110 O'Connor St

TIA Final Report

Final

November 2024

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.**

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

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110 O'Connor St

TIA Final Report

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TIA FINAL REPORT

Parsons has been retained by Edifice 110 O'Connor Inc. (Mach) to prepare a TIA in support of a Site Plan Control Application for a proposed mixed-use residential development with ground floor retail located at the municipal address of 110 O'Connor St. This document follows the TIA process as outlined in the City of Ottawa Transportation Impact Assessment (TIA) Guidelines (2017). The following report represents Step 4 – Final Report.

1.0 SCREENING FORM

The Screening Form confirmed the need for a TIA Report based on all the triggers: the Trip Generation Trigger was met as the development is anticipated to generate more than 60 person trips during peak hours; the Location Trigger was met as the development is located within a design priority area, transit oriented development and Crosstown Bikeway Network; and, the Safety Trigger was met as the development is located near the influence of a traffic signal. The Screening Form and Site Plan have been provided in **Appendix A**.

2.0 SCOPING REPORT

2.1. Existing and Planned Conditions

2.1.1. Proposed Development

The proposed development is bound by Laurier Ave to the south, Bank St to the west and fronting Slater St to the north and O'Connor St to the east. The site is currently occupied by a 14-storey office building which is proposed to be replaced by a 25-storey mixed-use building. The site is currently zoned as mixed-use downtown, MD S32. The site context is illustrated in **Figure 1**.

The development will consist of approximately 413 residential units and 5,200 ft² ground floor retail. The development will provide a total of 65 vehicle parking spaces located in a three-level underground parking garage and 309 bike parking spaces, with 299 of them located indoors in a secure room within the first and second underground parking levels.

The development proposal includes a new vehicle garage ramp off O'Connor St at the southeast corner of the property. There is also an existing driveway off Slater St at the northwest corner of the property that will be maintained to accommodate tenant moving truck operations. Garbage pick-up will be accommodated on-street off Slater St. The proposed development is anticipated to be constructed in a single phase tentatively by 2026. The site plan has been illustrated in **Figure 2** with a high-quality image in **Appendix A.**

Figure 1: Local Context

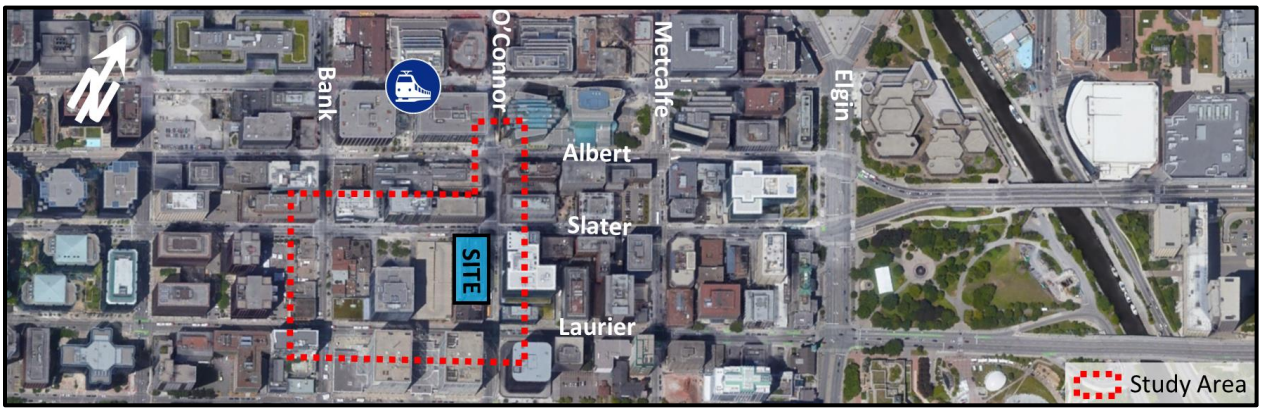
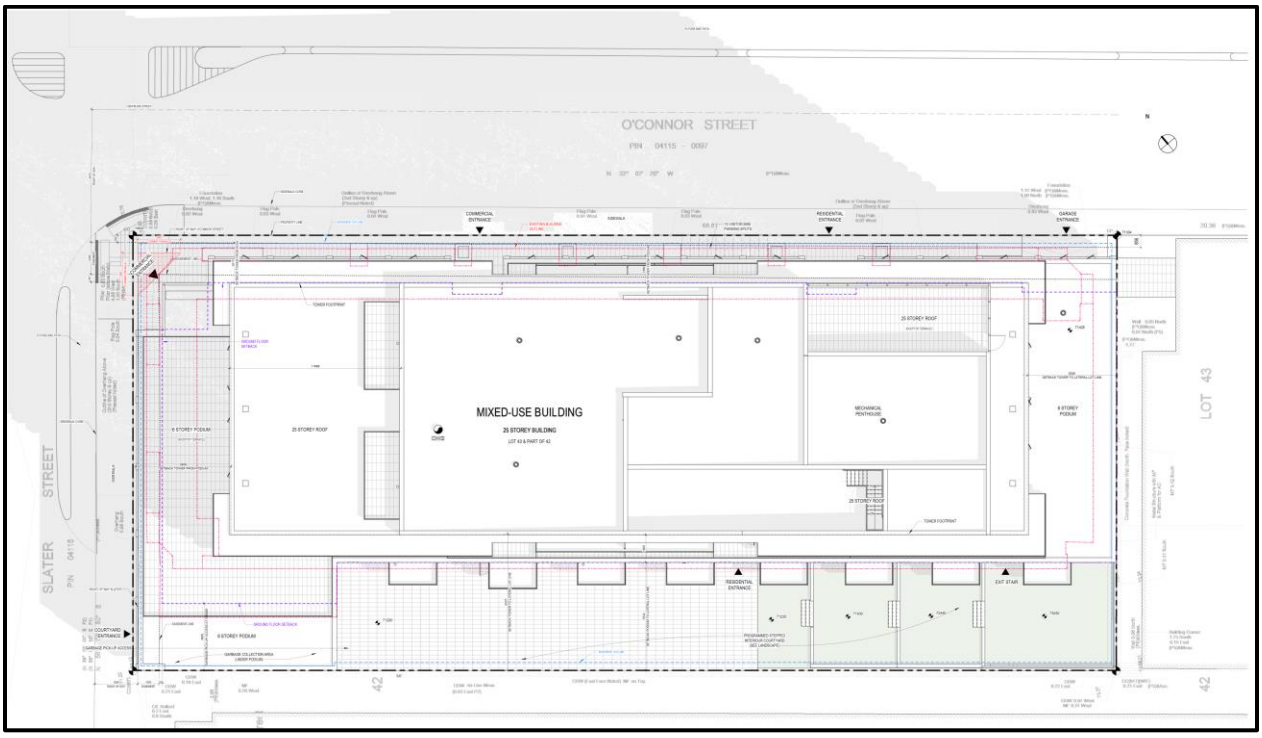


Figure 2: Proposed Site Plan



2.1.2. Existing Conditions

Area Road Network

A description for each road within the study area included in the TIA has been provided below.

O'Connor St is a north-south arterial road that extends from Wellington St in the north to Holmwood Ave in the south. Within the study area, the road operates with southbound only vehicular traffic but offers a bi-directional cycle-track on the east side of the road originating south of Laurier Ave. North of Laurier Ave, on-street parking is available on the east side of the road. The roadway consists of an undivided three-lane urban cross-section with an unposted speed limit assumed as 50km/h. The Official Plan identifies a 20m right-of-way, subject to easement policy with maximum land requirement of 1.5m.

Bank St is a north-south arterial road that extends from Wellington St in the north to beyond city limits in the south. Within the study area, the roadway typically operates as a two-way two-lane undivided urban cross-section with an unposted speed limit assumed as 50km/h. The Official Plan identifies a 20m right-of-way.

Albert St is an east-west arterial road that extends from the Mackenzie King Bridge in the east to Bayview Station Rd in the west, where it continues as Scott St. Within the study area, the roadway typically operates as a westbound only one-way three-lane undivided urban cross-section, including a bus/taxi only lane during peak hours with an unposted speed limit assumed as 50km/h. On-street parking and loading areas are provided on both sides of the road during off-peak hours. The Official Plan identifies a "variable right-of-way".

Slater St is an east-west arterial road that extends from the Mackenzie King Bridge in the east to Empress Ave in the west, where it continues as Albert St. Within the study area, the roadway typically operates as an eastbound only one-way three-lane undivided urban cross-section, including a bus/taxi only lane during peak hours with an unposted speed limit assumed as 50km/h. On-street parking and loading areas are provided on both sides of the road during off-peak hours. The Official Plan identifies a "variable right-of-way", subject to easement policy with maximum land requirement of 1.25m.

Laurier Ave is an east-west arterial road that extends from the Charlotte St in the east to Cambridge St in the west. Within the study area, the roadway typically operates as a two-way two-lane undivided urban cross-section with an unposted speed limit assumed as 50km/h. Uni-directional cycle-tracks are provided on both sides of the road. The Official Plan identifies a 20m right-of-way.

Existing Study Area Intersections

Note that the figures below illustrate general vehicle travel lanes available during the AM and PM peak hours. It is acknowledged that from aerial views some road corridors such as Albert St, Slater St and O'Connor St may appear to have more lanes, but some are dedicated bus/taxi only lanes or provide parking during peak hours and were therefore not considered within general vehicle capacity for the Synchro model.

Slater St/Bank St

The Slater/Bank intersection is a four-legged signalized intersection, where the east-west movements are limited to eastbound only. The southbound approach consists of a single through lane with all turns prohibited. The northbound approach consists of a single through lane with right-turns prohibited between 7:00-17:30 Monday to Friday (busses excepted). The eastbound approach consists of a left-turn lane with prohibited turns between 7:00-9:00 and 15:00-18:00 Monday to Friday, a single general vehicle through lane (plus a bus/taxi only through lane), and a right-turn lane which provides on-street parking during off peak-hours.

Laurier Ave/Bank St

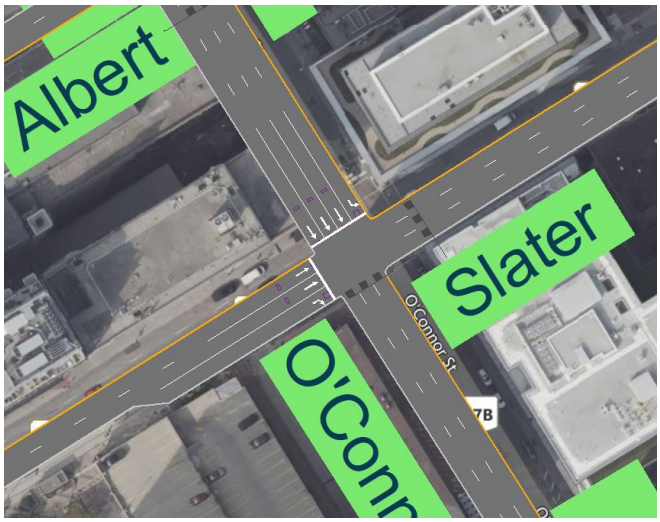
The Laurier/Bank intersection is a four-legged signalized intersection. The southbound and northbound approaches consist of a through lane and a right-turn lane. The eastbound movement consists of a though lane and a right-turn lane. The westbound approach consists of a shared through-right turn lane. All right-turns have a no-right-turn-on-red restriction, and all left-turns are prohibited at this intersection. Bike signals are provided for east-west movements at this intersection.

Albert St/O'Connor St

The Albert/O'Connor intersection is a four-legged signalized intersection, where the east-west movements are limited to westbound only and north-south movements limited to southbound only. The southbound approach consists of a double through lane and a shared through-right lane (note that an additional lane is created from an underground garage ramp that exits parallel to the through lanes). The westbound approach consists of a dual general vehicle through lane (plus a bus/taxi only through lane), and a left-turn lane which provides on-street loading area upstream of the intersection.

Slater St/O'Connor St

The Slater/O'Connor intersection is a four-legged signalized intersection, where the east-west movements are limited to eastbound only and north-south movements limited to southbound only. The southbound approach consists of a triple through lane and a left-turn lane. The eastbound approach consists of a dual general vehicle through lane (plus a bus/taxi only through lane), and a right-turn lane which has turning-prohibitions between 7:00-9:00 and 15:00-18:00 Monday to Friday.



Laurier Ave/ O'Connor St

The Laurier/O'Connor intersection is a four-legged signalized intersection, where the north-south movements are limited to southbound only. The southbound approach consists of a through lane, a through-left lane and a through-right lane. The eastbound approach consists of a shared through-right turn lane. The westbound movement consists of a though lane and a left-turn lane. All right-turns have a no-right-turn-on-red restriction. Bike signals are provided for east-west movements at this intersection.

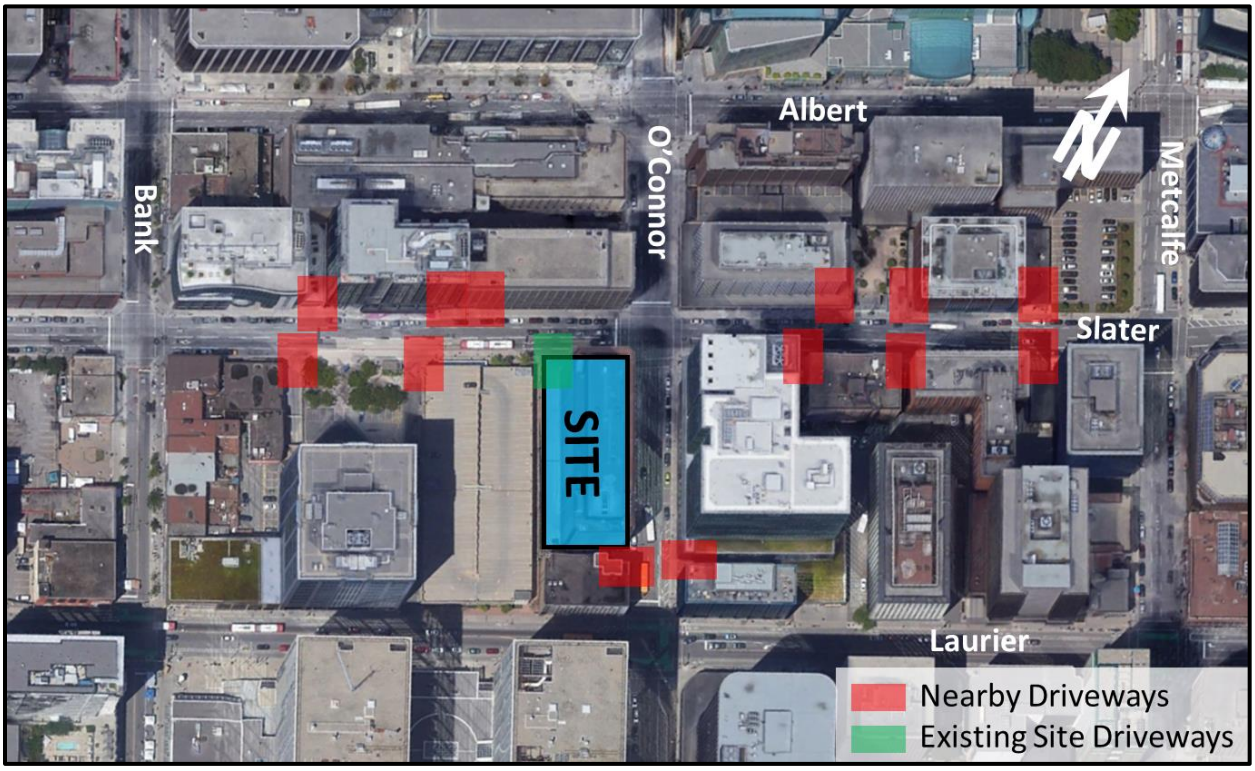
Existing Driveways to Adjacent Developments

Only driveways along O'Connor St and Slater St were considered as the site only fronts those two streets, as shown in **Figure 3**. Two driveways were identified on O'Connor St, one located just south of the proposed

development, servicing a garbage bin (garbage pick-up spot for adjacent site), and one across from the proposed development.

There are 12 driveways leading to surface and/ or underground parking spaces along Slater St within the study area. The proposed development intends to retain the existing driveway to the site from Slater St and provide a new access on the southeast quadrant of the site.

Figure 3: Adjacent Driveways within 200m of Site Access



Existing Area Traffic Management Measures

Existing area traffic management measures within the study area include turn restrictions at Slater/Bank during peak hours and no-right-on-red, bike boxes and leading signal intervals at study intersections with Laurier Ave.

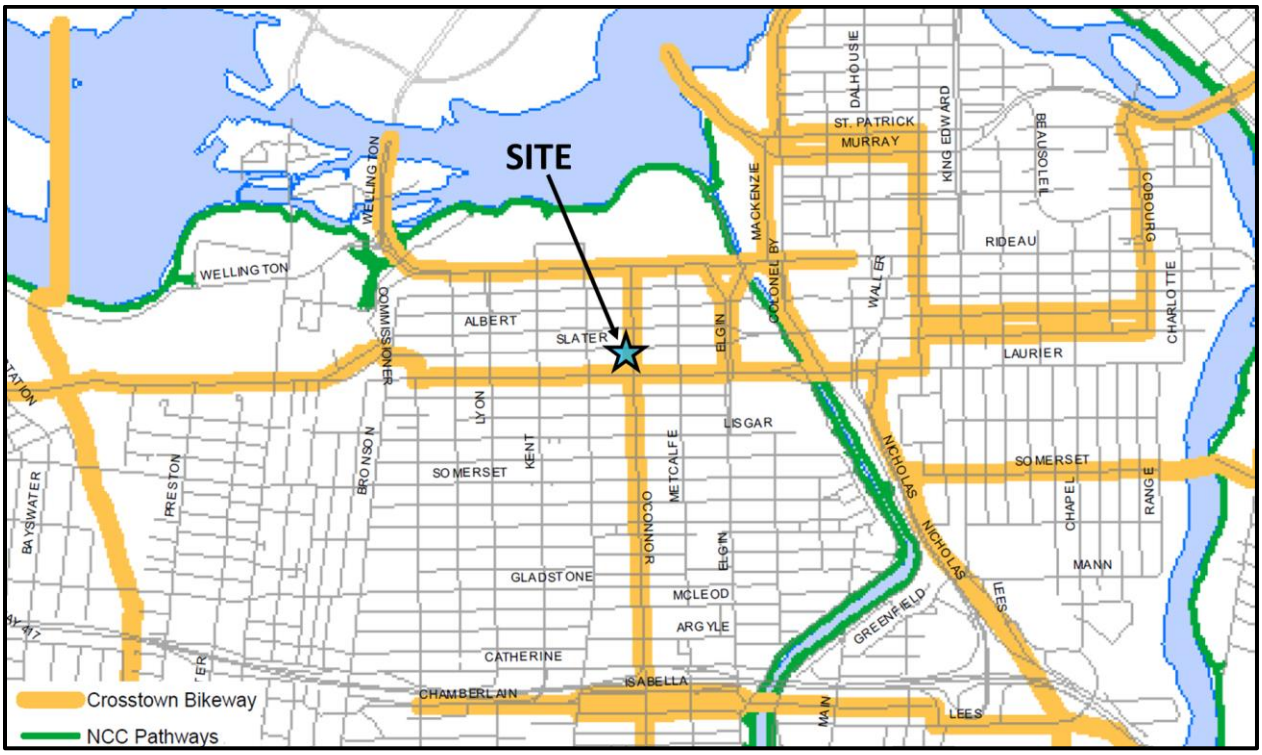
Existing Pedestrian/Cycling Network

Sidewalks are provided on both sides of all study area roads.

The Crosstown Bikeway Network (March 1, 2023)[1] from the new Transportation Master Plan classifies O'Connor St and Laurier Ave as crosstown bikeways as shown in **Figure 4**. O'Connor St provides a bi-directional cycle-track on the east side of the road from Laurier Ave to Pretoria Ave, where it continues as curbside bike lanes. Laurier Ave provides uni-directional cycle-tracks from Bronson Ave to Elgin St, where they continue as a mixture of painted bike lanes with occasional cycle-track treatment. Within the previous City of Ottawa's 2013 Cycling Plan, O'Connor St and Laurier Ave are identified as Crosstown Bikeways and spine routes, while Slater St and Albert St are identified as spine routes.

[1] Crosstown Bikeway Network, March 1, 2023

Figure 4: 2023 TMP Crosstown Bikeway Network



Transit Network

The following description of OC Transpo routes within the study area reflect the current transit operations:

- **Confederation LRT Line (Blair <-> Tunney's Pasture:** LRT providing grade-separated rapid transit operating 7 days a week at all time periods. The nearest LRT Station is located approximately 200m walk from the site on Queen St, at Parliament Station.
- **Various Frequent Routes Within 200m Walk:** OC Transpo identifies "Frequent Routes" as those operating every 15 minutes or less on weekdays and operate 7 days a week. Within a 200m walk, routes #6, 7, 11, 12 operate with bus stops located on Bank St or Queen St. These routes operate on major corridors such as via Montreal Rd, down St. Laurent Blvd, Sommerset St, Richmond Rd, Bank St, and connect major destinations such as Byward Market, Carleton University, and various shopping centers.
- **Local Routes:** there are various local routes near to the site, including routes #15, 16, 18, and 19 which operate on average every 30 minutes during weekdays. Destinations for these routes include Place du Portage (Gatineau), Montfort Hospital, Main St, Rideau, Vanier, St. Laurent, among others. All these routes have bus stops within 200m walking distance from the site near O'Connor/Queen intersection.
- **STO (Quebec) Routes:** The Gatineau bus network has a major eastbound bus stop on Slater St, less than 50m from the site. This stop provides service to STO bus routes #32, 34, 36, 37, 38, 55, 59, 67, 85, 87, 371 and rapi-bus 400 which has high frequency routing. A westbound stop for these routes is provided near the Albert/O'Connor intersection. Destinations for these routes include Rideau Mall and various destinations in Gatineau including Plateau, Les Promenades, Des Trembles, De La Gappe, CEGEP Gabrielle Roy, Freeman, Greber, Labrosse, Aylmer, etc.

The transit network for the study area is illustrated in **Figure 5** with **Figure 6** illustrating the bus and LRT stop locations near to the site for both OC Transpo[2] and STO[3].

Figure 5: Area Transit Network

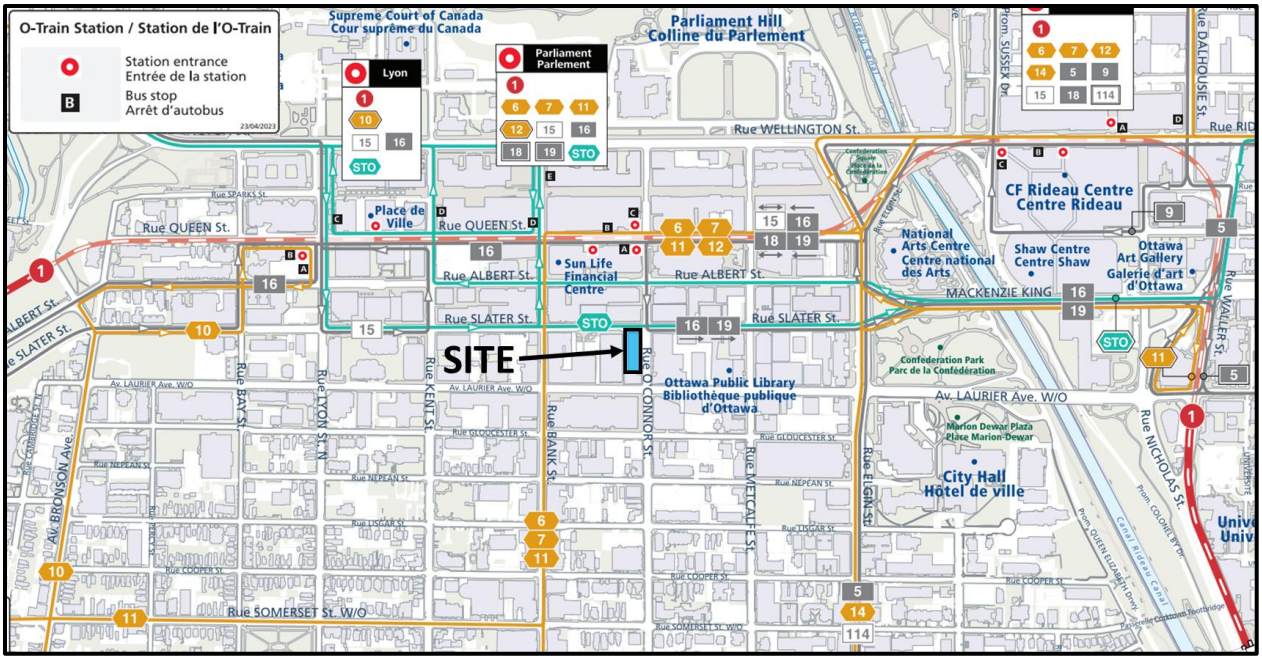
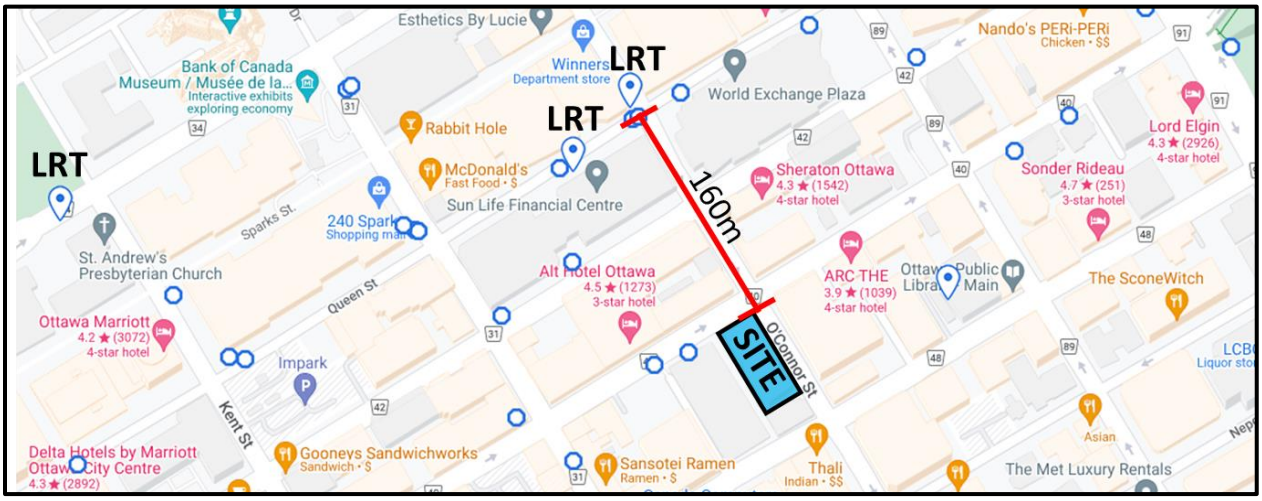


Figure 6: LRT & Bus Stop Locations



Peak Hour Travel Demands

Traffic count data was obtained from the City of Ottawa. The traffic volumes at study area intersections are illustrated in **Figure 7**, with raw traffic count data provided in **Appendix C**. Note that the count at Albert/O'Connor shows higher volumes than the rest of the study area intersections. This is likely to do with pre-Covid-19 traffic volumes (December 2019 count and stay at home orders started in March 2020). Following Covid-19, many

[2] https://www.octranspo.com/en/plan-your-trip/schedules-maps/network-map/

[3] https://www.sto.ca/en/schedules-and-routes/system-map/

downtown office workers have not returned to work in person and are working remotely, likely causing the exhibited reduction in traffic volumes for all counts post Covid-19. Existing active transportations volumes have been provided in **Figure 8**, however note that some were conducted in winter when active users, especially cyclists are expected to be lower than summer months.

Figure 7: Existing Peak Hour Vehicle Traffic Volumes

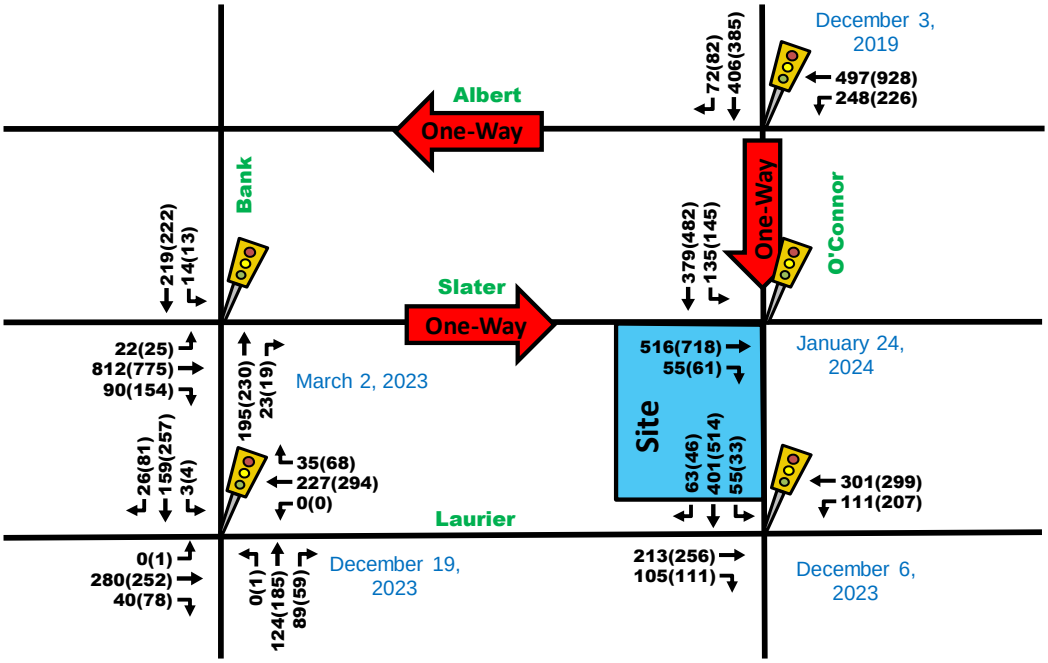
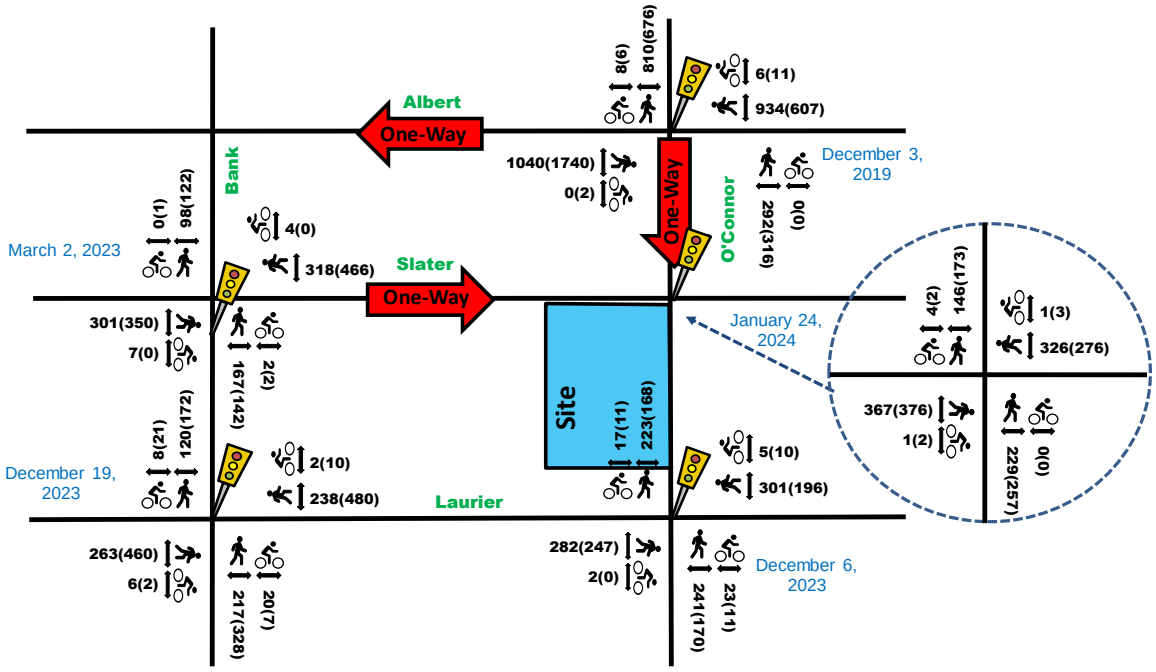


Figure 8: Existing Pedestrian and Cyclists Peak Hour Volumes



Existing Road Safety Conditions

A five-year collision history data (2017-2021, inclusive) was obtained from the City of Ottawa Open Data for the study area intersections, as well as road segments within the study area. Detailed collision analysis has been provided in **Appendix C**.

Upon analyzing the collision data, the total number of collisions observed within the study area was determined to be 116 collisions within the past five-years.

Table 1: Summary of Type, Quantity and Injury Producing Collisions

Classification of Accident	Rear End	Turning Move-ment	Side-swipe	Angle	Approa-ching	SMV Other	SMV Unatten ded	Other	Total
P.D. only	21	7	30	9	1	0	7	3	**78 (67%)**
Non-fatal injury	3	10	3	9	0	13	0	0	**38 (33%)**
Non-reportable	0	0	0	0	0	0	0	0	**0 (0%)**
Total	**24 (21%)**	**17 (15%)**	**33 (28%)**	**18 (16%)**	**1 (1%)**	**13 (11%)**	**7 (6%)**	**3 (3%)**	**116 (100%)**

Within the study area, the quantity of collisions plus collisions with pedestrians (peds) and bikes, and distance of mid-block at each location has occurred at a rate of (note: there were no collisions midblock on Bank St):

- Slater/Bank: 16; 2 peds, 0 bikes
- Laurier/Bank: 20; 2 peds, 6 bikes
- Albert/O'Connor: 15; 4 peds, 0 bikes
- Slater/O'Connor: 23; 3 peds, 0 bikes
- Laurier/O'Connor: 20; 1 peds, 5 bikes
- Mid-block on O'Connor St: 2 (160m)
- Mid-block on Slater: 5 (160m)
- Mid-block on Laurier: 15 (160m)
- Collisions with Pedestrians: 13 (11%)
- Collisions with Cyclists: 12 (10%)

All study area intersections had between 1 and 4 collisions with pedestrians, with Albert/O'Connor exhibiting the highest quantity of collisions at 4. Albert/O'Connor does however have the highest number of pedestrian crossings per hour of all intersections, likely as it is the closest intersection to an LRT Station portal. The chances of a collision with pedestrians at the study area intersections are increased compared to other intersections within the city which have lesser pedestrian activity due to increased exposure by numbers and probability per event of conflicting movements. Upon further inspection, all collisions with active transportation resulted in minimal to minor injury type, meaning that collisions likely involved slow moving vehicles.

Of the cyclist collisions, 12 of 12 (100%) occurred at a location involving Laurier Ave. Laurier Ave has uni-directional cycle-tracks on the north and south sides of the road. Of the 12 cyclist collisions, 10 (83%) were a result of turning movements, and 7 of those 10 (70%) occurred in 2017 or 2018. Using Google Streetview, it was observed that bike traffic signal heads were installed sometime between 2017 and 2018, which may of helped reduce future collisions with cyclists for the 2019 – 2021 remainder collision data. By providing leading cyclist intervals and allowing cyclists to proceed prior to vehicles receiving a green light to turn (no-right-on-red at all Laurier Ave study intersections), it places cyclists in a more visible area for drivers to see them at the start of a green phase or clears them past the intersection before vehicles can go.

To further prioritize active transportation, the City of Ottawa could consider lengthening the pedestrian/cyclist leading interval and should consider implementing them at downtown intersections that do not currently provide leading intervals, where applicable and appropriate.

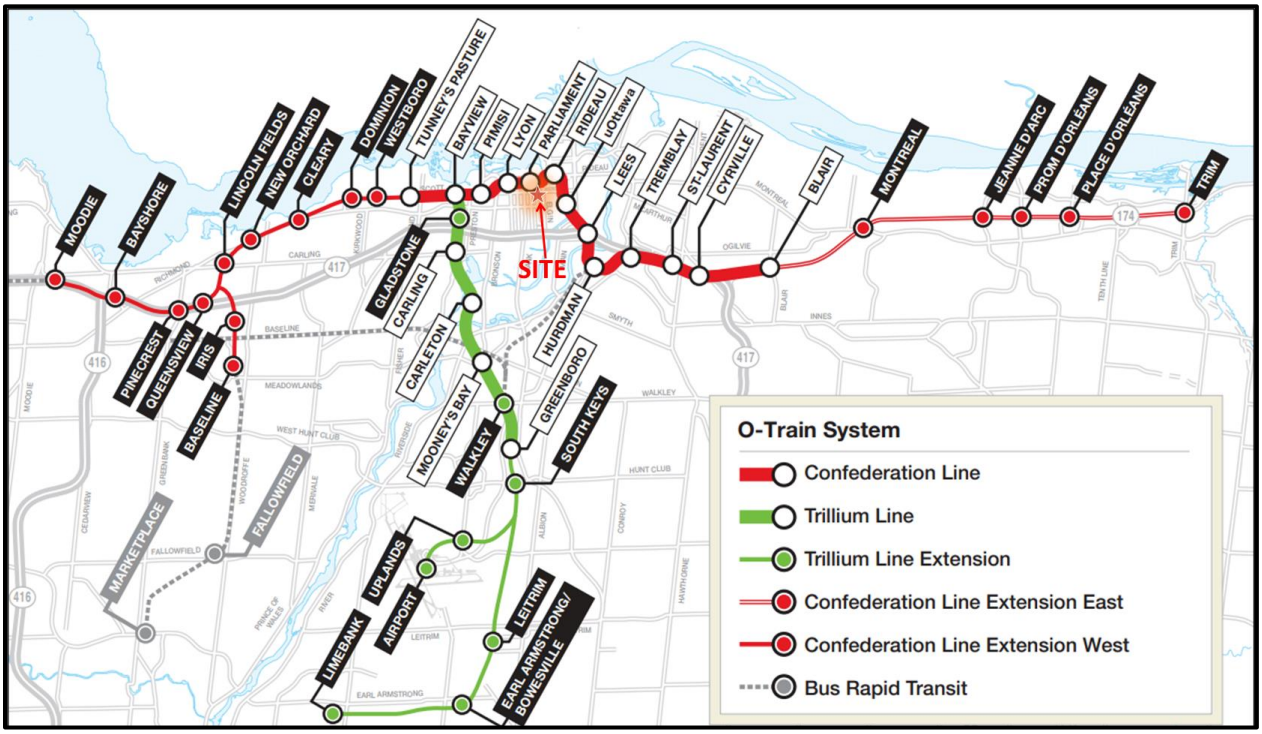
2.1.3. Planned Conditions

Future Transportation Network Changes

Ottawa LRT Stage 2 (Began Construction 2019)

Stage 2 of the City of Ottawa LRT system is currently under construction. Stage 2, as shown in **Figure 9,** is a package of three extensions – south, east and west – totaling 44 km of new rail and 24 new LRT stations. The site is located within 200m walking distance to already built and operational Parliament Station. Once this extension is complete, the site will have various new destinations using rapid grade-separated transit.

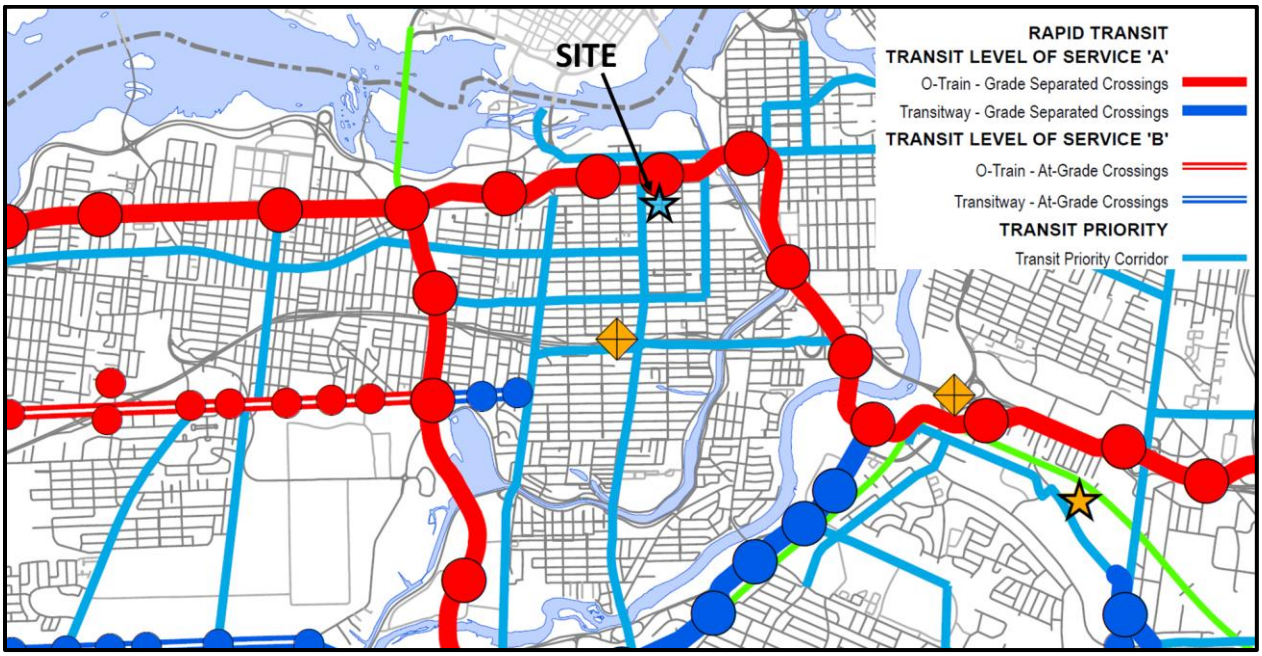
Figure 9: Stage 2 LRT System Map



Official Plan (2021)

According to the Official Plan, transit priority corridors are proposed on Elgin St, Bank St, Bronson Ave, Wellington St, Somerset St and Gladstone Ave within a relatively accessible radius from the site. Currently, there are no active studies for any of these transit priority corridors.

Figure 10: Official Plan – Ultimate Transit Network



Transportation Master Plan Update – Part 1 (2023)

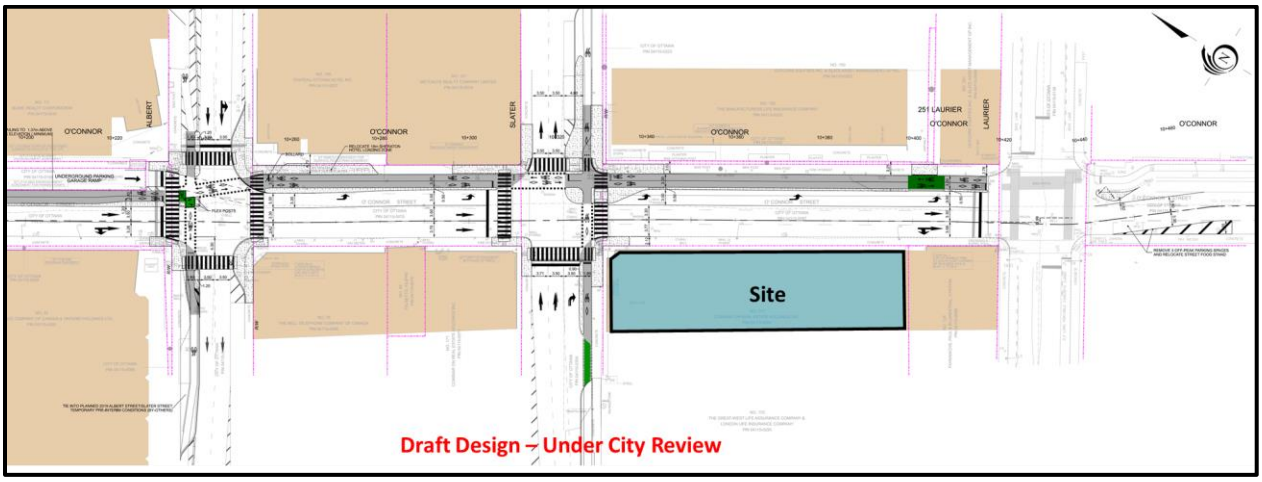
An update to the 2013 Transportation Master Plan (TMP) is currently ongoing. Details such as policy and active transportation project list have been released, but a detailed network map such as the "affordable network" has not been released yet. The complete TMP update is forecasted for 2025. As shown previously on **Figure 4** O'Connor St and Laurier Ave belong to the Crosstown Bikeway Network based on the 2023 TM. Within the active transportation project list, two infrastructure projects and one feasibility study have been noted within the reasonable distance from the proposed development, namely:

- O'Connor St (infrastructure): proposed separated cycling facilities on O'Connor St from Laurier Ave to Wellington St and resurfacing sidewalks (March 2019 Functional Design provided in **Appendix D**).
- Wellington St (infrastructure): proposed separated cycling facilities on Wellington St from Sussex Dr to the Portage Bridge. Proposed shared project between the City of Ottawa and the National Capital Commission (March 2019 Functional Design provided in **Appendix D**).
- Elgin St Cycling (feasibility study): feasibility study of adding cycling facilities on Elgin St from Laurier Ave to Wellington St.

Albert & Slater St Improvement Project (ongoing)

The City of Ottawa has prepared a study following the completion of Stage 1 LRT regarding Albert St and Slater St. Prior to the underground segment of LRT through the downtown core, buses used to operate on exclusive bus-only lanes, westbound on Albert St and eastbound on Slater St. Since the completion of the LRT, many of these buses have been removed from both of these roads and offer an opportunity to reallocate this space to other modes of transportation. In addition, both roads require watermain replacements which would present an opportunity to renew the road with contemporary designs. Such improvements to the streetscape could include addition of cycle tracks, on-street parking and/or widened sidewalks. A concept plan is illustrated in **Figure 11**, with detail on other study area intersections provided in **Appendix D**.

Figure 11: Slater St, Albert St and O'Connor St Concept Plan (March 2024)



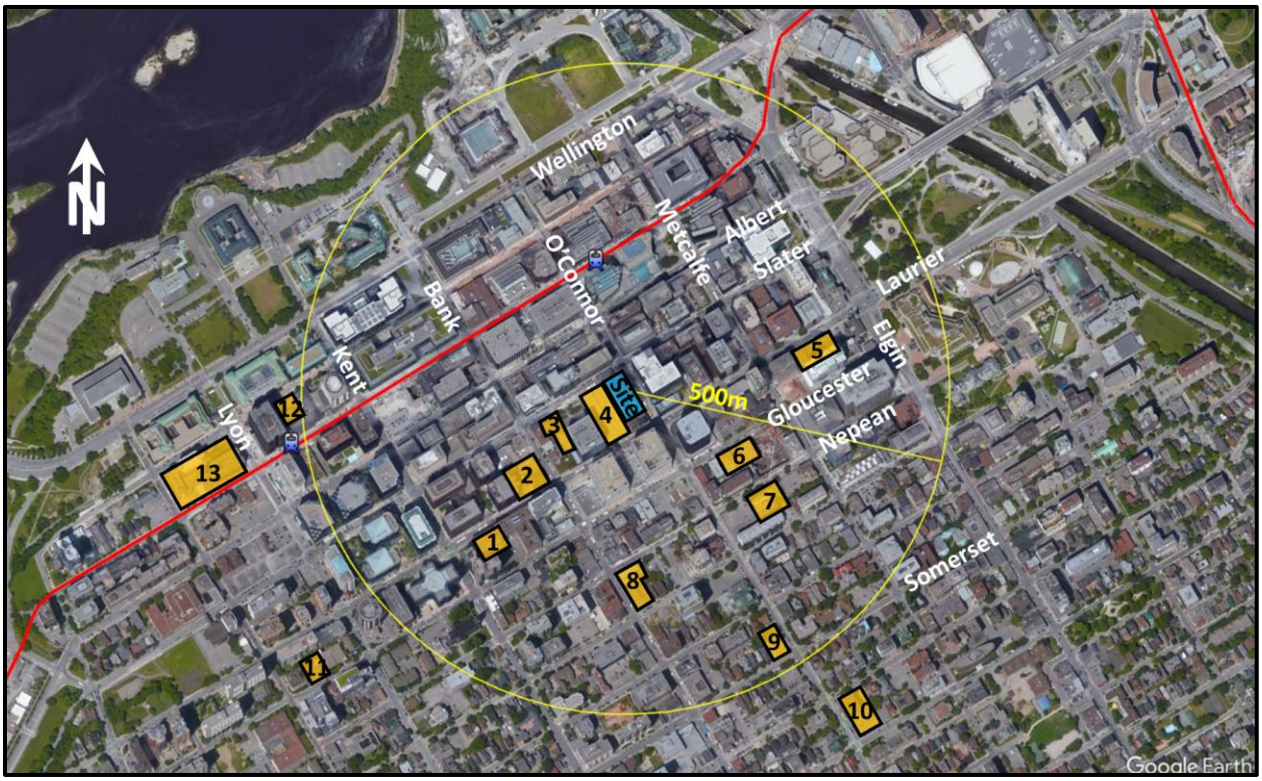
Wellington St project

A study is currently ongoing to analyze the impacts of keeping Wellington St closed to vehicular traffic. The plan also includes the addition of cycle tracks on Wellington St. At this time, a recommended plan has not been agreed upon.

Other Area Developments

The following section outlines adjacent developments in the general area that were considered in the TIA. **Figure 12** illustrates the site context for other area developments near the subject site with a description of each development below:

Figure 12: Other Area Developments



1 – 360 Laurier Ave

A mixed-use building is proposed consisting of 139 residential units with ground floor retail. A memo by CGH was prepared in April 2023 which forecasted a net reduction in vehicle trips of 132 and 147 two-way vehicles for the AM and PM peaks respectively. To provide a more conservative approach and account for other smaller developments without TIAs, no reductions in background volumes will be conducted for this development.

2 – 152 Bank St

An 18-storey office building is proposed with ground floor retail. The file was last updated in 2010 and no TIA was found.

3 – 208 Slater St

A 22-storey mixed-use building is proposed consisting of approximately 162 dwelling units and ground floor retail. The anticipated buildout year of the development was 2022, however it has not been built yet. Based on the TIA prepared by Novatech on May, 2019, the development is expected to generate a net increase of 18 and 9 veh/h during the morning and afternoon peak hours, respectively, which will be added to background volumes.

4 – 170 Slater St

A 25- and 26-storey mixed-use building is proposed to replace a multi-storey parking garage consisting of approximately 586 dwelling units and ground floor retail. The anticipated buildout year of the development is 2028. Based on the TIA prepared by CGH on July 2023, the development is expected to generate 46 and 51 veh/h during the morning and afternoon peak hours, respectively, but will also reduce some vehicle trips formerly using the parking garage. The net vehicle volumes will be layered to background volumes.

5 – 150 Laurier Ave

A 27-storey mixed-use building is proposed consisting of approximately 407 dwelling units and ground floor retail. The anticipated buildout year of the development is 2027. Based on the TIA prepared by CGH in August 2023, the development is expected to generate a net increase of 36 and 36 veh/h during the morning and afternoon peak hours, respectively, which will be added to background volumes.

6 – 100 Gloucester St

A 27-storey mixed-use building is proposed consisting of approximately 315 dwelling units and ground floor retail. The anticipated buildout year of the development is 2025. Based on the TIA prepared by Novatech on July, 2023, the development is expected to generate a net decrease of -30 and -38 veh/h during the morning and afternoon peak hours respectively as it is replacing a parking garage and other land uses. The forecasted net volumes will not be subtracted from background volumes for a more conservative approach.

7 – 96 Nepean St

A 27-storey residential building is proposed consisting of approximately 201 dwelling units. The anticipated buildout year of the development was 2013, however it has not been built yet. Based on the TIA prepared by Novatech in November 2011, the development is expected to generate a net increase of 59 and 57 veh/h during the morning and afternoon peak hours, respectively, which will be added to background volumes.

8 – 178 Nepean St

A 9-storey mixed-use building is proposed consisting of approximately 297 dwelling units and ground floor retail. The anticipated buildout year of the development is 2025. Based on the TIA prepared by CGH in June 2023, the development is expected to generate a net increase of 11 and 11 veh/h during the morning and afternoon peak hours, respectively, which will be added to background volumes.

9 – 234 O'Connor St

A 16-storey mixed-use building is proposed consisting of approximately 140 dwelling units and ground floor retail. The anticipated buildout year of the development is 2024. Based on the TIA prepared by CGH in June 2022, the

development is expected to generate a net increase of 18 and 21 veh/h during the morning and afternoon peak hours, respectively, which will be added to background volumes.

10 – 267 O'Connor St

A 30 and 28-storey mixed-use buildings are proposed consisting of approximately 541 dwelling units and ground floor retail. The anticipated buildout year of the development is 2025. Based on the TIA prepared by Parsons in August 2020, the development is expected to generate a net increase of 92 and 104 veh/h during the morning and afternoon peak hours, respectively, which will be added to background volumes.

11 – 339 Gloucester St

A 21-storey residential building is proposed consisting of approximately 116 dwelling units. The anticipated buildout year of the development was 2021, however it has not been built yet. Based on the TIA prepared by Parsons in July 2019, the development is expected to generate a net increase of 12 and 12 veh/h during the morning and afternoon peak hours, respectively. Given the distance and low trip generation by this development, trip generation will not be added to background volumes.

12 – 300 Sparks St

A 19-storey office building is proposed with ground floor retail. The file was last updated in 2009 and no TIA was found (a transportation brief was prepared exempting the development from a formal TIA).

13 – 350 Sparks St

A 27-storey hotel and 23-storey mixed-use buildings are proposed consisting of approximately 250 dwelling units, 303 hotel rooms and ground floor retail. The anticipated buildout year of the development is 2025. Based on the TIA prepared by BA Group in October 2015, the development is expected to generate a net increase of 35 and 35 veh/h during the morning and afternoon peak hours, respectively. Given the distance and low trip generation by this development, trip generation will not be added to background volumes.

2.2. Study Area and Time Periods

For the purposes of this report, the proposed development is assumed to be fully constructed by 2026. The full buildout scenario and five-years after development buildout will be analyzed, 2026 and 2031. The future horizon years analyzed will use the weekday morning and afternoon peak hour traffic volumes. Proposed study area intersections are listed below and illustrated in **Figure 13**.

- Slater/Bank
- Laurier/Bank
- Albert/O'Connor
- Slater/O'Connor
- Laurier/O'Connor
- Site Accesses

Figure 13: Study Area and Intersections to be Analyzed

2.3. Exemption Review

The following modules/elements of the TIA process provided in **Table 2** are recommended to be exempt in the subsequent steps of the TIA process, based on the City's TIA guidelines and the subject site:

Table 2: Exemptions Review Summary

Module	Element	Exemption Consideration
4.1 Development Design	4.1.3 New Street Network	Only required for plans of subdivision
4.6 Neighborhood Traffic Calming	All	Development does not rely on local or collector roads for access
4.7 Transit	All	The development is forecasted to generate less than 75 transit trips.
4.8 Network Concept	All	Only required for ZBLA applications.
4.9 Intersection Design	Synchro Analysis	The development is forecasted to generate less than 75 vehicle trips.

3.0 FORECASTING

3.1. Development Generated Travel Demand

3.1.1. Trip Generation and Mode Shares

The existing 14-storey office building has been vacant since 2020 when the Department of National Defense moved locations to the west end of the city.[4] The ground floor retail appears to still be operational but will be replaced by similar size ground floor retail uses (~5,200 ft²), thus it will not be reduced from existing counts nor replaced by new retail trip generation (assumed to remain similar and catered to local users).

Given that the office uses have been vacant since 2020, then a trip generation to reduce existing land uses will not be completed as those trips are not accounted for in recent traffic counts which were generally conducted in 2023 or 2024.

Trip Generation Rates

The proposed development will consist of 413 residential units and approximately 5,200 ft² of ground floor retail space located in a 25-storey building. The retail space is small, will replace existing retail and will likely provide ancillary uses for the high-density residential and office uses, intended for local active trips only (not anticipated to generate new trips). The appropriate trip generation rates for high-rise residential units were obtained from the 2020 TRANS Trip Generation Manual. The Manual provides person-trip rates during the peak AM and PM periods (i.e. 7am-9:30am and 3:30pm-6pm). The trip rates are summarized in **Table 3** below.

Table 3: Proposed Development Trip Rates

Land Use	ITE/TRANS Designation	Data Source	Trip Rates	
			AM Peak	PM Peak
Residential	"High-Rise Residential"	TRANS	T = 0.80(du);	T = 0.90(du);
Note: T = Average Vehicle Trip Ends; du = Dwelling unit				

Using the TRANS Trip Generation rates from **Table 3**, the total amount of person trips generated by the proposed 410 residential units was calculated by multiplying the rate by the number of units, for the morning and afternoon peak periods, as shown in **Table 4**.

Table 4: Residential Units Peak Period Person Trip Generation

Land Use	Dwelling Units	AM Peak Period Person Trips	PM Peak Period Person Trips
High-Rise Residential	413	331	373

The proposed residential units are anticipated to generate approximately 330 and 375 total person trips during the morning and afternoon peak hours respectively. The total peak period person trips in **Table 4** are then divided into different travel modes using mode share percentages obtained from the 2020 TRANS Manual for the "Ottawa Centre" district. **Table 5** provides the travel mode breakdown for the proposed high-rise apartments.

Table 5: High-Rise Apartments Peak Period Trips Mode Shares Breakdown

Travel Mode	Mode Share	AM Peak Period Person Trip	Mode Share	PM Peak Period Person Trips
Auto Driver	18%	59	17%	65
Auto Passenger	2%	8	9%	35
Transit	26%	87	21%	77
Cycling	1%	4	1%	2
Walking	52%	173	52%	194
Total Person Trips	**100%**	**331**	**100%**	**373**

[4] https://renx.ca/groupe-mach-reposition-ottawa-110-oconnor-office-tower

Standard traffic analysis is usually conducted using the morning and afternoon peak hour trips as they represent a worst-case scenario. In the 2020 TRANS Manual, Table 4 provides conversions rates from peak period to peak hours for different mode shares. The conversion rates are provided in **Table 6** below.

Table 6: Peak Period to Peak Hour Conversion Factors (2020 TRANS Manual)

Travel Mode	Peak Period to Peak Hour Conversion Factors	
	AM	PM
Auto Driver and Passenger	0.48	0.44
Transit	0.55	0.47
Bike	0.58	0.48
Walk	0.58	0.52

Using the conversion rates in **Table 6** and the peak period person trips for different travel modes in **Table 5**, the peak hour trips for different travel modes can be calculated as shown in **Table 7**.

Table 7: Peak Hour Trips Generated - TRANS Mode Share

Travel Mode	Mode Share	AM Peak Hour (Trips/h)			Mode Share	PM Peak Hour (Trips/h)		
		In	Out	Total		In	Out	Total
Auto Driver	18%	9	19	28	17%	17	12	29
Auto Passenger	2%	1	3	4	9%	9	6	15
Transit	26%	15	33	48	21%	21	15	36
Cycling	1%	1	2	3	1%	1	0	1
Walking	52%	31	69	101	52%	58	42	101
Total Person Trips	100%	57	126	183	100%	105	76	182

As shown above, the proposed development is anticipated to generate approximately 185 total person trips, 30 vehicle trips, 50 to 35 total transit trips, 100 walking trips and 5 cycling trips during the AM and PM peak hours respectively.

Based on this site's proximity to high quality bike lanes and LRT within 200m walk, it is possible that a higher bike mode share may be applicable and a reduction in vehicle mode share appropriate. To better represent local conditions, a 15% driver mode share and 5% passenger mode share consistent with transit-oriented developments within 600m of LRT (TOD) was chosen. The walking mode share was maintained at 52% consistent with local conditions, 3% was assumed for cyclists given the nearby quality facilities and the remainder 25% was allocated to transit trips. The forecasted trips generated based on custom mode shares has been illustrated in **Table 8**.

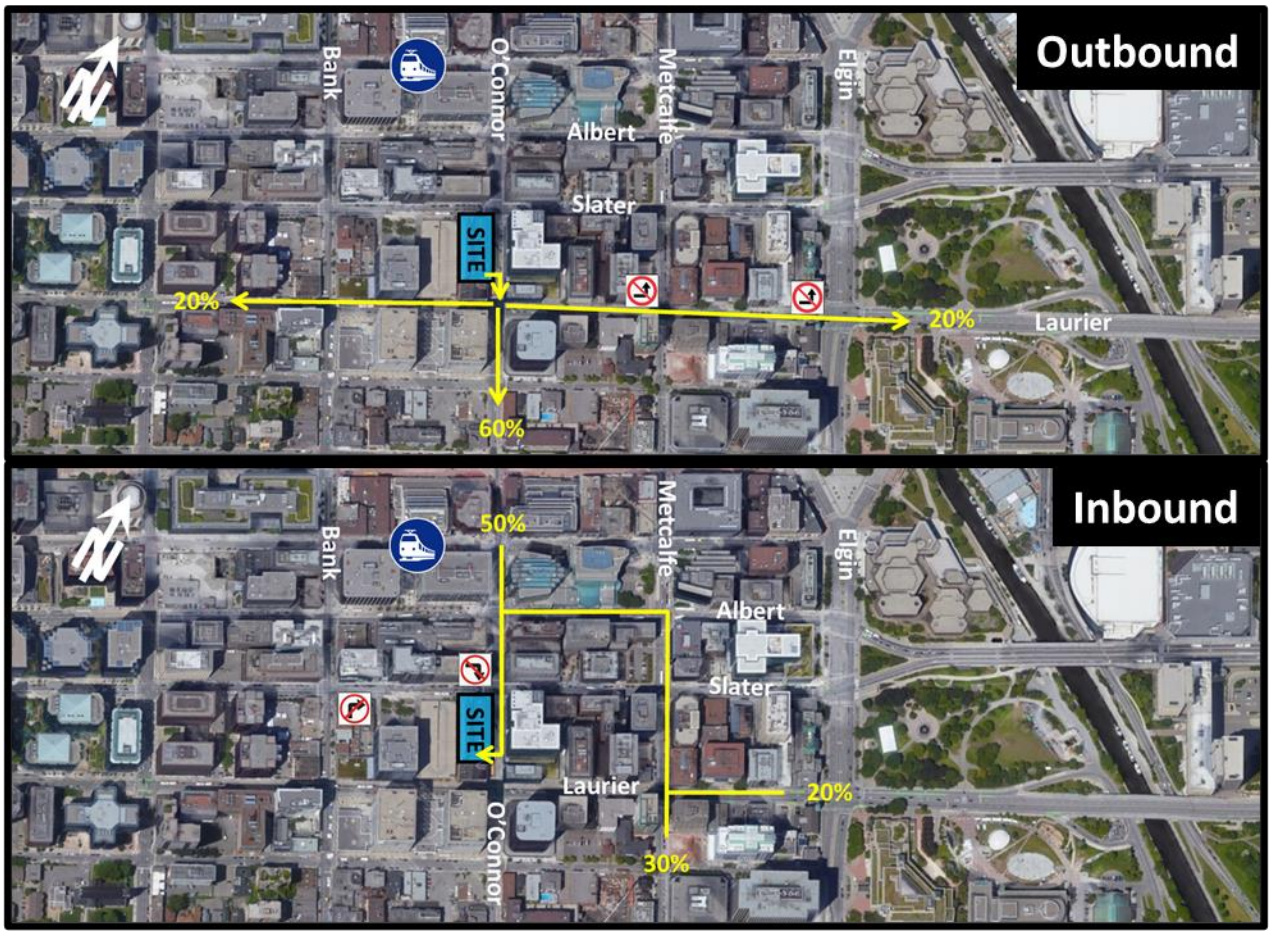
Table 8: Peak Hour Trip Generation – Custom Mode Shares

Travel Mode	Mode Share	AM Peak Hour (Trips/h)			Mode Share	PM Peak Hour (Trips/h)		
		In	Out	Total		In	Out	Total
Auto Driver	15%	9	19	27	15%	16	11	27
Auto Passenger	5%	3	6	9	5%	5	4	9
Transit	25%	14	32	46	25%	26	19	45
Cycling	3%	2	4	5	3%	3	2	5
Walking	52%	29	66	95	52%	55	40	95
Total Person Trips	100%	57	126	183	100%	105	76	182

3.1.2. Trip Distribution and Assignment

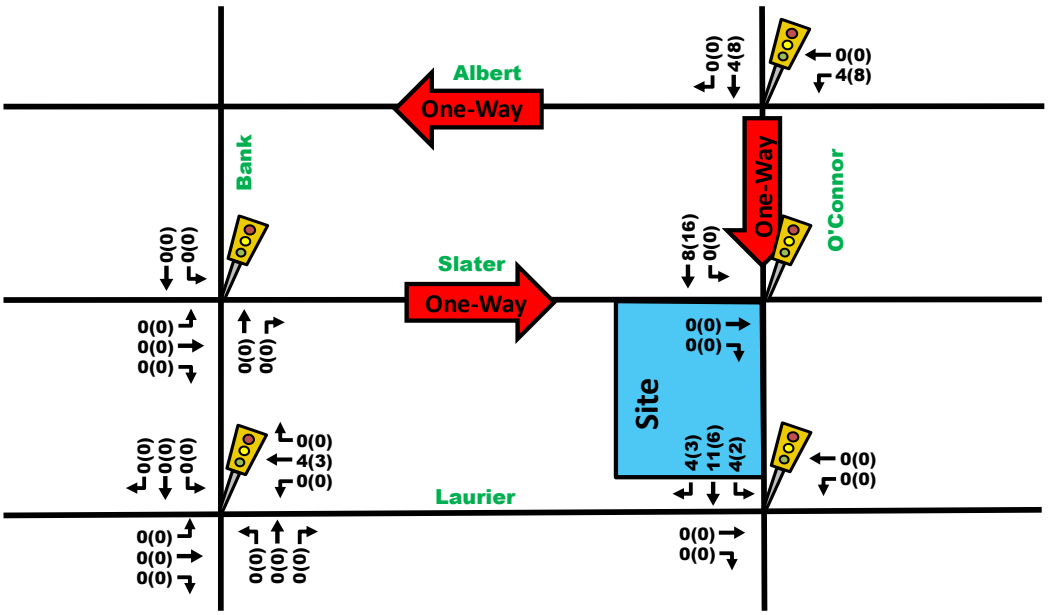
Based on the 2011 OD Survey (Ottawa Center), the location of adjacent arterial roadways, turning restrictions during peak hours and destinations, the distribution of site-generated traffic volumes was estimated as shown in **Figure 14**. Note that as part of the O'Connor St Cycling Facility project, the removal of the eastbound-right turn prohibition at Slater/O'Connor may be considered. The ultimate trip assignment may therefore vary should the prohibition be lifted or new turn prohibitions added as part of the ongoing City projects in the study area.

Figure 14: Site Generated Vehicle Traffic Percent Distribution



The anticipated 'new' auto trips for the proposed development from **Table 8** were then assigned to the road network with the distribution shown above, as shown in **Figure 15**, for the total site-generated traffic for custom mode share.

Figure 15: Site-Generated Traffic Using Custom Mode Shares



3.2. Background Network Traffic

3.2.1. Transportation Network Plans

Refer to Section 2.1.3: Planned Conditions.

3.2.2. Background Growth and Other Area Developments

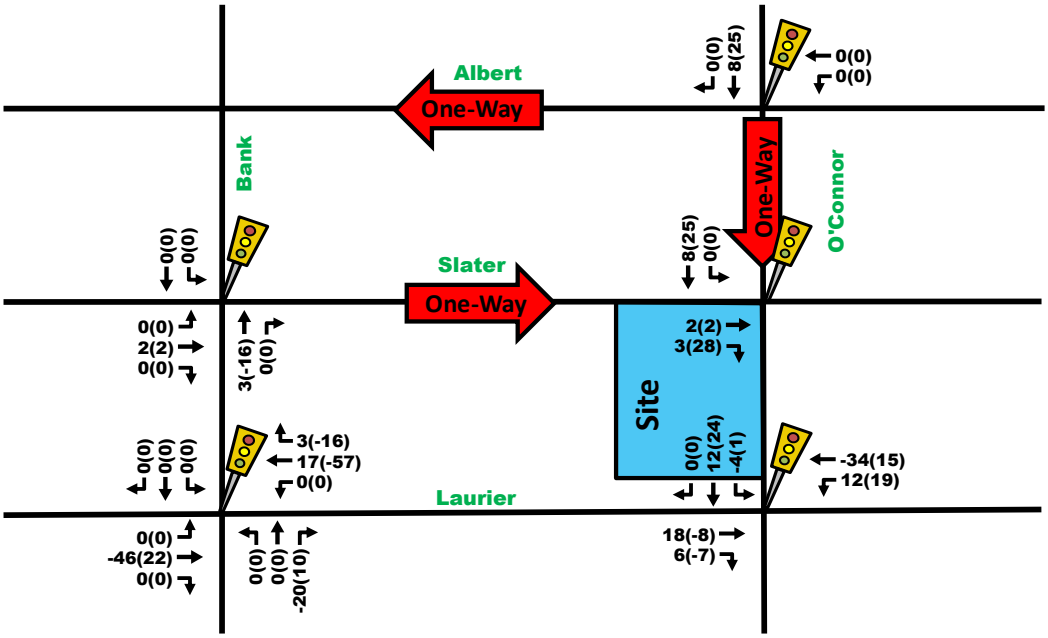
As described in Section 2.1.3, there are various new developments proposed within a 500m radius which will be layered on individually to existing traffic volumes.

Keeping consistent with the big moves and priorities listed on the Official Plan and new Transportation Master Plan (Part 1) being developed, future and existing trips in the area are expected to continue shifting towards active transportation modes including biking, walking and transit over driving. The city is currently investing in further cycling and pedestrian facilities within the core and is extending the reach of LRT for those coming from outside of the core. Historic counts collaborate this shift in mode share with zero to negative annual growth rates within the downtown core. For this reason, a 0% annual growth rate is considered appropriate.

3.2.3. Future Background Volumes

The total number of new other area development vehicle trips projected to use study area intersections have been illustrated in Figure 16.

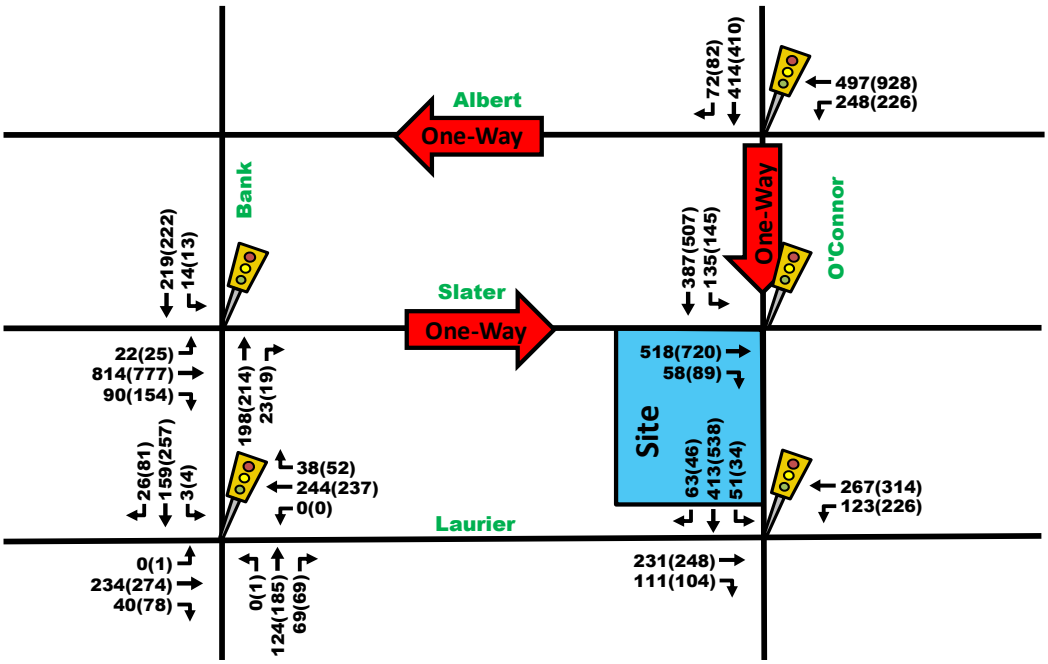
Figure 16: Other Area Development Trip Generation



Note: Negative volumes reflect a net reduction in trip generation for some developments.

These other area development volumes were then layered on to existing volumes. Since no yearly background growth is anticipated, then the 2025 and 2030 background volumes will be the same. The resultant background volumes have been provided in Figure 17.

Figure 17: Future Background Traffic Volumes



3.3. Demand Rationalization

The following section is exempt as less than 75 vehicle trips are anticipated (refer to Section 3.1).

4.0 ANALYSIS

4.1. Development Design

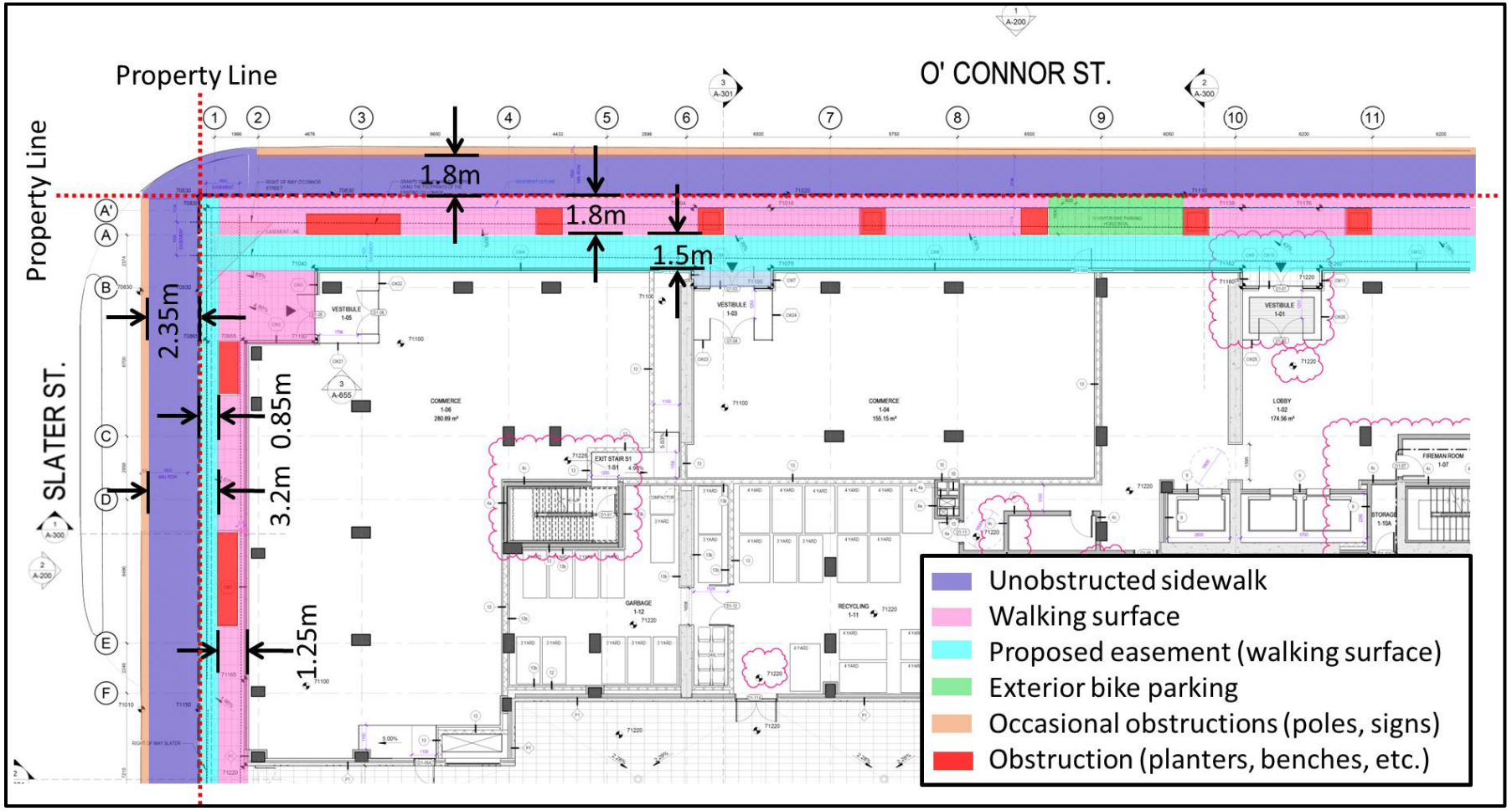
4.1.1. Design for Sustainable Modes

Pedestrian/Cycling Routes and Facilities

As per the Official Plan – Schedule C16, there is a right-of-way widening easement policy that applies to O'Connor St and Slater St. This widening is in addition to the required road right-of-way protection limits; it is to be "an unobstructed surface easement" that is intended "for the use of pedestrians, or other forms of active transportation…along the full length of property frontages." In this context, as per Table 1 in Schedule C16 of the Official Plan, O'Connor requires a 1.5m and Slater St a 1.25m unobstructed easement. **Figure 18** illustrates the proposed allocation of space along the two development frontages. The protected right-of-way limit is shown in a bolded dashed line. Existing city infrastructure obstructions (such as streetlights and signs) are located on a narrow strip along the curb in **orange**. The existing city sidewalk limits are shown in **purple**. The unobstructed easements are in **light blue**. along with other pedestrian facilities in purple and pink, indicating a 1.8m clear width sidewalk and other walking surfaces respectively. The areas in orange were not considered within the 1.8m clear width sidewalks as they have occasional obstructions such as light poles and traffic signals. The existing bike racks will be removed and reinstated as a 10-space bike rack within other general walking areas which would not affect the easement nor the 1.8m clear width sidewalk.

As requested by other City of Ottawa departments, benches were added on both Slater St and O'Connor St. The available streetscape width on Slater St between the municipal sidewalk facilities and the building are narrower than on O'Connor St, causing challenges in providing both benches and meeting the easement requirements internal to the property boundaries. The client is proposing a compromise alternative which places the benches as close to the building façade as possible and dedicating the remainder 0.85m of land as an unobstructed easement space connecting to the municipal sidewalk on O'Connor St, to create a continuous unobstructed 3.2m wide sidewalk. The alternative would be to provide the benches adjacent to the property boundary line and reserving an easement along the edge of the building, but this would result in two narrow sidewalks or the removal of benches altogether which is generally not preferred.

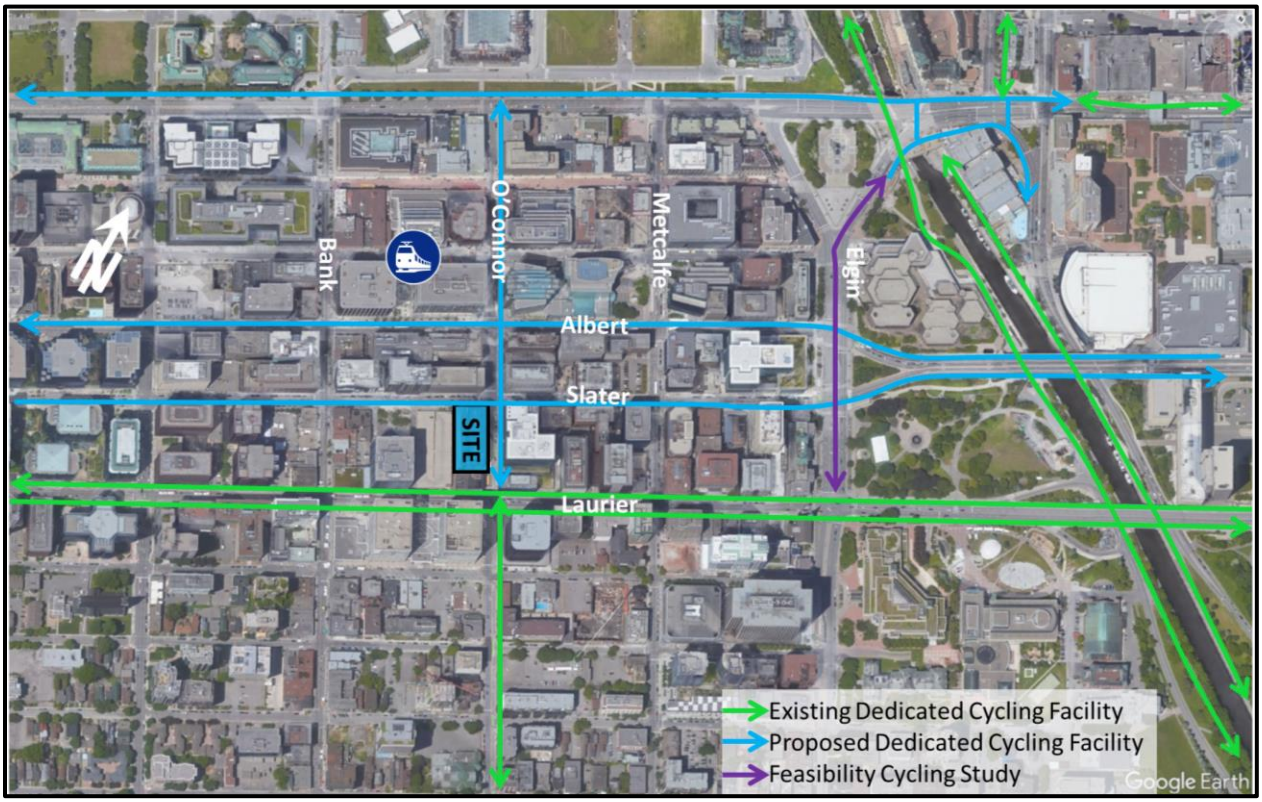
Figure 18: Proposed Walking Facilities on O'Connor St and Slater St



Cycling facilities currently exist on Laurier Ave as uni-directional cycle tracks travelling east-west approximately 20m south of the site, while a north-south bi-directional cycle track on the east side of O'Connor St originates from Laurier Ave to the south.

As described in **Section 2.1.3**, new cycle tracks are proposed on O'Connor St which would extend from the existing cycle tracks south of Laurier Ave to Wellington St, proposed to be built adjacent to the site on the opposite side of the street. These cycling facilities will likely connect to proposed uni-directional east-west facilities on Albert St and Slater St, as well as Wellington St, providing a well-connected network of cycling infrastructure adjacent to the site as shown in **Figure 19**. The site will provide secured bike parking spaces in the 1st and 2nd underground parking garage level. Access from the parking garage to the ground floor will be available using elevators. An additional 10 outdoor visitor bike parking spaces will be provided.

Figure 19: Future and Existing Off-Road Cycling Facilities



This development and adjacent road projects on Slater St and O'Connor St will require coordination and a construction management plan to reduce throw away costs and impacts to the area during construction. Vehicle parking is proposed in a 3-storey underground parking lot.

Location of Transit Facilities

The site is approximately 200m walking distance to the Parliament LRT Station, making the site located within a transit-oriented development area. Continuous sidewalks are provided from the front entrance of the proposed building to the LRT Station. In addition to the LRT Station, there are various bus stops located within 200m walk from the site, including routes on Bank St, Queen St, and STO (Quebec) routes on Albert St and Albert St.

4.1.2. Circulation and Access

The site proposes an underground parking garage which is accessed via O'Connor St on the southernmost edge of the site. **Section 4.4** will provide further details regarding the driveway accesses and connectivity to the adjacent road network. The internal driveway widths within the parking garage are proposed at 6.0 to 6.1m wide which is greater or equal than the minimum 6.0m wide required aisle width (Zoning By-Law Section 107 1c ii) considered adequate for two-way travel and 90-degree parking stalls. The parking garage ramps are proposed at a maximum 15.0% incline, with proposed transition grades, all located indoors. Melting devices are only required for outdoor ramps with grades between 6% to 12% which is not applicable at this location. The width of the ramps varies between 6.0 to 6.1m which is considered adequate.

Based on discussion with City Staff, it was concluded that garbage pick-up will occur on-street at surface level, adjacent to the building on Slater St. The Slater St access will be used to individually wheel out the garbage bins once the garbage truck arrives, ensuring that garbage bins will not be left on the proposed bike lane. The Slater St access will be gated and will not allow vehicles turning in/out from that access unless special permission is requested for loading operations such as move-ins. Truck turning templates have been provided in **Appendix E**.

4.1.3. New Streets Network

Exempt, only required for Plans of Subdivision.

4.2. Parking

The following parking analysis reflects the minimum number of parking rates and spaces required based on the City of Ottawa Zoning By-Law for developments located in Area Z: near major LRT Station on Schedule 1A. **Table 9** summarizes the minimum vehicle and bicycle parking rates from Part 4, Parking, Queueing and Loading Provisions parking by-law, referenced from Tables 101, 102, and 111A.

Table 9: Required Vehicle and Bicycle Parking Spaces

Land Use	Size (unit or m²)	Minimum Vehicle Parking Rates				Bicycles		
		Base Rate	Visitor Rate	Min Required Spaces	Proposed Spaces	Base Rate	Min Required Spaces	Proposed Spaces[2]
Dwelling, Mid-High-Rise Apartments (R12)	413 units	0	See Note[1]	30	65	0.5/unit	207	309
Commercial	483 m²	0	0	0		1/250m²	2	
			Total	**30**		**Total**	**209**	

1 – Area Z has a minimum visitor parking rate of 0.1 spaces per unit excluding the first 12 units to a maximum of 30 visitor parking spaces per building.
2 – Maximum allowed of 1.5/unit or 620 parking spaces which has not been exceeded.

As shown above in **Table 9**, the site requires a minimum of 30 visitor parking spaces, no minimum residential parking spaces, and a maximum allowed 620 parking spaces. The site proposes 35 residential parking spaces located in the lower two of three-level underground garage structure which would equate to a parking ratio of approximately 0.07 spaces per unit. This very low rate of vehicle parking spaces per units is consistent with the Official Plan and Transportation Master Plan in their principles to reduce car parking and car dependency in areas close to higher order transit facilities and transit priority routes.

The site also proposes 30 visitor parking spaces to be located in the first and second underground levels of the parking garage, thus meeting the minimum vehicle parking requirements.

Generally, visitors will be encouraged to use alternative modes of transportation such as taking transit (LRT Station within 200m walk), cycling (cycle-tracks available on O'Connor St and Laurier Ave, plus future proposed Albert St, Slater St, and Wellington St), ride hauling services (taxi, Uber, etc.), or walking. Should more than 30 visitors decide to drive to the site within a given time, there are ample locations near the subject site to park using public and private parking spaces. **Figure 20** illustrates available off-street parking garages, with many of them being located within less than a 200m radius from the site. On-street parking is also available on various streets surrounding the site, including existing O'Connor St adjacent to the site (note that these parking spaces will be lost once the cycling facilities are added). Nonetheless, there are other on-street parking locations available, with many becoming free during the evenings and overnight, which tends to match times when residential visitor parking demand is the highest. The existing on-street parking locations have been illustrated in **Figure 21**. It is worth noting that off-site parking is not typically free during peak periods, which function as an effective TDM measure to dissuade visitors from driving to the site during the busiest times. The proposed vehicle parking rates proposed are considered adequate.

Figure 20: Location of Visitor Parking Facilities Nearby – Off-Street

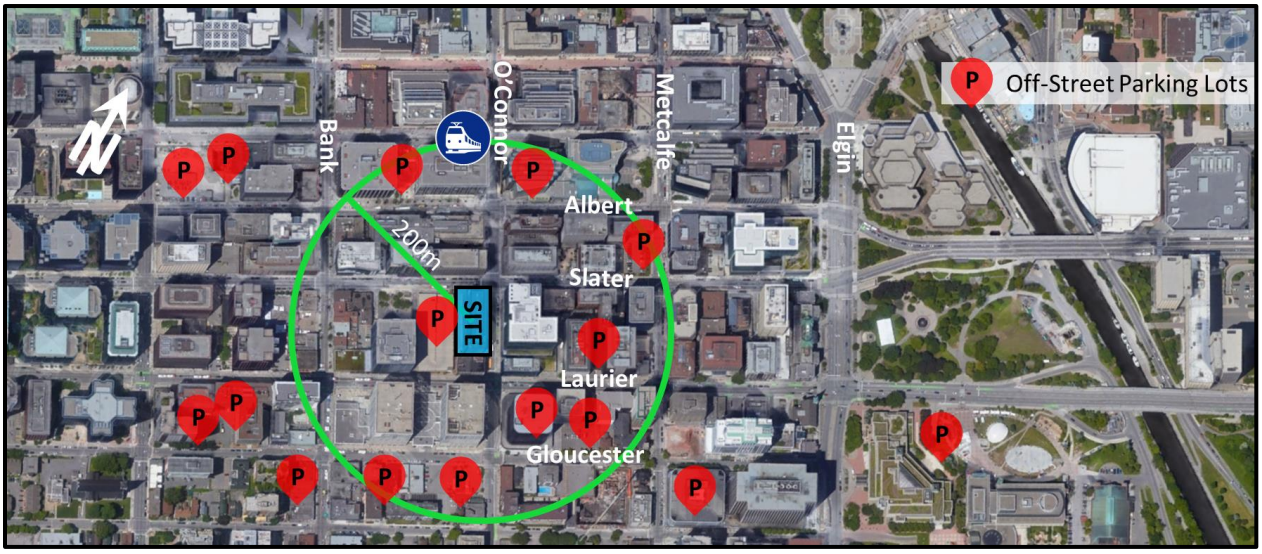
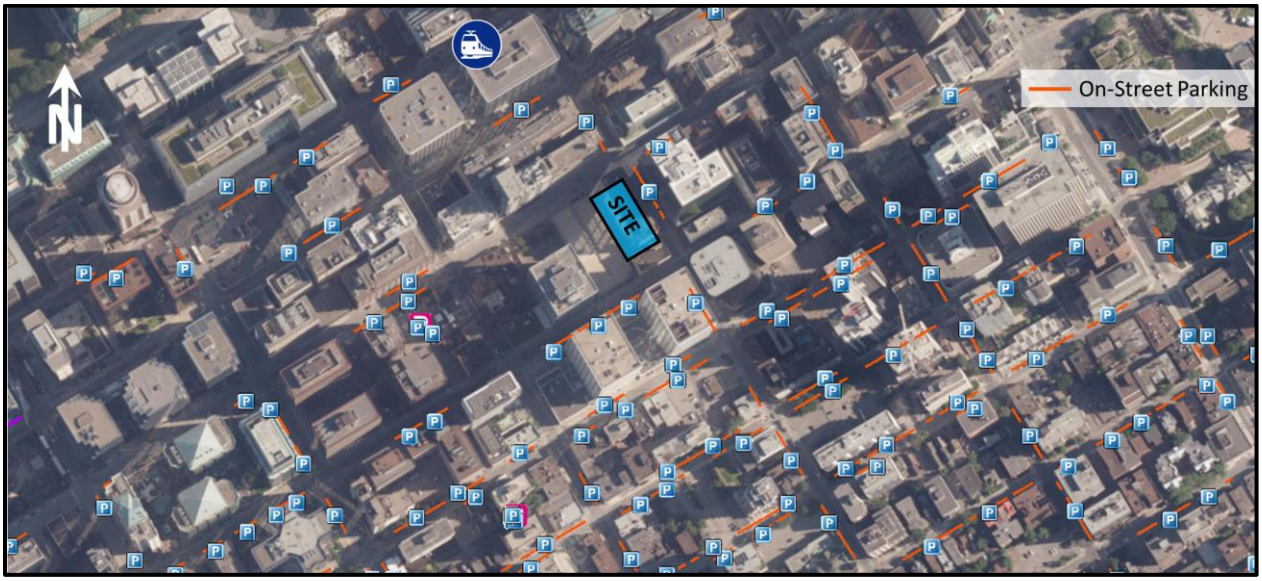


Figure 21: Location of Visitor Parking Facilities Nearby – On-Street



The minimum required bicycle spaces are 209. The site proposes 309 bike parking spaces which exceeds the minimum bike space requirements. The bike parking spaces are proposed within the 1st and 2nd underground levels of the underground parking garage. Access from the parking garage to the ground floor will be available using elevators. An additional 10 outdoor visitor bike parking spaces will be provided on O'Connor St.

4.3. Boundary Street Design

Multi-Modal Level of Service (MMLOS) analysis was conducted for the site frontages, Slater St and O'Connor St, based on the City of Ottawa's MMLOS Analysis Guidelines. Note that a revised MMLOS is currently being developed, however it has not been adopted yet by the City of Ottawa at the time this report was prepared. Slater St is an arterial road that consists of the following features within the study area:

- 3-vehicle travel lanes one-direction including bus lane. The Slater St rehabilitation proposes a reduction in travel lanes (excluding auxiliary storage lanes) to two lanes.
- At least 2.0m wide sidewalks on both sides. Both sides provides street furniture and signs between the road and path width sidewalk which will be treated as a boulevard treatment.
    - North sidewalk anticipated to remain as existing. South sidewalk shown as approximately 2.6m, with assumed 2m clear width and 0.6m boulevard, plus a new 1.8m cycletrack on intersection approach and buffered bike lane elsewhere.
- More than 3,000 average daily curb lane traffic.
- Loading zone on north side of road during off-peak hours.
- Classified as a spine bike route.
- Transit routes operate on segment, not part of transit priority corridor.
- Classified as a truck route.
- Assumed unposted speed limit of 50km/h.
- Approximately 3.5m wide lane.

O'Connor St is an arterial road that consists of the following features within the study area:

- 3-vehicle travel lanes one-direction plus car parking on east side of road. Car parking will be replaced by a bi-directional cycletrack (refer to **Section 2.1.3** Planned Conditions).
- At least 2.0m wide sidewalks on both sides. Both sides provide street furniture and signs between the road and clear path sidewalk which will be treated as a boulevard treatment.
    - The west sidewalk is forecasted to remain relatively the same.
    - The east sidewalk is assumed to be at least 2m wide or more and separated from vehicular traffic by a bi-directional cycletrack. It is assumed that the cycletrack will be similar in width to the extension further south, measured at approximately 3m wide.
- More than 3,000 average daily curb lane traffic.
- Classified as a cross-town bikeway.
- No transit routes on segment, not part of transit priority corridor.
- Classified as a truck route.
- Assumed unposted speed limit of 50km/h.
- Approximately 3.5m wide lane.

The multi-modal level of service analysis for adjacent site roadways is summarized in **Table 10**, with detailed analysis provided in **Appendix F.** The table also identifies the target LOS, based on the land-use designation and road classification of the development site and the boundary streets. The Transportation Master Plan (TMP) of the City of Ottawa identifies the land-use designation of the development site as a Central Area. The road classifications of each of the boundary streets were noted in the descriptions of features above.

Table 10: MMLOS - Boundary Road Analysis

Road Segment	Multi-Modal Level of Service							
	Pedestrian		Bicycle		Transit		Truck	
	PLoS	Target	BLoS[1]	Target	TLoS[2]	Target	TkLoS[3]	Target
Slater St (north side – Existing)	D	A	E	C	-	N/A	-	D
Slater St (south side – Existing)	D	A	E	C	B	N/A	A	D
O'Connor St (west side – Existing)	D	A	E	A	-	N/A	A	D
O'Connor St (east side – Existing)	C	A	E	A	-	N/A	-	D
Slater St (north side – Future)	D	A	-	C	-	N/A	-	D
Slater St (south side – Future)	C	A	A	C	D	N/A	A	D
O'Connor St (west side – Future)	D	A	-	A	-	N/A	A	D
O'Connor St (east side – Future)	C	A	A	A	-	N/A	-	D

1. Cycling on Slater St assumed to be a single direction only (eastbound), with westbound cycling to occur at adjacent parallel routes (Albert St or Laurier St). The west side of O'Connor BLOS was not tested as the east side provides a facility for both north and southbound travel (bi-directional cycletracks).
2. No transit service on O'Connor St. Slater St is a one-way, so no buses travelling westbound (north side of road).
3. There is no westbound or northbound travel on either road segment, exempting truck TkLoS on north and east sides of road.

Pedestrian

- Neither future nor existing PLOS targets were met given the posted operating speeds. Reducing speeds to 30km/h and providing at least 2m sidewalks with 2m separation from motor vehicles would result in the desired PLOS of 'A', however speeds of 30km/h may be inappropriate for arterial roads.

Bicycle

- The BLOS target was not met for existing conditions given the lack of cycling facilities. The proposed bike lanes and cycletracks on Slater St and O'Connor St would meet the desired BLOS targets.

Transit

- Only Slater St has active transit routes. There are no TLOS targets.

Truck

- The TkLOS level of was met at all locations for existing and future conditions.

4.4. Access Intersection Design

Note, former sections 4.4.2 (Access Control) and 4.4.3 (Access Design) have been moved to Section 4.9.1 and 4.9.2 as per the revised TIA Guidelines, June 2023.

4.4.1. Location and Design of Access

Vehicle Access and Circulation

The site plan proposes two vehicle accesses; one located on the northwestern quadrant of the site off Slater St approximately 25m west of the Slater/O'Connor intersection; one located on the southeastern quadrant of the site off O'Connor St approximately 65m south of the Slater/O'Connor intersection. The access off Slater St remains at grade and provides access for tenant moving operations. This access will be gated at most times of the day and will only be opened when tenants require loading operations, anticipated to have very low usage. The access off O'Connor St will have higher frequency use as it provides access to the underground parking garage, however as derived in **Section 3.1**, the volume of vehicles forecasted from the site is still considered very low.

The tenant loading access off Slater St is proposed at approximately 3.7m wide which accommodates an MSU sized vehicles to reserve in and then drive out forward as shown in **Appendix E**. Note that an MSU truck may be

slightly conservative as units are small and a smaller truck may be more common on move-in/out. This access is not meant to accommodate two-way traffic and is meant as a temporary loading bay only. The garage access off O'Connor St is proposed at 6.0m and will function as a two-way driveway which is considered adequate. The underground parking garage access has a 2% downward slope from the edge of the building to the curbline on O'Connor St. Since the previous submission, the distance from the road edge to the garage door has been increased to a total length of approximately 8.3m. The gentle slope provides as good as possible visibility of pedestrians crossing the continuous unobstructed sidewalk while providing adequate drainage. Parking is prohibited along O'Connor St adjacent to the site between the hours of 9:00 to 15:00 and no stopping is allowed between 7:00 to 9:00 and 15:00 to 17:00, improving sight lines during the busier hours of the day. Both accesses will function as right-in-right-out (RIRO), given that O'Connor St and Slater St are both one-way roads, reducing driver load demand. Given the downtown urban context, the proposed access provides sufficient sight lines and reduced driver workload and is therefore deemed acceptable.

Throat Length

The Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads, Chapter 8 (Access) provides guidelines for clear throat length. Clear throat lengths are only recommended for arterial and collector roads. Per TAC Table 8.9.3, the suggested minimum clear throat length to an arterial road for apartments (>200 units) is 40m for a development abutting an arterial road, which is not met if the garage door is considered the first conflict point. However, due to the site context and very low number of vehicles projected into the site at any given hour, the risk of spillback is minimal, and the access is therefore considered acceptable.

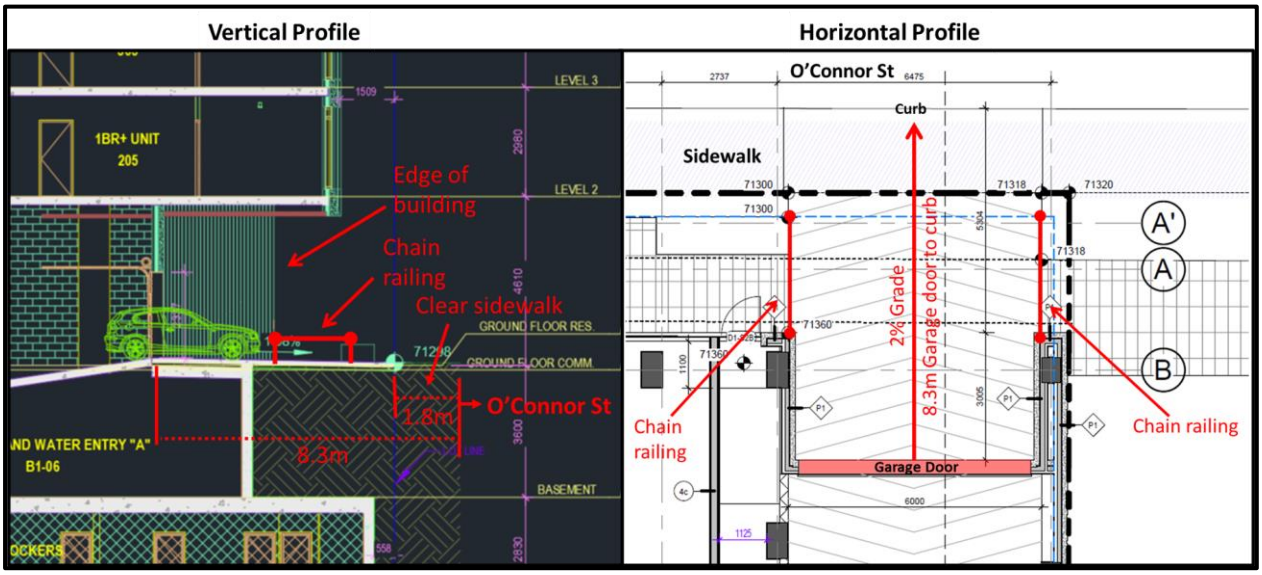
Private Approach By-law

Additionally, the Private Approach By-Law requirements for the City of Ottawa were reviewed, with the following observations:

- As required, the width of the proposed development drive aisles do not exceed 9m. The drive aisles will range between 6.0 to 6.1m wide for two-way corridors.
- The site has two frontages (approximately 30m and 70m long) which permits having at least one private approach per frontage.
- As required by part m section ii (O'Connor St being an arterial and providing access to parking garage with a range of 20 to 99 spaces), the minimum distance between the proposed access and the nearest adjacent intersecting street line is 18m. The nearest adjacent intersecting street is Laurier Ave which is located approximately 18m away and thus meets the requirements.
- The distance between the proposed accesses and the adjacent property lines do not meet the desired 3m separation but do meet and exceed the bare minimum of 0.3m separation. The Slater St access will have very low use as it will only provide access to a tenant loading area. The access on O'Connor St has been provided as far away as feasibly possible, approximately 0.8m from the adjacent property line, in accordance with guidance from Urban Design Review Panel (UDRP). The adjacent driveway has very low usage as it only provides access to a garbage bin. Given that O'Connor St is a one-way street, if a garbage truck were to be loading while a vehicle approaches the site, it would not affect sight lines as the adjacent driveway is located downstream. Similarly, for a vehicle leaving the site, since the truck is located downstream of the access, drivers would be unimpeded by the truck to see any oncoming vehicles on O'Connor St. As for the garbage truck driver, any vehicle leaving or entering the site would do so relatively quickly. The proposed location of the Site Access is therefore considered acceptable.
- The grade of the private approach is to not exceed 2% within the private property for a distance of 9.0m to the curb line. The site proposes approximately 8.3m driveway distance from the curb line to the garage door, at 2% grade towards O'Connor St. Although this falls slightly short of the target 9m distance, it is not uncommon within the downtown core given the near building setbacks from the road. The client intends to add a small chain parallel to the garage ramp to dissuade pedestrians from crossing too closely to the

building and improving sight lines, as shown in **Figure 22**. The portion of grades outside of the parking garage structure do not exceed 2%, are barely short of standard and measures to further separate vehicle and pedestrian conflict have been incorporated, therefore considered acceptable.

Figure 22: O'Connor Access Treatment



- Regarding visitor parking and risk of spillback on to O'Connor St:
  - It is not anticipated that residents will spill back on to O'Connor St as they will have a fob to open the garage door in a quick manner. The forecasted number of inbound vehicles per hour is generally very low and the changes of more than one tenant arriving at a given time is low.
  - Visitor parking may take slightly longer to enter beyond the garage door as they would not have a fob to automatically open the garage door. However, the client is proposing a control system for the security guard, where they can see and communicate two-way with visitors to accelerate entry into the garage and reduce the risk of queue spillback on to O'Connor St.

The access designs are in conformance with the City of Ottawa Private Approach By-law 2003-447 or have been justified based on their intended purpose. The accesses are to be constructed as per City of Ottawa Standard Detail SC7.1.

4.5. Transportation Demand Management

4.5.1. Context for TDM

Based on the type of development, it is assumed that most trips generated by the proposed site will be residents leaving the site in the AM peak hour to go to work and returning from work to the proposed site in the PM peak hour. Sections 3.1.1 and 3.1.2 describe how many trips are anticipated per travel mode. The site is located within 600m of existing rapid transit (Parliament LRT Station) and various bus routes.

4.5.2. TDM Program

The TDM infrastructure checklist and TDM Measures are attached as **Appendix G**. Non-residential TDM measures and infrastructure checklist have also been provided. The summary below reflects residential TDM.

TDM Supportive Development Design and Infrastructure Checklist:

- Ten (10) out of the ten (10) "required" measures have been satisfied.
- At least thirteen (13) of fourteen (14) "basic" measures related to walking, cycling, transit and parking have been satisfied or are not applicable.
- Two (2) of the of the seven (7) candidate "better" measures are also proposed or are non-applicable.

TDM Measures Checklist:

- Six (6) out of seven (7) "basic" measures related to walking, cycling, transit, parking and TDM marketing have been satisfied or are not applicable. Three (3) of those, which have been designated by an asterisk (*), are considered by the TDM Measures to be some of the most dependably effective tools to encourage sustainable travel modes. This includes:
    - Display walking and cycling information at major entrances.
    - Display transit information at major entrances (once transit becomes available).
    - *Designate an internal coordinator or contract with external coordinator
    - * Unbundle parking costs from monthly rent/condo purchase price.
    - * Provide multi-modal travel information package to new residents.
- None out of eleven (11) "better" measures related to walking, cycling, transit, parking and TDM marketing have been considered at this time or are not applicable to this site.

4.5.3. Need and Opportunity

Since the development is located within 600m radius of Parliament LRT Station and various bus routes, as well as adjacent to cycle tracks and various destinations by walking, measures to provide sustainable active mode shares are encouraged. Such measures are described in more detail in Section 4.5.3 below, but include more aggressive Multi-Modal Levels of Service (MMLOS) such as providing minimum 2m wide sidewalks as described in Section 4.3 and 4.9 and safe and efficient connectivity to public transit as described in Section 4.1 and 4.7, to name a few.

4.6. Neighbourhood Traffic Management

This section is exempt as it does not meet all criteria outlined in the June 14, 2023 TIA Guideline revision and is therefore exempt.

4.7. Transit

4.7.1. Route Capacity

Based on the TIA Guidelines Update, June 2023, this section is exempt as less than 75 transit trips are forecasted.

4.7.2. Transit Priority

Based on the TIA Guidelines Update, June 2023, this section is exempt as less than 75 vehicle trips are forecasted.

4.8. Review of Network Concept

This section is only required for Zoning By-Law Amendment applications (ZBLA). This report is in support of a Site Plan Application (SPA); therefore, this section is exempt.

4.9. Intersection Design

This section is exempt as the development is forecasted to generate less than 75 auto trips and therefore does not trigger the need for this section as outlined in the June 14, 2023 TIA Guideline revision.

5.0 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Based on the results summarized herein the following findings and recommendations are provided:

Existing Conditions

- Groupe Mach is proposing a mixed-use development at the municipal address of 110 O'Connor St. The site is currently occupied by a vacant office tower which would be replaced by a new 25-storey building.
- The site is located within 600m walk to Parliament LRT Station and various bus routes.
- The site is well served by pedestrian and cycling infrastructure near the site.

Proposed Development

- The development will consist of approximately 5,200 ft^2 of ground floor retail and 413 residential units. The development is assumed to be fully constructed by the year 2026.
- Road improvements are proposed on Albert St, Slater St, and O'Connor St within the study area. Such improvements generally consist of new cycling infrastructure and improved protected intersection designs. The latest information available for these projects suggest Albert St and Slater St would have new uni-directional cycling facilities following the direction of vehicular travel while O'Connor St proposes to extend the bi-directional cycletracks on the east side of the road from existing facilities on Laurier Ave to Wellington St. An east-west cycling facility is also proposed on Wellington St.
- Given the site's downtown context near major employment areas, well serviced cycling facilities and low vehicle parking rates proposed, a driver and passenger mode share consistent with TOD mode shares was used. The transit, walking and cycling mode shares were derived from TRANS mode share for downtown core and local conditions. Using these mode shares, it was forecasted approximately 25 'new' two-way vehicle trips, 45 'new' two-way transit trips, 5 'new' two-way cycling trips and 95 'new' two-way walking trips.
- The site exceeds the minimum bike parking rate of 0.5 spaces per unit and proposes a rate of approximately 0.75 spaces per unit. A rate of 0.07 residential vehicle parking spaces per unit are

proposed which is consistent with the OP and TMP policies. Visitor parking rates meet the requirement bylaw.

- The site proposes two accesses, one from Slater St and the other from O'Connor St.
    - The access from Slater St will be closed off by a gate and will only be accessible for infrequent loading operations such as a resident move-in/move-out. No concerns were noted at this access given the very limited vehicular movements expected (resident loading only).
    - The O'Connor St driveway will provide access to the underground parking garage. The access has been chosen as far away as feasibly possible from the adjacent property line, yet it still falls short of the desired 3m separation but exceeds the bare minimum requirement of 0.3m at a proposed 0.8m. Given that the adjacent access is predominantly used for low frequency garbage pick-up, no operational concerns were anticipated.
    - The O'Connor St driveway proposes a grade of 2% for 8.3m from the curb edge to the underground parking garage door which falls slightly short of the 9m desired distance. The client intends to add a small chain parallel to the garage ramp to dissuade pedestrians from crossing too closely to the building and improving their sight lines. Given the very low anticipated number of vehicle activity from this access and the measures proposed, the access is deemed acceptable.
    - Additionally, for vehicles exiting the parking garage on to O'Connor St, the short clear throat drive aisle provides sufficient sight lines for pedestrians and oncoming vehicles. No stopping/parking restrictions are in effect from 7:00 to 17:00 on the west side of O'Connor St, which is also a one-way street, restricting turning movements to right-in-right-out only, reducing driver workload. The access to O'Connor St is therefore considered acceptable given the site context.
- TDM measures are highly encouraged for the site given the site context. A strong TDM plan will encourage sustainable living and will reduce demands on the adjacent road network.

Future Conditions

- Other area developments were acknowledged within this report.
- The MMLOS road segment analysis showed that none of PLOS targets were met. Reducing speeds to 30km/h and providing at least 2m sidewalks with 2m separation from motor vehicles would result in the desired PLOS of 'A'. The BLOS targets were not met in existing conditions but were met for future conditions. All other targets were either met or not applicable.
- Generally speaking, the active transportation facilities along the site boundary will be improved, with new seating benches proposed, a 10-space outdoor bike rack, a protected easement and areas with wider walking surfaces than existing.
- Given the low number of vehicle and transit trips forecasted (less than 75), no major impacts to the study area network are anticipated. Future conditions are forecasted to operate similarly to today.

Based on the preceding report, the proposed development located at 110 O'Connor St is recommended from a transportation perspective.

Prepared By:

Juan Lavin, P. Eng.

Transportation Engineer

Reviewed By:

Austin Shih, M.A.Sc., P.Eng.

Senior Transportation Engineer

Appendix A:

TIA Screening For

Office: +1 613.738.4160
1223 Michael Street, Suite 100|Ottawa, ON K1J 7T2

City of Ottawa 2017 TIA Guidelines

TIA Screening Form

Date	11-Apr-24
Project	110 O'Connor St
Project Number	910537 - 10004

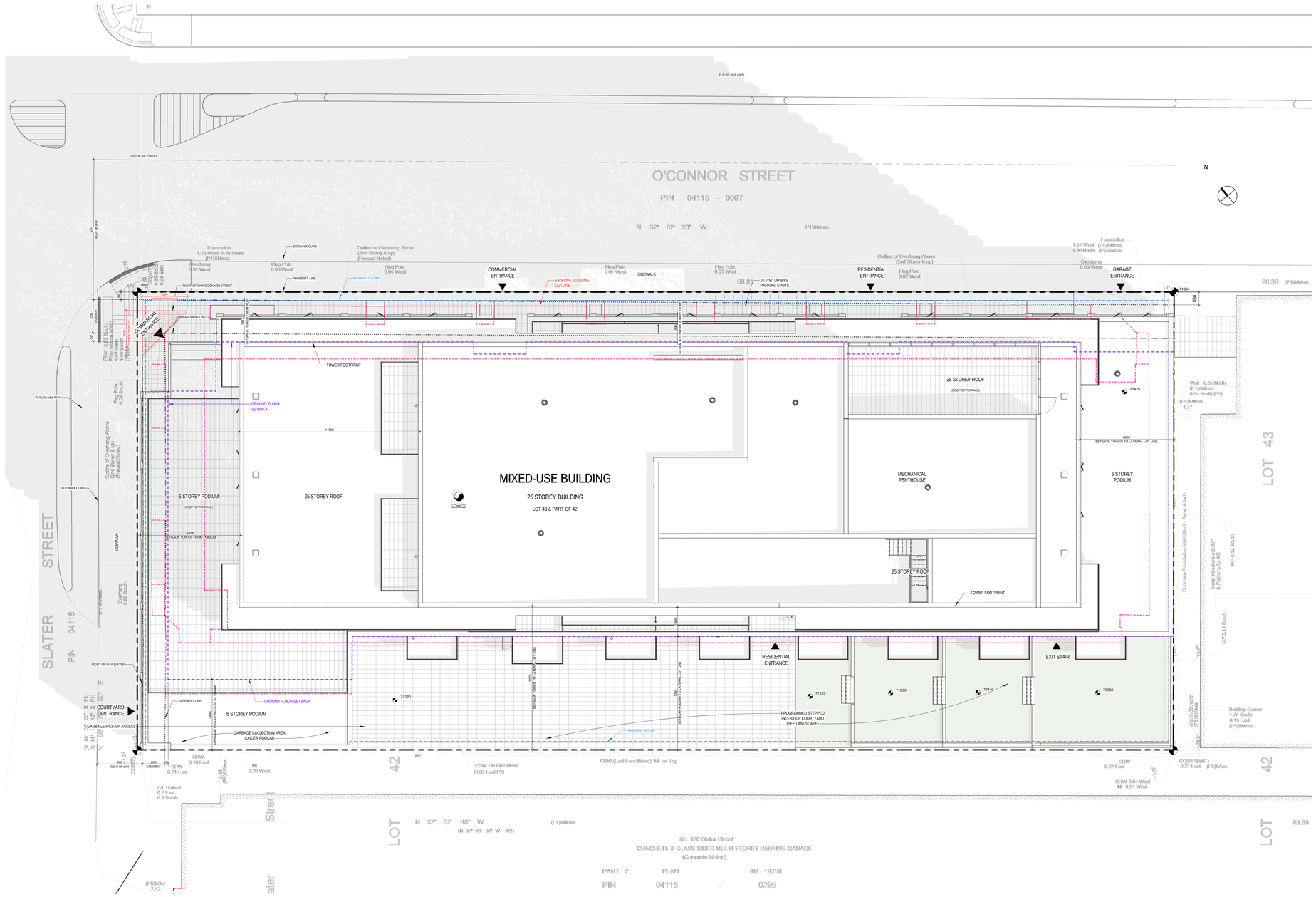
Results of Screening	Yes/No
Development Satisfies the Trip Generation Trigger	Yes
Development Satisfies the Location Trigger	Yes
Development Satisfies the Safety Trigger	Yes

Module 1.1 - Description of Proposed Development	
Municipal Address	110 O'Connor St
Description of location	The site is bound by Laurier Ave to the south, Bank St to the west and fronting Slater St to the north and O'Connor St to the east. The site is currently occupied by a 14-storey office building.
Land Use	Proposed mixed-use including ground floor retail and residential units. Currently zoned MD S32.
Development Size	Approximately 385 units and 5,800 sqf ground floor retail.
Number of Accesses and Locations	2: Parking garage ramp access off O'Connor St and garbage pick-up driveway off Slater St.
Development Phasing	Single-Phased Development
Buildout Year	Assumed 2026
Sketch Plan / Site Plan	See attached

Module 1.2 - Trip Generation Trigger		
Land Use Type	Townhomes or Apartments	
Development Size	385	Units
Trip Generation Trigger Met?	Yes	

Module 1.3 - Location Triggers		
Development Proposes a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit, or Spine Bicycle Networks (See Sheet 3)	Yes	O'Connor St is part of the crosstown bikeway network
Development is in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone. (See Sheet 3)	Yes	Site is within a DPA area and TOD area (Parliament LRT Station)
Location Trigger Met?	Yes	

Module 1.4 - Safety Triggers		
Posted Speed Limit on any boundary road	<80	km/h
Horizontal / Vertical Curvature on a boundary street limits sight lines at a proposed driveway	No	
A proposed driveway is 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) or within auxiliary lanes of an intersection;	Yes	Building fronts the signalized intersection of O'Connor/Slater
A proposed driveway makes use of an existing median break that serves an existing site	No	
There is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development	No	
The development includes a drive-thru facility	No	
Safety Trigger Met?	Yes	



1 / A-001 IMPLANTATION PLAN
1 : 100

SYMBOLS

- Room name 101 — ROOM NAME AND NUMBER
- 101 — DOOR NUMBER
- W — WINDOW TYPE
- TYPE OF CLADDING
- S40 — INTERIOR WALL TYPE
- E — EXTERIOR WALL TYPE
- 10000 — ELEVATION REFERENCE
- B-000000 — CONCRETE ELEVATION
- F-000000 — ELEVATION OF FINISHED FLOOR
- 1 / A-101 — EXTERIOR ELEVATION REFERENCE
- 1 / A101 — INTERIOR ELEVATION REFERENCE
- 1 / A-101 — SECTION REFERENCE
- 1 / A-101 — DETAIL REFERENCE

GENERAL

BUILDING	CNB 2015
1. OCCUPANCY	GROUPE C (RESIDENTIAL)
2. TYPEOF CONSTRUCTION	NON COMBUSTIBLE
3. BUILDING HEIGHT	26 STOREYS
4. CNB CLASSIFICACION	SECTION 3.2.2.-
5. SPRINKLERED	YES

DENSITY

LOT AREA	2094.4 m²		
DENSITY COEFFICIENT:			
GROSS BUILT AREA	33 959.5 m²	=	16.2
LOT AREA	2094.4 m²		

SITE COVERAGE

LOT AREA	2092.4 m²			
IMPLANTATION AREA	1494.0 m²			
IMPLANTATION AREA	x 100%	=	1494.0m² x 100%	= 71.4%
LOT AREA	2092.4 m²			

PARKING

TOTAL VISITOR PARKING SPOTS REQUIRED : 0.1 x 413 =	41
TOTAL PARKING SPOTS OFFERED	65
ELECTRIC PARKING SPOTS	X
VISITOR PARKING SPOTS	30
ACCESSIBLE PARKING SPOTS	1
SMALL CAR	17
TOTAL BIKE PARKING SPOTS REQUIRED : 0.5 x 413 =	207
TOTAL BIKE PARKING SPOTS OFFERED	309
INSIDE BIKE PARKING SPOTS	299
OUTSIDE VISITOR BIKE PARKING SPOTS	10

LOCKERS

PRIVATE ROOM LOCKERS	38
REGULAR LOCKERS	377
TOTAL LOCKERS	415

AMENITY AREA

TOTAL AMENITY AREA REQUIRED : 6 m² x 413 =	2 478 m²
TOTAL AMENITY AREA OFFERED	4 722 m²
BALCONY AREA	3 430 m²
COMMON SPACE (MIN. 3 m² / UNIT)	1 292 m²

GeigerHuot
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tel.: 514 - 935 - 3338 fax.: 514 - 935 - 3375
info@geigerhuot.com

GENERAL NOTES:

Do not measure directly on the plans.

All dimensions and general conditions are to be verified before the beginning of work.

Never proceed with uncertainty.

This drawing must be read conjointly with the architectural specifications as well as the general notes.

Ordre des architectes du Québec
3151
ERIC HUOT
ARCHITECTES

Stamp

MACH
GROUPE MACH
630 rue Saint Paul, Suite 600
Montreal, QC, H3C 1L9
Tel: 514-374-8224, Fax: 514-374-5561

Client

PROJECT NORTH / GEOGRAPHIC NORTH

REVISIONS		
#	DESCRIPTION	DATE
1	ZONING 50%	24 OCT 2024

2024.09.13	POUR COORDINATION	O.P.
2024.09.18	POUR COORDINATION	O.P.
2024.09.27	POUR COORDINATION	O.P.
2024.10.04	POUR COORDINATION	O.P.
2024.10.28	POUR COORDINATION	O.P.

Revision

Civil Engineer

Structural Engineer

GROUPE cme SERVICES D'INGÉNIERIE

Mecanical/Electrical Engineer

siteform

Landscape Architect

Interior Designer

110 O'CONNOR

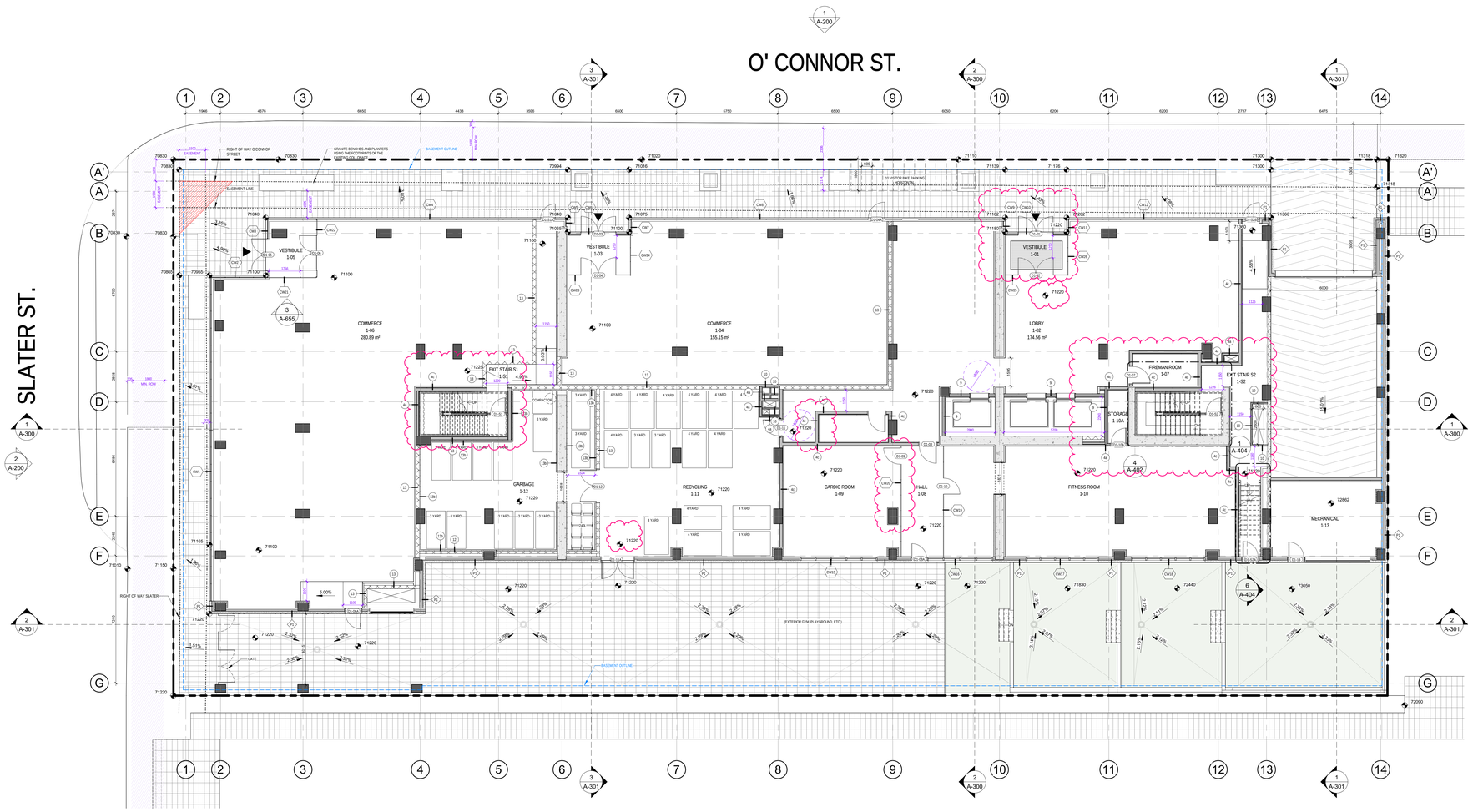
O'CONNOR STREET
OTTAWA, ONTARIO

Sheet name :

IMPLANTATION PLAN

scale :	As indicated	dawn by :	E.H.
date :	date	approved by :	E.H.
folder :	23-032	drawing :	A-001

2024-10-28 3:30:57 PM



1 A-103 GROUND FLOOR
1 : 100

GeigerHuot
architectes

424, rue Guy, bureau 104, Montreal, QC, H3J 1S6
tel. 514 - 935 - 3338 fax. 514 - 935 - 3375
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Client

PROJECT NORTH
GEOGRAPHIC NORTH

REVISIONS		
#	DESCRIPTION	DATE
1	ZONING 50%	24 OCT 2024

2024.09.13	POUR COORDINATION	O.P.
2024.09.16	POUR COORDINATION	O.P.
2024.09.27	POUR COORDINATION	O.P.
2024.10.04	POUR COORDINATION	O.P.
2024.10.28	POUR COORDINATION	O.P.

Revision

Civil Engineer

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GROUPE cme SERVICES D'INGÉNIERIE

Mecanical/Electrical Engineer

siteform

Landscape Architect

Interior Designer

110 O'CONNOR

O'CONNOR STREET
OTTAWA, ONTARIO

Sheet name :

GROUND FLOOR PLAN

scale :	1 : 100	dawn by :	E.H.
date :	date	approuved by :	E.H.
folder :	23-032	drawing :	A-103

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Appendix B:

Existing Peak Hour Volumes

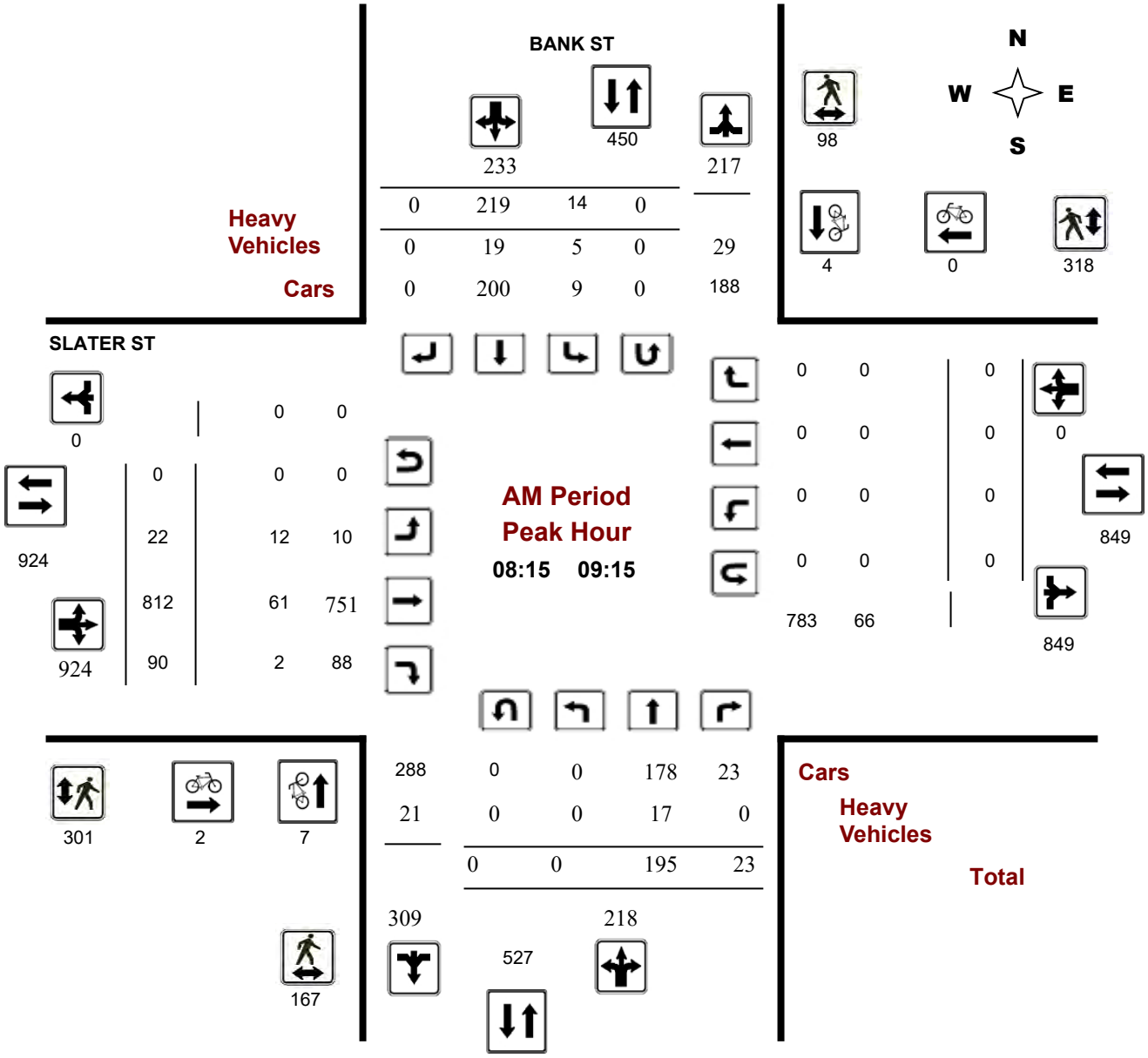
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BANK ST @ SLATER ST

Survey Date: Thursday, March 02, 2023 **WO No:** 40814

Start Time: 07:00 **Device:** Miovision



Comments

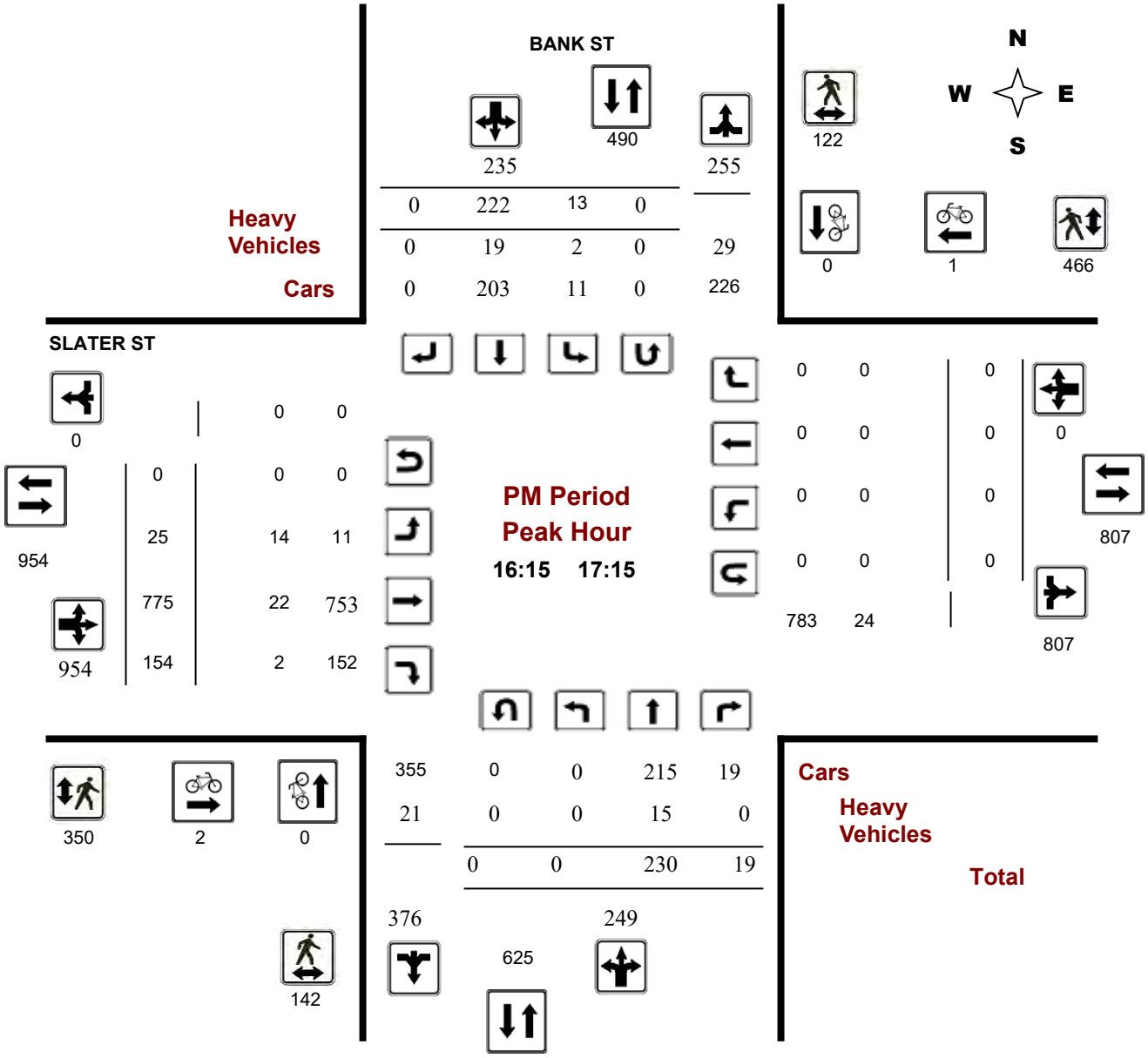
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BANK ST @ SLATER ST

Survey Date: Thursday, March 02, 2023 **WO No:** 40814

Start Time: 07:00 **Device:** Miovision



Comments

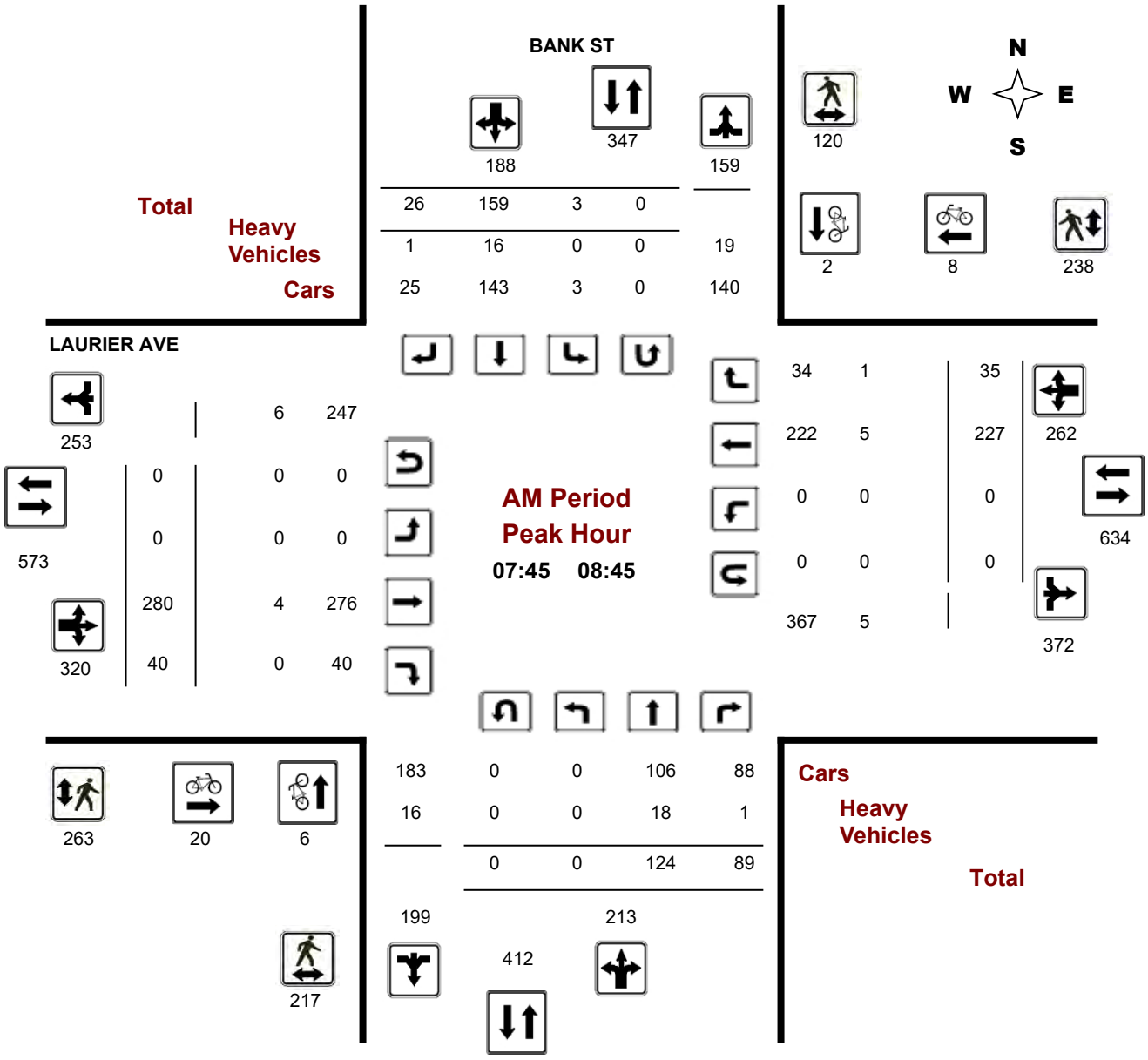
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BANK ST @ LAURIER AVE

Survey Date: Tuesday, December 19, 2023 **WO No:** 41590

Start Time: 07:00 **Device:** Miovision



Total	26	159	3	0
Heavy Vehicles	1	16	0	0
Cars	25	143	3	0

	6	247		
	0	0	0	
	0	0	0	
	4	276		
	0	40		

	34	1		
	222	5		
	0	0		
	0	0		
	367	5		

	35			
	227			
	0			
	0			

	183	0	0	106	88
	16	0	0	18	1
		0	0	124	89

Comments:

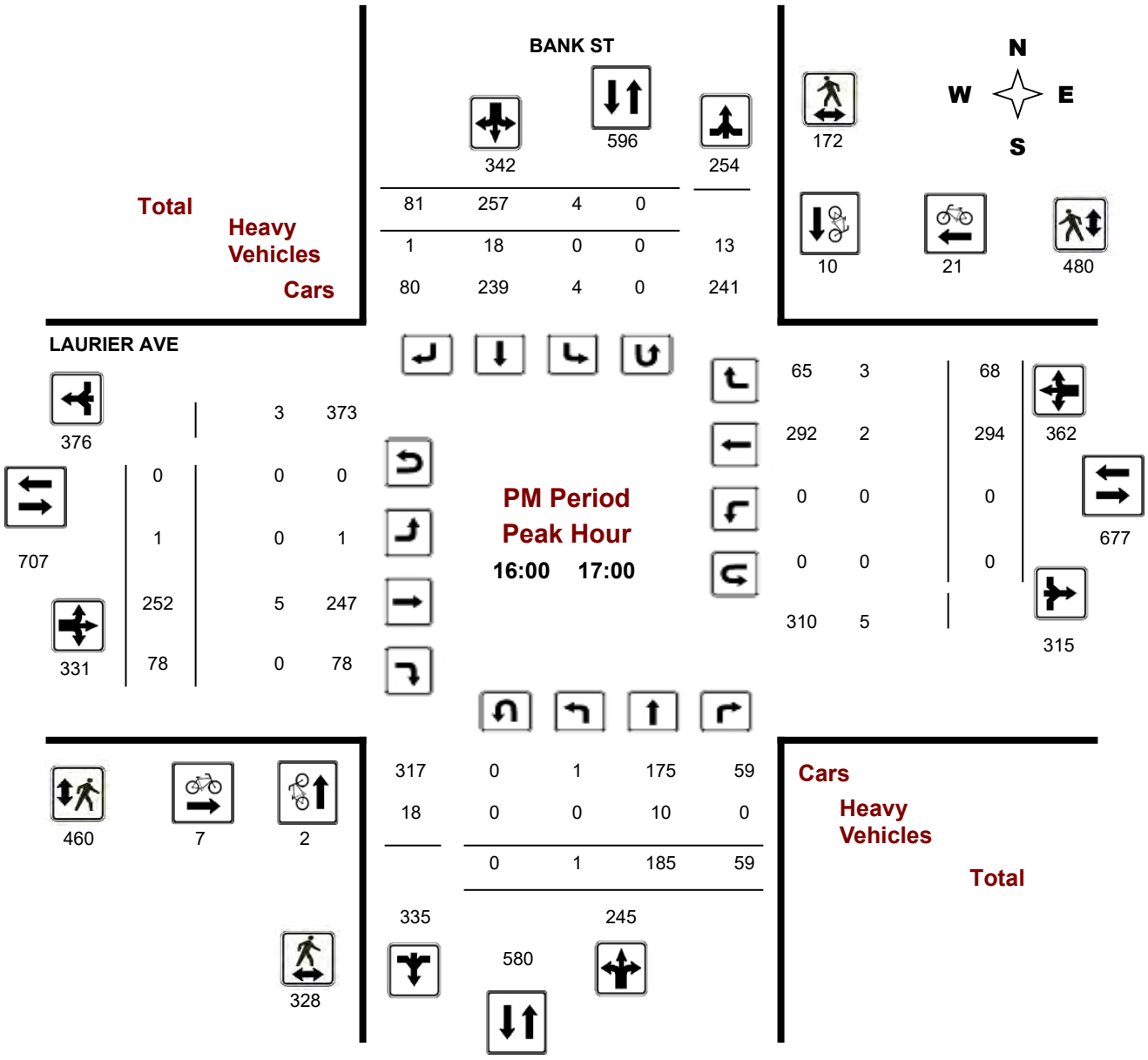
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BANK ST @ LAURIER AVE

Survey Date: Tuesday, December 19, 2023 **WO No:** 41590

Start Time: 07:00 **Device:** Miovision



Comments:

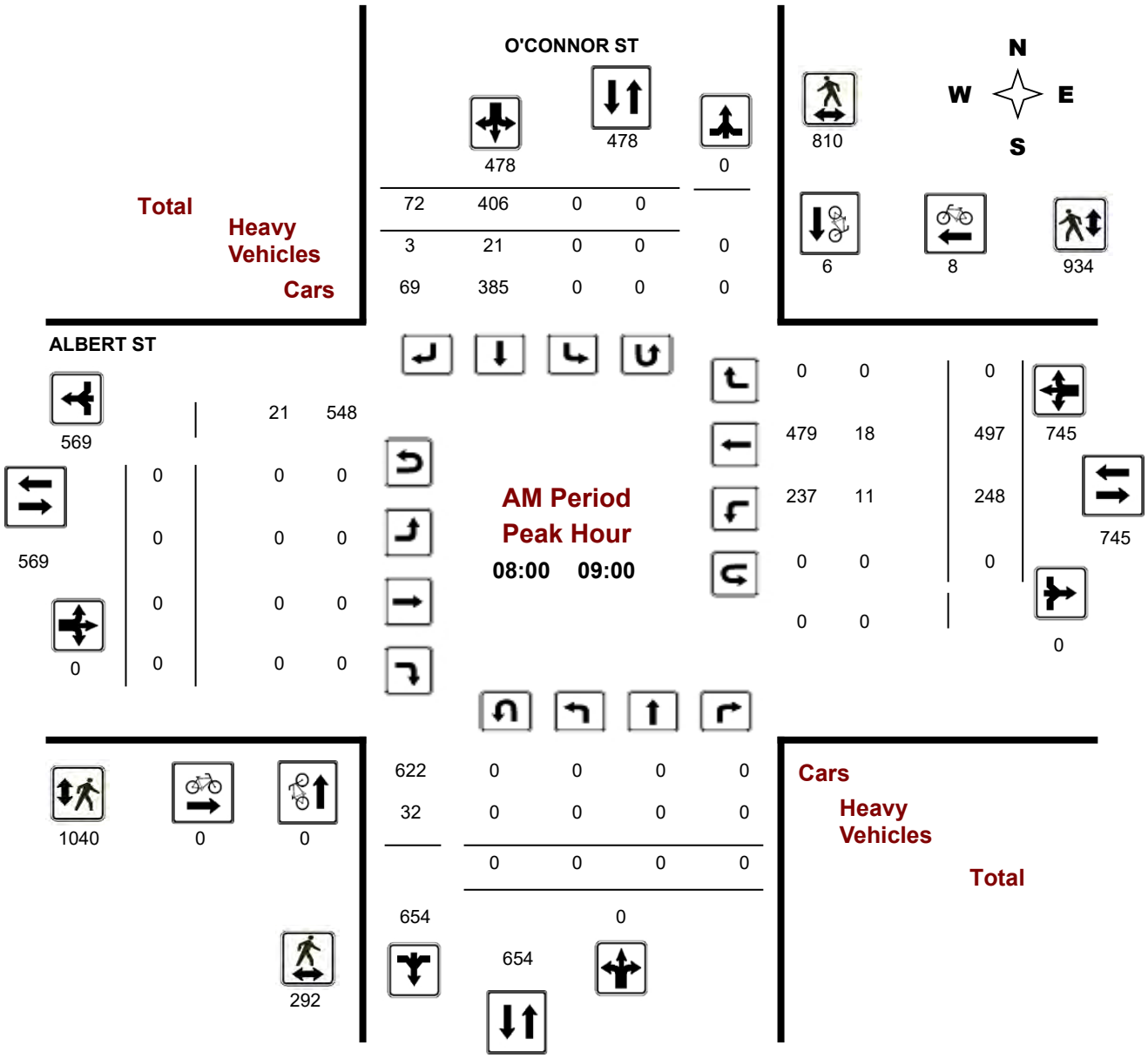
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ALBERT ST @ O'CONNOR ST

Survey Date: Tuesday, December 03, 2019 **WO No:** 39147

Start Time: 07:00 **Device:** Miovision



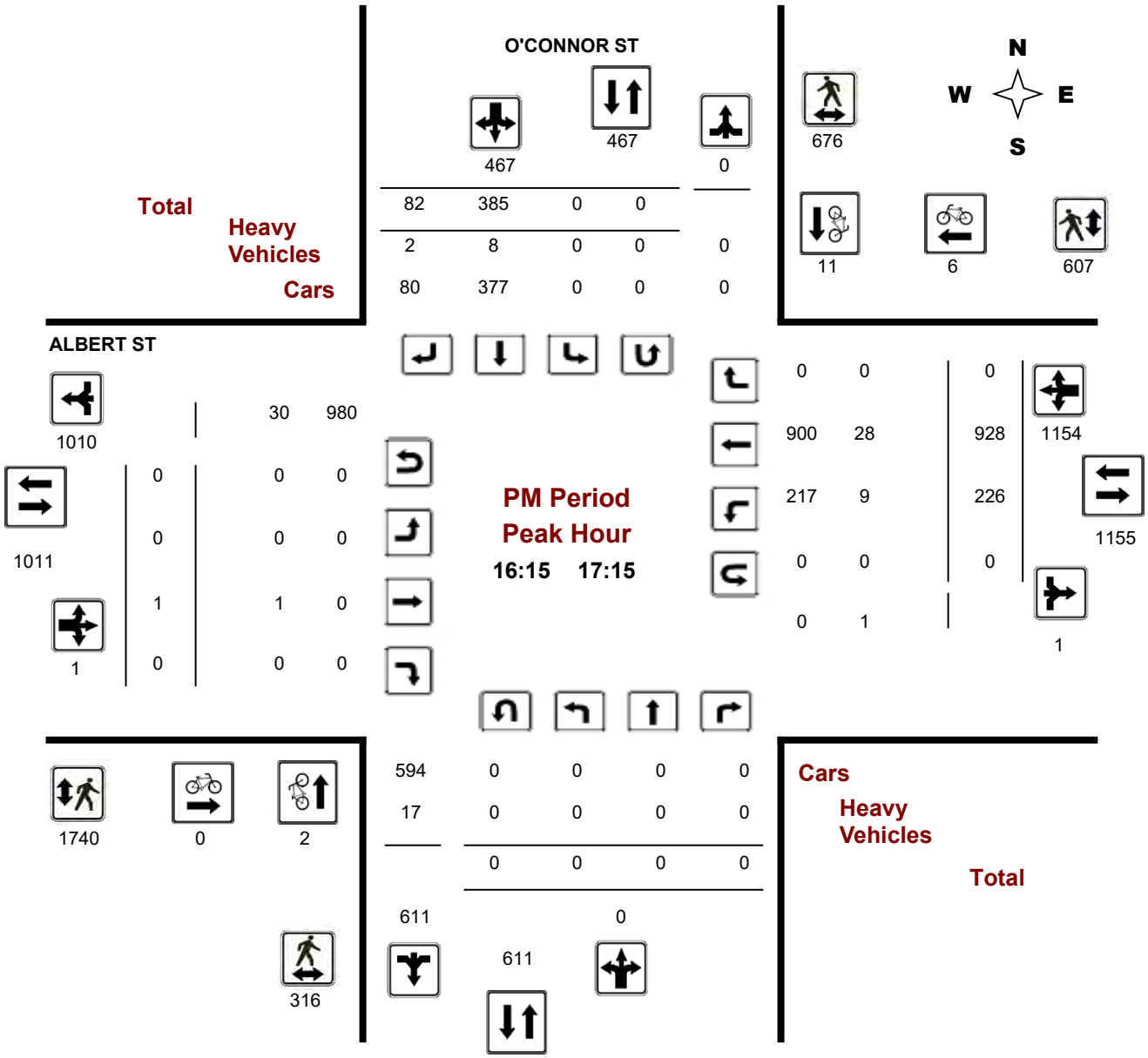
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ALBERT ST @ O'CONNOR ST

Survey Date: Tuesday, December 03, 2019 **WO No:** 39147

Start Time: 07:00 **Device:** Miovision



Comments:

5645477 - SLATER ST @ O'CONNOR ST - JAN 24 2... - TMC

Wed Jan 24, 2024
AM Peak (8:30 AM - 9:30 AM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1163461, Location: 45.420196, -75.697788

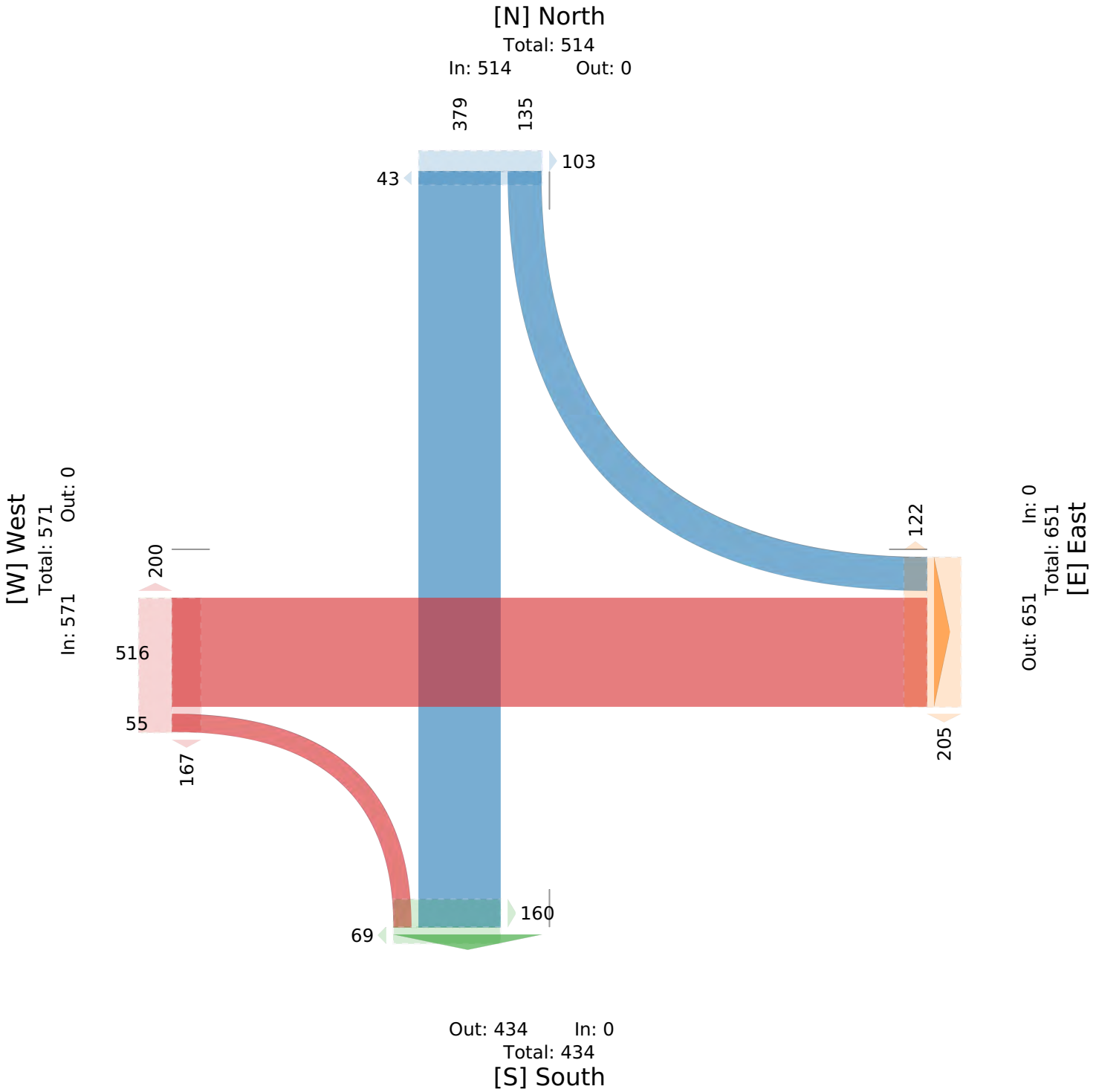
Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA

Leg / Direction	North Southbound						East Westbound						South Northbound						West Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2024-01-24 8:30AM	0	86	33	0	**119**	48	0	0	0	0	**0**	90	0	0	0	0	**0**	53	11	136	0	0	**147**	102	**266**
8:45AM	0	90	32	0	**122**	44	0	0	0	0	**0**	100	0	0	0	0	**0**	79	7	131	0	0	**138**	122	**260**
9:00AM	0	108	46	0	**154**	31	0	0	0	0	**0**	80	0	0	0	0	**0**	51	17	119	0	0	**136**	73	**290**
9:15AM	0	95	24	0	**119**	23	0	0	0	0	**0**	57	0	0	0	0	**0**	46	20	130	0	0	**150**	70	**269**
Total	0	379	135	0	**514**	146	0	0	0	0	**0**	327	0	0	0	0	**0**	229	55	516	0	0	**571**	367	**1085**
% Approach	0%	73.7%	26.3%	0%	**-**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	9.6%	90.4%	0%	0%	**-**	-	-
% Total	0%	34.9%	12.4%	0%	**47.4%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	5.1%	47.6%	0%	0%	**52.6%**	-	-
PHF	-	0.876	0.734	-	**0.833**	-	-	-	-	-	**-**	-	-	-	-	-	**-**	-	0.688	0.947	-	-	**0.950**	-	0.938
Lights	0	364	131	0	**495**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	53	453	0	0	**506**	-	1001
% Lights	0%	96.0%	97.0%	0%	**96.3%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	96.4%	87.8%	0%	0%	**88.6%**	-	92.3%
Single-Unit Trucks	0	7	1	0	**8**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	12	0	0	**13**	-	21
% Single-Unit Trucks	0%	1.8%	0.7%	0%	**1.6%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	1.8%	2.3%	0%	0%	**2.3%**	-	1.9%
Articulated Trucks	0	1	0	0	**1**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	2
% Articulated Trucks	0%	0.3%	0%	0%	**0.2%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	0%	0.2%	0%	0%	**0.2%**	-	0.2%
Buses	0	3	3	0	**6**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	49	0	0	**50**	-	56
% Buses	0%	0.8%	2.2%	0%	**1.2%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	1.8%	9.5%	0%	0%	**8.8%**	-	5.2%
Bicycles on Road	0	4	0	0	**4**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	5
% Bicycles on Road	0%	1.1%	0%	0%	**0.8%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	0%	0.2%	0%	0%	**0.2%**	-	0.5%
Pedestrians	-	-	-	-	-	146	-	-	-	-	-	326	-	-	-	-	-	229	-	-	-	-	-	367	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	99.7%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

5645477 - SLATER ST @ O'CONNOR ST - JAN 24 2... - TMC
Wed Jan 24, 2024
AM Peak (8:30 AM - 9:30 AM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1163461, Location: 45.420196, -75.697788

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



5645477 - SLATER ST @ O'CONNOR ST - JAN 24 2... - TMC

Wed Jan 24, 2024
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1163461, Location: 45.420196, -75.697788

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA

Leg Direction	North Southbound						East Westbound						South Northbound						West Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2024-01-24 4:00PM	0	124	35	0	**159**	45	0	0	0	0	**0**	66	0	0	0	0	**0**	77	17	180	0	0	**197**	116	**356**
4:15PM	0	126	38	0	**164**	39	0	0	0	0	**0**	75	0	0	0	0	**0**	53	15	202	0	0	**217**	79	**381**
4:30PM	0	117	36	0	**153**	49	0	0	0	0	**0**	71	0	0	0	0	**0**	63	13	161	0	0	**174**	104	**327**
4:45PM	0	115	36	0	**151**	43	0	0	0	0	**0**	67	0	0	0	0	**0**	64	16	175	0	0	**191**	77	**342**
Total	0	482	145	0	**627**	176	0	0	0	0	**0**	279	0	0	0	0	**0**	257	61	718	0	0	**779**	376	**1406**
% Approach	0%	76.9%	23.1%	0%	**-**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	7.8%	92.2%	0%	0%	**-**	-	-
% Total	0%	34.3%	10.3%	0%	**44.6%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	4.3%	51.1%	0%	0%	**55.4%**	-	-
PHF	-	0.960	0.954	-	**0.959**	-	-	-	-	-	**-**	-	-	-	-	-	**-**	-	0.897	0.886	-	-	**0.895**	-	0.922
Lights	0	473	140	0	**613**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	60	682	0	0	**742**	-	1355
% Lights	0%	98.1%	96.6%	0%	**97.8%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	98.4%	95.0%	0%	0%	**95.3%**	-	96.4%
Single-Unit Trucks	0	5	1	0	**6**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	8	0	0	**8**	-	14
% Single-Unit Trucks	0%	1.0%	0.7%	0%	**1.0%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	0%	1.1%	0%	0%	**1.0%**	-	1.0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	0%
Buses	0	2	4	0	**6**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	26	0	0	**27**	-	33
% Buses	0%	0.4%	2.8%	0%	**1.0%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	1.6%	3.6%	0%	0%	**3.5%**	-	2.3%
Bicycles on Road	0	2	0	0	**2**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	2	0	0	**2**	-	4
% Bicycles on Road	0%	0.4%	0%	0%	**0.3%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	0%	0.3%	0%	0%	**0.3%**	-	0.3%
Pedestrians	-	-	-	-	-	173	-	-	-	-	-	276	-	-	-	-	-	257	-	-	-	-	-	376	
% Pedestrians	-	-	-	-	-	98.3%	-	-	-	-	-	98.9%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	1.7%	-	-	-	-	-	1.1%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

5645477 - SLATER ST @ O'CONNOR ST - JAN 24 2... - TMC
Wed Jan 24, 2024
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1163461, Location: 45.420196, -75.697788

Provided by: City of Ottawa
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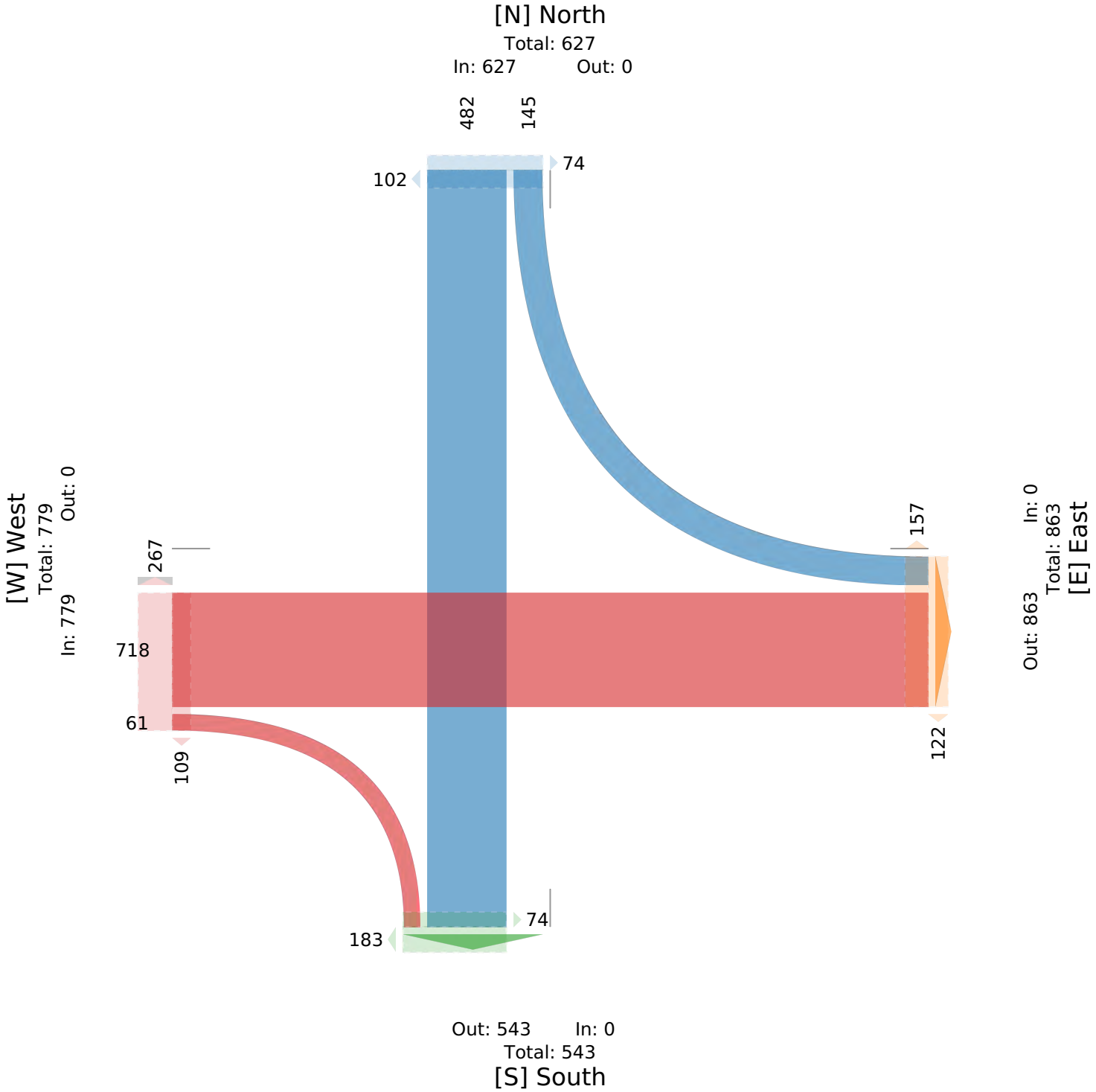


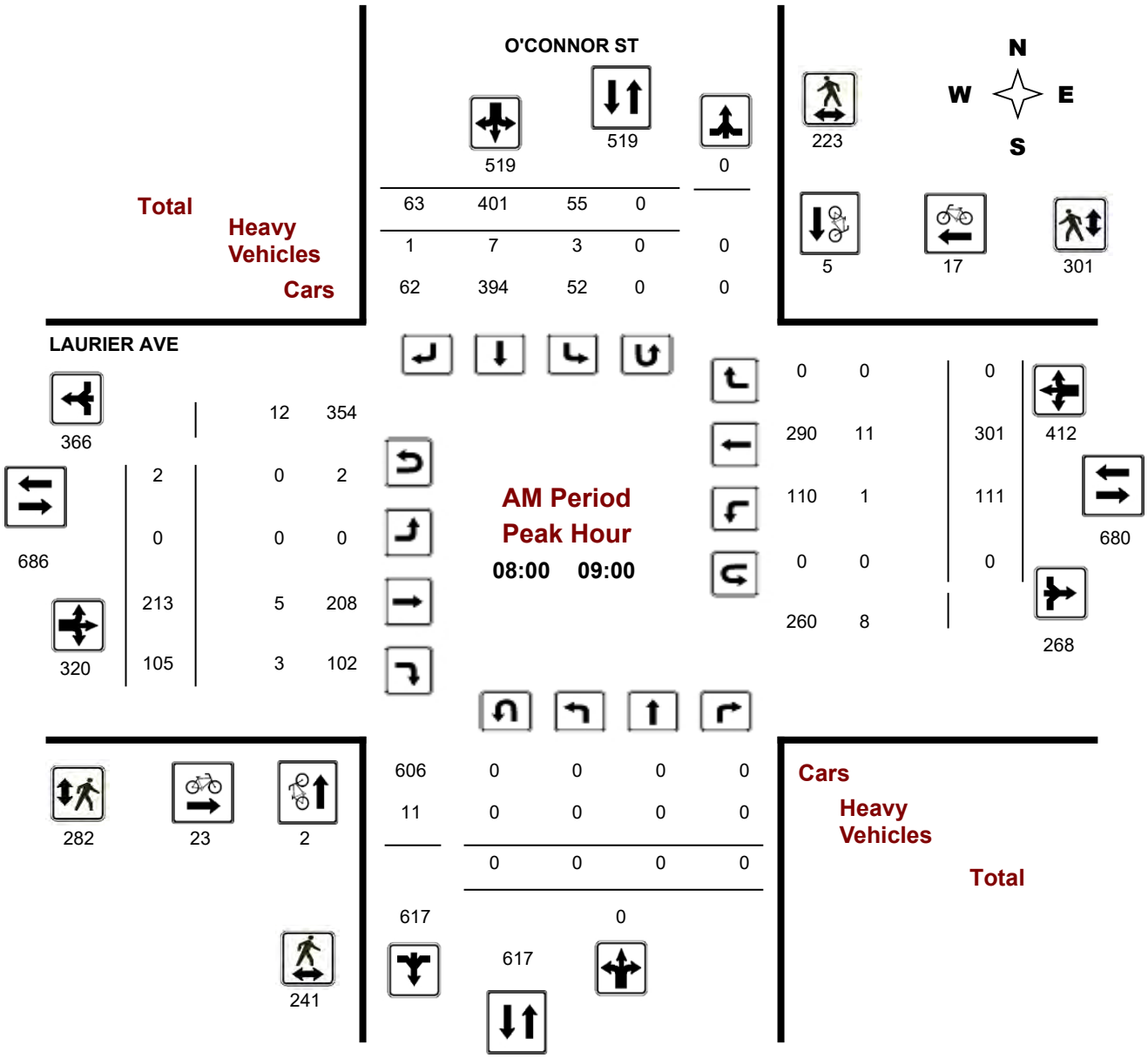
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LAURIER AVE @ O'CONNOR ST

Survey Date: Wednesday, December 06, 2023 **WO No:** 41363

Start Time: 07:00 **Device:** Miovision



Comments:

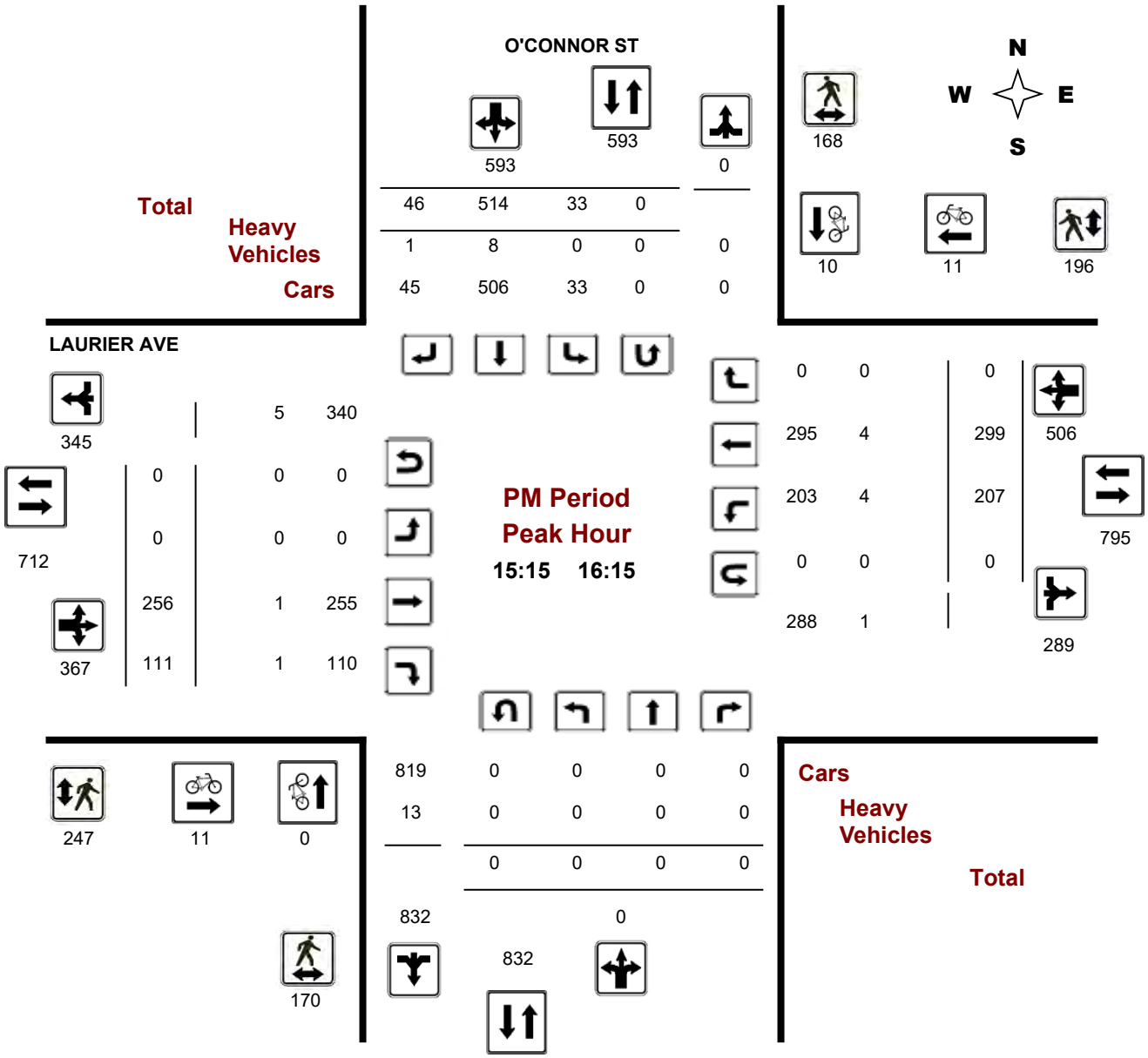
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LAURIER AVE @ O'CONNOR ST

Survey Date: Wednesday, December 06, 2023 **WO No:** 41363

Start Time: 07:00 **Device:** Miovision



Comments:

Appendix C:

Historic Collision Data

Total Area

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	21	7	30	9	1	0	7	3	78	67%
Non-fatal injury	3	10	3	9	0	13	0	0	38	33%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**24**	**17**	**33**	**18**	**1**	**13**	**7**	**3**	**116**	100%
	#2 or 21%	#4 or 15%	#1 or 28%	#3 or 16%	#8 or 1%	#5 or 11%	#6 or 6%	#7 or 3%		

BANK ST/SLATER ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2017-2021	16	16,752	1825	**0.52**

Peds	Cyclists
2	**0**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	3	1	5	1	0	0	0	1	11	69%
Non-fatal injury	2	0	0	1	0	2	0	0	5	31%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**5**	**1**	**5**	**2**	**0**	**2**	**0**	**1**	**16**	100%
	31%	6%	31%	13%	0%	13%	0%	6%		

BANK ST/LAURIER AVE

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2017-2021	20	19,072	1825	**0.57**

Peds	Cyclists
2	**6**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	2	1	4	1	0	0	0	0	8	40%
Non-fatal injury	1	4	2	3	0	2	0	0	12	60%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**3**	**5**	**6**	**4**	**0**	**2**	**0**	**0**	**20**	100%
	15%	25%	30%	20%	0%	10%	0%	0%		

ALBERT ST/O'CONNOR ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2017-2021	15	21,729	1825	**0.38**

Peds	Cyclists
4	**0**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	3	1	5	1	0	0	0	0	10	67%
Non-fatal injury	0	0	0	1	0	4	0	0	5	33%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**3**	**1**	**5**	**2**	**0**	**4**	**0**	**0**	**15**	100%
	20%	7%	33%	13%	0%	27%	0%	0%		

O'CONNOR ST/SLATER ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2017-2021	23	16,892	1825	**0.75**

Peds	Cyclists
3	**0**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	3	2	8	5	0	0	0	0	18	78%
Non-fatal injury	0	0	0	2	0	3	0	0	5	22%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**3**	**2**	**8**	**7**	**0**	**3**	**0**	**0**	**23**	100%
	13%	9%	35%	30%	0%	13%	0%	0%		

LAURIER AVE/O'CONNOR ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2017-2021	20	17,313	1825	**0.63**

Peds	Cyclists
1	**5**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	7	2	1	0	0	0	0	1	11	55%
Non-fatal injury	0	5	1	2	0	1	0	0	9	45%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**7**	**7**	**2**	**2**	**0**	**1**	**0**	**1**	**20**	100%
	35%	35%	10%	10%	0%	5%	0%	5%		

Road Segments

O'CONNOR ST, ALBERT ST to SLATER ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2017-2021	2	n/a	1825	**n/a**

Peds	Cyclists
0	**0**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	0	0	0	0	0	0	2	0	2	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	100%
	0%	0%	0%	0%	0%	0%	100%	0%		

SLATER ST, BANK ST to O'CONNOR ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2017-2021	5	n/a	1825	**n/a**

Peds	Cyclists
0	**0**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	2	0	2	0	0	0	1	0	5	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**2**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**5**	100%
	40%	0%	40%	0%	0%	0%	20%	0%		

LAURIER AVE W, BANK ST to O'CONNOR ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2017-2021	15	n/a	1825	**n/a**

Peds	Cyclists
1	**1**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	1	0	5	1	1	0	4	1	13	87%
Non-fatal injury	0	1	0	0	0	1	0	0	2	13%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**1**	**1**	**5**	**1**	**1**	**1**	**4**	**1**	**15**	100%
	7%	7%	33%	7%	7%	7%	27%	7%		

Appendix D:

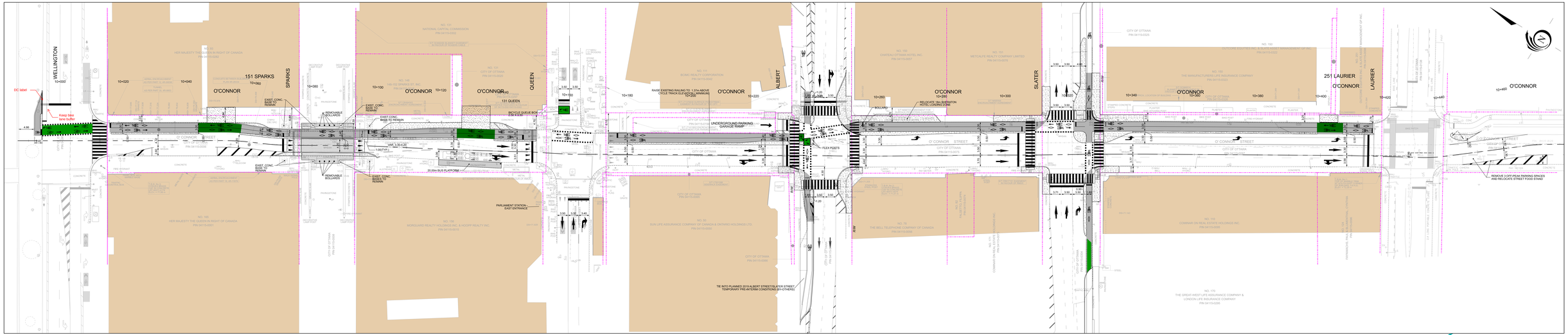
Functional Desing Plans O'Connor St, Wellington St & Slater St

Legend:

EXISTING PROPERTY LINE	GREEN THERMOPLASTIC PAINT
PROPOSED CURB DEPRESSION	EXISTING TRAFFIC SIGNALS (POSSIBLE MODIFICATIONS)
PROPOSED CYCLE TRACKS	EXISTING STREET LIGHTING
TACTILE WALKING SURFACE INDICATOR (TWSI)	RELOCATE STREET LIGHTING POLE

Des:	CM,EP,KH,MP	Plate: 01	WELLINGTON STREET CYCLING IMPROVEMENT
Chkd:	CM,EP,KH,MP		
Dwn:	MB		
Chkd:	CM,EP,KH	Scale: Horizontal 0 5 10 20	FUNCTIONAL DESIGN NORTH CYCLE TRACK OPTION
Date:	February–10–22		

O'CONNOR ST. BIKEWAY PHASE 2 - 2023
WELLINGTON ST. TO LAURIER ST.



FOR REVIEW PURPOSES ONLY
NOT FOR CONSTRUCTION
September 20, 2023

Ottawa PARSONS

0m 5m 10m 20m 30m 40m

Appendix E:

Truck Turning Templates


GRANITE BENCHES AND PLANTERS USING THE FOOTPRINTS OF THE EXISTING COLLONADE
COMMERCIAL 253.89 m²
COMMERCIAL 208.21 m²
LOBBY 196.93 m²
CIRCULATION 45.54 m²
CIRCULATION 25.1 m²
CIRCULATION 42.71 m²
GARBAGE 43.3 m²
MECHANICAL 32.75 m²
GARBAGE 153.09 m²
AMMENITY 135.33 m²
AMMENITY 265 m²
(EXTERIOR GYM, PLAYGROUND, ETC.)
24 STANDING BIKE PARKING
GATE WITH TRAFFIC LIGHT SIGNALING SYSTEM
HSU TAC-2017 (CA)
10.2%
DN
UP

Appendix F:

MMLOS: Road Segments

Multi-Modal Level of Service - Segments Form

Consultant	**Parsons**	**Project**	**479053**
Scenario	**110 O'Connor St**	**Date**	**1-Nov-24**
Comments			

SEGMENTS		**Street A**	Slater (N)	Slater (S)	O'Connor (W)	O'Connor (E)	Slater (N)	Slater (S)	O'Connor (W)	O'Connor (E)	Section
			Existing	Existing	Existing	Existing	Future	Future	Future	Future	9
Pedestrian	Sidewalk Width Boulevard Width	**D**	≥ 2 m 0.5 - 2 m	≥ 2 m 0.5 - 2 m	≥ 2 m 0.5 - 2 m	≥ 2 m 0.5 - 2 m	≥ 2 m 0.5 - 2 m	≥ 2 m > 2 m	≥ 2 m 0.5 - 2 m	≥ 2 m > 2 m	
	Avg Daily Curb Lane Traffic Volume		> 3000	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000	
	Operating Speed On-Street Parking		> 50 to 60 km/h no	> 50 to 60 km/h no	> 50 to 60 km/h no	> 50 to 60 km/h yes	> 50 to 60 km/h no	> 50 to 60 km/h no	> 50 to 60 km/h no	> 50 to 60 km/h no	
	Exposure to Traffic PLoS		**D**	**D**	**D**	**C**	**D**	**C**	**D**	**C**	**-**
	Effective Sidewalk Width		3.0 m	2.0 m	2.0 m	2.5 m	3.0 m	3.0 m	2.0 m	3.0 m	
	Pedestrian Volume		250 ped/hr	250 ped/hr	500 ped /hr	500 ped /hr	250 ped/hr	250 ped/hr	500 ped /hr	500 ped /hr	
	Crowding PLoS		**A**	**B**	**B**	**B**	**A**	**A**	**B**	**B**	**-**
	Level of Service		**D**	**D**	**D**	**C**	**D**	**C**	**D**	**C**	**-**
Bicycle	Type of Cycling Facility	**E**	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic		Physically Separated		Physically Separated	
	Number of Travel Lanes		2-3 lanes total	2-3 lanes total	2-3 lanes total	2-3 lanes total					
	Operating Speed		≥ 50 to 60 km/h	≥ 50 to 60 km/h	≥ 50 to 60 km/h	≥ 50 to 60 km/h					
	# of Lanes & Operating Speed LoS		**E**	**E**	**E**	**E**	**-**	**-**	**-**	**-**	**-**
	Bike Lane (+ Parking Lane) Width										
	Bike Lane Width LoS		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Bike Lane Blockages										
	Blockage LoS		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge					
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes	≤ 3 lanes	≤ 3 lanes	≤ 3 lanes					
	Sidestreet Operating Speed		>50 to 60 km/h	>50 to 60 km/h	>50 to 60 km/h	>50 to 60 km/h					
	Unsignalized Crossing - Lowest LoS		**C**	**C**	**C**	**C**	**-**	**A**	**-**	**A**	**-**
	Level of Service		**E**	**E**	**E**	**E**	**-**	**A**	**-**	**A**	**-**
Transit	Facility Type	**D**		Bus lane				Mixed Traffic			
	Friction or Ratio Transit:Posted Speed			Cf ≤ 60				Vt/Vp ≥ 0.8			
	Level of Service		**-**	**B**	**-**	**-**	**-**	**D**	**-**	**-**	**-**
Truck	Truck Lane Width	**A**		≤ 3.5 m	≤ 3.5 m			≤ 3.5 m	≤ 3.5 m		
	Travel Lanes per Direction			> 1	> 1			> 1	> 1		
	Level of Service		**-**	**A**	**A**	**-**	**-**	**A**	**A**	**-**	**-**

Appendix G:

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	☑ Fronting street.
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑ Entrance fronting O'Connor.
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑ Modern design.
	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)*	☑ Sidewalks available from building to LRT portal.
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)*	☑ Refer to 1.2.1.

	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)*	☑ Refer to 1.2.1.
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)*	☑ Built to meet specs.
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)*	☑ Provided.
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑ Refer to 1.2.1.
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☑ Street lighting already exists.
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	☑ Cycle-tracks exist on O'Connor and Laurier Ave.
	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	☑ Street lighting already exists.
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)	☑ Route maps and locations proposed at front entrance.

	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)*	☑ Bike parking provided in secure parking in P1 and P2.
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)*	☑ Site exceeds minimum bike parking.
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)*	☑ Will meet by-law.
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	☑ Proposed rate of approximately 0.75/unit.
	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)*	☑ Will meet by-law.
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☐ Proposed rate of approximately 0.75/unit.
	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	☐ No 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	☐ Not applicable.
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐ Not applicable.

		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	☑ Proposed to meet bylaw.
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	☑ short-term to use -1 and parts of -2 level, residents -2 and -3.
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)*	☐ Not applicable.
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)	☑ short-term to use -1 and parts of -2 level, residents -2 and -3.

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: *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)*	☐ not applicable to this site
		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)	☐ not applicable to this site
		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)*	☑ TBD if condo or apartment, proposed unbundled.
BASIC	★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☑ TBD if condo or apartment, proposed unbundled.

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	☐

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	☑ Fronting street.
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑ Entrance fronting O'Connor.
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑ Modern design.
	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)*	☑ Sidewalks available from building to LRT portal.
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)*	☑ Refer to 1.2.1.

		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)*	☑ Refer to 1.2.1.
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)*	☑ Built to meet specs.
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)*	☑ Provided.
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑ Refer to 1.2.1.
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☑ Street lighting already exists.
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	☑ Cycle-tracks exist on O'Connor and Laurier Ave.
	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	☑ Street lighting already exists.
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)	☑ Route maps and locations proposed at front entrance.

		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)*	☑ Secure bike parking provided indoors in P1 and P2.
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)*	☑ Site exceeds minimum bike parking.
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)*	☑ Will meet by-law.
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	☑ 10 outdoor bike parking proposed for commercial uses. Bylaw requires 2.
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	☑ refer to comment above.
	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)*	☑ Only 2 spaces required for commercial uses.
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	☐ No 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	☐ No on-site transit stops.
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐ No on-site transit stops.
	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	☐ very few employees anticipated.
	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	☐ very few employees anticipated.
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐ very few employees anticipated.
	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	☑ Minimum parking requirement met, no maximum parking restriction.
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	☑ short-term to use -1 and parts of -2 level, residents -2 and -3.
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)	☑ short-term to use -1 and parts of -2 level, residents -2 and -3.
	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 Measures Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

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: *Non-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	☑
		2.2 Bicycle skills training	
		Commuter travel	
BETTER	*	2.2.1 Offer on-site cycling courses for commuters, or subsidize off-site courses	☐
		2.3 Valet bike parking	
		Visitor travel	
BETTER		2.3.1 Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐

		TDM measures: *Non-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	☑
BASIC		3.1.2 Provide online links to OC Transpo and STO information	☑
BETTER		3.1.3 Provide real-time arrival information display at entrances	☐
		3.2 Transit fare incentives	
		Commuter travel	
BETTER		3.2.1 Offer preloaded PRESTO cards to encourage commuters to use transit	☐
BETTER	*	3.2.2 Subsidize or reimburse monthly transit pass purchases by employees	☐
		Visitor travel	
BETTER		3.2.3 Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	☐
		3.3 Enhanced public transit service	
		Commuter travel	
BETTER		3.3.1 Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	☐
		Visitor travel	
BETTER		3.3.2 Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	☐
		3.4 Private transit service	
		Commuter travel	
BETTER		3.4.1 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	☐
		Visitor travel	
BETTER		3.4.2 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☐

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		4. RIDESHARING	
		4.1 Ridematching service	
		Commuter travel	
BASIC	*	4.1.1 Provide a dedicated ridematching portal at OttawaRideMatch.com	☐
		4.2 Carpool parking price incentives	
		Commuter travel	
BETTER		4.2.1 Provide discounts on parking costs for registered carpools	☐ Very few employees anticipated.
		4.3 Vanpool service	
		Commuter travel	
BETTER		4.3.1 Provide a vanpooling service for long-distance commuters	☐
		5. CARSHARING & BIKESHARING	
		5.1 Bikeshare stations & memberships	
BETTER		5.1.1 Contract with provider to install on-site bikeshare station for use by commuters and visitors	☐
		Commuter travel	
BETTER		5.1.2 Provide employees with bikeshare memberships for local business travel	☐
		5.2 Carshare vehicles & memberships	
		Commuter travel	
BETTER		5.2.1 Contract with provider to install on-site carshare vehicles and promote their use by tenants	☐
BETTER		5.2.2 Provide employees with carshare memberships for local business travel	☐
		6. PARKING	
		6.1 Priced parking	
		Commuter travel	
BASIC	*	6.1.1 Charge for long-term parking (daily, weekly, monthly)	☐
BASIC		6.1.2 Unbundle parking cost from lease rates at multi-tenant sites	✓
		Visitor travel	
BETTER		6.1.3 Charge for short-term parking (hourly)	

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		7. TDM MARKETING & COMMUNICATIONS	
		7.1 Multimodal travel information	
		Commuter travel	
BASIC	*	7.1.1 Provide a multimodal travel option information package to new/relocating employees and students	☑
		Visitor travel	
BETTER	*	7.1.2 Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☐
		7.2 Personalized trip planning	
		Commuter travel	
BETTER	*	7.2.1 Offer personalized trip planning to new/relocating employees	☐
		7.3 Promotions	
		Commuter travel	
BETTER		7.3.1 Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☐
		8. OTHER INCENTIVES & AMENITIES	
		8.1 Emergency ride home	
		Commuter travel	
BETTER	*	8.1.1 Provide emergency ride home service to non-driving commuters	☐
		8.2 Alternative work arrangements	
		Commuter travel	
BASIC	*	8.2.1 Encourage flexible work hours	☐
BETTER		8.2.2 Encourage compressed workweeks	☐
BETTER	*	8.2.3 Encourage telework	☐
		8.3 Local business travel options	
		Commuter travel	
BASIC	*	8.3.1 Provide local business travel options that minimize the need for employees to bring a personal car to work	☐
		8.4 Commuter incentives	
		Commuter travel	
BETTER		8.4.1 Offer employees a taxable, mode-neutral commuting allowance	☐
		8.5 On-site amenities	
		Commuter travel	
BETTER		8.5.1 Provide on-site amenities/services to minimize mid-day or mid-commute errands	☐