30 Cleary Avenue

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Strategy Report

Prepared for:

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November 2023

PN: 2022-104

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1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines, incorporating the 2023 Revision to Transportation Impact Assessment Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for the TIA Study PM. As shown in the Screening Form, a TIA is required, and this study has been prepared to support an Official Plan Amendment and Zoning By-Law Amendment.

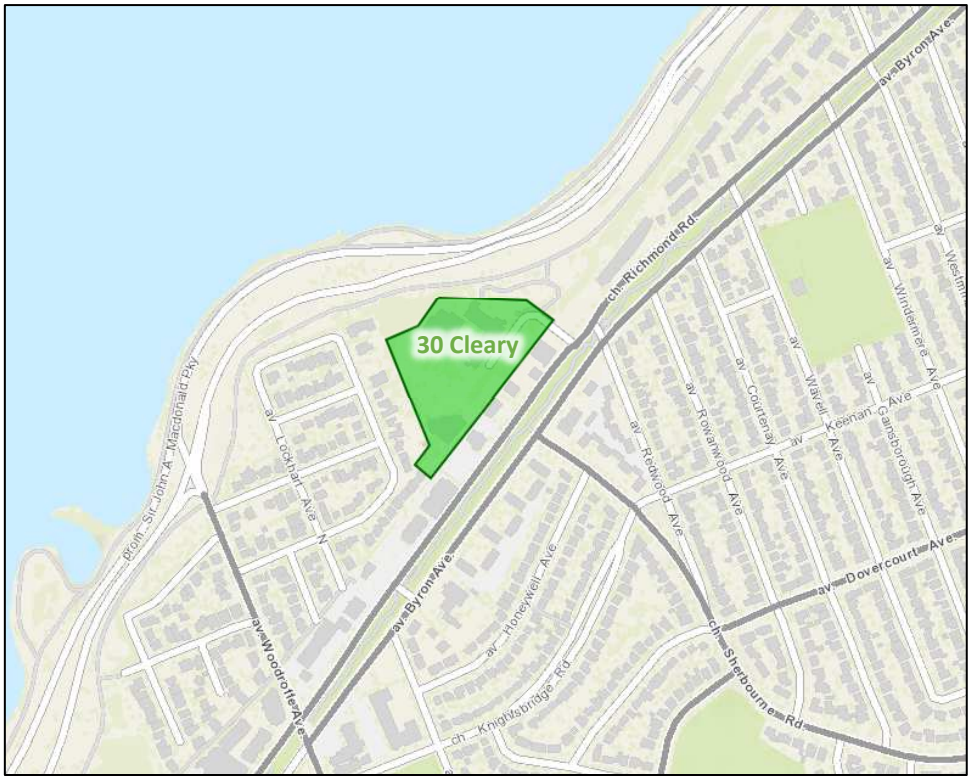
2 Existing and Planned Conditions

2.1 Proposed Development

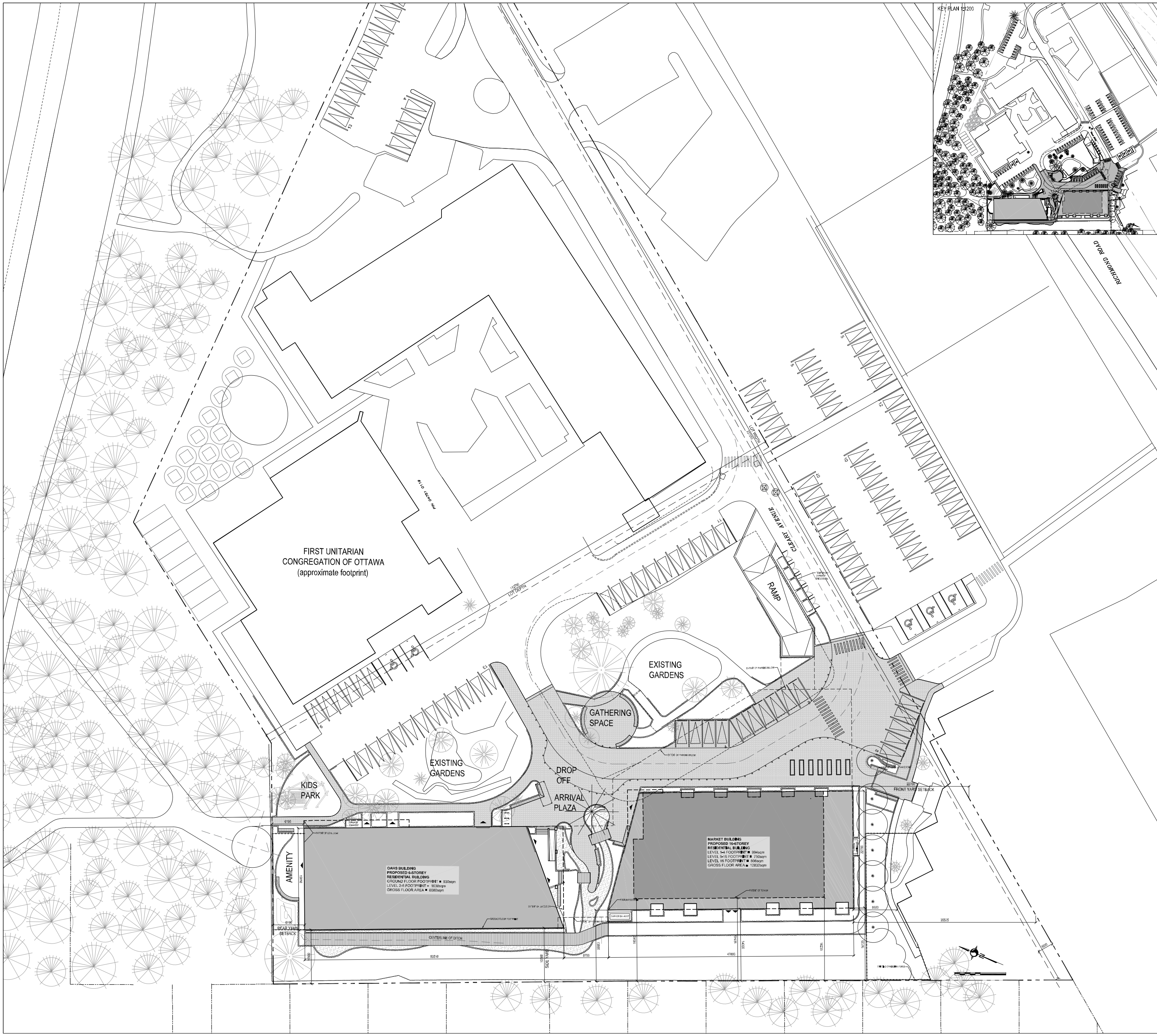
The existing site, located at 30 Cleary Avenue, is zoned as Minor Institutional (I1A[314] H(13.8)). The site currently includes a church, a seniors' residence, and a childcare centre, as well as two gardens. The development concept proposes the addition of one mid-rise affordable housing building comprising 66 units and one high-rise market rental tower comprising 148 units, to the site. Parking is proposed in two underground levels and on the surface for 113 vehicles and within a bike room on the main floor and within the underground parking levels for 225 bicycles. The anticipated full build-out and occupancy horizon is 2028 with construction consecutively through a single phase. The site will continue to use the existing full-movement signalized intersection of Cleary Avenue at Richmond Road. The site is within the Sherbourne and New Orchard Secondary Plan area, and it is within 200 metres of the planned Sherbourne Station on the O-Train Confederation Line, and this study will consider a Transit-Oriented-Development (TOD) framework.

Figure 1 illustrates the study area context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: July 28, 2023



KEY PLAN

PROPERTY DESCRIPTION

6 & 16 STOREY RESIDENTIAL BUILDINGS

CITY OF OTTAWA PIN NUMBER	04751-0119
MUNICIPAL ADDRESS	30 Cleary ave

SITE INFORMATION

LOT AREA: 20,680 sqm

LOT FRONTAGE: 237.3m

LOT DEPTH: 112.8m

BUILDING INFORMATION

BUILDING AREA: MARKET BUILDING = 994sqm, OAHS Building = 930 sqm

BUILDING FLOOR AREA: OAHS BLDG = 6080 sqm, MARKET BLDG = 12832 sqm, P1 = 2898sqm, P2 = 1953sqm

PROPOSED USE: APARTMENT DWELLINGS

UNIT BREAKDOWN - MARKET BUILDING:

		UNIT MIX:
LEVEL 1:	9 UNITS	4x 1BD, 2x 1BD+D, 1x 2BD, 2x 2BD+D
LEVEL 2-4:	11 UNITS	2x 1BD, 4x 1BD+D, 3x 2BD, 2x 2BD+D
LEVEL 5-15	9 UNITS	5x 1BD, 1x 1BD+D, 3x 2BD
LEVEL 16	7 UNITS	3x 1BD, 2x 1BD+D, 2x 2BD

TOTAL 148 UNITS

UNIT BREAKDOWN - OAHS BUILDING:

		UNIT MIX:
LEVEL 1:	6 UNITS	4x 1BD, 2 x 2BD
LEVEL 2-6:	12 UNITS	6x 1BD,1x 1BD+D, 4x 2BD,1 x 2BD+D

TOTAL 66 UNITS

MARKET & OAHS BUILDINGS TOTAL 214 UNITS

ZONING TABLE I1A[314]H(13.8)

CITY OF OTTAWA ZONING BY-LAW No. 2008-250	REQUIRED	PROPOSED
MINIMUM LOT AREA	400m²	TOTAL LOT AREA = 20,680sqm
MINIMUM LOT WIDTH	15m	237.3m
MINIMUM FRONT YARD SETBACK	3m	22.7m
MINIMUM INTERIOR SIDE YARD SETBACK	7.5m	10.5m
MINIMUM REAR YARD SETBACK	Abutting R1, R2 or R3: 7.5m Other cases: 4.5m	6.19m
MAXIMUM BUILDING HEIGHT	13.8m	MARKET BUILDING: 49.75m(WITHOUT PENTHOUSE) 53.75m(WITH PENTHOUSE) OAHS: 19m (WITHOUT PENTHOUSE) 19.4 (WITH PENTHOUSE)
VEHICLE PARKING REQUIREMENTS (AREA Z)	No off-street motor vehicle parking is required to be provided within Area Z (By-law 2016-249)	UNDERGROUND = 98 SPACES ABOVE GROUND = 15 SPACES TOTAL = 113 SPACES
VISITOR VEHICLE PARKING REQUIREMENTS	0.2 Spaces per unit *Despite (1), within Areas B, X, Y and Z, no visitor parking spaces are required for the first twelve dwelling units on a lot. (By-law 2016-249).* *Despite (1), within Areas X, Y and Z, no more than thirty visitor parking spaces are required per building (By-law 2016-249).*	MARKET = 148 UNITS X0.2 SPACES = 30 VISITOR PARKING SPACES OAHS = 66 UNITS X 0.2 = 14 VISITOR SPACES
AMENITY AREA REQUIREMENTS	6m² per dwelling unit, and 10% of the gross floor area of each rooming unit. Minimum 50% of the required total amenity area to be communal. MARKET = 6m² x 148 units = 888sqm OAHS = 6m² x 66 units = 396 sqm	MARKET BUILDING: 632 sqm PRIVATE 454 sqm COMMUNAL 1086 sqm TOTAL OAHS BUILDING = 847 sqm (ALL COMMUNAL)
BICYCLE PARKING SPACES	0.5 per dwelling unit	MARKET BUILDING = 124 HORIZONTAL SPACES, STACKED = 18X2 = 36 SPACES 160 SPACES TOTAL OAHS = 33 HORIZONTAL STACKED = 16X2 = 32 SPACES 65 SPACES TOTAL

LEGEND

SOFT LANDSCAPING	FD — FLOOR DRAIN
PAVERS REFER TO LANDSCAPE	UP — UTILITY POLE
ASPHALT PAVING	OHW — OVERHEAD UTILITY WIRES
CONCRETE	L.S. — LIGHT STANDARD
RIVERSTONE REFER TO LANDSCAPE	DC — DEPRESSED CURB
EXISTING BUILDING ELEMENT TO BE REMOVED	NEW TREE (REFER TO LANDSCAPE DRAWINGS)
EXISTING FENCE	
NEW BOARD FENCE REFER TO LANDSCAPE	
LOT LINE	EXISTING TREE (REFER TO LANDSCAPE DRAWINGS)
SETBACK LINE	
DESIGNATED BUILDING ENTRANCE / EXIT	NEW PLANTING AREA (REFER TO LANDSCAPE DRAWINGS)
FH — FIRE HYDRANT. REFER TO CIVIL	
CB CB — CATCH BASIN	77.70 — EXISTING GROUND ELEVATION [TO DETERMINE EXISTING AVERAGE GRADE]
MH — MANHOLE	58.84 — NEW GROUND ELEVATION REFER TO CIVIL
	NOTE: 'X'-E INDICATES EXISTING TO REMAIN

No.	Date	ISSUED FOR
1	YYYY-MM-DD	ISSUED FOR

Architecte Dirigeant / Interior Designer

Urbaniste / Urban Planner

FOTENN Planning + Design

Architecte Architect (Paysagiste / Landscape)

Ingénieur / Engineer (Génie Civil)

Ingénieur / Engineer (Mécanique / Mechanical)

Ingénieur / Engineer (Électricité / Electrical)

Ingénieur / Engineer (Structure / Structural)

Client / Client

Architecte Architect

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190 Somerset St W #208
Ottawa ON K2P 0J4
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figurr

www.figurr.ca

Sceau / Seal

Notes:

L'entrepreneur doit vérifier toutes les dimensions et informations sur le site et aviser immédiatement l'architecte de toutes erreurs ou omissions.

Contractor shall verify all information and dimensions on site and immediately report any errors or omissions to the architect.

Projet / Project

THEIA - FIRST UNITARIAN

30 Cleary avenue
Ottawa ON

Titre / Title

SITE PLAN

Dessiné par / Drawn by: RH + ZK	No. projet / Project number: 2314
Vérifié par / Verified by: RC	No. dessin / Drawing number: A010
Échelle / Scale: 1:250	Révision / Revision: 1
Date de création du dessin / Drawing creation date: 2023-08-01	

2.2 Existing Conditions

2.2.1 Area Road Network

Richmond Road: Richmond Road is a City of Ottawa arterial road with a two-lane cross-section. A sidewalk is present along the north side of the road east of Cleary Avenue and for 70 metres to the west of Cleary Avenue. A MUP is located on the south side of the road within the Byron Linear Tramway Park. The unposted speed limit is assumed to be 50 km/h. The Ottawa Official Plan reserves a 26.0-metre right-of-way. Richmond Road is designated as a truck route.

Cleary Avenue: Cleary Avenue is a City of Ottawa local road continuing as a private road, with a two-lane cross-section. The posted speed limit is 25 km/h. The sidewalk is provided on the east side and partially on the west side along the road. The existing right of way is 14.0 metres.

2.2.2 Existing Intersections

The key intersection within 400 metres of the site has been summarized below, subject to the conditions present prior to LRT construction activities in the area:

Richmond Road at Cleary Avenue	The intersection of Richmond Road at Cleary Avenue is a signalized T-intersection. The southbound approach consists of shared left-turn/right-turn lane. The eastbound approach consists of an auxiliary left-turn land and a through lane, and the westbound approach consists of a shared through/right-turn lane. No turn restrictions were noted.

2.2.3 Existing Driveways

The site is on a private road extension of Cleary Avenue. One driveway to a high-rise building is present on Cleary Avenue. Figure 3 illustrates the existing driveways.

Figure 3: Existing Driveways

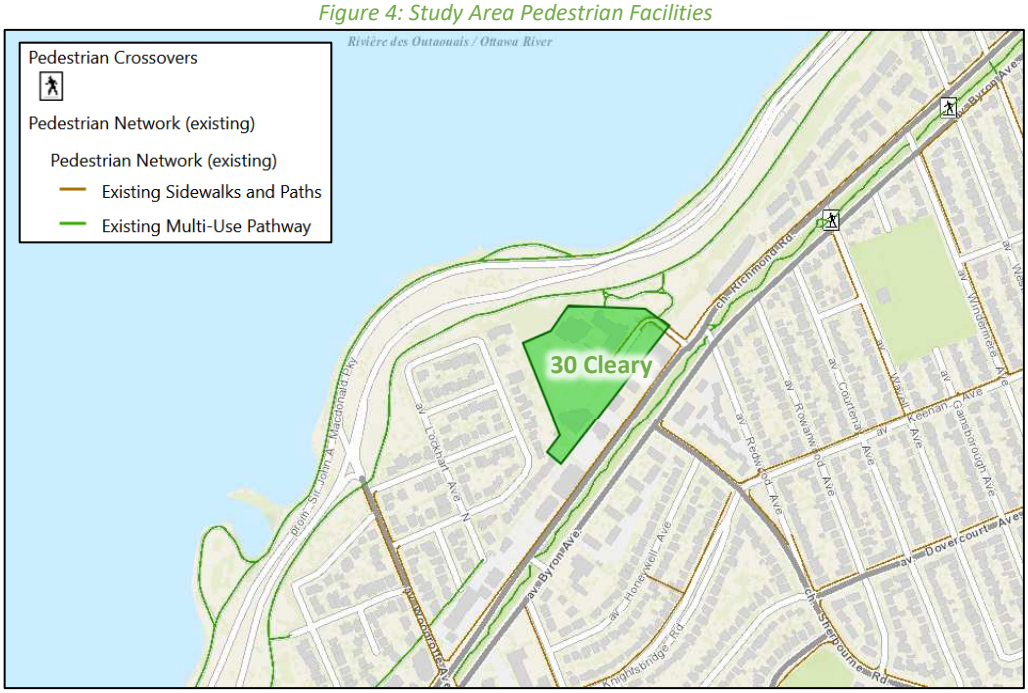
Source: http://maps.ottawa.ca/geoOttawa/ Accessed: Accessed: July 17, 2023

2.2.4 Cycling and Pedestrian Facilities

Figure 4 illustrates the pedestrian facilities in the study area and Figure 5 illustrates the cycling facilities.

Sidewalks are provided on both sides Cleary Avenue, a sidewalk is provided on the north side of Richmond Road to the east of and 70 metres west of Cleary Avenue, and a MUP has historically run along the length of the Byron Linear Tramway Park and will be reconstructed as part of the LRT connectivity improvements. A MUP is present along both sides of Kichi Zibi Mikan Parkway, with the south side connecting to a secondary MUP connection on Cleary Avenue. In the ultimate cycling network, Richmond Road is a spine route and a cross-town bikeway.

Figure 4: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: July 28, 2023

Figure 5: Study Area Cycling Facilities

Source: http://maps.ottawa.ca/geoOttawa/ Accessed: July 28, 2023

Pedestrian and cyclist volumes included in study area intersection counts, presented in Section 2.2.7, have been compiled and are illustrated in Figure 6 and Figure 7, respectively.

Figure 6: Existing (2015) Pedestrian Volumes

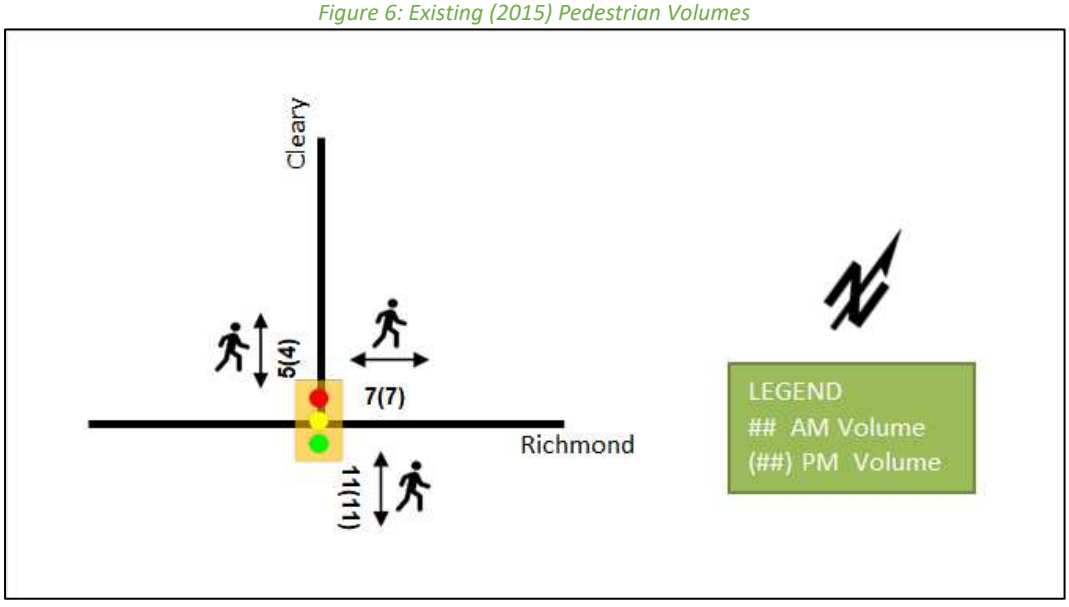
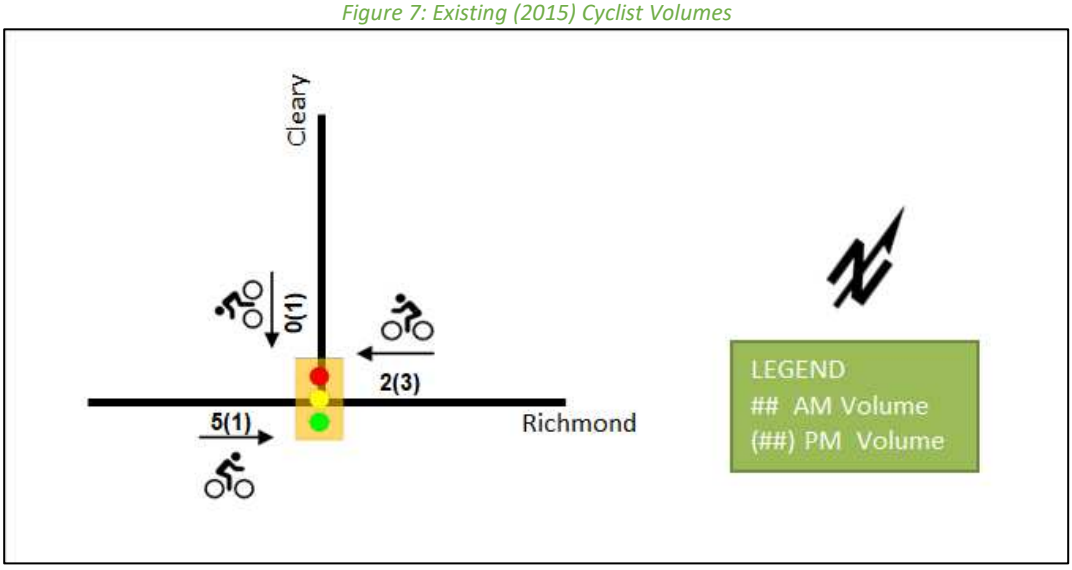


Figure 7: Existing (2015) Cyclist Volumes



2.2.5 Existing Transit

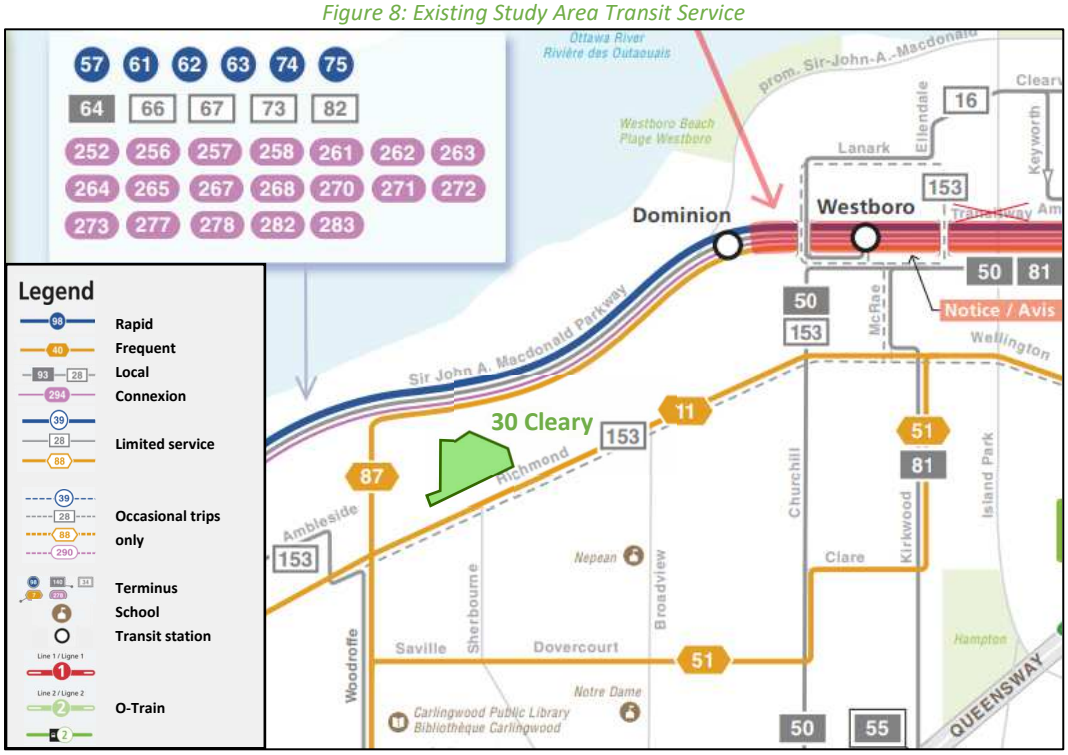
Figure 8 illustrates the transit system map in the study area and Figure 9 illustrates nearby transit stops. All transit information is from July 17, 2023 and is included for general information purposes and context to the surrounding area.

Within the study area, routes #11 and #153 travel along Richmond Road. The frequency of these routes within proximity of the proposed site based on July 17, 2023 service levels are:

- Route # 11 – 15-minute service all day, 30-minute service after 9:00 PM
- Route # 153 – Five trips on weekdays

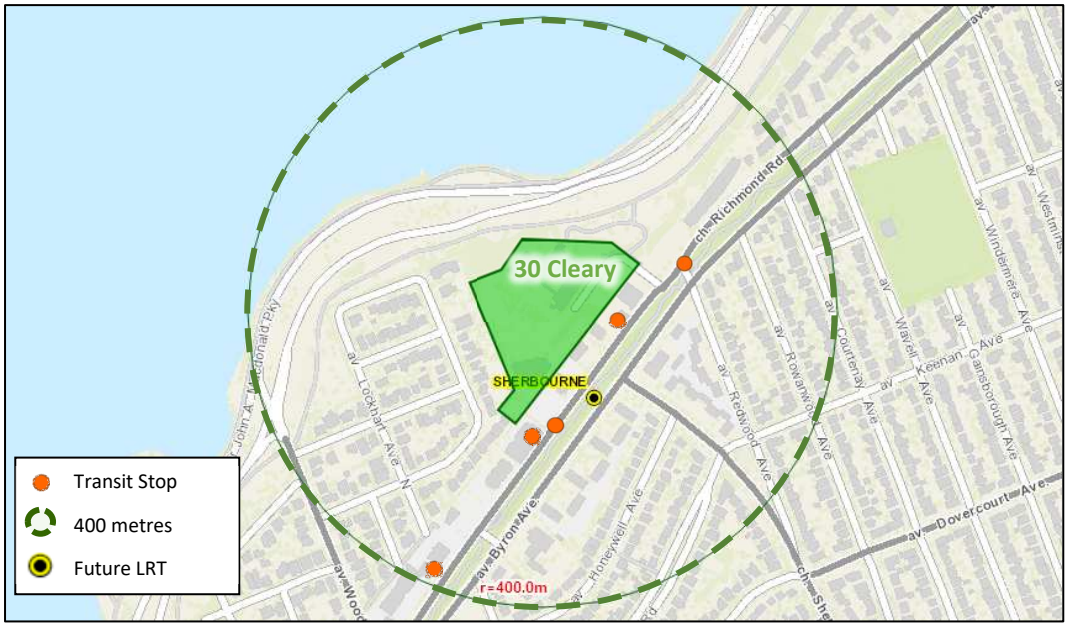
Additionally, the site is within 200 metres of the planned Sherbourne Station on the O-Train Confederation Line.

Figure 8: Existing Study Area Transit Service



Source: http://www.octranspo.com/ Accessed: July 17, 2023

Figure 9: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: July 17, 2023

2.2.6 Existing Area Traffic Management Measures

There are no existing area traffic management measures on Richmond Road and Cleary Avenue.

2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were acquired from the City of Ottawa for the existing study area intersection. Table 1 summarizes the intersection count date, which the City Signals Group confirmed via email on July 27, 2023

that these volumes should be used due to the construction-related traffic disruptions along Richmond Road during the years preceding the study.

Table 1: Intersection Count Date

Intersection	Count Date
Richmond Road at Cleary Avenue	Friday, June 12, 2015

Figure 10 illustrates the existing traffic counts and Table 2 summarizes the existing intersection operations. The level of service for signalized intersections is based on volume to capacity ratio (v/c) calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. Detailed turning movement count data is included in Appendix B and the Synchro worksheets are provided in Appendix C.

Figure 10: Existing (2015) Traffic Counts

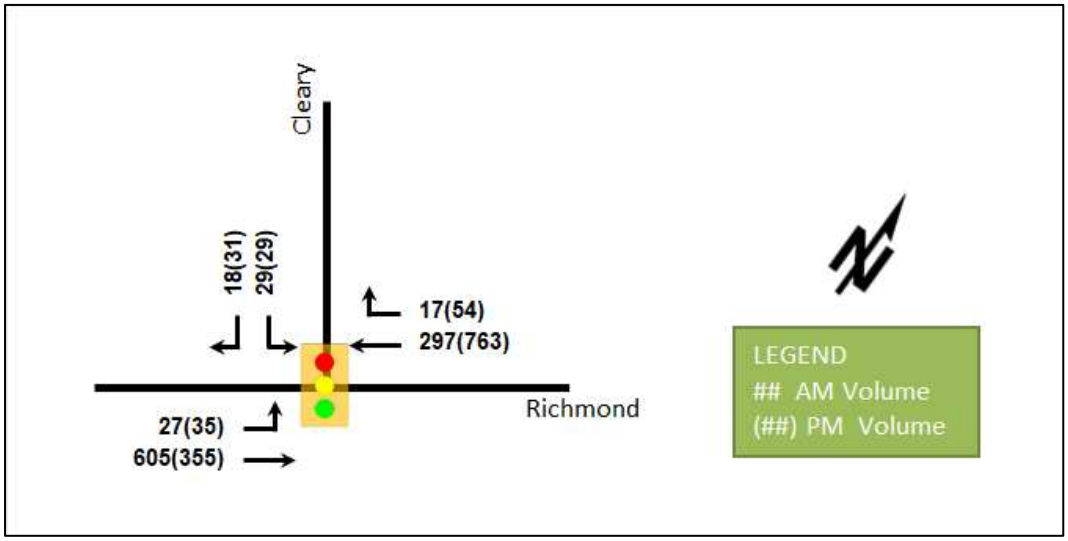


Table 2: Existing (2015) Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Richmond Road at Cleary Avenue *Signalized*	EBL	A	0.04	4.5	4.1	A	0.12	5.7	6.0
	EBT	A	0.49	6.8	79.9	A	0.28	4.8	36.8
	WBT/R	A	0.26	4.6	31.9	B	0.66	10.8	**#164.2**
	SBL/R	A	0.18	17.0	10.3	A	0.22	14.9	11.3
	Overall	**A**	**0.49**	**65**	**-**	**B**	**0.65**	**9.2**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 0.90
Delay = average vehicle delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both the AM and PM peak hours, the intersection of Richmond Road at Cleary Avenue operates well. The westbound share through/right-turn movement may exhibit extended queues during the PM peak hour.

2.2.8 Collision Analysis

Collision data have been acquired from the City of Ottawa open data website (data.ottawa.ca) for five years prior to the commencement of this TIA for the surrounding study area road network. Table 3 summarizes the collision types and conditions in the study area, Figure 11 illustrates the area collision records, and Table 4 summarizes the total collisions for each of the locations analyzed. Collision data are included in Appendix D.

Table 3: Study Area Collision Summary, 2018-2022

		Number	%
Total Collisions		8	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	3	38%
	Property Damage Only	5	63%
Initial Impact Type	**Approaching**	2	25%
	Angle	2	25%
	Rear end	2	25%
	Other	2	25%
Road Surface Condition	**Dry**	3	38%
	Wet	5	63%
Pedestrian Involved		0	0%
Cyclists Involved		0	0%

Figure 11: Study Area Collision Records

Table 4: Summary of Collision Locations, 2018-2022

	Number	%
Intersections / Segments	**8**	**100%**
Richmond Rd btwn Cleary Ave & Lockhart Ave	4	50%
Cleary Ave @ Richmond Rd	3	38%
Redwood Ave @ Richmond Rd	1	13%

Within the study area, there are a total of eight collisions during the 2018-2022 time period, with five involving property damage only and the remaining three having non-fatal injuries. No more than two of the same collision type was noted at any one location, and thus no further collision review is required as part of this study.

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

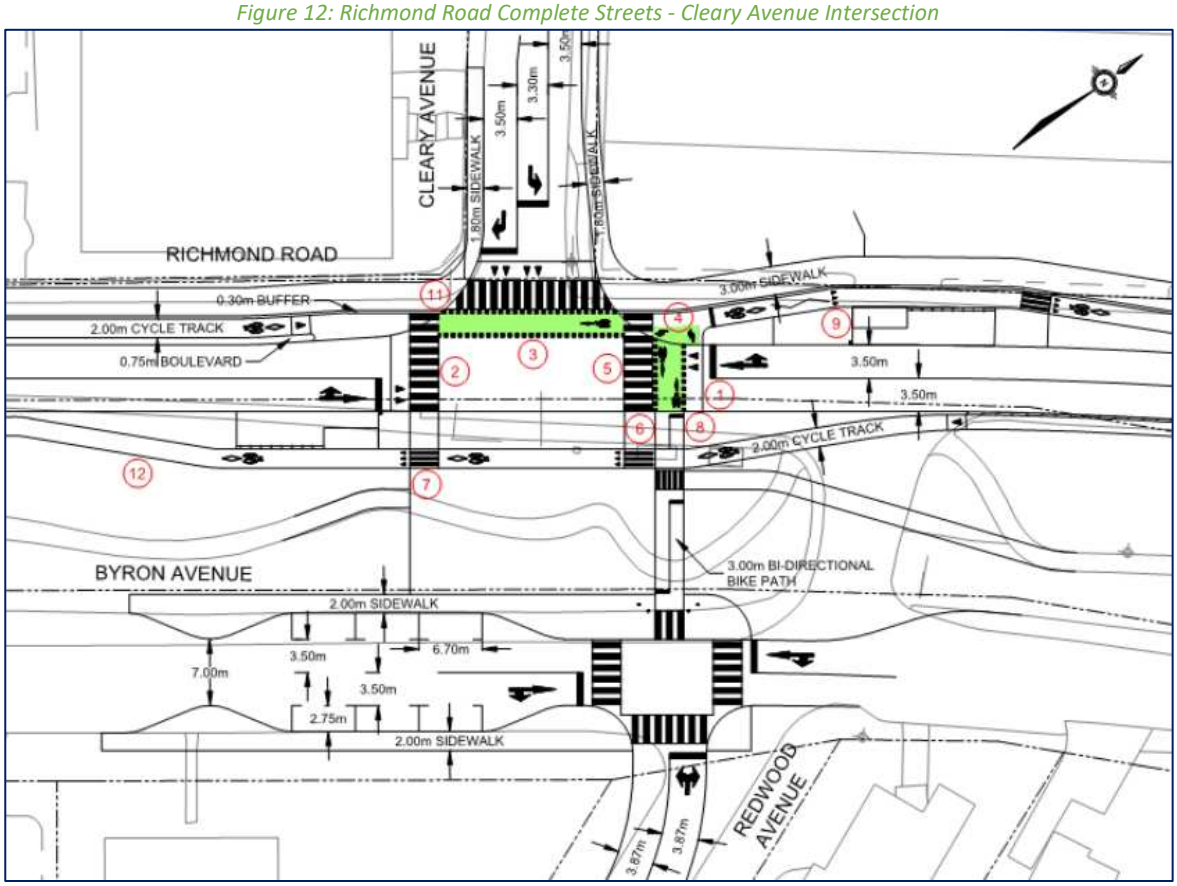
2.3.1.1 Stage 2 LRT West Extension - Sherbourne Station

The future Sherbourne Station LRT station will be located within 200 metres from the site, and the west extension is expected to be complete by 2026. As part of the works supporting the new station, an active modes underpass under Kichi Zibi Mikan Parkway is to be constructed to connect to the Ottawa River Pathway via Richmond Road and Cleary Avenue.

2.3.1.2 Richmond Road Complete Streets

At the time of this report, Richmond Road is under construction. As part of the complete streets upgrades on Richmond Road, cycle tracks will be provided on both sides of the road and a sidewalk will be provided on the north side of the road through the study area. A crossride on the north leg and a two-way crossride on the east leg are provisionally planned for the intersection of Richmond Road at Cleary Avenue. Figure 12 illustrates Richmond Road Complete Streets upgrades at the intersection of Richmond Road at Cleary Avenue.

Figure 12: Richmond Road Complete Streets - Cleary Avenue Intersection



Source: Confederation Line Extension Project Schedule 15-2 Part 2 - Appendix D - Richmond Road Complete Streets Intersection Design (City of Ottawa)

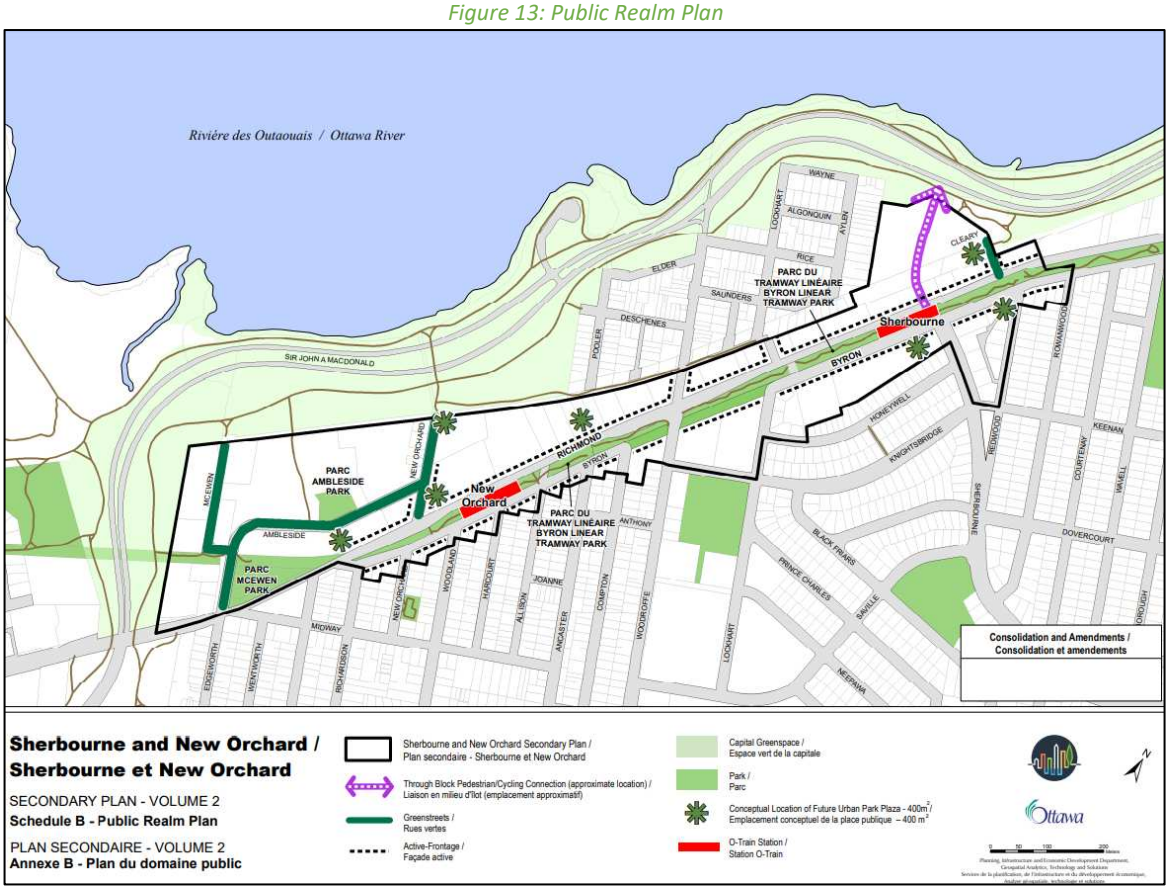
2.3.1.3 Sherbourne and New Orchard Secondary Plan

The subject development is within the Sherbourne and New Orchard Secondary Plan area. Per the Secondary Plan's Land Designation Policies, redevelopment of the subject site should include:

a) A pedestrian and cycling pathway connection extending from the east side lot line of 809 Richmond Road leading into the site – this connection is not expected to be required without a planned connection through the 809 Richmond Road site
b) Continuous sidewalk connections on either side of Cleary Avenue into the site – to be completed as part of City upgrades along Cleary Avenue
c) Interior streets, public or private, to break-up the large site

Figure 13 illustrates the Sherbourne and New Orchard Secondary Plan's public realm plan.

Figure 13: Public Realm Plan



Source: Ottawa Official Plan – Volume 2A – Urban Secondary Plans - Sherbourne and New Orchard Secondary Plan (City of Ottawa)

2.3.2 Other Study Area Developments

1047 Richmond Road

The proposed development application includes a zoning amendment and official plan amendment application to replace the existing car dealership with three mixed-use high-rise towers consisting of approximately 1,343 apartment units, along with approximately 14,493 ft^2 of first-floor retail and an approximately 10,925 ft^2 park. The development is forecasted to generate 85 new AM and 85 new PM two-way peak-hour auto trips, and the anticipated build-out horizon is 2026. (Parsons, 2022)

797 Richmond Road

The proposed development application includes a zoning amendment and site plan application to construct a mixed-use mid-rise tower consisting of approximately 51 units, along with approximately 3,629 ft^2 of first-floor medical dental office building. The development is forecasted to generate 7 new AM and 8 new PM two-way peak-

hour auto trips, which is considered negligible as compared to the existing traffic volumes on Richmond Road. The anticipated build-out horizon was 2023. (Ainley Group, 2022)

809 Richmond Road

The proposed development application includes an official plan amendment to construct two 16 storey towers with 11,000 ft^2 of retail space, and 252 residential units. The development is forecasted to generate 24 new AM and 36 new PM two-way peak-hour auto trips. The anticipated build-out horizon was 2023. (Parsons, 2016)

3 Study Area and Time Periods

3.1 Study Area

As an urban development a study area of 400 metres will be considered, and no pedestrian crossovers will be examined or evaluated. The study area will include the intersection of:

- Richmond Road at Cleary Avenue

The site driveway is at the terminus of Cleary Avenue, and no roads bound the site area. No screenlines are present within proximity to the site.

3.2 Time Periods

As the proposed development is composed entirely of residential units the AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2028. As a result, the full build-out plus five years horizon year is 2033.

4 Development-Generated Travel Demand

4.1 Mode Shares

Examining the mode shares recommended in the TRANS Trip Generation Manual (2020) for the subject district, derived from the most recent National Capital Region Origin-Destination survey (OD Survey), the existing average district mode shares by land use for Ottawa West have been summarized in Table 5.

Table 5: TRANS Trip Generation Manual Recommended Mode Shares – Ottawa West

Travel Mode	Multi-Unit (High-Rise)	
	AM	PM
Auto Driver	28%	33%
Auto Passenger	11%	11%
Transit	41%	26%
Cycling	3%	7%
Walking	17%	23%
Total	**100%**	**100%**

Based upon the site's context of being within 200 metres-walk of the future Sherbourne Station LRT station, and the travel characteristics associated with affordable housing, modified mode share targets are proposed for the development and are summarized in Table 6.

Table 6: Proposed Development Mode Shares

Travel Mode	Multi-Unit (High-Rise)		Affordable Housing	
	AM	PM	AM	PM
Auto Driver	18%	23%	8%	11%
Auto Passenger	6%	6%	4%	5%
Transit	56%	41%	64%	49%
Cycling	3%	7%	3%	7%
Walking	17%	23%	21%	28%
Total	**100%**	**100%**	**100%**	**100%**

4.2 Trip Generation

This TIA has been prepared using the vehicle and person trip rates for the residential dwellings using the TRANS Trip Generation Manual (2020) and the vehicle trip rates and derived person trip rates for affordable housing from the ITE Trip Generation Manual 11th Edition (2021) using the City-prescribed conversion factor of 1.28. Table 7 summarizes the person trip rates for the proposed multi-unit (high-rise) land use for each peak period and the person trip rates for the affordable housing land use by peak hour.

Table 7: Trip Generation Person Trip Rates by Peak Period

Land Use	Land Use Code	Peak Period	Vehicle Trip Rate	Person Trip Rates
Multi-Unit (High-Rise)	221 & 222 (TRANS)	AM	-	0.80
		PM	-	0.90
Land Use	**Land Use Code**	**Peak Hour**	**Vehicle Trip Rate**	**Person Trip Rates**
Affordable Housing	223 (ITE)	AM	0.50	0.64
		PM	0.46	0.59

Using the above person trip rates, the total person trip generation has been estimated. Table 8 summarizes the total person trip generation for the proposed land uses.

Table 8: Total Residential Person Trip Generation

Land Use	Units	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Multi-Unit (High-Rise)	148	37	81	118	77	56	133
Land Use	**Units**	**AM Peak Hour**			**PM Peak Hour**		
		In	**Out**	**Total**	**In**	**Out**	**Total**
Affordable Housing	66	12	30	42	23	16	39

Using the above mode share targets and the person trip rates, the person trips by mode have been projected. Trip generation by peak hour has been forecasted using the prescribed peak period conversion factors presented in the TRANS Trip Generation Manual (2020) for the residential component. Table 9 summarizes the trip generation by mode and peak hour.

Table 9: Trip Generation by Mode

Travel Mode		AM Peak Hour				PM Peak Hour			
		Mode Share	In	Out	Total	Mode Share	In	Out	Total
Multi-Unit (High-Rise)	Auto Driver	**18%**	3	7	10	**23%**	8	6	14
	Auto Passenger	**6%**	1	2	3	**6%**	2	2	4
	Transit	**56%**	11	25	36	**41%**	15	11	26
	Cycling	**3%**	1	1	2	**7%**	2	2	4
	Walking	**17%**	4	8	12	**23%**	9	7	16
	Total	**100%**	**20**	**43**	**63**	**100%**	**36**	**28**	**64**
Affordable Housing	Auto Driver	**8%**	1	2	3	**11%**	3	2	5
	Auto Passenger	**4%**	0	1	1	**5%**	1	1	2
	Transit	**64%**	8	19	27	**49%**	11	8	19
	Cycling	**3%**	0	1	1	**7%**	2	1	3
	Walking	**21%**	3	6	9	**28%**	6	4	10
	Total	**100%**	**12**	**29**	**41**	**100%**	**23**	**16**	**39**
Total	Auto Driver	-	4	9	13	-	11	8	19
	Auto Passenger	-	1	3	4	-	3	3	6
	Transit	-	19	44	63	-	26	19	45
	Cycling	-	1	2	3	-	4	3	7
	Walking	-	7	14	21	-	15	11	26
	Total	-	**32**	**72**	**104**	-	**59**	**44**	**103**

As shown above, a total of 13 AM and 19 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

4.3 Trip Distribution

To understand the travel patterns of the subject development, the OD Survey has been reviewed to determine the travel for the residential component, and these patterns were applied based on the build-out of Ottawa West. Table 10 below summarizes the distributions.

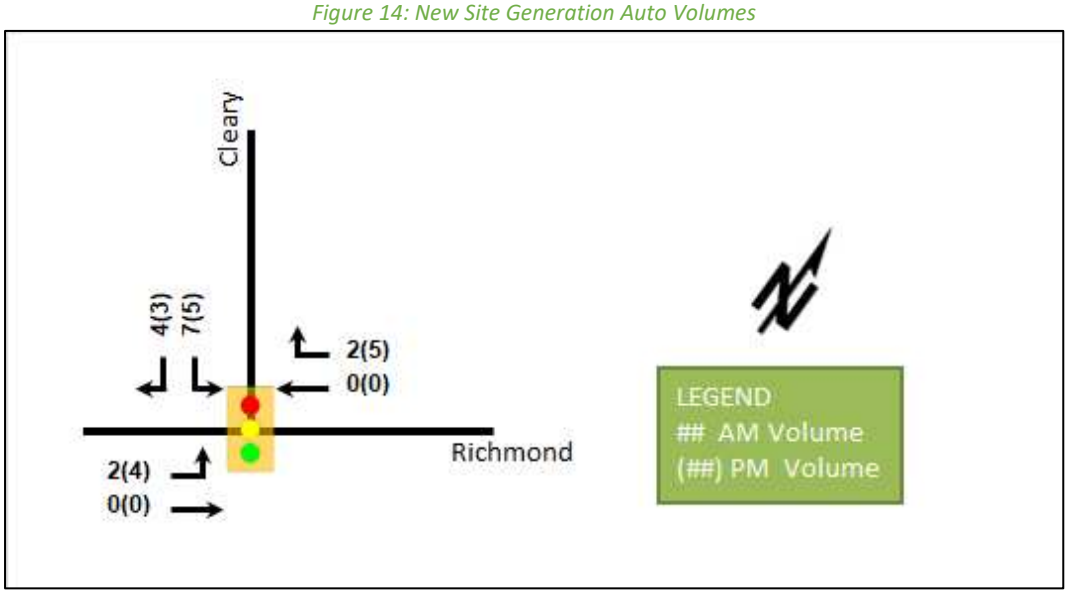
Table 10: OD Survey Distribution – Ottawa West

To/From	Residential % of Trips	Via
North	5%	5% Richmond Road (W)
South	40%	30% Richmond Road (W) 10% Richmond Road (E)
East	50%	50% Richmond Road (E)
West	5%	5% Richmond Road (W)
Total	**100%**	**100%**

4.4 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Figure 14 illustrates the new site generated volumes.

Figure 14: New Site Generation Auto Volumes



5 Exemption Review

Table 11 summarizes the exemptions for this TIA.

Table 11: Exemption Review

Module	Element	Explanation	Exempt/Required
Site Design and TDM			
4.1 Development Design	4.1.2 Circulation and Access	Only required for site plan and zoning by-law applications	Required
	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
4.2 Parking	4.2.1 Parking Supply	Only required for site plan and zoning by-law applications	Required
4.3 Boundary Street Design		All applications	Exempt. No boundary roads
4.5 Transportation Demand Management	All Elements	Only required when the development generates more than 60 person-trips	Required
Network Impact			
3.2 Background Network Travel Demand	All Elements	Only required when one or more other Network Impact Modules are triggered when the development generates more than 75 auto or transit trips	Exempt
3.3 Demand Rationalization		Only required when one or more other Network Impact Modules when the development generates more than 75 auto trips	Exempt
4.6 Neighbourhood Traffic Calming	4.6.1 Adjacent Neighbourhoods	If the development meets all of the following criteria along the route(s) site generated traffic is expected to utilize between an arterial road and the site's access:	Exempt

Module	Element	Explanation	Exempt/Required
		1. Access to Collector or Local; 2. "Significant sensitive land use presence" exists, where there is at least two of the following adjacent to the subject street segment: • School (within 250m walking distance); • Park; • Retirement / Older Adult Facility (i.e. long-term care and retirement homes); • Licenced Child Care Centre; • Community Centre; or • 50%, or greater, of adjacent property along the route(s) is occupied by residential lands and a minimum of 10 occupied residential units are present on the route. 3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision; 4. At least 75 site-generated auto trips; 5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.	
4.7 Transit	4.7.1 Transit Route Capacity	Only required when the development generates more than 75 transit trips	Exempt
	4.7.2 Transit Priority Requirements	Only required when the development generates more than 75 auto trips	Exempt
4.8 Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt
4.9 Intersection Design	4.9.1 Intersection Control (incl. Site Accesses)	Only required when the development generates more than 75 auto trips	Exempt
	4.9.2 Intersection Design	Only required when the development generates more than 75 auto trips	Exempt

6 Development Design

6.1 Design for Sustainable Modes

The proposed development includes addition of one mid-rise affordable housing building and one high-rise market rental tower. The bicycle parking spaces are proposed within a bike room in the affordable housing building and within the underground parking levels for the market rental building. Vehicle parking will be within the underground levels and within parking bays accessing the drive aisle.

The on-site pedestrian facilities create a mid-block crossing between the MUP along the south side of Kichi Zibi Mikan Parkway and sidewalk along Richmond Road, which facilitates the City's desired connection to Sherbourne Station. These pedestrian facilities connect to the building entrances and the on-site amenities. Bus stops are located within 300 metres' walking distance of the building entrances, and future Sherbourne Station is within 400 metres' walking distance.

The infrastructure TDM checklist is provided in Appendix E.

6.2 Circulation and Access

The development will be accessed via the internal private road that connects to the existing full-movement signalized intersection of Cleary Avenue at Richmond Road. Garbage collection will take place on the 6.0-metre-wide drive aisle, and emergency services can access both site buildings via this drive aisle.

7 Parking

7.1 Parking Supply

The proposed development will provide 113 vehicle parking spaces, 98 within two levels of underground parking and 15 within bays abutting the drive aisle. Two hundred twenty-five bicycle parking spaces, 160 for the market rental building and 65 for the affordable rental building, are to be provided across the two underground parking levels and within a secure room on the main floor of the affordable rental building.

From the zoning by-law, no vehicle parking is required to be provided for residents, and the total required visitor parking for the site is 20 vehicle spaces. The maximum vehicle parking for the site based on its proximity to rapid transit is 375 parking spaces. The minimum bicycle parking is 107 spaces. The proposed development parking provision is compliant with the minimum and maximum zoning by-law provision rates.

8 Transportation Demand Management

8.1 Context for TDM

The mode shares used within the TIA represent a shift from auto modes to transit modes due to the immediate proximity of rapid transit. Overall, the modal shares are likely to be achieved and supporting TDM measures should be provided.

The total bedroom count within the development is subject to the final unit breakdown, and no age restrictions are noted.

8.2 Need and Opportunity

The subject site has been assumed to rely predominantly on transit with the proximity to the future LRT corridor, and those assumptions have been carried through the analysis. The study area intersections are anticipated to have residual capacity and the increase in transit ridership is achievable.

8.3 TDM Program

The "suite of post occupancy TDM measures" has been summarized in the TDM checklists for the residential land uses. The checklist is provided in Appendix E. The key TDM measures recommended include:

- Display local area maps with walking and cycling routes, and transit route information and schedules at major entrances
- Provide a multimodal travel option information package to new residents
- Contract with providers to install on-site bikeshare spaces (or other micromobility alternatives)

- Inclusion of a 1-year Presto card for first time apartment rental, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
- Unbundle parking cost from rental costs

9 Summary of Improvements Indicated and Modifications Options

The following summarizes the analysis and results presented in this TIA report:

Proposed Site and Screening

- The proposed development includes the addition of 148 market rental apartment units and 66 affordable rental apartment units to the site
- Accesses will be provided to the existing private road connecting to Cleary Avenue
- The development is proposed to be completed as a single phase by 2028
- The Trip Generation trigger was met for the TIA Screening
- This study has been prepared to support an Official Plan Amendment and Zoning By-Law Amendment

Existing Conditions

- Richmond Road is an arterial road in the study area
- A sidewalk is provided on the north side of Richmond Road, a MUP is provided on each side of Kichi Zibi Mikan Parkway, where the south side MUP connects to the site and Cleary Avenue
- Fifteen-minute transit service is present along Richmond Road
- Collisions within the study area were found to be few in number
- The study area and access intersection of Richmond Road at Cleary Avenue was found to operate well with queueing noted in the peak westbound direction during the PM peak hour

Planned Conditions

- Sherbourne Station on the Confederation O-Train Line will be constructed by 2026 and supportive works will include an active modes underpass under Kichi Zibi Mikan Parkway to connect the station to the Ottawa River Pathway
- Sidewalks and cycletracks will be provided on both sides of Richmond Road, a MUP will be provided along the Byron Linear Tramway Park
- The secondary plan notes an active mode connection through the site area, which is only expected to be required in the presence of a corridor through the adjacent 809 Richmond Road site

Development Generated Travel Demand

- The proposed development is forecasted produce 104 two-way people trips during the AM peak hour and 103 two-way people trips during the PM peak hour
- Of the forecasted people trips, 13 two-way trips will be vehicle trips during the AM peak hour and 19 two-way trips will be vehicle trips during the PM peak hour based on the proximity to LRT, the mix of rental models, and an 18-23% auto mode share for the market rental units
- Of the forecasted trips, 5% are anticipated to travel each north and west, 40% to travel south, and 50% to travel east

Development Design

- The bike parking will be located within a secure room on the main floor of the affordable rental building and in the underground parking levels
- Pedestrian connections will be through the site from Sherbourne Station to the MUP on the south side of Kichi Zibi Mikan Parkway, and will connect all on-site buildings and amenities
- Bus stops are located within 300 metres' walking distance, and the future LRT station is within 400 metres' walking distance
- Emergency services can access the site via the internal private road and drive aisles, and garbage collection will take place on the drive aisles

Parking

- Ninety-eight vehicle parking spaces will be located within the two underground parking levels, and 15 spaces will be located within bays abutting the drive aisles
- One hundred sixty bicycle parking spaces will be provided within the underground parking levels for the market rental building and 65 spaces will be provided within the secure room on the main floor for the affordable rental building
- Per the zoning by-law, no minimum vehicle parking is required for the site residents, 20 visitor vehicle parking spaces are required, and a maximum of 375 vehicle parking spaces can be provided, and a minimum of 107 bicycle spaces are required
- The proposed development is compliant with the zoning by-law parking provision rates

TDM

- Supportive TDM measures to be included within the proposed development should include:
    - Display local area maps with walking and cycling routes, and transit route information and schedules at major entrances
    - Provide a multimodal travel option information package to new residents
    - Contract with providers to install on-site bikeshare spaces (or other micromobility alternatives)
    - Inclusion of a 1-year Presto card for first time apartment rental, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
    - Unbundle parking cost from rental costs

10 Conclusion

It is recommended that, from a transportation perspective, the proposed development applications proceed.

Prepared By:

John Kingsley, EIT
Transportation Engineering-Intern

Reviewed By:

Andrew Harte, P.Eng.
Senior Transportation Engineer

Appendix A

TIA Screening Form and PM Certification Form

CGH TRANSPORTATION

6 Plaza Court
Ottawa, ON K2H 7W1

City of Ottawa 2017 TIA Guidelines
Step 1 - Screening Form

Date: 17-Aug-23
Project Number: 2022-104
Project Reference: 30 Cleary

1.1 Description of Proposed Development	
Municipal Address	30 Cleary Avenue
Description of Location	Between Ward 7 and Ward 15. On the north/east side of Cleary Avenue
Land Use Classification	Minor Institutional Zone I1A[314] H(13.8)
Development Size	Approximately 60 affordable housing and 140 high-rise units
Accesses	An existing access on Cleary Avenue
Phase of Development	Single Phase
Buildout Year	2028
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Townhomes or apartments	
Development Size	200	Units
Trip Generation Trigger	Yes	

1.3 Location Triggers	
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks?	No
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?	No
Location Trigger	No

1.4. Safety Triggers	
Are posted speed limits on a boundary street 80 km/hr or greater?	No
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	No
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	No
Is the proposed driveway within auxiliary lanes of an intersection?	No
Does the proposed driveway make use of an existing median break that serves an existing site?	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	No
Does the development include a drive-thru facility?	No
Safety Trigger	No

TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below.

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
4. I am either a licensed[1] or registered[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering √ or transportation planning □.

[1,2] **License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.**

City Of Ottawa
Infrastructure Services and Community Sustainability
Planning and Growth Management
110 Laurier Avenue West, 4th fl.
Ottawa, ON K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

Ville d'Ottawa
Services d 'infrastructure et Viabilité des collectivités
Urbanisme et Gestion de la croissance
110, avenue Laurier Ouest
Ottawa (Ontario) K1P 1J1
Tél. : 613-580-2424
Télécopieur: 613-560-6006

Dated at ___Ottawa_____ this __20__ day of _____September_____, 2018.
(City)

Name: _____Andrew Harte_____
(Please Print)

Professional Title: _____Professional Engineer_____

_____
Signature of Individual certifier that s/he meets the above four criteria

Office Contact Information (Please Print)
Address: 6 Plaza Court
City / Postal Code: Ottawa / K2H 7W1
Telephone / Extension: (613) 697-3797
E-Mail Address: Andrew.Harte@CGHTransportation.com

Appendix B

Turning Movement Counts

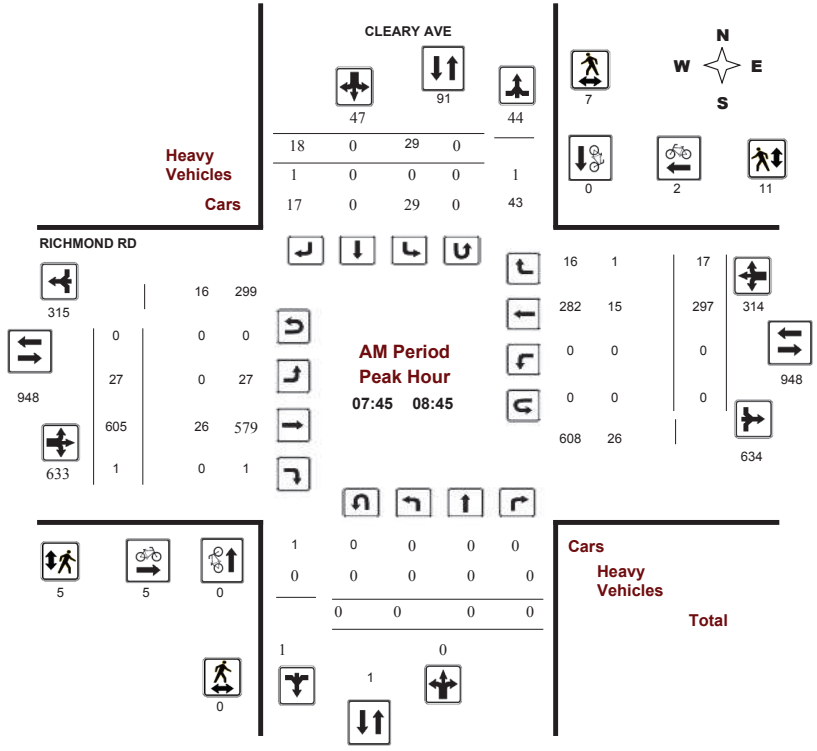
Public Works - Traffic Services

Turning Movement Count - Peak Hour Diagram

CLEARY AVE @ RICHMOND RD

Survey Date: Friday, June 12, 2015
Start Time: 07:00

WO No: 34681
Device: Jamar Technologies, Inc



Comments

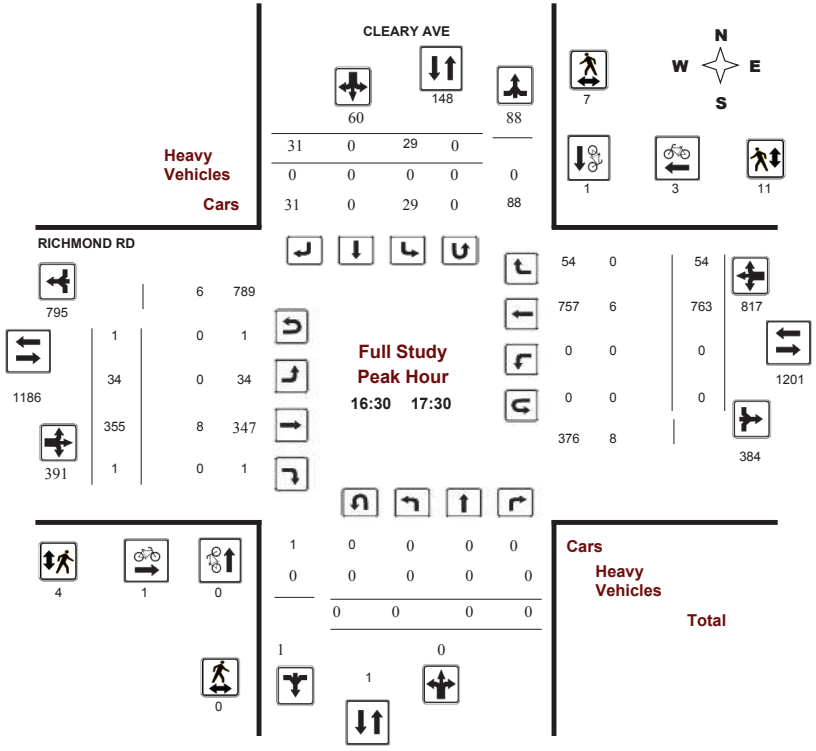
Public Works - Traffic Services

Turning Movement Count - Peak Hour Diagram

CLEARY AVE @ RICHMOND RD

Survey Date: Friday, June 12, 2015
Start Time: 07:00

WO No: 34681
Device: Jamar Technologies, Inc



Comments

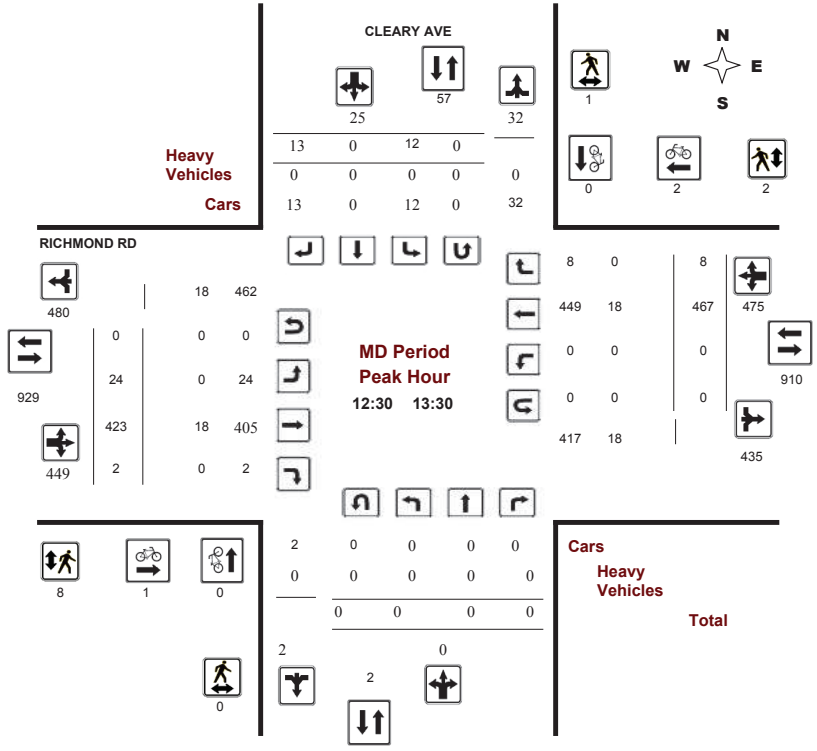
Public Works - Traffic Services

Turning Movement Count - Peak Hour Diagram

CLEARY AVE @ RICHMOND RD

Survey Date: Friday, June 12, 2015
Start Time: 07:00

WO No: 34681
Device: Jamar Technologies, Inc



Comments

Public Works - Traffic Services

Turning Movement Count - Peak Hour Diagram

CLEARY AVE @ RICHMOND RD

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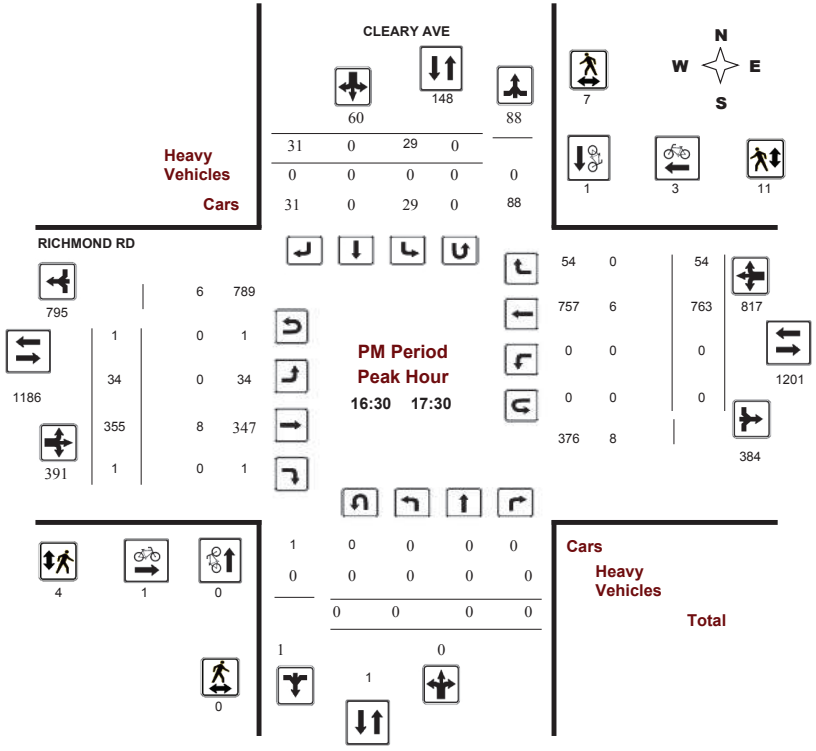
Start Time: 07:00

WO No: 34681
Device: Jamar Technologies, Inc



Comments

Public Works - Traffic Services

Work Order 34681

Turning Movement Count - Full Study Summary Report

CLEARY AVE @ RICHMOND RD

Survey Date: Friday, June 12, 2015

Total Observed U-Turns

Northbound: 0 Southbound: 0
Eastbound: 1 Westbound: 0

AADT Factor .80

Full Study

	CLEARY AVE								RICHMOND RD									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	0	0	**0**	12	0	10	**22**	**22**	14	549	0	**563**	0	204	12	**216**	**779**	**801**
08:00 09:00	0	0	0	**0**	28	0	18	**46**	**46**	28	568	1	**597**	0	322	13	**335**	**932**	**978**
09:00 10:00	0	0	0	**0**	17	0	14	**31**	**31**	11	404	0	**415**	0	340	11	**351**	**766**	**797**
11:30 12:30	0	0	0	**0**	23	0	15	**38**	**38**	16	374	0	**390**	0	430	20	**450**	**840**	**878**
12:30 13:30	0	0	0	**0**	12	0	13	**25**	**25**	24	423	2	**449**	0	467	8	**475**	**924**	**949**
15:00 16:00	0	0	0	**0**	10	0	23	**33**	**33**	16	326	0	**342**	0	693	12	**705**	**1047**	**1080**
16:00 17:00	0	0	0	**0**	27	1	30	**58**	**58**	36	364	2	**402**	0	748	46	**794**	**1196**	**1254**
17:00 18:00	0	0	0	**0**	23	0	24	**47**	**47**	23	378	1	**402**	0	750	22	**772**	**1174**	**1221**
Sub Total	0	0	0	**0**	152	1	147	**300**	**300**	168	3386	6	**3560**	0	3954	144	**4098**	**7658**	**7958**
U Turns				**0**				**0**	**0**				**1**				**0**	**1**	**1**
Total	0	0	0	**0**	152	1	147	**300**	**300**	168	3386	6	**3561**	0	3954	144	**4098**	**7659**	**7959**
EQ 12Hr	0	0	0	**0**	211	1	204	**417**	**417**	234	4707	8	**4950**	0	5496	200	**5696**	**10646**	**11063**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	0	0	0	**0**	169	1	163	**334**	**334**	187	3765	7	**3960**	0	4397	160	**4557**	**8517**	**8851**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**.80**						
AVG 24Hr	0	0	0	**0**	221	1	214	**437**	**437**	245	4932	9	**5187**	0	5760	210	**5970**	**11157**	**11594**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Public Works - Traffic Services

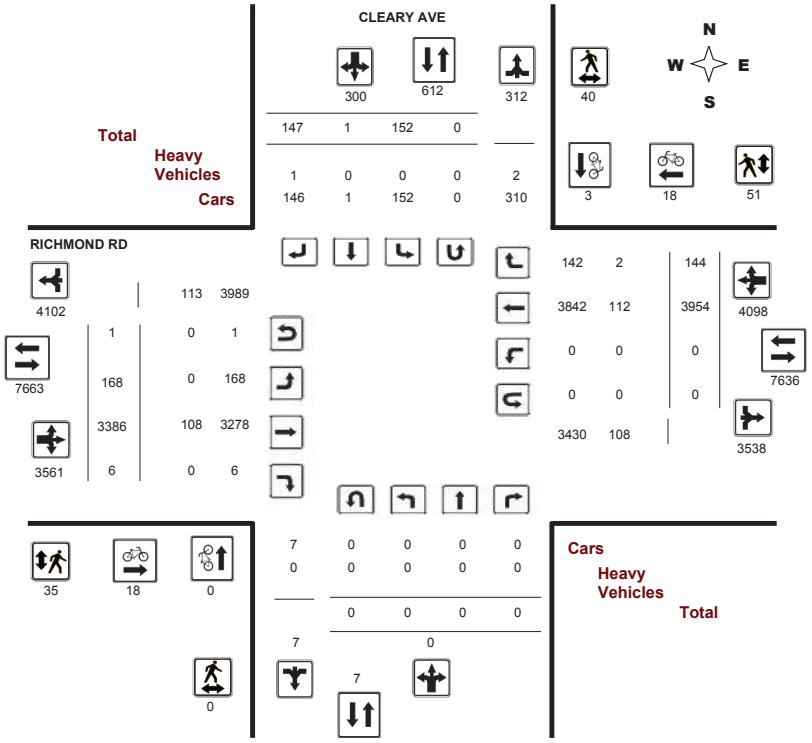
Turning Movement Count - Full Study Diagram

CLEARY AVE @ RICHMOND RD

Survey Date: Friday, June 12, 2015

WO#: 34681

Device: Jamar Technologies, Inc



Comments

Public Works - Traffic Services

W.O. 34681

Turning Movement Count - 15 Minute Summary Report

CLEARY AVE @ RICHMOND RD

Survey Date: Friday, June 12, 2015

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 1 Westbound: 0

		CLEARY AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	**0**	1	0	4	**5**	**5**	4	106	0	**110**	0	40	1	**41**	**151**	**156**
07:15	07:30	0	0	0	**0**	2	0	1	**3**	**3**	3	144	0	**147**	0	52	3	**55**	**202**	**205**
07:30	07:45	0	0	0	**0**	5	0	2	**7**	**7**	3	133	0	**136**	0	54	4	**58**	**194**	**201**
07:45	08:00	0	0	0	**0**	4	0	3	**7**	**7**	4	166	0	**170**	0	58	4	**62**	**232**	**239**
08:00	08:15	0	0	0	**0**	10	0	1	**11**	**11**	6	136	0	**142**	0	79	7	**86**	**228**	**239**
08:15	08:30	0	0	0	**0**	9	0	8	**17**	**17**	12	154	1	**167**	0	94	4	**98**	**265**	**282**
08:30	08:45	0	0	0	**0**	6	0	6	**12**	**12**	5	149	0	**154**	0	66	2	**68**	**222**	**234**
08:45	09:00	0	0	0	**0**	3	0	3	**6**	**6**	5	129	0	**134**	0	83	0	**83**	**217**	**223**
09:00	09:15	0	0	0	**0**	5	0	4	**9**	**9**	4	97	0	**101**	0	107	4	**111**	**212**	**221**
09:15	09:30	0	0	0	**0**	7	0	5	**12**	**12**	2	109	0	**111**	0	68	2	**70**	**181**	**193**
09:30	09:45	0	0	0	**0**	1	0	1	**2**	**2**	1	78	0	**79**	0	83	1	**84**	**163**	**165**
09:45	10:00	0	0	0	**0**	4	0	4	**8**	**8**	4	120	0	**124**	0	82	4	**86**	**210**	**218**
11:30	11:45	0	0	0	**0**	8	0	3	**11**	**11**	4	99	0	**103**	0	109	3	**112**	**215**	**226**
11:45	12:00	0	0	0	**0**	7	0	1	**8**	**8**	3	113	0	**116**	0	100	8	**108**	**224**	**232**
12:00	12:15	0	0	0	**0**	2	0	4	**6**	**6**	4	73	0	**77**	0	117	3	**120**	**197**	**203**
12:15	12:30	0	0	0	**0**	6	0	7	**13**	**13**	5	89	0	**94**	0	104	6	**110**	**204**	**217**
12:30	12:45	0	0	0	**0**	2	0	2	**4**	**4**	3	116	0	**119**	0	104	2	**106**	**225**	**229**
12:45	13:00	0	0	0	**0**	6	0	3	**9**	**9**	6	114	0	**120**	0	124	3	**127**	**247**	**256**
13:00	13:15	0	0	0	**0**	0	0	7	**7**	**7**	5	97	1	**103**	0	119	1	**120**	**223**	**230**
13:15	13:30	0	0	0	**0**	4	0	1	**5**	**5**	10	96	1	**107**	0	120	2	**122**	**229**	**234**
15:00	15:15	0	0	0	**0**	3	0	1	**4**	**4**	2	75	0	**77**	0	120	4	**124**	**201**	**205**
15:15	15:30	0	0	0	**0**	2	0	3	**5**	**5**	2	82	0	**84**	0	163	3	**166**	**250**	**255**
15:30	15:45	0	0	0	**0**	3	0	8	**11**	**11**	4	89	0	**93**	0	205	4	**209**	**302**	**313**
15:45	16:00	0	0	0	**0**	2	0	11	**13**	**13**	8	80	0	**88**	0	205	1	**206**	**294**	**307**
16:00	16:15	0	0	0	**0**	7	0	3	**10**	**10**	9	106	0	**115**	0	190	4	**194**	**309**	**319**
16:15	16:30	0	0	0	**0**	5	1	7	**13**	**13**	8	87	1	**96**	0	187	5	**192**	**288**	**301**
16:30	16:45	0	0	0	**0**	9	0	11	**20**	**20**	9	93	0	**103**	0	198	8	**206**	**309**	**329**
16:45	17:00	0	0	0	**0**	6	0	9	**15**	**15**	10	78	1	**89**	0	173	29	**202**	**291**	**306**
17:00	17:15	0	0	0	**0**	7	0	10	**17**	**17**	11	82	0	**93**	0	193	11	**204**	**297**	**314**
17:15	17:30	0	0	0	**0**	7	0	1	**8**	**8**	4	102	0	**106**	0	199	6	**205**	**311**	**319**
17:30	17:45	0	0	0	**0**	3	0	10	**13**	**13**	6	97	0	**103**	0	183	1	**184**	**287**	**300**
17:45	18:00	0	0	0	**0**	6	0	3	**9**	**9**	2	97	1	**100**	0	175	4	**179**	**279**	**288**
TOTAL:		0	0	0	**0**	152	1	147	**300**	**300**	168	3386	6	**3561**	0	3954	144	**4098**	**7659**	**7959**

Note: U-Turns are included in Totals.

Comment:

Public Works - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order 34681

CLEARY AVE @ RICHMOND RD

Count Date: Friday, June 12, 2015 **Start Time:** 07:00

		CLEARY AVE			RICHMOND RD			
Time Period		Northbound	Southbound	**Street Total**	Eastbound	Westbound	**Street Total**	**Grand Total**
07:00	08:00	0	0	**0**	6	1	**7**	**7**
08:00	09:00	0	0	**0**	6	2	**8**	**8**
09:00	10:00	0	0	**0**	0	3	**3**	**3**
11:30	12:30	0	1	**1**	2	0	**2**	**3**
12:30	13:30	0	0	**0**	1	2	**3**	**3**
15:00	16:00	0	0	**0**	1	3	**4**	**4**
16:00	17:00	0	2	**2**	2	1	**3**	**5**
17:00	18:00	0	0	**0**	0	6	**6**	**6**
Total	.....	0	3	**3**	18	18	**36**	**39**

Comment:

Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary.

Public Works - Traffic Services

W.O. 34681

Turning Movement Count - Heavy Vehicle Report

CLEARY AVE @ RICHMOND RD

Survey Date: Friday, June 12, 2015

		CLEARY AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	08:00	0	0	0	**0**	0	0	0	**0**	**0**	0	17	0	**17**	0	17	0	**17**	**34**	**34**
08:00	09:00	0	0	0	**0**	0	0	1	**1**	**1**	0	21	0	**21**	0	16	1	**17**	**38**	**39**
09:00	10:00	0	0	0	**0**	0	0	0	**0**	**0**	0	19	0	**19**	0	16	1	**17**	**36**	**36**
11:30	12:30	0	0	0	**0**	0	0	0	**0**	**0**	0	13	0	**13**	0	20	0	**20**	**33**	**33**
12:30	13:30	0	0	0	**0**	0	0	0	**0**	**0**	0	18	0	**18**	0	18	0	**18**	**36**	**36**
15:00	16:00	0	0	0	**0**	0	0	0	**0**	**0**	0	8	0	**8**	0	11	0	**11**	**19**	**19**
16:00	17:00	0	0	0	**0**	0	0	0	**0**	**0**	0	8	0	**8**	0	7	0	**7**	**15**	**15**
17:00	18:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	7	0	**7**	**11**	**11**
Sub Total		0	0	0	**0**	0	0	1	**1**	**1**	0	108	0	**108**	0	112	2	**114**	**222**	**223**
U-Turns (Heavy Vehicles)					**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total		0	0	0	**0**	0	0	1	**1**	**1**	0	108	0	**108**	0	112	2	**114**	**222**	**223**

Heavy Vehicles are vehicles having one rear axle with four or more wheels, or having two or more rear axles. These vehicles include most O.C. Transpo, school and inter-city buses. Further, they ARE included in the Turning Movement Count Summary.

Public Works - Traffic Services

Work Order 34681

Turning Movement Count - Pedestrian Volume Report

CLEARY AVE @ RICHMOND RD

Count Date: Friday, June 12, 2015 **Start Time:** 07:00

Time Period		NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00	07:15	0	0	**0**	1	0	**1**	**1**
07:15	07:30	0	1	**1**	0	2	**2**	**3**
07:30	07:45	0	3	**3**	0	2	**2**	**5**
07:45	08:00	0	2	**2**	1	1	**2**	**4**
07:00	08:00	0	6	**6**	2	5	**7**	**13**
08:00	08:15	0	3	**3**	1	2	**3**	**6**
08:15	08:30	0	2	**2**	2	5	**7**	**9**
08:30	08:45	0	0	**0**	1	3	**4**	**4**
08:45	09:00	0	0	**0**	0	3	**3**	**3**
08:00	09:00	0	5	**5**	4	13	**17**	**22**
09:00	09:15	0	3	**3**	0	0	**0**	**3**
09:15	09:30	0	6	**6**	0	5	**5**	**11**
09:30	09:45	0	2	**2**	1	0	**1**	**3**
09:45	10:00	0	0	**0**	0	1	**1**	**1**
09:00	10:00	0	11	**11**	1	6	**7**	**18**
11:30	11:45	0	0	**0**	3	1	**4**	**4**
11:45	12:00	0	0	**0**	1	1	**2**	**2**
12:00	12:15	0	0	**0**	1	7	**8**	**8**
12:15	12:30	0	1	**1**	0	0	**0**	**1**
11:30	12:30	0	1	**1**	5	9	**14**	**15**
12:30	12:45	0	1	**1**	2	1	**3**	**4**
12:45	13:00	0	0	**0**	2	0	**2**	**2**
13:00	13:15	0	0	**0**	2	0	**2**	**2**
13:15	13:30	0	0	**0**	2	1	**3**	**3**
12:30	13:30	0	1	**1**	8	2	**10**	**11**
15:00	15:15	0	3	**3**	1	0	**1**	**4**
15:15	15:30	0	2	**2**	1	0	**1**	**3**
15:30	15:45	0	0	**0**	2	2	**4**	**4**
15:45	16:00	0	1	**1**	0	0	**0**	**1**
15:00	16:00	0	6	**6**	4	2	**6**	**12**
16:00	16:15	0	2	**2**	4	2	**6**	**8**
16:15	16:30	0	0	**0**	0	0	**0**	**0**
16:30	16:45	0	1	**1**	1	3	**4**	**5**
16:45	17:00	0	2	**2**	1	1	**2**	**4**
16:00	17:00	0	5	**5**	6	6	**12**	**17**
17:00	17:15	0	1	**1**	0	5	**5**	**6**
17:15	17:30	0	3	**3**	2	2	**4**	**7**
17:30	17:45	0	1	**1**	0	0	**0**	**1**
17:45	18:00	0	0	**0**	3	1	**4**	**4**
17:00	18:00	0	5	**5**	5	8	**13**	**18**
Total	.....	0	40	**40**	35	51	**86**	**126**

Comment:

Public Works - Traffic Services

Work Order
34681

Turning Movement Count - 15 Min U-Turn Total Report

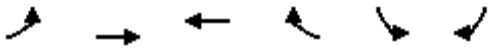
CLEARY AVE @ RICHMOND RD

Survey Date: Friday, June 12, 2015

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	1	0	1
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	0	1	0	1

Appendix C

Synchro Intersection Worksheets – Existing Conditions



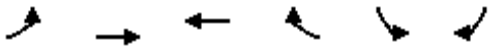
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	605	297	17	29	18
Future Volume (vph)	27	605	297	17	29	18
Satd. Flow (prot)	1658	1712	1679	0	1563	0
Flt Permitted	0.552				0.970	
Satd. Flow (perm)	956	1712	1679	0	1541	0
Satd. Flow (RTOR)			8		20	
Lane Group Flow (vph)	30	672	349	0	52	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	
Minimum Split (s)	23.1	23.1	23.1		21.3	
Total Split (s)	43.0	43.0	43.0		22.0	
Total Split (%)	66.2%	66.2%	66.2%		33.8%	
Yellow Time (s)	3.3	3.3	3.3		3.3	
All-Red Time (s)	1.8	1.8	1.8		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.1	5.1	5.1		5.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)	51.6	51.6	51.6		11.2	
Actuated g/C Ratio	0.79	0.79	0.79		0.17	
v/c Ratio	0.04	0.49	0.26		0.18	
Control Delay	4.5	6.8	4.6		17.0	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	4.5	6.8	4.6		17.0	
LOS	A	A	A		B	
Approach Delay		6.7	4.6		17.0	
Approach LOS		A	A		B	
Queue Length 50th (m)	1.0	33.7	13.1		3.4	
Queue Length 95th (m)	4.1	79.9	31.9		10.3	
Internal Link Dist (m)		130.8	20.8		142.6	
Turn Bay Length (m)	50.0				15.0	
Base Capacity (vph)	758	1358	1333		410	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.04	0.49	0.26		0.13	

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 53 (82%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 6.5	Intersection LOS: A
Intersection Capacity Utilization 51.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Richmond & Cleary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	35	355	763	54	29	31
Future Volume (vph)	35	355	763	54	29	31
Satd. Flow (prot)	1658	1745	1725	0	1560	0
Flt Permitted	0.240				0.976	
Satd. Flow (perm)	419	1745	1725	0	1543	0
Satd. Flow (RTOR)			9		34	
Lane Group Flow (vph)	39	394	908	0	66	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	
Minimum Split (s)	23.1	23.1	23.1		21.3	
Total Split (s)	43.0	43.0	43.0		22.0	
Total Split (%)	66.2%	66.2%	66.2%		33.8%	
Yellow Time (s)	3.3	3.3	3.3		3.3	
All-Red Time (s)	1.8	1.8	1.8		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.1	5.1	5.1		5.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)	51.6	51.6	51.6		11.2	
Actuated g/C Ratio	0.79	0.79	0.79		0.17	
v/c Ratio	0.12	0.28	0.66		0.22	
Control Delay	5.7	4.8	10.8		14.9	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	5.7	4.8	10.8		14.9	
LOS	A	A	B		B	
Approach Delay		4.9	10.8		14.9	
Approach LOS		A	B		B	
Queue Length 50th (m)	1.3	15.5	57.6		3.4	
Queue Length 95th (m)	6.0	36.8	#164.2		11.3	
Internal Link Dist (m)		130.8	20.8		142.6	
Turn Bay Length (m)	50.0				15.0	
Base Capacity (vph)	332	1384	1370		421	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.12	0.28	0.66		0.16	

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 13 (20%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 9.2	Intersection LOS: A
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Richmond & Cleary

Appendix D

Collision Data

CGH TRANSPORTATION

Accident Date	Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Traffic Control Condition	Classification Of Accident	Initial Impact Type	Road Surface Condition	# Vehicles	# Motorcycles	# Bicycles	# Pedestrians
12/20/2019	2019	15:17	CLEARY AVE @ RICHMOND RD (0011504)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
12/16/2021	2021	7:25	CLEARY AVE @ RICHMOND RD (0011504)	02 - Rain	03 - Dawn	01 - Traffic signal	0	03 - P.D. only	99 - Other	02 - Wet	0	0	0	0
2/10/2022	2022	12:14	CLEARY AVE @ RICHMOND RD (0011504)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	99 - Other	02 - Wet	0	0	0	0
1/19/2017	2017	16:30	RICHMOND RD btwn CLEARY AVE & LOCKHART AVE (__3ZAYFU)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
11/30/2019	2019	7:00	RICHMOND RD btwn CLEARY AVE & LOCKHART AVE (__3ZAYFU)	01 - Clear	03 - Dawn	10 - No control	0	02 - Non-fatal injury	01 - Approaching	01 - Dry	0	0	0	0
7/27/2021	2021	17:10	RICHMOND RD btwn CLEARY AVE & LOCKHART AVE (__3ZAYFU)	02 - Rain	01 - Daylight	10 - No control	0	02 - Non-fatal injury	03 - Rear end	02 - Wet	0	0	0	0
12/22/2021	2021	11:55	RICHMOND RD btwn CLEARY AVE & LOCKHART AVE (__3ZAYFU)	01 - Clear	01 - Daylight	10 - No control	0	02 - Non-fatal injury	01 - Approaching	02 - Wet	0	0	0	0
1/5/2021	2021	9:23	REDWOOD AVE @ RICHMOND RD (0009018)	03 - Snow	01 - Daylight	02 - Stop sign	0	03 - P.D. only	02 - Angle	02 - Wet	0	0	0	0

Appendix E

TDM Checklists

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☑
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☑
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

	TDM-supportive design & infrastructure measures: *Residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☑
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☑
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

TDM-Supportive Development Design and Infrastructure Checklist **City of Ottawa**
Version 1.0 (30 June 2017)

	TDM-supportive design & infrastructure measures: *Residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☑
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Residential developments*	Check if proposed & add descriptions
	1.	**TDM PROGRAM MANAGEMENT**	
	1.1	**Program coordinator**	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
	2.	**WALKING AND CYCLING**	
	2.1	**Information on walking/cycling routes & destinations**	
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances *(multi-family, condominium)*	☑
	2.2	**Bicycle skills training**	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

TDM Measures Checklist **City of Ottawa**
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		TDM measures: *Residential developments*	Check if proposed & add descriptions
	3.	**TRANSIT**	
	3.1	**Transit information**	
BASIC	3.1.1	Display relevant transit schedules and route maps at entrances *(multi-family, condominium)*	☑
BETTER	3.1.2	Provide real-time arrival information display at entrances *(multi-family, condominium)*	☐
	3.2	**Transit fare incentives**	
BASIC ★	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	☐
BETTER	3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☑
	3.3	**Enhanced public transit service**	
BETTER ★	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels *(subdivision)*	☐
	3.4	**Private transit service**	
BETTER	3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	☐
	4.	**CARSHARING & BIKESHARING**	
	4.1	**Bikeshare stations & memberships**	
BETTER	4.1.1	Contract with provider to install on-site bikeshare station *(multi-family)*	☑
BETTER	4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐
	4.2	**Carshare vehicles & memberships**	
BETTER	4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐
BETTER	4.2.2	Provide residents with carshare memberships, either free or subsidized	☐
	5.	**PARKING**	
	5.1	**Priced parking**	
BASIC ★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☐
BASIC ★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☑

			TDM measures: *Residential developments*	Check if proposed & add descriptions
		6.	**TDM MARKETING & COMMUNICATIONS**	
		6.1	**Multimodal travel information**	
BASIC	★	6.1.1	Provide a multimodal travel option information package to new residents	☑
		6.2	**Personalized trip planning**	
BETTER	★	6.2.1	Offer personalized trip planning to new residents	☐