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39 Years

Proposed Residential Development

211 Clarence Street

Transportation Impact Assessment

Proposed Residential Development

211 Clarence Street

Transportation Impact Assessment

Prepared By:

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April 12, 2022

Novatech File: 111023
Ref: R-2021-122

April 12, 2022

City of Ottawa
Planning and Growth Management Department
110 Laurier Ave. E., 4th Floor
Ottawa, Ontario K1P 1J1

Attention: **Wally Dubyk**
Project Manager, Infrastructure Approvals

Reference: **211 Clarence Street**
Transportation Impact Assessment
Our File No.: 111023

We are pleased to submit the following Transportation Impact Assessment Report in support of Zoning By-law Amendment and Site Plan Control applications for the above noted property. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

If you have any questions or comments regarding this report, please feel free to contact the undersigned.

Yours truly,

NOVATECH

B. Byvelds

Brad Byvelds, P.Eng.
Project Manager, Transportation/Traffic

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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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Dated at Ottawa (City) this 12 day of April, 2022 .

Name: Brad Byvelds
(Please Print)

Professional Title: P. Eng. - Project Manager

B. Byvelds

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

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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of Site Plan Control and Zoning By-law Amendment applications for the subject property at 211 Clarence Street in Ward 12 in Ottawa. Currently, the site has an area of 285 square metres and is unoccupied.

The subject site is surrounded by the following:

- Fire of God Ministries and Murray Street to the north;
- Existing residential developments and King Edward Avenue to the east;
- Clarence Street and existing residential developments to the south;
- Existing residential developments and Cumberland Street to the west.

The subject site is designated as Central Area on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is Residential Fourth (R4), which allows for 'a wide mix of residential building forms ranging from detached to low rise apartment dwellings, in some cases limited to four units, and in no case more than four storeys in the General Urban Area.'

The proposed development will replace the existing empty lot with a 9-storey mid-rise residential building containing 34 dwelling units and a roof terrace for residents. No on-site parking is proposed for the development. Pedestrian access to the proposed development will be provided from Clarence Street. In addition, 34 bicycle parking spaces has been proposed in the development. The development is anticipated to be constructed in a single phase with full occupancy in the year 2023.

Development Design

- A sidewalk connection will be provided between the building entrance and Clarence Street.
- A total of 34 parking spaces for bicycles will be provided within the building.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

Parking

- The proposed vehicle parking does not meet the minimum visitor parking requirements of the City of Ottawa Zoning By-law.
- The proposed bicycle parking provided exceeds the requirements of the City of Ottawa Zoning By-law.
- A review of the spillover parking in the study area shows that 252 paid and unpaid parking spaces would be available for use.

Boundary Street Design

- The target PLOS is not achieved along Clarence Street. To achieve the target PLOS A, a 2-metre sidewalk and boulevard greater than 0.5 metre are required. This is identified for the City's consideration.
- The target BLOS is not achieved along Clarence Street. To achieve the target BLOS D along Clarence Street, a reduction in the operating speed is required.
- The target TkLOS is met on Clarence Street due to lanes that measure more than 3.7 metres.

Access Intersections

- As there are no new accesses proposed, a review of the accesses has not been conducted.

Transportation Demand Management

- The following measures will be implemented upon completion of the proposed development:
    - Designate an internal coordinator, or contract with an external coordinator
    - Display local area maps with walking/cycling access routes and key destinations at major entrances
    - Display relevant transit schedules and route maps at entrances
    - Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit
    - Provide a multimodal travel option information package to new residents

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-law Amendment and Site Plan Control applications for the subject property at 211 Clarence Street in Ward 12 in Ottawa. Currently, the site has an area of 285 square metres and is unoccupied.

The subject site is surrounded by the following:

- Fire of God Ministries and Murray Street to the north;
- Existing residential developments and King Edward Avenue to the east;
- Clarence Street and existing residential developments to the south;
- Existing residential developments and Cumberland Street to the west.

A view of the subject site and study area is provided in **Figure 1**.

1.2 Proposed Development

The subject site is designated as Central Area on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is R4-UD (S.77) which permits low-rise residential buildings with a maximum height of 21.5 metres. The proposed Zoning By-law Amendment will introduce a site-specific exemption provision and a new height schedule to permit development of an "apartment building, mid-rise" and a maximum building height of nine storeys on the property.

The proposed development will replace the existing empty lot with a 9-storey mid-rise residential building containing 34 dwelling units and a roof terrace for residents. No on-site parking is proposed for the development. Pedestrian access to the proposed development will be provided from Clarence Street. The proposed development is anticipated to have 34 bicycle parking spots. The development is anticipated to be constructed in a single phase with full occupancy in the year 2023.

A copy of the proposed site plan is included in **Appendix A**.

1.3 Screening Form

The City's 2017 TIA Guidelines identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form. The trigger results are as follows:

- **Trip Generation Trigger** – The proposed development is not anticipated to generate over 60 person trips/peak hour; further assessment is not required based on this trigger.
- **Location Triggers** – The proposed development is located within the City's 'Design Priority Area and/or Transit-oriented Development zone'; further assessment is required based on this trigger.
- **Safety Triggers** – The proposed development does not flag any safety triggers so further assessment is not required based on this trigger.

A copy of the TIA Screening Form is included in **Appendix B**.

Figure 1: Study Site

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

All roadways within the study area fall under the jurisdiction of the City of Ottawa.

Clarence Street is a local roadway that runs on an east-west alignment between Sussex Drive Nelson Street. At the intersection of Clarence Street and Cumberland Street, Clarence Street is a two-way road while at the intersection of Clarence Street and King Edward Avenue, Clarence Street is a one-way road that allows vehicles to enter Clarence Street westbound from King Edward Avenue. Within the study area, Clarence Street typically has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. Clarence Street is not classified as a truck route. On-street parking is permitted on the northern side only. The right-of-way (ROW) at the subject site is currently 20 metres. The City of Ottawa's Official Plan does not identify any further ROW protection on Clarence Street.

Murray Street is a one-way eastbound arterial roadway that runs on an east-west alignment between the Alexandra Inter-Provincial Bridge and King Edward Avenue. East of King Edward Avenue, Murray Street continues as St. Patrick Street. Within the study area, Murray Street typically has a three-lane undivided urban cross-section, sidewalks on both sides of the roadway, and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act.

York Street is a local roadway that runs on an east-west alignment between Sussex Drive and east of Beausoleil Drive. Within the study area, York Street typically has a two-lane divided urban cross-section, a grass median, sidewalks on both sides of the roadway, and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. York Street is not classified as a truck route. On-street parking is permitted on the northern side only.

Cumberland Street is a local roadway that runs on a north-south alignment between Boteler Street and Université Private. Within the study area, Cumberland Street has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. Cumberland Street is not classified as a truck route. On-street parking is permitted on both sides. A stopping prohibition on the east side provides additional northbound lane capacity between the hours of 3:30 p.m. to 5:30 p.m. on Monday to Saturday.

King Edward Avenue is an arterial roadway that runs on a north-south alignment between Mann Avenue and the Macdonald-Cartier Inter-Provincial Bridge. Within the study area, King Edward Avenue typically has a six-lane divided urban cross-section, a grass median, sidewalks on both sides of the roadway, and a posted speed limit of 40 km/h. King Edward Avenue is classified as a truck route. On-street parking is permitted on both sides. A stopping prohibition on the east side provides additional northbound lane capacity between the hours of 3:30-5:30 p.m. on weekdays. A stopping prohibition on the west side provides additional southbound lane capacity between the hours of 7:00-9:00 a.m. and 3:00-5:30 p.m. on weekdays. Between the hours of 3:30-5:30 p.m. the additional southbound lane functions as a transit/bike lane.

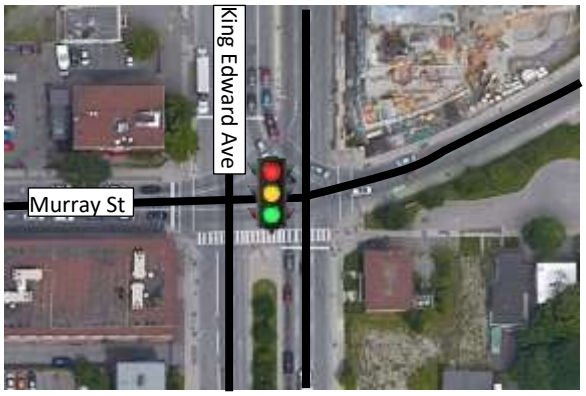
2.1.2 Study Intersections

Murray St & Cumberland St

- Signalized four-legged intersection
- North Approach: One left-turn/through shared lane
- East Approach: Nothing (one-way street going eastbound)
- South Approach: One through/right-turn shared lane
- West Approach: One left-turn/through lane and one through/right-turn shared lane
- Additional Information: Standard pedestrian crossing on all four legs

Murray St & King Edward Ave

- Signalized four-legged intersection
- North Approach: Two left-turn lanes and three through lanes
- East Approach: Nothing (one-way street going eastbound)
- South Approach: Two through lanes and one through/right-turn shared lane
- West Approach: One left-turn lane, one left-turn/through shared lane and one through/right-turn shared lane
- Additional Information: Standard pedestrian crossings on east and west legs, ladder hatched pedestrian crossing on south leg. The southbound U-turn movement is prohibited.



Clarence St & Cumberland St

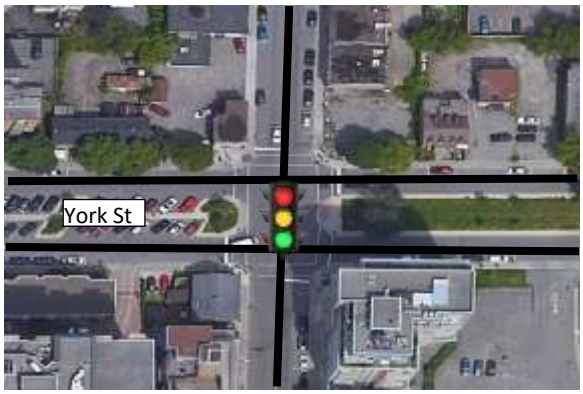
- Unsignalized four-legged intersection
- All Approaches: One left/through/right shared lanes
- Additional Information: Standard pedestrian crossing on the east and west legs

Clarence St & King Edward Ave

- Unsignalized four-legged intersection
- North/South Approaches: Two through lanes and one through/right-turn shared lane
- East Approach: Nothing (one-way going westbound)
- West Approach: One right-turn lane
- Additional Information: Standard pedestrian crossing on the east and west legs

York St & Cumberland St

- Signalized four-legged intersection
- North/South Approaches: One left/through/right shared lane
- East/West Approach: One left-turn and one through/right-turn shared lane
- Additional Information: Standard pedestrian crossing on all four legs. Westbound right turn prohibited between the hours of 8:00 p.m. to 6:00 a.m.



York St & King Edward Ave

- The north, south, and east approaches operate under traffic signal control, while the west approach operates under stop control.
- North Approach: Two through lanes and one through/right-turn shared lane
- East Approach: One right-turn lane
- South Approach: One left-turn lane, two through lanes and one through/right-turn shared lane
- West Approach: One right-turn lane
- Additional Information: Standard pedestrian crossings on east leg, two-stage standard pedestrian crossing on west leg, and a two-stage ladder hatched pedestrian crossing on north leg. The eastbound/westbound through and left turn, and southbound left-turn movements are prohibited.

2.1.3 Driveways

In accordance with the City's 2017 TIA Guidelines, a review of driveways on the boundary streets of Clarence Street adjacent to the proposed development is provided as follows:

North Driveways:

- 3 driveways serving parking for multi-unit residential developments at 215/231 Clarence Street and 309 Cumberland Street.

South Driveways:

- One driveway serving parking for a multi-unit residential development at 222 Clarence Street.
- 6 driveways to single residential units at 208-240 Clarence Street.

2.1.4 Pedestrian and Cycling Facilities

Concrete and/or unit paver sidewalks are provided on both sides of Murray Street, Clarence Street, York Street, Cumberland Street, and King Edward Avenue. A sidewalk is also provided on the median on York Street.

In the City of Ottawa's primary cycling network, Murray Street and Cumberland Street are classified as spine routes and York Street is classified as a local route. King Edward Avenue and Clarence Street do not have any classifications.

2.1.5 Area Traffic Management

There are no Area Traffic Management (ATM) studies within the study area that have been completed or currently in progress.

The eastbound right turn from Clarence Street onto King Edward Avenue is prohibited to alleviate cut-through traffic along Clarence Street. Cumberland Street north of St. Patrick Street is identified as a traffic calmed neighbourhood and Centreline flex posts have been implemented. King Edward Avenue north of St. Patrick Street is identified as a traffic calmed neighbourhood and 40 KM/HR MAX line painting, flex posts, and speed display boards have been implemented.

2.1.6 Transit

The closest Ottawa LRT station, Rideau, is 750 metres from the proposed development. There are several OC transit and bus stops near the vicinity (within 400 m of the proposed development location) of the subject site.

A summary of the closest bus stops and routes is provided as follows:

Murray St/St. Patrick St:

- Stop #7575 / Stop #2321 / Stop #2322 / Stop #2320: for Route 6

King Edward Avenue:

- Stop #8977 / Stop #8974: for Route 56

Location of these transit stops are shown in **Figure 2**.

Figure 2: Transit Stops within the Study Area

OC Transpo Route 6 travels between Greenboro Station and the Rockcliffe Community Station. On weekdays, the route operates every 15 to 30 minutes from 6:00 a.m. to 11:00 p.m. On the weekends, the route operates on 15 to 30 minute headways from 7:00am to 12:00am on Saturdays, and 30-minute headways from 8:00am to 12:00am on Sundays.

OC Transpo Route 56 travels between King Edward/Union and Tunney's Pasture Station. On weekdays, the route operates every 15 to 30 minutes from 6:00am to 7:00pm. This route does not operate within the study area on weekends.

OC Transpo maps for the routes outlined above and a portion of the OC Transpo System Map are included in **Appendix C**.

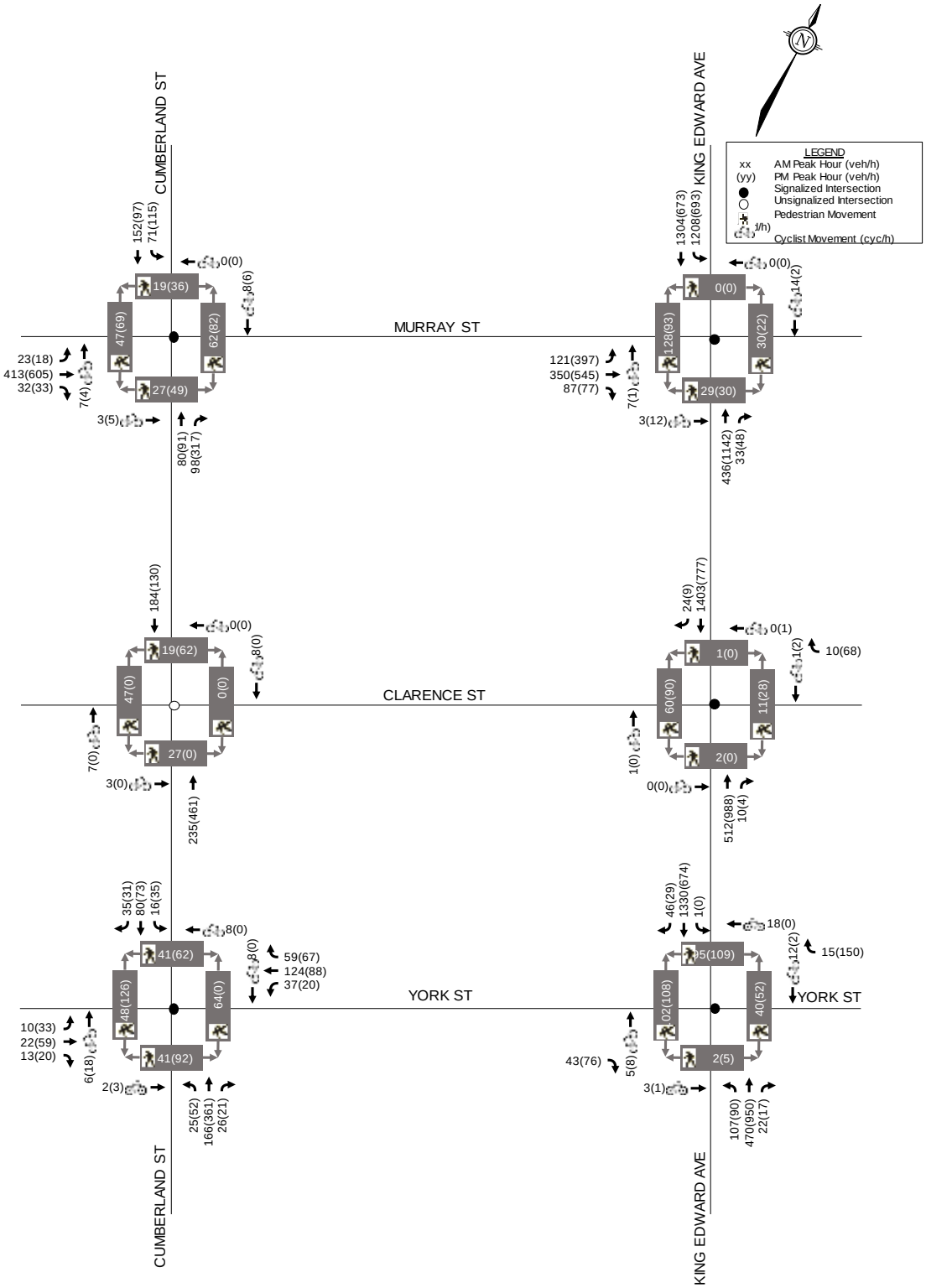
2.1.7 Existing Traffic Volumes

Weekday traffic counts completed by the City of Ottawa were used to determine the existing pedestrian, cyclist and vehicular traffic volumes at the study area intersections. The traffic counts were completed on the following dates:

- Murray St & Cumberland St 2016-Nov-30
- Murray St & King Edward Ave 2016-Sep-21
- Clarence St & King Edward Ave 2016-Mar-03
- York St & Cumberland St 2018-Apr-26
- York St & King Edward Ave 2016-Sep-21

Traffic count data is included in **Appendix D**. Traffic volumes within the study area are shown in **Figure 3**.

Figure 3: 2019 Existing Traffic Volumes



2.1.8 Collision Records

Historical collision data from the last five years was obtained from the City's Public Works and Service Department for the study area intersections. Copies of the collision summary reports are included in **Appendix E**.

The collision data has been evaluated to determine if there are any identifiable collision patterns, which are defined in the 2017 TIA Guidelines as 'more than six collisions in five years' for any one movement. The number of collisions at each intersection from January 1, 2015 to December 31, 2019 is summarized in **Table 1**.

Table 1: Collusion History Summary

Intersection	Impact Types					Total
	Angle	Rear-end	Sideswipe	Turning	SMV[1]/Other	
Murray St & Cumberland St	10	4	5	2	4	**25**
Murray St & King Edward Ave	7	26	16	6	7	**62**
Clarence St & Cumberland St	10	1	-	-	-	**11**
Clarence St & King Edward Ave	-	2	2	-	-	**4**
York St & Cumberland St	5	4	2	1	1	**13**
York St & King Edward Ave	1	7	4	2	2	**16**

Murray St / Cumberland St
A total of 25 collisions were reported at this intersection over the last five years, of which there were four rear-end impacts, two turning movement impacts, five sideswipe impacts, ten angle impacts, and four single-vehicle/other impacts. Four of the collisions caused injuries, but none caused fatalities. None of the collisions involved cyclists, and three involved a pedestrian.

Of the 25 collisions, nineteen of them occurred during clear conditions where weather was not a factor. Additionally, of the 25 collisions, sixteen of them occurred during daylight hours.

Of the ten angle collisions, nine involved northbound and eastbound vehicles, and one involved southbound and eastbound vehicles. Additionally, five of the angle impacts were a result of drivers disobeying traffic controls and two were a result of drivers failing to yield right-of-way. Six out of the ten angle collisions occurred during daylight hours and had clear environment conditions. It is noteworthy that the existing building at 302 Cumberland Street, located in the southwest corner of the intersection, is constructed to the property line. This building obstructs sightlines between northbound and eastbound vehicles and may be a contributing factor in the angle collision pattern at this intersection.

Murray St / King Edward Ave
A total of 62 collisions were reported at this intersection over the last five years, of which there were twenty-six rear-end impacts, six turning movement impacts, sixteen sideswipe impacts, seven angle impacts, and seven single-vehicle/other impacts. Fourteen of the collisions caused

injuries, but none caused fatalities. Four of the collisions involved cyclists, and five involved a pedestrian.

Of the 62 collisions, 52 of them occurred during clear conditions where weather was not a factor. Additionally, of the 62 collisions, 45 of them occurred during daylight hours.

Of the seven angle collisions, four involved northbound and eastbound vehicles, and three involved southbound and eastbound vehicles. As there are less than 6 angle collisions of any specific direction, this does not constitute a collision pattern.

Of the 26 rear-end collisions, twelve involved northbound vehicles, nine involved eastbound vehicles, and five involved southbound vehicles. Additionally, all of the rear-end impacts were a result of vehicles following too close, speeding too fast for conditions, disobeying traffic control, or improper lane changing. 23 of the rear-end collisions occurred during daylight hours and had clear environment conditions. Based on the foregoing, the rear-end collision pattern on the northbound and eastbound approach is anticipated to be a result of high traffic volumes and drivers speeding.

Of the sixteen sideswipe collisions, four involved northbound vehicles, seven involved eastbound vehicles, and five involved southbound vehicles Additionally, ten of the sideswipe impacts were a result of vehicles improper lane changing. Thirteen of the sideswipe collisions occurred during daylight hours and had clear environment conditions.

Of the seven single motor vehicle collisions, three involved northbound vehicles, and four involved eastbound vehicles. As there are less than 6 single motor vehicle collisions of any specific direction, this does not constitute a collision pattern.

Clarence St / Cumberland St
A total of 11 collisions were reported at this intersection over the last five years, of which there were one rear-end impacts and ten angle impacts. None of the collisions caused injuries or fatalities. None of the collisions involved cyclists, and none involved a pedestrian.

Of the ten angle collisions, six involved northbound and westbound vehicles, two involved southbound and westbound vehicles, and two involved southbound and eastbound vehicles. Additionally, two of the angle impacts were a result of drivers disobeying traffic controls, six were a result of drivers failing to yield right-of-way, and two other collisions were a result of drivers speeding or doing an improper turn. Six out of the ten angle collisions occurred during daylight hours. Half of the collisions had clear environment conditions. It is noteworthy that the existing building at 202 Clarence Street and fencing/landscaping at 309 Cumberland Street, located in the southeast and northeast corners of the intersection may impact sightlines for westbound vehicles, and may be a contributing factor in the angle collision pattern at this intersection.

Clarence St / King Edward Ave
A total of 4 collisions were reported at this intersection over the last five years, of which there were two rear-end impacts and two sideswipe impacts. Two of the collisions caused injuries, but none caused fatalities. One of the collisions involved cyclists, and none involved a pedestrian.

As there are less than 6 collisions of any specific impact type, there are no identifiable collision patterns at the intersection of Clarence Street and King Edward Avenue.

York St / Cumberland St
A total of 13 collisions were reported at this intersection over the last five years, of which there were four rear-end impacts, one turning movement impacts, two sideswipe impacts, five angle impacts, and one single-vehicle/other impacts. Two of the collisions caused injuries, but none caused fatalities. One of the collisions involved cyclists, and none involved a pedestrian.

As there are less than 6 collisions of any specific impact type, there are no identifiable collision patterns at the intersection of York Street and Cumberland Street.

York St / King Edward Ave
A total of 16 collisions were reported at this intersection over the last five years, of which there were seven rear-end impacts, two turning movement impacts, four sideswipe impacts, one angle impacts, and two single-vehicle/other impacts. Three of the collisions caused injuries, but none caused fatalities. None of the collisions involved cyclists, and two involved a pedestrian.

Of the seven rear-end collisions, five involved northbound vehicles, and two involved southbound vehicles. As there are less than 6 rear-end collisions of any specific direction, this does not constitute a collision pattern.

As there are less than 6 collisions of any other specific impact type, there are no identifiable collision patterns at the intersection of York Street and King Edward Avenue.

2.2 Planned Conditions

2.2.1 Transportation Projects

The City of Ottawa's 2013 Transportation Master Plan (TMP) does not identify any upcoming roadway projects within the study area in its Affordable Road Network. The TMP's Affordable Rapid Transit and Transit Priority (RTTP) Network identifies the implementation of transit signal priority at select intersections along Murray Street/St Patrick Street to reduce travel times and improve reliability along the corridor.

The 2013 Ottawa Cycling Plan identifies the dedication shared use lanes along Murray Street and St. Patrick Street between King Edward Avenue and Sussex Drive as a Phase 1 (2014-2019) project. Shared use lanes are currently in place along these roadways.

2.2.2 Other Area Developments

The Ottawa Development Application search tool allows review of any applications that have been submitted to the City of Ottawa. Upon examining the applications, the following developments are proposed in close proximity to the study area of 211 Clarence Street:

- *216 Murray Street*: 8-storey mixed-use building with 48 dwelling, and a community health and resource centre that includes a low-barrier drop-in centre and commercial kitchen.
- *261/269/277 King Edward Ave*: 6-storey mixed-use building with 31 dwellings, and a specialty retail centre.
- *112 Nelson Street*: demolition of the existing mixed-use building and construction of a mid-rise, mixed-use development.
- *110 York Street*: permit a 19-storey addition to the existing hotel.

2.3 Study Area and Time Periods

The study area for this report includes the boundary street Clarence Street, and the study area intersections at Cumberland Street/Murray Street, King Edward Avenue/Murray Street, Clarence Street/King Edward Avenue, Cumberland Street/York Street, and King Edward Avenue/York Street.

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic.

The proposed development is expected to be completed with full occupancy by the year 2023. As such, this TIA considers the weekday AM and PM peak periods for the buildout year 2023 and the horizon year 2028.

2.4 Exemptions Review

This section reviews possible exemptions from the final Transportation Impact Assessment, as outlined in the 2017 TIA Guidelines. The applicable exemptions for the site are shown below in **Table 2**.

Table 2: City of Ottawa Exemptions Review

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

As the proposed development does not meet the trip generation trigger, the TIA report is limited to the Design Review components. Per the City of Ottawa's request, Module 4.5-Transportation Demand Management will also be completed as part of the TIA.

3.0 FORECASTING

3.1 Development-Generated Travel Demand

3.1.1 Trip Generation

Trips Generated from Existing Development

Currently, the subject site is unoccupied and does not generate any trips.

Trips Generated from Proposed Development

The proposed redevelopment will include 34 dwelling units. Trips generated by the proposed residential units during the AM and PM peak period have been estimated using the recommended rates from the TRANS Trip Generation Manual, prepared in 2020 by WSP Canada. The trip generation rates are taken from Table 3 and correspond to High-Rise Residential in the Ottawa Central Area. The directional split between inbound and outbound trips are based on the blended splits presented in Table 9 of the report.

The estimated number of peak period trips generated by the proposed residential units is shown in **Table 3**.

Table 3: Peak Period Trips Generated

Land Use	TRANS Rate	Units	AM Peak (PPP)[1]			PM Peak (PPP)[1]		
			In	Out	Total	In	Out	Total
High-Rise Residential	AM: 0.80 PM: 0.90	34	9	19	28	19	13	32

1. PPP = Person Trips per Peak Period

The 2020 TRANS Trip Generation Manual provides modal shares for residential developments within the Ottawa Central Area. However, as the proposed development does not have any on-site parking for tenants and visitors, a reduction in the auto modal share and increase in the walking modal share have been assumed. A summary of the TRANS residential mode shares and proposed residential mode shares is provided below in **Table 4**.

Table 4: Modal Share Splits

	Auto-Driver	Auto-Passenger	Transit	Cyclist	Walking
TRANS	15%	5%	25%	5%	50%
Proposed	10%	5%	25%	5%	55%

The proposed residential modal shares reflect a 5% reduction in auto trips and 5% increase in walking trips compared to the Ottawa Central Area to account for the lack of on-site parking spaces.

A full breakdown of the projected peak period person trips by modal share is shown in **Table 5**.

Table 5: Peak Period Person Trips by Modal Share

Travel Mode	Mode Share	AM Peak (PPP)[1]			PM Peak (PPP)[1]		
		In	Out	Total	In	Out	Total
Total Trips		**9**	**19**	**28**	**19**	**13**	**32**
Auto-Driver	10%	1	2	3	2	1	3
Auto-Passenger	5%	0	1	1	1	1	2
Transit	25%	3	5	8	5	2	7
Cyclist	5%	0	1	1	1	1	2
Pedestrian	55%	5	10	15	10	8	18

1. PPP = Person Trips per Period

Table 4 of the 2020 O-D TRANS Trip Generation Manual includes adjustment factors to convert the estimated number of trips generated for each mode from peak period to peak hour. A breakdown of the peak hour trips by mode is shown in **Table 6**.

Table 6: Peak Hour Persons Trips by Modal Share

Travel Mode	Mode Share		AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
Auto-Driver	0.48	0.44	0	1	1	1	0	1
Auto-Passenger	0.48	0.44	0	0	0	0	1	1
Transit	0.55	0.47	2	2	4	2	1	3
Cyclist	0.58	0.48	0	1	1	0	1	1
Pedestrian	0.58	0.52	3	6	9	5	4	9
Total Trips			**5**	**10**	**15**	**8**	**7**	**15**

Based on the previous table, the proposed residential development is expected to generate 15 person trips (including one vehicle trip) during the AM and PM peak hours.

3.1.2 Trip Distribution

For the purpose of this analysis, this report does not include trip distribution.

3.2 Background Traffic

3.2.1 Other Area Developments

A description of other study area developments is included in Section 2.2.

A review of traffic studies for the following study area developments suggest that traffic generated by these developments is expected to have a negligible impact on the adjacent roadways:

- 216 Murray Street: 8-storey mixed-use building with 48 dwelling, and a community health and resource centre that includes a low-barrier drop-in centre and commercial kitchen.
- 261/269/277 King Edward Ave: 6-storey mixed-use building with 31 dwellings, and a specialty retail centre.

The projected traffic volumes generated by the following developments have been added to the background traffic at all relevant intersections within the study area:

- 112 Nelson Street: demolition of the existing mixed-use building and construction of a mid-rise, mixed-use development.
- 110 York Street: a 19-storey addition to the existing hotel.

Excerpts of site generated traffic figures from the respective traffic studies for the above developments are included in **Appendix F**.

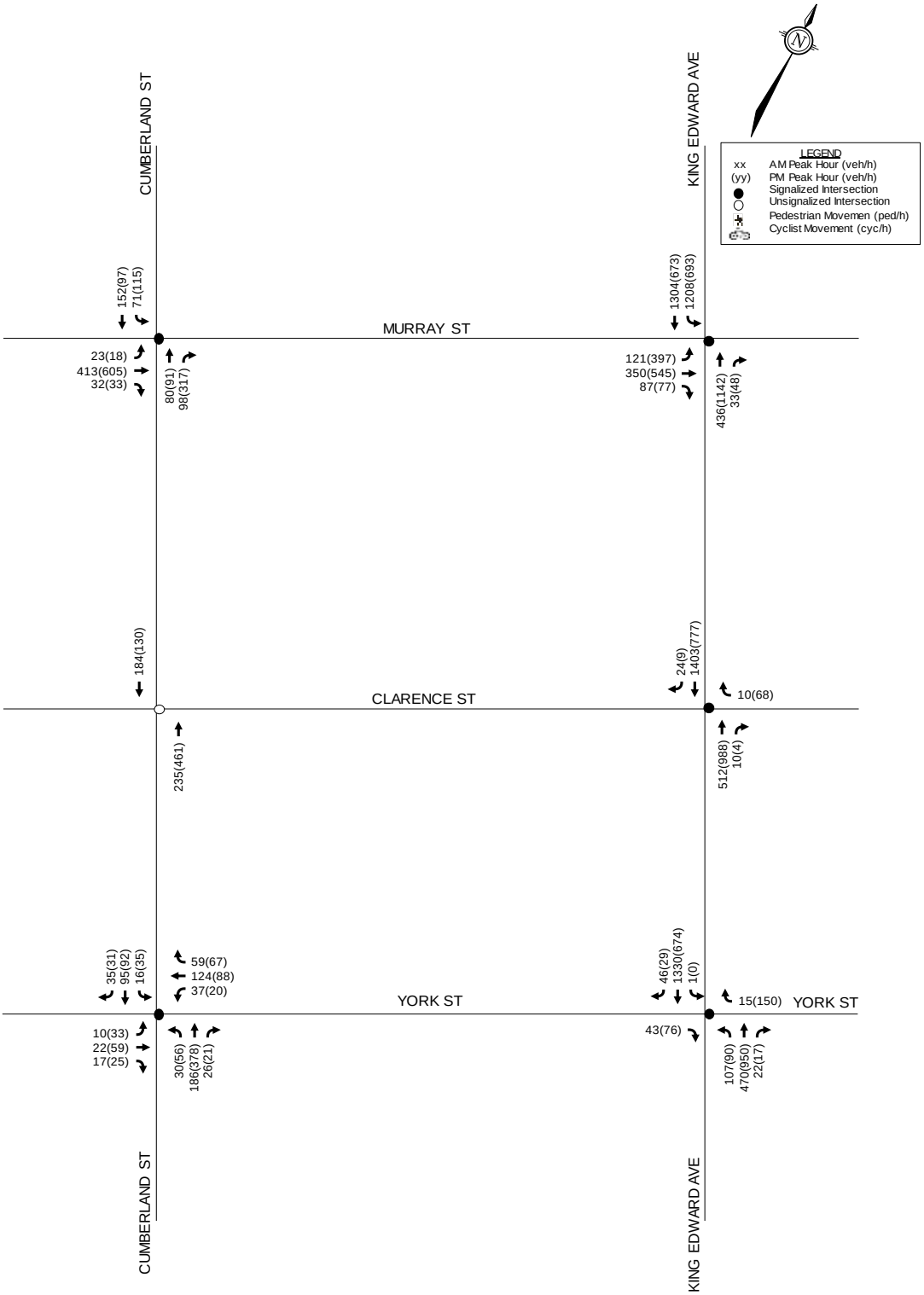
3.2.2 General Background Growth Rate

A rate of background growth has been established through a review of the City of Ottawa's Intersection Traffic Growth Rate, snapshots that compare traffic growth from 2000 and 2016 AM and PM peak volumes. In general, the snapshots suggest a growth rate between -0.2% and -4% per annum for intersections within the study area.

Based on the foregoing, no background growth rate will be applied in the analysis.

The background traffic volumes in 2023 and 2028 are shown in **Figure 4**.

Figure 4: 2023 and 2028 Future Background Traffic Volumes



4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

A sidewalk connection will be provided between the building entrance and Clarence Street.

A total of 34 parking spaces for bicycles will be provided within the building. Further review of the number of bicycle parking spaces is included in Section 4.2: Parking.

OC Transpo guidelines recommend that all developments within the vicinity of a bus route should have at least one bus stop within a walking distance of 400 metres, roughly a 5-minute walk. All of the transit stops outlined in Section 2.1.6 are within the 400 metres distance. The stops within 400 metres walking distance of the subject site provide service to routes 6 and 56.

A review of the Transportation Demand Management (TDM) – Supportive Development Design and Infrastructure Checklist has been conducted. A copy of the TDM checklist is included in **Appendix G**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met. In addition to the required measures, the proposed development also meets the following 'basic' or 'better' measures as defined on the TDM - Supportive Development Design and Infrastructure Checklist:

- Locate building close to the street, and do not locate parking areas between the street and building entrances
- Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations
- Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort

Garbage bins will be wheeled out for public curbside garbage collection along Clarence Street. The fire route for the development is curbside along Clarence Street.

4.1.2 Circulation and Access

As there are no new accesses proposed, a review of circulation and access has not been conducted.

4.2 Parking

4.2.1 Parking Supply

The subject site is located in Area A of Schedule 1 and Area Z of Schedule 1A of the City of Ottawa's Zoning By-Law (ZBL).

Vehicle Parking

Section 101 and 102 of the ZBL summarizes the minimum parking space rates for various land uses. The minimum vehicle parking spaces for the proposed development is summarized in **Table 7**.

Table 7: Minimum Vehicle Parking Requirements

Land Use	Rate	Units	Required
Residential	Tenant: no off-street motor vehicle parking is required to be provided	34 units	0
	Visitor: 0.1 per dwelling units after the first 12 units		2
		Minimum	**2**
		Provided	**0**

Section 103 of the ZBL summarizes the maximum parking space rates for developments located in the Ottawa Central Area. The maximum vehicle parking spaces for the proposed development is summarized in **Table 8**.

Table 8: Maximum Vehicle Parking Requirements

Land Use	Rate	Units	Maximum
Residential	Tenant + Visitor: 1.5 per dwelling units	34 units	51
		Maximum	**53**
		Provided	**0**

The proposed vehicle parking does not meet the minimum visitor parking requirements of the City of Ottawa ZBL. As the proposed number of vehicular parking spaces equate to less than 85% the required parking under the ZBL, a review of spillover parking is required under the TIA guidelines.

Bicycle Parking

Section 111 of the ZBL summarizes the minimum bicycle parking space rates for various land uses. The minimum required bicycle parking spaces for the proposed development is summarized in **Table 9**.

Table 9: Bicycle Parking Requirements

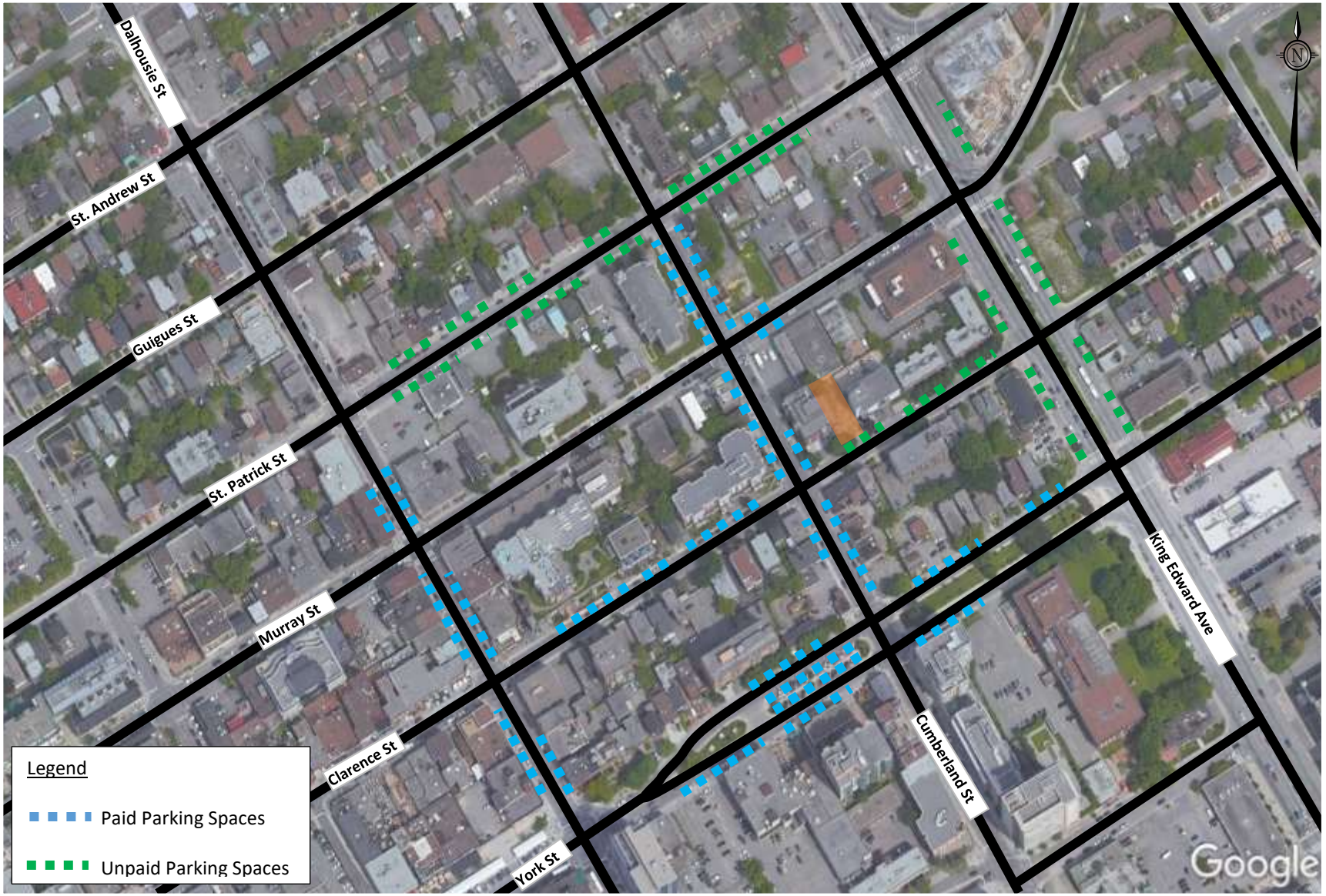
Land Use	Rate	Units	Required
Residential	Rate: 0.5 per dwelling units	34 units	17
		Minimum	**17**
		Provided	34

A total of 34 bicycle parking spaces will be provided, exceeding the requirements of the City of Ottawa ZBL.

4.2.2 Spillover Parking

For the purposes of this parking review, the study area is bound by St. Patrick Street to the north, York Street to the south, King Edward Avenue to the east, and Dalhousie Street to the west. The proposed study area equates to a radius of approximately 250 metres surrounding the site. On-street paid and unpaid parking locations within the study area are shown in **Figure 5**.

Figure 5: On-Street Parking Adjacent to Study Area



A review of aerial photography was completed to determine the number of on-street parking spaces within the study area. The number of parking spaces were estimated by taking the total length of the parking area and dividing it by six metres, which represent an average parking spot within downtown Ottawa. A summary of the number of on-street parking spaces by street is provided in **Table 10**.

Table 10: On-Street Parking in the Study Area

Street	Number of Spots	
	Paid	Unpaid
King Edward Avenue	-	30
Cumberland Street	33	-
St. Patrick Street	-	45
Dalhousie Street	37	-
Murray Street	27	-
Clarence Street	13	12
York Street	55	-
Total	**165**	**87**

Approximately 252 parking spaces (165 paid, 87 unpaid) are available within the study area. Based on the ZBL, two visitor parking spaces are required for the development. It is expected that the two visitor parking spaces can be accommodated on-street within the study area.

4.3 Boundary Street

This section provides a review of the boundary street, Clarence Street using complete streets principles. The Multi-Modal Level of Service (MMLOS) guidelines produced by IBI Group in October 2015 have been used to evaluate the LOS of boundary roadways for each mode of transportation.

Within the boundaries of the subject site, Clarence Street is classified as a local roadway. Clarence Street is located within a 600 metre radius of the Rideau Transit Station.

4.3.1 Pedestrian Level of Service (PLOS)

Exhibit 4 of the MMLOS guidelines has been used to evaluate the segment PLOS of Clarence Street. Exhibit 22 of the MMLOS guidelines suggests a target PLOS A for all roadways within 600 metres of rapid transit station. The results of the segment PLOS analysis are summarized in **Table 11**.

Table 11: Pedestrian LOS

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed	Segment PLOS
Clarence Street (North Curb)					
1.5m	0m	< 3000	Yes	60 km/h	F
Clarence Street (South Curb)					
1.5m	0m	< 3000	No	60 km/h	F

4.3.2 Bicycle Level of Service (BLOS)

Exhibit 11 of the MMLOS guidelines has been used to evaluate the segment BLOS of Clarence Street. Exhibit 22 of the MMLOS guidelines suggests a target BLOS D for all roadways within 600 metres of rapid transit station with no cycling classification. The results of the segment BLOS analysis are summarized in **Table 12**.

Table 12: Bicycle LOS

Road Class	Bike Route	Type of Bikeway	Travel Lanes	Operating Speed	Segment BLOS
Clarence Street					
Local	None	Mixed Traffic	2	60 km/h	F

4.3.3 Transit Level of Service (TLOS)

Clarence Street does not provide any transit services; therefore, the transit level of service (TLOS) has not been evaluated.

4.3.4 Truck Level of Service (TkLOS)

Exhibit 20 of the MMLOS guidelines has been used to evaluate the segment TkLOS of Clarence Street. Exhibit 22 of the MMLOS guidelines does not suggest a target for local roadways not classified as truck routes within 600 metres of a rapid transit station. The results of the segment TkLOS analysis are summarized in **Table 13**.

Table 13: Truck LOS

Curb Lane Width	Number of Travel Lanes per Direction	Segment TkLOS
Clarence Street (North Curb)		
> 3.7	1	B
Clarence Street (South Curb)		
> 3.7	1	B

4.3.5 Segment MMLOS Summary

A summary of the results of the segment MMLOS analysis for Clarence Street is provided in **Table 14**.

Table 14: Summary of MMLOS Analysis

Roadway	PLOS	BLOS	TLOS	TkLOS
Clarence Street	F	F	-	B
Target	**A**	**D**	**-**	**-**

The target PLOS is not achieved along Clarence Street. To achieve the target PLOS A, a 2-metre sidewalk and boulevard greater than 0.5 metre are required. This is identified for the City's consideration.

The target BLOS is not achieved along Clarence Street. To achieve the target BLOS D along Clarence Street, a reduction in the operating speed is required.

Clarence Street does not provide any transit services; therefore, the TLOS has not been evaluated.

The target TkLOS is met on Clarence Street due to lanes that measure more than 3.7 metres.

4.4 Access Intersections

As there are no new accesses proposed, a review of the accesses has not been conducted.

4.5 Transportation Demand Management

4.5.1 Context for TDM

The proposed development consists of a total of 34 residential units. The residential unit breakdown is provided as follows:

- Studio: 24 units
- 1 Bedroom: 10 units

4.5.2 Need and Opportunity

As the proposed development is located within a TOD zone, the Ottawa Central Area modal shares presented in the 2020 TRANS Trip Generation Manual have been adjusted to reflect a lower auto-driver mode share. In addition, the proposed building does not provide any vehicle parking spaces. The assumed modal shares for the development decrease the auto modal share from 15% to 10%. Should the development meet the TRANS modal shares, the proposed development would generate slightly more vehicle trips. Using the conservative estimate of 15% for the auto modal share would result in an additional vehicle trip during the AM and PM peak hours. This additional vehicle trip results in an increased demand for on-street parking. However, as identified in Section 4.2, approximately 252 on-street parking spaces are available within the study area.

4.5.3 TDM Program

A review of the Transportation Demand Management (TDM) – Measures Checklist has been conducted. A copy of the TDM checklist is included in **Appendix G**.

The following measures will be implemented upon opening of the proposed development:

- Designate an internal coordinator, or contract with an external coordinator
- Display local area maps with walking/cycling access routes and key destinations at major entrances
- Display relevant transit schedules and route maps at entrances
- Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit
- Provide a multimodal travel option information package to new residents

The proposed development will provide bicycle 34 parking spaces, which is approximately one space per dwelling unit within the building.

5.0 CONCLUSIONS

Based on the foregoing, the conclusions and recommendations of this TIA can be summarized as follows:

Development Design

- A sidewalk connection will be provided between the building entrance and Clarence Street.
- A total of 34 parking spaces for bicycles will be provided within the building.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

Parking

- The proposed vehicle parking does not meet the minimum visitor parking requirements of the City of Ottawa Zoning By-law.
- The proposed bicycle parking provided exceeds the requirements of the City of Ottawa Zoning By-law.
- A review of the spillover parking in the study area shows that 252 paid and unpaid parking spaces would be available for use.

Boundary Street Design

- The target PLOS is not achieved along Clarence Street. To achieve the target PLOS A, a 2-metre sidewalk and boulevard greater than 0.5 metre are required. This is identified for the City's consideration.
- The target BLOS is not achieved along Clarence Street. To achieve the target BLOS D along Clarence Street, a reduction in the operating speed is required.
- The target TkLOS is met on Clarence Street due to lanes that measure more than 3.7 metres.

Access Intersections

- As there are no new accesses proposed, a review of the accesses has not been conducted.

Transportation Demand Management

- The following measures will be implemented upon completion of the proposed development:
    - Designate an internal coordinator, or contract with an external coordinator
    - Display local area maps with walking/cycling access routes and key destinations at major entrances
    - Display relevant transit schedules and route maps at entrances
    - Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit
    - Provide a multimodal travel option information package to new residents

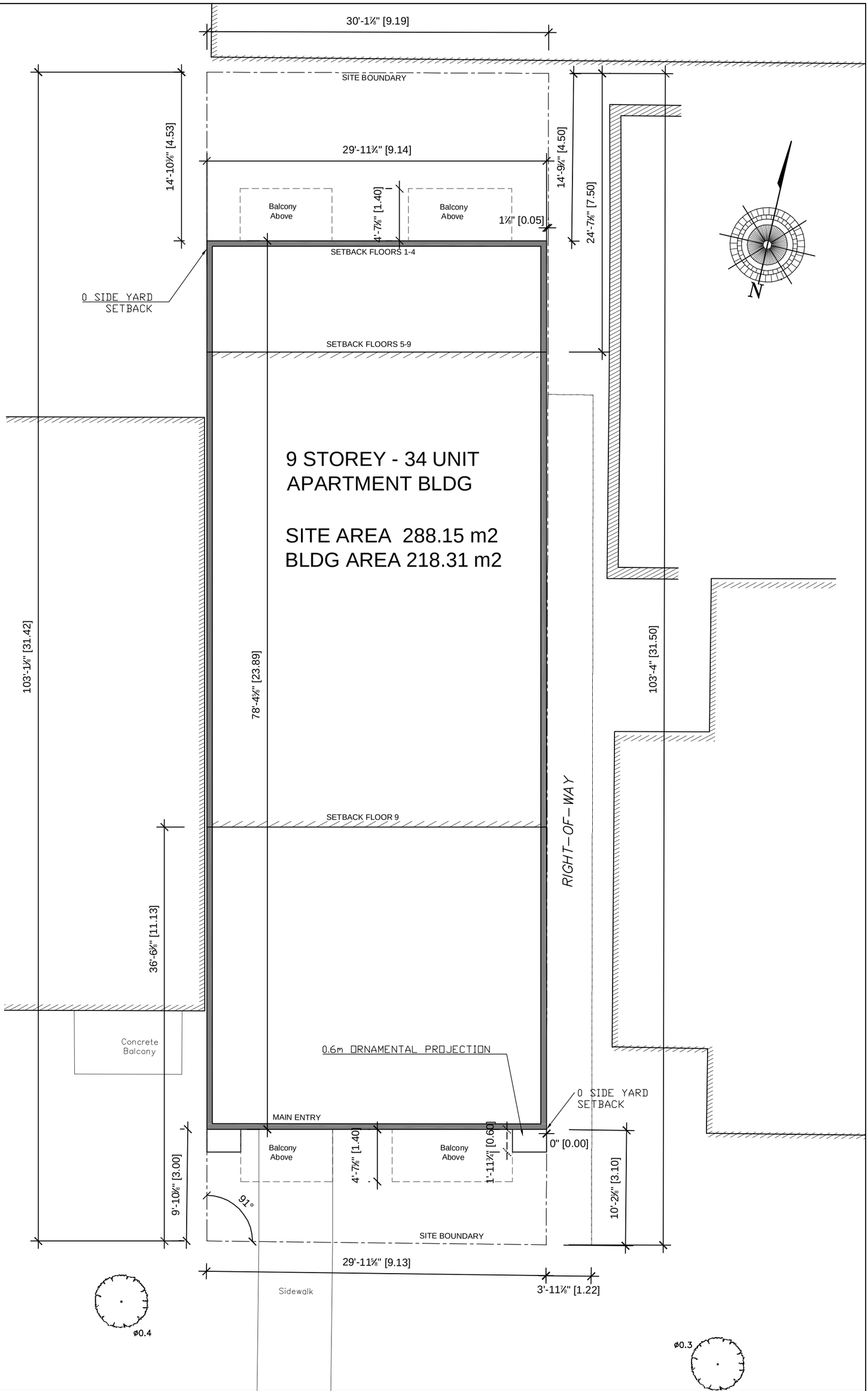
Based on the foregoing, the proposed development is recommended from transportation perspective.

NOVATECH

Prepared by:

Brad Byvelds, P.Eng.
Project Manager, Transportation/Traffic

Appendix A: Site Plan



geoff hodgins architect
Perth, Ontario
tel: (613) 267-0817
ghodgins.gha@gmail.com

PRELIMINARY SITE PLAN
211 CLARENCE
OTTAWA, ON

scale/échelle 1/8"= 1'-0"	date MAR 21, 2022
drawn by/dessiné par GH	project no./projet H212
checked by/ verifié par	drawing no./ dessin no.

SP-1

Appendix B: Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	**211 Clarence Street**
Description of Location	**Mid-block between Cumberland St and King Edward Ave**
Land Use Classification	**Residential**
Development Size (units)	**34**
Development Size (m^2)	**N/A**
Number of Accesses and Locations	**No access proposed**
Phase of Development	**1**
Buildout Year	**2023**

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.

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?*	✓	

**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

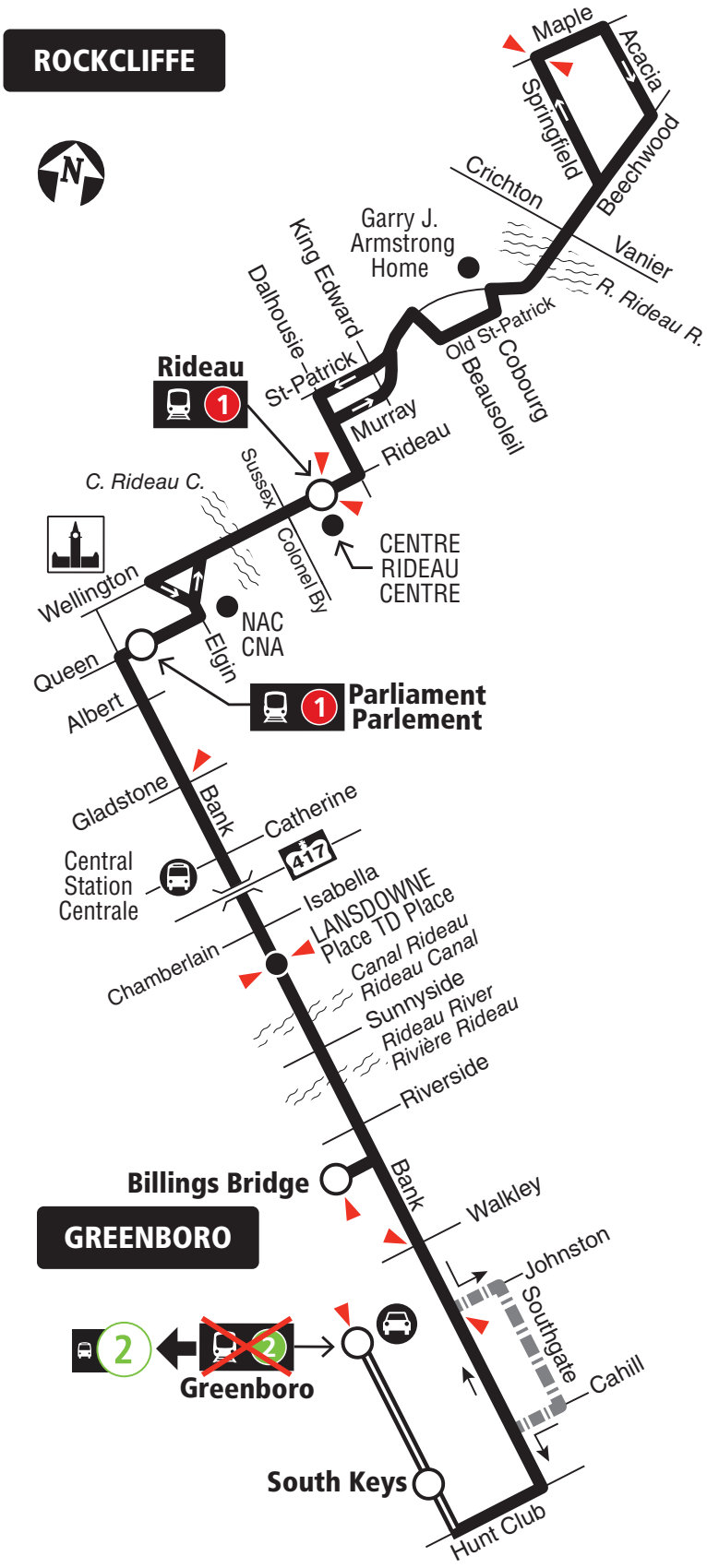
If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

5. Summary

	Yes	No
Does the development satisfy the Trip Generation Trigger?		X
Does the development satisfy the Location Trigger?	✓	
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 C: OC Transpo Map


ROCKCLIFFE
N
Maple
Acacia
Springfield
Beechwood
Crichton
Vanier
R. Rideau R.
Garry J. Armstrong Home
King Edward
Dalhousie
St-Patrick
Old St-Patrick
Cobourg
Beausoleil
Rideau
1
Murray
Rideau
C. Rideau C.
Sussex
Colonel By
CENTRE RIDEAU CENTRE
Wellington
NAC CNA
Elgin
Queen
Albert
1
Parliament Parlement
Gladstone
Bank
Catherine
Central Station Centrale
417
Isabella
LANSDOWNE Place TD Place
Chamberlain
Canal Rideau Rideau Canal
Sunnyside
Rideau River Rivière Rideau
Riverside
Billings Bridge
Bank
Walkley
GREENBORO
Johnston
Southgate
Cahill
2
2
Greenboro
South Keys
Hunt Club
Transitway & Station
No early morning service / Aucun service matinal
Park & Ride / Parc-o-Bus
Timepoint / Heures de passage

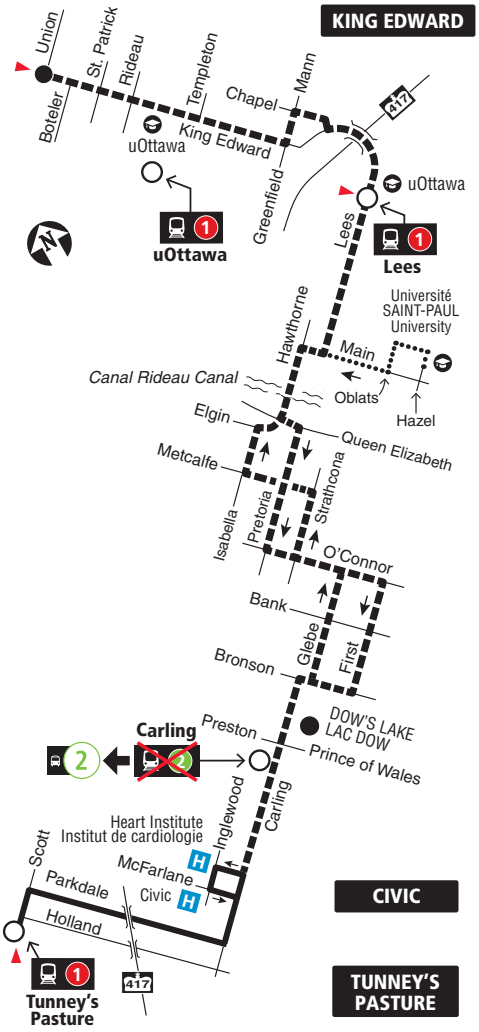
2020.08

56

CIVIC
KING EDWARD
TUNNEY'S PASTURE

Local

7 days a week / 7 jours par semaine



2021.06

Schedule / Horaire 613-560-1000
Text / Texto* 560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres
*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

Customer Service
Service à la clientèle **613-741-4390**

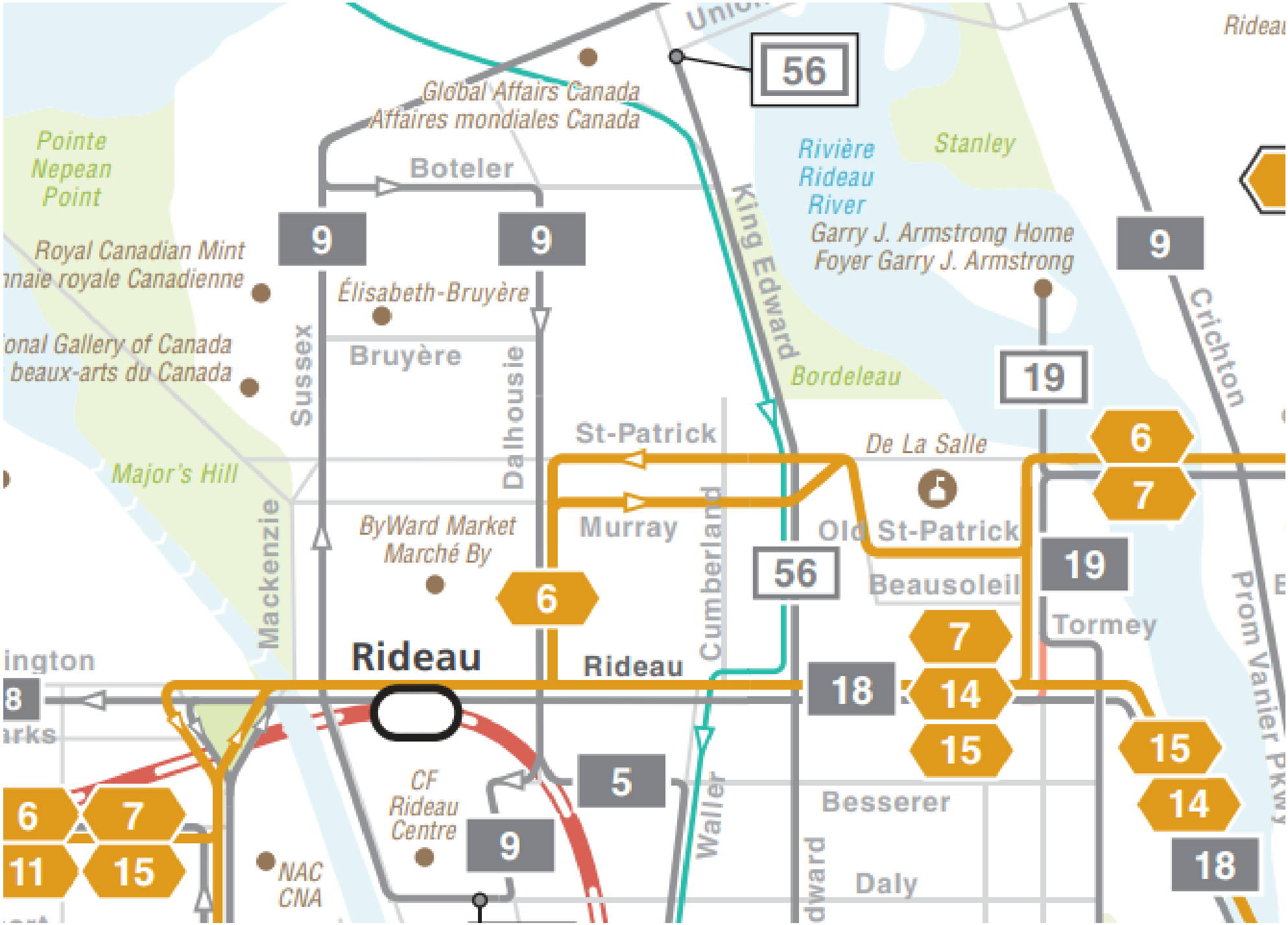
Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité **613-741-2478**

Effective June 20, 2021
En vigueur 20 juin 2021

OC Transpo
INFO 613-741-4390
octranspo.com

Transit Map Carte du réseau



Appendix D: Traffic Count Data

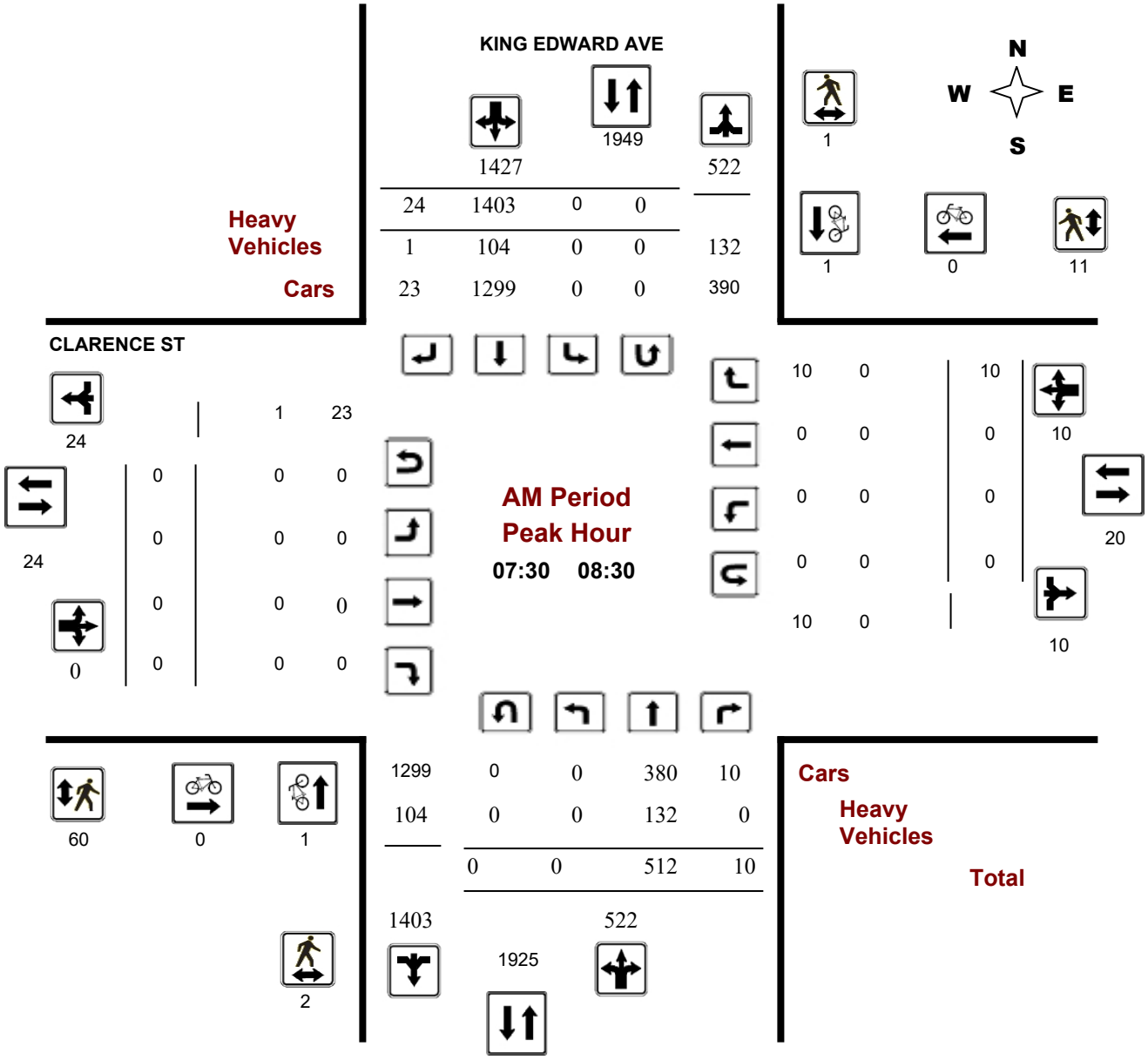
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CLARENCE ST @ KING EDWARD AVE

Survey Date: Thursday, March 03, 2016 **WO No:** 35763

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



Comments

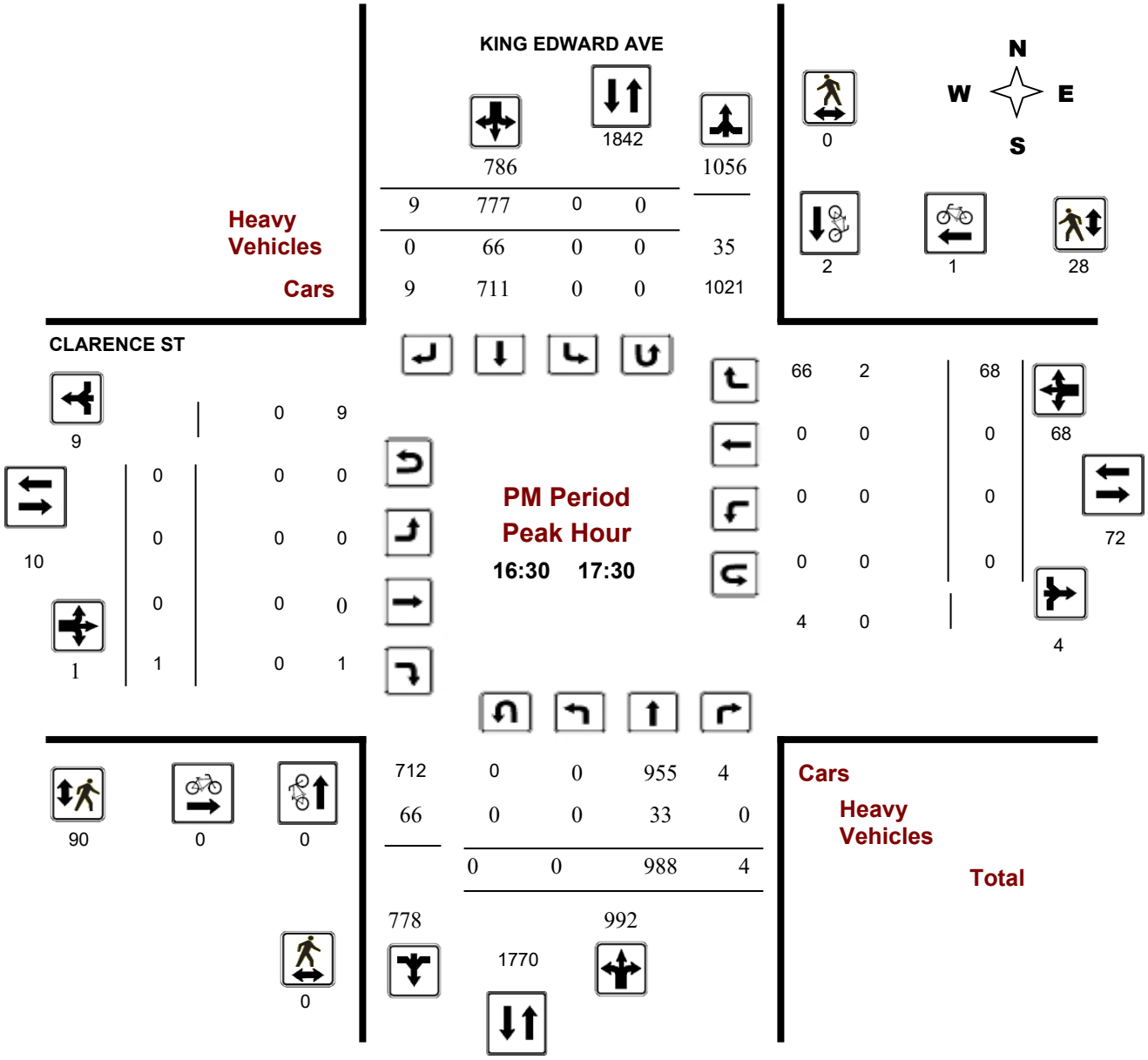
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CLARENCE ST @ KING EDWARD AVE

Survey Date: Thursday, March 03, 2016 **WO No:** 35763

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



Comments

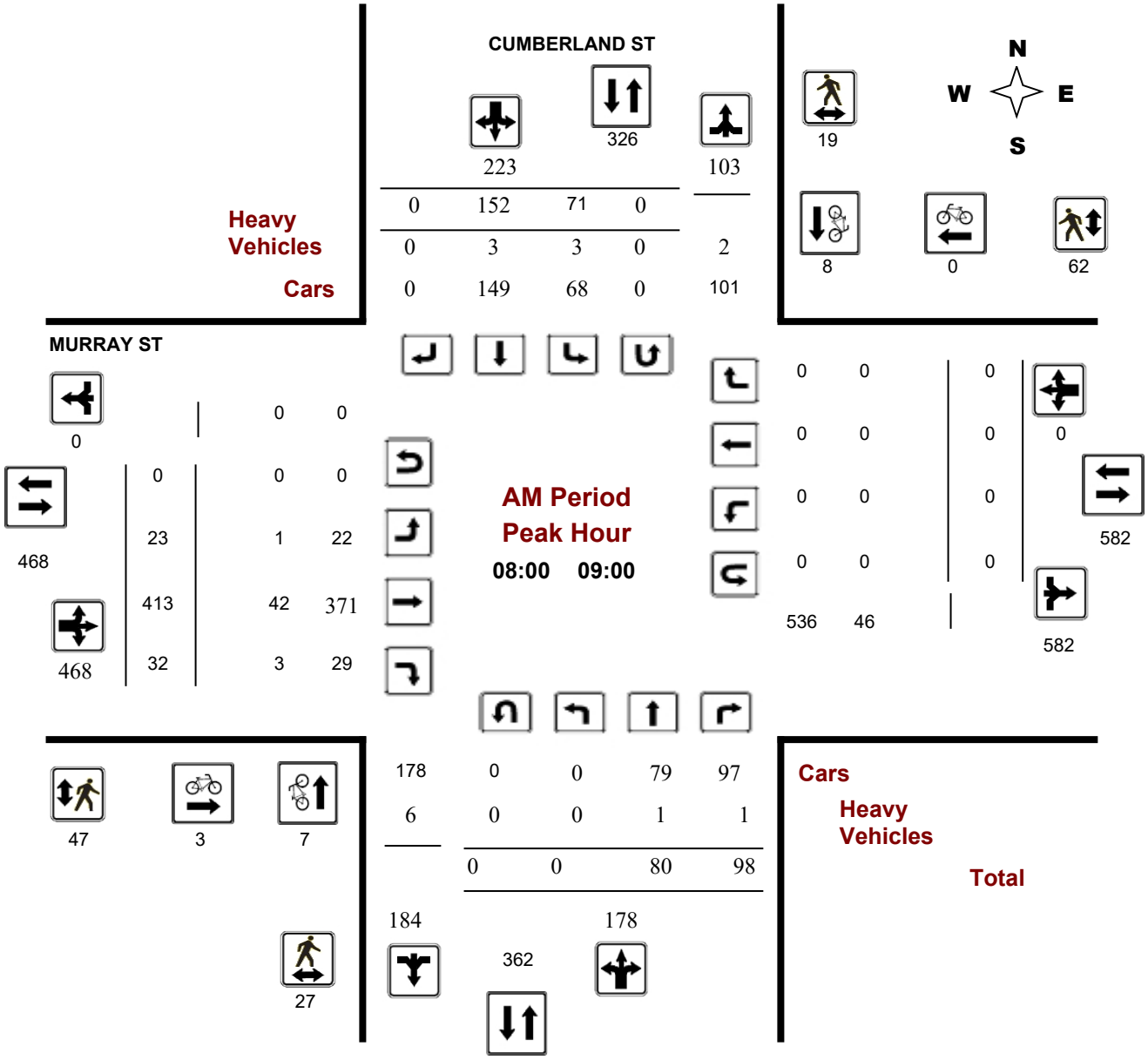
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CUMBERLAND ST @ MURRAY ST

Survey Date: Wednesday, November 30, 2016 **WO No:** 36557

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



Comments

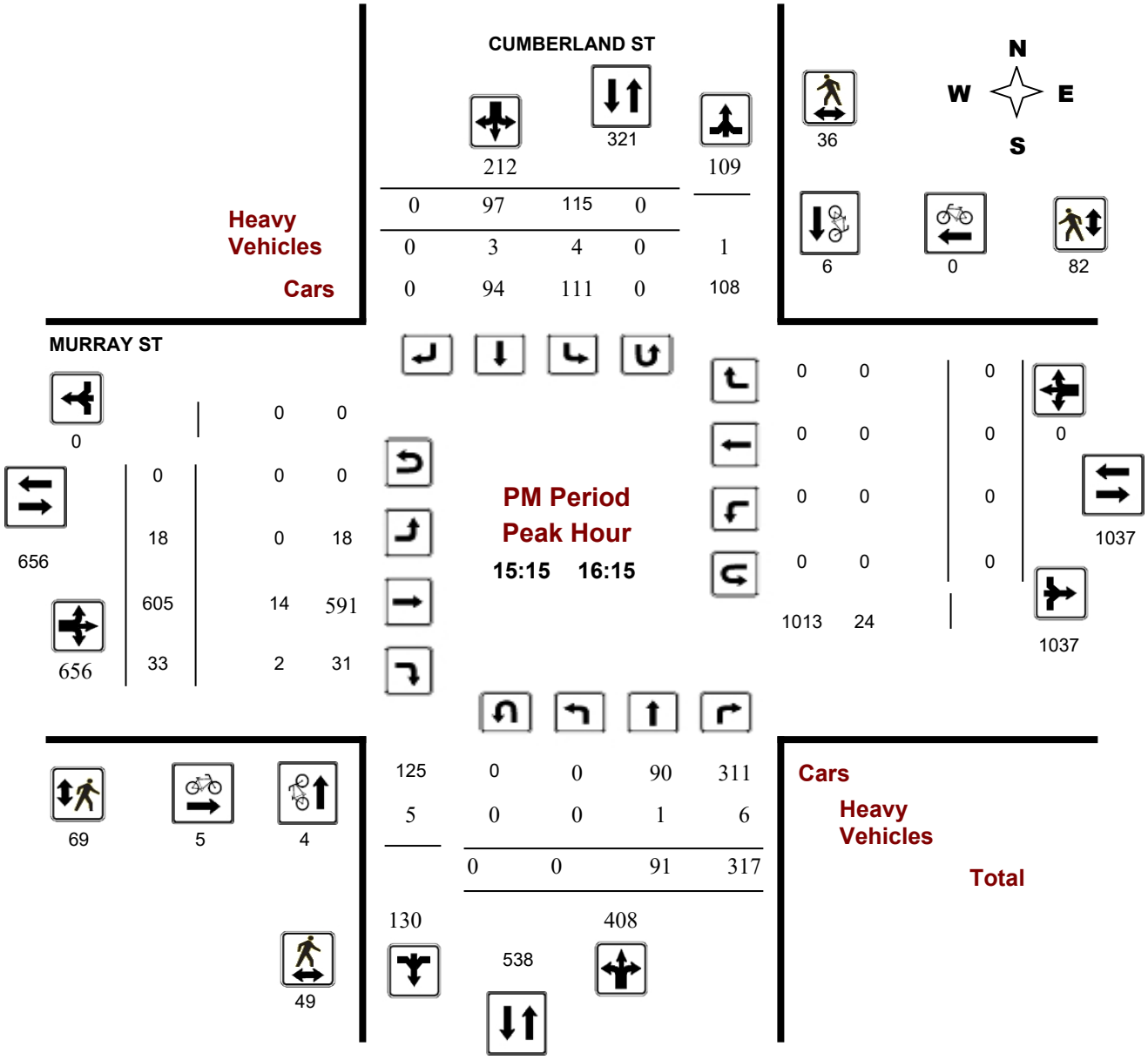
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CUMBERLAND ST @ MURRAY ST

Survey Date: Wednesday, November 30, 2016 **WO No:** 36557

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



Comments

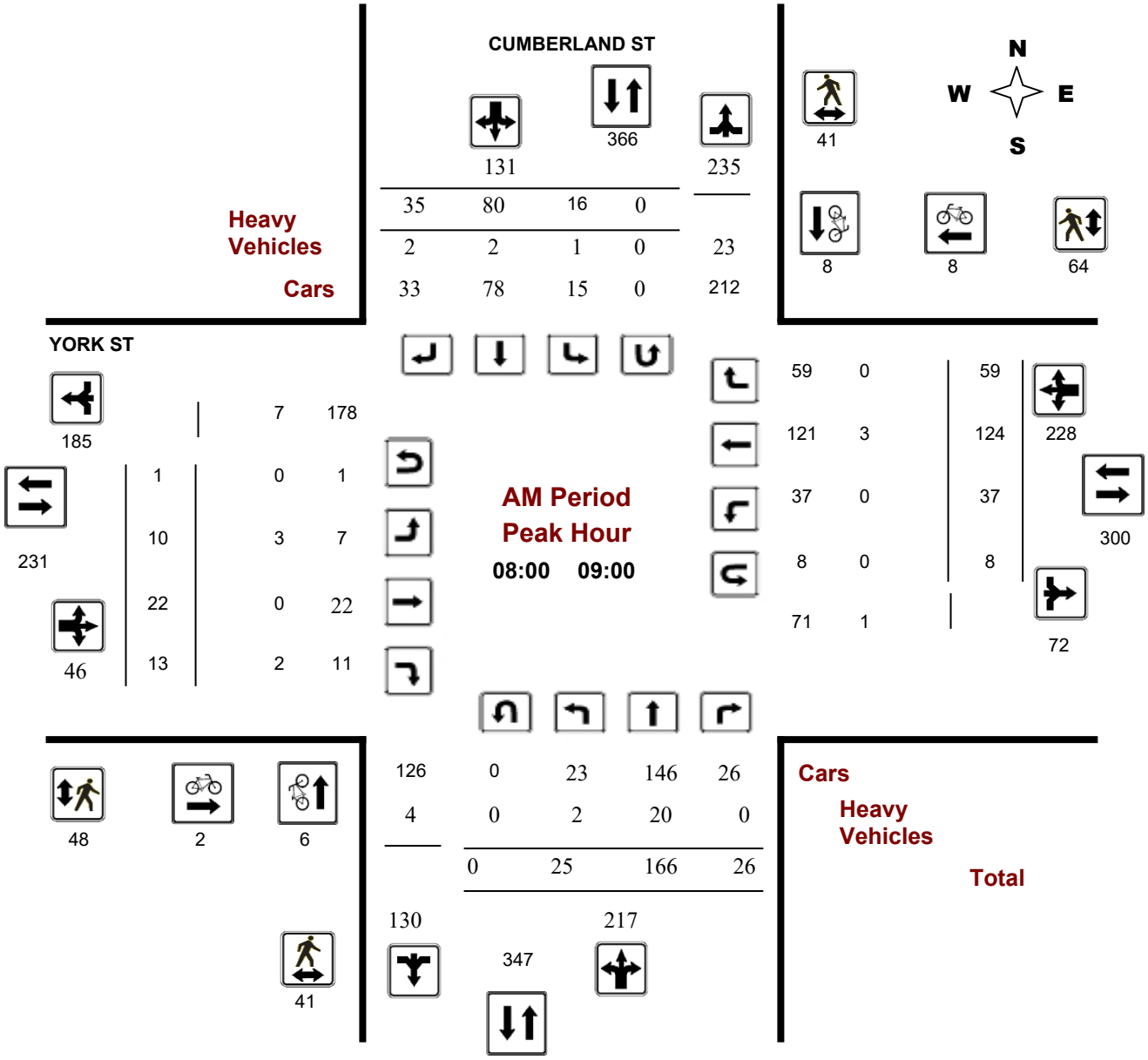
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CUMBERLAND ST @ YORK ST

Survey Date: Thursday, April 26, 2018 **WO No:** 37798

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



Comments

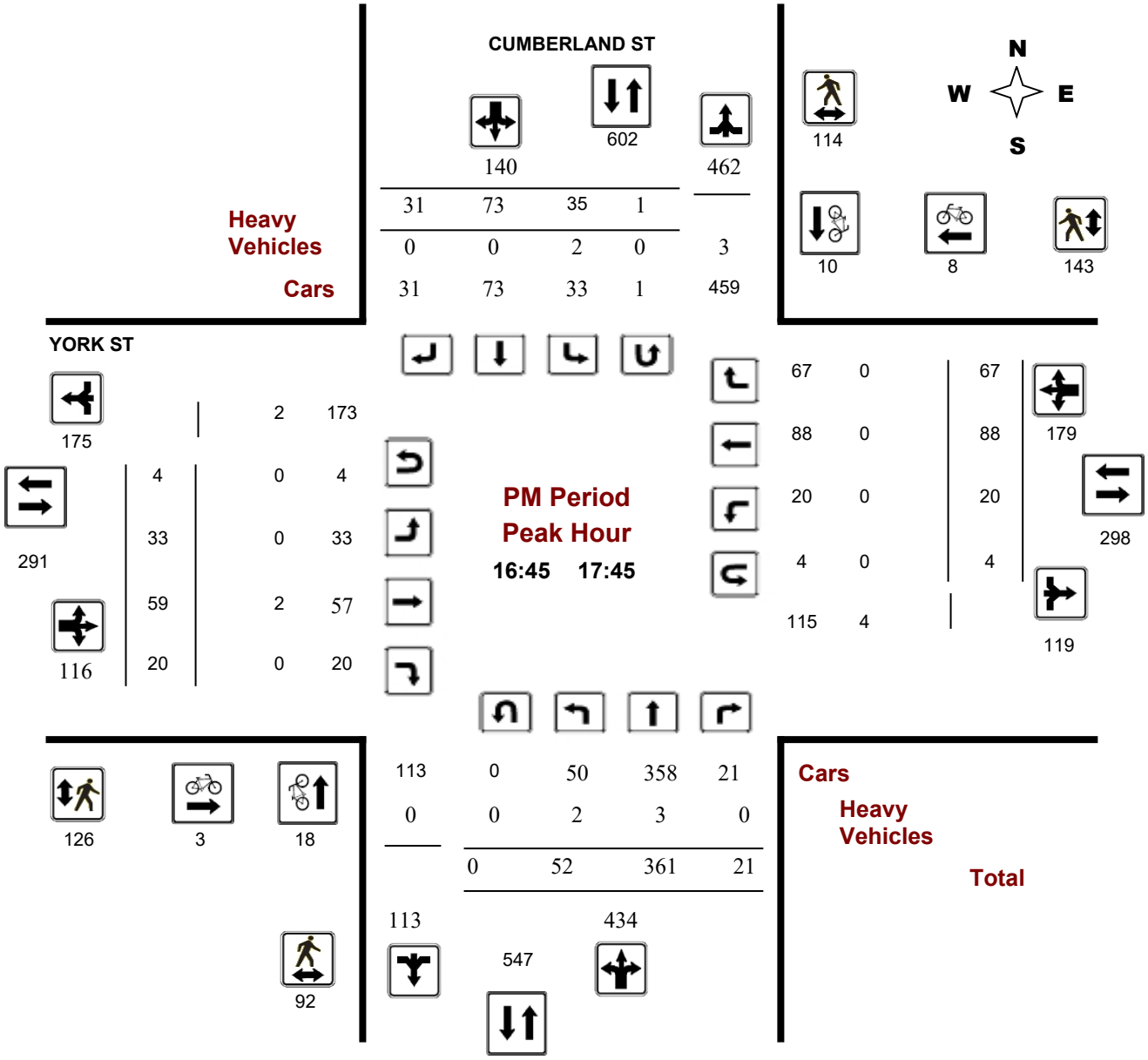
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CUMBERLAND ST @ YORK ST

Survey Date: Thursday, April 26, 2018 **WO No:** 37798

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



Comments

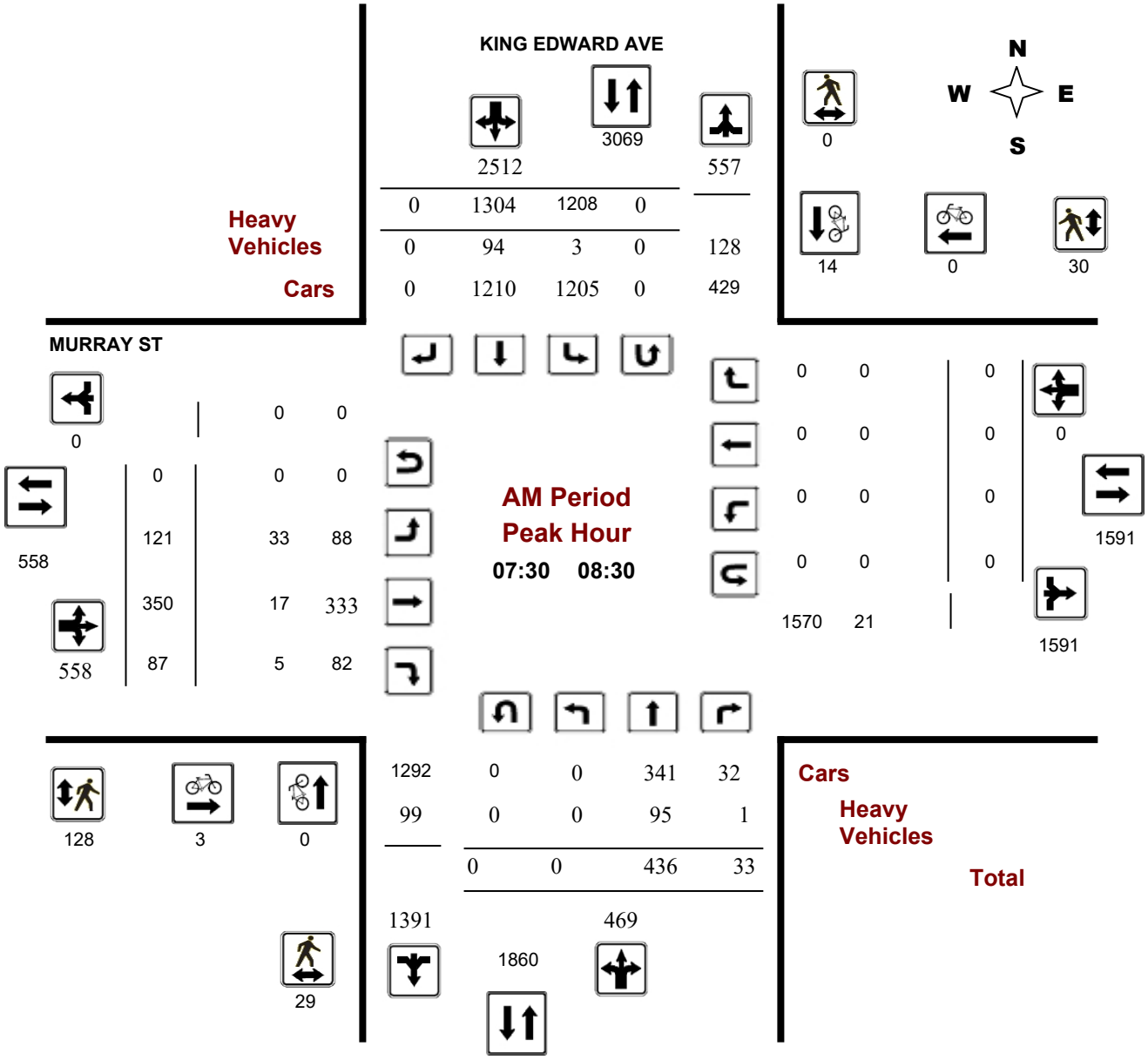
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

KING EDWARD AVE @ MURRAY ST

Survey Date: Wednesday, September 21, 2016 **WO No:** 36335

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



Comments

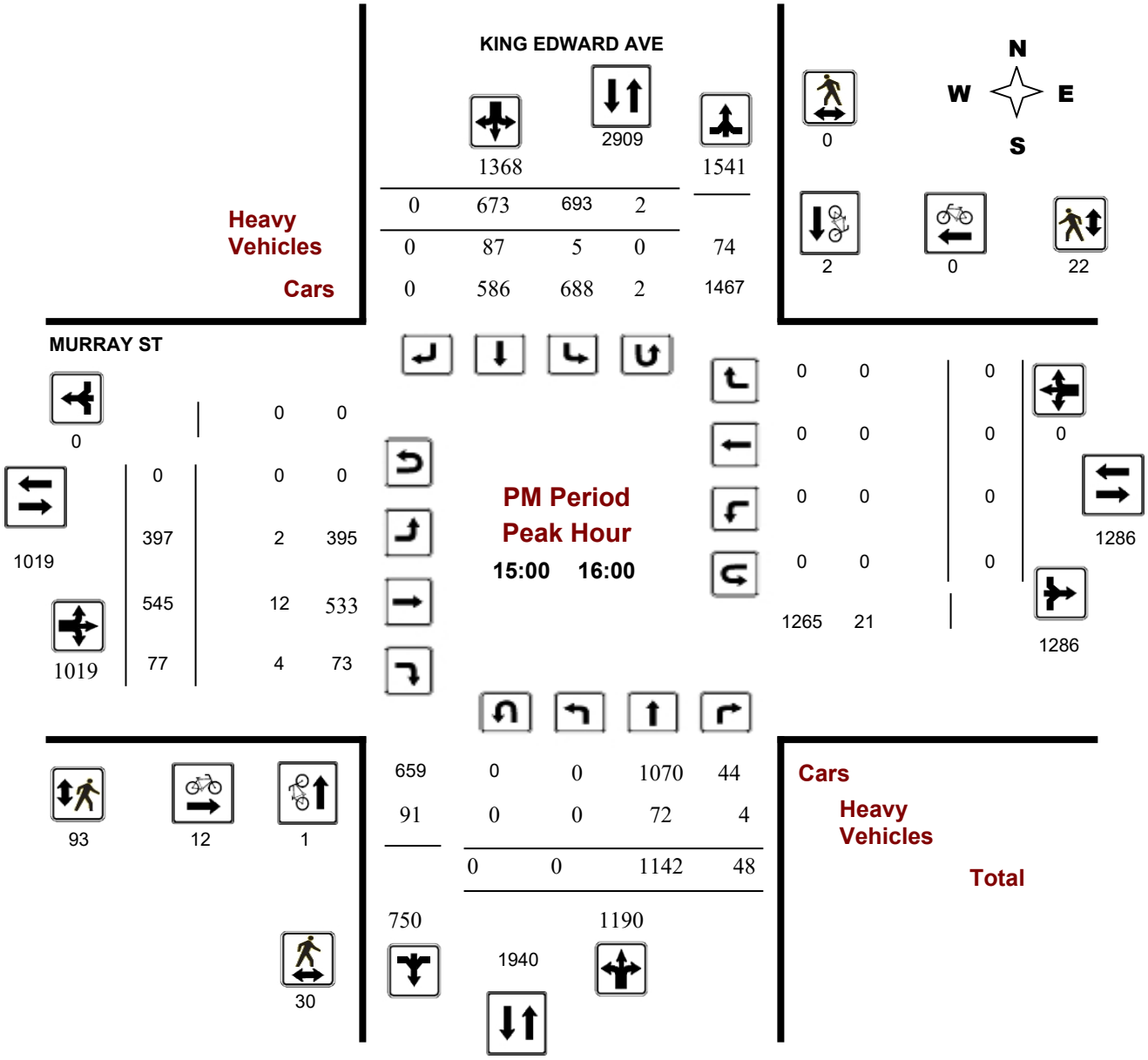
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

KING EDWARD AVE @ MURRAY ST

Survey Date: Wednesday, September 21, 2016 **WO No:** 36335

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



Comments

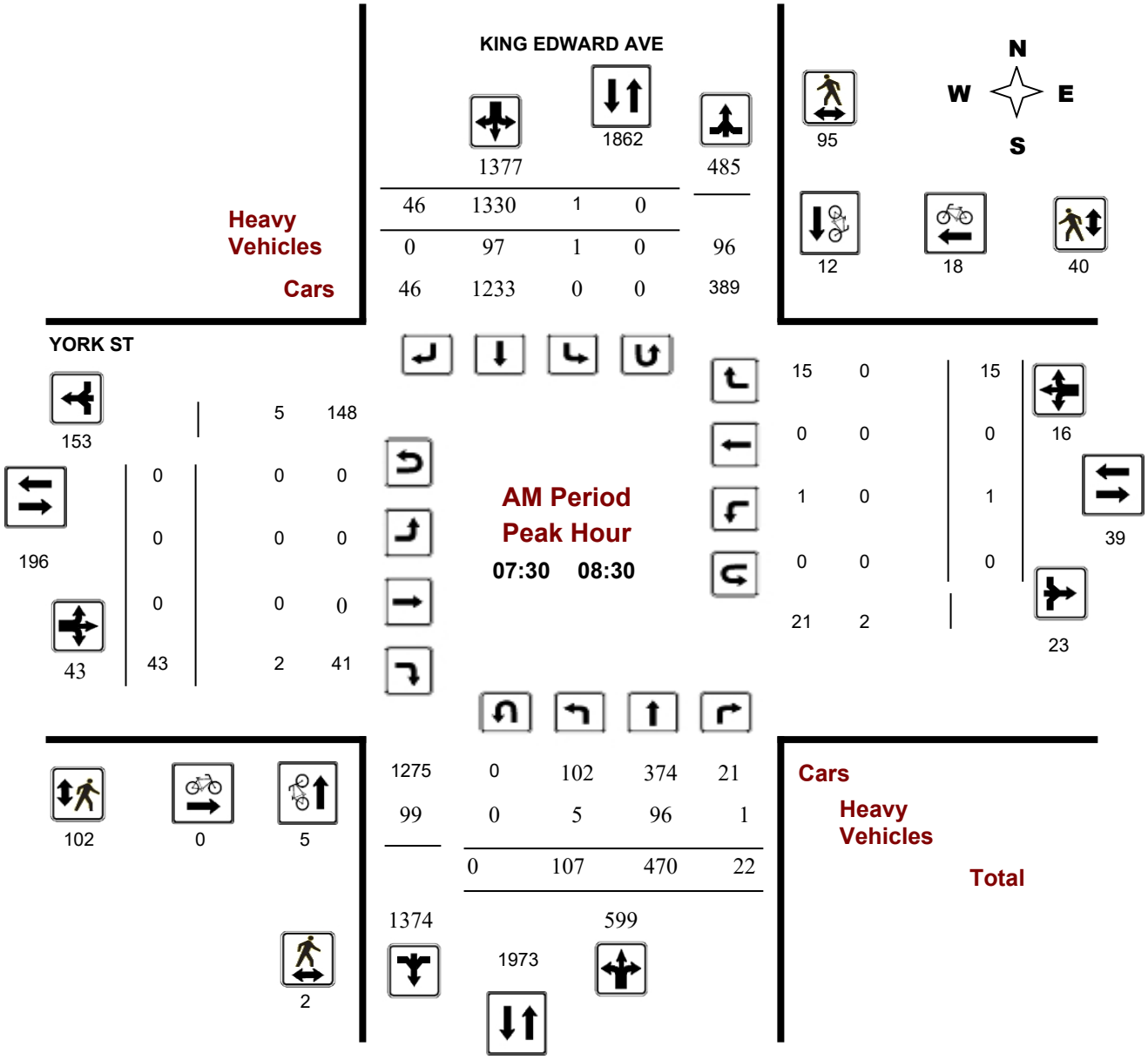
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

KING EDWARD AVE @ YORK ST

Survey Date: Wednesday, September 21, 2016 **WO No:** 36337

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

KING EDWARD AVE @ YORK ST

Survey Date: Wednesday, September 21, 2016 **WO No:** 36337

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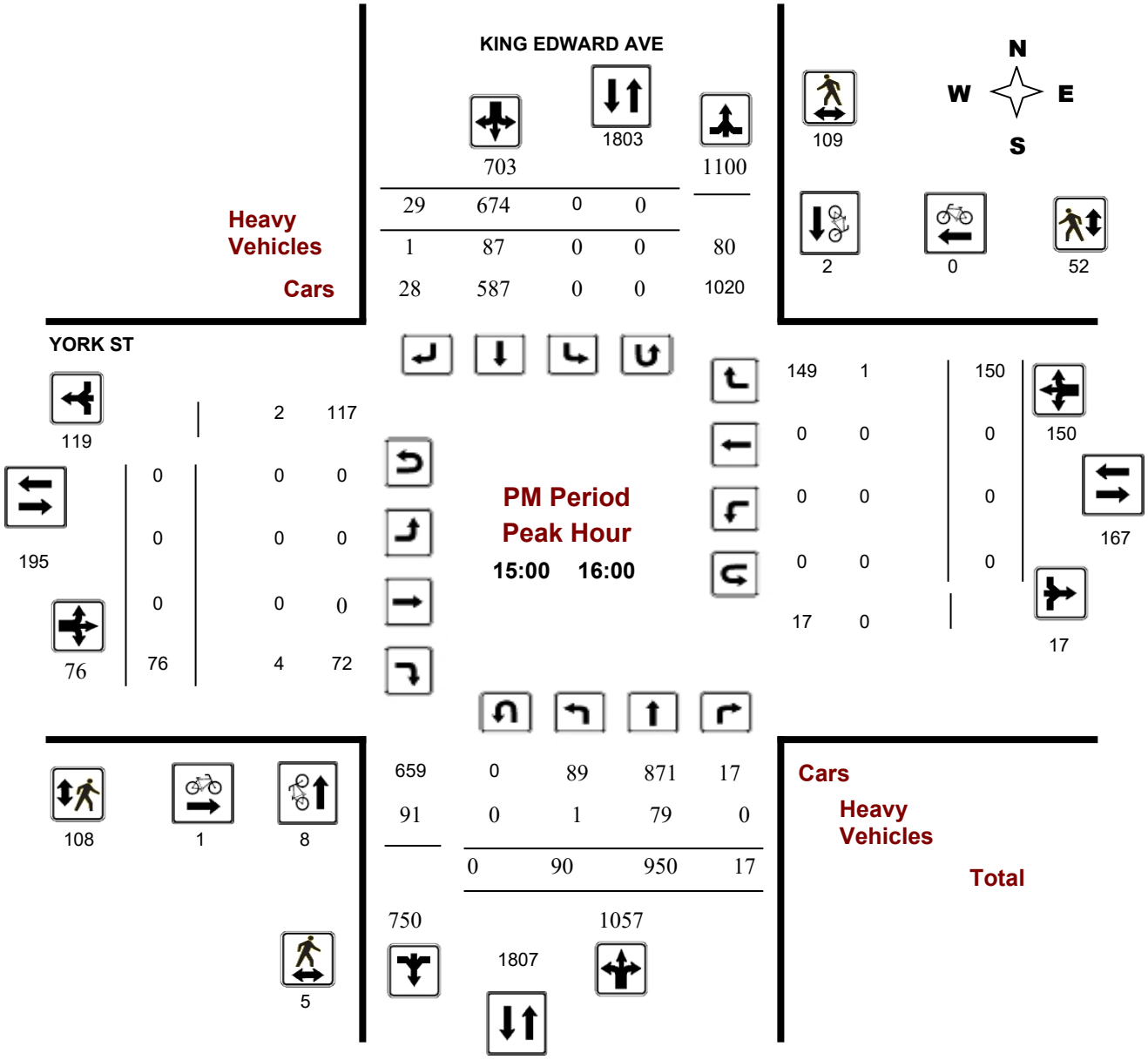

Comments

Appendix E: Collision History Summary

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CLARENCE ST @ CUMBERLAND ST

Traffic Control: Stop sign **Total Collisions:** 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Oct-15, Thu,17:00	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-20, Sat,04:17	Snow	Angle	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2016-May-01, Sun,12:03	Rain	Angle	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Pick-up truck	Other motor vehicle	
2017-Jun-15, Thu,06:12	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2017-Sep-09, Sat,02:37	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-15, Fri,14:08	Snow	Angle	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jun-07, Thu,15:56	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-01, Thu,21:14	Rain	Angle	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-11, Sat,20:36	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-23, Fri,16:43	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-10, Tue,17:10	Rain	Angle	P.D. only	Wet	East	Unknown	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CLARENCE ST @ KING EDWARD AVE

Traffic Control: Stop sign **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Nov-13, Sun,13:11	Clear	Rear end	Non-fatal injury	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2016-Nov-22, Tue,15:15	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-22, Wed,07:00	Clear	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-28, Mon,16:58	Clear	Sideswipe	Non-fatal injury	Dry	South	Going ahead	Bus (other)	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	

Location: CLARENCE ST btwn CUMBERLAND ST & KING EDWARD AVE

Traffic Control: No control **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Oct-21, Sat,15:12	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Bicycle	Other motor vehicle	0
					West	Pulling onto shoulder or toward curb	Automobile, station wagon	Cyclist	
2019-Jul-06, Sat,23:44	Clear	SMV unattended vehicle	P.D. only	Dry	East	Stopped	Police vehicle	Unattended vehicle	0
2019-Sep-04, Wed,17:10	Clear	SMV other	Non-fatal injury	Dry	East	Reversing	Automobile, station wagon	Pedestrian	1

Location: CUMBERLAND ST @ MURRAY ST

Traffic Control: Traffic signal **Total Collisions:** 25

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Mar-11, Wed,13:20	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: CUMBERLAND ST @ MURRAY ST

Traffic Control: Traffic signal **Total Collisions:** 25

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jul-16, Thu,16:30	Clear	Sideswipe	P.D. only	Dry	North	Turning right	Truck and trailer	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2015-Sep-12, Sat,14:21	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-May-09, Mon,02:05	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jun-22, Wed,09:55	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Truck - closed	Other motor vehicle	
2016-Oct-21, Fri,01:07	Rain	Angle	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-17, Tue,18:56	Snow	Angle	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-08, Tue,17:34	Clear	SMV unattended vehicle	P.D. only	Dry	West	Reversing	Automobile, station wagon	Unattended vehicle	0
2017-Oct-26, Thu,15:20	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-12, Tue,23:32	Snow	SMV other	Non-fatal injury	Slush	East	Going ahead	Unknown	Pedestrian	1
2018-Mar-03, Sat,13:33	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-06, Tue,21:02	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Passenger van	Other motor vehicle	
2018-Mar-20, Tue,07:57	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: CUMBERLAND ST @ MURRAY ST

Traffic Control: Traffic signal **Total Collisions:** 25

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-May-16, Wed,16:29	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jul-18, Wed,21:53	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-04, Sat,12:49	Clear	Turning movement	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Nov-29, Thu,14:00	Snow	SMV other	Non-fatal injury	Wet	North	Turning right	Passenger van	Pedestrian	1
2019-Jan-18, Fri,23:00	Clear	Angle	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-05, Sun,00:59	Clear	SMV other	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Pedestrian	1
2019-May-23, Thu,16:45	Rain	Sideswipe	P.D. only	Wet	North	Overtaking	Automobile, station wagon	Other motor vehicle	0
					North	Overtaking	Automobile, station wagon	Other motor vehicle	
2019-May-24, Fri,12:40	Clear	Sideswipe	P.D. only	Dry	North	Turning right	Truck and trailer	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jul-01, Mon,14:59	Clear	Rear end	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jul-01, Mon,23:30	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Nov-11, Mon,10:25	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-25, Mon,10:03	Clear	Angle	P.D. only	Dry	East	Going ahead	Delivery van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CUMBERLAND ST @ YORK ST

Traffic Control: Traffic signal **Total Collisions:** 13

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-18, Sun,00:00	Clear	Other	P.D. only	Slush	South	Reversing	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-May-27, Wed,17:46	Clear	Sideswipe	P.D. only	Dry	North	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2015-Oct-22, Thu,11:47	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Nov-02, Mon,11:00	Clear	Angle	P.D. only	Dry	North	Going ahead	Delivery van	Other motor vehicle	0
					East	Going ahead	Delivery van	Other motor vehicle	
2016-Jan-07, Thu,18:20	Clear	Angle	P.D. only	Wet	South	Going ahead	Ambulance	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jul-31, Sun,01:20	Clear	Angle	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-18, Sat,16:08	Clear	Rear end	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Apr-09, Sun,18:40	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Sep-16, Sun,13:24	Clear	Sideswipe	P.D. only	Dry	East	Overtaking	Tow truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Sep-27, Thu,12:39	Clear	Turning movement	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Cyclist	
2018-Dec-12, Wed,14:29	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CUMBERLAND ST @ YORK ST

Traffic Control: Traffic signal **Total Collisions:** 13

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Dec-31, Mon,22:49	Freezing Rain	Angle	P.D. only	Ice	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Apr-09, Tue,07:59	Freezing Rain	Rear end	P.D. only	Ice	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Location: KING EDWARD AVE @ MURRAY ST

Traffic Control: Traffic signal **Total Collisions:** 62

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-31, Sat,10:45	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Feb-01, Sun,07:19	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2015-Mar-05, Thu,16:40	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Mar-12, Thu,21:44	Clear	Angle	P.D. only	Dry	East	Going ahead	Police vehicle	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2015-Apr-06, Mon,14:08	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2015-Apr-07, Tue,21:45	Clear	SMV other	Non-fatal injury	Dry	East	Slowing or stopping	Automobile, station wagon	Pedestrian	1
2015-Apr-18, Sat,14:45	Clear	Rear end	P.D. only	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Apr-30, Thu,19:53	Clear	SMV other	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Pedestrian	1
2015-May-24, Sun,16:40	Clear	Angle	P.D. only	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Cyclist	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: KING EDWARD AVE @ MURRAY ST

Traffic Control: Traffic signal **Total Collisions:** 62

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jun-09, Tue,08:20	Rain	Sideswipe	P.D. only	Wet	South	Turning left	Delivery van	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jun-30, Tue,13:15	Clear	Rear end	P.D. only	Dry	East	Going ahead	Truck - open	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jul-16, Thu,20:13	Clear	SMV other	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Pedestrian	1
2015-Sep-04, Fri,17:09	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Bicycle	Other motor vehicle	0
					North	Turning right	Passenger van	Cyclist	
2015-Sep-04, Fri,18:39	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Unknown	Other motor vehicle	0
					North	Turning right	Passenger van	Other motor vehicle	
2015-Nov-07, Sat,08:53	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Passenger van	Other motor vehicle	
2016-Jan-02, Sat,19:42	Clear	Sideswipe	Non-fatal injury	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jan-06, Wed,16:45	Rain	Angle	P.D. only	Wet	East	Turning right	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jan-22, Fri,15:11	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Feb-17, Wed,06:49	Clear	Rear end	Non-fatal injury	Ice	South	Going ahead	Pick-up truck	Ran off road	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Feb-22, Mon,11:53	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Truck - tractor	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-19, Sat,21:41	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: KING EDWARD AVE @ MURRAY ST

Traffic Control: Traffic signal **Total Collisions:** 62

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Mar-20, Sun,16:40	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Apr-23, Sat,17:02	Clear	Rear end	P.D. only	Dry	North	Going ahead	Motorcycle	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-May-26, Thu,17:57	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Unknown	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2016-Jun-04, Sat,15:50	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jun-05, Sun,08:48	Rain	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Sep-24, Sat,09:31	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2016-Sep-30, Fri,16:31	Clear	Turning movement	Non-reportable	Dry	East	Going ahead	Automobile, station wagon	Cyclist	0
					West	Turning left	Bicycle	Other motor vehicle	
2016-Oct-12, Wed,10:44	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-14, Mon,01:54	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Curb	0
2016-Nov-18, Fri,15:43	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					Unknown	Unknown	Unknown	Other motor vehicle	
2016-Nov-23, Wed,16:50	Clear	Sideswipe	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: KING EDWARD AVE @ MURRAY ST

Traffic Control: Traffic signal **Total Collisions:** 62

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Mar-02, Thu,12:18	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
					South	Turning left	Pick-up truck	Other motor vehicle	
2017-Jul-02, Sun,16:56	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Unknown	Other motor vehicle	0
					North	Changing lanes	Automobile, station wagon	Other motor vehicle	
2017-Aug-16, Wed,16:33	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-25, Fri,07:50	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-26, Tue,14:11	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Truck - tractor	Other motor vehicle	
2017-Oct-29, Sun,10:43	Clear	Sideswipe	Non-fatal injury	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Nov-13, Mon,12:41	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Truck - closed	Other motor vehicle	
2017-Nov-20, Mon,12:26	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-Dec-23, Sat,02:44	Snow	SMV other	P.D. only	Packed snow	East	Turning left	Automobile, station wagon	Pole (sign, parking meter)	0
2018-Apr-11, Wed,08:22	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Intercity bus	Other motor vehicle	
2018-Apr-25, Wed,22:23	Rain	SMV other	Non-fatal injury	Wet	North	Going ahead	Truck and trailer	Pedestrian	1

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From: January 1, 2015 **To:** December 31, 2019

Location: KING EDWARD AVE @ MURRAY ST

Traffic Control: Traffic signal **Total Collisions:** 62

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Apr-26, Thu,10:00	Rain	Rear end	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Jun-21, Thu,12:36	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Jun-30, Sat,16:44	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2018-Jul-01, Sun,22:54	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-18, Tue,12:00	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Truck - closed	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Nov-12, Mon,11:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2018-Nov-18, Sun,13:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2019-Jan-26, Sat,03:32	Snow	Turning movement	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Making "U" turn	Ambulance	Other motor vehicle	
2019-Mar-12, Tue,23:06	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-May-21, Tue,16:20	Clear	Sideswipe	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-15, Sat,12:00	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: KING EDWARD AVE @ MURRAY ST

Traffic Control: Traffic signal **Total Collisions:** 62

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-02, Tue,23:48	Clear	SMV other	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Pedestrian	1
2019-Jul-17, Wed,16:29	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Aug-02, Fri,08:52	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Cyclist	
2019-Aug-22, Thu,11:12	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-02, Mon,04:00	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-23, Sat,12:59	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-28, Thu,09:48	Snow	Rear end	Non-fatal injury	Loose snow	South	Slowing or stopping	Truck - tractor	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Dec-06, Fri,19:22	Clear	Sideswipe	P.D. only	Slush	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Unknown	Other motor vehicle	

Location: KING EDWARD AVE @ YORK ST

Traffic Control: Traffic signal **Total Collisions:** 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-16, Fri,12:25	Clear	SMV other	Non-fatal injury	Loose snow	North	Turning left	Automobile, station wagon	Pedestrian	1
2015-Mar-21, Sat,10:38	Clear	Sideswipe	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Overtaking	Automobile, station wagon	Other motor vehicle	
2017-Feb-20, Mon,13:15	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: KING EDWARD AVE @ YORK ST

Traffic Control: Traffic signal **Total Collisions:** 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Dec-28, Thu,08:30	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Aug-29, Wed,16:07	Clear	Rear end	P.D. only	Dry	North	Going ahead	Truck - tractor	Other motor vehicle	0
					North	Stopped	Truck - open	Other motor vehicle	
2018-Sep-14, Fri,14:40	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-18, Tue,16:15	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2018-Sep-19, Wed,14:50	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2019-Apr-19, Fri,22:00	Rain	Turning movement	Non-fatal injury	Wet	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-10, Thu,13:11	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Truck - tractor	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-28, Thu,16:30	Clear	Sideswipe	P.D. only	Wet	South	Changing lanes	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: KING EDWARD AVE @ YORK ST S

Traffic Control: Stop sign **Total Collisions:** 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-02, Mon,08:57	Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Nov-17, Tue,08:44	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Truck and trailer	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

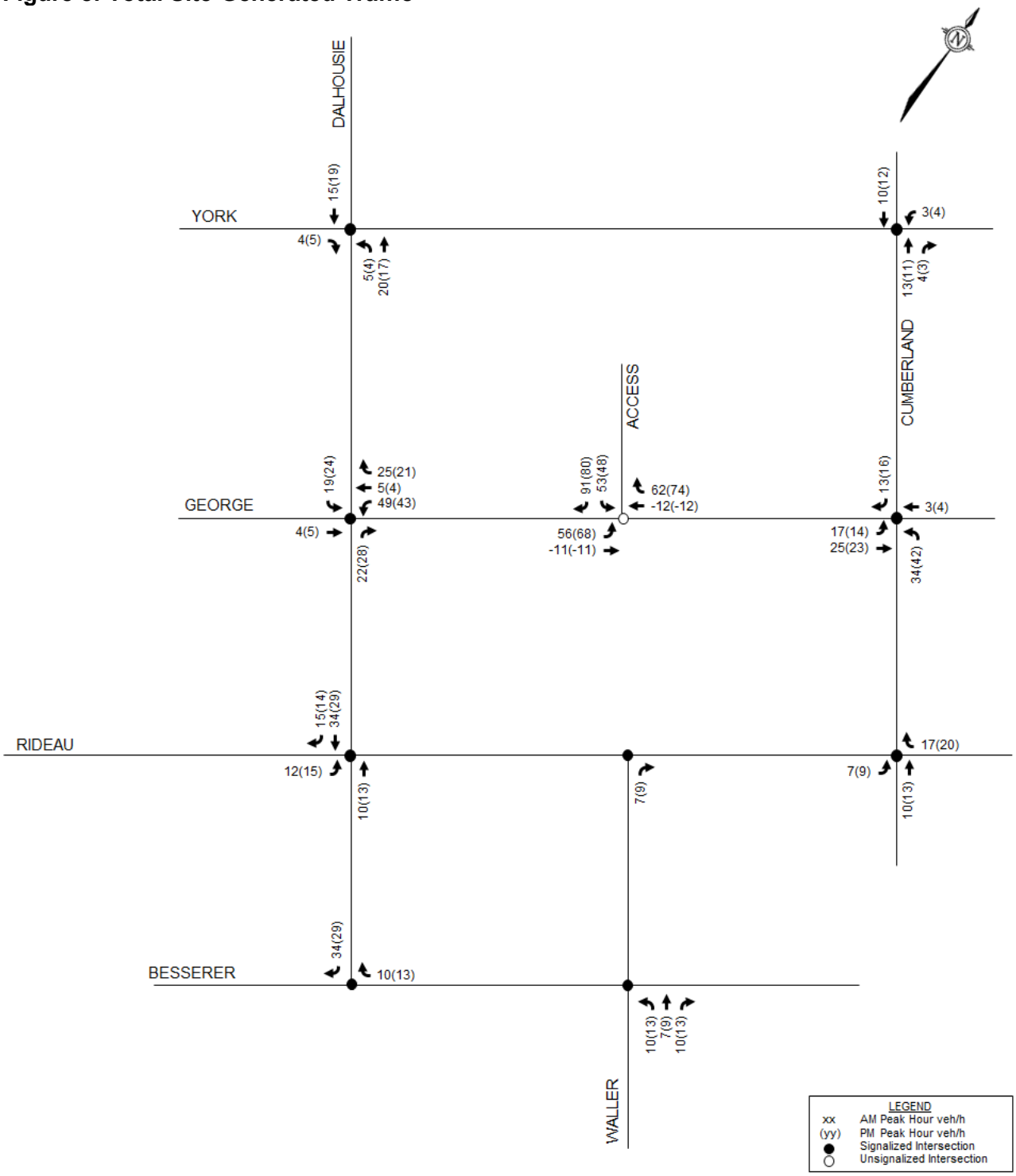
Location: KING EDWARD AVE @ YORK ST S

Traffic Control: Stop sign **Total Collisions:** 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-10, Wed,11:19	Clear	Rear end	P.D. only	Ice	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-17, Thu,22:51	Clear	SMV other	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Pedestrian	1
2019-Mar-13, Wed,18:35	Snow	Rear end	P.D. only	Slush	North	Going ahead	Unknown	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	

Appendix F: Other Area Developments

Figure 8: Total Site-Generated Traffic



5.2 Trip Distribution

To understand the travel of the subject development, the OD Survey has been reviewed to determine the district residential travel patterns which were then applied based on the build-out of Ottawa Inner. Table 13 below summarizes the distributions.

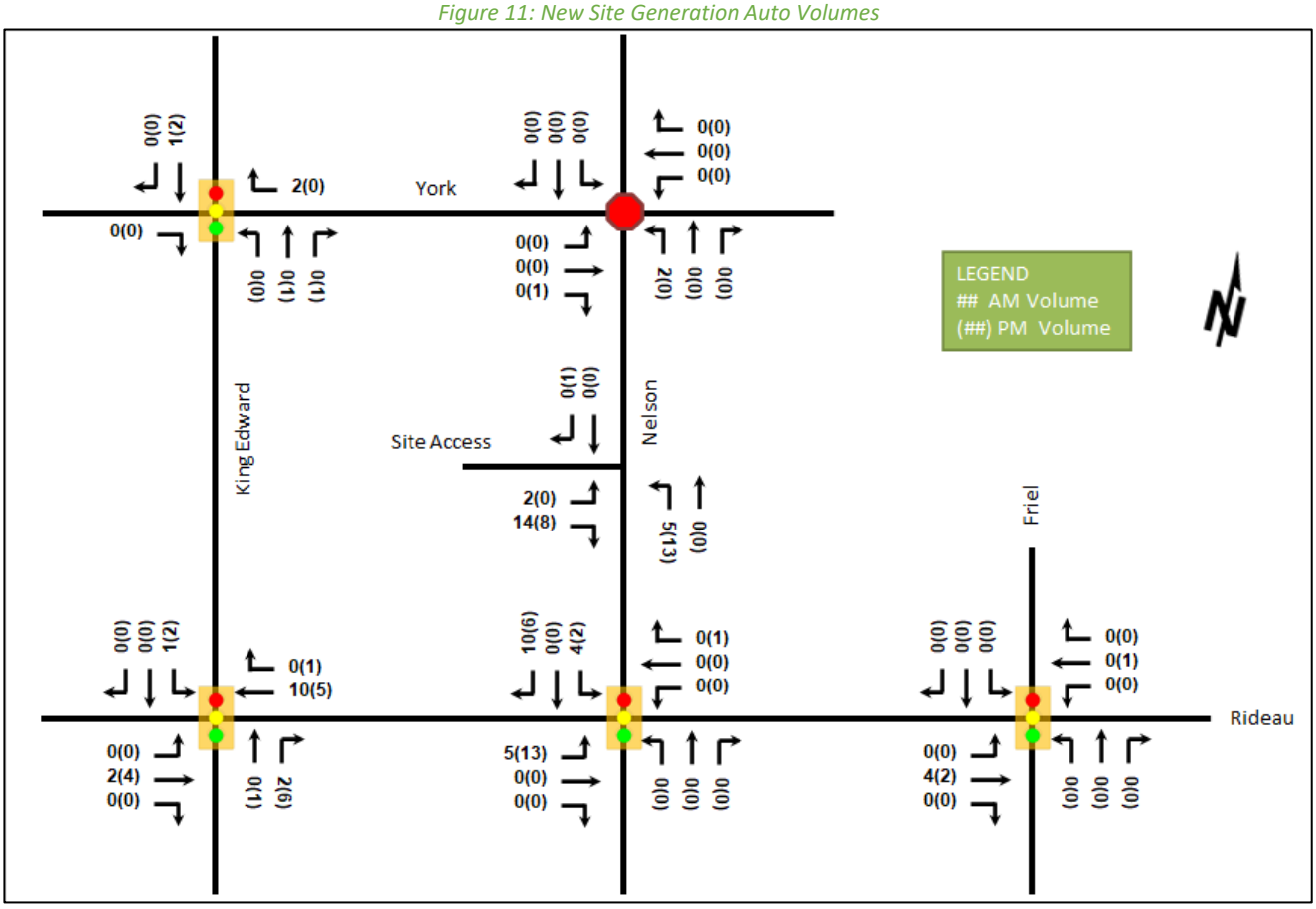
Table 13: OD Survey Distribution – Ottawa Inner

To/From	Residential % of Trips	Inbound Via	Outbound Via
North	10%	King Edward Ave	King Edward Ave
South	40%	King Edward Ave	25% Rideau St(W), 15% Rideau St (E)
East	10%	Rideau St	Rideau St
West	40%	10% King Edward Ave (S), 30% Rideau St	Rideau St
Total	**100%**	-	-

5.3 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Figure 11 illustrates the new site generated volumes.

Figure 11: New Site Generation Auto Volumes



Appendix G: TDM Measures

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

Legend

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

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

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

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

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

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)*	☐
		3.4	**Private transit service**	
BETTER		3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	☐
		4.	**CARSHARING & BIKESHARING**	
		4.1	**Bikeshare stations & memberships**	
BETTER		4.1.1	Contract with provider to install on-site bikeshare station (*multi-family)*	☐
BETTER		4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐
		4.2	**Carshare vehicles & memberships**	
BETTER		4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐
BETTER		4.2.2	Provide residents with carshare memberships, either free or subsidized	☐
		5.	**PARKING**	
		5.1	**Priced parking**	
BASIC	★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☐
BASIC	★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☐

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