

CITY OF OTTAWA

555 ALBERT STREET TRANSPORTATION IMPACT ASSESSMENT FORECASTING REPORT

NOVEMBER 12, 2020

DRAFT





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CITY OF OTTAWA

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WSP
SUITE 300
2611 QUEENSVIEW DRIVE
OTTAWA, ON, CANADA K2B 8K2

T: +1 613 829-2800

F: +1 613 829-8299

WSP.COM



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APPENDICES

- A SCREENING FORM
- B DRAFT SITE PLAN
- C CRASH DATA
- D TRIP GENERATION SUPPORTING DOCUMENTATION

1 SCREENING

This Transportation Impact Assessment (TIA) has been prepared to support the Site Plan application for the development of the Ottawa Public Library (OPL) and Library and Archives Canada (LAC) Joint Facility at 555 Albert Street. The TIA follows the City of Ottawa guidelines which includes 5 steps:

- 1 Screening
- 2 Scoping
- 3 Forecasting
- 4 Analysis
- 5 TIA Plan

The Screening Step determines the need to continue with a Transportation Impact Assessment (TIA) Study. The development is assessed against three triggers: trip generation, location, and safety to identify the next step of the study. If one or more of the triggers is satisfied, the Scoping Step must be completed. If none of the triggers are satisfied, the TIA is deemed complete. If one or more triggers are satisfied, specific TIA components are required to be carried out depending on the combination of triggers (**Table 1-1**) that have been satisfied.

The proposed development at 555 Albert Street **satisfied all three triggers** indicating that, as part of Steps Two through Five of the TIA process, the Design Review and Network Impact components should be completed. be addressed. For reference, the completed Screening Form is provided in **Appendix A**.

Table 1-1. Transportation Impact Assessment (TIA) Screening Options

Next Step of the TIA Process	TIA TRIGGERS SATISFIED		
	Trip Generation	Location	Safety
Deemed Complete	No	No	No
Step Two: <i>Design Review Only</i>	No	Yes (one or both)	
Step Two: <i>Design Review and Network Impact</i>	Yes	Yes	Yes

2 SCOPING

2.1 SCREENING FORM

Refer to **Section 1** for the completed Screening Form.

2.2 DESCRIPTION OF PROPOSED DEVELOPMENT

This Transportation Impact Assessment (TIA) has been prepared in support of the Site Plan Application for the Ottawa Public Library (OPL) and Library and Archives Canada (LAC) Joint Facility being developed at 555 Albert Street.

The 555 Albert Street site is an undeveloped property owned by the City of Ottawa in the Ottawa Inner Area. It is located at the southwest corner of the Albert Street and Commissioner Street intersection. The property consists of approximately 10,530 m² of land which is currently zoned as a Mixed-Use Downtown Zone (MD). X illustrates the Study Area Context. The estimated size of the facility is approximately 20,000 square meters and it is expected to attract an average of 5,000 visitors daily.

The draft site plan, attached as **Appendix B**, includes a five-storey building with two levels of underground parking. Notable transportation elements on the draft site plan include:

- Pedestrians can enter the building at a number of locations with main entrances at the southwest entry between the north and central amphitheatres; at the southeast entry near the Albert Street pedestrian signals, and northeast entry near the corner of Albert Street and Commissioner Street.
- Ring bike racks (28) are provided along the east exterior wall of the building
- Private vehicles access the underground parking structure from Commissioner Street near the north property line (48 parking spaces on P1 and 138 parking spaces on P2; including 10 accessible spaces)
- Private vehicles will also have street parking available on Albert Street (*Albert and Slater Improvement Project*)
- Operations and maintenance vehicles have a separate entrance from Commissioner Street to two interior loading bays and one exterior loading bay south of the parking garage access.

The facility will be built as a single phase with an estimated date of completion during the summer of 2024.



Figure 2-1. Area Context Plan

2.3 EXISTING CONDITIONS

2.3.1 ROADWAYS AND PEDESTRIAN / CYCLING FACILITIES

The eight existing roadways that the Transportation Impact Assessment will consider are Commissioner Avenue, Albert Street, Slater Street, Empress Avenue North, Bronson Avenue, Bay Street, Lyon Street, and Wellington Street. These roads are all under the jurisdiction of the City of Ottawa with the exception of Wellington Street which is also part of the National Capital Commissions (NCC) ceremonial and discovery route: Confederation Boulevard. The road classification for City of Ottawa roadways are defined in the City of Ottawa Official Plan, 2013, Volume 1, Section 7, Annex 1 Road Classifications and Rights-of-Way.

Commissioner Avenue is an urban local road that runs north-south with a posted speed limit of 50 km/h. It has 2 lanes of traffic in one direction (southbound). The Right-of-Way adjacent to the proposed development is approximately 18 metres.

Albert Street is an urban arterial road that runs east-west with a posted speed limit of 50 km/h. On the western section of the study area, Albert Street is a two-way road with 2 lanes of traffic in both directions. Upon leaving the intersection with Empress Ave North, the road splits into a Y-shape; the left side continues as Albert Street while the right side turns into Slater Street. Once Albert Street passes the intersection with Commissioner Street, it becomes a one-way road with 2 lanes (and an HOV lane) of traffic. The Official Plan reserves a 40 metre Right-of-Way in the study area.

Slater Street is an urban arterial one-way road with 2 lanes of traffic throughout the study area. It begins east of Empress Avenue North and continues east-west through the downtown area. The posted speed limit is 50 km/h, similar to Albert Street. The Official Plan reserves a 40 metre Right-of-Way in the study area.

Empress Avenue North is an urban local road that runs north-south with a posted speed limit of 50 km/h and is not a through road. It has 2 lanes of traffic in one direction (southbound). Furthermore, the Right-of-Way in the study area is 15 metres.

Bronson Avenue is an urban arterial that runs north-south with a posted speed limit of 50 km/h. It has 2 lanes of traffic in both directions for a total of 4 lanes throughout the study area. Furthermore, the Right-of-Way in the study area is 23 metres.

Bay Street is an urban arterial that runs north-south with a posted speed limit of 50 km/h. It has 2 lanes of traffic in one direction (northbound). Furthermore, the Right-of-Way in the study area is 20 metres.

Lyon Street is a local road that runs north-south with a posted speed limit of 50 km/h. It has 2 lanes of traffic in one direction (southbound). Furthermore, the Right-of-Way in the study area is 23 metres.

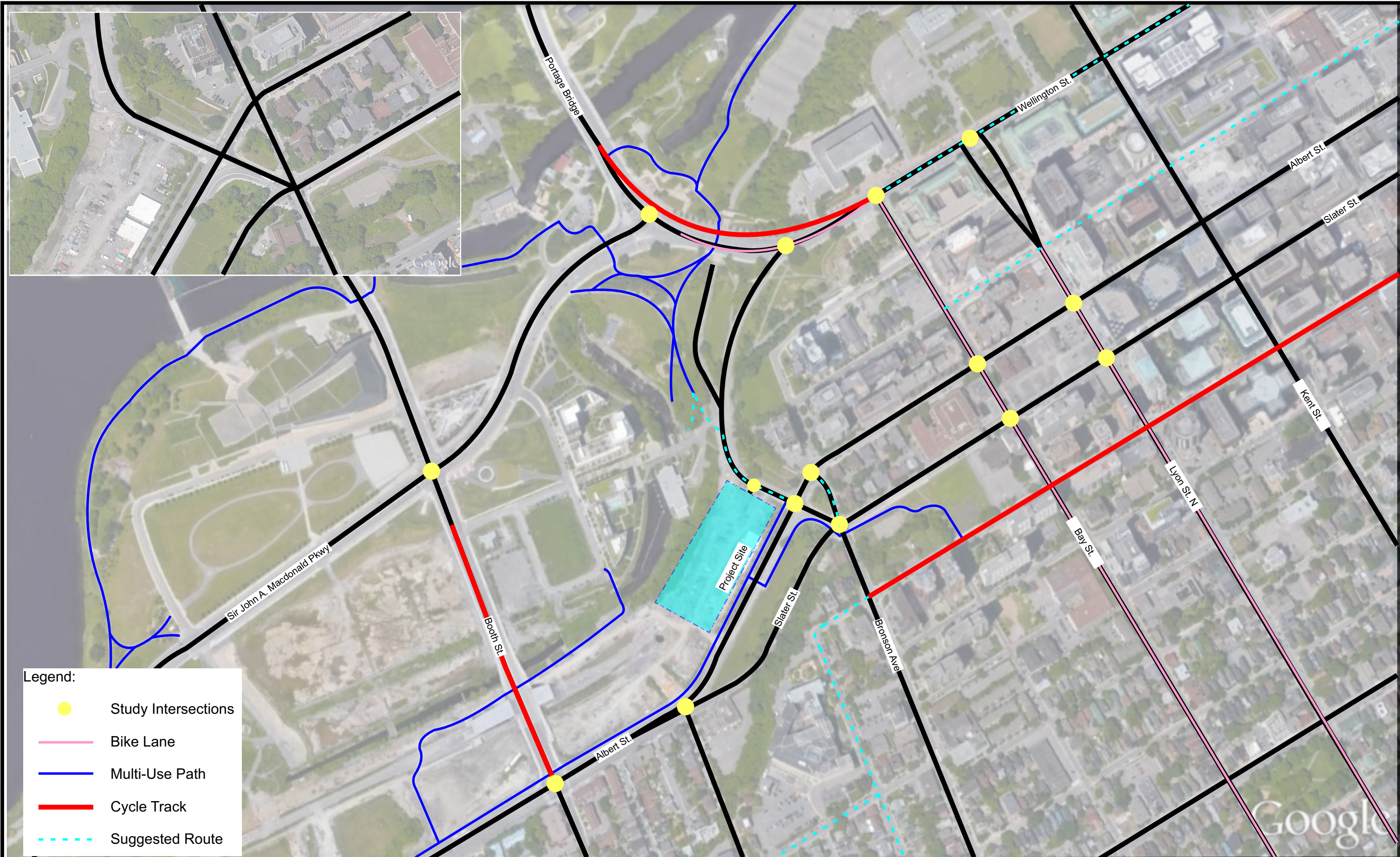
Wellington Street is an urban arterial road that runs east-west alignment with a posted speed of 40 km/h. Wellington Street has 4 to 6 lanes of traffic, with 2 to 3 in each direction, on various locations of the study area. Wellington Street is part of the NCC's Confederation Boulevard which is the Capital's ceremonial and discovery route and connects many sites and symbols of national significance. The Official Plan reserves a 40 metre Right-of-Way west of the Portage Bridge and a 27m Right-of-Way east of the Portage Bridge in the study area.

The existing pedestrian and cycling facilities providing a direct connection to the site are shown in **Figure 2-2** and the City's Ultimate Cycling Network (including pathways) is shown in **Figure 2-3**. These pedestrian and cycling facilities include:

- Commissioner Avenue: 1.6m asphalt pathway on the north and south side
- Albert Street: 3.0m multi-use pathway separated by 4.5m boulevard on west side and 3.0m asphalt pathway separated by curb / seasonal flexible bollards on the east side.
- Pooley's Bridge providing a pedestrian / bicycle connection from Commissioner Street to Fleet Street
- Direct access to the Trans-Canada Trail using paths to the north


NOTE: These design documents are prepared solely for the use by the party with whom the design professional has entered into a contract and there are no representations of any kind made by the design professional to any party with whom the design professional has not entered into a contract.

DRAWING:OLP Study Area.cdr DATE: 2020-05-15 DRAWN BY: adhkikarb



Legend:

- Study Intersections
- Bike Lane
- Multi-Use Path
- Cycle Track
- - - Suggested Route

	<p>WSP Canada Group Limited 2611 Queensview Drive #300 Ottawa, ON, K2B 8K2 t. 613.829.2800 www.wsp.com</p>	<p>Issue Date - 2020-05-15 Scale: NTS Aerial Imagery: 2016 Note: All Dimensions shown in Metres unless otherwise</p>	<p>Figure 2-2 Bicycle and Multi-Use Pathways</p>
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NOTE: These design documents are prepared solely for the use by the party with whom the design professional has entered into a contract and there are no representations of any kind made by the design professional to any party with whom the design professional has not entered into a contract.

DRAWING:OLP Study Area.cdr DATE: 2020-05-15 DRAWN BY: adhkikarb



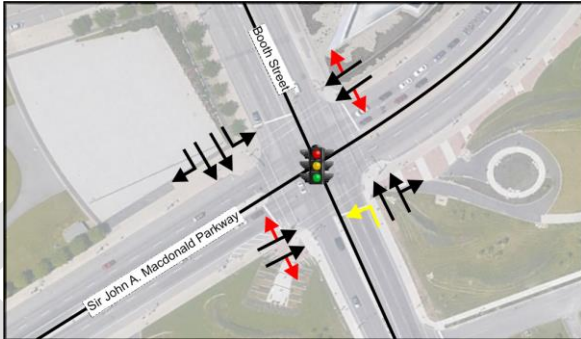
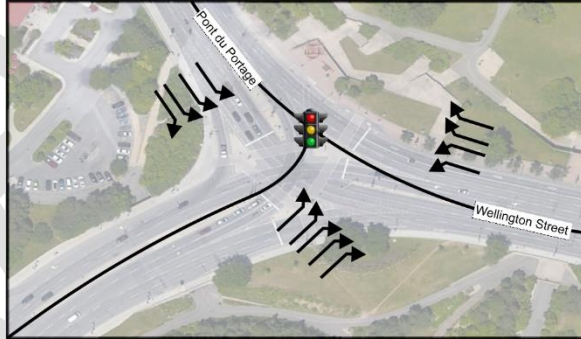

Legend:

- Study Intersections
- - - Pedestrian Sidewalks
- Path

2.3.2 INTERSECTIONS

The Transportation Impact Assessment will consider fourteen intersections as described in **Table 2-1**.

Table 2-1. Description of Study Area Intersections

INTERSECTION (DESCRIPTION)	LANE CONFIGURATION (YELLOW INDICATES BUS, RED INDICATES AUTHORIZED VEHICLES ONLY)
<p>Booth Street and Wellington Street / Sir John A. Macdonald Parkway is a signalized intersection.</p> <p>North Approach: Two through lanes, 50-m right turn lane, 150-m left turn lane</p> <p>East Approach: Two through lanes with the left-turn and right-turn restricted to authorized vehicles only</p> <p>South Approach: One through lane, one through/right turn lane, 60-m left turn lane for HOV vehicles</p> <p>West Approach: Two through lanes with the left-turn and right-turn restricted to authorized vehicles only</p> <p>Pedestrian/Bicycle: Pedestrian crossings across all four approaches</p>	 <p>Booth Street and Wellington Street/Sir John A. Macdonald Parkway Intersection</p>
<p>Wellington Street / Sir John A. Macdonald Parkway and Portage Bridge Street is a signalized intersection.</p> <p>Northwest Approach: Two left-turn lanes, Two right-turn lanes</p> <p>Southeast Approach: Two left-turn lanes, Two right-turn lanes</p> <p>Southwest Approach: Two left-turn lanes, three right-turn lanes</p> <p>Pedestrian/Bicycle: Bicycle and pedestrian crossings across three approaches.</p>	 <p>Wellington Street / Sir John A. Macdonald Parkway and Portage Bridge Street Intersection</p>
<p>Albert Street and Booth Street is a signalized intersection.</p> <p>North Approach: One through lane, 130-m right turn lane; left turn lane extends all the way to the parkway</p> <p>East Approach: Three through lanes (One is HOV), 130-m right turn lane; 80-m left turn lane</p> <p>South Approach: One through/left turn lane, 50-m through/right turn lane</p> <p>West Approach: 190-m left turn lane, one through lane and one through/right turn lane</p> <p>Pedestrian/Bicycle: Pedestrian crossing across all approaches.</p>	 <p>Albert Street and Booth Street Intersection</p>

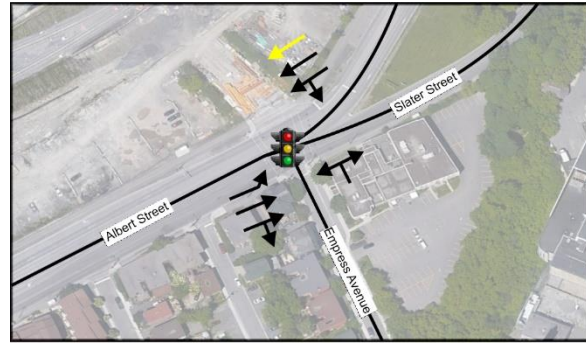
Albert Street and Empress Avenue North is a signalized intersection.

Northeast Approach: Two through lanes (one HOV), one through/left turn lane

South Approach: One left/right turn lane

West Approach: One lane continues northeast on Albert Street and two lanes continue east on Slater Street (right turn on one of the lanes)

Pedestrian/Bicycle: Pedestrian crossings across all approaches.



Albert Street and Empress Avenue Intersection

Albert Street and Commissioner Street is a one-way stop-controlled intersection.

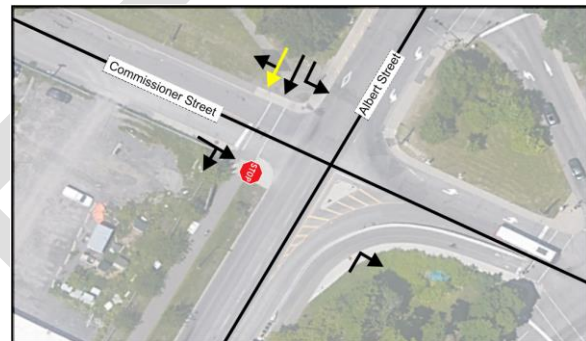
Northeast Approach: One right/through HOV lane, One through lane, and 50-m left turn lane

Northwest Approach: One through/right turn lane; left turns restricted

Southeast Approach: one-way going southbound

Southwest Approach: right-turn only lane

Pedestrian/Bicycle: Bike lane and pedestrian crossing across northwest approach.



Albert Street and Commissioner Street Intersection

Albert Street and Bronson Avenue is a signalized intersection.

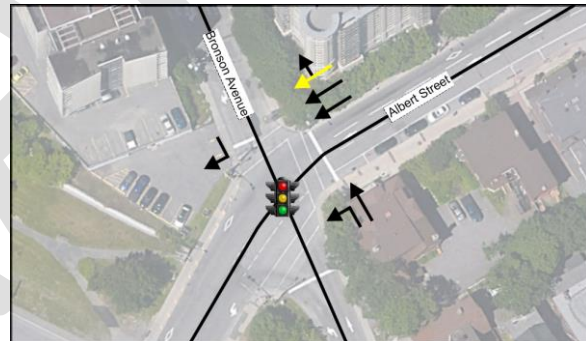
Northeast Approach: right lane is for HOV and right turns, two through lanes

Southeast Approach: 40-m left turn lane, One through lane

Southwest Approach: One-way westbound

Northwest Approach: Only right turns allowed

Pedestrian/Bicycle: Pedestrian crossing across the three approaches.



Albert Street and Bronson Avenue Intersection

Albert Street and Bay Street is a signalized intersection.

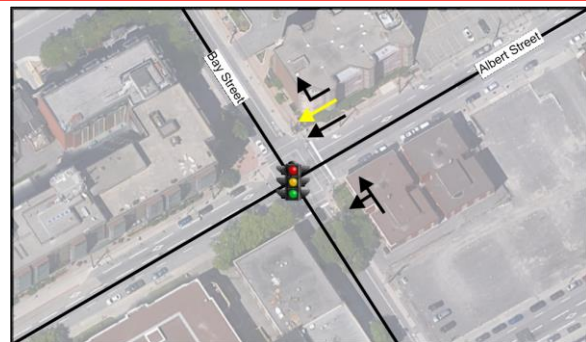
North Approach: One-way northbound

East Approach: One through lane, 50-m right turn lane, one HOV through lane

South Approach: One through/left turn lane

West Approach: One-way westbound

Pedestrian/Bicycle: Bicycle crossing across east approach and pedestrian crossings across all approaches.



Albert Street and Bay Street Intersection

Albert Street and Lyon Street North is a signalized intersection.

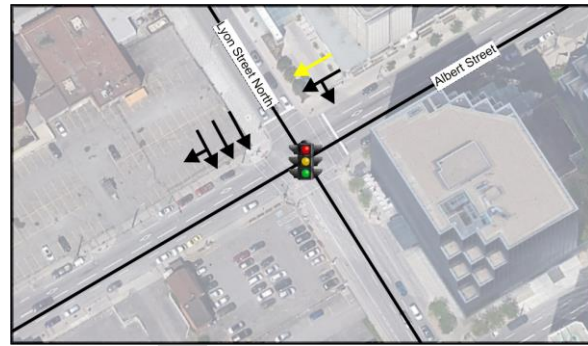
North Approach: Two through lanes, one through/right turn lane

East Approach: One HOV through lane, one through/left turn lane

South Approach: One-way southbound

West Approach: One-way westbound

Pedestrian/Bicycle Infrastructure: Bicycle crossing across west north approach and pedestrian crossings across all approaches.



Albert Street and Lyon Street Intersection

Slater Street and Bronson Avenue is a signalized intersection.

North Approach: One-way northbound

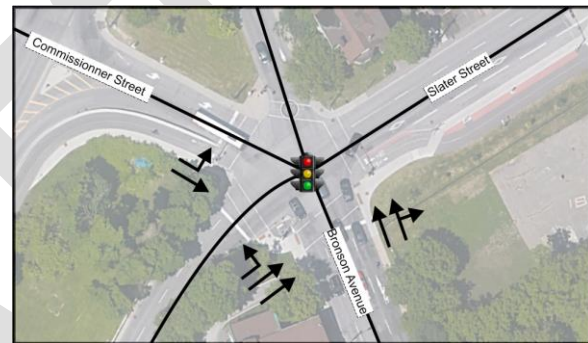
East Approach: One-way eastbound

South Approach: One through lane, one through/right turn lane

Southwest Approach: Two through lanes, one left turn lane

Northwest Approach: One left turn lane, one through lane

Pedestrian/Bicycle Infrastructure: bicycle crossing on south and southwest approaches and pedestrian crossings across all approaches.



Slater Street and Bronson Avenue Intersection

Slater Street and Bay Street is a signalized intersection.

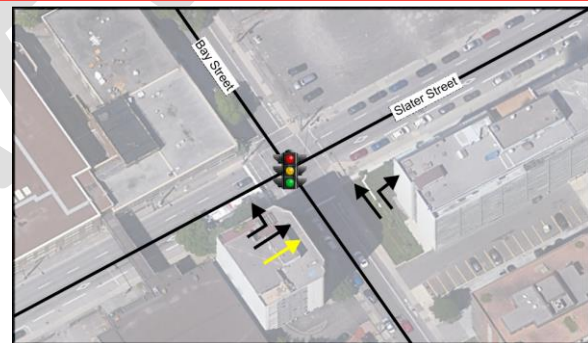
North Approach: one-way going northbound

East Approach: one-way going eastbound

South Approach: One through lane, one right-turn lane

West Approach: One left-turn lane, one through lane, one HOV through lane

Pedestrian/Bicycle: Bicycle crossing across east approach and pedestrian crossings across all approaches.



Slater Street and Bay Street Intersection

Slater Street and Lyon Street North is a signalized intersection.

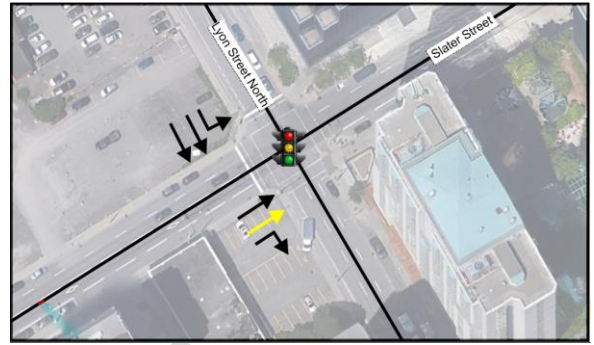
North Approach: Two through lanes, one left-turn lane

East Approach: One-way eastbound

South Approach: One-way southbound

West Approach: One right-turn lane, one through lane, one HOV through lane

Pedestrian/Bicycle: Bicycle crossing across west north approach and pedestrian crossings across all approaches.

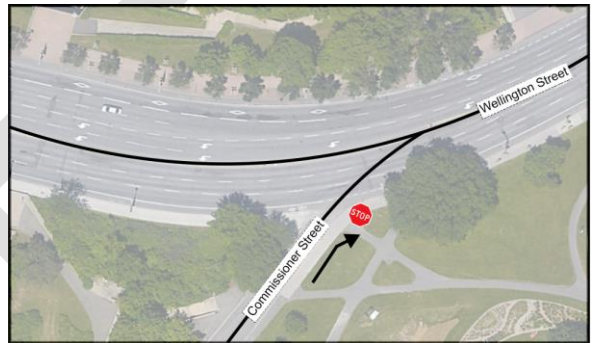


Slater Street and Lyon Street Intersection

Wellington Street and Commissioner Street is a one-way stop-controlled intersection.

South Approach: merge onto Wellington Street; stop controlled

Pedestrian/Bicycle: Bicycle and pedestrian crossing on south approach.



Wellington Street and Commissioner Street Intersection

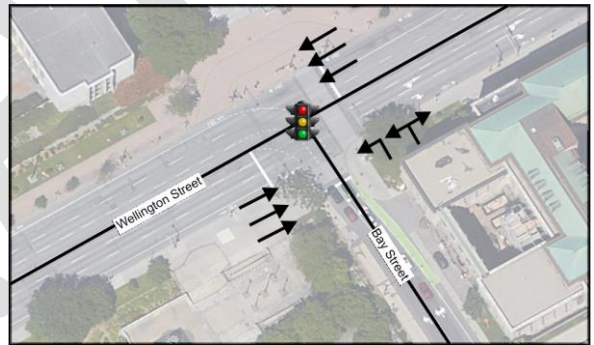
Wellington Street and Bay Street is signalized intersection

East Approach: Three through lanes

South Approach: one-way northbound; one left turn lane, one left/right turn lane

West Approach: Three through lanes

Pedestrian/Bicycle: Bicycle crossing across south approach. Pedestrian crossing across south and east approaches.



Wellington Street and Bay Street Intersection

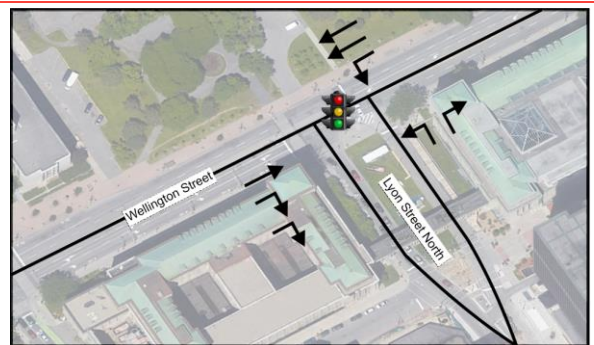
Wellington Street and Lyon Street North is a signalized intersection.

East Approach: Two through lanes, one left-turn lane

South Approach: One-way northbound; one left turn lane, one right turn lane

West Approach: One through lane, two right-turn lanes

Pedestrian/Bicycle: Pedestrian crossings across south east approaches.



Wellington Street and Lyon Street North Intersection

2.3.3 DRIVEWAYS

The Cliff Heating and Cooling Plant (1 Fleet Street) main access intersections with Commissioner Street approximately 100m north of the proposed vehicle access to the OPL-LAC Joint Facility. There are no other existing private driveways that could influence access to the Joint Facility.

2.3.4 TRANSIT FACILITIES

OC Transport provides two bus stops within 200m of 555 Albert Street as shown in **Figure 2-5**:

- Westbound Transit Stop #2392: Bus Routes 16, 57, 61, 75 on Albert Street
- Eastbound Transit Stop #2396: Bus Routes 16, 57, 61, 75 on Albert Street

On October 6, 2019, the City of Ottawa’s bus routes changed to provide connections from bus transit to the newly opened O-Train Line 1. The O-Train provides frequent and reliable service through downtown Ottawa and has a capacity of 600 passengers per train set.

The Pimisi Station is located approximately 400 metres west of the proposed development and is a key station people traveling between LeBreton Flats and Gatineau. OC Transpo provides an estimate of locations within a 5-minute walk of Pimisi Station (**Figure 2-4**) which includes the proposed development site.



Figure 2-4: 5-Minute Radius from Pimisi Station



WSP Canada Group Limited
 2611 Queensview Drive #300
 Ottawa, ON, K2B 8K2
 T. 613.829.2800
 www.wsp.com

Issue Date - 2020-04-04
 Scale: NTS
 Aerial Imagery: 2016
 Note: All Dimensions shown
 in Metres unless otherwise

Figure 2-5
 Transit Services

2.3.5 AREA TRAFFIC MANAGEMENT MEASURES

The identified area traffic management measures adjacent to the proposed development include:

- A signalized pedestrian crossing on Albert Street near the proposed pedestrian entrance to the OPL-LAC Joint Facility providing a connection between the continuous multi-use pathway on the west side and the multi-use pathway on the east side that begins at the pedestrian crossing and extends west towards the downtown.
- Seasonal flex posts on south side of Albert Street to separate the multi-use pathway from the driving lanes and improve visibility during poor weather conditions.

2.3.6 PEAK HOUR DEMANDS

The TRANS Committee was established to co-ordinate transportation planning efforts among various planning agencies located within the National Capital Region. The proposed development is located in the Ottawa Inner Area. The complete TRANS O-D results (including a map of the district area) is provided in Appendix D. The most recent Origin-Destination (O-D) survey was completed by TRANS in the Fall of 2011. The TRANS trip data for the Ottawa Inner Area is summarized in **Table 2-2**.

Table 2-2. TRANS Peak Period Trip Data for Ottawa Inner Area

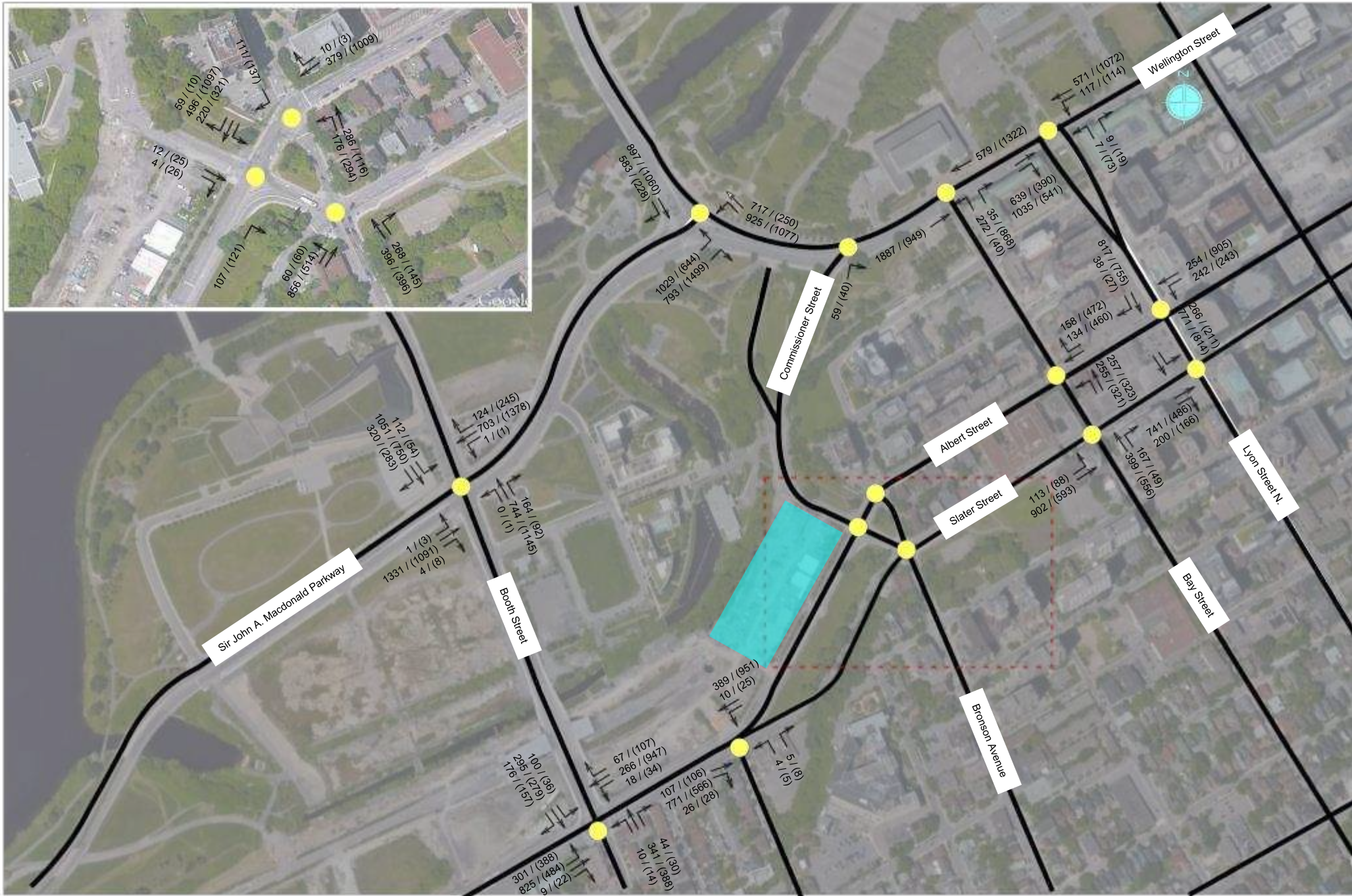
TRAVEL MODE	AM PEAK PERIOD (6:30 A.M. – 9:00 A.M.)			PM PEAK PERIOD (3:30 P.M. – 6:00 P.M.)		
	FROM DISTRICT	TO DISTRICT	WITHIN DISTRICT	FROM DISTRICT	TO DISTRICT	WITHIN DISTRICT
Auto-Driver	40%	41%	20%	45%	43%	21%
Auto-Passenger	7%	9%	9%	11%	11%	8%
Transit	25%	41%	13%	33%	22%	10%
Bicycle	6%	4%	8%	5%	6%	7%
Walk	19%	3%	44%	5%	16%	53%
Other	4%	2%	6%	2%	2%	2%
Total Vehicles	28,730	44,290	17,180	46,390	35,930	25,480

Source: TRANS 2011 O-D Survey, Inner Area District

The existing vehicle turning movement volumes (at major intersections) and dates of the counts were obtained from the City of Ottawa. They are shown in and including those at the following locations:

- Albert Street and Booth Street Thursday June 8, 2017*
- Albert Street and Bronson Avenue Wednesday December 13, 2017
- Albert Street and Commissioner Wednesday April 19, 2017
- Albert Street and Empress Avenue North Wednesday April 19, 2017
- Bay Street and Slater Street Wednesday May 30, 2012
- Bay Street and Wellington Street Wednesday January 20, 2016*
- Booth Street and Wellington Street Thursday June 8, 2017
- Bronson Avenue and Slater Street Wednesday December 13, 2017
- Lyon Street and Slater Street Thursday March 7, 2019
- Lyon Street and Wellington Street Wednesday January 20, 2016*
- Wellington Street and Portage Bridge Wednesday March 23, 2016*

* anticipating receiving updated turning movement counts from the City of Ottawa



Ottawa Public
Library – Library
Archives Canada
Joint Facility

Transportation
Impact Assessment

Figure 2.6
Existing Traffic
Volumes

WSP Canada Group Ltd.
Suite 300
2611 Queensview Drive
Ottawa, ON
K2B 8K2

www.wsp.com

2.3.7 5-YEAR COLLISION HISTORY

The boundary streets for the development are Albert Street between Empress Avenue North and Commissioner Street and Commissioner Street from Albert Street and 100 metres north of the intersection. Upon receiving the collision history from the City of Ottawa, WSP will review the number and types of collisions on the boundary streets. The City of Ottawa will provide the most recent five years of crash history for review (January 1, 2014 through December 31, 2018). Once this data is provided, **Table 2-3** will be completed.

Table 2-3. Five Year Collision History Summary

LOCATION	SUMMARY	TRENDS
Segment: Albert Street between Brickhill Street and Commissioner Street	One crash along this segment over five years with no fatalities. The westbound rear-end crash involved a transit bus and occurred on a January evening during clear, dry conditions.	There were no trends identified involving more than six crashes in five years.
Segment: Commissioner Street from Albert Street to 100m north of intersection	There were no recorded crashes on Commissioner Street.	
Intersection: Albert St & Commissioner St	Nine crashes at this location over five years with no fatalities. All crashes were during daylight hours. Notably, three crashes involved municipal transit buss (2014, 2017, and 2017) and two crashes involved cyclists (2016 and 2017).	

2.4 PLANNED CONDITIONS

2.4.1 CHANGES TO THE STUDY AREA TRANSPORTATION NETWORK

LRT Stage 2: The Confederation Line West is one of the three major extensions to Ottawa’s light rail transit system. This extension will see LRT continue from Tunney’s Pasture to Moodie and Baseline Stations. This extension will increase transit ridership through Pimisi Station. Revenue service for this extension is planned for 2025.

Albert and Slater Streets Improvement: With the development and extension of the Confederation Line Light Rail Transit (LRT), the City of Ottawa is planning to repurpose the corridor of Albert and Slater Streets. By removing the dedicated bus lanes and improving the streetscape environment, the city aims to make these streets more friendly and accessible to pedestrians and cyclists. The project is currently in the design stage, which should be completed by the end of the 2020. Construction schedule has yet to be determined but is anticipated to be completed by 2024.

LeBreton Flats: The National Capital Commission (NCC) approved a Master Concept Plan for LeBreton Flats in January 2020 (**Figure 2-7**). The Master Concept Plan describes a pedestrian and cyclist friendly space with parks and plazas. In the long-term, it will feature a mixed-use community combining residential units that will be supported by retail and employment opportunities. The Master Concept Plan has been designed to encourage active mobility over all other modes of transportation by providing:

- Grand Staircase connecting Booth Street to the Aqueduct District
- Pimisi Underpass providing an accessible ramp and staircase connecting Albert Street to the urban playground
- Preston Street Connection extending a pedestrian and cycling bridge over the LRT from Albert Street to the Aqueduct District
- City Centre Avenue Connection extending a pedestrian and cycling bridge over the LRT from Albert Street to Capital Park
- Pathway Connections connecting the river pathway network to the site
- Flexibility for a Major Event Centre

The phasing and implementation aspect of the LeBreton Flats Master Concept Plan is still being developed.



Figure 2-7. LeBreton Flats Master Concept Plan (2020)

2.4.2 OTHER STUDY AREA DEVELOPMENTS

One development is noted in the City of Ottawa’s Development Application Search tool that could have an influence on the study area:

- 593 Laurier Avenue West (PIN D02-02-19-0144): 17-floor apartment building with approximately 85 residential units

2.5 STUDY AREA

The limits for the Transportation Impact Assessment (TIA) study area are shown in **Figure 2-8**.



Legend:

● Study Intersections



WSP Canada Group Limited
2611 Queensview Drive #300
Ottawa, ON, K2B 8K2
T. 613.829.2800
www.wsp.com

Issue Date - 2020-05-15
Scale: NTS
Aerial Imagery: 2016
Note: All Dimensions shown
in Metres unless otherwise

Figure 2-8
Study Area

2.6 TIME PERIOD

The time periods identified for the traffic analysis are:

- AM Peak Hour: 7:45 a.m. to 8:45 a.m.
- PM Peak Hour: 4:30 p.m. to 5:30 p.m.

These are consistent with the AM and PM peak hours identified in the turning movement counts for the intersection of Albert Street and Commissioner Street dated Wednesday April 19, 2017.

2.7 HORIZON YEARS

The new Ottawa Public Library-Library of Archives Canada facility is expected to be completed in one phase with a target build-out year of 2024. In accordance with the TIA Guidelines, the following horizons will be considered for analysis

- 2024, which represents the anticipated buildout horizon
- 2029, which represents the buildout year plus five years

2.8 EXEMPTIONS REVIEW

Based on the review of the development and network conditions, the following elements shown in **Table 2-4** qualify for an exemption from this Transportation Impact Assessment.

Table 2-4. Exemptions Summary

MODULE	ELEMENT	EXEMPTIONS
DESIGN REVIEW COMPONENT		
4.1 Development Design	4.1.2 Circulation and Access	Not Exempted. This element is required for site plans.
	4.1.3 New Street Networks	Exempted. This element is only required for plans of subdivision.
4.2 Parking	4.2.1 Parking Supply	Not Exempted. This element is required for site plans.
	4.2.2 Spillover Parking	Exempted. This element is only required for site plans where parking supply is 15% below unconstrained demand.
NETWORK IMPACT COMPONENT		
4.5 Transportation Demand Management	All Elements	Not Exempted. Required for site plans expected to have more than 60 employees on location at any given time.
4.6 Neighborhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Not Exempted. Required when the development relies on local access and total volumes exceed ATM capacity threshold of 1,000 vpd or 120 vph.
4.8 Network Concept		Exempted.

3 FORECASTING

3.1 DEVELOPMENT-GENERATED TRAVEL DEMAND

3.1.1 TRIP GENERATION

Select Base Trip Generation Rate. The City of Ottawa completed a Parking Requirement Assessment Study (2017) for the New Central Library to determine the minimum amount of parking required to accommodate visitors accessing the Central Library by car. The Study identified users of the facility, determined their travel behaviour, and ultimately proposed the number of parking spaces that would be suitable for the facility to accommodate peak demand.

The trip generation estimates provide in this Transportation Impact Assessment is based on the user profiles prepared as part of the 2017 Study. The user profiles identified are described in **Table 3-1** with supporting documents in **Appendix C**.

Table 3-1. Facility User Profiles

	EMPLOYEE		VISITOR		OPERATIONS AND MAINTENANCE
User Type	OPL	LAC	OPL	LAC	Service Vehicles, Deliveries, Contractors
Frequency	Throughout the day	Throughout the day	Throughout the day with peaks during the early afternoon and evening.	Many likely present at the same time (meetings), especially during the afternoon	Throughout the day
Typical Length of Stay	8	8	1-2 hours	4 hours	1 hour
Maximum Users / Day	105	90	5,850	350	>10
Auto Driver Mode Share	23% - 38%	23% - 38%	15% - 18%	20%	100%

Total Development-Generated Person-Trips. The projected development-generated person-trips are provided in **Table 3-2**. To convert between the maximum users during a Peak Period provided in the 2017 Parking Requirement Assessment Study and the Peak Hour to be assessed, the following factors were applied:

- Employee, AM Peak Period to AM Peak Hour: 0.60
- Employee, PM Peak Period to PM Peak Hour: 0.40
- Visitor, LAC PM Peak Period to PM Peak Hour: 0.40

The OPL Visitor Peak Hour person-trips were estimated based on the hourly distribution of weekday unique user barcodes provided in the 2017 Parking Requirement Assessment Study which indicated that there are fewer than 10 users prior to 9am and 800-900 users from 4:30pm – 5:30pm. The Peak Hour OPL Visitor user estimates were multiplied by 2 (two) to account for the short length of stay anticipated (arriving and departing during the peak hour).

Table 3-2: Projected Development-Generated Persons-Trips

User Type		EMPLOYEE		VISITOR		OPERATIONS AND MAINTENANCE
		OPL	LAC	OPL	LAC	Service Vehicles, Deliveries, Contractors
Maximum Users	Daily	105	90	5,850	350	>20
	7am – 10am	95	85	120	0	>10
	2pm – 6pm	105	70	2,050	280	>10
Peak Hour Person-Trips	7:45am – 8:45am	60	50	20	0	5
	4:30pm – 5:30pm	45	30	1,640	115	5

Based on the above, the total number of peak-hour person trips estimated during the peak hours are:

- AM Peak Hour: 185 person-trips
- PM Peak Hour: 1,830 person-trips

Existing Mode Share. The existing peak hour travel demand was identified from the most recent TRANS Origin-Destination Survey (Fall 2011). The existing mode share is based on those value and is shown in **Table 3-3**.

Table 3-3: Existing Mode Shares

PEAK HOUR	AUTO-DRIVER	AUTO-PASSENGER	TRANSIT	BICYCLE	WALK	OTHER
AM Peak Hour	40%	8%	35%	5%	9%	3%
PM Peak Hour	44%	11%	28%	5%	10%	2%

Future Mode Share Targets. The mode share targets for the proposed development are provided for the business users (OPL and LAC Employees, and LAC Visitors) and service users (OPL Visitors) are shown in **Table 3-4**. It is anticipated that the business users will originate from around the National Capital Region while service users will have a higher percentage of users originating in the Central Area and surrounding neighbourhoods.

The City of Ottawa’s *Transit-Oriented Development (TOD) Plans (2014)* suggest an aggressive 65% transit mode share for sites within the area of influence of a TOD. The subject site is located near the PIMISI LRT Station (**Section 2.3.4**) and near a potential Gatineau rail connection. This Transportation Impact Assessment suggests a transit mode share of 50% for business users, however it is acknowledged the transit mode share could see an increase up to 65% as rail transit is adopted more widely by residents of the National Capital Region.

Table 3-4: Future Travel Mode Share Targets

TRAVEL MODE	OPL & LAC EMPLOYEES, LAC VISITOR		OPL VISITOR	
	TARGET MODE SHARE	RATIONALE	TARGET MODE SHARE	RATIONALE
Transit	50%	Proximity to PIMISI Station with CLE Expansion connecting more of the City	50%	Proximity to PIMISI Station and location along downtown east/west transit route.
Walking	10%	Consistent with existing mode	10%	Most users will originate from the Central Area and Neighbourhoods encouraging the active modes.
Cycling	10%	Improved on-street facilities and provision of 28 bike racks will encourage cycling.	10%	
Auto-Passenger	5%	-	10%	Consistent with existing mode (families travel together).
Auto-Driver	25%	Consistent with estimates used to determine Parking Demand.	15%	Consistent with estimates used to determine Parking Demand.
Other	0%	-	5%	Taxis and Ubers providing short distance door-to-door service

Development Persons Trips by Mode and Phase. The proposed development will be constructed in one phase. The development trips by mode are shown in **Table 3-5**.

Table 3-5: Development Persons Trip by Mode and Phase

USER TYPE	PEAK HOUR	AUTO-DRIVER	AUTO-PASSENGER	TRANSIT	BICYCLE	WALK	OTHER	TOTAL
Employees and LAC Visitors	AM	28	6	55	11	11	0	110
	PM	48	10	95	19	19	0	190
OPL Visitors	AM	3	2	10	2	2	1	20
	PM	246	164	820	164	164	82	1,640

Trip Reduction Factors. There are no existing trips to deduct. As a library development, pass-by trips are not expected to be reflected in the trip composition.

3.1.2 TRIP DISTRIBUTION

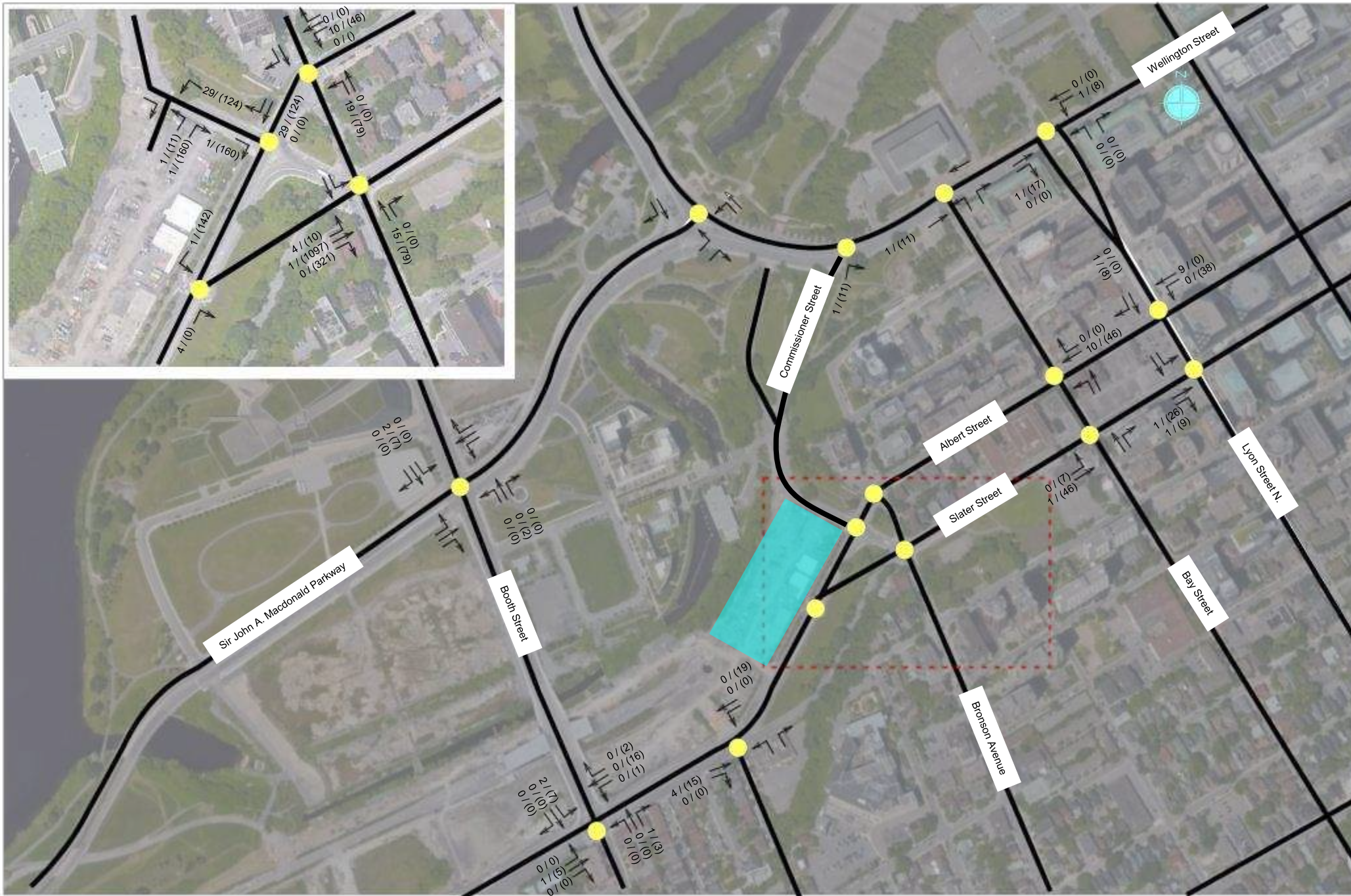
There are two vehicle accesses to the development; one from Commissioner Street leading to the underground parking lot and the other from Albert Street for passenger drop-off and pick-up. Vehicles will approach and depart from the proposed development following existing travel patterns. The trip distribution for the proposed development is presented as follows:

Table 3-6: Trip Distribution during the AM and PM Peak Hours

DIRECTION	% DISTRIBUTION	VIA (TO / FROM)			
		BOOTH	BRONSON	SLATER	ALBERT
North	5%	5%			
East	30%		3%	27%	
South	10%		10%		
West	40%		15%		
Internal	40%	2%	24%	10%	4%
Total	100%	7%	52%	37%	4%

3.1.3 TRIP ASSIGNMENT

Trips were assigned to adjacent the transportation network and have been based upon traffic patterns as identified from a review of the turning movement counts from intersections in the study area. The vehicle trip assignment for the proposed OPL – LAC Joint Facility are provided in **Figure 3-1**.



Ottawa Public Library – Library Archives Canada Joint Facility

Transportation Impact Assessment

Figure 3.1
Site Generated Vehicle Trips

WSP Canada Group Ltd.
Suite 300
2611 Queensview Drive
Ottawa, ON
K2B 8K2

www.wsp.com

3.2 BACKGROUND NETWORK TRAVEL DEMANDS

3.2.1 CHANGES TO THE BACKGROUND TRANSPORTATION NETWORK TRAFFIC

The *Albert and Slater Streets Post Light-Rail Transit (LRT) Repurposing Functional Design Study* plan was approved by City Council on April 11, 2018. The approved plan (**Figure 3-2**) identifies wide sidewalks and separated cycle tracks on each side of the roadway with two travel lanes in each direction along Albert Street adjacent to the subject site. Bicycle cross-rides and improvement pedestrian crossings are provided at Commissioners Street and across Albert Street near the site access.

Other notable impacts to the transportation network include:

- Commissioner Street is reconfigured to a two-way stop-controlled T-intersection with Albert Street;
- Bronson Avenue is reconfigured to carry two-way traffic between Slater Street and Albert Street; and
- All turning movements will be permitted at the intersections of Bronson Avenue / Albert Street and Bronson Avenue / Slater Street.

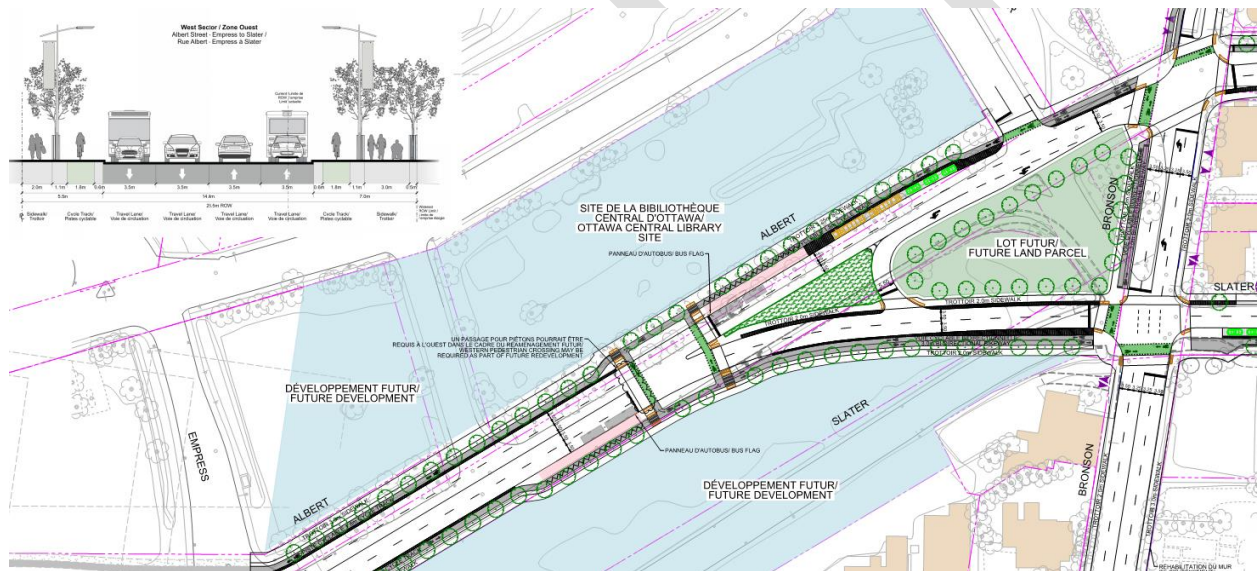


Figure 3-2. Albert-Slater Improvement Project: Reconfiguration

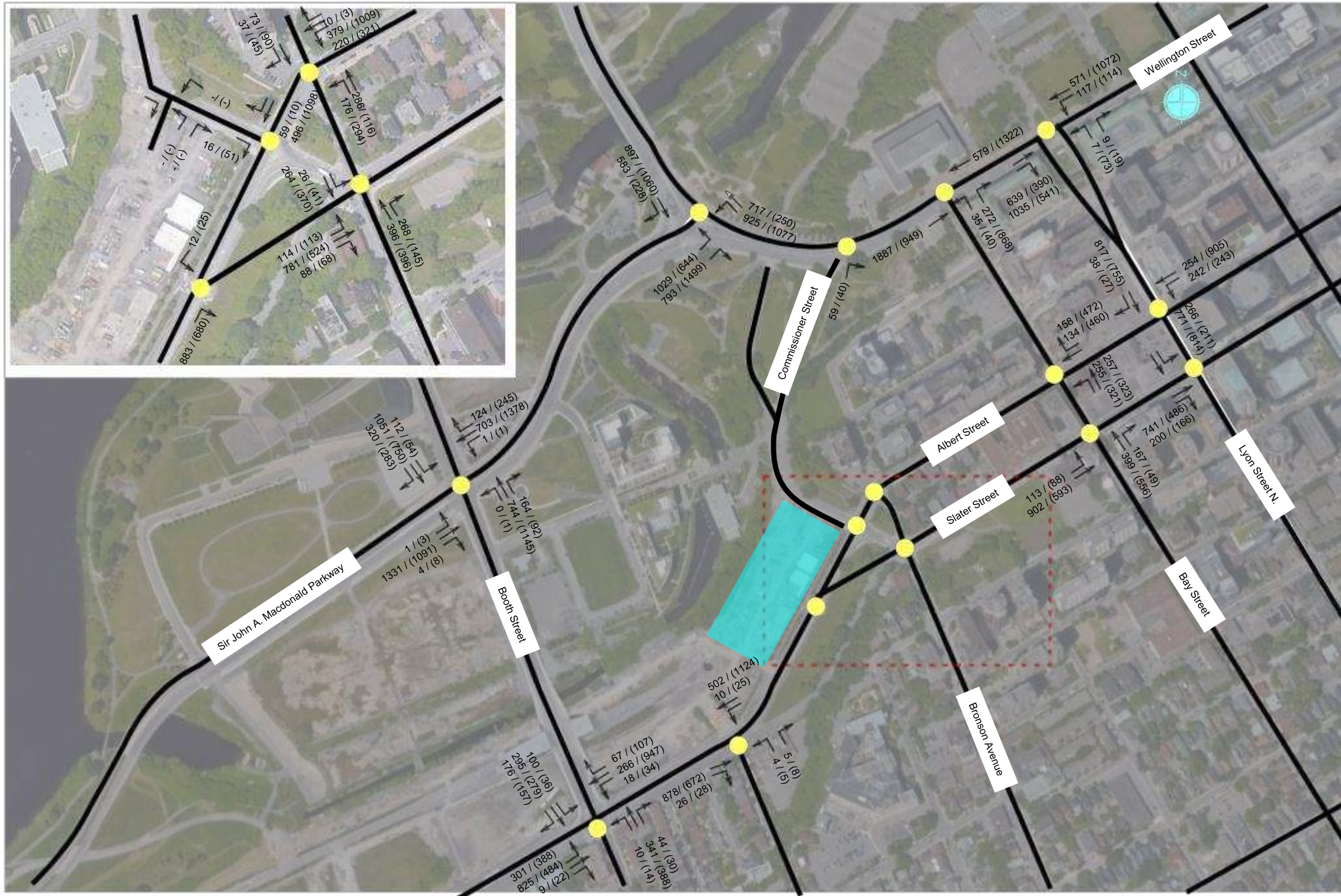
3.2.2 GENERAL BACKGROUND GROWTH RATES

A 0% background growth rate has been selected based on a review of the 20-year historical screenline data across Screenline #35 (Downtown West). This is consistent with the shift from the auto mode to transit and active modes through the downtown area.

Currently, the phasing and implementation aspect of the *LeBreton Flats Master Concept Plan* is still being developed and has not been included in this Study's planning horizons.

The background traffic volumes for 2024 and 2029 are provided in **Figure 3-3**.

DRAFT



Ottawa Public Library – Library Archives Canada Joint Facility

Transportation Impact Assessment

Figure 3.3

Background Traffic (2024 and 2029)

WSP Canada Group Ltd.
Suite 300
2611 Queensview Drive
Ottawa, ON
K2B 8K2

www.wsp.com

3.2.3 OTHER AREA DEVELOPMENTS

One developments that could impact this Study were identified in Section 2.4.2. The proposed 85-unit apartment building at 593 Laurier Avenue West (PIN D02-02-19-0144) is anticipated to generate up to 56 person-trips during a peak hour with a low auto mode share given the proximity to the PIMISI LRT Station and downtown Ottawa. Additional trips have not been added to the network as a result.

3.3 DEMAND RATIONALIZATION

3.3.1 DESCRIPTION OF CAPACITY ISSUES

Total traffic volumes for the 2024 and 2029 planning horizons were estimated by and adding trips generated by the proposed development. The estimated total traffic volumes are shown in **Figure 3-4**.

Recent studies in this area have noted that the intersections at Booth Street / Wellington Street and Booth Street / Albert Street are approaching capacity. It is anticipated that similar results will be observed as part of this Transportation Impact Assessment.

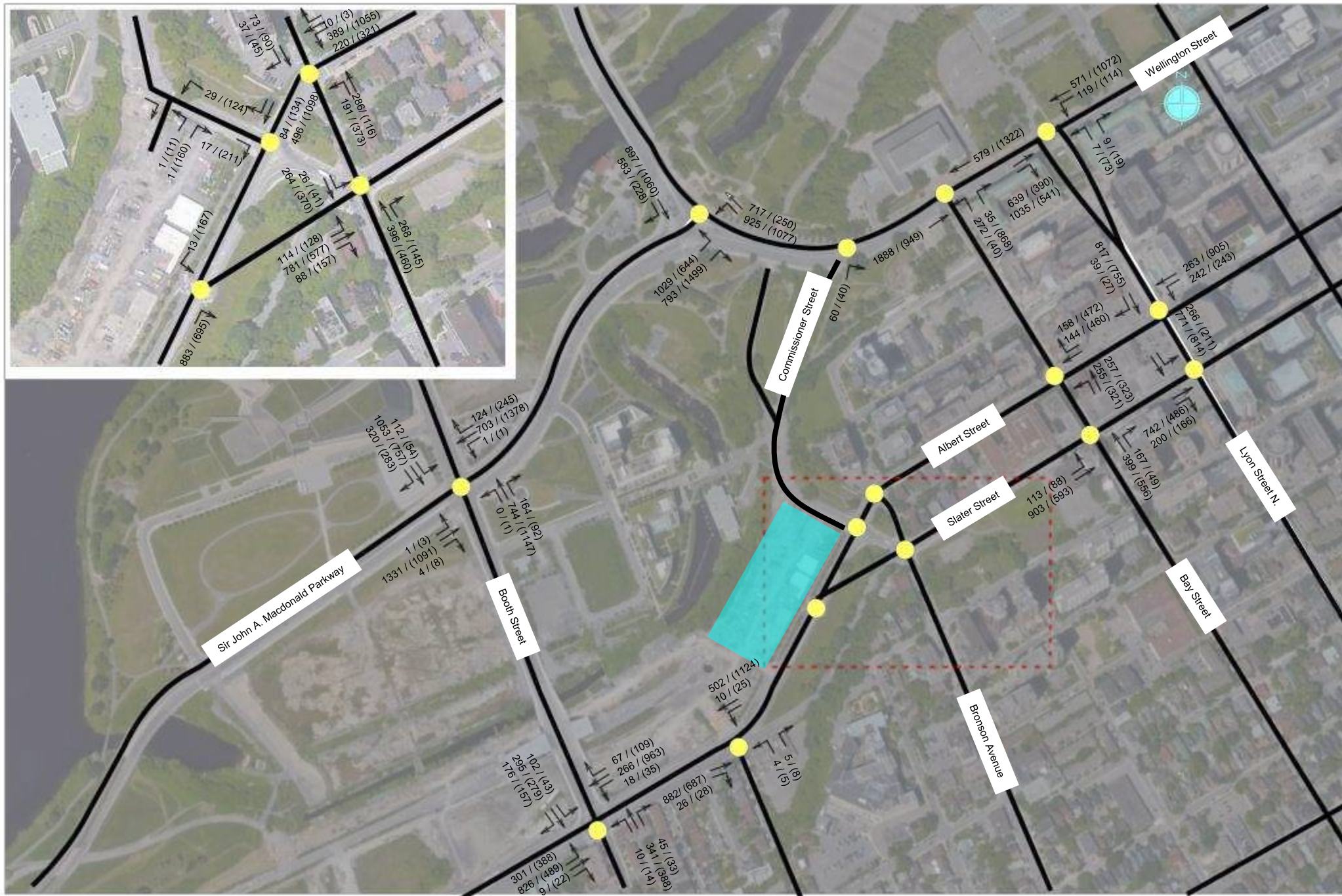
3.3.2 ADJUSTMENTS TO DEVELOPMENT GENERATED DEMANDS

There are no proposed adjustments to development generated demands since the trips generated by the development since the development is promoting the transit and active transportation mode shares and has a limited parking supply onsite which will encourage employees and visitors to use non-auto modes.

3.3.3 ADJUSTMENTS TO BACKGROUND NETWORK DEMANDS

There are no proposed adjustments to background network demands since as preliminary indications are that the proposed transportation network with the Albert-Slater Improvements will offer an acceptable Multi-Modal Level of Service adjacent to the site.

Figure 3.4
Total Traffic (2024
2029)



4 STRATEGY

To be submitted following approval by the City of Ottawa of the Transportation Impact Assessment – Forecasting Report.

DRAFT

APPENDIX

A SCREENING FORM





City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	555 Albert Street
Description of Location	South west corner of Albert / Commissioner
Land Use Classification	Mixed-Use Downtown (MD)
Development Size (units)	OPL-LAC Joint Facility, 5-storeys shared space
Development Size (m ²)	20,000 sq/m
Number of Accesses and Locations	1 private vehicle from Commissioner, 1 O&M from Commissioner
Phase of Development	One phase
Buildout Year	2024

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

2. Trip Generation Trigger

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

Land Use Type	Minimum Development Size
Single-family homes	40 units
Townhomes or apartments	90 units
Office	3,500 m ²
Industrial	5,000 m ²
Fast-food restaurant or coffee shop	100 m ²
Destination retail	1,000 m ²
Gas station or convenience market	75 m ²

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

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

Estimated > 60 person-trips during peak hour



3. Location Triggers

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

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

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

4. Safety Triggers

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

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

5. Summary

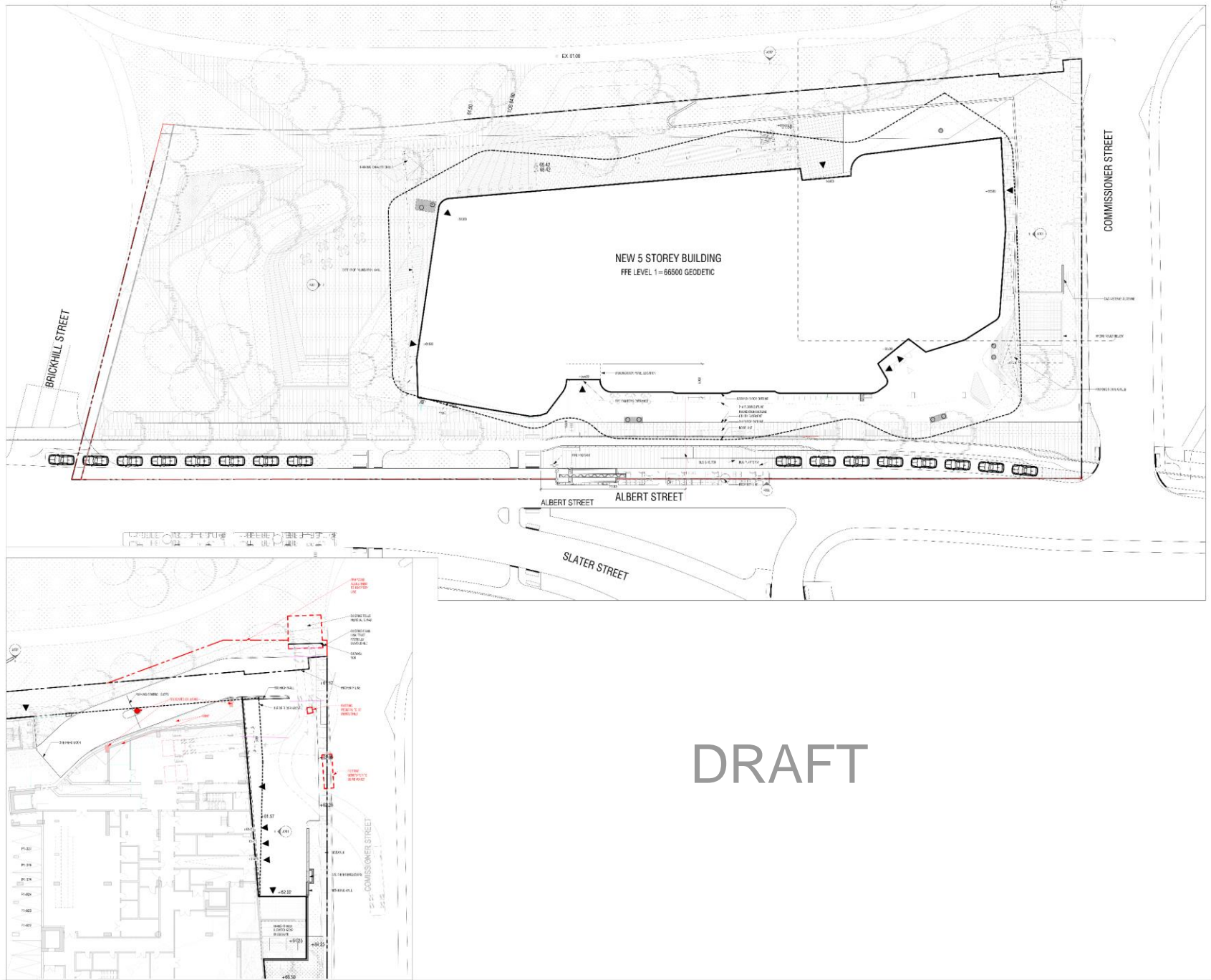
	Yes	No
Does the development satisfy the Trip Generation Trigger?	X	
Does the development satisfy the Location Trigger?		X
Does the development satisfy the Safety Trigger?	X	

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

APPENDIX

B

DRAFT SITE
PLAN



DRAFT

PROJECT: OTTAWA PUBLIC LIBRARY AND ARCHIVES CANADA JOINT FACILITY
 CLIENT: OTTAWA PUBLIC LIBRARY AND ARCHIVES CANADA JOINT FACILITY
 DATE: 2018.08.28

REVISIONS
 No. Date Description

Diamond Schmitz Architects
 INC. Architects Inc.
 1000 Avenue Road, Suite 1000, Ottawa, Ontario K1R 6P4
 Tel: 416.962.9122 Fax: 416.962.9123 Website: www.dsa.ca



OTTAWA PUBLIC LIBRARY AND ARCHIVES CANADA JOINT FACILITY

SITE PLAN

Scale: 1:200
 Date: 2018
 DWG

A010

APPENDIX

C CRASH DATA





Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2014 To: December 31, 2018

Location: 105 S OF COMMISSIONER ST @ ALBERT ST

Traffic Control: Traffic signal

Total Collisions: 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Aug-04, Thu,17:03	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Municipal transit bus	Other motor vehicle	

Location: ALBERT ST @ BRICKHILL ST

Traffic Control: Stop sign

Total Collisions: 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Jul-22, Fri,06:01	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					South	Stopped	Pick-up truck	Cyclist	
2017-Feb-21, Tue,15:02	Clear	Sideswipe	Non-reportable	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	
2017-Sep-08, Fri,15:31	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	

Location: ALBERT ST @ COMMISSIONER ST

Traffic Control: Stop sign

Total Collisions: 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2014-May-16, Fri,10:13	Rain	Angle	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Oct-29, Wed,11:35	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Nov-07, Fri,07:59	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Municipal transit bus	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Dec-08, Tue,15:16	Rain	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2014 To: December 31, 2018

Location: ALBERT ST @ COMMISSIONER ST

Traffic Control: Stop sign

Total Collisions: 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Oct-05, Wed,07:47	Clear	Turning movement	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2017-Mar-30, Thu,09:18	Clear	Angle	P.D. only	Dry	West	Turning left	Municipal transit bus	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-17, Wed,15:30	Clear	Turning movement	Non-fatal injury	Dry	West	Going ahead	Bicycle	Other motor vehicle	0
					West	Turning right	Bus (other)	Cyclist	
2017-Oct-12, Thu,11:45	Clear	Sideswipe	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Going ahead	Municipal transit bus	Other motor vehicle	
2017-Dec-23, Sat,12:11	Snow	Sideswipe	P.D. only	Loose snow	South	Changing lanes	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: ALBERT ST @ EMPRESS AVE

Traffic Control: Traffic signal

Total Collisions: 12

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Feb-18, Tue,08:17	Snow	SMV other	P.D. only	Loose snow	South	Turning left	Municipal transit bus	Pole (utility, power)	0
2014-Jun-07, Sat,16:51	Clear	Rear end	P.D. only	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2014-Dec-15, Mon,09:59	Clear	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jan-05, Mon,08:33	Strong wind	Rear end	Non-fatal injury	Ice	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-Jan-16, Fri,14:29	Clear	Other	P.D. only	Dry	South	Reversing	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	
2015-Feb-20, Fri,06:16	Clear	SMV other	P.D. only	Wet	West	Unknown	Unknown	Skidding/sliding	0



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2014 To: December 31, 2018

Location: ALBERT ST @ EMPRESS AVE

Traffic Control: Traffic signal

Total Collisions: 12

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jun-14, Tue,18:41	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Municipal transit bus	Other motor vehicle	0
					West	Stopped	Municipal transit bus	Other motor vehicle	
2017-Mar-01, Wed,12:00	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-13, Mon,09:31	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Truck and trailer	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-19, Tue,15:32	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Truck - open	Other motor vehicle	0
					West	Going ahead	Truck - tank	Other motor vehicle	
2017-Nov-08, Wed,12:58	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2018-May-15, Tue,18:30	Clear	Sideswipe	P.D. only	Dry	West	Unknown	Automobile, station wagon	Other motor vehicle	0
					West	Unknown	Truck - closed	Other motor vehicle	

Location: ALBERT ST btwn BRICKHILL ST & COMMISSIONER ST

Traffic Control: No control

Total Collisions: 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Jan-20, Mon,17:28	Clear	Rear end	P.D. only	Dry	West	Changing lanes	Intercity bus	Other motor vehicle	0
					West	Stopped	Truck - closed	Other motor vehicle	

Location: ALBERT ST btwn SLATER ST & BRICKHILL ST

Traffic Control: No control

Total Collisions: 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Oct-29, Sat,12:26	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2014 To: December 31, 2018

Location: ALBERT ST btwn SLATER ST & BRICKHILL ST

Traffic Control: No control

Total Collisions: 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Apr-07, Fri,09:46	Clear	Sideswipe	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	

Location: WELLINGTON ST btwn COMMISSIONER ST & TO BE DETERMINED

Traffic Control: No control

Total Collisions: 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Sep-24, Thu,10:05	Clear	Sideswipe	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Changing lanes	Automobile, station wagon	Other motor vehicle	
2016-Jun-13, Mon,11:45	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0

APPENDIX

D

TRIP GENERATION
SUPPORTING
DOCUMENTATION

PARKING REQUIREMENT ASSESSMENT

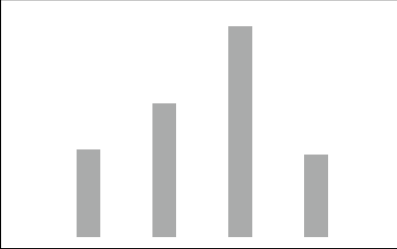

NEW CENTRAL LIBRARY



*FEBRUARY 24, 2017
VERSION 5.0*

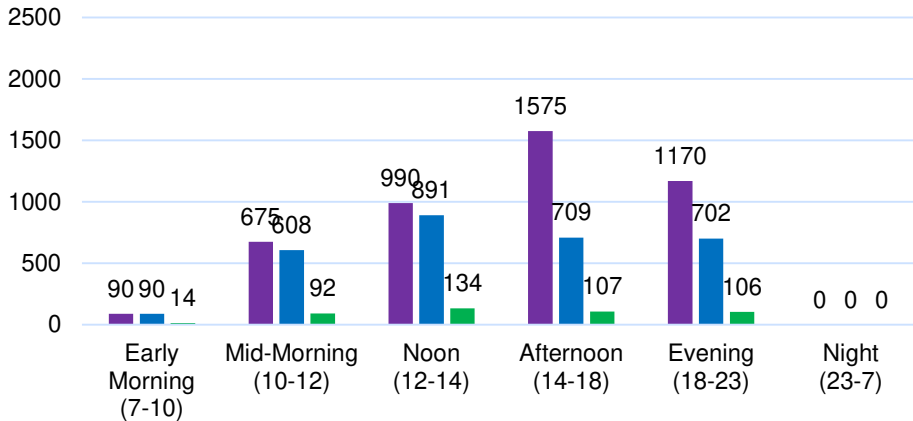
PARKING USERS – REGULAR OPL VISITORS

→ SENSITIVE TO MODAL SHARE AND DISTRIBUTION

PARAMETERS INFLUENCING DEMAND	MIN.	MAX.
NUMBER OF VISITORS/USERS PER DAY	4,500	5,850
HOURLY DISTRIBUTION		
AVERAGE LENGTH OF STAY (HR)	1.5	1.5
DRIVER MODAL SHARE (PERCENT OF CAR USERS)	15%	18%

OPL VISITORS – MINIMUM VS. MAXIMUM PARKING DEMAND

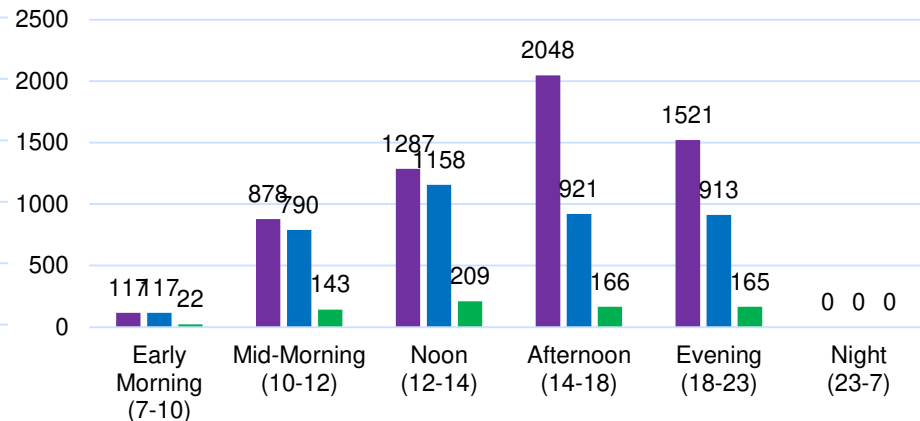
OPL VISITORS - WEEKDAY MINIMUM



■ Total Users during Period ■ Users Present at Peak ■ Vehicles Present at Peak

TOTAL USERS: 4,500
 DRIVER MODAL SHARE: 15%
 SIMILAR DISTRIBUTION OF VISITORS FOR
 AFTERNOON AND EVENING.

OPL VISITORS - WEEKDAY MAXIMUM





■ Total Users during Period ■ Users Present at Peak ■ Vehicles Present at Peak

TOTAL USERS: 5,850
 DRIVER MODAL SHARE: 18%
 SIMILAR DISTRIBUTION OF VISITORS FOR
 AFTERNOON AND EVENING.

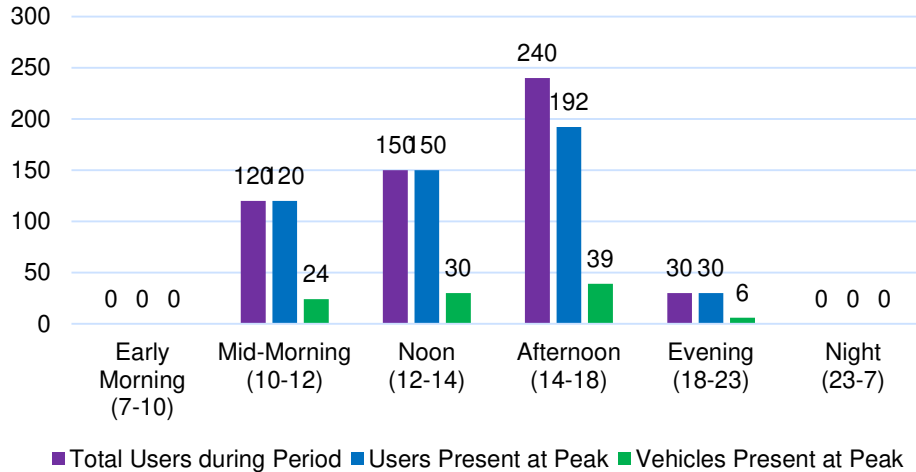
PARKING USERS – LAC VISITORS

→ SENSITIVE TO MODAL SHARE AND DISTRIBUTION

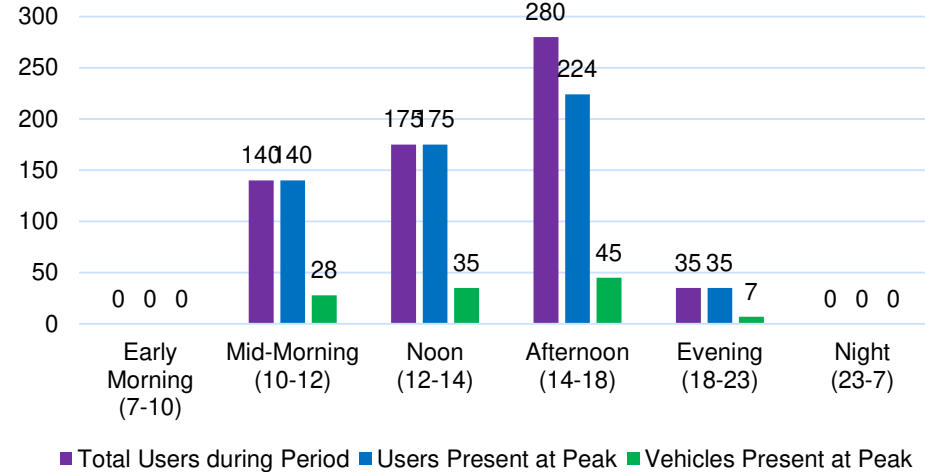
PARAMETERS INFLUENCING DEMAND	MIN.	MAX.
NUMBER OF VISITORS/USERS PER DAY	300	350
HOURLY DISTRIBUTION		
AVERAGE LENGTH OF STAY (HR)	4	4
DRIVER MODAL SHARE (PERCENT OF CAR USERS)	20%	20%

LAC VISITORS – MINIMUM VS. MAXIMUM PARKING DEMAND

LAC VISITORS - WEEKDAY MINIMUM


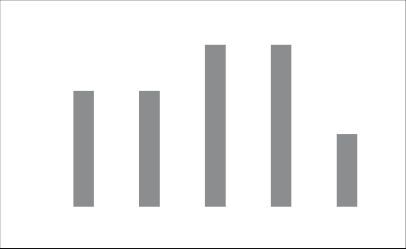


LAC VISITORS - WEEKDAY MAXIMUM





PARKING USERS – OPL EMPLOYEE – BRANCH SERVICES

→ SENSITIVE TO MODAL SHARE AND DISTRIBUTION

PARAMETERS INFLUENCING DEMAND	MIN.	MAX.
NUMBER OF VISITORS/USERS PER DAY	49	49
HOURLY DISTRIBUTION		
AVERAGE LENGTH OF STAY (HR)	8	8
DRIVER MODAL SHARE (PERCENT OF CAR USERS)	23%	38%

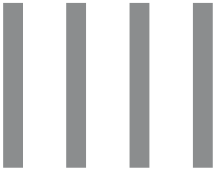

PARKING USERS – OPL EMPLOYEE – CORPORATE

→ SENSITIVE TO MODAL SHARE AND DISTRIBUTION

PARAMETERS INFLUENCING DEMAND	MIN.	MAX.
NUMBER OF VISITORS/USERS PER DAY	54	54
HOURLY DISTRIBUTION		
AVERAGE LENGTH OF STAY (HR)	8	8
DRIVER MODAL SHARE (PERCENT OF CAR USERS)	23%	38%

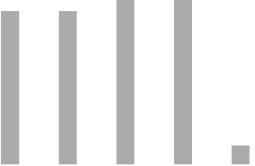
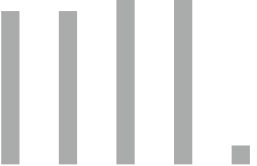
PARKING USERS – LAC EMPLOYEE

→ SENSITIVE TO MODAL SHARE AND DISTRIBUTION

PARAMETERS INFLUENCING DEMAND	MIN.	MAX.
NUMBER OF VISITORS/USERS PER DAY	90	90
HOURLY DISTRIBUTION		
AVERAGE LENGTH OF STAY (HR)	8	8
DRIVER MODAL SHARE (PERCENT OF CAR USERS)	23%	38%

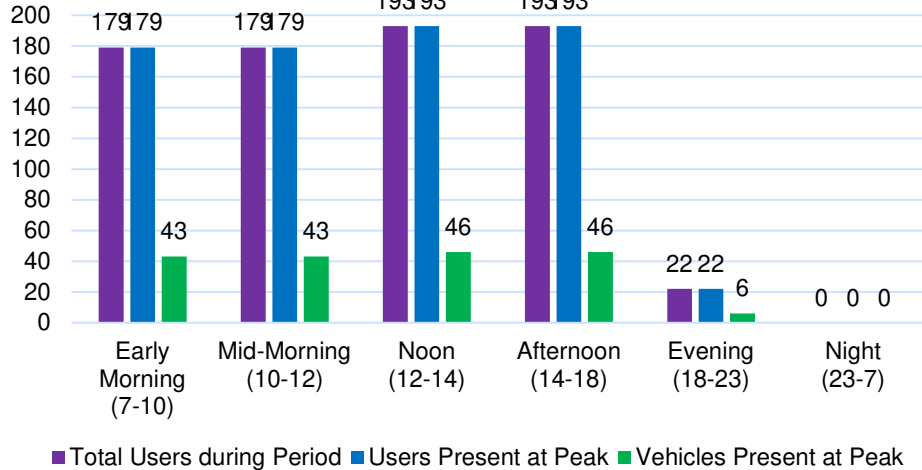
PARKING USERS – ALL EMPLOYEES

→ SENSITIVE TO MODAL SHARE AND DISTRIBUTION

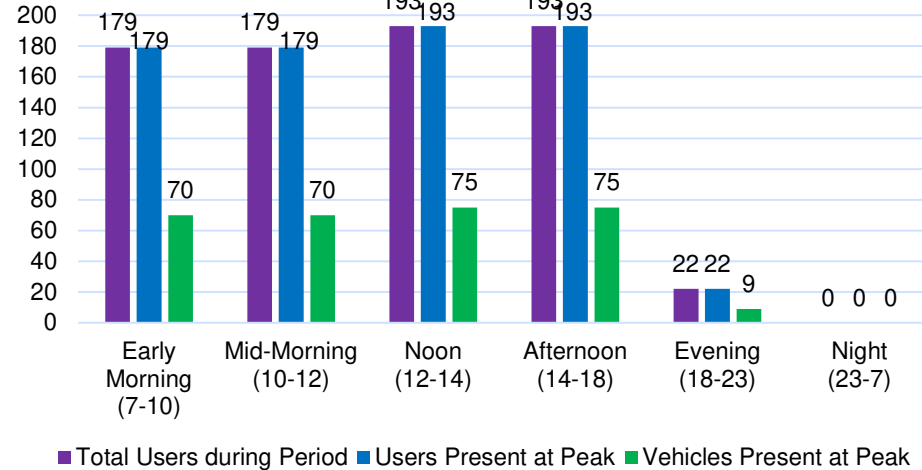
PARAMETERS INFLUENCING DEMAND	MIN.	MAX.
NUMBER OF VISITORS/USERS PER DAY	179	179
HOURLY DISTRIBUTION		
AVERAGE LENGTH OF STAY (HR)	8	8
DRIVER MODAL SHARE (PERCENT OF CAR USERS)	23%	38%

ALL EMPLOYEES – MINIMUM VS. MAXIMUM WEEKDAY PARKING DEMAND

EMPLOYEES - WEEKDAY MINIMUM

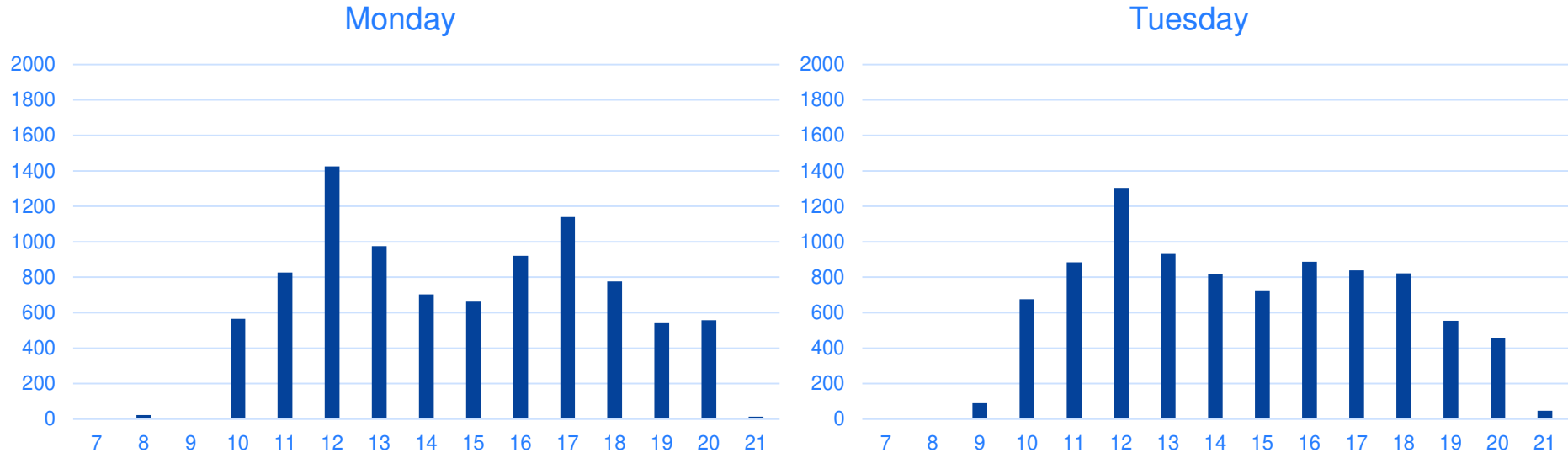


EMPLOYEES - WEEKDAY MAXIMUM



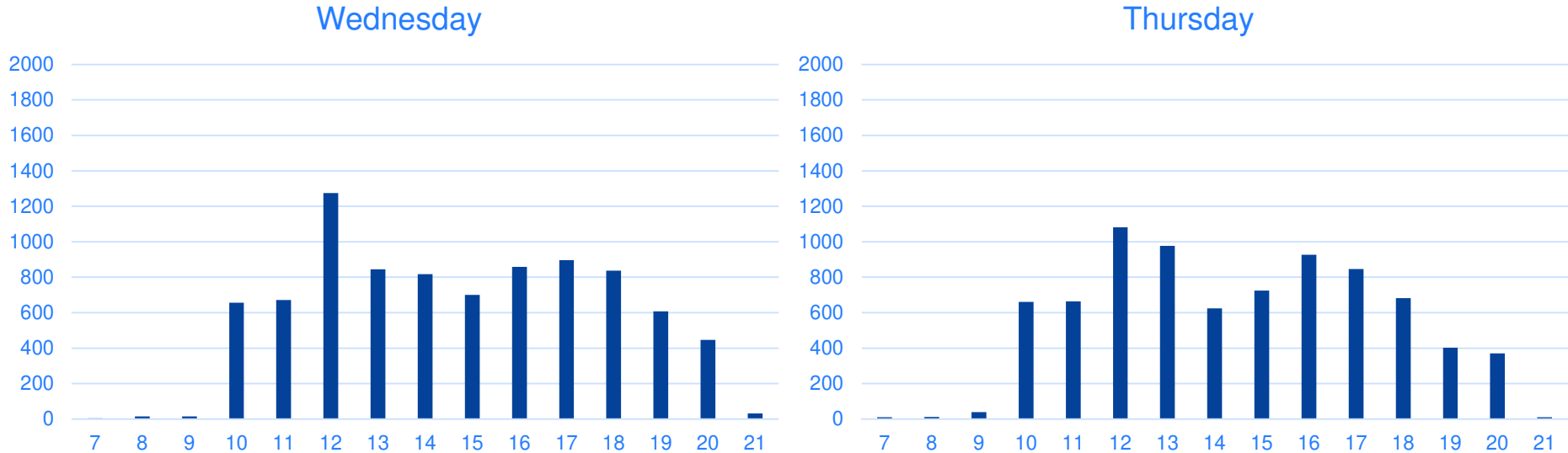
EXISTING CONDITIONS – REGULAR OPL VISITOR

UNIQUE USER BARCODE BY DAY OF WEEKDAY



PARKING USERS – REGULAR OPL VISITOR

UNIQUE USER BARCODE BY DAY OF WEEKDAY



PARKING USERS – REGULAR OPL VISITOR

UNIQUE USER BARCODE BY DAY OF WEEKDAY

