

November 14, 2018

Ms. Linda Liao  
 Clayton Park Learning Centre  
 165 Roxbury Crescent  
 Halifax, NS, B3M 4S9

Original Signed

**RE: Traffic Impact Statement  
 165 Roxbury Crescent, Halifax, NS**

Dear Ms. Liao:

Plans are being prepared for a child care facility within an existing residential unit at 165 Roxbury Crescent in Halifax, NS (PID 41031048). This is the Traffic Impact Statement (TIS) required to accompany the development application.

## SITE DESCRIPTION AND PLANNED DEVELOPMENT

The proposed development is a 58-student pre-school facility occupying the existing residential unit at 165 Roxbury Crescent. The existing house is located on the southwest corner of Langbrae Drive and Roxbury Crescent and is within 100 metres of Park West School (See Figure 1).

The day care facility is planned to occupy the existing house and will accommodate up to 58 children with 6 staff. The site is expected to be operational by Spring 2019. The house is not expected to be inhabited in its current residential use.

## DESCRIPTION OF EXISTING STREETS AND INTERSECTIONS

**Langbrae Drive** (See Photos 1 and 2) is a 2-lane collector street that runs east-west through the Clayton Park area of Halifax between Dunbrack Street and Parkland Drive. Near the site, sidewalks are present on both sides of the street and on-street parking is generally permitted on both sides, however there is no-stopping (8AM-4PM, Mon-Fri) on both sides between Roxbury Crescent and the Park West Driveway. The speed limit is 50km/h and the street is signed as a school zone with a speed reduction to 30km/h "when children are present". Traffic data collected by HRM Traffic Management in 2017 indicate a two-way volume on Langbrae Drive of around 275 vehicles in each of the AM and PM peak hours.



Figure 1 – Location of Proposed Development



Photo 1 – Looking east (to the left) on Langbrae Drive from Roxbury Crescent

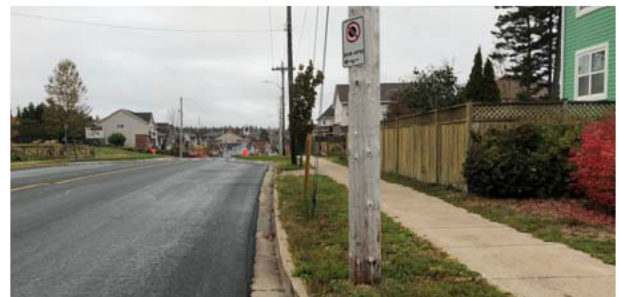


Photo 2 – Looking west (to the right) on Langbrae Drive from Roxbury Crescent

**Roxbury Crescent** (See Photos 3 and 4) is a 2-lane, 9-metre-wide local residential street that loops around with two connections with Langbrae Drive. There is concrete sidewalk on the non-site side of the street.



Photo 3 – Looking north on Roxbury Crescent from the site

The intersection of Langbrae Drive and Roxbury Crescent (See Photo 4) is a T-intersection with stop control on the Roxbury Crescent approach and all approaches are a single lane.



Photo 4 – Looking south on Roxbury Crescent from the site

## SITE ACCESS

Vehicular access to the site is from an existing driveway on Roxbury Crescent, located approximately 20m north of Langbrae Drive. The driveway can accommodate parking for approximately 4 vehicles. The developer also plans to modify the existing driveway at Langbrae Drive (See Photo 2) to provide additional on-site parking, sufficient to accommodate the employees of the day care.

While on-site parking will be available it is expected that some drop-offs and pick-ups via vehicle trips will be made using on-street parking on Roxbury Crescent.

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## ACTIVE TRANSPORTATION AND PUBLIC TRANSIT

The Mainland Linear Park Trail lies approximately 50 metres to the west of the site and runs over 4 km between Parkland Drive, past the Lacewood Transit Terminal to Washmill Lake Drive. The Trail crosses Langbrae Drive at a marked crosswalk with pedestrian curb extensions (See Photo 2). Halifax Regional Municipality is planning to extend the trail to connect to the Beechville / Lakeside / Timberlea Trail.

While there are currently no transit routes along Langbrae Drive, Halifax Transit service (Routes #39, 136) is provided along Farnham Gate Road (400 metres to the north along the Mainland Linear Park Trail). The Lacewood Terminal lies approximately 1 km to the south.

## TRIP GENERATION FOR PROPOSED SITE

The existing site is a single-family home while the planned development is a pre-school with space for 58 students between the ages of 3 and 5 years. This is expected to include 8 infants, 20 wrap-around (before and after scheduled classes) pre-primary children and 30 before and after school children. The day care will have 6 teachers.

*Trip Generation, 10th Edition* (Institute of Transportation Engineers (ITE), Washington, 2017) provides trip generation estimates for weekday peak hour trips for a “Day Care Center” and “Single-Family Residential”. Trip generation estimates, prepared using rates from *Trip Generation*, are included in Table 1. It is estimated that the pre-school (58 students) will generate about 45 trips (24 entering and 21 exiting) during the AM peak hour and 46 trips (22 entering and 24 exiting) during the PM peak hour. However, when trips generated by the existing house are considered, it is estimated that the site will generate 44 new two-way trips (24 entering and 20 exiting) during the AM peak hour and 45 new two-way trips (21 entering and 24 exiting) during the PM peak hour.



Given the proximity of Park West School, the developer expects that most of the day care students (50 of 58, 86%) will be students at Park West School and will attend the day care before and after class. Since these students represent non-auto trips and given the proximity of the Mainland Linear Park Trail and sidewalk along Langbrae Drive, a 40% reduction for non-auto modes has been applied. It is estimated that the site will generate 26 new two-way vehicle trips (14 entering and 12 exiting) during the AM peak hour and 27 new two-way vehicle trips (13 entering and 14 exiting) during the PM peak hour.

**Table 1 – Estimated Trip Generation for Proposed Development**

Land Use	Units <sup>3</sup>	Trip Generation Rates <sup>1</sup>				Trips Generated <sup>2</sup>			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out	In	Out	In	Out
<b>Trip Generation Estimates for Proposed Day Care</b>									
Day Care Center (ITE 565)	58 Students	0.41	0.37	0.37	0.42	24	21	22	24
<b>Trip Generation Estimates for Existing Development</b>									
Single Family Residential <sup>1</sup> (Land Use 210)	1 Unit	0.19	0.56	0.62	0.37	0	1	1	0
<b>Estimated Additional Trips Generated by Development</b>						24	20	21	24
<b>40% Reduction for Non-auto Trips</b>						-10	-8	-8	-10
<b>Estimated Additional Trips Generated by Development</b>						14	12	13	14
Notes: 1. Trip generation rates are 'vehicles per hour per unit', published in <i>Trip Generation, 10<sup>th</sup> Edition</i> (Institute of Transportation Engineers, Washington, 2017). 2. Vehicles per hour for peak hours, based on the AM and PM 'Peak Hour of Adjacent Street'. 3. Units are number of students enrolled in the Day Care Center; residential units for single family. 4. It is expected that most of (~86%) the day care students will also be students at Park West School. A 40% reduction to account for non-auto trips has been applied that considers the proximity of the school as well as the existing trail and sidewalk along Langbrae Drive.									

## PARKING

With 3-4 parking spaces available within the existing driveway accessing Roxbury Crescent and 6 teachers expected, there is sufficient onsite parking to accommodate about 50% of the staff. The developer plans to modify the Langbrae Drive driveway to provide additional on-site parking, however, some of the vehicle trips generated by the site are expected to arrive and depart using on-street parking on Roxbury Crescent. With 9 metres of available width and on-street parking on both sides, and considering that the pick ups and drop are expected to be short duration (less than 5 minutes) it is expected that vehicles accessing the site via on-street parking will have a minimal impact on the availability of parking or on the traffic flow along Roxbury Crescent.



## SUMMARY

1. Plans are being prepared for development of the site as a 58-student child care facility within an existing residential unit at 165 Roxbury Crescent in Halifax, NS. The house is not expected to be inhabited in its current residential use. It is anticipated that the pre-school will be operational by Spring 2019.
2. Vehicular access to the proposed development will be from Roxbury Crescent via the existing driveway. The developer plans to modify the existing driveway at Langbrae Drive to provide additional on-site parking.
3. Unrestricted daytime on-street parking is permitted on both sides of Roxbury Crescent. On-street parking is generally permitted on both sides for most of Langbrae Drive, however daytime stopping is restricted in front of the site on Langbrae Drive.
4. Using published rates from *Trip Generation, 10<sup>th</sup> Edition* (Institute of Transportation Engineers, Washington, 2017), it is estimated that the pre-school (58 students) will generate about 45 trips (24 entering and 21 exiting) during the AM peak hour and 46 trips (22 entering and 24 exiting) during the PM peak hour.
5. When trips generated by the existing house are considered, it is estimated that the site will generate 44 two-way trips (24 entering and 20 exiting) during the AM peak hour and 45 two-way trips (21 entering and 24 exiting) during the PM peak hour.
6. Given the proximity of Park West School, it is expected that most of the day care students (50 of 58, 86%) will be students at Park West School and will attend the day care before and after class. Since these students represent non-auto trips and given the proximity of the Mainland Linear Park Trail and sidewalk along Langbrae Drive, a 40% reduction for non-auto modes has been applied. It is estimated that the site will generate 26 new two-way vehicle trips (14 entering and 12 exiting) during the AM peak hour and 27 new two-way vehicle trips (13 entering and 14 exiting) during the PM peak hour.

## RECOMMENDATIONS

7. With the pedestrian curb extensions at the marked crosswalk crossing Langbrae Drive at the Trail, consideration could be given to modifying the stopping restriction on the north side of Langbrae Drive immediately fronting the site.

## CONCLUSION

8. The vehicle trips that will be generated by the proposed child care facility are not expected to have any significant impact on the level of performance of Langbrae Drive, Roxbury Crescent, or other streets and intersections in the vicinity.
9. With 9 metres of available width and on-street parking on both sides, and considering that the pick ups and drop-offs are expected to be short duration (less than 5 minutes) it is expected that vehicles accessing the site via on-street parking will have a minimal impact on the availability of parking or on the traffic flow along Roxbury Crescent.

If you have any questions or comments, please contact me by email at [patrick.hatton@wsp.com](mailto:patrick.hatton@wsp.com) or by telephone at 902-536-0954.

Sincerely,

**Original Signed**

Patrick Hatton, P.Eng.  
Traffic & Transportation Engineer  
WSP Canada Inc.

**Original Signed**