ATTACHMENT

G ADDENDUM TIS

Ref. No. 151-14201-01

November 13, 2019

Ms. Ashley Blissett, P. Eng
Senior Development Engineer
Halifax Regional Municipality
PO Box 1749
HALIFAX NS B3J 3A5

RE: Addendum Traffic Impact Statement, Proposed Multi-Tenant Residential Building, South Street and Harvey Street, West of Barrington Street, Halifax, NS (WSP November 8, 2016)

Dear Ms. Blissett:

This is an Addendum to the Traffic Impact Statement (TIS) prepared by WSP Canada Inc. in November 2016 (Copy attached). The current plan for the Stairs House site (Figure A1) is similar to that considered in 2016 with pedestrian accesses on both Harvey Street and South Street, and a parking garage driveway on Harvey Street at the east site boundary. The Addendum has been prepared to consider the following:

- Increase in the number of residential units from 106 in the 2016 TIS to 112 units;
- Traffic volume changes since the 2016 TIS was prepared; and
- Changes in other proposed development in the area.

Trip Generation Estimates - Trip generation estimates for the proposed 2019 development and existing land uses, prepared using published trip generation equations from *Trip Generation, 10th Edition,* (Institute of Transportation Engineers, 2017), are included in Table A1. Since the existing residential units will be removed, trips generated by those land uses which are now included in background volumes on local streets, have been considered as a 'credit' when determining additional vehicle trips that will be generated by the redeveloped site.

While the *Halifax Integrated Mobility* plan has a 2031 target for 60% non-auto trips for the Regional Centre, a 30% reduction for non-auto trips has continued to be used in the Addendum for comparison with the 2016 Traffic Impact Statement. After consideration of a 30% trip reduction for high pedestrian / cycling / transit usage in the area, it is estimated that the proposed mid-rise apartment building will generate about 27 two-way vehicle trips (7 entering and 20 exiting) during the AM peak hour and 34 two-way vehicle trips (21 entering and 13 exiting) during the PM peak hour. However, when trips generated by the existing residential units on the site are considered as a credit, it is estimated that the redeveloped site will generate 21 additional two-way vehicle trips (6 entering and 15 exiting) during the AM peak hour and 25 additional two-way vehicle trips (15 entering and 10 exiting) during the PM peak hour.

1 Spectacle Lake Drive, Dartmouth, Nova Scotia, Canada B3B 1X7
Telephone: 902-835-9955 ~ Fax: 902-835-1645 ~ www.wsp.com

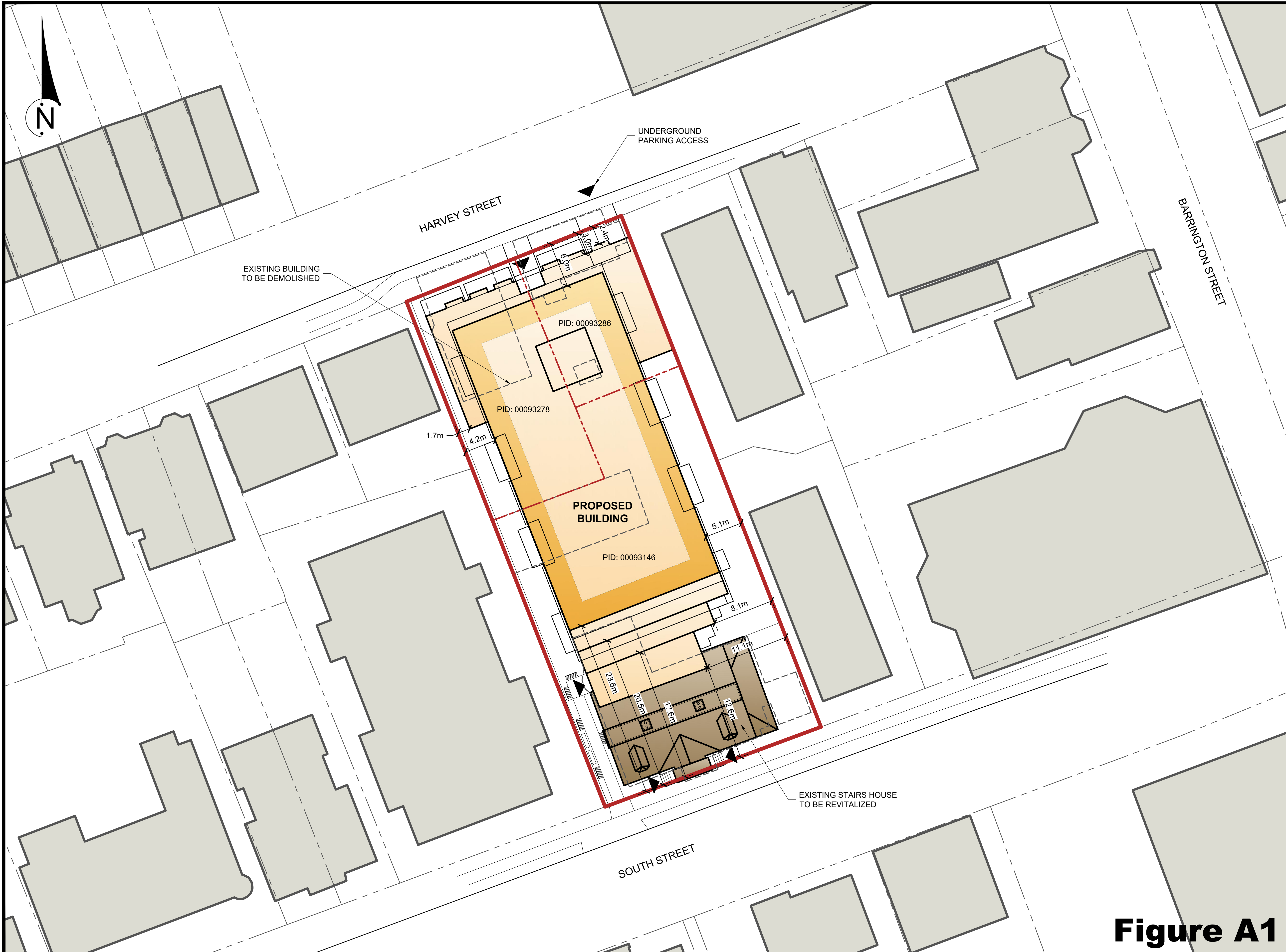
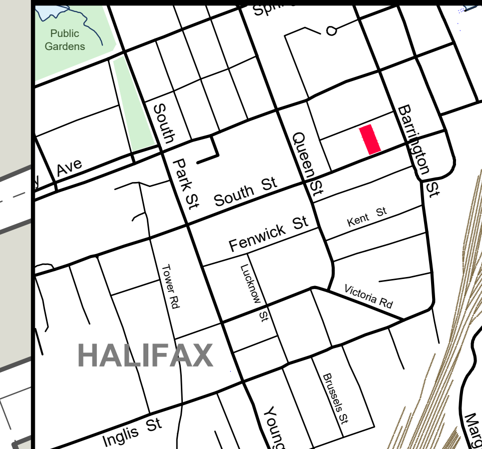


Figure A1

KEY PLAN



LEGEND

- Subject Site Boundaries
- Existing Internal Property Boundaries
- Adjacent Property Boundaries
- Building Access

SITE SUMMARY:

- Land Area - 2,210.5 m²
- Centre Plan Zone: Higher-Order Residential 1 (HR-1)

NOTES:

- Adjacent Property lines approximate only.

SOURCES:

- Adjacent property lines and topographic features from provincial mapping
- Subject site based on WSP Topographical Plan and Plan of Survey, Drawing No. 151-14201-620 dated June 9, 2016

Designer: JHARPER
Planner: CLOVITT

VERSION
102

SITE PLAN
SOUTH ST. HERITAGE BUILDING
HALIFAX, NOVA SCOTIA

SUMMER WIND HOLDINGS LTD.

OCTOBER 28, 2019 151-14201-102

SCALE

7.5 5 2.5 0 12.5 m

1 : 500

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Table A1 - Trip Generation Estimates for Proposed 2019 Development and Existing Land Uses

Land Use [1]	Units [2]	Trip Generation Rates [3]				Trips Generated [3]			
		AM Peak		PM Peak		AM Peak		PM Peak	
		In	Out	In	Out	In	Out	In	Out
Trip Generation Estimate for the Proposed Development									
Mid-Rise Apartment (Land Use 221)	112 units	Equations from Pages 74 and 75				10	28	30	19
30% Trip Reduction - High Pedestrian / Transit Usage [4]						3	8	9	6
Adjusted Trip Generation Estimates for Proposed Development						7	20	21	13
Trip Generation Estimate for the Existing Land Uses [5]									
Mid-Rise Apartment (Land Use 221	27 units	Equations from Pages 74 and 75				2	7	8	5
30% Trip Reduction - High Pedestrian / Transit Usage [4]						1	2	2	2
Adjusted Trip Generation Estimates for Existing Land Uses [5]						1	5	6	3
Estimated Additional Trips Generated by the Redeveloped Site									
Additional Vehicle Trip Estimates for the Redeveloped Site [6]						6	15	15	10

NOTES:
1. Equations for Mid-Rise Apartment Land Use Code 221, *Trip Generation*, *10th Edition*, Institute of Transportation Engineers, 2017, have been used.
2. Numbers of residential units.
3. Rates are 'vehicles per hour per unit'; trips generated are 'vehicles per hour for peak hours'.
4. Since there is high pedestrian / cycling / transit usage in the Downtown Areas of Halifax, a 30% reduction has been applied to site generated trip estimates for both existing and proposed developments.
5. These are the trips generated by existing residential units on the site which can be considered as a 'credit' for site trip generation estimates for the redeveloped site.
6. These are the estimated additional trips that will be generated by the redeveloped site after consideration of the 'credit' for trips generated by the existing land uses on the site.

Comparison of Trip Generation Estimates - Additional site generated trips for the 2016 TIS and the 2019 Addendum, after consideration of credits for trips generated by existing residential units on the site, include the following:

- 2016 - 16 two-way vehicle trips during the AM peak hour and 22 two-way vehicle trips during the PM peak hour.
- 2019 - 21 two-way vehicle trips during the AM peak hour and 25 two-way vehicle trips during the PM peak hour.

Traffic Volumes - The 2016 TIS included review of HRM turning movement traffic count volumes obtained at the intersection of Barrington Street and Morris Street one block north of the Harvey Street intersection during October 2014. That count indicated that Barrington Street has moderate traffic volumes just north of the Harvey Street intersection with two-way volumes of 565 vehicles per hour (vph) during the AM peak hour and 690 vph during the PM peak hour.

A more recent count is not available for that intersection, however, a count obtained by HRM at the South Street intersection during July 2017 indicated two-way volumes of 485 vehicles per hour (vph) during the AM peak hour and 585 vph during the PM peak hour on Barrington Street between the South Street and Harvey Street intersections.

While the 2017 count at South Street indicates a lower volume on Barrington Street than was recorded during the 2014 count at Morris Street intersection, the difference is probably due to lower counts usually experienced during summer months when the 2017 count were obtained during July. Barrington Street volumes are still considered to be moderate in this area.

Other Proposed Residential and Commercial Developments in the Study Area - When the 2016 TIS was prepared, TISs had been prepared for four other developments within about two blocks of the study site. Only the building at the northwest corner of Hollis Street and South Street intersection (Item 1, Table 2, 2016 TIS) has been completed since 2016. The other proposed developments are still in various planning and development stages.

Summary -

1. While the current plan for the Stairs House site is similar to that considered in the 2016 Traffic Impact Statement (TIS) with pedestrian accesses on both Harvey Street and South Street, and a parking garage driveway on Harvey Street at the east site boundary, the current plan includes 112 residential units compared to 106 considered during 2016.

2. It is estimated that the proposed mid-rise apartment building will generate about 27 two-way vehicle trips (7 entering and 20 exiting) during the AM peak hour and 34 two-way vehicle trips (21 entering and 13 exiting) during the PM peak hour.

3. When trips generated by the existing residential units on the site are considered as a credit, it is estimated that the redeveloped site will generate 21 additional two-way vehicle trips (6 entering and 15 exiting) during the AM peak hour and 25 additional two-way vehicle trips (15 entering and 10 exiting) during the PM peak hour.

4. Comparison of additional site generated trips for the 2016 TIS and the 2019 Addendum include the following:
   - 2016 - 16 two-way vehicle trips during the AM peak hour and 22 two-way vehicle trips during the PM peak hour.
   - 2019 - 21 two-way vehicle trips during the AM peak hour and 25 two-way vehicle trips during the PM peak hour.

5. Traffic volumes are moderate on Barrington Street between South Street and Harvey Street intersections. While counts are not available for Harvey Street, peak hourly volumes are expected to be low.

6. Only one of four other area developments considered in the 2016 TIS has been completed and the other three proposed developments are still in various planning and development stages.

Conclusions: Since trip generation changes from the revision in number of units from 106 to 112 are low, conclusions included in the 2016 Traffic Impact Statement are still applicable to this project.

A. Since traffic volumes are low to moderate on streets in the immediate vicinity of the development, the low numbers of additional vehicle trips generated by this development are not expected to have any significant impact to the level of performance of adjacent streets and intersections, or the regional street network.

B. Since additional trips that will be generated by this development and other proposed developments within a two block radius will be dispersed on the local, collector, and arterial streets in the area, the net additional low to moderate numbers of trips estimated to be generated by the developments are not expected to have any significant cumulative effect on traffic operations of area intersections or streets, or the regional street network.

If you have any questions or comments, please contact me by Email to greg.obrien@wsp.com or telephone 902-444-8347.

Sincerely:

Greg O'Brien, P. Eng.
Senior Traffic Engineer
WSP Canada Inc.

Ref. No. 151-14201-002

November 8, 2016

Ms. Ashley Blissett, P. Eng
Senior Development Engineer
Halifax Regional Municipality
PO Box 1749
HALIFAX NS B3J 3A5

RE: Traffic Impact Statement, Proposed Multi-Tenant Residential Building, South Street and Harvey Street, West of Barrington Street, Halifax, NS

Dear Ms. Blissett:

Southwest Properties Limited is preparing plans to construct a multi-unit residential building on a site west of Barrington Street that has frontages on both South Street and Harvey Street (Figure 1). The proposed development will include approximately 106 apartment units and 85 underground parking spaces. The development will be served by pedestrian accesses on both Harvey Street and South Street, and a parking garage driveway on Harvey Street at the east site boundary. This is the Traffic Impact Statement (TIS) required to accompany the development application.

Description of Development Site - The site, which bisects the block between South Street and Harvey Street (Figure 1) approximately 60 meters west of Barrington Street, is now occupied by the following buildings with a total of 27 existing residential units:

- 5241 South Street 13 units
- 5247 South Street 10 units
- 5240 - 5246 Harvey Street 4 units.

The Harvey Street buildings and 5247 South Street will be demolished. The building at 5241 South Street is the Stairs House, a municipally registered heritage building located on a municipally registered heritage property. The residential units attached to the rear of that building will be removed and the Stairs House will be revitalized and used as common amenity space for the proposed residential development.

The proposed parking garage driveway will be on Harvey Street near the east site boundary (Figure 1). Visibility is good on both Harvey Street approaches to the driveway location as illustrated in Photos 1 and 2. Also, since the building will be set back approximately three meters (10 feet) from the property line, there is expected to be good visibility between vehicle drivers exiting the parking garage driveway and pedestrians on the sidewalk.

Photo 1 - Looking west on Harvey Street towards Church Street from the proposed parking garage driveway.

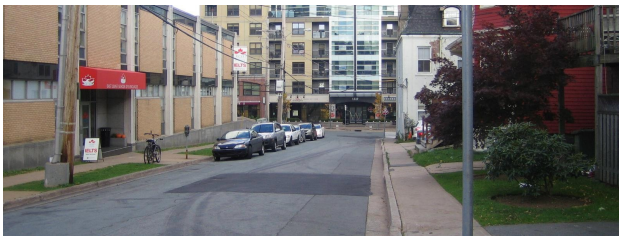

Photo 2 - Looking east on Harvey Street towards Barrington Street from the proposed parking garage driveway.

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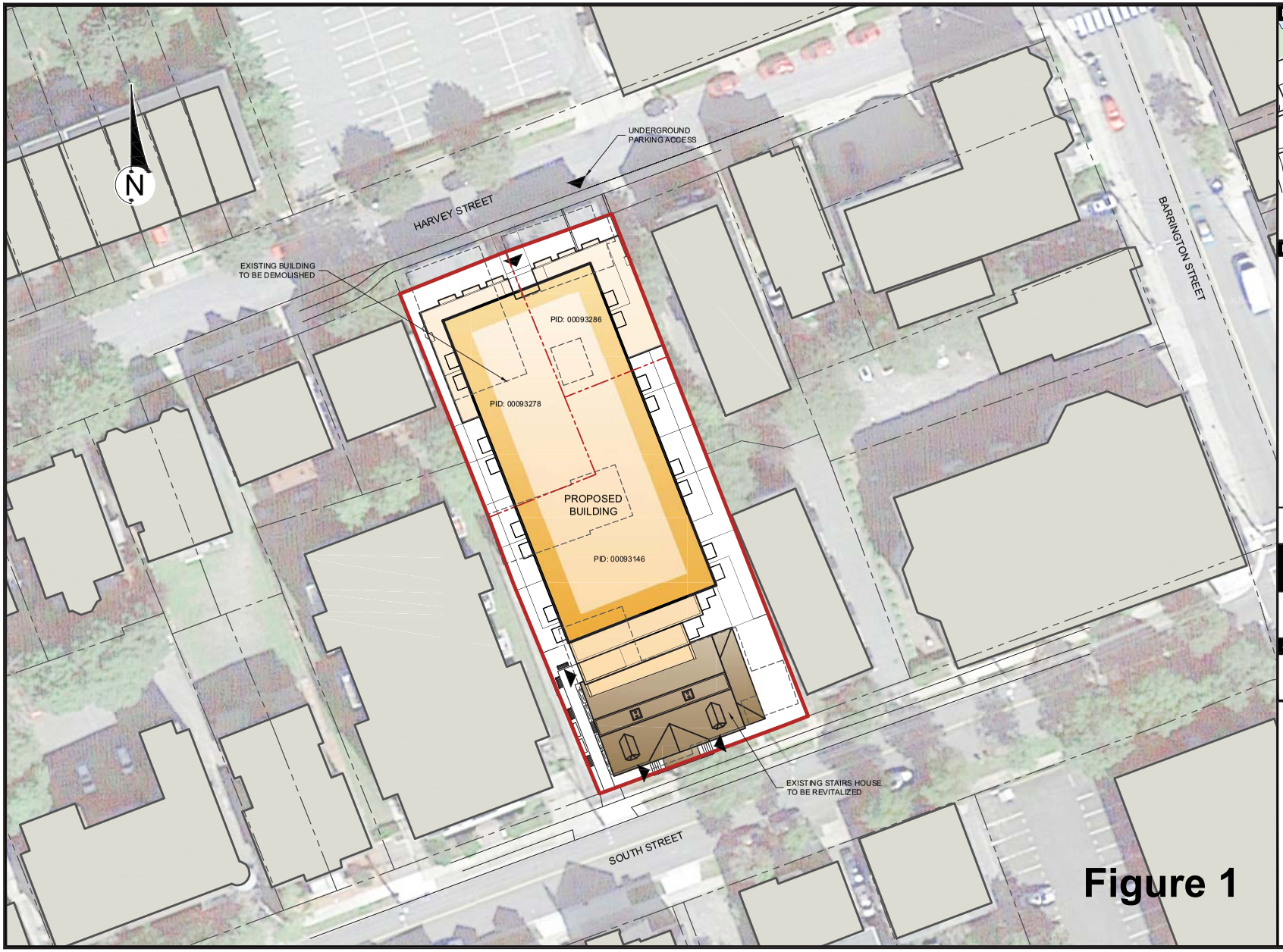
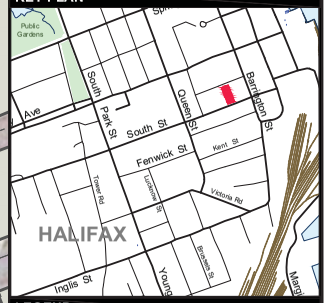


Figure 1

KEY PLAN



LEGEND

- Subject Site Boundaries
- Existing Internal Property Boundaries
- Adjacent Property Boundaries
- Building Access

SITE SUMMARY:

- Land Area - 2,210 m²
- Existing Zone - R-2A

NOTES:

- Property lines approximate only.
- Site subject to survey.

SOURCES:

- Property lines and topographic features fro provincial mapping

Designer: KWATTERS
Planner: CWALLACE

VERSION 101

SITE PLAN
SOUTH ST. HERITAGE BUILDING
HALIFAX, NOVA SCOTIA

SOUTHWEST PROPERTIES LTD.

NOVEMBER 03, 2016 151-14201-101

SCALE

7.5 5 2.5 0 12.5 m

1 : 500

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Harvey Street is a one block long east - west local street between Barrington Street and Church Street. There are sidewalks on both sides of the street (Photos 1 and 2). There are parking meters on the north side of the street opposite the site; parking is not permitted on the south side of the street adjacent to the site. Harvey Street traffic is controlled by STOP signs at both the Church Street and Barrington Street intersections. Since Church Street is one-way southbound, vehicles travelling west on Harvey Street must turn left towards South Street.

South Street is a two-lane east-west major collector street with sidewalks on both sides adjacent to the site. Parking is not permitted at anytime on the north side of the street adjacent to the site. Parking is not permitted from 8 AM - 6 PM, Monday to Friday, on the south side of the street opposite the site.

Barrington Street is a two-lane north-south arterial street with sidewalks on both sides. Intersection traffic control on Barrington Street near the site include traffic signals at Morris Street one block north of Harvey Street and ALL-WAY STOP at South Street, one block south of Harvey Street.

Traffic Volumes - HRM obtained a turning movement traffic count at the intersection of Barrington Street and Morris Street one block north of the Harvey Street intersection during October 2014. The count indicated that Barrington Street has moderate traffic volumes just north of the Harvey Street intersection with two-way volumes of 565 vehicles per hour (vph) during the AM peak hour and 690 vph during the PM peak hour. While counts are not available for Harvey Street, peak hourly volumes are expected to be low.

Description of Pedestrian Facilities - There are sidewalks on both sides of Barrington Street, as well as on Harvey Street and South Street adjacent to the site. There is a marked pedestrian crosswalk across Barrington Street at the south side of the Harvey Street intersection, and there are crosswalks at the signalized Morris Street intersection north of Harvey Street and at the South Street ALL-WAY STOP controlled intersection.

Description of Transit Service - The proposed development site is well served by Halifax Transit. Routes 7, 9, 35 and 41 operate on Barrington Street north of South Street, with Routes 7 and 41 on South Street adjacent to the site.

Trip Generation estimates for the proposed and existing land uses, prepared using published trip generation rates from *Trip Generation, 9th Edition,* (Institute of Transportation Engineers, 2012), are included in Table 1. Since the existing 27 residential units will be removed, trips generated by those land uses, which are now included in background volumes around the site, have been considered as a 'credit' when determining additional vehicle trips that will be generated by the redeveloped site.

After consideration of a 30% trip reduction for high pedestrian / cycling / transit usage in the Downtown Areas of Halifax, it is estimated that the proposed mid-rise apartment building will generate about 22 two-way vehicle trips (7 entering and 15 exiting) during the AM peak hour and 39 two-way vehicle trips (17 entering and 12 exiting) during the PM peak hour. However, when trips generated by the existing 27 residential units on the on the site are considered as a credit, it is estimated that the redeveloped site will generate 16 additional two-way vehicle trips (5 entering and 11 exiting) during the AM peak hour and 22 additional two-way vehicle trips (13 entering and 9 exiting) during the PM peak hour.

Table 1 - Trip Generation Estimates for Proposed Development and Existing Land Uses

Land Use [1]	Units [2]	Trip Generation Rates [3]				Trips Generated [3]			
		AM Peak		PM Peak		AM Peak		PM Peak	
		In	Out	In	Out	In	Out	In	Out
Trip Generation Estimate for the Proposed Development									
Mid-Rise Apartment (Land Use 223)	106 units	0.09	0.21	0.23	0.16	10	22	24	17
30% Trip Reduction - High Pedestrian / Transit Usage [4]						3	7	7	5
Adjusted Trip Generation Estimates for Proposed Development						7	15	17	12
Trip Generation Estimate for the Existing Land Uses [5]									
Mid-Rise Apartment (Land Use 223	27 units	0.09	0.21	0.23	0.16	3	6	6	4
30% Trip Reduction - High Pedestrian / Transit Usage [4]						1	2	2	1
Adjusted Trip Generation Estimates for Existing Land Uses [5]						2	4	4	3
Estimated Additional Trips Generated by the Redeveloped Site									
Additional Vehicle Trip Estimates for the Redeveloped Site [6]						5	11	13	9

NOTES:
1. Rates are for the indicated Land Use Codes, *Trip Generation*, *9th Edition*, Institute of Transportation Engineers, 2012.
2. Numbers of residential units.
3. Rates are 'vehicles per hour per unit'; trips generated are 'vehicles per hour for peak hours'.
4. Since there is high pedestrian / cycling / transit usage in the Downtown Areas of Halifax, a 30% reduction has been applied to site generated trip estimates for both existing and proposed developments.
5. These are the trips generated by existing residential units on the site which can be considered as a 'credit' for site trip generation estimates for the redeveloped site.
6. These are the estimated additional trips that will be generated by the redeveloped site after consideration of the 'credit' for trips generated by the existing land uses on the site.

Other Proposed Residential and Commercial Developments in the Study Area - When this Traffic Impact Statement letter was prepared in November 2016, TISs had been prepared for ***four other developments*** (Table 2) within about two blocks of the study site.

Table 2 - Commutative Traffic Impacts of Developments near the Proposed Site

Site	TIS Letter		Development		Vehicle Trips AM Peak [1]		Vehicle Trips PM Peak [1]	
	Consultant	Date	Apts	Commercial	Exit	Enter	Exit	Enter
1. *WM Fares Group* NW Corner Hollis / South [2]	WSP	Sep. 2014	63	5,700	25	27	31	22
2.*1256 Barrington Investment Ltd* Harvey Street [2]	WSP	Aug. 2015	52	0	5	11	12	9
3. *Universal Realty Group* 1190 Barrington Street [3]	WSP	Oct. 2015	86	6,500	(23)	10	11	(14)
4. *Principal Developments Ltd.* NE Corner Barrington / South [3]	WSP	Mar. 2016	42	5,700	4	5	8	8
5. *Southwest Properties Limited* South - Harvey Streets [4]	WSP	Nov 2016	106	0	5	11	13	9
TOTALS for Five Projects			349	17,900	16	64	75	34

NOTES:
1. Vehicle trips are 'net additional vehicles per hour' generated by each site considering credit for trips generated by existing developments on the sites.
2. These sites were used as parking lots when the Traffic Impact Statements were prepared.
3. These sites had existing residential and / or commercial developments when Traffic Impact Statements were prepared.
4. This is the site that has prompted this Traffic Impact Statement. Since the exiting 27 residential units on the site will be removed for this development, trips generated by those units have been considered as a 'credit' when estimating additional trips that will be generated by the development.

Other Proposed Residential and Commercial Developments in the Study Area (Continued)-
The four other proposed developments involved sites that were used as parking lots, or had existing residential and commercial developments, that generated background traffic volumes on the adjacent streets when TISs were prepared (Table 2). With the addition of the current project, the five proposed developments include a total of approximately 349 apartment units and 17,900 square feet of commercial space. Since traffic will be dispersed on the local, collector, and arterial streets in the area, the net additional low to moderate numbers of trips estimated to be generated by the five developments are not expected to have any significant cumulative effect on traffic operations of area intersections or streets, or the regional street network.

Summary -

1. The proposed development will include approximately 106 apartment units and 85 underground parking spaces. The development will be served by pedestrian accesses on both Harvey Street and South Street, and a parking garage driveway on Harvey Street at the east site boundary.

2. Visibility is good on both Harvey Street approaches to the driveway location. Also, since the building will be set back approximately three meters (10 feet) from the property line, there is expected to be good visibility between vehicle drivers exiting the parking garage driveway and pedestrians on the sidewalk.

3. Since the existing 27 residential units will be removed, trips generated by those land uses, which are included in background volumes around the site, have been considered as a 'credit' when determining additional vehicle trips that will be generated by the redeveloped site.

4. It is estimated that the proposed mid-rise apartment building will generate about 22 two-way vehicle trips (7 entering and 15 exiting) during the AM peak hour and 39 two-way vehicle trips (17 entering and 12 exiting) during the PM peak hour. However, when trips generated by the existing 27 residential units on the on the site are considered as a credit, it is estimated that the redeveloped site will generate 16 additional two-way vehicle trips (5 entering and 11 exiting) during the AM peak hour and 22 additional two-way vehicle trips (13 entering and 9 exiting) during the PM peak hour.

5. The site is well served by pedestrian facilities and transit services. There are sidewalks on both sides of Barrington Street, as well as on Harvey Street and South Street adjacent to the site. There is a marked pedestrian crosswalk across Barrington Street at the south side of the Harvey Street intersection, and there are crosswalks at the signalized Morris Street intersection north of Harvey Street and at the South Street ALL-WAY STOP controlled intersection. Halifax Transit operates Routes 7, 9, 35 and 41 on Barrington Street north of South Street, and Routes 7 and 41 on South Street adjacent to the site.

6. Traffic volumes are moderate on Barrington Street just north of the Harvey Street intersection with two-way volumes of 565 vehicles per hour (vph) during the AM peak hour and 690 vph during the PM peak hour. While counts are not available for Harvey Street, peak hourly volumes are expected to be very low.

7. When this Traffic Impact Statement letter was prepared in November 2016, TISs had been prepared for ***four other developments*** within about two blocks of the study site. With the addition of the current project, the five proposed developments include a total of approximately 349 apartment units and 17,900 square feet of commercial space.

Conclusions -

8. Since traffic volumes are low to moderate on streets in the immediate vicinity of the development, the low numbers of additional vehicle trips generated by this development are not expected to have any significant impact to the level of performance of adjacent streets and intersections, or the regional street network.

9. Since additional trips that will be generated by this development and four other proposed developments within a two block radius will be dispersed on the local, collector, and arterial streets in the area, the net additional low to moderate numbers of trips estimated to be generated by the five developments are not expected to have any significant cumulative effect on traffic operations of area intersections or streets, or the regional street network.

If you have any questions or comments, please contact me by Email to ken.obrien@wspgroup.com or telephone 902-443-7747.

Sincerely:

Ken O'Brien, P. Eng.
Senior Traffic Engineer
WSP Canada Inc.