ITE Land Use 620 Nursing Home

"A nursing home is a facility whose primary function is to provide care for persons who are unable to care for themselves. Examples include rest homes, chronic care, and convalescent homes. Skilled nurses and nursing aides are present 24 hours a day at these sites. Residents often require treatment from a registered healthcare professional for ongoing medical issues. A nursing home resident is not capable of operating a vehicle. Traffic is entirely generated by employees, visitors, and deliveries." The unit of measurement for average vehicle trip ends is beds.

Exhibit 3.1 – Estimated Site Generated Traffic Volumes Nursing Home (Generator)

LAND USE	QUANTITY	AM PEAK			PM PEAK		
		TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT
Nursing Home ITE Land Use 620	48	10	63%	37%	16	41%	59%
			6	4		6	10
TOTAL		10	6	4	16	6	10

Exhibit 3.2 – Estimated Site Generated Traffic Volumes Nursing Home (Adjacent Traffic)

LAND USE	QUANTITY	AM PEAK			PM PEAK		
		TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT
Nursing Home ITE Land Use 620	48	7	72%	28%	7	33%	67%
			5	2		2	5
TOTAL		7	5	2	7	2	5

We estimate that the proposed development will generate net new traffic volumes of **10** in its AM peak hour and **16** vehicles in its PM peak hour.

We estimate that the proposed development will generate net new traffic volumes of **7** vehicles in the AM peak hour of adjacent traffic and **7** vehicles in the PM peak hour of adjacent traffic.

4 Conclusions and Recommendations

- This Traffic Impact Statement has provided a high level overview of the proposed development of a 48-bed long term care facility in Bedford, Nova Scotia.
- Access to the property will be from a new driveway on Gary Martin Drive south of the existing Northwood long term care facility. Surface parking will be provided with 40 spaces along with 5 accessible parking spaces near the entrance for a total of 45 parking spaces.
- 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 **10** new vehicle trips in its AM peak hour and **16** new vehicles in its PM Peak Hour.
- Based on ITE Trip Generation Rates, we estimate that the proposed development will generate **7** new vehicle trips in the AM peak hour of adjacent traffic and **7** new vehicles in the PM Peak Hour of adjacent traffic.
- Site generated traffic will most likely follow existing trip distribution patterns along Gary Martin Drive in the AM and PM peak hours with the majority of traffic traveling north towards Halifax and Dartmouth in the AM peak hour and this reverses in the PM peak hour as people return home from work.
- Stopping Sight Distance is adequate on Gary Martin Drive at the proposed driveway for the proposed Northwood long term care facility.
- The location is well served by Halifax Transit on Route 90 Larry Uteck, Route 91 Hemlock Ravine, Route 194 West Bedford Express and Route 433 Tantallon with connections to rest of Halifax Transit's network. The proposed development is located within walking distance of the West Bedford Park and Ride Transit Terminal.
- 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 the driveway be designed and constructed in accordance with HRM Design Guidelines and Transportation Association of Canada standards for a local road.
- Site generated traffic is relatively minor during the AM and PM peak hours of adjacent traffic so we don't expect any material impacts on the surrounding transportation network.