

August 20, 2021

Mr. Scott MacCallum, P.Eng., M.B.A  
Vice-President Operations  
Clayton Developments Limited

via email: [smacallum@claytondev.com](mailto:smacallum@claytondev.com)

**RE: Traffic Impact Statement – Mount Hope Lands  
Dartmouth, Nova Scotia**

Dear Mr. MacCallum,

Plans are being prepared for a residential subdivision on the undeveloped parcels of land (PID 40003600, 41362161 & 41280546) within the Southdale neighbourhood in Dartmouth, Nova Scotia (See Figure 1). This is the Traffic Impact Statement for the subdivision, which will involve the construction of 83 single detached homes, 18 four-plexes (72 units), 235 townhouse units and 8 mid-rise residential buildings (356 units).



**Figure 1: Study Area**

## SITE DESCRIPTION AND ACCESS

The proposed subdivision is adjacent to the Circumferential Highway (Hwy 111), and in close proximity to the Penhorn Transit Terminal, Woodside Ferry Terminal, Dartmouth South Academy, Woodside Industrial Park, the commercial/industrial areas of Portland Street and Woodside, the major collectors Pleasant Street and Portland Street, and an existing multi-use pathway network that can be accessed on Mount Hope Avenue. Roadway access points will be located at Mount Hope Avenue and Lynn Drive, as shown on the conceptual plan (See Figure 2).





Figure 2: Conceptual Plan



The Mount Hope access location is proposed where the existing curb returns have been planned and provided when the street was constructed. Views from the Mount Hope Avenue access point are displayed in Photo 1 and Photo 2.



**Photo 1 - Looking southeast (to the left) on Mount Hope Avenue from the Subdivision Access**



**Photo 2 - Looking northwest (to the right) on Mount Hope Avenue from the Subdivision Access**

The second access is proposed by extending Lynn Drive to the east as shown in Photo 3, which would provide access through to Portland Street.



**Photo 3 - Looking southbound on Lynn Drive near Subdivision Access**

## STREET AND INTERSECTION DESCRIPTIONS

**Mount Hope Avenue**, at the site location, is a 2-lane collector, with a multi-use pathway on the south side. The street transitions to a multi-lane arterial just east of the access point on the approach to the Circumferential Highway. It has a posted speed limit of 50km/hr. Within the Regional Plan, there is an envisioned road network project to extend the eastern-most end of Mount Hope Avenue to connect with Caldwell Road and/or Portland Estates.

**Lynn Drive** is a local street (speed limit is 50 km/h) within the Southdale neighbourhood that has a single existing roadway connection point with the local street Clement Street and provides connection through to Portland Street.

**Mount Hope Avenue at Highway 111** is a diamond interchange at Exit 8 with signalized intersections where it intersects with Mount Hope Avenue. At the southbound ramp intersection, there are two lanes and a channelized right on the southbound approach. The westbound approach consists of two left turn lanes and a single through lane. The eastbound approach consists of three lanes and a channelized right turn.

## TRANSIT

The two closest HRM transit routes that currently operate in the vicinity of the proposed development are Route 57 (Russell Lake) and Route 66 (Penhorn), which have transit stops on Mount Hope Avenue and Gaston Road, respectively.

A future bus rapid transit (BRT) route is planned for Portland Street which will see more frequent and reliable service connecting the adjacent neighbourhoods with Downtown Dartmouth, Downtown Halifax, Spring Garden Road and the University District on the Halifax Peninsula (See Figure 3).



**Figure 3: Future BRT Red Line**

## ACTIVE TRANSPORTATION

The subdivision plan proposes a future trail network that provides connections through the proposed park/open space bordering the local wetland. The proposed trails will provide active transportation permeability throughout the subdivision and the local neighbourhoods.

An existing multi-use pathway network, which can be accessed from the proposed subdivision on Mount Hope Avenue, will provide direct connections to commercial and employment destinations within the surrounding neighbourhoods and to transit hubs (e.g. Woodside Ferry Terminal) that will provide access to destinations further away.

## TRAFFIC VOLUME DATA

A turning movement count was obtained from Halifax Regional Municipality (HRM) Traffic Management at the intersection of Mount Hope Avenue with the Highway 111 Exit 8 ramps. Count data is summarized in Table A-1, Appendix A, with peak hours indicated by shaded areas. During the AM peak hour, there are 670 westbound and 180 eastbound vehicles past the site access with 250 westbound and 730 eastbound vehicles during the PM peak hour.

## TRIP GENERATION

When using the published trip generation rates in *Trip Generation Manual, 10<sup>th</sup> Edition* (Institute of Transportation Engineers, Washington, 2017) the transportation engineer's objective should be to provide a realistic estimate of the number of trips that will be generated. Generated trips for Single-Family Detached Housing (Land Use 210), Low-Rise Multifamily Housing (Land Use 220) and Mid-Rise Multifamily Housing (Land Use 221) are estimated for the AM and PM peak hours of traffic by the number of dwelling units. The proposed development includes 83 single-family detached housing dwelling units, 307 low-rise multifamily housing dwelling units and 356 mid-rise multifamily housing dwelling units, as shown in Table 1.



The estimated number of trips that will be generated by the development includes:

- 199 two-way trips (49 entering and 150 exiting) during the AM peak hour; and,
- 246 two-way trips (153 entering and 93 exiting) during the PM peak hour.

**Table 1 - Trip Generation Estimates**

Land Use <sup>1</sup>	Units <sup>2</sup>	Trip Generation Rates <sup>3</sup>				Trips Generated <sup>4</sup>			
		AM Peak		PM Peak		AM Peak		PM Peak	
		In	Out	In	Out	In	Out	In	Out
Proposed Development									
Single-Family Detached Housing (Land Use 210)	83 units	0.19	0.56	0.62	0.37	15	46	52	30
Four-plex & Townhouses <sup>5</sup> (Land Use 220)	307 units	0.11	0.35	0.35	0.21	32	109	108	64
Mid-Rise Residential Buildings (Land Use 221)	356 units	0.09	0.27	0.27	0.17	33	95	96	61
Trip Generation Estimate						81	250	256	155
40% Reduction for Non-Vehicle Trips <sup>6</sup>						32	100	102	62
Total Trips generated by the Proposed Development						49	150	153	93
Notes: 1. Land Use Codes are from <i>Trip Generation Manual, 10th Edition</i> , (Institute of Transportation Engineers, Washington, 2017). 2. The units of measurement are dwelling units. 3. Trip generation rates are 'trips per hour per unit of measurement'. 4. Trips generated are 'trips per hour' for AM and PM peak hours. 5. Four-plexes and townhouses are considered a form of low-rise multi-family housing (Land Use Code 220) 6. In 2016, approximately 36% of trips were made by transit or using active transportation in the associated census tract. The Halifax Integrated Mobility Plan has a 60% target for non-auto trips within the Regional Centre by 2031 (Page 16, IMP Implementation Update, 2021). A conservative reduction of 40% was used to account for non-auto trips (transit, bicycle and walking trips) generated to the site.									

## ACCESS REVIEW

The roadway access to the proposed subdivision at Mount Hope Avenue is 250m northwest of the signalized intersection of the southbound Highway 111 ramps, is at the end of a roadway horizontal curve and is nearing the end of a vertical curve. The intersection is at a previously determined location and the available stopping sight distance appears adequate (See Photo 1 and Photo 2).

Active transportation users wanting to access the multi-use pathway will have to cross Mount Hope Avenue as the pathway is on the opposite side of the roadway. Currently, a guard rail and lack of a pedestrian crossing would prevent users from accessing the pathway (See Photo 4). It is recommended that a gap in the guard rail, along with pedestrian ramps, be provided and that a crosswalk review be conducted to determine if a crossing is warranted, as development proceeds.



**Photo 4 - Looking southwest (straight) on Mount Hope Avenue from the Subdivision Access**

The roadway access to the proposed subdivision at Lynn Drive will be an extension of the existing local road ending at Civic 55, see Photo 3. Currently, there is no traffic control at the adjacent three-way intersection. It is recommended to add traffic control, such as a STOP control on the “T” leg of the Lynn Drive/Lynn Drive intersection.

## SUMMARY

1. Plans are being prepared for a residential development in the Southdale neighbourhood of Dartmouth, Nova Scotia.
2. The proposed development is planned to have two roadway access points: one at Mount Hope Avenue and the second at Lynn Drive. The Lynn Drive access will be an extension of the existing local street. The southern roadway access point will intersect with Mount Hope Avenue at a previously determined intersection location. The available stopping sight distance at this location appears adequate, but the current active transportation access to the multi-use pathway is blocked by a guard rail and is not accommodated by a crosswalk.
3. Trip generation estimates were prepared using rates published in *Trip Generation, 10<sup>th</sup> Edition* (Institute of Transportation Engineers, Washington 2017). It was estimated that the proposed development will generate:
  - 199 two-way trips (49 entering and 150 exiting) during the AM peak hour; and,
  - 246 two-way trips (153 entering and 93 exiting) during the PM peak hour.

## RECOMMENDATIONS

4. Site trips will be distributed both east and west on Mount Hope Avenue, as well as along Lynn Drive to access both directions on Portland Street.
5. Consideration for addition of a crosswalk at the roadway access point with Mount Hope Avenue, and if warranted, a gap be provided in the guard rail to allow access to the multi-use pathway.
6. Assignment of right-of-way should be established at the Lynn Drive/Lynn Drive intersection near civic numbers 53-59.

## CONCLUSION

7. With good access and proximity to transit, AT facilities and the site traffic distributed to multiple access points, site generated trips are not expected to have any significant impact to levels of performance on adjacent streets and intersections or to the regional street system.

If you have any questions or comments, please contact me by email at [courtney.mccarthy@wsp.com](mailto:courtney.mccarthy@wsp.com) or by telephone at 902-536-0982.

Sincerely,



Courtney McCarthy, P.Eng.  
Traffic & Transportation Engineer  
WSP Canada Inc.



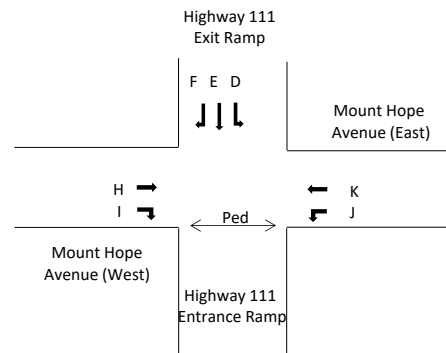


**Traffic Impact Statement – Mount Hope Lands  
Dartmouth, Nova Scotia**

**APPENDIX A**

**Table A-1**  
**Mount Hope Avenue**  
**@**  
**Highway 111 West Terminus**

*Dartmouth, Nova Scotia*  
Wednesday, August 28, 2019



**AM Peak Period Volume Data**

Time	Highway 111 Entrance Ramp Northbound Approach			Highway 111 Exit Ramp Southbound Approach			Mount Hope Avenue Eastbound Approach		Mount Hope Avenue Westbound Approach		Total Vehicles
	A	B	C	D	E	F	H	I	J	K	
07:00 07:15				34	0	61	38	0	25	52	210
07:15 07:30				33	0	94	28	1	36	53	245
07:30 07:45				44	0	104	28	1	34	71	282
07:45 08:00				49	0	120	37	4	40	74	324
08:00 08:15				40	0	83	58	2	29	63	275
08:15 08:30				43	0	104	49	0	39	54	289
08:30 08:45				49	0	79	43	1	22	51	245
08:45 09:00				44	0	81	45	1	26	57	254
<b>AM Peak Hour</b>	<b>0</b>			<b>176</b>	<b>0</b>	<b>411</b>	<b>172</b>	<b>7</b>	<b>142</b>	<b>262</b>	<b>1170</b>
07:00 08:00	0	0	0	160	0	379	131	6	135	250	1061
08:00 09:00	0	0	0	176	0	347	195	4	116	225	1063
	<b>Ped 1</b>			<b>Ped 2</b>			<b>Ped 3</b>		<b>Ped 4</b>		<b>Total Peds</b>
07:00 08:00	5			-			-		-		5
08:00 09:00	3			-			-		-		3

**PM Peak Period Volume Data**

Time	Highway 111 Entrance Ramp Northbound Approach			Highway 111 Exit Ramp Southbound Approach			Mount Hope Avenue Eastbound Approach		Mount Hope Avenue Westbound Approach		Total Vehicles
	A	B	C	D	E	F	H	I	J	K	
16:00 16:15				69	0	31	218	3	50	23	394
16:15 16:30				112	0	41	158	0	52	33	396
16:30 16:45				77	0	26	241	2	64	45	455
16:45 17:00				104	0	23	106	1	56	31	321
17:00 17:15				113	0	30	142	1	69	34	389
17:15 17:30				124	0	25	87	1	49	29	315
17:30 17:45				73	0	23	80	1	72	18	267
17:45 18:00				55	0	20	63	0	43	23	204
<b>PM Peak Hour</b>	<b>0</b>			<b>362</b>	<b>0</b>	<b>121</b>	<b>723</b>	<b>6</b>	<b>222</b>	<b>132</b>	<b>1566</b>
16:00 17:00	0	0	0	362	0	121	723	6	222	132	1566
17:00 18:00	0	0	0	365	0	98	372	3	233	104	1175
	<b>Ped 1</b>			<b>Ped 2</b>			<b>Ped 3</b>		<b>Ped 4</b>		<b>Total Peds</b>
16:00 17:00	4			-			-		-		4
17:00 18:00	10			-			-		-		10

\* Count completed by HRM