



Ref. No. 161-02034

March 14, 2017

Ms. Shannon O'Connell, P. Eng.
Development Engineer
HRM Planning and Development
PO Box 1749
Halifax, NS B3J 3A5

**RE: Traffic Impact Statement - TED Building Multi-Use Development
Pepperell Street, Halifax, Nova Scotia**

Dear Ms. O'Connell:

Plans are being prepared for the redevelopment of multiple properties fronting Pepperell Street and Quinpool Road in Halifax, NS. The site is occupied by commercial and residential development and will be redeveloped as a mixed use 11 storey building that includes 67 residential units, with ground floor retail and one level of office space (See Figure 1).

The site will be accessed from Quinpool Road via the existing one-way entrance driveway with egress from the site via the existing one-way exit driveway onto Pepperell Street. Both driveways are approximately 70 metres west of the Preston Street intersection. This is the Traffic Impact Statement (TIS) required to accompany the development application.



Figure 1 - Concept Plan

Site Description– The site is bounded by Quinpool Road in the north, Pepperell Street in the south, and existing development to the east and west. Currently the site is occupied by a commercial building fronting Quinpool Road and low density residential development on Pepperell Street. There is a small paved parking area with access from Quinpool Road and egress to Pepperell Street (See Photos 1 and 2).



Photo 1 – Existing site along Quinpool Road looking from the entrance driveway



Photo 2 – Existing site and exit driveway onto Pepperell Street

Description of the Proposed Development– Redevelopment of the site is expected to be an 11 storey mixed use building that will include 61 apartment units, 6 townhouse units, 10,950 square feet (SF) of office space and 6,140 SF of ground floor retail. For the purposes of this study, the townhouse units have been considered as apartments given the shared driveway and access to underground parking. No modifications are planned to the existing onsite surface parking.

Description of Site Access– Vehicular access to the site and its proposed 67 stall underground parking lot will be via the existing one-way entrance driveway from Quinpool Road. Vehicular egress from the site will be via the existing one-way exit driveway onto Pepperell Street (See Photos 2, 3, and 4). There is sufficient sight distance at both of the site driveways, however vehicles are not permitted to exit the site onto Quinpool Road. Pedestrian access to the site will be from both Pepperell Street and Quinpool Road.



Photo 3 – Looking east (to the right) from the site driveway onto Pepperell Street



Photo 4 – Looking west (to the left) from the site driveway onto Pepperell Street

Description of Existing Streets and Intersections– Quinpool Road (See Photos 1, 5, and 6) is an arterial road that runs east-west approximately 2.5 km from the Armdale Roundabout to Robie Street with a 50 km/h speed limit. In this area Quinpool Road has a four lane cross section with a concrete sidewalk and time restricted parking on both sides. Turning movement count data collected by HRM Traffic Management in 2014 at the Quinpool Road intersections at Preston Street and at Oxford Street show that there are approximately 1800 vehicles per hour (vph) in the AM peak hour and 1700 vph in the PM peak hour on Quinpool Road in the vicinity of the site.

Pepperell Street (See Photos 2, 3, and 4) is a two-lane local street that runs east-west approximately 1.0 km from Beech Street to Robie Street with a concrete sidewalk on both sides and a 50 km/h speed limit. There is time restricted parking on the south side and parking is prohibited on the north (site) side.

Approximately 50 metres west of the site a pedestrian half signal provides a crossing of Quinpool Road at Harvard Street. The Quinpool Road intersections at Preston Street and Oxford Street are both fully signalized with marked crosswalks crossing all approaches and are both within 150 metres of the site (See Photos 5 and 6).



Photo 5 – Pedestrian half-signal crossing Quinpool Road at Harvard Street (The Oxford Street signalized intersection is in the background)



Photo 6 – Traffic signalized intersection of Quinpool Road at Preston Street

Transit– Halifax Transit operates Routes 6, 20, and 32 on Quinpool Road with eastbound and westbound stops east of Preston Street approximately 100 metres from the site. Halifax Transit also operates Routes 1 and 14 on Oxford Street with stops at Quinpool Road within 200 metres of the site.

Trip Generation– The proposed development is an eleven storey mixed-use building with 67 residential units, 10,950 SF of office space, and 6,140 SF of ground floor specialty retail.

Trip generation estimates, prepared using published rates from *Trip Generation, 9th Edition* (Washington, 2012) for the new development are included in the top portion of Table 1. It is estimated that the developed site will generate:

- 46 two-way trips (26 entering and 20 exiting) during the AM peak hour; and,
- 62 two-way trips (25 entering and 37 exiting) during the PM peak hour.

Since it will no longer be operational with redevelopment, trips currently generated by the site have been considered as credit for the purposes of estimating the additional vehicle trips generated by the redeveloped site. Existing site generated trips estimated from *Trip Generation, 9th Edition* (Washington, 2012) include:

- 7 two-way trips (3 entering and 4 exiting) during the AM peak hour; and,
- 15 two-way trips (6 entering and 9 exiting) during the PM peak hour.

A 20% reduction has been applied to trip generation estimates to account for onsite synergies between the various uses, as well as high non-auto mode share typical of a centrally located urban development with good access to transit and active transportation facilities.

When trips generated by the existing land use as well as onsite synergies and non-vehicle trips are considered, it is estimated that the redeveloped site will generate:

- 31 additional two-way vehicle trips (18 entering and 13 exiting) during the AM peak hour; and,
- 37 additional two-way vehicle trips (15 entering and 22 exiting) during the PM peak hour.

Table 1 – Trip Generation Estimates

Land Use ¹	Units ²	Trip Generation Rates ^{3,4}				Trips Generated ⁵			
		AM Peak		PM Peak		AM Peak		PM Peak	
		In	Out	In	Out	In	Out	In	Out
Trip Generation Estimates for the Proposed Development									
Mid-Rise Apartment ⁶ (ITE 223)	67	0.09	0.21	0.23	0.16	6	14	15	11
General Office (ITE 710)	11.0	1.37	0.19	0.25	1.24	15	2	3	14
Specialty Retail ⁷ (ITE 826)	6.1	0.76	0.60	1.19	1.93	5	4	7	12
Total Estimated Trips Generated by the Proposed Site						26	20	25	37
Trip Generation Estimates for the Existing Development									
Specialty Retail ⁷ (ITE 826)	4.3	0.76	0.60	1.19	1.93	3	3	5	8
Single-Family Detached (ITE 210)	2	0.19	0.56	0.63	0.37	0	1	1	1
Total Estimated Trips Generated by the Proposed Site						3	4	6	9
Total Estimated Net Site Trips						23	16	19	28
Estimated 20% Reduction of Trips for onsite Synergies and non-vehicle trips ⁸						5	3	4	6
Estimated Vehicle Trips Attracted to the Site						18	13	15	22
<p>Notes: 1. Land use codes are from <i>Trip Generation, 9th Edition</i>, (Institute of Transportation Engineers, Washington, 2012).</p> <p>2. 'Number of residential units' for Residential, 'Gross Floor Area x 1000 square feet' for Office, 'Gross Leasable Area x 1000 square feet' for Specialty Retail.</p> <p>3. Trip generation rates are 'vehicles per hour per unit' for Apartments and 'vehicles per hour per 1000 sq. ft.' for Specialty Retail and Office.</p> <p>4. Average Trip Generation Rates were used as these rates are expected to provide a realistic estimate of the number of trips. Additionally, for General Office (Land Use 710) <i>Trip Generation, 9th Edition</i>, cautions against the use of regression curves for that land use on Page 1250.</p> <p>5. Trips generated are 'vehicles per hour' for AM and PM peak hours.</p> <p>6. Proposed townhouse units have been included as apartments with consideration of the shared driveway and underground parking.</p> <p>7. The Specialty Retail (ITE Land Use 826) rate for 'Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 PM' has been used. Since there is no published rate for the AM peak hour of adjacent street traffic for this land use, and since AM peak hour trips to specialty retail are generally low, AM trip rates have been assumed to be 50% of the PM rate with reversal of the directional split.</p> <p>8. Since high pedestrian and transit usage is expected in the Study Area, and since there may be some on-site synergies between the residential and retail land uses, a 20% reduction has been applied to site generated trip estimates.</p>									

Summary–

1. Plans are being prepared for the redevelopment of a site around Quinpool Road and Pepperell Street in Halifax, NS. The proposed redevelopment includes demolition of the existing commercial and low-density residential development and construction of an eleven storey building with 61 apartment units, 6 townhouse units, and 10,950 square feet (SF) of office and 6,140 SF of ground floor retail.
2. Vehicular access to the site will continue to be from the existing one-way entrance driveway at Quinpool Road and egress from the site via the existing one-way exit driveway onto Pepperell Street. Pedestrian access will be provided from Quinpool Road and Pepperell Street.
3. The site is well served by Halifax Transit, with several bus routes stopping on Quinpool Road and nearby on Oxford Street within 200 metres of the site.
4. It is estimated that the redeveloped site will generate a total of 46 two-way trips (26 entering and 20 exiting) during the AM peak hour and 62 two-way trips (25 entering and 37 exiting) during the PM peak hour.
5. It is estimated that the existing site generates a total of 7 two-way trips (3 entering and 4 exiting) during the AM peak hour and 15 two-way trips (6 entering and 9 exiting) during the PM peak hour.
6. When trips generated by the existing land use as well as reductions for non-vehicle trips are considered, it is estimated that the redeveloped site will generate 31 additional two-way vehicle trips (18 entering and 13 exiting) during the AM peak hour and 37 additional two-way vehicle trips (15 entering and 22 exiting) during the PM peak hour.

Conclusion–

7. Redevelopment of the site as a 67-unit apartment building with 10,950 square feet of office and 6,140 square feet of ground floor retail is expected to result in only a slight increase in the number of trips generated relative to the existing development. Given that the increase in site generated trips is low and that the site has excellent access to transit and pedestrian infrastructure, site generated trips are not expected to have any significant impact on 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 patrick.hatton@wspgroup.com or by telephone at 902-835-9955, extension 347.

Sincerely:

Original Signed

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



April 17, 2018

Mrs. Ashley Blissett, P. Eng.
 Senior Development Engineer
 HRM Planning and Development
 PO Box 1749
 Halifax, NS B3J 3A5

**RE: April 2018 Addendum Traffic Impact Statement -
 TED Building Multi-Use Development, Pepperell Street, Halifax, NS**

Dear Mrs. Blissett:

This is an Addendum Traffic Impact Statement for the redevelopment of multiple properties fronting Pepperell Street and Quinpool Road in Halifax, NS (See Figure 1) that was previously reviewed in a March 2017 Traffic Impact Statement by WSP. This Addendum is required to account for the following changes to the residential, commercial and office components of the proposed development from those included in recent plans submitted to HRM:

- **Residential Units:** The residential development is proposed to increase from 67 units to 73 units.
- **Commercial Area:** The ground floor commercial space is proposed to increase from 6,140 square feet to 6,433 square feet.
- **Office Area:** The office space (originally 10,950 square feet) is proposed to be eliminated.



Figure 1 - Concept Plan

SITE ACCESS

Proposed site access to the 67 underground parking stalls is planned to remain from Quinpool Road via the existing one-way entrance driveway with planned egress continuing from the site via the existing one-way exit driveway onto Pepperell Street. This access / egress configuration remains unchanged from the March 2017 Traffic Impact Statement.

TRIP GENERATION FOR PROPOSED SITE

The following trip generation estimates for the existing planned development and the proposed revised number of apartment units and commercial space are summarized in Table 1:

- **Original Planned Development -** Trip generation estimates for the original planned development include an estimated 39 two-way trips (23 entering and 16 exiting) during the AM peak hour and an estimated 44 two-way trips (19 entering and 25 exiting) during the PM peak hour.



**April 2018 Addendum Traffic Impact Statement –
TED Building Multi-Use Development, Pepperell Street, Halifax, NS**

- Revised Planned Development - Trip generation estimates for the revised development include an estimated 24 two-way trips (9 entering and 15 exiting) during the AM peak hour and an estimated 32 two-way trips (19 entering and 13 exiting) during the PM peak hour.
- Trip Reductions – The proposed changes in land use represents a decrease of an estimated 15 two-way trips (14 less entering and 1 less exiting) during the AM peak hour and a decrease of an estimated 12 two-way trips (no change entering and 12 less exiting) during the PM peak hour.

Table 1 – Trip Generation

Land Use ¹	Units ²	Trip Generation Rates ^{3, 4}				Trips Generated ⁵			
		AM Peak		PM Peak		AM Peak		PM Peak	
		In	Out	In	Out	In	Out	In	Out
Trip Generation Estimates for the Original Proposed Development - Traffic Impact Statement (March 2017)									
Mid-Rise Apartment ⁶ (ITE 223)	67	0.09	0.21	0.23	0.16	6	14	15	11
General Office (ITE 710)	11.0	1.37	0.19	0.25	1.24	15	2	3	14
Specialty Retail ⁷ (ITE 826)	6.1	0.76	0.60	1.19	1.52	5	4	7	9
Less: Trips Generated by the Existing Site ⁸	See <i>Traffic Impact Statement</i> (WSP, March 2017)					-3	-4	-6	-9
Total Estimated Net Site Trips: March 2017 Traffic Impact Statement						23	16	19	25
Trip Generation Estimates for the Proposed Development - Addendum Traffic Impact Statement (April 2018)									
Mid-Rise Apartment ⁶ (ITE 223)	73	0.09	0.21	0.23	0.16	7	15	17	12
Specialty Retail ⁷ (ITE 826)	6.4	0.76	0.60	1.19	1.52	5	4	8	10
Less: Trips Generated by the Existing Site ⁸	See <i>Traffic Impact Statement</i> (WSP, March 2017)					-3	-4	-6	-9
Total Estimated Net Site Trips: April 2018 Addendum						9	15	19	13
Net Difference in Trip Generation Estimates						-14	-1	0	-12
Notes: 1. Land use codes are from <i>Trip Generation, 9th Edition</i> , (Institute of Transportation Engineers, Washington, 2012). 2. 'Number of residential units' for Residential, 'Gross Floor Area x 1000 square feet' for Office, 'Gross Leasable Area x 1000 square feet' for Specialty Retail. 3. Trip generation rates are 'vehicles per hour per unit' for Apartments and 'vehicles per hour per 1000 sq. ft. ' for Specialty Retail and Office. 4. Average Trip Generation Rates were used as these rates are expected to provide a realistic estimate of the number of trips. Additionally, for General Office (Land Use 710) <i>Trip Generation, 9th Edition</i> , cautions against the use of regression curves for that land use on Page 1250. 5. Trips generated are 'vehicles per hour' for AM and PM peak hours. 6. Proposed townhouse units have been included as apartments with consideration of the shared driveway and underground parking. 7. The Specialty Retail (ITE Land Use 826) rate for 'Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 PM has been used. Since there is no published rate for the AM peak hour of adjacent street traffic for this land use, and since AM peak hour trips to specialty retail are generally low, AM trip rates have been assumed to be 50% of the PM rate with reversal of the directional split. 8. The site is currently occupied by a commercial building fronting Quinpool Road and low density residential development on Pepperell Street. Estimated trips generated by the existing site (<i>Traffic Impact Statement</i> , WSP 2017) are subtracted from the estimated site trips for both original proposed development and the the revised development.									



SUMMARY

1. This April 2018 Addendum Traffic Impact Statement has been prepared to review changes to the proposed residential / commercial development since development plans were submitted to HRM in March 2017.
2. While previously submitted development plans included an 11 storey mixed use building with 61 apartment units, 6 townhouse units, 10,950 square feet (SF) of office space and 6,140 SF of ground floor retail, the revised land use considered in this Addendum includes 73 apartment units and 6,433 SF of ground floor retail with no office space.
3. Vehicular access to the 67 underground parking stalls will continue to be from the existing one-way entrance driveway at Quinpool Road and egress from the site via the existing one-way exit driveway onto Pepperell Street. Pedestrian access will be provided from Quinpool Road and Pepperell Street.
4. Trip generation estimates for the revised development include about 24 two-way trips (9 entering and 15 exiting) during the AM peak hour and 32 two-way trips (19 entering and 13 exiting) during the PM peak hour. This represents a decrease of 15 two-way trips (14 less entering and 1 less exiting) during the AM peak hour and a decrease of 12 two-way trips (no change entering and 12 less exiting) during the PM peak hour.

CONCLUSION

5. Since the revised proposed development is expected to result in a small reduction in total estimated peak hour trips relative to those estimated for the original proposed development, the conclusion of the original Traffic Impact Statement (WSP, 2017) are not affected:

“Site generated trips are not expected to have any significant impact on 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 patrick.hatton@wsp.com or by telephone at 902-536-0954.

Sincerely,
Original Signed

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



May 31, 2018

Mrs. Ashley Blissett, P. Eng.
 Senior Development Engineer
 HRM Planning and Development
 PO Box 1749
 Halifax, NS B3J 3A5

**RE: May 2018 Addendum Traffic Impact Statement -
 TED Building Multi-Use Development, Pepperell Street, Halifax, NS**

Dear Mrs. Blissett:

This is an Addendum Traffic Impact Statement for the redevelopment of multiple properties fronting Pepperell Street and Quinpool Road in Halifax, NS (See Figure 1) that was previously reviewed in a March 2017 Traffic Impact Statement by WSP and a subsequent April 2018 Addendum. This Addendum is required to account for the planned modification to the site access. No change in land use is planned from the April 2018 Addendum which included:

- 73 Residential Units,
- 6,433 square feet of Commercial Area,



Figure 1 – Concept Plan

SITE ACCESS / EGRESS

While the March 2017 Traffic Impact Statement and the subsequent April 2018 Addendum indicated that access to the site was to be from Quinpool Road with egress to Pepperell Street, plans are being modified to provide access and egress for the proposed site at Pepperell Street only (via a single two-way driveway). This modified access will shift traffic to the lower volume street, Sight distance at this proposed driveway is expected to be sufficient (See Photos 1 and 2). While measurements of the existing driveway indicate a width of 5.3 metres, it is expected that minor modifications to the driveway can be completed to accommodate two-way traffic.



Photo 1 – Looking east (to the left) from the site driveway onto Pepperell Street



Photo 2 – Looking west (to the right) from the site driveway onto Pepperell Street



TRIP GENERATION FOR PROPOSED SITE

The trip generation estimates for the proposed site is expected to be unchanged from the April 2018 Addendum. Trip generation estimates for the site are outlined in the April 2018 Addendum indicate:

- Revised Planned Development - Trip generation estimates for the development include an estimated 24 two-way trips (9 entering and 15 exiting) during the AM peak hour and an estimated 32 two-way trips (19 entering and 13 exiting) during the PM peak hour.

SUMMARY

1. This *May 2018 Addendum Traffic Impact Statement* has been prepared to review changes to the proposed residential / commercial development since development plans were submitted to HRM in March 2017.
2. While previously submitted development plans indicated access to the site would be via Quinpool Road with egress to Pepperell Street, plans are being revised to provide access and egress both from Pepperell Street.
3. Proposed land uses have not changed since the submission of the April 2018 Addendum and include an 11-storey mixed use building with 73 residential units and 6,433 square feet (SF) of ground floor retail space.
4. Trip generation estimates for the development include about 24 two-way trips (9 entering and 15 exiting) during the AM peak hour and 32 two-way trips (19 entering and 13 exiting) during the PM peak hour.

CONCLUSION

5. Since the revised proposed development driveway will shift site traffic to the lower volume street, site impact to area traffic flow will be reduced and the conclusion of the original Traffic Impact Statement (WSP, 2017) are not affected:

“Site generated trips are not expected to have any significant impact on 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 patrick.hatton@wsp.com or by telephone at 902-536-0954.

Sincerely,
Original Signed

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

