Richmond Road
City of Ottawa

March 2022

AINLEY GROUP FILE No. 21006-2

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1. SCREENING

1.1. 1.1. Summary of Development

1. Description of Proposed Development	
Municipal Address	797 Richmond Rd, Ottawa, ON K2A 0G7
Description of Location	The subject site is located at 797 Richmond Road approximately 540m east of Woodroffe Avenue, on the north side of Richmond Road.
Land Use Classification	Mid-rise residential with 1st-floor commercial
Development Size (units)	51 units
Development Size (m^2)	5,175 sq.m including commercial 352 sq. m.
Number of Accesses and Locations	One Access located at South-East corner of the property and one right-in/right-out pick-up/drop off access
Phase of Development	Development will be constructed in one (1) phase.
Buildout Year	Construction starts early 2022, complete early 2023. Estimated date of occupancy; - May 2023.

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

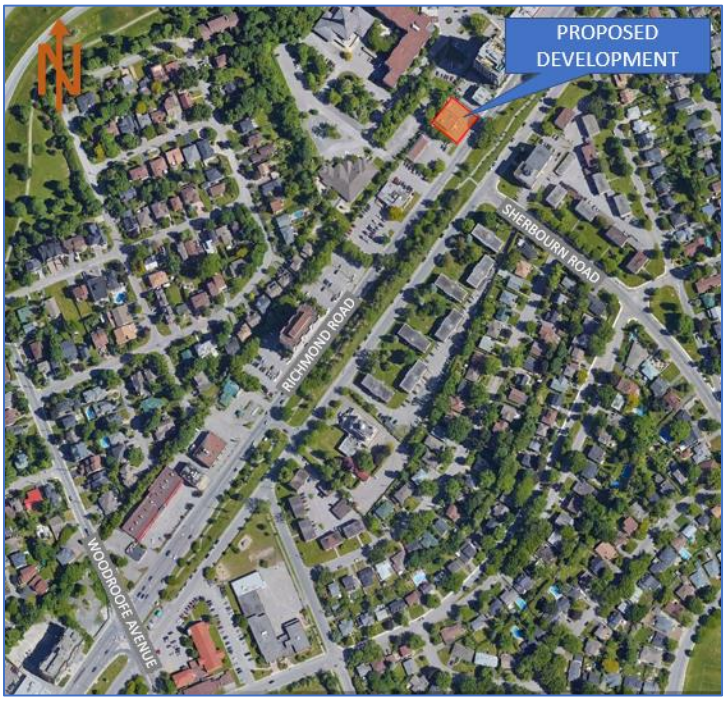

Figure 1: Site Location

1.2. 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.

Land Use Type	Minimum Development Size	Triggered
Single-family homes	40 units	✖
Townhomes or apartments	90 units	✖
Office	3,500 m^2	✖
Industrial	5,000 m^2	✖
Fast-food restaurant or coffee shop	100 m^2	✖
Destination retail	1,000 m^2	✖
Gas station or convenience market	75 m^2	✖
Will the development generate more than 60 person trips?		✖

* If the development has a land use type other than what is presented in the table above, estimates of person-trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.

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

1.3. Location Triggers

Land Use Type	Yes	No
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?		✖
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*	✓	

*DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6). See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA).

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

1.4. 1.4 Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 km/hr 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 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?		✖
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.

1.5 Summary

Land Use Type	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).

2. SCOPING

2.1. Existing and Planned Conditions

2.1.1. Proposed Development

The chmielarchitects is proceeding with a Zoning By-Law Amendment and Site Plan Control for a proposed 9-storey building located at 797 Richmond Road in Ottawa, Ontario. The subject site is located at 797 Richmond Road approximately 540m east of Woodroffe Avenue, 80m west of the intersection of Cleary Avenue and Richmond Road

on the north side of Richmond Road as shown in Figure 1. This property parcel is part of the ward number 15 (Kitchissippi).

The subject site is currently zoned as Traditional Mainstreet (TM) Zone; the purpose of the TM Zone, according to the City of Ottawa's Official Plan, is to:

- "Accommodate a broad range of uses including retail, service commercial, office, residential and institutional uses, including mixed-use buildings but excluding auto-related uses, in areas designated Traditional Mainstreet in the Official Plan;
- Foster and promote compact, mixed-use, pedestrian-oriented development that provide for access by foot, cycle, transit and automobile;
- Recognize the function of Business Improvement Areas as primary business or shopping areas; and
- Impose development standards that will ensure that street continuity, scale and character is maintained, and that the uses are compatible and complement surrounding land uses."

The existed property is currently used as retail (denture clinic), with a total site area of 0.116 ha. The development will have one full movements access situated on the south of the site which can be accessed from Richmond Road as shown in Figure 2.

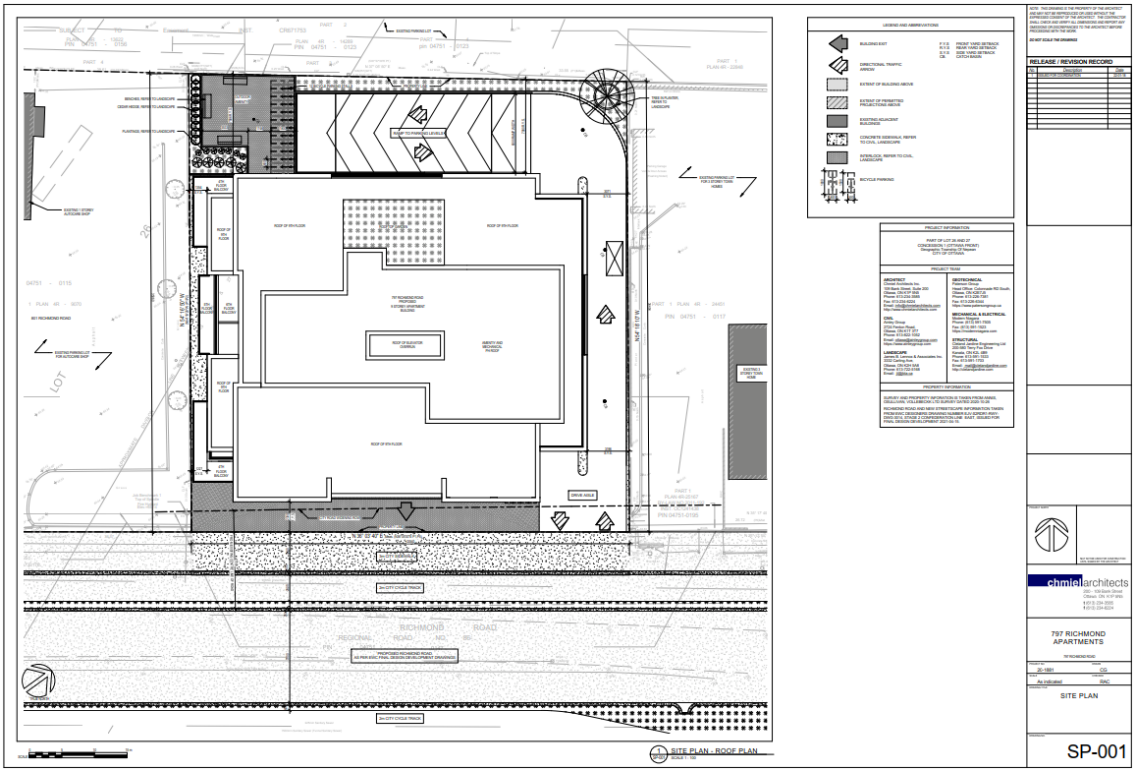

Figure 2: Site Plan

The proposed development has 51 apartment units in 9 stories. A total of 37 vehicle parking spaces (21 parking stalls in P2 level and 16 parking stalls in P1 level), and outdoor bicycles parking spaces and an indoor secured bicycle storage room will be provided as part of the proposed site (total of 31 spaces). Table 1 represents the land uses and land use code based on Institute of Transportation Engineers (8th Edition) for the proposed development.

The proposed site will be constructed in one phase with build-out and occupancy occurring in 2023.

Table 1: Proposed Land Uses

Land Use	Size	Land Use Code
Residential	51 units	223 – Mid-Rise Apartment
Office	337 m^2 3,629 ft^2	720 - Medical-Dental Office Building

2.1.2. Existing Conditions

The footprint of the building is approximately 255 m² (2745 ft²) and the Calculated Parcel Area is 1164.71 m² (12,536.82 ft²) (0.12 ha). The approximate parcel geometry is shown in Figure 3. There is only one property (15-story, 94 units building, municipal address: 75 Cleary Avenue, was built in 2010) to the east of the development. Below is the list of the properties located on the west side of the 797 Richmond Road parcel:

- 801 Richmond Rd: Dave Rennie's Autocare.
- 809 Richmond Rd (70m west of the 797 Richmond Road): Kristy's Restaurant.
- 851 Richmond Rd (220m west of the 797 Richmond Road): 10-story apartment building (Lord Richmond).

Figure 3: Parcel Geometry (Source: GeoOttawa ())

2.1.2.1. Roads and Traffic Control

The roadways under consideration in the study area are described as follows:

Richmond Road: In the vicinity of the subject site, Richmond Road is a two-lane municipally owned arterial roadway. Sidewalks are provided along both sides of Richmond Road. Currently, Richmond Road in the vicinity is under construction for the Light Rail Transit (LRT) project. Concrete jersey barriers are placed along the south side of the Richmond Road as part of the traffic control plan for the LRT project. In the absence of a posted speed limit, the default speed limit is 50 km/h; however, reduced-speed-limit signs in the construction zones are posted for the safety of workers and drivers in the area.

Cleary Avenue: North of the Richmond Road, Cleary Avenue is a two-lane roadway and is located 80m east of the property. The intersection with Richmond Road is a signalized controlled intersection.

Woodroffe Avenue: North of the Richmond Road, Woodroffe Avenue is a two-lane roadway and is located 540m west of the property. A stationary

posted speed of 50 km/h is provided within the vicinity of the proposed development. The intersection with Richmond Road is a signalized controlled intersection.

Access to the underground parking is proposed to be located on Richmond Road.

2.1.2.2. Walking and Cycling

Originally, a paved multi-use pathway (MUP) is provided along both sides of Richmond Road within the vicinity of the subject site (located between Richmond Road and Byron Avenue) and was used by pedestrian and cyclists. However, due to the construction of the LRT Confederation Line, which will run parallel to Richmond Road and Byron Avenue directly in between these roadways and construction of the Sherbourne Station, this MUP has been removed and the entire area is barricaded by concrete jersey barriers that are placed along the south side of Richmond Road as part of the traffic control plan for LRT project.

In terms of cycling facilities, Richmond Road does not have on-street bicycle lanes; however, it is designated as a suggested cycling route. It should be noted that Sherbourne Street (a two-lane municipally owned arterial roadway to the south of the property) has dedicated bicycles lanes on both sides.

2.1.2.3. Transit

Transit service is currently provided in the immediate vicinity of the proposed site. Below is a summary of the transit routes serving the area (Figure 4):

- Route 153: is a local route runs between Tunney's Pasture D and Lincoln Fields 4A.
- Route 11: is a local route runs between Elgin /Queen and Bayshore

The following transit stops are close to the subject development:

Stop ID 7513 (Richmond/Cleary):	located approximately 80m east of the project site, west of the intersection of Cleary Avenue and Richmond Road.
Stop ID 4924 (Richmond Sherbourne):	located at Richmond Road approximately 100m west of the project site.
Stop ID 7512 (Richmond/Redwood):	located 120m east of the project site, west of the intersection of Redwood Avenue and Richmond Road.
Stop ID 2459 (Richmond Sherbourne):	located at Richmond Road approximately 100m west of the project site.

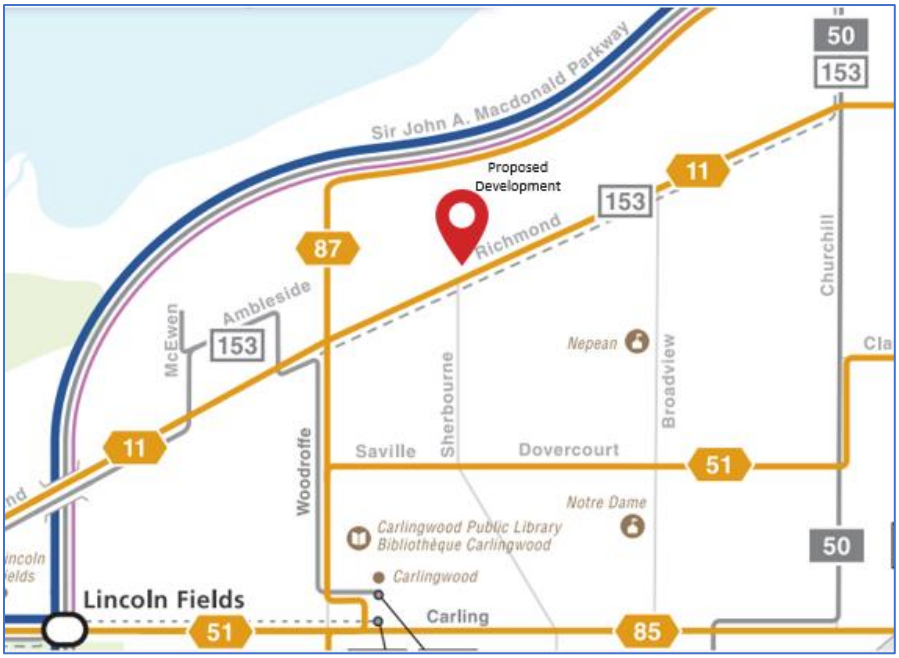

Figure 4: Study Area Transit Routes (Source: OC Transpo System Map, Accessed on March 15th, 2022)

2.1.2.4. Traffic Management Measures

No traffic management measures are currently provided in the vicinity of the subject site.

2.1.2.5. Collision History

Collision data was extracted from the City of Ottawa (Open Ottawa (1)) for the period January 2016 to December 2020 in the vicinity of the subject site. The data was reviewed to determine if any intersections or road segments exhibited an identifiable collision pattern during the five-year period. The collision summary is shown in Table 2.

The table shows that the majority (75%) of the collisions in the study area intersections and Richmond Road segment resulted in property damage only, which suggests that collisions occurred at low speeds that they would not cause injury or harm to road users. Most of these collisions (83%) occurred at Richmond Road and Woodroffe Avenue intersection. More than 83% of these collisions occurred during clear weather conditions and approximately 71% on dry surface pavement conditions. This would suggest that the environment has less impact on collisions' occurrence. Upon further review, it is found that the collisions at this intersection were distributed as 46% rear end, 40% angle/turning collisions, 8% single motor vehicle, and 6% sideswipe. As such, there is no evidence to suggest that there is a pattern or a trend of collisions at the intersection.

It should be noted that the majority (98%) of the collisions were vehicular collisions and two collisions (2%) involved pedestrian and bicycle road users.

Table 2: Collision Summary

Description		RICHMOND RD & WOODROFFE AVE	RICHMOND RD (Between LOCKHART AVE & CLEARY AVE)	CLEARY AVE & RICHMOND RD
Classification	Property Damage Only	32	3	1
	Non-fatal injury	8	4	
Collision Type	Rear End	20	1	
	Angle/Turning	13	5	1
	Sideswipe	3		
	Single Motor Vehicle	4	7	
Event	Other Motor Vehicle	38		1
	Bicycle	1		
	Pedestrian	1		
Weather Conditions	Clear	32	7	1
	Other	8		
Pavement Conditions	Dry	26	7	1
	Wet	7		
	Other	7		

2.1.3. Planned Conditions

2.1.3.1. Road Network Modifications

The configuration of Richmond Road will have a significant development in the site vicinity. For example, the following changes will be happened to the geometry of the network (see Appendix A):

- New concrete sidewalk of a 3.0m will be added to the north side of Richmond Road,
- New asphalt cycling tracks of 2.0 m on both sides of the roadway will be added to the cross section, and
- The linear park between Richmond Road and Byron Avenue will be modified to

accommodate the new LRT station.

In addition, the area will be serviced by Sherbourne Station (across the Richmond Road) which its single entrance will be located within the Byron Linear Park between Cleary Avenue and Sherbourne Road. The station entrance plaza will seamlessly integrate with the planned functions of the Bryon Linear Park, activating this node within the park. Bicycle parking will be provided in the station plaza and Passenger Pick Up/Drop Off (PPDUO) spaces will be provided on both the north and south side of Bryon Avenue (1). Representation design image for the Sherbourne Station and the location of the proposed development is shown in Figure 5.

Figure 5: Sherbourne Station and Proposed Development Location (2)

Also, the Light Rail Transit (LRT) Confederation Line under development will run parallel to Richmond Road and Byron Avenue, directly in between these roadways. The section of the LRT Confederation Line running along the subject site will travel underground.

2.1.3.2. Future Background Developments

Based on the City of Ottawa website (3), there is no development within the vicinity of the subject site.

2.2. Study Area and Time Periods

2.2.1. Study Area

The proposed study area is limited to the Richmond Road segment between the intersections of Richmond Road with Woodroffe Avenue and Cleary Avenue.

2.2.2. Time Periods and Horizon Years

Traffic analysis is not required for this study as per the City comments in Feb 22nd, 2022.

2.3. Exemptions Review

The exemptions review table stated in the City of Ottawa's 2017 Transportation Impact Assessment Guidelines is shown in Table 3.

Table 3: Exemptions Review

Module	Element	Exemption Considerations	Exemption Status	
			Exempted	Not Exempted
Design Review Component				
4.1 Development Design	4.1.2 Circulation and Access	Only required for site plans		✓
	4.1.3 New Street Networks	Only required for plans of subdivision	✓	
4.2 Parking	4.2.1 Parking Supply	Only required for site plans		✓
	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	✓	
Network Impact Component				
4.5 Transportation Demand Management	All elements	Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	✓	
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	✓	
4.8 Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning	✓	
4.9 Intersection Design	All Elements	Not required if site generation trigger is not met.	✓	

3. FORECASTING

3.1. Development Generated Travel Demand

3.1.1. Trip Generation and Mode Shares

Trip generation rates have been determined from Institute of Transportation Engineer's (ITE) Trip Generation Manual (8th edition) (4), which is nationally recognized and locally accepted as a method for predicting generated trips for new developments and the TRANS Trip Generation Residential Trip Rates Study Report was used for the residential land use (5). Based on the existing and proposed land use and applicable ITE land use categories, the trip rate to Mid-Rise Apartment (ITE land use code 223) and Medical-Dental Office Building (ITE land use code 720) for the retail areas were thought to be the most representative of the proposed land use. The trip rates for the AM and PM peak hours on a weekday are shown in Table 4. The maximum generated auto trips by the proposed development for the AM and PM peak hours are expected to be 21 and 27 trips respectively.

Table 4: Land Use and Trip Generation Rates

			Weekday AM Peak Hour			Weekday PM Peak Hour		
Land Use	ITE Code	Size	Entering	Exiting	Rate	Entering	Exiting	Rate
Mid-size Apartment	223	51 units	24%	77%	0.23	62%	39%	0.26
Medical-Dental Office Building	720	3,629 ft^2 GFA	79%	21%	2.3	27%	73%	3.46

As per the City of Ottawa's 2017 TIA Guidelines, the auto trip generation rate of the general office land use was converted to person trips using a conversion factor of 1.28 and the generation rates for conversion of the proposed development (residential part - apartments) were converted to person trips using the Table 3.13 in the TRANS Residential Trip Generation Residential Trip Rates Study Report-August 2009 (5) (37% and 40% for AM and PM peak hours respectively). The development-generated person trips for the land use are shown in Table 5.

Table 5: Person Trips Generated by Land Use

Land Use	ITE Code	Trip Conversion	Weekday AM Peak Hour			Weekday PM Peak Hour		
			Entering	Exiting	Total	Entering	Exiting	Total
Mid-size Apartment	223	Auto Trips	3	9	12	9	5	14
		Conversion Factor	37%	37%	37%	40%	40%	40%
		Person Trips	8	25	33	22	14	35
Medical-Dental Office Building	720	Auto Trips	7	2	9	4	9	13
		Conversion Factor	1.28	1.28	1.28	1.28	1.28	1.28
		Person Trips	9	2	12	4	12	17
Total Auto Trips			10	11	21	12	15	27
Total Person Trips			17	27	44	26	26	52

Currently, the nearest transit station to the subject site is the Dominion Station as shown in Figure 6, which is located approximately within 1400m. However, Sherbourne Station (under construction) is just across Richmond Road. Therefore, the subject site can be classified as being in a Transit Oriented Development (TOD) zone. Accordingly, the majority of the future residents and employees of the TOD area encourage to commute by public transit, cycling and walking in order to support sustainability.

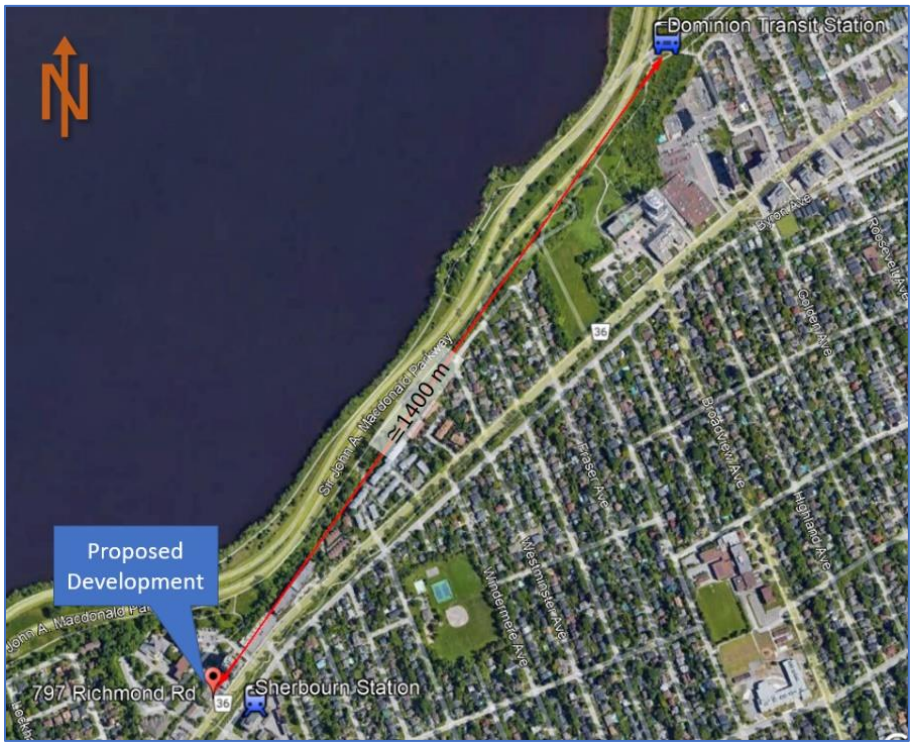

Figure 6: Proposed Development and Transit Stations

Based on the City's Transit-Oriented Development (TOD) Plans (January 2014 (6)), TOD zones have a transit modal share target of 65%, an active modal share target of 15%, private automobiles modal share target of 15%, and an automobile passenger modal share target of 5%. Trips generated by the proposed development according to the travel mode are shown in Table 6.

Table 6: Trips Generated by Travel Mode

		Trip Conversion		Weekday AM Peak Hour			Weekday PM Peak Hour		
Land Use	ITE Code	Item	Rate	Entering	Exiting	Total	Entering	Exiting	Total
Mid-size Apartment	223	Automobile	15%	1	4	5	3	2	5
		Passenger	5%	0	1	2	1	1	2
		Transit	65%	5	16	21	14	9	23
		Cycling and Walking	15%	1	4	5	3	2	5
Medical-Dental Office Building	720	Automobile	15%	1	0	2	1	2	2
		Passenger	5%	0	0	1	0	1	1
		Transit	65%	6	2	7	3	8	11
		Cycling and Walking	15%	1	0	2	1	2	2
Total Generated Trips		Automobile		3	4	7	4	4	8
		Passenger		1	1	2	1	2	3
		Transit		11	18	29	17	17	34
		Cycling and Walking		3	4	7	4	4	8

As shown in Table 6, the proposed development is expected to generate 7 and 8 automobile trips during the AM and PM peak hours, respectively, is considered negligible as compared to the existing traffic volumes on Richmond Road.

3.2. Background Network Travel Demand

Based on the comments received from the City staff (dated Feb 22nd, 2022, see appendix B), this task is not required for this study.

4. ANALYSIS

4.1. Development Design

4.1.1. Design for Sustainable Modes

Bicycle Facilities: A total of 31 bicycle parking spaces are provided for the proposed development. The bicycle parking stall and post rack is provided by the Underground Level P1 and P2 (15 spaces), and Ground Level (12 spaces in the back and 4 spaces in the front of the subject site).

Pedestrian Facilities: Pedestrians on Richmond Road are directly connected to the proposed development via a sidewalk on the west side of Richmond Road.

Parking Areas: A total of 37 automobile spaces are provided. The parking spaces are provided by the Underground Level P1 (21) and Underground Level P2 (16 spaces and inclusive one accessible).

Transit Facilities: The subject site is presently serviced by transit. Four Transit stops for OC Transpo routes 153, and 11 are currently located in the vicinity of the proposed development within a distance less the 120 m (at Richmond Road and Cleary intersection, Richmond Road and Sherbourne Road, Richmond and Redwood intersection). There are sidewalks along both sides of Richmond Road to access the transit stops. However, with the conversion to LRT in future (2025), the transit capacity will increase in the study area, thus increasing the viability for people to choose to use transit.

TDM-Supportive Development Design and Infrastructure Checklist is included in Appendix C.

4.1.2. Circulation and Access

There is one site access proposed on the east-south edge of the subject site connecting its parking lot to Richmond Road via an internal driveway. The site access is envisioned to be a full movements access. The proposed driveway is 6.68m wide (Appendix A).

4.1.3. New Street Networks

Not applicable; exempted during screening and scoping.

4.2. Parking

4.2.1. Parking Supply

Automobile Parking: Based on the official plan of the City of Ottawa schedule 1A, the subject site is located within Area Y – Inner Urban Mainstreet. As per this designation, the City of Ottawa's Zoning By-law 2008-250 (Section 101 and 102) was consulted to determine the minimum parking space requirement for the proposed development. It was found that the minimum parking requirement for the proposed development is:

- 0.5 per dwelling unit,
- 2.0 per 100m^2 (gross floor area) of medical facility, and
- 0.1 per dwelling unit for visitor parking.

As per City of Ottawa Zoning By-Law 2008-250 (Section 101 (4) (b)), no off-street motor vehicle parking is required for the first twelve residential units, where a residential use is located within a building of five or more storeys. As such, the proposed development is required to provide 25 vehicle parking spaces for the residents, 5 vehicle parking spaces for the visitors, and 7 vehicle parking spaces for the medical facility component, for a total of 37 vehicle parking spaces, which is satisfies the minimum limit of the requirement.

Bicycle Parking: Based on the Ottawa Zoning By-law 2008-250 (Section 111), the minimum bicycle parking rate for the proposed development is:

- 0.50 bicycle parking spaces per dwelling unit, and
- 1.0 bicycle parking space per 1000m^2 (gross floor area) of medical facility.

Accordingly, the proposed development should provide a minimum of 26 bicycles spaces for the residential component and 1 for the medical facility component for a total of 27 bicycle parking spaces.

The proposed site plan indicates there will be 31 bicycle spaces provided, which meets and exceeds the minimum requirements.

4.2.2. Spillover Parking

Given the proponent will not be seeking a reduction in minimum supply of parking for the subject development, this module is exempted, with respect to the City's TIA Guidelines.

4.3. Boundary Street Design

With respect to the City's TIA guidelines, this module determines design elements of boundary streets required to accommodate the proposed development, consistent with the City's complete streets philosophy and its urban design objectives for the

development area. The identified boundary streets for the subject site are Richmond Road, Woodroffe Avenue and Cleary Avenue, which are owned and maintained by the City of Ottawa.

4.3.1. Transit priority measures

Transit priority can improve the competitiveness of transit by reducing travel times and improving service reliability, while allowing more transit service to be delivered with the same resources. As per the Transportation Master Plan of the City of Ottawa (7), Richmond Road being scheduled to have transit signal priority and queue jump lanes at select intersections between Woodroffe Avenue and Bank Street by 2031. Given the highest order transit is within the vicinity of the subject development lands, transit travel times should be unimpeded. Currently, the intersections and roadway segment within the vicinity are not equipped with transit priority measures such as (e.g., dedicated bus lanes, transit signal priority treatments, bus queue jumps, special bus stop arrangements, and traffic management techniques such as queue relocation).

4.3.2. Multi Modal Level of Service

A Multi-Modal Level of Service (MMLOS) assessment was conducted for the subject site's boundary streets, which is a measure of risk, comfort and stress for active modes and a measure of impedance, delay and reliability for trucks/buses. The MMLOS was evaluated for Richmond Road to assist with developing a design concept that maximizes the achievement of the MMLOS objectives. This road was determined to fall within the 600m of a rapid transit station' Policy Area designation. This Policy Area dictates the following MMLOS targets that will be applied to the roadway segment. Based on the City of Ottawa Multi-Modal Level of Service (MMLOS) Guidelines (8), the target level of service for each transportation mode is:

- Richmond Road (arterial Traditional Mainstreet) is located within 600m of Sherbourne Station. This roadway segment is subject to a pedestrian level of service target (PLOS) of A.
- As cross-town bikeway MMLOS targets are more stringent, therefore, they are to be adopted. As such, Richmond Road is subject to a bicycle level of service (BLOS) target of A.
- Richmond Road includes isolated transit priority measures and thus has a track level of service target of D.
- Richmond Road is designated as full load truck route and therefore the Truck level of Service target (TrLOS) for this roadway segment is D.

Following is the assessment for all transportation mode of the ultimate conditions of the roadway segment.

- The ultimate conditions of the Richmond Road, located to the south of the proposed development, will have a concrete sidewalk a 3.0m to the north side of the Road. Based on the assessment criteria, the roadway segment will have PLOS of C, which does not meet the PLOS target.
- Richmond Road has no cycling designation under the 2013 Ottawa Cycling Plan (9) and as such, it is subject to a Bicycle level of service target (BLOS) of D. However, a 2.0 m wide dedicated cycling track will be constructed along Richmond Road within the vicinity and another 2.0 m wide dedicated cycling track will be constructed south of the Richmond Rd (Between Richmond and Byron Ave) as explained in Section 2.1.3.1 and shown in Appendix A. Thus, this cycling facility will allow the BLOS target of A to be met across the frontage of the subject site. It should be noted that Byron Avenue, which is adjacent roadway to Sherbourne Station runs parallel to Richmond Road, has designated bicycles lane as well.
- Transit service along Richmond Road operates in a mixed traffic conditions which allows it to meet the TLOS target (D) across the frontage of the subject site under both existing and build-out conditions.
- The ultimate lane widths along Richmond Road are sufficiently wide (3.5 m) to accommodate truck turning movements. Accordingly, Richmond Road along the frontage of the subject site meets the TrLOS target.

Summary for the ultimate conditions for all modes (i.e., Pedestrian, Cycling, Transit and Truck) along the Richmond Road is shown in Table 7 (LOS results highlighted in red indicate that the target MMLOS was not met for that segment).

Pedestrian LOS: Richmond Road does not meet the PLOS targets; however, it is considered to good Levels of Service. However, to achieve the PLOS target, the posted speed limit would need to be reduced to 30 km/h.

Bicycle LOS: Richmond Road meets BLOS targets.

Transit LOS: Richmond Road meets TLOS targets.

Truck LOS: Richmond Road meets TrLOS targets.

Table 7: Multi Modal Level of Service for Richmond Road Segment (2025 Target Horizon)

Type	Item	Description	Level of Service
Pedestrian	Sidewalk Width	≥ 2.0	C (Target A)
	Boulevard Width	0	
	Motor Vehicle Traffic Volume (AADT)	> 3000*	
	Operating Speed	> 30 or 50 km/h*	
	On-Street Parking	No	
Bicycle	Type of Cycling Facility	Physically Separated (2.0 m)	A (Target A)
	Number of Travel Lanes	2-3 lanes total	
	Operating Speed	> 30 or 50 km/h*	
Transit	Facility Type	Mixed Traffic	D (Target D)
	Friction or Ratio Transit to Posted Speed	Vt/Vp ≥ 0.8	
Truck	Truck Lane Width	≤ 3.5 m	C (Target D)
	Travel Lanes per Direction	1	

Vt: Transit Speed (km/h), Vp: Posted Speed (km/h), *: Assumed based on other TIA reports in the region.

4.4. Access Intersection Design

4.4.1. Access Location

The latest Concept Plan depicts that the development will have one vehicular access point off Richmond Road. The site access will be stop-controlled along the site access approach (6.68m wide) and will be a full movement access without any turning restrictions.

4.4.2. Intersection Control

The site access is a low-volume driveway and is anticipated to be a One Way Stop Control (OWSC) access. Both Richmond Road and Woodroffe Avenue intersection and Richmond Road and Cleary Avenue intersection are signalized intersections.

4.5. Transportation Demand Management

4.5.1. Context for TDM Measures

With respect to the City's TIA Guidelines, an analysis of Transportation Demand Management (TDM) measures is required for this development. As such, a formal TDM Checklist (provided by the City) was completed to determine if TDM measures should be implemented, based on available information (Appendix C).

The site consists of apartments units as well as ground floor retail (medical-dental office) and is expected to be built and occupied by 2023. As explained in Section 3.1.1, the subject site is considered to be in a Transit Oriented Development (TOD) Zone. As outlined in the City's Transit-Oriented Development (TOD) Plans (January 2014), TOD zones have a transit modal share target of 65%, an active modal share target of 15%, an auto driver modal share target of 15%, and an automobile passenger modal share target of 5%. These modal share targets were used in the development of the trip generation potential for the subject site.

The subject site is located close to Sherbourne Station and will support this 65% transit modal share. In addition, the developer is prepared to implement certain Transportation Demand Management (TDM) measures as part of this development, which are outlined in the TDM checklists (Appendix C).

To support the active modal share of 15%, the development proposes 31 bicycle parking spaces in addition to supplemental TDM measures, which are outlined in the TDM checklists (Appendix C).

Also, it should be noted that the proposed development is not anticipated to generate a substantial amount of vehicle traffic as compared to the traffic that is already on the boundary road network, and therefore the automobile modal shares are not anticipated to be an issue.

4.6. Neighbourhood Traffic Management

With respect to the City's TIA guidelines, this module reviews significant access routes to/from the development and identifies any required neighbourhood traffic management measures to mitigate impacts on collector and local roads. As only one site access is proposed on Richmond Road, all subject development traffic will use this roadway to access the surrounding transportation network. As mentioned in Section 3.0 earlier, the proposed development is projected to generate very low site-generated traffic volumes, and therefore, additional Neighbourhood Traffic Management measures are not recommended.

4.7. Transit

Transit stops that serve the development site were previously summarized in Section 2.1.2.3, which included stop information, routes, and the distance to/from the development site.

4.7.1. Route Capacity

Based the projected modal split of site-generated traffic, it is anticipated that 65% of the trips generated by the two land uses contained within the proposed development will be accommodated by transit. The forecasted transit trips for the proposed development are 36 and 44 total transit trips during the AM and PM peak hours, respectively.

The subject site is located approximately 40m south of the Transitway, and close to Sherbourne Station (just across the Richmond Road). There are two transit routes along the Transitway (11 and 153). According to the available information provided by OC Transpo, the City is expecting an increase in the current planned LRT capacity of 10,700 passengers per hour per direction to 18,000 passengers per hour per direction by the year 2031, and 24,000 passengers per hour per direction at the ultimate build out (10). Therefore, most of the trips can be assumed to be accommodated by the planned future LRT system.

Furthermore, it is reported that the peak hour one-way passenger volume for the OC Transpo Transitway was 9,000 riders served in 2017 (11). Given that the forecasted transit trips for the proposed development, the subject site represents at most 0.5% of current passenger volumes and thus is not expected to pose capacity issues for the existing Transitway.

4.8. Review of Network Concept

With respect to the City's TIA Guidelines, this module is exempt.

4.9. Intersection Design

4.9.1. Intersection Control

Within the study area, the intersection of Richmond Road and Cleary Avenue and Richmond Road and Woodroffe Avenue are signalized and is envisioned to maintain this control into the future horizons.

4.9.2. Intersection Design

With respect to the City's TIA Guidelines, this module is exempt.

5. CONCLUSION

The subject Transportation Impact Assessment (TIA) was prepared in support of a Site Plan application for a proposed development located at 797 Richmond Road in the in Ottawa, Ontario. The proposed development is located in the west Richmond Road.

The proposed development includes 337 m^2 of general office space (medical-Dental office) and 51 apartment units. The development includes 37 vehicle parking spaces (including 1 accessible parking space – comply with by-law No. 2017-301) and 31 bicycle parking spaces. The development will be accessed via one full movements site access off Richmond Road.

With respect to the City's Transportation Impact Assessment Guidelines, the following findings and conclusions are offered:

- The intersections in the study area are within the construction zone of the LRT project and are currently operating; however, some queues may be expected due to construction operations.
- There are no prevailing safety concerns, based on historical collision data.
- Transit is assumed to be the primary mode of travel with a 65% mode share target for the proposed development, which is consistent with the City's goals and objectives, given the context of the study area.
- With additional traffic generated by area development and the subject development itself, both the local bus and nearby future LRT, Richmond Road segment and the intersections study area are projected to continue operating acceptably.

Accordingly, the transportation evaluation presented in this transportation impact assessment, the proposed development at 797 Richmond Road can be supported and recommended to be permitted to proceed from a transportation perspective.

We trust that the above meets with your purpose. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

Bashar Dhahir, Ph.D., P.Eng, PMP

Project Engineer

Ainley Graham and Associates Ltd.

Mohammad Ramezani, P.Eng., M.Sc.,

Senior Engineer

Ainley Graham and Associates Ltd.

6. REFERENCES

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2. City of Ottawa, Stations, Accessed in March 15th, 2022, Available at: https://ottawa.ca/en/planning-development-and-construction/major-projects/stage-2-light-rail-transit-project/o-train-west-extension-0/stations#sherbourne-station
3. City of Ottawa, Development Applications Search, Accessed in March 15th, 2022, Available at: https://devapps.ottawa.ca/en/.
4. Institute of Transportation Engineer's (ITE), Trip Generation Manual, Edition 8th, 2008.
5. TRANS Residential Trip Generation Residential Trip Rates Study Report (August 2009).
6. City of Ottawa, Transit-Oriented Development (TOD) Plans, January 29, 2014.
7. City of Ottawa, Transportation Master Plan, Accessed in March 15th, 2022, Available at: https://documents.ottawa.ca/sites/documents/files/documents/tmp_en.pdf
8. City of Ottawa, Multi-Modal Level of Service (MMLOS) Guidelines: Supplement to the TIA Guidelines, September 15, 2015.
9. City of Ottawa, Ottawa Cycling Plan, November 2013.
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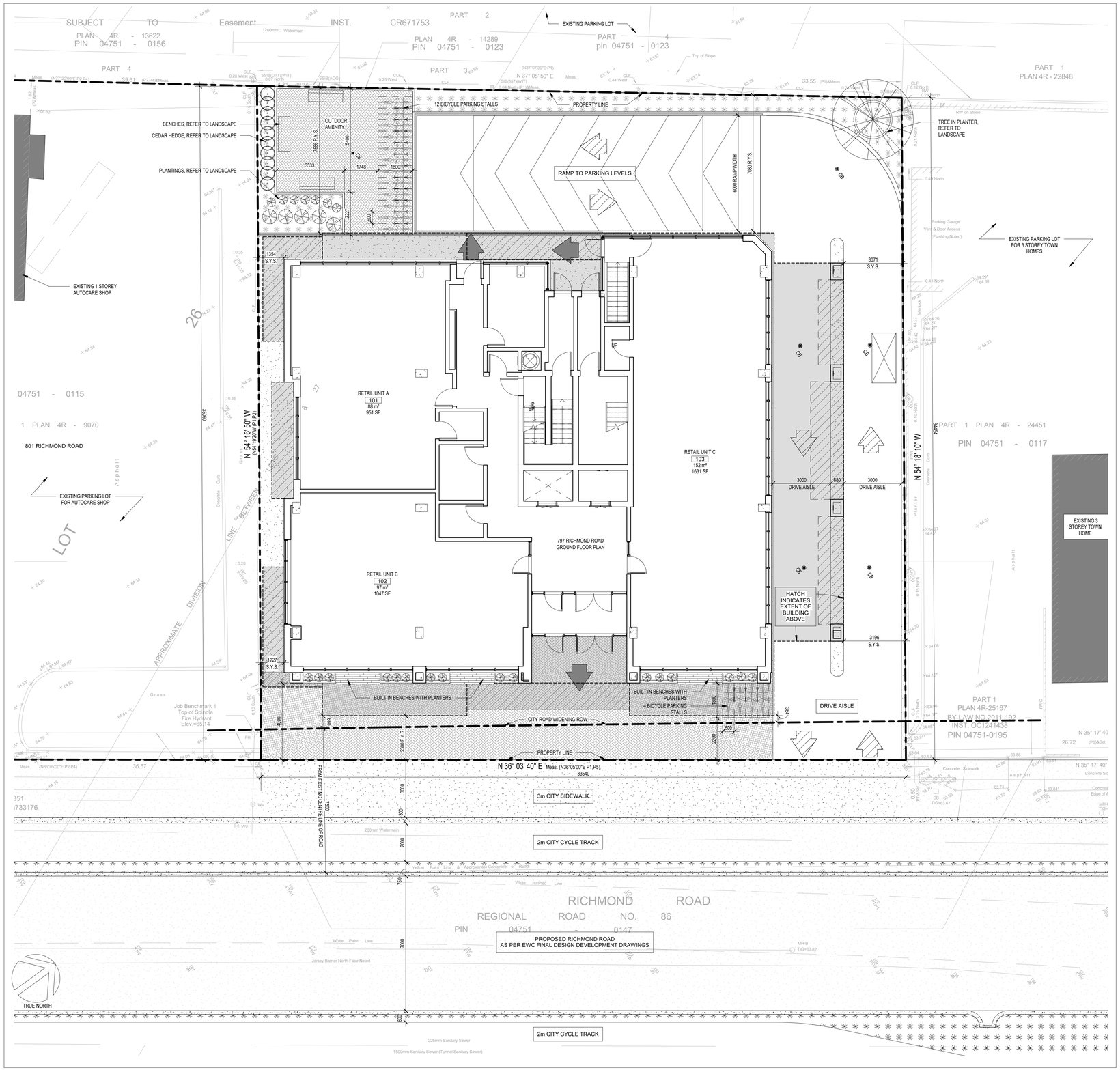
APPENDIX A

Site Plan



SCALE 0 5 10 15 m

1 SP-002 SITE PLAN - GROUND FLOOR
SCALE 1 : 100

LEGEND AND ABBREVIATIONS

- BUILDING EXIT
- DIRECTIONAL TRAFFIC ARROW
- EXTENT OF BUILDING ABOVE
- EXTENT OF PERMITTED PROJECTIONS ABOVE
- EXISTING ADJACENT BUILDINGS
- CONCRETE SIDEWALK, REFER TO CIVIL, LANDSCAPE
- INTERLOCK, REFER TO CIVIL, LANDSCAPE
- BICYCLE PARKING (1800, 1500, 500, 500)

F.Y.S FRONT YARD SETBACK
R.Y.S REAR YARD SETBACK
S.Y.S SIDE YARD SETBACK
CB. CATCH BASIN

PROJECT INFORMATION

PART OF LOT 26 AND 27
CONCESSION 1 (OTTAWA FRONT)
Geographic Township Of Nepean
CITY OF OTTAWA

PROJECT TEAM

ARCHITECT
Chmiel Architects Inc.
109 Bank Street, Suite 200
Ottawa, ON K1P 5N5
Phone: 613-234-3585
Fax: 613-234-6224
Email: info@chmielarchitects.com
http://www.chmielarchitects.com

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Email: ottawa@ainleygroup.com
https://www.ainleygroup.com

LANDSCAPE
James B. Lennox & Associates Inc.
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Email: jl@jbla.ca

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MECHANICAL & ELECTRICAL
Modern Niagara
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Fax: 613-591-1703
Email: mail@clelandjardine.com
http://clelandjardine.com

PROPERTY INFORMATION

SURVEY AND PROPERTY INFORATION IS TAKEN FROM ANNIS, OSULLIVAN, VOLLEBECKK LTD SURVEY DATED 2020-10-26

RICHMOND ROAD AND NEW STREETSCAPE INFORMATION TAKEN FROM EWC DESIGNERS DRAWING NUMBER EJV-S2RDR1-RWY-DWG-3014, STAGE 2 CONFEDERATION LINE EAST, ISSUED FOR FINAL DESIGN DEVELOPMENT 2021-04-15.

RELEASE / REVISION RECORD

No.	Description	Date
1	ISSUED FOR COORDINATION	21-03-18
2	ISSUED FOR COORDINATION	21-03-25
3	ISSUED FOR COORDINATION	21-04-05
4	ISSUED FOR COORDINATION	21-04-14
5	ISSUED FOR COORDINATION	21-05-05
6	RESSIUED FOR COORDINATION	21-05-05
7	ISSUED FOR COORDINATION	21-05-12
8	ISSUED FOR SITE PLAN CONTROL	21-06-09
9	ISSUED FOR COORDINATION	22-01-18

PROJECT NORTH

chmielarchitects
200 - 109 Bank Street
Ottawa ON K1P 5N5
t (613) 234-3585
f (613) 234-6224

797 RICHMOND APARTMENTS

797 RICHMOND ROAD

PROJECT NO.	DRAWN
20-1881	CG
SCALE	CHECKED
As indicated	RAC

DRAWING TITLE
SITE PLAN AT GROUND FLOOR

DRAWING NO.
SP-002

D07-12-21-0088

#18550

REFER TO DWG EJV-S2RDRI-RWY-DWG-3013 FOR DETAILS

MATCH LINE STA. 2+610

REFER TO DWG EJV-S2RDRI-RWY-DWG-3015 FOR DETAILS

MATCH LINE STA. 2+760

2+650

2+700

2+750

RICHMOND ROAD

300mm WIDE DELINEATOR TILE WITH ALTERNATING DIRECTIONAL BARS

CONCRETE BARRIER CURB PER SC1.1 (TYP.)

ASPHALT CYCLE TRACK (TYP.)

CONCRETE SIDEWALK PER SC4 (TYP.)

STEEL FACED CURB PER SC11.1

CLEARY STATION

CLEARY STATION REFER TO EJV-S2STCL FOR STATION DETAILS AND EJV-S2STCL-LAG FOR STATION LANDSCAPE DETAILS

9+350

9+400

9+450

BYRON AVENUE

90° CONCRETE OUTLET (TYP.) OPSD 604.010 MOD. SEE DWG. EJV-S2RDRI-RWY-DWG-4003 FOR DETAILS

150mm TOPSOIL, SEED AND MULCH (TYP.)

PROPOSED BUS SHELTER - BUS STOP 7512

REFER TO EJV-S2RDBY-LAG-DWG FOR LANDSCAPE DESIGN

1.0R (TYP.)

MONOLITHIC CURB AND SIDEWALK PER SC2

MATCH EXISTING

R.O.W. (TYP.)

SHERBOURNE AVENUE

68" (1500mm) STRM SEWR

36" (900mm) SANI SEWR

12" (300mm) WATERMAIN

300mm WATERMAIN

D.C.

BELL

REINSTATEMENT

- FULL DEPTH ASPHALT
- PARTIAL DEPTH ASPHALT
- ASPHALT DRIVEWAY/ SIDEWALK
- ASPHALT CYCLE TRACK
- CONCRETE SIDEWALKS, MEDIANS AND PLATFORMS
- CONCRETE PAVING STONES
- LANDSCAPING - TOPSOIL, SEED AND MULCH
- LANDSCAPING - TOPSOIL AND SOD
- LANDSCAPING - BIO-SWALE
- 300mm WIDE DELINEATOR TILE WITH ALTERNATING DIRECTIONAL BARS

ROW LINES ARE APPROXIMATE AND BASED ON CITY PROVIDED PROPERTY REQUEST PLANS (PRP). ANY PROPOSED CONSTRUCTION WITHIN 1m OF A PROPERTY LIMIT REQUIRES THAT A LICENSED ONTARIO LAND SURVEYOR BE ENGAGED AS PER SCHEDULE 15-2 PART 1 ARTICLE 4.2.

STAGE 2 ETAPE 2 — Confederation Line EAST — Confederation Line WEST

Ottawa

DRAWING NAME
RICHMOND ROAD (COMPLETE STREETS) INCL. BYRON LINEAR PARK SEGMENT 2
GEOMETRY AND GENERAL LAYOUT 15
RICHMOND ROAD & BYRON AVENUE
RICHMOND CONTROL 2+610 TO 2+760

CONTRACT No.
LRT19-1019

DESIGNED	CHECKED
M. BATCHOURIKHINA	P. HILL
DRAWN	SEALED
M. SHUBALY	

DRAWING NUMBER
EJV-S2RDRI-RWY-DWG-3014

PRIMARY SEAL

ENGINEERING JV

EWC DESIGNERS

SECONDARY SEAL

SCALE
HORIZONTAL 1:250 22"x34" 1:500 11"x17"
0m 2.5 5 10 20
VERTICAL 0m 22"x34" 11"x17"

ASSET No.
-

ASSET GROUP
-

REV	DESCRIPTION	BY	DATE
A	ISSUED FOR PRE-FINAL DESIGN DEVELOPMENT - DBJV REVIEW	KC	2021-02-08
B	ISSUED FOR PRE-FINAL DESIGN DEVELOPMENT	KC	2021-02-25
C	ISSUED FOR FINAL DESIGN DEVELOPMENT - DBJV REVIEW	KC	2021-03-24
D	ISSUED FOR FINAL DESIGN DEVELOPMENT	KC	2021-04-15

LAYOUT INFORMATION BASED ON 3 DEGREE MTM ZONE 9 NAD 83 ORIGINAL COORDINATE SYSTEM. COMBINED SCALE FACTOR 0.9999

PRELIMINARY
NOT FOR CONSTRUCTION
2021-04-15

APPENDIX B

City of Ottawa Comments

File Number: D07-12-21-0088/

D02-02-21-0083

April 1, 2022

Joe Tallis

Sent via email: tallisje@gmail.com

Dear Mr. Tallis,

Re: Site Plan Control and Zoning By-law Amendment Applications

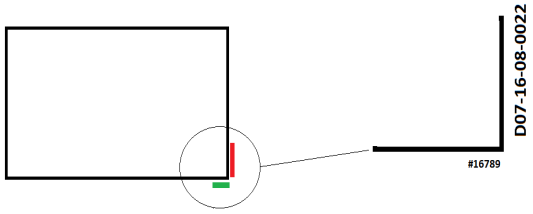
797 Richmond Road – Second Submission

The following comments are provided in response to the first submission of the above application. Please review the items below, revise plans accordingly and provide a cover letter indicating how each of the comments has been addressed through the resubmission. This should be one consolidated letter. ~~Please provide 3 sets of all revised plans as well as PDF copies of these plans.~~

Planning Comments:

General

1. On lower right hand corner of all the plans, include City's Application Number **D07-12-21-0088** and on lower bottom corner the Plan Number**: #18550**.



2. Amenity area within the top floor is not considered a permitted projection (Sec. 64), the building would therefore be considered a ten-storey, high-rise building, and would not be in-keeping with the direction of the Cleary and New Orchard Area

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Tél: (613) 580-2424
Téléc: (613) 580-2576
www.ottawa.ca

Secondary Plan (See Section 4.1). Please remove this space otherwise an Official Plan Amendment would be required.

3. I cannot proceed with the zoning component until we are satisfied with the building and site design aspects.

Planning Rationale & Zoning-Specific Comments

4. *Any portion of the building that is above 15 metres (above four storeys) must be set back a further 2m from the provided front yard setback, per Sec 197 (4)(d).* Unsure if this is properly demonstrated. Note that the 'provided front yard setback' is where the building is proposed, not what the front yard setback requirement is. Please indicate the following dimensions on both the Site Plan and Elevations drawings.

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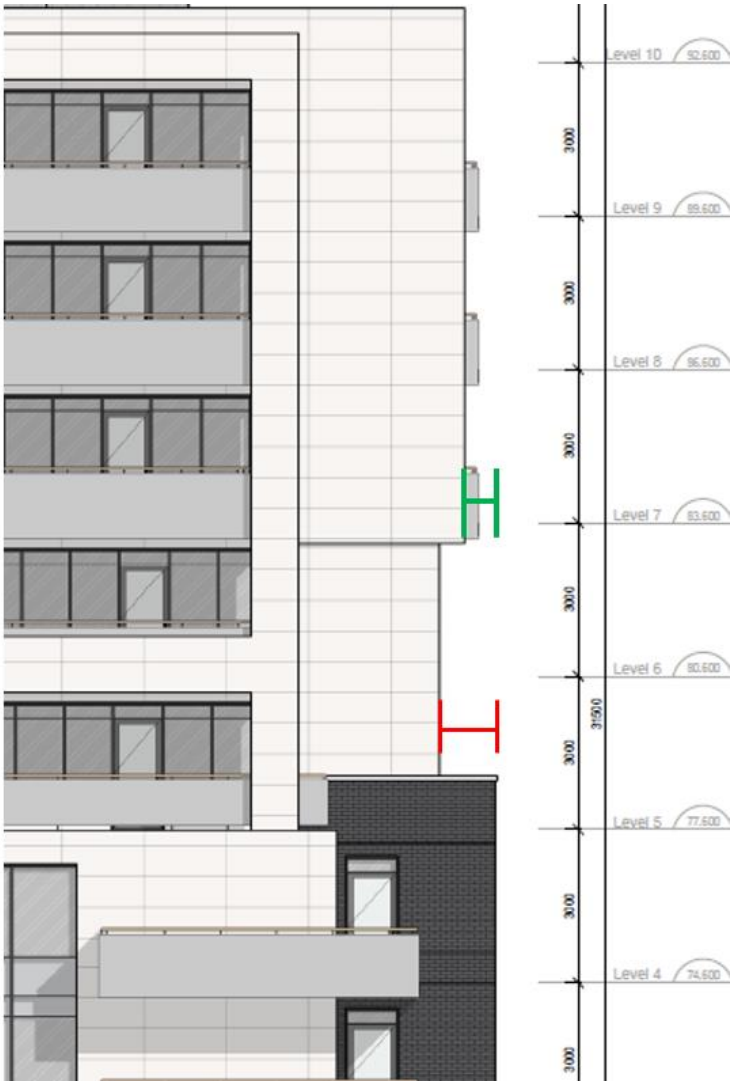

5. Is there an opportunity to provide a tree planting? Perhaps on the southwest corner.
6. Please provide a Sec. 37 calculation. See guidelines here: https://ottawa.ca/en/planning-development-and-construction/developing-property/development-application-review-process/development-application-submission/fees-and-funding-programs/section-37-implementation-guidelines

   I am looking for an as-of-right calculation of gross floor area vs. a proposed gross-floor area to ensure that you are not exceeding the 25% threshold. Note that GFA excludes mechanical and stairways. See zoning definitions Sec. 54 for further information.

Design Comments

7. Proximity of the building to the west property line and the impacts by any potential development on the neighbouring 801 Richmond Road must be taken into consideration. I am wondering why the applicant hasn't chosen to flip the site plan by having the wider setback on the west side of the site? The low-rise building as part of the Continental project is likely to be there for a long time.
8. The building massing should be further studied to avoid have a larger floor plate on the upper floors as previously indicated.
9. The building façade should be further studied and can benefit from some simplifications as well as a bit more reflective of the internal functions. For example, the building floor plans are not symmetrical at all on all floors but the façade design appears to be struggling to be symmetrical, resulting in a design that is somewhat symmetrical through the "frames", but asymmetrical on the underlying layer which is where the doors and windows are actually located.
10. Please provide updated renderings and updated Design Brief.

Engineering Comments

Phase II- Environmental Site Assessment

Prepared by Paterson Group

11. Reminder that the following will be included in the conditions of approval:
    - submission of a filed RSC,
    - submission of a copy of the revised phase two ESA with the remediation report appended.

Transportation Noise and Vibration Assessment,

Prepared by Gradient Wind dated May 20,2021

12. Please note that Stationary Noise Assessment requirement will be included in the Site plan Conditions

Geotechnical Investigation

Prepared by Paterson Group dated 27th January 2022

13. For easy interpretation of Vibration Monitoring Plan on site, please include a sketch detailing where the 4 vibration monitors will be installed on site. Include a table on

the sketch showing the warning and exceedance level and the required action for various Frequency range.

Site Servicing & Stormwater Management Report**,**
Prepared by Ainley Consulting Revised February 07,2022

14. Please include email confirmation from the Architect within the Appendix regarding the building construction to confirm the building assumptions made in the FUS fire flow requirement calculations are accurate for type of construction, occupancy type and sprinkler protection to justify the selections. Correspondence shall be provided within the Appendix of the report as supporting documentation. **Note this is required before site plan approval**

Plan Specific Comments:
General

15. Please provide the footing layout plans to confirm that the building footing will not extend beyond the new property line. If the footing plan is not ready yet, please provide a confirmation letter from the architect

16. Please note if a shoring system with tie backs encroaching the ROW is proposed then a Municipal Consent Circulation would be required. The installation of any structure, structure footing, geo-membrane or perforated pipe encroaching into the existing ROW is not permitted without a separate Municipal Consent Approval.

Grading and Drainage plan
Prepared by Ainley Group dated February 7th 2022

17. Grading Plan and Post development drainage area plan shows major overland flow from the outdoor amenity area, Area A2 and Area A4 flow towards 30 Clearly Ave and 25 Cleary Ave.

- For Area A4 Private Drainage agreement will be required with 30 Clearly Ave and 25 Cleary Ave, this will be the condition of the Site plan Agreement.
- For Amenity Area and Area A2, it is Owner's responsibility to maintain and clean the inlet CBs. Please look into options of adding another CB in the amenity are to avoid risk of blocking in this area.

- Please ensure Emergency flow from the underground storage tank flows to the ROW and not towards the neighboring properties. Discuss in the servicing Report and add note on the servicing plan

18. A permission letter is required from the neighbouring property owner(s) for any works planned on private properties. This is in reference to surface drainage work and retaining wall(s) work planned for this site. Provide a detailed permission letter, signed, dated & witnessed, to the file lead as soon as possible. **Note this is required before site plan approval**

Site Servicing Plan

Prepared by Ainley Group dated 7th February 2022

19. Sanitary inspection chamber and Valve boxes are not recommended in the ROW. Instead of a Sanitary Inspection chamber in the ROW, please look into options of having a Sanitary inspection Ports inside the building.

20. Is there any separation between the proposed toe of footing and front face of the foundation wall? If yes, can this space be used for placing the valve box? This will help ensure that valve box is at the property line.

For 150mm Sanitary service connection to 225mm Concrete sanitary sewer, a 150mm mm core on a 225 concrete pipe will result in a weak connection which may result in infiltration or leaks. To avoid this the contractor would have to use a 250mm x 250mm x 135mm tee branch, and then install a short section of 250mm PVC into both sides of the tee branch, and then connect to the existing clay pipe on each side using a 250mm PVC x 225mm clay rubber coupler. Please add note on the servicing drawing. **LRT**

Transportation PM Comments

Transportation Engineering

21. TES supports the omission of Step 3 Forecasting. Given the low person trip generation, the low auto mode share target for the area and the current redesign of Richmond Road there is little reason to review the Synchro analysis for study area intersections. However, the site needs to support the TOD mode shares so that auto trips are kept to a minimum and pedestrians, cyclists and transit riders are well supported.

22. The submitted proposed site plan includes significant commercial space and a suggested drive through layby. As detailed below, the proposed accesses are not

supported by the PABL or the secondary plan. Consider removal or reduction of the commercial components to the site plan to reduce the access needs. Clarify how loading/delivery will be supported for a commercial property.

23. The draft report is missing several items required as per the TIA Guidelines. For example, there is no reference to the 5-year collision history in the vicinity of the site, the TMP's listing of Richmond Road (and Wellington Street West and Somerset Street West) being scheduled to have transit signal priority and queue jump lanes at select intersections between Woodroffe Avenue and Bank Street, reference to neighboring developments, Module 2.2. of the TIA Guidelines, etc. Ensure that the final submission covers all requirements of the TIA Guidelines.

24. Appendix B uses the ITE trip generation manual for calculation of residential trips. The 2020 TRANS trip generation manual must be used for residential developments. The ITE manual would still be used for forecasting of the commercial component. Please also correct the "Error! Reference source not found" messages in Appendix B.

25. Ensure that the site plan and report reflect the correct amount of ZBL parking spaces required, and that the provision and design of accessible parking is consistent with the AODA IASR. Also, ensure that building setbacks, retaining walls, parking spaces, etc. do not conflict with the ROW widening requirement for Richmond Road.

26. As mentioned in the report, this site is in immediate proximity of the Stage 2 LRT corridor. The City of Ottawa will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid rights-of-way.

27. In Design Priority Areas, all public projects, private developments, and community partnerships within the public realm will be reviewed for their contribution to an enhanced pedestrian environment and their response to the distinct character and unique opportunities of the area. The public realm/domain refers to all those private and publicly owned spaces and places, which are freely available to the public to see and use.

Site Plan Comments:

28. The site access appears to be almost directly abutting the adjacent property line. This does not conform to Section 25.1.p of the PABL.

29. Illustrate the proposed reconstruction of Richmond Road on the site plan drawings. Indicate where the proposed 3m sidewalk and 2m cycle track (part of the Richmond Road design) will be in relation to the property line.

30. The proposed site layby is not accepted for various reasons:

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1. The layby is not entirely on private property.
2. It adds more conflict points between vehicles and vulnerable road users at each access on this cross-town bikeway.
3. It leads to the site not conforming to Sections 25.1.a, 25.1.g, and 25.1.m of the PABL.
4. Does not support the guiding principle of the secondary plan to give priority to transit mode share over auto mode share.

31. Figure 4 shows a 19% underground parking ramp slope. Slopes exceeding 15% can be a psychological barrier to some drivers. When the underground parking ramp's slope exceeds 8%, a vertical-curve transition or a transition slope of half the ramp should be implemented. In addition, when the slope is exceeding 6%, a subsurface melting device should be used.

32. Cyclists will be very challenged to use the underground parking ramp. Review and provide a more comfortable option for cyclists to access bike storage. Also consider providing a more sheltered and secure exterior bike storage especially the spaces behind the building.

33. Provide site access grade and ensure compliance with Section 25.1.t of the PABL.

Traffic Signal Operations

34. We concur with TES that a Synchro analysis may not be beneficial given the Richmond Road reconstruction. However, it should be documented/demonstrated that there will be minimal auto share and negligible impact to road network in adherence to the exemption threshold values. There is concern that the TIA report forecasted travel demand generated by the commercial portion of the development will not reflect post occupancy behaviors. If the commercial portion remains as part of the site plan submission, a monitoring program is recommended.

Transit Services

35. Given the subject site's location in a design priority area and proximity to bus stops and the future O-Train station, we would like to see the following:

1) Parking: The subject site is located in Area Z (Schedule 1A of City Zoning By-law). No off-street parking is required as per the zoning by-law other than the five visitor parking spaces that are proposed. Provide justification of the proposed parking supply, as increased parking supply can lead to decreased transit usage.

2) Transit incentive: A transit fare incentive can help encourage transit usage. A transit fare incentive should be included, such as "offer at least one year of free monthly transit passes on residence purchase/move in". This is from the TDM Measures Checklist, Version 1.0 (June 2017).
3) Larger building: The subject site is a great location for increased density. The applicant needs to seek a variance on the maximum building height with the proposed plans. Has the applicant or City considered a larger building with more units at this site? Note, however, that if more units are proposed, a transit capacity analysis for stops 2459, 4924, 7512 and 7513 will be required. Contact octdevelopmentreview@ottawa.ca for peak hour boarding, alighting and average load at departure data for these stops if necessary.

36. In response to the applicant's request for forecasted transit ridership information at Sherbourne Station:

2031 AM Peak Hour Ridership Forecast - Sherbourne Station

- EB Boardings: 565
- EB Alightings: 404
- EB Load: 11,895
- WB Boardings: 110
- WB Alightings: 163
- WB Load: 2,594

2048 AM Peak Hour Ridership Forecast - Sherbourne Station

- EB Boardings: 636
- EB Alightings: 455
- EB Load: 13,393
- WB Boardings: 124
- WB Alightings: 184
- WB Load: 2,921

General Comments

37. Richmond Road is designated as an Arterial road within the City's Official Plan and subject to unequal widening with a ROW protection limit of 7.5 meters on North side and the offset distance is to be dimensioned from the existing centerline of pavement and shown on the drawings.

38. All underground and above ground building footprints and permanent walls need to be shown on the plan to confirm that any permanent structure does not extend either above or below into the existing property lines and/or future road widening protection limits.

39. Permanent structures such as curbing, stairs, retaining walls, and underground parking foundation also bicycle parking racks are not to extend into the City's right-of-way limits.

40. The consultant should review the sight distance to the access and any obstructions that may hinder the view of the driver.

41. The concrete sidewalk should be 2.0 metres in width and be continuous and depressed through the proposed access.

42. The closure of an existing private approach shall reinstate the sidewalk, shoulder, curb and boulevard to City standards.

43. The proponent shall comply with the Private Approach By-Law 2003-447

44. The Owner shall be required to enter into maintenance and liability agreement for all pavers, plant and landscaping material placed in the City right-of-way and the Owner shall assume all maintenance and replacement responsibilities in perpetuity.

45. Bicycle parking spaces are required as per Section 111 of the Ottawa Comprehensive Zoning By-law. Bicycle parking spaces should be located in safe, secure places near main entrances and preferably protected from the weather.

46. A construction Traffic Management Plan is to be provided for approval by the Senior Engineer, Traffic Management, Transportation Services Dept.

Waste Collection Services

47. My only concern with this site plan is at the exit of the garbage room there is a parking spot that should not be there unless barriers are installed and a walking of 2.2 m is given to bring the bins out.

Sincerely,

John Bernier MCIP, RPP

Planner, Development Review Urban Services Branch

Planning, Infrastructure and Economic Development Department

APPENDIX C

TDM-Supportive Development Design and Infrastructure Checklist

Introduction

The City of Ottawa's *Transportation Impact Assessment (TIA) Guidelines* (specifically Module 4.1—Development Design) requires proponents of qualifying developments to use the City's **TDM-Supportive Development Design and Infrastructure Checklist** to assess the opportunity to implement design elements that are supportive of sustainable modes. The goal of this assessment is to ensure that the development provides safe and efficient access for all users, while creating an environment that encourages walking, cycling and transit use.

The remaining sections of this document are:

- Using the Checklist
- Glossary
- TDM-Supportive Development Design and Infrastructure Checklist: Non-Residential Developments
- TDM-Supportive Development Design and Infrastructure Checklist: Residential Developments

Readers are encouraged to contact the City of Ottawa's TDM Officer for any guidance and assistance they require to complete this checklist.

Using the Checklist

This **TDM-Supportive Development Design and Infrastructure Checklist** document includes two actual checklists, one for non-residential developments (office, institutional, retail or industrial) and one for residential developments (multi-family or condominium only; subdivisions are exempt). Readers may download the applicable checklist in electronic format and complete it electronically, or print it out and complete it by hand. As an alternative, they may create a freestanding document that lists the design and infrastructure measures being proposed and provides additional detail on them.

Each measure in the checklist is numbered for easy reference. Each measure is also flagged as:

- 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.

Glossary

This glossary defines and describes the following measures that are identified in the **TDM-Supportive Development Design and Infrastructure Checklist**:

Walking & cycling: Routes
- Building location & access points
- Facilities for walking & cycling
- Amenities for walking & cycling

Walking & cycling: End-of-trip facilities
- Bicycle parking
- Secure bicycle parking
- Shower & change facilities
- Bicycle repair station

Transit
- Walking routes to transit
- Customer amenities

Ridesharing
- Pick-up & drop-off facilities
- Carpool parking

Carsharing & bikesharing
- Carshare parking spaces
- Bikeshare station location

Parking
- Number of parking spaces
- Separate long-term & short-term parking areas

Other
- On-site amenities to minimize off-site trips

In addition to specific references made in this glossary, readers should consult the City of Ottawa's design and planning guidelines for a variety of different land uses and contexts, available on the City's website at www.ottawa.ca. Readers may also find the following resources to be helpful:

- *Promoting Sustainable Transportation through Site Design*, Institute of Transportation Engineers, 2004 (www.cite7.org/wpdm-package/iterp-promoting-sustainable-transportation)
- *Bicycle End-of-Trip Facilities: A Guide for Canadian Municipalities and Employers*, Transport Canada, 2010 (www.fcm.ca/Documents/tools/GMF/Transport_Canada/BikeEndofTrip_EN.pdf)

▶ *Walking & cycling: Routes*

Building location & access points. Correctly positioning buildings and their entrances can help make walking convenient, comfortable and safe. Minimizing travel distances and maximizing visibility are key.

Facilities for walking & cycling. The Official Plan gives clear direction on the provision and design of walking and cycling facilities for both access and circulation. On larger, busier sites (e.g. multi-building campuses) the inclusion of sidewalks, pathways, marked crossings, stop signs and traffic calming features can create a safer and more supportive environment for active transportation.

Amenities for walking & cycling. Lighting, landscaping, benches and wayfinding can make walking and cycling safer and more secure, comfortable and accessible.

▶ *Walking & cycling: End-of-trip facilities*

Bicycle parking. The Official Plan and Zoning By-law both address the need for adequate bicycle parking at developments. Weather protection and theft prevention are major concerns for commuters who spend hundreds or thousands of dollars on a quality bicycle. Bicycle racks should have a design that enables secure locking while preventing damage to wheels. They should be located within sight of busy areas such as main building entrances or staffed parking kiosks.

Secure bicycle parking. Ottawa's Zoning By-law requires a secure area for bicycles at office or residential developments having more than 50 bicycle parking spaces. Lockable outdoor bike cages or indoor storage rooms that limit access to registered users are ideal.

Shower & change facilities. Longer-distance cyclists, joggers and even pedestrians can need a place to shower and change at work; the lack of such facilities is a major barrier to active commuting. Lockers and drying racks provide a place to store gear away from workspaces, and showers and grooming stations allow commuters to make themselves presentable for the office.

Bicycle repair station. Cycling commuters can experience maintenance issues that make the homeward trip difficult or impossible. A small supply of tools (e.g. air pump, Allen keys, wrenches) and supplies (e.g. inner tube patches, chain lubricant) in the workplace can help.

▶ *Transit*

Customer amenities. Larger developments that feature an on-site transit stop can make transit use more attractive by providing shelters, lighting and benches. Even better, they could integrate the passenger waiting area into a building entrance.

▶ *Ridesharing*

Pick-up & drop-off facilities. Having a safe place to load or unload passengers (for carpools as well as taxis and ride-hailing services) without obstructing pedestrians, cyclists or other vehicles can help make carpooling work.

Carpool parking. At destinations with large parking lots (or lots that regularly fill to capacity), signed priority carpool parking spaces can be an effective ridesharing incentive. Priority spaces are frequently abused by non-carpoolers, so a system to provide registered users with vehicle identification tags is recommended.

▶ *Carsharing & bikesharing*

Carshare parking spaces. For developments where carsharing could be an attractive option for employees, visitors or residents, ensuring an attractive location for future carshare parking spaces can avoid challenges associated with future retrofits.

Bikeshare station location. For developments where bikesharing could be an attractive option for employees, visitor or residents, ensuring an attractive location for a future bikeshare station can avoid challenges associated with future retrofits.

▶ *Parking*

Number of parking spaces. Parking capacity is an important variable in development design, as it can either support or subvert the mode share targets set during the transportation impact analysis (TIA). While the Zoning By-law establishes any minimum and/or maximum requirements for parking capacity, it also allows a reduction in any minimum to reflect the existence of on-site shower, change and locker rooms provided for cyclists.

Separate long-term & short-term parking areas. Because access to unused parking spaces can be a powerful incentive to drive, developments can better manage their parking supply and travel behaviours by separating long-term from short-term parking through the use of landscaping, gated controls or signs. Doing so makes it difficult for long-term parkers (e.g. commuters) to park in short-term areas (e.g. for visitors) as long as enforcement occurs; it also protects long-term parking capacity for its intended users.

▶ *Other*

On-site amenities to minimize off-site trips. Developments that offer facilities to limit employees' need for a car during their commute (e.g. to drop off children at daycare) or during their workday (e.g. to hit the gym) can free employees to make the commuting decision that otherwise works best for them.

TDM-Supportive Development Design and Infrastructure Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

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: *Non-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: *Non-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: *Non-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 commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☐
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office 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 the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☐
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
	2.4	**Bicycle repair station**	
BETTER	2.4.1	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)	☐

	TDM-supportive design & infrastructure measures: *Non-residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	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	☐
	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	☐
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(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	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	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	Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	☐
	7.	**OTHER**	
	7.1	**On-site amenities to minimize off-site trips**	
BETTER	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐

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 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)	☐