NOVATECH
Engineers, Planners & Landscape Architects

M E M O R A N D U M

DATE: SEPTEMBER 23, 2024

TO: MIKE GIAMPA, P.ENG. – CITY OF OTTAWA

FROM: JOSHUA AUDIA, P.ENG. – NOVATECH

RE: 200 BARIBEAU STREET
TRANSPORTATION REVIEW

CC: JENNIFER LUONG, P.ENG., MARK BISSETT, P.ENG. – NOVATECH

1.0 Introduction

This Transportation Review memorandum has been prepared in support of a Site Plan Control Application for a redevelopment at 200 Baribeau Street. The subject site is located in the Vanier neighborhood, at the southwest corner of the Baribeau Street and Landry Street intersection. An aerial view of the subject site is provided as **Figure 1**.

Figure 1: Aerial of the Subject Site

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The subject property was most recently occupied by a one-storey building, which was originally constructed as an elementary school with 18 classrooms, a general purpose room (gym/stage, change rooms, etc.), and administrative offices. The property was then acquired by Ahlul Bayt Centre Ottawa (ABCO), and functioned as an elementary school for students from kindergarten to sixth grade, a mosque for worship services, and community centre during non-school hours, weekends, and summer periods. The growth in ABCO's student population resulted in relocation to a site on Albion Road North, and the existing building has been demolished. The subject site is now vacant.

The proposed redevelopment at 200 Baribeau will include the construction of 94 townhouses. Each townhouse can include a primary dwelling and two accessory dwellings. Therefore, the proposed redevelopment can include a maximum of 282 dwellings. This unit count is considered in this TIA letter. The development will be served by one access connection to Baribeau Street. A copy of the proposed Site Plan is included in **Appendix A**.

2.0 Scope of Transportation Review Memo

A TIA Screening Form is included in **Appendix B**. The scope of work has been confirmed to include the following elements:

- Trip generation of the previous ABCO uses and proposed residential dwellings;
- Review of the nearest signalized intersections to the subject site;
- Review of neighbourhood traffic calming triggers.

3.0 Trip Generation

3.1 Existing Trip Generation

The Ahlul Bayt Centre Ottawa (ABCO) currently operates a private school, mosque, and community/ recreational centre at 3025 Albion Road. A Transportation Impact Study (TIS) was prepared by Novatech in 2016 and revised in 2018 in support of the relocation. As such, peak hour trips for the proposed relocation were estimated using existing data at the ABCO. The trip generation section from the 2018 TIS is included as **Appendix C** for reference. For the purposes of establishing the net difference in trips generated by the subject site, the following summarizes the weekday peak hour trip generation for the subject site when it was occupied by the ABCO.

<u>Elementary School</u>
The elementary school serves approximately 170 students and employs 17 teachers and administrative staff. It is expected that all students and staff arrive within a single one-hour period during the AM peak hour, and that approximately 35% of staff/students remain on-site for after-school programs in the PM peak hour. It is expected that most students carpool and are dropped off/picked up from school. A vehicle occupancy of 3 students per vehicle was assumed. Peak hour person trips are estimated at 187 people per hour (pph) in the AM peak, and 122 pph in the PM peak hour. Peak hour vehicle trips are estimated at 119 vehicles per hour (vph) during the AM peak hour, and 78 vph during the PM peak hour.

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Mosque and Community/Recreational Centre Uses

Currently, prayer services are not held during a school day. As such, no weekday peak hour vehicle trips are associated with the mosque use. A variety of different programs (youth groups, scouts, religious education) are run out of the community/recreational centre throughout the week. These programs are generally held outside of peak hours.

3.2 Proposed Trip Generation

The number of person trips generated by the proposed redevelopment has been estimated using the *TRANS Trip Generation Manual* (prepared by WSP in October 2020). The manual presents peak hour trip generation rates and mode shares for different types of housing for the AM and PM peak periods. The data is divided into rates and mode shares for Single-Family Detached Housing, Low-Rise Multifamily Housing (defined as one or two storeys), and High-Rise Multifamily Housing (defined as three or more storeys). For the High-Rise Multifamily Housing use, the process of converting the trip generation estimates from peak period to peak hour is shown as follows.

The *TRANS Trip Generation Manual* identifies the subject site as being located within the Ottawa East district, which has the following observed mode shares for high-rise multifamily housing during the peak hours:

- Auto Driver: 39% AM peak, 40% PM peak;
- Auto Passenger: 7% AM peak, 14% PM peak;
- Transit: 38% AM peak, 28% PM peak;
- Cyclist: 2% AM peak, 3% PM peak;
- Pedestrian: 13% AM peak, 15% PM peak.

For the purposes of this TIA letter, the assumed mode shares of the proposed redevelopment generally follow the observed mode shares above, and can be summarized as 40% driver, 10% passenger, 30% transit, 5% cyclist, and 15% pedestrian.

The process of converting the trip generation estimates from peak period to peak hour is shown in the following tables. The estimated number of person trips generated by the proposed development during the AM and PM peak periods are shown in **Table 1**. A breakdown of these trips by mode share is shown in **Table 2**.

Table 1: Peak Period Trip Generation

Land Use	TRANS Rate	Units	AM Peak Period (ppp[1])			PM Peak Period (ppp)		
			IN	OUT	TOT	IN	OUT	TOT
High-Rise Multifamily Housing	AM: 0.80 PM: 0.90	282	70	156	*226*	147	107	*254*

1. ppp: Person Trips per Peak Period

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Table 2: Peak Period Trips by Mode Share

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		IN	OUT	TOT	IN	OUT	TOT
Residential Person Trips		**70**	**156**	***226***	**147**	**107**	***254***
Auto Driver	40%	28	62	*90*	59	43	*102*
Auto Passenger	10%	7	16	*23*	15	10	*25*
Transit	30%	21	47	*68*	44	32	*76*
Cyclist	5%	3	8	*11*	7	6	*13*
Pedestrian	15%	11	23	*34*	22	16	*38*

Table 4 of the *TRANS Trip Generation Manual* includes adjustment factors to convert the estimated number of trips generated for each mode from peak period to peak hour. A breakdown of the peak hour trips by mode is shown in **Table 3**.

Table 3: Peak Hour Trips by Mode Share

Travel Mode	Adj. Factor		AM Peak Hour			PM Peak Hour		
	AM	PM	IN	OUT	TOT	IN	OUT	TOT
Auto Driver	0.48	0.44	13	30	*43*	26	19	*45*
Auto Passenger	0.48	0.44	3	7	*10*	6	5	*11*
Transit	0.55	0.47	12	26	*38*	21	15	*36*
Cyclist	0.58	0.48	2	5	*7*	4	3	*7*
Pedestrian	0.58	0.52	6	14	*20*	11	8	*19*
Peak Hour Person Trips			**36**	**82**	***118***	**68**	**50**	***118***

From the previous table, the proposed residences are estimated to generate 118 person trips during each peak hour, including 43 vehicle trips during the AM peak hour and 45 vehicle trips during the PM peak hour.

3.3 Net Site Trip Generation

The following table summarizes the net site trip generation due to the proposed redevelopment at 200 Baribeau Street. Note that negative numbers indicate an overall reduction in site trips.

Table 4: Net Site Trip Generation

Land Use	AM Peak Hour (vph)			PM Peak Hour (vph)		
	IN	OUT	TOT	IN	OUT	TOT
Previous Use (ABCO)	65	54	*119*	35	43	*78*
Proposed Redevelopment	13	30	*43*	26	19	*45*
Net Site Vehicle Trips	**-52**	**-24**	***-76***	**-9**	**-24**	***-33***

Compared to the previous use, the proposed redevelopment will result in an overall net decrease of approximately 76 vehicle trips during the AM peak hour and 33 vehicle trips during the PM peak hour.

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4.0 Nearest Signalized Intersections

The signalized intersections closest to the subject site are located at:

- Vanier Parkway/Deschamps Avenue (260m driving distance from proposed access);
- Montreal Road/Marier Avenue (610m driving distance from proposed access);
- Beechwood Avenue/Marier Avenue (940m driving distance from proposed access).

If the peak hour vehicle trips generated by the proposed redevelopment were distributed approximately evenly between the three signalized intersections identified above, this would equate to approximately 15 vehicles at each intersection, which is anticipated to have negligible impacts on traffic operations at any signalized intersection. As the proposed redevelopment is projected to generate fewer trips than the previous use, traffic operations at the intersections above could even improve.

5.0 Neighbourhood Traffic Calming

The subject site is located within a community with 'Traffic Calmed Neighbourhood' signage. When entering the neighbourhood from roadways such as Beechwood Avenue and Vanier Parkway, there is signage identifying a posted area speed limit of 30 km/h.

Street-level photography identifies that many roadways in vicinity of the subject site have flex posts that delineate the centreline and/or parking lanes, including the boundary roadways Landry Street and Baribeau Street. Intersection narrowings are provided at many intersections within the immediate vicinity (including at Landry Street/Baribeau Street). Raised crossings are also provided at select locations within the neighbourhood (the Montfort Street/Hannah Street intersection being the example closest to the subject site).

Traffic flow throughout the neighbourhood is also managed through the implementation of one-way roadways. This applies to roadways such as St. Ambroise Avenue, Dagmar Avenue, Montfort Street, and Ethel Street.

No additional neighbourhood traffic management measures are identified as part of this proposed redevelopment, given the abundance of existing traffic calming measures in the immediate vicinity of the subject site. Additionally, the triggers for neighbourhood traffic calming are not met, as the development application is not for Zoning or Draft Plan of Subdivision, and the development is projected to generate fewer than 75 vehicle trips per peak hour.

6.0 Conclusions

The Ahlul Bayt Centre Ottawa (ABCO) previously operated a private school, mosque, and community/recreational centre at 200 Baribeau Street. The proposed redevelopment, consisting of 282 dwelling units, is projected to generate fewer peak hour trips than the previous use, and could improve traffic operations at the nearest signalized intersections in comparison. No additional neighbourhood traffic calming measures are identified as part of this proposed redevelopment.

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Appendix A

Proposed Site Plan

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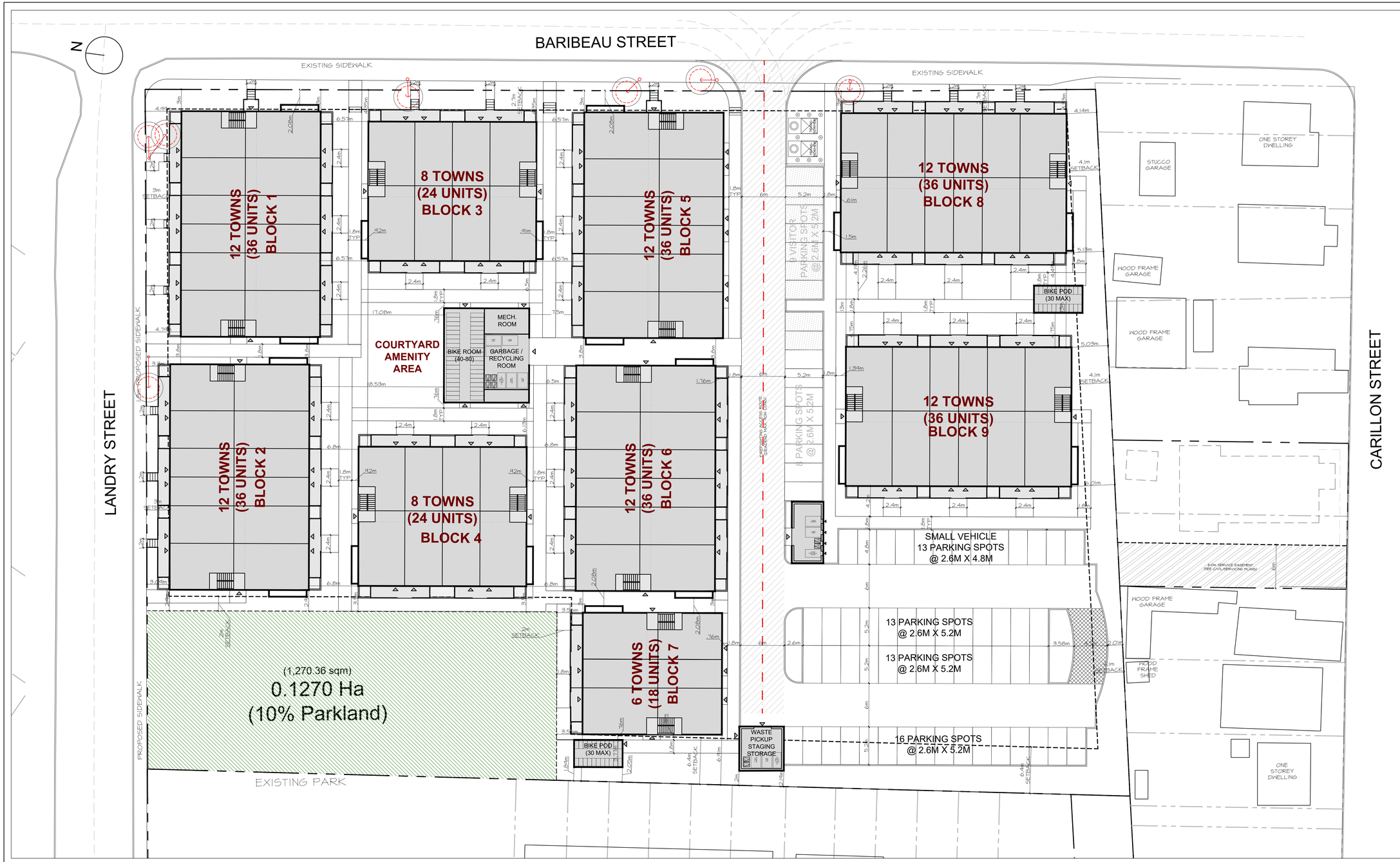

no.	date	revision
6	2024-09-18	SITE PLAN UPDATES FOR COORDINATION
5	2024-09-13	ISSUED SITE PLAN REVISIONS FOR CONSULTANT COORDINATION
4	2024-07-31	ISSUED FOR CLIENT PRELIMINARY PRICING
3	2024-07-05	ISSUED TO M&E FOR PRELIMINARY COORDINATION
2	2024-07-03	ISSUED FOR CONSULTANT COORDINATION
1	2024-06-25	ISSUED FOR CLIENT REVIEW

parkriver PROPERTIES

Hobin Architecture Incorporated
63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7
T: 613-238-7200
F: 613-235-2005
E: mail@hobinarc.com
hobinarc.com

HOBIN ARCHITECTURE

project title
200 BARIBEAU
BARIBEAU ST, OTTAWA, ONTARIO

drawing title
SITE PLAN OPTION 2

drawn	date	scale
HL	DEC 2021	1:250

project 2006

drawing no. SP-1

revision no.

ONTARIO ASSOCIATION OF ARCHITECTS
SHAWN J. HOBIN
LICENCE 3049

SITE DATA

SITE STATISTICS (NUMBER OF UNITS & BUILDING FOOTPRINT AREA)

BLOCK 1	12 TOWNS / 36 UNITS	596.99M²
BLOCK 2	12 TOWNS / 36 UNITS	596.99M²
BLOCK 3	8 TOWNS / 24 UNITS	444.81M²
BLOCK 4	8 TOWNS / 24 UNITS	444.81M²
BLOCK 5	12 TOWNS / 36 UNITS	596.99M²
BLOCK 6	12 TOWNS / 36 UNITS	596.99M²
BLOCK 7	6 TOWNS / 18 UNITS	321.90M²
BLOCK 8	12 TOWNS / 36 UNITS	596.99M²
BLOCK 9	12 TOWNS / 36 UNITS	596.99M²
TOTAL	94 TOWNS / 282 UNITS	4,793.46M²

LOT COVERAGE

TOTAL LOT AREA:	12,703.69M²
TOTAL GROSS BUILDING AREA: (GARBAGE & BIKE STORAGE INCLUDED)	4'993.32M²
TOTAL LOT COVERAGE:	39.3%
TOTAL HARD LANDSCAPING AREA:	3'850.71M²
TOTAL LOT COVERAGE:	30.3%
TOTAL SOFT LANDSCAPE AREA: (PARK EXCLUDED)	2,589.48M²
TOTAL LOT COVERAGE:	20.4%
PARK AREA:	1270HA (1'270.18M²)
TOTAL LOT COVERAGE:	10%

SURVEY INFORMATION

JD BARNES LTD.
2430 DON REID DRIVE SUITE 204
OTTAWA, ON
K1H 1E1, CANADA

CONTACT:
SHAWN LEROUX
TEL. 613-731-7244

REAL PROPERTY REPORT
PART 1 - PLAN SHOWING
PART OF BLOCK A
REGISTERED PLAN M-44
CITY OF OTTAWA

SITE STATISTICS

PLANNED UNIT DEVELOPMENT ZONING MECHANISM

ZONING:

DWELLING TYPE: PUD - 94 TOWNS / 282 UNITS	REQUIRED	PROPOSED
MIN. WIDTH OF PRIVATE DRIVEWAY	6.0m	6.0m
MIN. SEPARATION AREA BETWEEN BUILDINGS	1.2m MIN.	3.0m MIN.
SETBACKS		
MIN. LOT WIDTH		
MIN. LOT AREA		
MAX. BUILDING HEIGHT		

PARKING REQUIREMENTS - RESIDENTS

(PART 4 - PARKING, QUEUING AND LOADING PROVISIONS)

TOWNHOMES PROVIDED
94 - 12(SEC. 101 3a) 82 TOWNHOUSES

MIN. PARKING REQUIRMENTS - TABLE 101A

TOWNHOUSE
0.75 PER DWELLING UNIT 82 X 0.75 = 61.5
REQUIRED 62 SPACES PROVIDED 63 SPACES

VISITOR PARKING
94 - 12(SEC. 102 2) 82 TOWNHOUSES

MIN. VISITOR PARKING SPACE RATES - TABLE 102

TOWNHOUSE
0.1 PER DWELLING UNIT 82 X 0.1 = 8.2
REQUIRED 9 SPACES PROVIDED 9 SPACES

GRAPHIC SCALE

1 : 250

5m 10m 20m 30m 35m

CONSULTANTS

ARCHITECT
HOBIN ARCHITECTURE INC.
63 PAMILLA STREET,
OTTAWA, ON K1S 3K7

CONTACT:
HUGO LATREILLE ext. 133
SEAN CARTY ext. 124
TEL. 613-236-7200
FAX. 613-265-2005

CIVIL- GRADING & SERVICING
NOVATECH
240 MICHAEL COWPLAND DR
SUITE 200,
OTTAWA, ON K2M 1P6

CONTACT:
MARK BISSETT
TEL. 613-254-9643 X.237

LANDSCAPE
URBANTYPOLOGY INC.
499 PRESTON STREET
OTTAWA, ONTARIO K1S 4N7

CONTACT:
SCOTT MASON
STUDIO 437-700-5446
DIRECT 343-882-4918
MOBILE 613-867-3042

LOCATION MAP

N.T.S.

Appendix B

TIA Screening Form

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City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	200 Baribeau Street
Description of Location	Southwest of Baribeau St/Landry St intersection
Land Use Classification	Residential
Development Size (units)	94 principal dwellings (282 dwellings total)
Development Size square metre (m^2)	-
Number of Accesses and Locations	One proposed to Baribeau Street
Phase of Development	One
Buildout Year	2026

If available, please attach a sketch of the development or site plan to this form.

2. Trip Generation Trigger

Considering the Development's Land Use type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Table notes:

1. Table 2, Table 3 & Table 4 TRANS Trip Generation Manual
2. Institute of Transportation Engineers (ITE) Trip Generation Manual 11.1 Ed.

Land Use Type	Minimum Development Size
Single-family homes	**60 units**
Multi-Use Family (Low-Rise)[1]	**90 units**
Multi-Use Family (High-Rise)[1]	**150 units**
Office[2]	**1,400 m^2**
Industrial[2]	**7,000 m^2**
Fast-food restaurant or coffee shop[2]	**110 m^2**
Destination retail[2]	**1,800 m^2**
Gas station or convenience market[2]	**90 m^2**

If the proposed development size is equal to or greater than the sizes identified above, the Trip Generation Trigger is satisfied.

3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	☐	☑
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?[2]	☐	☑

If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 kilometers per hour (km/h) or greater?	☐	☑
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	☐	☑
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 metre [m] of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	☐	☑
Is the proposed driveway within auxiliary lanes of an intersection?	☐	☑
Does the proposed driveway make use of an existing median break that serves an existing site?	☐	☑

[2] Hubs are identified in Schedules B1 to B8 of the City of Ottawa Official Plan. PMTSAs are identified in Schedule C1 of the Official Plan. DPAs are identified in Schedule C7A and C7B of the Official. See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.

	Yes	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	☐	☑
Does the development include a drive-thru facility?	☐	☑

If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

5. Summary

Results of Screening	Yes	No
Does the development satisfy the Trip Generation Trigger?	☐	☑
Does the development satisfy the Location Trigger?	☐	☑
Does the development satisfy the Safety Trigger?	☐	☑

If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

Appendix C

Excerpt from 3025 Albion Road TIS

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Albion Road and Bank Street in the vicinity of the subject site, as shown in the TRANS model (2011 to 2031), identified either no growth or negative growth over the 20-year planning horizon. Based on this information, no background growth has been applied to the road network. As no growth is anticipated, the 2019 and 2024 background traffic volumes remain consistent with the existing condition.

3.3 Trip Generation

The ABCO is a Lebanese Muslim Canadian registered charitable organization which offers the community ongoing social, cultural, educational, and religious services. The ABCO is relocating from their existing site in Vanier to 3025 Albion Road. The site is currently occupied by Hydro Ottawa offices. The proposed development will use the existing building to include a mix of several uses including a school, community centre, recreational facility, mosque, banquet hall, as well as leased office and warehouse spaces. The uses and programs for day-to-day operations have been reviewed independently from the banquet hall which will be used for occasional events, as described further in Section 3.3.6.

The approximate time periods associated with each program or facility are identified in **Table 2**, which includes the existing office use. During the weekday time period, the school remains the major trip generator with occasional evening programming at the community centre. The exercise facilities and mosque will continue to generate trips throughout the day and evening time periods. The proposed leased office and warehouse spaces will generate trips during the AM, midday, and PM peak hours. On weekends, Saturday mornings reflect the worst-case scenario with overlapping heritage language school and the use of the mosque and exercise facilities.

For the existing development and the proposed office and warehouse, the vehicle trips have been estimated using trip generation rates from ITE's *Trip Generation Manual, 9th Edition*. For the proposed development, the vehicle trips associated with each program or facility have been identified based on the existing staff experience at the facility in Vanier. The estimated vehicle trips have been compared to ITE rates (where available) to validate the assumptions. Given the limited access to transit and the city-wide catchment area, it has been assumed that few people will travel by non-auto modes. Higher proportions of carpooling are anticipated and estimated vehicle occupancies are identified for each trip generator.

Table 2: Typical Facility Programs by Day and Time Period

Use/Program	Weekday				Saturday				Sunday		
	AM	Midday	PM	Evening	AM	Noon	Mid-PM	Evening	AM	Noon	Mid-PM
Existing Development											
Industrial	✔	✔	✔								
Warehouse	✔	✔	✔								
Offices	✔	✔	✔								
Proposed Development											
School	✔	✔	✔								
Heritage Language School					✔	✔	✔				
Religious Education				✔							
Girls' Youth Group				✔							
Boys' Youth Group								✔			
Scouts									✔	✔	✔
Exercise Facility	✔	✔	✔	✔	✔	✔	✔	✔			
Prayers	✔	✔	✔	✔	✔	✔	✔	✔			
Leased Office	✔	✔	✔								
Leased Warehouse	✔	✔	✔								

3.3.1 Existing Development

The existing building is occupied by Hydro Ottawa, and currently contains 42,510 ft^2 GFA of industrial space, 25,324 ft^2 GFA of warehousing spaces, and 80,125 ft^2 GFA of office space. A section of the first floor is also used as garage space, which has been assumed to generate no trips.

Trips generated by the existing development during the weekday AM and PM peak periods have been estimated using relevant land uses in the ITE *Trip Generation Manual, 9th Edition*. Trips generated during the midday peak period has been estimated as half of the average between the AM and PM peaks. These trips represent employees or clients who arrive and/or depart the subject site for lunch, meetings, etc. A split of 50% entering/50% exiting during this period has also been assumed.

Trips generated using the ITE trip generation rates were converted to person trips using a factor of 1.28, consistent with the City's 2017 TIA Guidelines. The person trip generation by the existing site is summarized in **Table 3**.

Table 3: Existing Person Trips

Land Use	ITE Code	GFA	AM Peak (pph)			Mid Peak (pph)			PM Peak (pph)		
			IN	OUT	TOT	IN	OUT	TOT	IN	OUT	TOT
Gen. Light Industrial	110	42,510 ft^2	44	6	50	13	13	26	6	46	52
Warehousing	150	15,324 ft^2	5	1	6	2	2	4	1	5	6
Single Tenant Office	715	80,125 ft^2	164	20	184	45	45	90	27	151	178
Total			**213**	**27**	**240**	**60**	**60**	**120**	**34**	**202**	**236**

The modal shares for the existing development are anticipated to be consistent with the modal shares outlined in the 2011 *TRANS O-D Survey Report*, specific to the Alta Vista district. A full breakdown of the person trips by modal share are shown in **Table 4**.

Table 4: Existing Person Trips by Modal Share

Travel Mode	Modal Share	AM Peak			Midday Peak			PM Peak		
		IN	OUT	TOT	IN	OUT	TOT	IN	OUT	TOT
Total Person Trips		*213*	*27*	*240*	*60*	*60*	*120*	*34*	*202*	*236*
Auto Driver	65%	138	18	156	39	39	78	22	132	154
Auto Pass	15%	32	4	36	9	9	18	5	30	35
Transit	15%	32	4	36	9	9	18	5	30	35
Non-Auto	5%	11	1	12	3	3	6	2	10	12

3.3.2 School

The elementary and middle school will include approximately 16 classrooms and serve approximately 170 students. The school will have 17 teachers and administrative staff and will be in session from Monday to Friday between 8:15am and 3:15pm.

Based on the 2011 OD Data for work trips to the Alta Vista area, it has been assumed that 65% of the teachers drive to the site; amounting to 11 vehicles. Based on current operations at the ABCO school in the Vanier area, it is expected that most students will carpool to/from school with an average of 3 students per vehicle; amounting to approximately 54 vehicles. It has been conservatively assumed that all students and teachers arrive within a single one-hour period during the AM peak hour, as summarized in **Table 5**. During the PM peak hour, 65% of teachers and students are expected to depart during the peak hour while the remaining 35% remain on-site for after-school programs. By comparison, the ITE rates for a private school (LU534) identify approximately 30% more vehicle trips in both the morning and afternoon peak periods; likely reflective of lower carpooling rates amongst students.

Table 5: School Trips

	Teachers	Students
Persons	17	170
Non-Auto Modes (35% / 5%)	5	9
Vehicle Occupancy	1.1	3
Vehicles	11	54
Peak Hour Vehicle Trips (In/Out)		
-AM Peak Hour	11/0	54/54*
-PM Peak Hour	0/8	35/35*

Note: * All drivers assumed to drop-off/pick-up only. Some linked vehicle trips may exist which is not accounted for.

3.3.3 Recreation/Community Centre

The recreation and community centre will include sports facilities and community programs. The centre will employ 9 full-time or part-time staff and up to 30 occasional volunteers to lead youth programs and serve on the Executive and Trustee boards. A total of ten vehicle trips have been included to account for these staff and volunteers.

Exercise Facility

The exercise facility is proposed to be open from 7:00am to 10:00pm but access will be limited to some facilities during school hours. The facility may include a swimming pool, gymnasium, and squash court. Peak use of the facility is expected to be approximately 50 persons and occur in the evening period from 7:00pm to 10:00pm. If on average users stay on-site for 1.5 hours, two-way vehicle trip rates are anticipated to be approximately 58vph, as shown in **Table 6**. By comparison, the ITE Trip Generation Manual Recreational Community Centre rates suggest two-way peak hour trips of up to 45vph; suggesting the estimate of 58vph is likely conservative.

Table 6: Exercise Facility Trips

	Users
Persons	50
Non-Auto Modes (5%)	3
Vehicle Occupancy	1.1
Vehicles	43
Average Length of Stay	1.5 hours
Peak Hour Vehicle Trips (In/Out)	
-Evening and Weekends	29/29
-Weekday (33% reduction assumed during school hours)	19/19

Religious Education

A religious education session will be hosted every Thursday evening at approximately 7:00pm and will serve 200 persons including both children and adults. It has been assumed that 95% will arrive by vehicle with an average of 3 students per vehicle, or 64 vehicles, as shown in **Table 7**. As some students are adults, it has been assumed that only 25% of drivers will be exclusively

dropping-off/picking-up while the remainder of drivers will remain on site to either attend the education session or use on-site facilities.

Table 7: Religious Education Trips

	Leaders	Students
Persons	7	200
Non-Auto Modes (5%)	0	10
Vehicle Occupancy	1.1	3
Vehicles	6	64
Peak Hour Vehicle Trips (In/Out) 7:00PM Arrival	6/0	64/16

Youth Groups

The centre will host a girls' youth group for ages 9 to 16 years on Friday evenings beginning at approximately 7:00pm. A boys' youth group for ages 15 to 18 years will be hosted on Saturday evenings beginning at approximately 7:00pm. The youth groups will be run by a team of 8 to 10 councillors. Most youth will carpool to the site with an average of 3 youths per vehicle, as summarized in **Table 8**. Half of the vehicles are expected to remain on-site while drivers attend the youth group or use the recreational facility while the other half return at the end of each session to pick-up the youth.

Table 8: Youth Group Trips

	Girls' Youth Group		Boys' Youth Group	
	Councilor	Youth	Councilor	Youth
Persons	10	120	8	100
Non-Auto Modes (5%)	1	6	0	5
Vehicle Occupancy	1.1	3	1.1	3
Vehicles	8	38	7	32
Peak Hour Vehicle Trips (In/Out)	8/0	38/19	7/0	32/16

Scouts

A Scouts program will be hosted at the site on Sunday mornings from approximately 10:00am to 12:00pm. The Scouts will include both boys and girls from ages 6 to 14 years and will be run by a team of 15 Scout Leaders. Consistent with the travel assumptions for the youth groups, it is expected that only 5% arrive by non-auto modes and on average 3 scouts arrive in each vehicle, as shown in **Table 9**. Half of the vehicle drivers are assumed to remain on-site to make use of the available facilities while the second half are assumed to return to pick-up Scouts at the end of the program.

Table 9: Scouts Trips

	Leaders	Scouts
Persons	15	150
Non-Auto Modes (5%)	1	8
Vehicle Occupancy	1.1	3
Vehicles	13	48
Peak Hour Vehicle Trips (In/Out)		
-Arrival (AM Peak)	13/0	48/24
-Departure (Midday)	0/13	24/48

Heritage Language Program

A Heritage Language Program will be hosted on Saturdays from approximately 10:00am to 2:00pm. This program will include approximately 160 students and 15 teachers. Consistent with previous assumptions, students are expected to carpool with an average of 3 students per vehicle, as shown in **Table 10**. Half of the drivers are assumed to remain on-site to make use of the available facilities.

Table 10: Heritage Language Program Trips

	Teachers	Students
Persons	15	160
Non-Auto Modes (5%)	1	8
Vehicle Occupancy	1.1	3
Vehicles	13	51
Peak Hour Vehicle Trips (In/Out)		
-Arrival (AM Peak)	13/0	51/26
-Departure (Mid-Afternoon)	0/13	26/51

3.3.4 Mosque

Prayer services will occur approximately 5 times per day with the exact times shifting throughout the year. Peak attendance for weekly prayers will occur on Friday afternoon (approximately 1:00pm). Attendance at the mosque for prayers is not highly prioritized within the community and therefore attendance is expected to be less than what is observed at other mosques in Ottawa. At the existing site in Vanier, prayers are not held during the school day and therefore none of the community members currently attend Friday afternoon. It has been conservatively assumed that as many as 200 persons would be in attendance at midday on Friday (not including school children and staff already on-site).

In addition to the Friday afternoon service, typical weekday attendance at prayers has been estimated at approximately 70 persons (not including school children and staff). On weekends, typical attendance at prayers is expected to increase to approximately 90 persons to account for some school-aged children attending with their parents.

The time periods have been conservatively assumed to align with the peak travel demand for other on-site programs. The estimated people and vehicle trips are summarized in **Table 11**. It has been conservatively assumed that all persons attending prayers arrive and depart within a single hour as most prayer sessions are limited to approximately 30 minutes. By comparison, the ITE Trip Generation Manual land use for mosques (which is limited to a single observation) identifies 67% or 96% of trips occurring during the peak hour of generator as inbound trips; suggesting most remain on-site for more than a 1-hour period.

Table 11: Mosque – Vehicle Trips

	Typical Weekday	Friday Midday Peak Hour	Saturday
Persons	70	200	90
Non-Auto Modes (5%)	4	10	5
Vehicle Occupancy	1.65	1.65	2.1
Vehicles	40	115	40
Peak Hour Vehicle Trips (In/Out)	40/40	115/115	40 /40

3.3.5 Leased Office and Warehouse Space

The proposed redevelopment includes office and warehouse space that operates independently of the previous programs, with the office occupying approximately 3,000 ft^2 of the gross floor area and the warehouse occupying approximately 70,000 ft^2 of the gross floor area.

Trips generated by the proposed office and warehouse developments during the weekday AM and PM peak periods have been estimated using relevant land uses in the ITE *Trip Generation Manual, 9th Edition*. Consistent with the existing development, the trip generation for the midday peak period has been estimated as half of the average between the AM and PM peaks.

Trips generated using the ITE trip generation rates were converted to person trips using a factor of 1.28, consistent with the City's 2017 TIA Guidelines. The person trip generation by the existing site is summarized in **Table 12**.

Table 12: Leased Office and Warehouse – Person Trips

Land Use	ITE Code	GFA	AM Peak (pph)			Mid Peak (pph)			PM Peak (pph)		
			IN	OUT	TOT	IN	OUT	TOT	IN	OUT	TOT
Warehousing	150	69,943 ft^2	22	5	27	7	7	14	8	21	29
Single Tenant Office	715	2,940 ft^2	5	1	6	1	1	2	1	5	6
		Total	**27**	**6**	**33**	**8**	**8**	**16**	**9**	**26**	**35**

As with the existing development, the modal shares are anticipated to be consistent with the modal shares outlined in the *2011 TRANS O-D Survey Report*, specific to the Alta Vista district. A full breakdown of the person trips by modal share are shown in **Table 13**.

Table 13: Leased Office and Warehouse – Person Trips by Modal Share

Travel Mode	Modal Share	AM Peak			Midday Peak			PM Peak		
		IN	OUT	TOT	IN	OUT	TOT	IN	OUT	TOT
Total Person Trips		*27*	*6*	*33*	*8*	*8*	*16*	*9*	*26*	*35*
Auto Driver	65%	17	4	21	6	6	12	6	17	23
Auto Pass	15%	4	1	5	1	1	2	1	4	5
Transit	15%	4	1	5	1	1	2	1	4	5
Non-Auto	5%	2	0	2	0	0	0	1	1	2

The net increase in trip generation, as identified in **Table 3** through **Table 13** above, is summarized in **Table 14** and identifies additional midday and PM peak hour trips of 87vph to 213vph for typical day-to-day scenarios. There are approximately eight annual events identified separately in Section 3.3.6, for which a detailed traffic assessment has not been carried out. As previously identified in Section 1.1, the weekday midday (Friday) and PM peak hours were selected for further analysis to reflect the worst-case combination of background and site generated traffic.

Table 14: Summary of Peak Hour Vehicle Trips (Inbound and Outbound)

WEEKDAYS				
Use or Program	**AM**	**Midday (Fri)**	**PM**	**Evening**
Existing Development				
Industrial	29/4	8/8	4/30	-
Warehouse	3/1	1/1	1/3	-
Office	106/13	30/30	17/99	-
Sub-Total	**138/18**	**39/39**	**22/132**	**-**
	156	**78**	**154**	**-**
Proposed Development				
School	65/54	-	35/43	-
Recreational Centre Staff	10/0	5 /5	3/7	0/10
Religious Education (Thurs)	-	-	-	70/16
Girls' Youth Group (Fri)	-	-	-	46/19*
Exercise Facility	19/19	19/19	29/19	29/29
Prayers	40/40	115/115	40/40	40/40
Leased Warehouse	14/3	5/5	5/14	-
Leased Office	3/1	1/1	1/3	-
Sub-Total	**151/117**	**145/145**	**113/126**	**185/114***
	268	**290**	**239**	**299***
Net Difference	**13/99** **112**	**106/106** **212**	**91/-6** **85**	**185/114*** **299**
SATURDAY**				
Use/Program	**AM**	**Noon**	**Midday**	**Evening**
Recreational Centre Staff	10/0	5 /5	3/7	0/10
Heritage Language School	64/26	-	26/64	-
Boys' Youth Group	-	-	-	39/16
Exercise Facility	29/29	29/29	29/29	29/29
Prayers	40/40	40/40	40/40	40/40
Sub-Total/Net Difference	**143/95** **238**	**74/74** **148**	**98/140** **238**	**108/95** **203**
SUNDAY**				
Use/Program	**AM**	**Noon**	**Midday**	**Evening**
Scouts	61/24	24/61	-	-
Sub-Total/Net Difference	**61/24** **85**	**24/61** **85**	**-** **-**	**-** **-**

Note: * Weekday evening sub-total reflective of Thursday evening as the worst-case scenario.
**Existing development is assumed to generate no trips on weekends.

3.3.6 Banquet Hall and Annual Events

Up to eight annual events are anticipated at the ABCO facility with attendance as high as 600 persons. Five (5) of the events are typically held on a Saturday evening while the remaining three (3) events may occur during the AM peak period. During these events, families typically travel