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Proposed Residential Development

335 Roosevelt Avenue

Transportation Impact Assessment

Proposed Residential Development

355 Roosevelt Avenue

Transportation Impact Assessment

Prepared By:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
K2M 1P6

June 26, 2025
Revised September 25, 2025

Novatech File: 110098
Ref: R-2020-053

NOVATECH
Engineers, Planners & Landscape Architects

September 25, 2025

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

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

Dear Mr. Dubyk:

Reference: **Residential Development, 335 Roosevelt Avenue**
Transportation Impact Assessment Report
Novatech File No.: 110098

We are pleased to submit the following Transportation Impact Assessment Report in support of Site Plan Control application for 335 Roosevelt Avenue. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (2017) and its revisions (2023).

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

Yours truly,

NOVATECH

Mohammed Talha, M. Eng.
Engineering Intern | Transportation

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

Certification Form for Transportation Impact Assessment (TIA) Study Program Manager

TIA Plan Reports

On April 14, 2022, the Province's Bill 109 received Royal Assent providing legislative direction to implement the More Homes for Everyone Act, 2022 aiming to increase the supply of a range of housing options to make housing more affordable. Revisions have been made to the TIA guidelines to comply with Bill 109 and streamline the process for applicants and staff.

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 they meet the four criteria listed below.

Certification

- ☑ 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 (Update Effective July 2023);
- ☑ 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;
- ☑ 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

City of Ottawa
Transportation Engineering Services
Planning, Real Estate and Economic Development
110 Laurier Avenue West, 4th fl.
Ottawa, ON K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

☑ I am either a licensed or registered[1] professional in good standing, whose field of expertise [check ✓ appropriate field(s)]:

- ☑ is either transportation engineering
- ☐ or transportation planning.

Dated at Ottawa (City) this 25 day of September, 2025.

Name: Brad Byvelds

Professional Title: P. Eng. Senior Transportation Project Manager

B.Byvelds

Signature of Individual certifier that they meet the above four criteria

Office Contact Information (Please Print)	
Address:	240 Michael Cowpland Drive
City / Postal Code:	K2M 1P6
Telephone / Extension:	613-254-9643 EXT 286
E-Mail Address:	b.byvelds@novatech-eng.com

Stamp

[1] 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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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) scoping report has been prepared in support of Site Plan Control application for 335 Roosevelt Avenue.

The subject site is surrounded by the following:

- A Multi-Use Pathway (MUP) and the OC Transpo East-West Transitway to the north;
- Wilmont Avenue and low-density residential development to the south;
- A high-density residential apartment building to the east; and
- Roosevelt Avenue and low-density residential development to the west.

The site currently has gated accesses at Roosevelt Avenue and at Wilmont Avenue, restricting local traffic from shortcutting between Richmond Road and Churchill Avenue.

A TIA was prepared previously for the subject site in 2022 in support of Zoning By-law Amendment application. There have been changes to the proposed site plan since the previous TIA. The previous site plan proposed two high-rise residential buildings (12-storey each) providing a total of 246 units, and two mid-rise (three-storey) residential buildings containing a total of 17 units. The current site plan has been replaced with a park, and the two high rise buildings have been changed to 13-storey and 14-storey for east and west buildings respectively, providing a total of 312 units.

The conclusions and recommendations of this TIA can be summarized as follows:

Trip Generation

- The proposed development is anticipated to generate 137 person trips (including 19 vehicle trips) in the AM peak, and 135 person trips (including 19 vehicle trips) in the PM peak.

Access Intersection Design

- Roosevelt Avenue at the north end will be extended to form a cul-de-sac and will provide connectivity to the multi-use pathway. Winston Avenue will also be extended at the north end such that it forms a cul-de-sac between the two proposed buildings and will be used as pickup and drop off location along with a pedestrian walkway connecting to the MUP.
- Wilmont Avenue Access has a width of approximately 10.1m at street line and does not meet the section 25(c) of the City's PABL, and ZBL. This increased width is recommended to accommodate the garage ramp and the loading area beside it.
- Roosevelt Avenue and Wilmont Avenue accesses are located 0.7m and 2.2m from their nearest property lines respectively. The Wilmont Avenue access is located to accommodate the parkland dedication. The location of the Roosevelt Avenue access is not anticipated to create operational and safety concerns. Relief from the section 25(p) of the PABL is being requested from both the Wilmont and Roosevelt Avenue accesses.
- Wilmont Avenue access will have a 3.5% grade towards the road for the first 5.0m within the property line, then a transition of 2% grade, followed by another transition of 10% before transforming to a ramp of 19.8%. The proposed 3.5% downgrade towards the road on Wilmont Avenue is not anticipated to impact sight lines or create a traffic hazard.
- Roosevelt Avenue access will have an 8% grade for the first 4.0m within the property, transitioning to 18.0% ramp to the underground parking garage. Drivers exiting the ramp will have clear sight lines to pedestrians along the sidewalk. Additionally, as the proposed

access is at the terminus of Roosevelt Avenue, it is not anticipated to create a traffic hazard.
- Relief from PABL requirements is requested for both Roosevelt Avenue and Wilmont Avenue accesses.

Development Design
- Sidewalk connections will be provided between the proposed development and the existing sidewalks on Roosevelt Avenue, Winston Avenue, and Wilmont Avenue.
- Connections will also be provided to the MUP that runs along the northern property line of the subject site.
- A north-south pathway connecting Winston Avenue to the MUP will bisect the two buildings and will function as a woonerf.
- The proposed on-site cul-de-sac at the terminus of Winston Avenue will function as a woonerf and will facilitate pick-ups and drop-offs for the east building.
- A new cul-de-sac is proposed within the city right-of-way (ROW) at the terminus of Roosevelt Avenue. The proposed cul-de-sac will address an existing deficiency along Roosevelt Avenue, which is approximately 300m in length north of Richmond Road and does not provide a turnaround facility for large vehicles.
- Accesses to the underground parking are proposed from Roosevelt Avenue and Wilmont Avenue.
- A total of 447 bicycle parking spaces will be provided within the underground parking garage and the surface bike storage room located at the southeast corner of the west building.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.
- Garbage bins for the east building will be wheeled up the underground parking ramp and stored in a loading area for curbside collection on Wilmont Avenue. Garbage bins for the west building will be wheeled up the ramp and stored on a garbage pad for curbside collection on Roosevelt Avenue.
- Fire department connection is provided along the site frontage on Roosevelt Avenue for west building, and for east building, fire route is provided along the cul-de-sac formed by extension of Winston Avenue.

Parking
- The proposed number of parking spaces adhere to the requirements of the City's ZBL.
- The proposed 447 bicycle parking spaces will be located in bike storage rooms within the underground parking garage and the surface bike storage room located at the southeast corner of the west building, exceeding the minimum requirements of the City's ZBL.

Boundary Street Design
- Roosevelt Avenue, Winston Avenue, and Wilmont Avenue meet the BLOS target. However, only Wilmont Avenue meets the target PLOS.
- The east side of Roosevelt Avenue has a 1.5m sidewalk and no boulevard which earns a PLOS of E. A locally widened 2.0m pedestrian sidewalk will be provided adjacent to the site on Roosevelt Avenue achieving a PLOS A.
- The west side of Winston Avenue has a 1.5m asphalt sidewalk and no boulevard which earns a PLOS E. A 2.0m wide pedestrian walkway will be provided along Winston Avenue access which will connect to the east-west MUP running along the north property line.

Transportation Demand Management

- As the proposed development is located in close proximity to the future Kichi Zībī Mīkan and Westboro LRT stations and the development will provide a suite of TDM measures, the development is anticipated to meet the target TOD modal shares.
- Should the development only meet the Ottawa West modal shares, the additional traffic may increase congestion slightly along Roosevelt Avenue and Wilmont Avenue, the roads are anticipated to operate within acceptable thresholds for local roads.
- The following measures will be implemented upon opening of the proposed development:
  - Designate internal coordinator.
  - Display local maps with walking/cycling access routes and key destinations,
  - Display relevant transit schedules and route maps,
  - Offer Presto card preloaded with a one-month transit pass per residence upon first move-in,
  - Unbundle parking from monthly rent, and
  - Provide multi-modal travel option information package to new residents.

Transit

- The proposed development is anticipated to generate 76 transit trips (24 IN and 52 OUT) in the AM peak and 73 transit trips (42 IN and 31 OUT) in the PM peak.
- In the AM peak the number of transit trip is just one trip higher than the set threshold for the requirement of transit capacity analysis.
- The LRT Line 1 and Line 3 area anticipated to be inaugurated before the subject site's horizon year. These LRT lines are anticipated to meet the capacity needed by the subject site's transit trips during the peak hours.

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) scoping report has been prepared in support of Site Plan Control application for 335 Roosevelt Avenue.

The subject site is surrounded by the following:

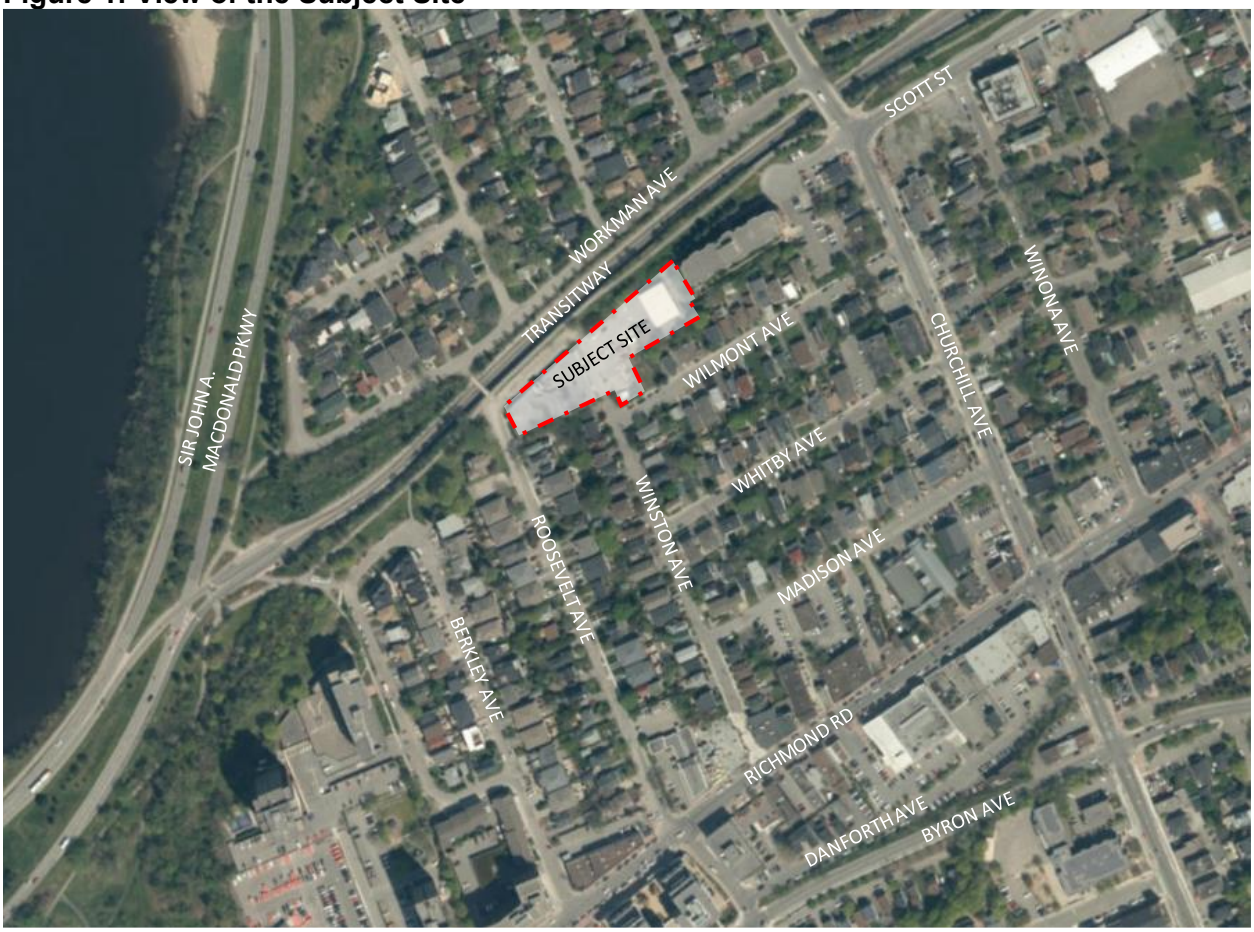
- A Multi-Use Pathway (MUP) and the OC Transpo East-West Transitway to the north;
- Wilmont Avenue and low-density residential development to the south;
- A high-density residential apartment building to the east; and
- Roosevelt Avenue and low-density residential development to the west.

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

The subject site is in the Ottawa West district. Within the City of Ottawa *Official Plan* (OP), the subject site falls under inner urban transect as per Schedule A, and evolving neighbourhood overlay as per Schedule B2. The site currently has gated accesses at Roosevelt Avenue and at Wilmont Avenue, restricting local traffic from shortcutting between Richmond Road and Churchill Avenue.

A TIA was prepared previously for the subject site in 2022 in support of Zoning By-law Amendment application. There have been changes to the proposed site plan since the previous TIA. The previous site plan proposed two high-rise residential buildings (12-storey each) providing a total of 246 units, and two mid-rise (three-storey) residential buildings containing a total of 17 units. The current site plan has been replaced with a park, and the two high rise buildings have been changed to 13-storey and 14-storey for east and west buildings respectively, providing a total of 312 units.

Figure 1: View of the Subject Site



Source: Google Maps

1.2 Proposed Development

The proposed development consists of two residential buildings providing a total of 312 units. The east building will be 13 storeys and will yield 160 dwelling units while the west building will have 14 storeys and will yield 152 dwelling units. A total of 275 underground parking spaces will be provided in a single three-level parking garage with access on both Wilmont Avenue and Roosevelt Avenue. The proposed development is anticipated to be constructed in two phases with a build-out year of 2029.

The west building will be constructed as part of phase 1 and the east building will be a part of phase 2. The parking garage access will be provided from both the buildings, i.e., off Roosevelt Ave for west building and off Wilmont Avenue for east building, and the garages will be connected internally once both the phases are completed.

The extension of Winston Avenue will form a cul-de-sac between the two residential buildings, connecting the residential community to the south, and to the east-west Multi-Use Pathway (MUP) along the OC Transpo Transitway corridor.

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

1.3 Screening Form

The City's 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 development is anticipated to generate over 60 peak hour person trips; further assessment **is required** based on this trigger.

- Location Trigger – No location triggers outlined in the TIA Screening Form are met; no further assessment is required based on this trigger.

- Safety Trigger – No safety triggers outlined in the TIA Screening Form are met; no further assessment is required based on this trigger.

The proposed development satisfies the Trip Generation Trigger for completing a TIA. A copy of the TIA screening form is included in **Appendix B**.

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

The roadway network of the greater area surrounding the subject site is illustrated in **Figure 2**.

Figure 2: Roadway Network

Source: geoOttawa

The Kichi Zībī Mīkan (formerly Sir John A. Macdonald Parkway) falls within the jurisdiction of the National Capital Commission. All other roadways within the study area fall under the jurisdiction of the City of Ottawa.

Roosevelt Avenue is a local roadway that generally runs on a north-south alignment from Cole Avenue, terminating at the OC Transpo East-West Transitway. It has a two lane semi-urban cross section (curb/sidewalk on east side). Roosevelt Avenue has a posted speed limit of 40km/hr and is not designated as a truck route. One hour street parking from 7:00 AM to 7:00 PM is permitted on the east side of the road, beginning approximately 75m north of the Richmond Road intersection. Parking is prohibited on the west side of the roadway.

Winston Avenue is a local roadway that runs on a north-south alignment from north of Richmond Road (closed to vehicles at Richmond Road), terminating at a gated entrance to the subject site. It has a two-lane urban cross section with concrete sidewalks on both sides south of Madison Avenue. North of Madison Avenue, it has a two-lane semi-urban cross section (curb/asphalt

sidewalk on west side). Winston Avenue has a regulatory speed limit of 50km/hr and is not designated as a truck route. On-street parking is permitted on the east side of the roadway south of Whitby Avenue, and the west side of the roadway north of Whitby Avenue.

Wilmont Avenue is a local roadway that runs on an east-west alignment between Winston Avenue and Churchill Avenue. It has a two-lane urban cross section with curb/sidewalk along with a gutter with an approximate 1m offset from the curb on the north side of the roadway, and a gutter on the south side of the roadway. Wilmont Avenue has a regulatory speed limit of 50km/hr and is not designated as truck route. On-street parking is permitted on both sides of the roadway.

Churchill Avenue is classified as a major collector roadway between Carling Avenue and Richmond Road, an arterial roadway between Richmond Road and Scott Street, a collector roadway between Scott Street and Lanark Avenue, and a local roadway north of Lanark Avenue. It runs on a north-south alignment between Carling Avenue and north of Ferndale Avenue. In the vicinity of the subject site, Churchill Avenue has a two-lane undivided urban cross section with curb/sidewalk on both the sides of the road. It has a regulatory speed limit of 50km/hr. Churchill Avenue is designated as a truck route between Carling Avenue and Scott Street, permitting full loads. On-street parking is permitted on both sides of the Churchill Avenue between Richmond Road and Scott Street.

Richmond Road is an arterial roadway that generally runs on an east-west alignment between Baseline Road/Robertson Road and Island Park Drive/Wellington Street. In the vicinity of the subject site, it has a two-lane undivided urban cross section with curb/sidewalk on both the sides of the road and on-street parking is permitted on both sides of the roadway. It has a regulatory speed limit of 50 km/hr.

Scott Street is classified as an arterial roadway east of Churchill Avenue, and a local roadway west of Churchill Avenue. It runs on an east-west alignment from Bayview Station Road/Albert Street, terminating in a cul-de-sac approximately 50m west of Churchill Avenue (currently it also transitions into a temporary transitway, and will be decommissioned once LRT Phase 2 is completed). East of Churchill Avenue, Scott Street has a two-lane semi-urban cross section (curb/sidewalk on south side) with parking permitted on the north side of the roadway, and a posted speed limit of 50 km/hr. East of Churchill Avenue, it is also designated as a truck route, permitting full loads.

2.1.2 Study Intersections

Richmond Road/Roosevelt Avenue

- Signalized intersection
- One approach lane in all directions
- Standard crosswalks are provided on all approaches

Wilmont Avenue/Churchill Avenue

- Unsignalized, with free flow on Churchill Avenue and stop-control on Wilmont Avenue
- One approach lane on Wilmont Ave, and one lane in each direction on Churchill Ave.
- Standard crosswalk provided on the west approach

2.1.3 Driveways

In accordance with the City's 2017 TIA guidelines, a review of adjacent driveways along the boundary roads (within 200m of the subject site) are provided as follows:

Roosevelt Avenue, east side:

- Eighteen driveways to residential dwellings at 339, 345, 349, 351, 353, 355, 357/359, 361, 363, 365/367, 371, 373/375, 377, 381, 383, 385/387, and 389 Roosevelt Avenue
- Two driveways to parking lots serving a funeral home/chapel at 403 Roosevelt Avenue

Roosevelt Avenue, west side:

- Eighteen driveways to residential dwellings at 342, 350/352, 354/356, 358, 362, 364, 366, 368, 370/370A, 372, 374, 378, 382, 384, 386, 390, 394, and 396 Roosevelt Avenue
- One driveway serving a gravel parking lot at 346 Roosevelt Avenue

- One proposed driveway to 398-406 Roosevelt Ave (under construction).
- One driveway at 442 Richmond Road leading to commercial parking lot.

Winston Avenue, east side:

- Eight driveways to residential dwellings at 349, 353, 355, 365/367, 373/375/377, 383, 393, and 395 Winston Avenue

Winston Avenue, west side:

- Seventeen driveways to residential dwellings at 344, 348, 350 (a, b), 352, 354, 358, 362, 364, 368/370, 374, 376 (a, b), 378, 382, 386/388, 390, 392/394, and 394 Winston Avenue.

Wilmont Avenue, north side:

- Ten driveways to residential dwellings at 379, 377, 375, 369, 367, 365, 361, 359, 353, and 349 Wilmont Avenue
- One driveway to SGI Canada Buddhist Center at 334 Churchill Avenue North.

Wilmont Avenue, south side:

- Twelve driveways to residential dwellings at 378, 376 (a, b, c), 374/372, 368/366, 364, 360, 356, 352, 350, and 346 Wilmont Avenue.
- One driveway to Hayles Clinic at 344 Churchill Avenue North.

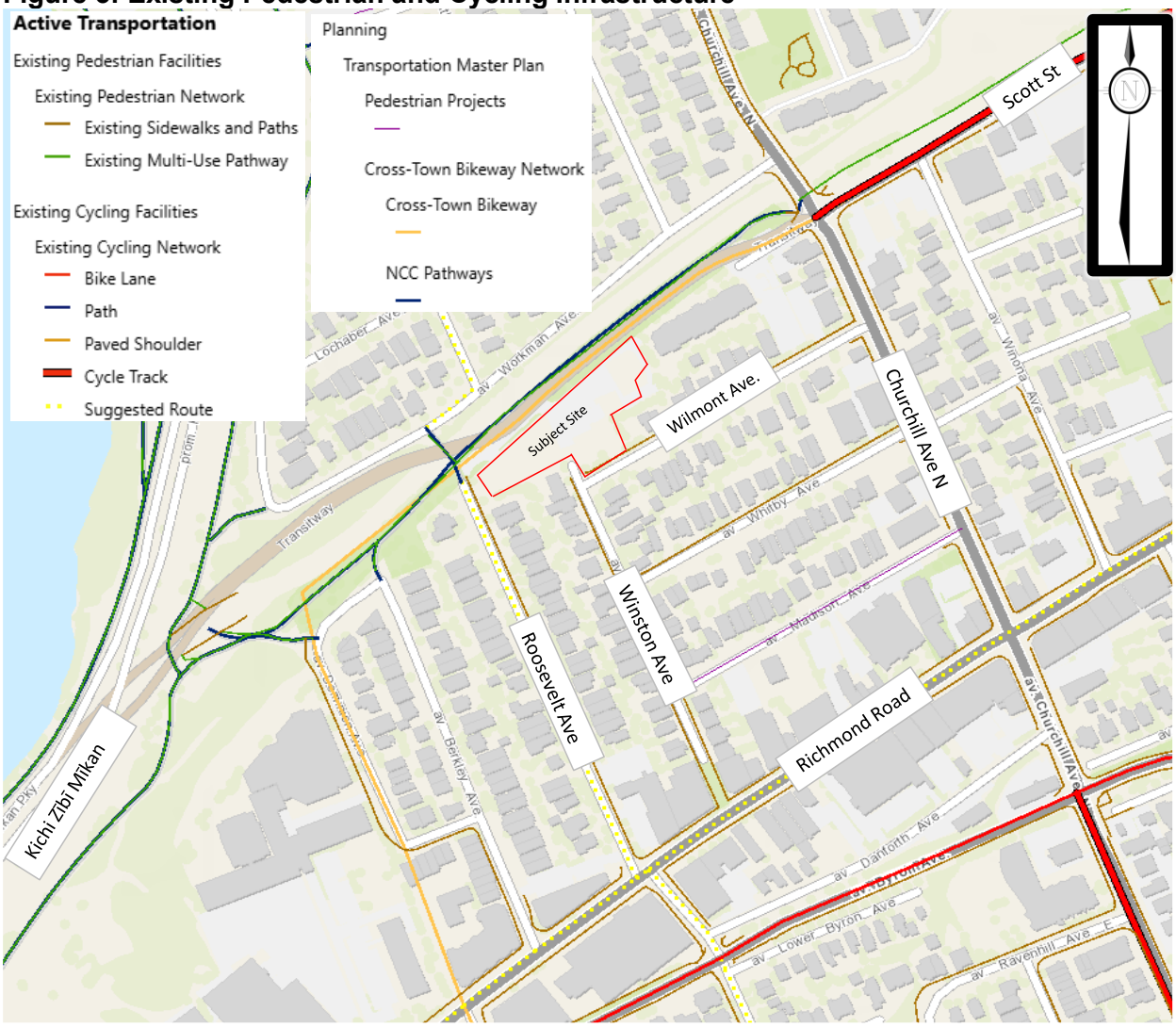
2.1.4 Pedestrian and Cycling Facilities

The existing pedestrian and cycling infrastructure provided in the greater area surrounding the subject site is illustrated in **Figure 3**.

Sidewalks are currently provided on both sides of Churchill Avenue, Richmond Road, and Winston Avenue (south of Madison Avenue), the east side of Roosevelt Avenue, the west side of Winston Avenue (north of Madison Avenue), the north side of Wilmont Avenue, and the south side of Scott Street (east of Churchill Avenue).

Scott Street and the transitway corridor north of the site are designated as cross-town bikeway in the City's 2024 TMP Active Transportation Network Map, and Richmond Road is designated as a suggested route. Within the study area, cycle tracks are provided on Scott Street and on Churchill Avenue south of Byron Avenue. A MUP is also located along the north side of Scott Street, providing connectivity to Westboro Transit Station. This MUP continues west past the terminus of Scott Street and provides connectivity to Dominion (Kichi Zībī Mīkan) Transit Station and the MUP system along Kichi Zībī Mīkan Parkway.

Figure 3: Existing Pedestrian and Cycling Infrastructure



Source: geoOttawa

2.1.5 Transit

The locations of OC Transpo bus stops in the vicinity of the subject site are described as follows:

- Stops #7379 and #7380 are located along Churchill Avenue, north of Wilmont Avenue, a walking distance of 250m-350m. Stop #7379 serves select trips OC Transpo Route 61 and on weekends it also serves route 87. Stop #7380 serves route 87 on weekends only.
- Stops #5615 and #4884 are located along Churchill Avenue, north of Scott Street, and serve OC Transpo Route 81.
- Stops #7406 and #2436 are located along Richmond Road east of Roosevelt Avenue, at a walking distance of approximately 300m-350m, and serve OC Transpo Route 11.
- Kichi Zībī Mīkan (Dominion) Transit Station (3013) is located along the OC Transpo Transitway west of the subject site, a walking distance of approximately 300m-400m, and serves OC Transpo Routes: 57, 60, 61, 62, 63, 66, 67, 73, 74, 75, 82, 87, 256, 261, 262, 263, 265, and 266.

- Westboro Transit Station (3012) is located along the OC Transpo Transitway east of the subject site, a walking distance of approximately 500m-600m, and serves OC Transpo Routes: 57, 60, 61, 62, 63, 66, 67, 73, 74, 75, 81, 82, 87, 256, 261, 262, 263, 265, 266.

The location of the aforementioned transit facilities in relation to the subject site is shown in **Figure 4**. Detailed route information and an excerpt from the OC Transpo System Map are included in **Appendix C**.

Figure 4: OC Transpo Bus Stop Locations

Source: Google Earth Aerial Snapshot

2.1.6 Area Traffic Management

Traffic calming measures have been implemented along Churchill Avenue including intersection and mid-block narrowings. These measures were implemented per the recommendations of the 1996 *Island Park, Kirkwood and Churchill Avenue Area Transportation Assessment and Traffic Calming Plan.* The report identified Churchill Avenue as having excessive traffic volumes and speeds that impacted the quality of life of the residents. Seasonal flex-posts are also implemented along Churchill Avenue at Roy Duncan Park, north of Workman Avenue.

Trucks are prohibited on Roosevelt Ave between Richmond Road and Byron Road.

2.1.7 Existing Traffic Volumes

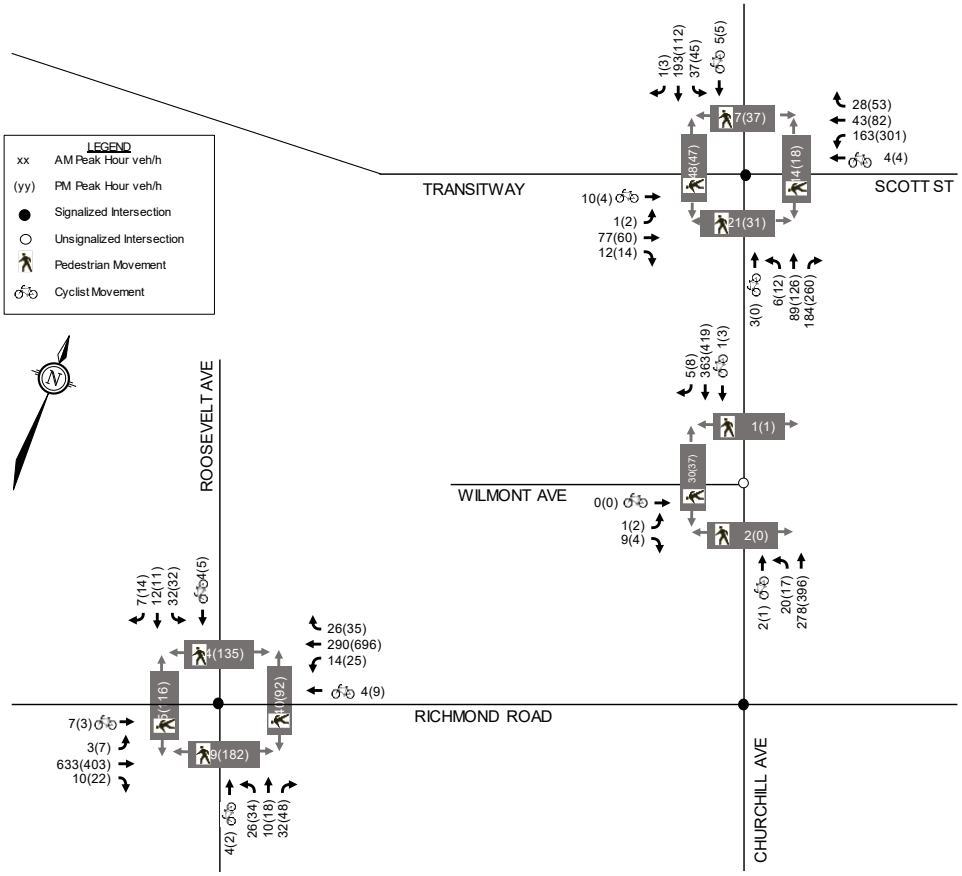
Weekday traffic counts were obtained from the City of Ottawa at the study area intersections to determine the existing pedestrian, cyclist and vehicular traffic volumes. The traffic counts were completed on the following dates:

- Roosevelt Avenue/Richmond Road January 23, 2020 (Thursday)
- Churchill Avenue/Scott Street November 30, 2023 (Thursday)
- Churchill Avenue/Wilmont Avenue January 13, 2016 (Wednesday)

Since the traffic counts at Churchill Avenue/Wilmont Avenue are outdated, and no recent counts were available, latest counts at the Churchill Avenue/Scott Street were obtained and the N-S through movements were projected to the Churchill Avenue/Wilmont Avenue intersection. The Churchill Avenue/Scott Street intersection is just approximately 70m north of Churchill Avenue/Wilmont Avenue intersection and no other road links exist between them.

Existing traffic volumes along the study area roadways are shown in **Figure 5**. Peak hour summary sheets of the above traffic counts are included in **Appendix D**.

Figure 5: Existing Traffic Volumes



2.1.8 Collision History

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

The collision data has been evaluated to determine if there are any identifiable collision patterns. The following summarizes the number of collisions at each intersection from January 1, 2018, to December 31, 2022.

Table 1: Reported Collisions

Intersection	Impact Types						Total Number of Collisions
	Approaching	Angle	Sideswipe	Rear End	Turning Movement	SMV[1]/ Other	
Intersections							
Richmond Road/Roosevelt Avenue	0	0	1	5	0	2	**8**
Churchill Avenue/Wilmont Avenue	0	0	0	1	0	0	**1**
Street Segments							
Churchill Avenue between Scott Street & Wilmont Avenue	0	0	0	0	1	1	**2**
Churchill Avenue between Wilmont Avenue & Whitby Avenue	1	0	0	0	0	0	**1**
Richmond Road between Roosevelt Avenue & Winston Avenue	0	0	1	0	0	1	**2**
Roosevelt Ave between North End & Richmond	0	2	0	0	0	1	**3**
Wilmont Ave between Winston Ave & Churchill Ave	0	0	0	0	0	1	**1**
Winston Avenue between Wilmont Ave & Whitby Ave	0	0	0	0	0	1	**1**

1. SMV = Single Motor Vehicle

Richmond Road/Roosevelt Avenue

A total of eight collisions occurred at this intersection; five of which were rear-end collisions, two were single vehicle collisions, and one was a sideswipe collision. Two of the eight collisions caused injuries, but none caused fatalities. One collision involved a pedestrian and none involved a cyclist.

Of the eight collisions, four occurred in snow conditions and four occurred in clear conditions. All the eight collisions occurred in daylight conditions.

Of the five rear-end collisions:

- three of the vehicles were heading eastbound;

- one of the vehicles was heading westbound; and
- one of the vehicles was heading northbound.

Churchill Avenue/Wilmont Avenue
Only one collision occurred at this intersection. It was a rear-end collision and did not cause any injuries or fatalities. The collision occurred in dark and clear conditions. The involved vehicle was heading southbound.

Churchill Avenue between Scott Street & Wilmont Avenue
A total of two collisions occurred along this segment; one of which was a turning movement collision, and one was a single vehicle collision. None of the two collisions caused injuries or fatalities. One of the collisions occurred in daylight conditions and one occurred in dark conditions. Both the collisions occurred in clear conditions.

Churchill Avenue between Wilmont Avenue & Whitby Avenue
Only one collision occurred at this segment. It was an approaching collision and caused injury but not fatality and did not involve a pedestrian or a cyclist. The collision occurred in dark and clear conditions. The involved vehicle was heading southbound.

Richmond Road between Roosevelt Avenue & Winston Avenue
A total of two collisions occurred at thus segment; one of which was a sideswipe collision, and one was a single vehicle collision. None of the two collisions caused injuries or fatalities and did not involve a pedestrian or a cyclist. One of the collisions occurred in rain conditions and the other occurred in clear conditions. Both the collisions occurred in daylight conditions.

Roosevelt Ave between North End & Richmond
A total of three collisions occurred along this segment; two of which were angle collisions, and one was a single vehicle collision. Of the three collisions, one caused injuries and none caused fatalities. One of the collisions involved a cyclist and none involved a pedestrian. Two of the collisions occurred in clear conditions and one occurred in rain. Additionally, two occurred in daylight conditions and one occurred in dark conditions.

Wilmont Ave between Winston Ave & Churchill Ave
Only one collision occurred in this segment. It was a single vehicle collision and did not cause any injury or a fatality and did not involve a pedestrian or a cyclist. The collision occurred in clear conditions.

Winston Avenue between Wilmont Ave & Whitby Ave
Only one collision occurred in this segment. It was a single vehicle collision and did not cause any injury or a fatality and did not involve a pedestrian or a cyclist. The collision occurred in clear conditions.

As the aforementioned collision history does not reflect a collision pattern, no mitigation measures have been identified.

2.2 Planned Conditions

2.2.1 Transportation Projects

The City of Ottawa's Transportation Master Plan (TMP) 2031 Affordable Rapid Transit and Transit Priority (RTTP) Network identifies the implementation of transit signal priority and queue jump lanes at select intersections along Richmond Road, Wellington Street W. and Somerset Street. In addition, the affordable RTTP Network identifies the extension of Light Rail Transit (LRT) to the east, west, and south (Phase 2).

LRT Phase 2
Construction for Phase 2 of the LRT began in 2019. The Confederation Line Extension West is anticipated to be completed by 2027, and Westboro Transit Station and Dominion Transit Station will open as Westboro LRT Station and Kichi Zíbí LRT Station respectively. The proposed western Confederation Line extension is shown in **Figure 6**.

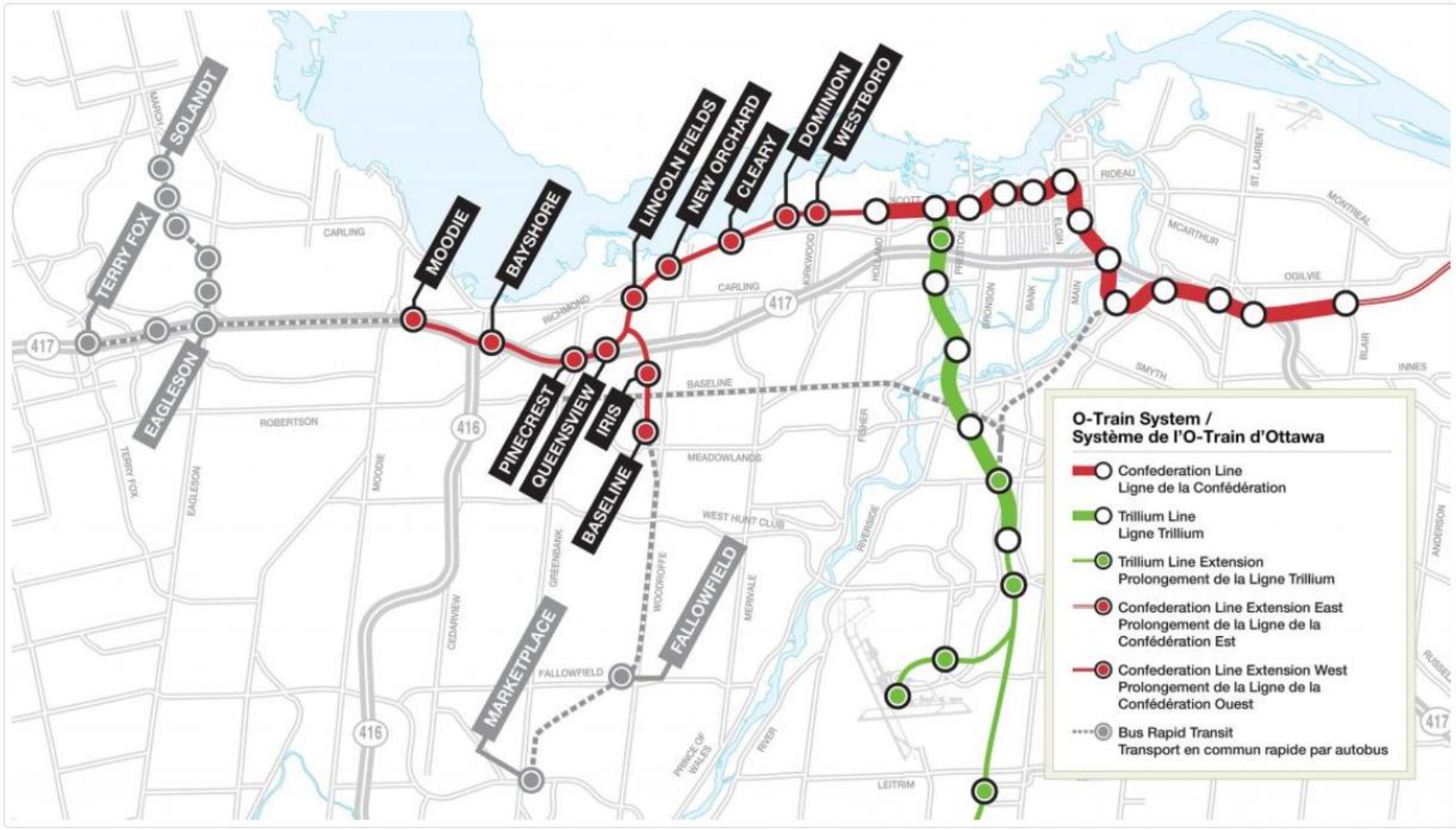
During the LRT Phase 2 construction, buses have been routed off the existing Transitway, onto Scott Street which extends west of Churchill Avenue to Roosevelt Avenue, crossing to the north side of the Transitway on a temporary bridge at Roosevelt Avenue and extended westerly from Workman Avenue to the Kichi Zíbí Parkway. This detour will be decommissioned in 2027/2028 following the opening of Phase 2 LRT. A new multi-use pathway will be constructed along the south side of the transitway corridor to facilitate the City's Crosstown Bikeway Network.

Integrated Renewal: Winona, Wilmont, Elmgrove and Picton
The City of Ottawa plans to replace watermains, and sanitary sewers on Wilmont Avenue along with other works on Winona, Elmgrove and Picton Avenue. As part of the renewal, the roads will be fully reconstructed with new asphalt, catch basins, concrete curbs and sidewalks. The project is also proposed to incorporate several new traffic calming features such as mid-block narrowings, speed humps and raised crosswalks to achieve an operating speed of 30 kmph.

On Wilmont Avenue, two speed humps, three mid-block narrowings are proposed. The west sidewalk at the Wilmont Ave/Churchill Ave N will be reconstructed with a raised sidewalk and intersection. Construction of Wilmont Avenue is ongoing and will be completed in 2025. The design of Wilmont Avenue is included in **Appendix F**.

Context from Draft 2025 TMP Capital Infrastructure Plan
As part of the development of the new TMP of the city, *Draft TMP Capital Infrastructure Plan (CIP) Highlights Report* was published to public in April 2025. Within the report, the Needs Based Transit Network identifies Richmond Road as Transit Priority Corridor with isolated measures. However, this project is not included in the Transit Priority Network.

Figure 6: LRT Phase 2 - Confederation Line Extension West



2.2.2 Other Area Developments

Other area development includes:

386 Richmond Road
This development initially proposed a mixed-use six-storey building with 16 residential units, 230m^2 of office space, and 230m^2 of ground floor retail. No vehicle access is proposed, and no parking will be provided on site. A TIA was prepared by Parsons, dated October 2017, in support of this development. Ultimately, it was constructed as 3-storey building based on the May 2023 Google Maps Street view imagery.

398-406 Roosevelt Avenue
This residential development proposes a 6-storey building with 61 dwelling units. A TIA was prepared by Parsons, dated December 2017, in support of this development, followed by addendums as the site plans were revised. The trip generation trigger for this development was not satisfied.

1946 Scott Street
This residential development proposes a 12-storey building with approximately 60 apartment units. A TIA was prepared by Parsons, dated August 2017, in support of this development. The estimated date of full occupancy was 2019.

371 Richmond Road
This residential development proposes a nine-story condominium providing 100 dwelling units. Access was to be provided via Madison Avenue. A Transportation Brief was prepared by Parsons, dated July 2014, in support of this development.

433-435 Churchill Avenue and 468-472 Byron Place
This residential development proposes 76 apartment units and two retails units with a combined gross floor area of 3,450ft^2. A TIA was prepared by Novatech, dated April 2019, in support of this development. The estimated date of full occupancy was 2020.

320 McRae Avenue, 1976 Scott Street and 315 Tweedsmuir
This mixed-use development proposes 297 residential units and 14,440ft^2 of retail land uses. A Community Transportation Study (CTS), dated December 2015, and two addendums, dated July 2016 and September 2017, were prepared by Parsons in support of this redevelopment. This development was recently constructed.

2070 Scott Street
The mixed-use development at 2070 Scott Street, at the southeast corner of the Scott Street/Churchill Avenue intersection. The development proposes a 23-storey tower with 241 units and 5,500ft^2 of retail. An underground parking garage with access to Winona Avenue is proposed. A TIA was prepared by Stantec, dated November 2019, in support of this development. The estimated date of occupancy is 2022.

319-327 Richmond Rd
A TIA was prepared by CGH Transportation dated May 2020. The proposed development is a 9-storey building with 184 apartments, and 1738 m^2 of retail space. The anticipated buildout year was 2022 and was to be constructed in a single phase.

403 Richmond Rd/389 Roosevelt Ave

A TIA was prepared by CIMA+ dated April 7, 2022. The existing land uses are proposed to be replaced by a 9-storey mixed-use building with 141 residential units, a 10th floor amenity space and 5,283 ft^2 of ground floor commercial space. The development is anticipated to be completed in a single phase with a buildout year of 2025.

2050 Scott St, 2046 Scott St, 301 Ashton Ave, 299 Ashton Ave, 295 Ashton Ave

A TIA was prepared by Parsons dated March 8, 2021, for the proposed development consisting of a 30-storey residential building on a 3- and 6-storey podiums with approximately 353 units and 233 m2 of ground commercial/office. A 2021 buildout year was anticipated; however, it appears that the construction hasn't started yet.

114 Richmond Road – Q West Development

A series of transportation review and memorandum were prepared by Parsons in 2020-2022. The proposed residential development is anticipated to be built in three phases. Phase 1 is built and occupied and consists of 297 condo units and a mix of retail and commercial land uses. Phase 2A will consist of a new 9-storey residential building (161 units) and reprogramming of Covent building to include two restaurants, 5 residential units and amenity space. Phase 2B is proposed to include two new buildings: a 4-storey residential building and a 9-storey retirement home. Analysis was conducted for Phase 2A only and a buildout year wasn't provided in the report.

342 Roosevelt Avenue

This property is in front of the subject site. The property is currently occupied by a two-storey detached dwelling which will be demolished to make way for the new construction. The initial proposal by the applicant proposed a new four-storey building but has undergone a design evolution and now proposes a six-storey residential building. The site plans suggests that no vehicle parking spaces are provided and hence no vehicular traffic is anticipated to be generated from the proposed development.

255 Richmond Rd, 249 Richmond Rd, 372 Tweedsmuir Ave

A TIA was prepared by Novatech dated April 2023. The proposed development will replace the existing commercial retail building, restaurant, and single residence unit with a 9-storey condo building consisting of 104 dwelling units, approximately 390 m^2 of retail space and 189 m^2 of restaurant space. The development is anticipated to be constructed in one phase with full occupancy in 2024. Within the report, the trip generation trigger wasn't satisfied and hence no trips distribution and assignment were included.

424 Churchill Ave N

A TIA was prepared by Castleglenn Consultants dated November 3, 2022, followed by an addendum. A review of the TIA suggested that the trip generation trigger has not been met, and the network impact component was not required as part of the TIA.

2026 Scott St, 2020 Scott St, 2006 Scott St, 318 Athlone Ave, 314 Athlone Ave

A TIA was prepared by Novatech dated April 2024. The proposed development consists of 40-storey towers with a total of 856 dwelling units and approximately 3,207 ft^2 of ground-floor commercial space. The development is anticipated to be completed in two phases, with phase one to occur in 2026 and phase two to occur in 2029. Phase one of the development includes east building which consists of 392 dwellings and 1,287 ft2 of commercial space. Phase two of the development includes the west building which consists of 464 dwellings and 1,920 ft2 of commercial space.

30 Clearly Avenue
A TIA was prepared by CGH Transportation dated November 2023. The proposed development includes a 6-storey and 16-storey residential buildings containing a total of 214 units. The anticipated full build-out and occupancy horizon is 2028 and is expected to be constructed in single phase.

1950 Scott St, 314 Clifton Rd, 312 Clifton Rd
A TIA was prepared by Novatech dated September 2024. The proposed development consists of one 22-storey residential tower with a total of 244 dwellings and approximately 2,098 ft^2 of ground-floor commercial space. The proposed development is anticipated to be completed in one phase with full occupancy in 2026. Since the site generated less than 75 vehicle trips during the peak hours, intersection analysis was exempt, and the traffic wasn't distributed to the network.

210 Clearview Avenue
A TIA was prepared by CGH Transportation dated October 2024. The proposed development consists of a 4-storey podium and 25-storey tower with a total of 184 apartment units. The existing 26-storey apartment building will remain on the east side of the parcel. The anticipated buildout year is 2027 with construction occurring in single phase.

2.3 Study Area and Time Periods

A boundary street review will be conducted for Roosevelt Avenue, Wilmont Avenue, and Winston Avenue. The study area intersections include the proposed accesses and following intersections:

- Churchill Avenue/Wilmont Avenue, and;
- Roosevelt Avenue/Richmond Road.

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.

2.4 Development Generated Travel Demand

2.4.1 Trip Generation

The *TRANS Trip Generation Manual Summary Report (October 2020, WSP)* was used to estimate the traffic generated by the proposed development. Peak Period person trips generated by the proposed development have been estimated based on the Multifamily Housing (High-Rise) rates prescribed in Table 3 of the *TRANS Trip Generation Manual*. The directional distribution of the peak period trips is identified in Table 9 of the *TRANS Trip Generation Manual*. The peak period person trips generated by the proposed residential development during the weekday AM and PM peak periods are estimated in **Table 2** below.

Table 2: Peak Period Person Trips Generated

Land Use	TRANS Rate per Unit	Units	AM Peak Period (ppp[1])			PM Peak Period (ppp[1])		
			IN	OUT	TOT	IN	OUT	TOT
High-Rise Multifamily Housing	AM: 0.80 PM: 0.90	312	78	172	250	163	118	281

1. ppp = Person Trips per Peak Period

Table 8 of *TRANS Trip Generation Manual* includes recommended AM and PM peak period modal shares for high-rise multifamily housing developments by district. Figure 1 of *TRANS Trip Generation Manual* identifies the subject site as being within the Ottawa West district and therefore recommends the following modal shares for the high-rise residential development:

- Auto Driver: 28% AM, 33% PM
- Transit: 41% AM, 26% PM
- Pedestrian: 16% AM, 23% PM
- Auto Passenger: 11% AM, 11% PM
- Cyclist: 3%AM, 7%PM

The subject site is located within 600m of the Dominion Transit Station and Westboro Transit Station, and it also falls under Transit-Oriented Development (TOD) Zone. In TOD Zones, the transit share is assumed to increase significantly compared to the TRANS O-D district. The city has outlined sustainable modal share targets for TOD developments which are summarized below:

- Auto Driver: 15%
- Transit: 65%
- Auto Passenger: 5%
- Cyclist and Pedestrian: 15%

Since the Ottawa West district observes higher modal share for pedestrian mode as seen in above summarized modal shares from the *TRANS Trip Generation Manual*, the City's TOD modal shares were adjusted to reflect the higher pedestrian modal share of the district. The assumed modal shares for the purposes of this report are as summarized below:

- Auto Driver: 15%
- Transit: 55%
- Pedestrian: 20%
- Auto Passenger: 5%
- Cyclist: 5%

Table 3: Peak Period Person Trips Generated

Modal Split	Modal Share	AM Peak Period (ppp[1])			PM Peak Period (ppp[1])		
		IN	OUT	TOT	IN	OUT	TOT
Auto Driver	15%	12	26	38	24	18	42
Auto Passenger	5%	4	9	13	8	6	14
Transit	55%	43	95	138	90	65	155
Cycling	5%	4	9	13	8	6	14
Pedestrian	20%	15	34	49	33	23	56
Total		**78**	**173**	**251**	**163**	**118**	**281**

1. ppp = Person Trips per Peak Period

Table 4 of the TRANS Trip Generation Manual includes adjustment factors to convert the estimated peak period person trips to peak hour person trips. A breakdown of the estimated peak hour person trips with site development is summarized in **Table 4**.

Table 4: Peak Hour Person Trips Generated

Modal Split	Peak Hour Factor	AM Peak Hour (pph[1])			PM Peak Hour (pph[1])		
		IN	OUT	TOT	IN	OUT	TOT
Auto Driver	AM: 0.48 PM: 0.44	6	13	19	11	8	19
Auto Passenger	AM: 0.48 PM: 0.44	2	4	6	4	3	7
Transit	AM: 0.55 PM: 0.47	24	52	76	42	31	73
Cycling	AM: 0.58 PM: 0.48	2	5	7	4	3	7
Pedestrian	AM: 0.58 PM: 0.52	9	20	29	17	12	29
Total		**43**	**94**	**137**	**78**	**57**	**135**

1. pph = Person Trips per Peak Hour

Based on the foregoing, the proposed development is anticipated to generate approximately 137 person trips (including 19 vehicle trips) during the AM peak hour and 135 person trips (including 19 vehicle trips) during the PM peak hour.

2.4.2 Trip Distribution

Site generated traffic was distributed based on the existing and historic peak hour traffic patterns within the study area using the TMCs (historic/previous study area also included the Richmond Road/Churchill Avenue intersection). The distribution can be described as follows;

- 30% to/from east via Richmond Road
- 25% to/from east via Scott Street
- 20% to/from west via Richmond Road
- 20% to/from south via Churchill Avenue
- 5% to/from south via Roosevelt Avenue

2.4.3 Trip Assignment

For the purposes of analysis, it is assumed that the site traffic using the Wilmont Avenue access will travel to and from Churchill Avenue using Wilmont Avenue only. The assignment of trips to the proposed site access has been assumed based on the logical trip routing, and is summarized as follows:

Wilmont Avenue Access

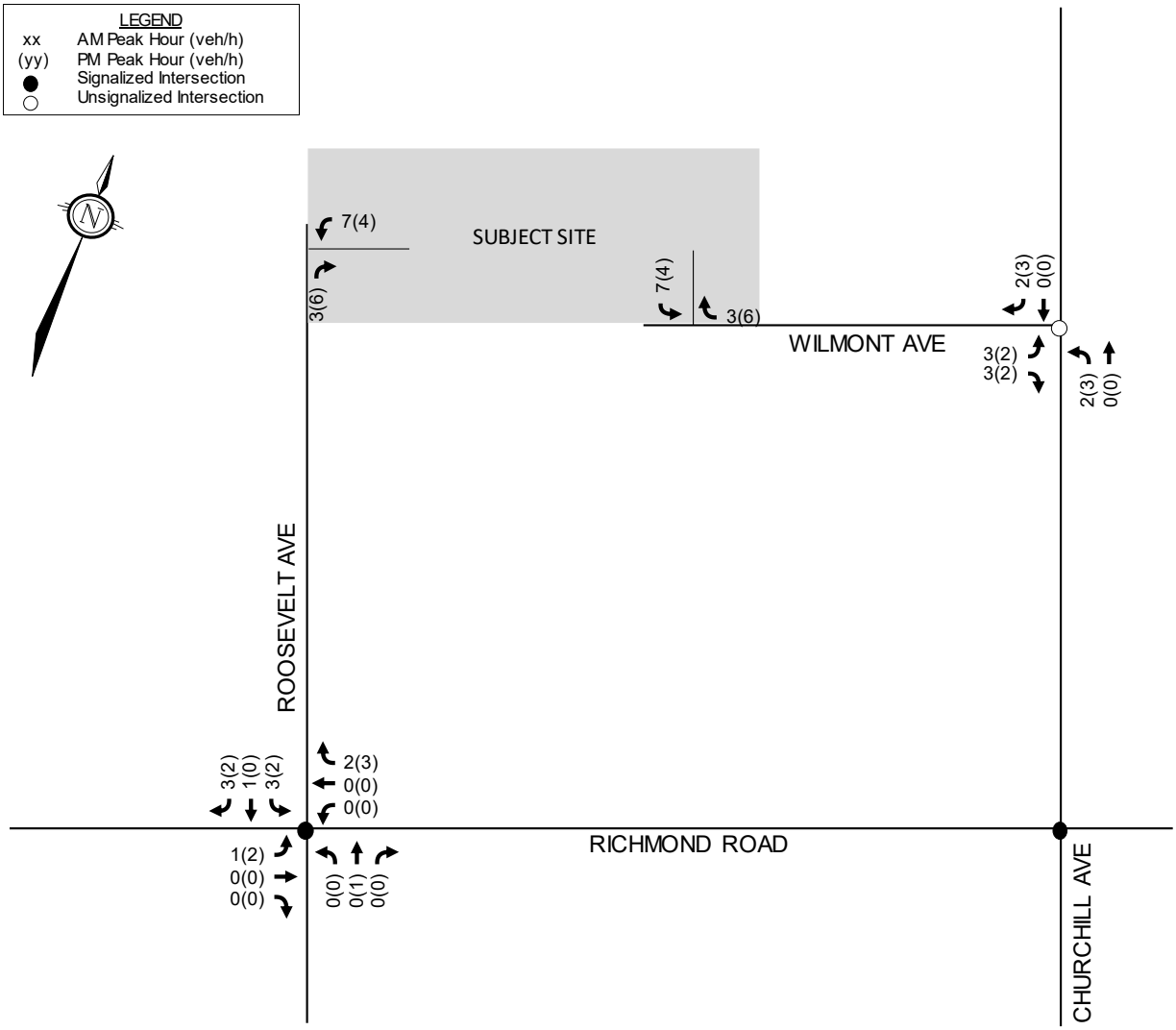
- All trips to/from east via Scott Street
- 50% of trips to/from east via Richmond Road
- 50% of trips to/from south via Churchill Avenue

Roosevelt Avenue Access

- All trips to/from west via Richmond Road
- All trips to/from south via Roosevelt Avenue
- 50% of trips to/from east via Richmond Road
- 50% of trips to/from south via Churchill Avenue

The trip distribution and assignment are consistent with the previous TIA prepared for Zoning Applicated, dated March 2022. Traffic generated by the proposed development during the weekday AM and PM peak hours is shown in **Figure 7**.

Figure 7: Site Generated Traffic Volumes



2.5 Access Design

The proposed development will be served by two full movement accesses, one along Roosevelt Avenue and the other along Wilmont Avenue. The two buildings and the underground parking garage will be constructed in two phases; however, the garages will be connected internally once the construction is completed.

Roosevelt Avenue at the north end will be extended to form a cul-de-sac and will provide connectivity to the multi-use pathway. Winston Avenue will also be extended at the north end such that it forms a cul-de-sac between the two proposed buildings and will be used as pickup and drop off location. The Winston Avenue access will operate under side street stop control, allowing free flow conditions along the Winston Avenue/Wilmont Avenue 90-degree bend.

The proposed access on Roosevelt Avenue will have a width of approximately 6.0m and will be located at the southwest corner of the property.

The proposed access on Wilmont Avenue will have a width of approximately 10.1m and will be located at the southeast corner of the property. This access will serve to the loading area used for moving purposes and will also serve to the underground parking garage ramp.

Loading area for moving purposes for west building will be provided on Winston Avenue, just south of the west building, and for the east building will be provided beside the east building's parking garage ramp.

The design of each access has been evaluated using the relevant provisions of the City's Private Approach By-law (PABL) and Zoning By-law (ZBL).

Section 25(c) of the PABL states that two-way accesses to have width no greater than 9m, as measured at the street line. Furthermore, the City of Ottawa's ZBL identifies a minimum width of 6.0m and maximum width of 6.7m for a two-way driveway leading to a residential parking garage/lot with more than 20 spaces. The proposed driveway at Roosevelt Avenue adheres to these requirements. The proposed driveway at Wilmont Avenue is approximately 10.1m in width at street line. Since this approach serves the loading area and the garage ramp, both located beside each other, increased width of the approach is recommended. Asphalt will be used for the path leading to the underground ramp, while textured unit pavers will differentiate the area to be used for loading operations.

Section 25(p) of the PABL of the PABL identifies a minimum spacing of 3.0m between the nearest limit of a private approach and the property line, as measured at the street line. The proposed Wilmont Avenue access is located approximately 2.2m from the eastern property line, and the proposed Roosevelt Avenue access is located approximately 0.7m from the southern property line. Section 25(r) identifies that despite paragraph (p), a private approach may be constructed in such a manner that it is less than 3 meters from an adjoining property at the highway line and at the curb line or edge of the roadway if it is approved through Site Plan Control in accordance with the provision of the Planning Act and the City's Site Plan Control By-law. The proposed Wilmont Avenue driveway location is required to accommodate the 10% parkland dedication. As the driveway to the adjacent property to the south on Roosevelt Avenue is located on the southern position of the lot, the proposed access to Roosevelt Avenue is not anticipated to create operational and safety concerns. Relief from the PABL requirements is requested for both the Winston Avenue and Roosevelt Avenue accesses.

Section 25(s) of the PABL states that no private approach shall be constructed serving any parking area with a grade exceeding 2% and the grade on the private approach shall descend in the direction of the roadway. Roosevelt Avenue and Wilmont Avenue accesses adhere to this requirement.

Section 25(u) of the PABL identifies a requirement that any private approach serving a parking area with more than 50 parking spaces shall not have a grade exceeding 2% for the first 9m inside the property line. Wilmont Avenue access will have a 3.5% grade towards the road for the first 5.0m within the property line, then a transition of 2% grade, followed by another transition of 10% before transforming to a ramp of 19.8%. Roosevelt Avenue access will have an 8% grade for the first 4m within the property, transitioning to 18.0% ramp to the underground parking garage. Section 25(v) identifies that despite paragraph (u), the General Manager may issue a permit for

a private approach subject to such conditions and restrictions as the General Manager may deem necessary provided that the proposed access is located:

- a safe distance from the access serving the adjacent property;
- in such a manner that there are adequate sight lines for vehicles exiting the property; and
- in such a manner that it does not create a traffic hazard.

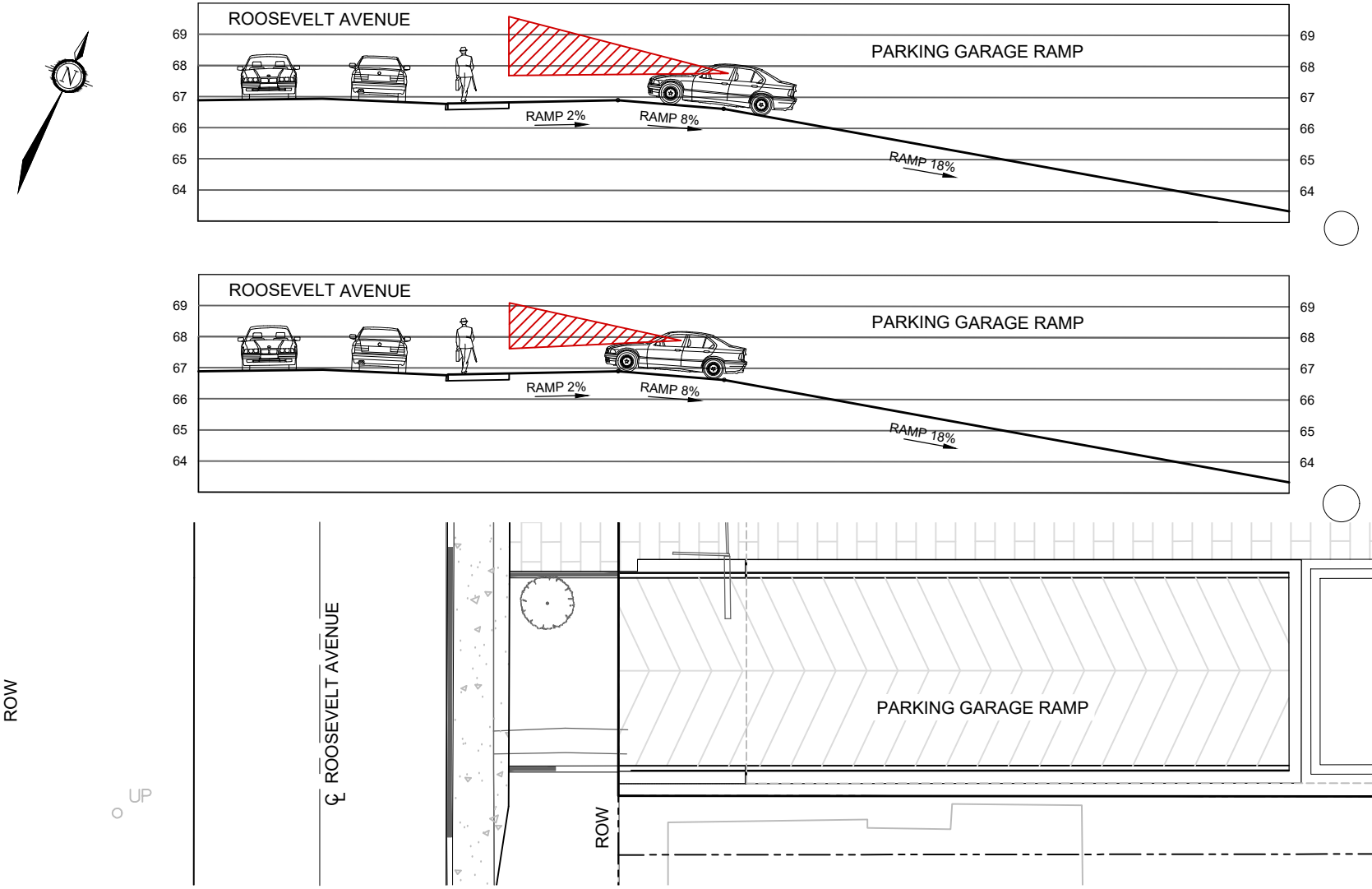
The proposed 3.5% downgrade towards the road on Wilmont Avenue is not anticipated to impact sight lines or create a traffic hazard. A vertical sight line review has been conducted for the Roosevelt Avenue access and is included in **Figure 8**. As shown, drivers exiting the ramp will have clear sight lines to pedestrians along the sidewalk. Additionally, as the proposed access is at the terminus of Roosevelt Avenue, it is not anticipated to create a traffic hazard. Relief from PABL requirements is requested for both Wilmont Avenue and Roosevelt Avenue accesses.

The Transportation Association of Canada (TAC)'s Geometric Design guide for Canadian Road identifies minimum intersection sight distance (ISD) and stopping sight distance (SSD) requirements, based on the roadway grade and design speed (taken as speed limit plus 10 kmph). The required ISD and SSD for the two accesses is summarized as follows:

Roosevelt Avenue
ISD: 105m to turn left
SSD: 65m

Wilmont Avenue
ISD: 85m to turn left
SSD: 50m

As all the accesses meet the roadways at a perpendicular angle and no vertical or horizontal curves impact sightlines based on desktop review, these requirements are met at the proposed access' locations.



NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

335 ROOSEVELT AVENUE

PARKING GARAGE RAMP SIGHT DISTANCE

SCALE 1 : 200 (0 2 4 6 8)

DATE SEP 2025 | JOB 110098 | FIGURE FIGURE 8

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2.6 Exemptions Review

As per the city's 2023 Revisions to the TIA Guidelines, **Table 5** summarizes the exemptions applicable to the subject site.

Table 5: TIA Exemptions

Module	Element	Exemption Criteria	Status
4.1 Development Design	*4.1.1*	Design for Sustainable Modes	Not Exempt
	4.1.2 Circulation and Access	Required for site plan and zoning by-law applications.	Not Exempt
	4.1.3 New Street Networks	Required for plans of subdivision.	Exempt
4.2 Parking	*All elements*	Required for site plan and zoning by-law applications.	Not Exempt
4.3 Boundary Street Design	*All elements*	Required for all.	Not Exempt
4.5 Transportation Demand Management	*All Elements*	All	Not Exempt
4.6 Neighbourhood Traffic Calming	*All elements*	Required if all the below criteria are met: 1. Access is provided to a collector or local roadway. 2. Application is for zoning by-law amendment or draft plan of subdivision. 3. Proposed development generates more than 75 vehicle trips. 4. Site trip infiltration is expected, and site-generated traffic will increase peak hour volumes by 50%+ along the route between the site and an arterial road. 5. The subject street segment is adjacent to two or more of the following significant sensitive land uses: ○ School (within 250m walking distance) ○ Park ○ Retirement/older adult facility ○ Licensed childcare centre ○ Community centre ○ 50+% of adjacent properties along the route(s) are occupied by residential lands and at least ten dwellings are occupied	Exempt

Module	Element	Exemption Criteria	Status
4.7 Transit	*4.7.1* Transit Route Capacity	Required when the proposed development generates more than 75 transit trips.	Not Exempt
	4.7.2 Transit Priority Requirements	Required when the proposed development generates more than 75 vehicle trips.	Exempt
4.8 Network Concept	*All elements*	Required when the proposed development generates >200 person trips during the peak hour in excess of the equivalent volume permitted by the established zoning.	Exempt
4.9 Intersection Design	*All elements*	Required when the proposed development generates more than 75 vehicle trips.	Exempt

3.0 FORECASTING

3.1 Background Traffic

3.1.1 Other Area Developments

As discussed in section 2.2.2, there are multiple development applications for sites in proximity of the subject site that are under construction, approved, or in approval process. Relevant excerpts from respective transportation studies of each development listed below are included in **Appendix G**.

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

- The mixed-use development at 386 Richmond Road.
- The mixed-use development at 398-406 Roosevelt Avenue.
- The residential development at 1946 Scott Street.
- The residential development at 342 Roosevelt Avenue.
- The mixed-use development at 349-255 Richmond Road.
- The residential development at 424 Churchill Avenue.
- The mixed-use development at 1950 Scott Street.

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

- The residential development at 371 Richmond Road.
- The residential development at 433-435 Churchill Ave and 468-472 Byron Place.
- The mixed-use development at 320 McRae Avenue.
- The mixed-use development at 2070 Scott Street.
- The mixed-use development at 319-327 Richmond Road.
- The mixed-use development at 403 Richmond Road.
- The residential development at 2050 Scott Street.
- The residential development at 114 Richmond Road.
- The mixed-use development at 2026 Scott Street.
- The residential development at 30 Clearly Avenue.

- The residential development at 210 Clearview Avenue.

3.1.2 Background Growth Rate

A review of historic traffic counts, as well as snapshots from the City's Long Range Transportation Model were reviewed to determine an appropriate background growth rate along the study area roadways.

Based on the historic traffic counts (2015, 2016, 2017, 2019, and 2020 at Churchill Avenue/Richmond Road), traffic volumes have generally decreased along the study area roadways. This is consistent with the 2011 and 2031 long range model snapshots obtained from the city. The summary sheets of the previous counts and the 2011-2031 long range model snapshots are included in **Appendix D**.

The LRT line 1 extension and line 3 inception which is anticipated to be completed by 2027, is anticipated to attract ridership thereby reducing the number of people using vehicles as mode of transport.

Based on the foregoing, no background growth rate has been applied to the existing traffic volumes within the study area.

3.1.3 Future Traffic Conditions

The figures listed below present the following future traffic conditions:

- Background traffic volumes in 2029 and 2034 are shown in **Figure 9**;
- Total traffic volumes in 2029 and 2034 are shown in **Figure 10**;

Figure 9: Background 2029 and 2034 Traffic Volumes

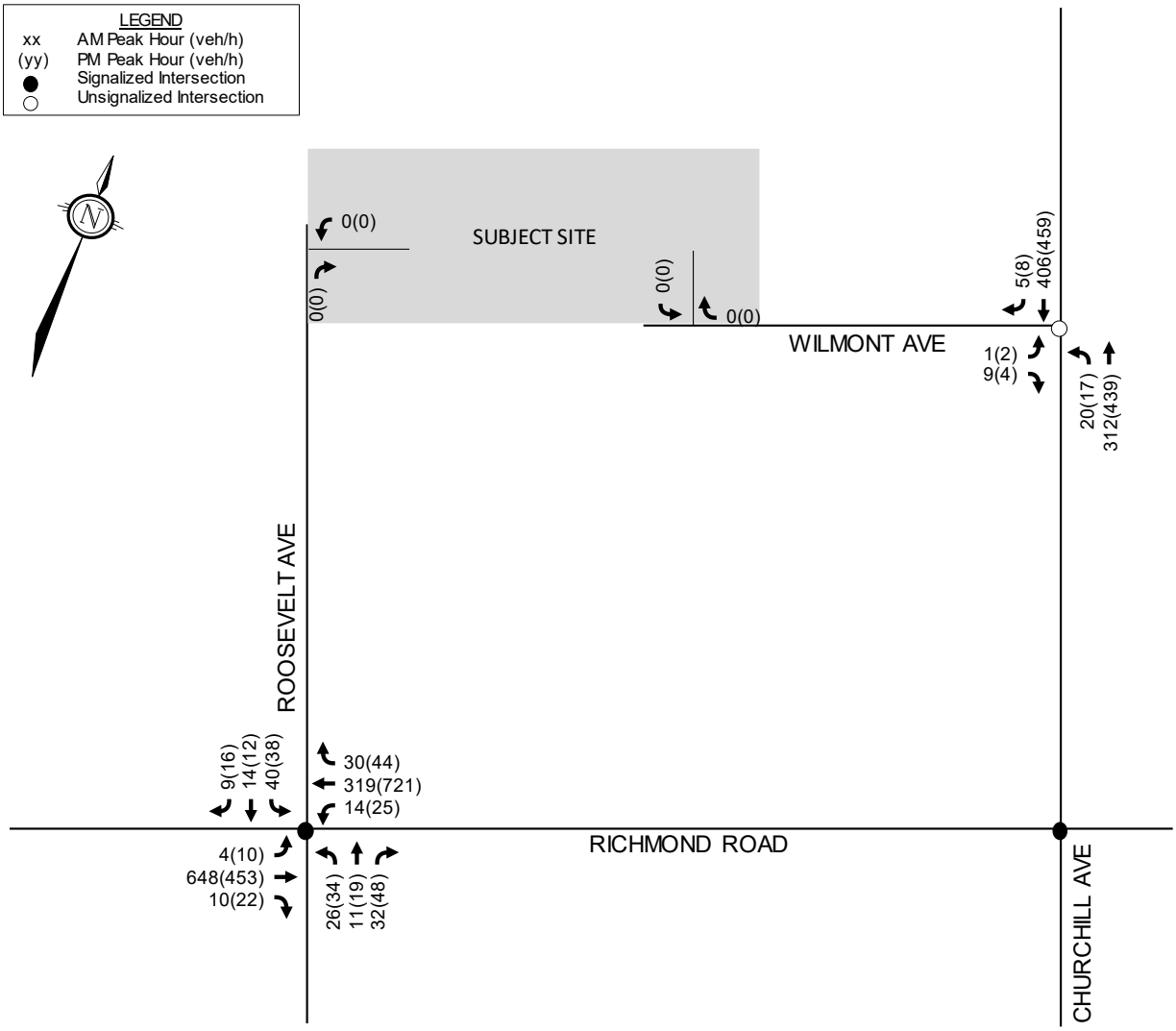
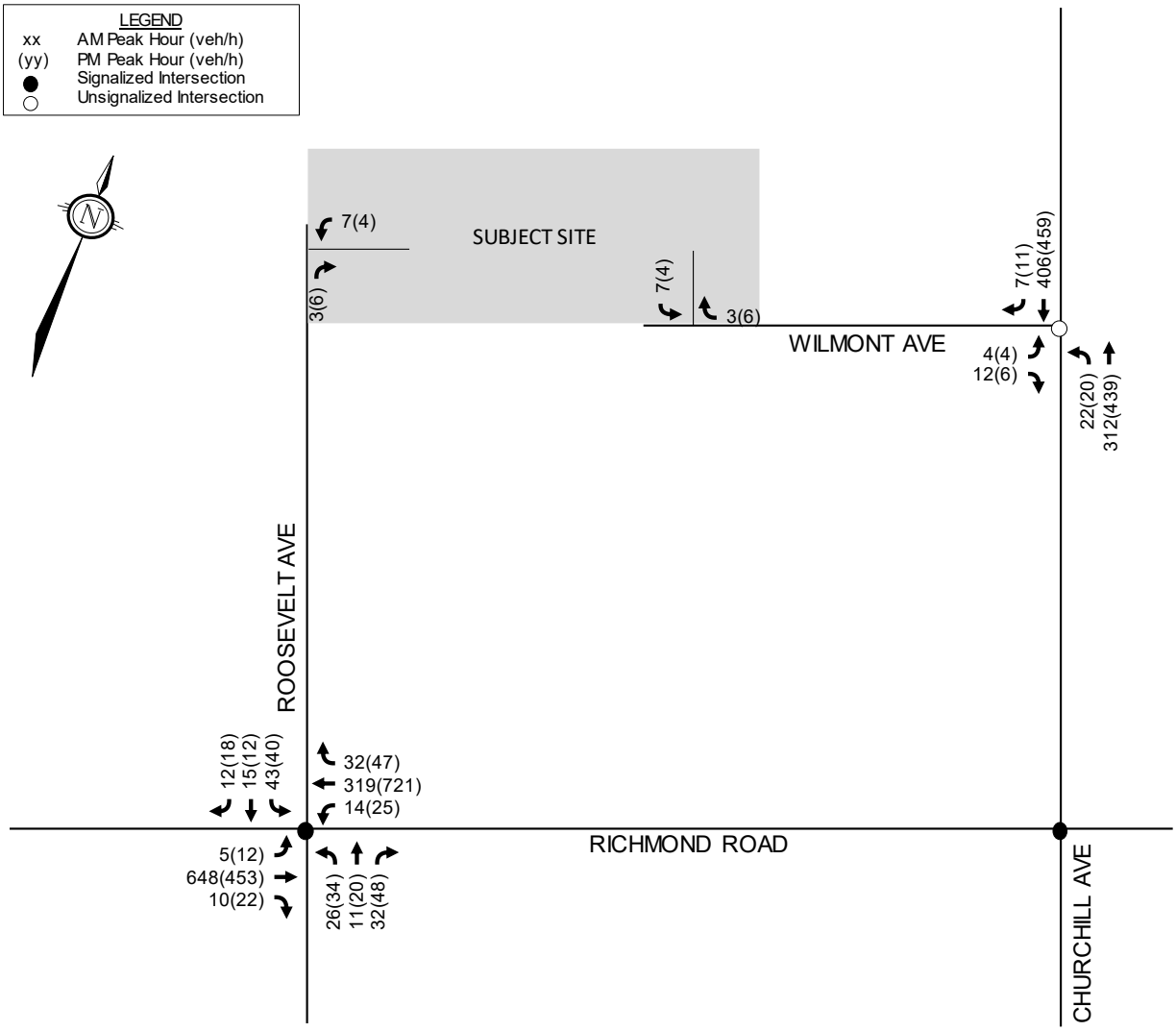


Figure 10: Total 2029 and 2034 Traffic Volumes



4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

Sidewalk connections will be provided between the proposed development and the existing sidewalks on Roosevelt Avenue, Winston Avenue, and Wilmont Avenue. Connections will also be provided to the MUP that runs along the northern property line of the subject site. A north-south pathway connecting Winston Avenue to the MUP will bisect the two buildings and will function as a woonerf.

The proposed on-site cul-de-sac at the terminus of Winston Avenue will function as a woonerf and will facilitate pick-ups and drop-offs for the east building. A new cul-de-sac is proposed within

the city right-of-way (ROW) at the terminus of Roosevelt Avenue. The proposed cul-de-sac will address an existing deficiency along Roosevelt Avenue, which is approximately 300m in length north of Richmond Road and does not provide a turnaround facility for large vehicles. As sufficient space is not available for a traditional cul-de-sac, a cul-de-sac/hammerhead is proposed to facilitate improved turning movements for emergency vehicles as well as garbage/delivery trucks. The proposed roadway modifications will also facilitate a pick-up/drop-off are for residents of the west building. A roadway Modification Approval (RMA) letter will be submitted to the City under a separate cover.

A total of 447 bicycle parking spaces will be provided within the underground parking garage and the surface bike storage room located at the southeast corner of the west building. Further review of the number of bicycle parking spaces is included in section 4.2.

Underground parking will be accessed from both Wilmont Avenue and Roosevelt Avenue.

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 400m, roughly a 5-minute walk. The site is located beside the transitway, and the closet station is the Kichi Zībī Mīkan (formerly Dominion Station) which is roughly 150m from the proposed development.

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 H**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met. In addition to the required measures, it is anticipated that the following 'basic' measures will be met:

- 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.
- Provide safe, direct and attractive walking routes from building entrances to nearby transit stops.
- Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments
- Provide a permanent bike repair station
- Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones

4.1.2 Circulation and Access

Garbage bins for the east building will be wheeled up the underground parking ramp and stored in a loading area for curbside collection on Wilmont Avenue. Garbage bins for the west building will be wheeled up the ramp and stored on a garbage pad for curbside collection on Roosevelt Avenue. Fire department connection is provided along the site frontage on Roosevelt Avenue for west building, and for east building, fire route is provided along the cul-de-sac formed by extending Winston Avenue. Move-in/out procedures will occur adjacent to the parking garage for the east building, and within the loading area at southeast corner of west building for the west building.

Turning movements for medium single unit truck (MSU) at the loading area for the west building are shown in **Figure 11-12**. Turning movements for the passenger car, fire truck, and ambulance at Winston Avenue cul-de-sac are shown in **Figure 13-16** respectively. Turning movements for MSU and passenger car at the Wilmont Avenue Access are shown in **Figure 17**. Turning movements at Roosevelt Avenue cul-de-sac will be issued with the RMA.

4.2 Parking

The subject site is located in Area B of Schedule 1 and Area X of Schedule 1A of the City of Ottawa's Zoning By-law (ZBL). Minimum vehicular parking and bicycle parking rates for the proposed development are identified in the ZBL and are summarized in **Table 6**.

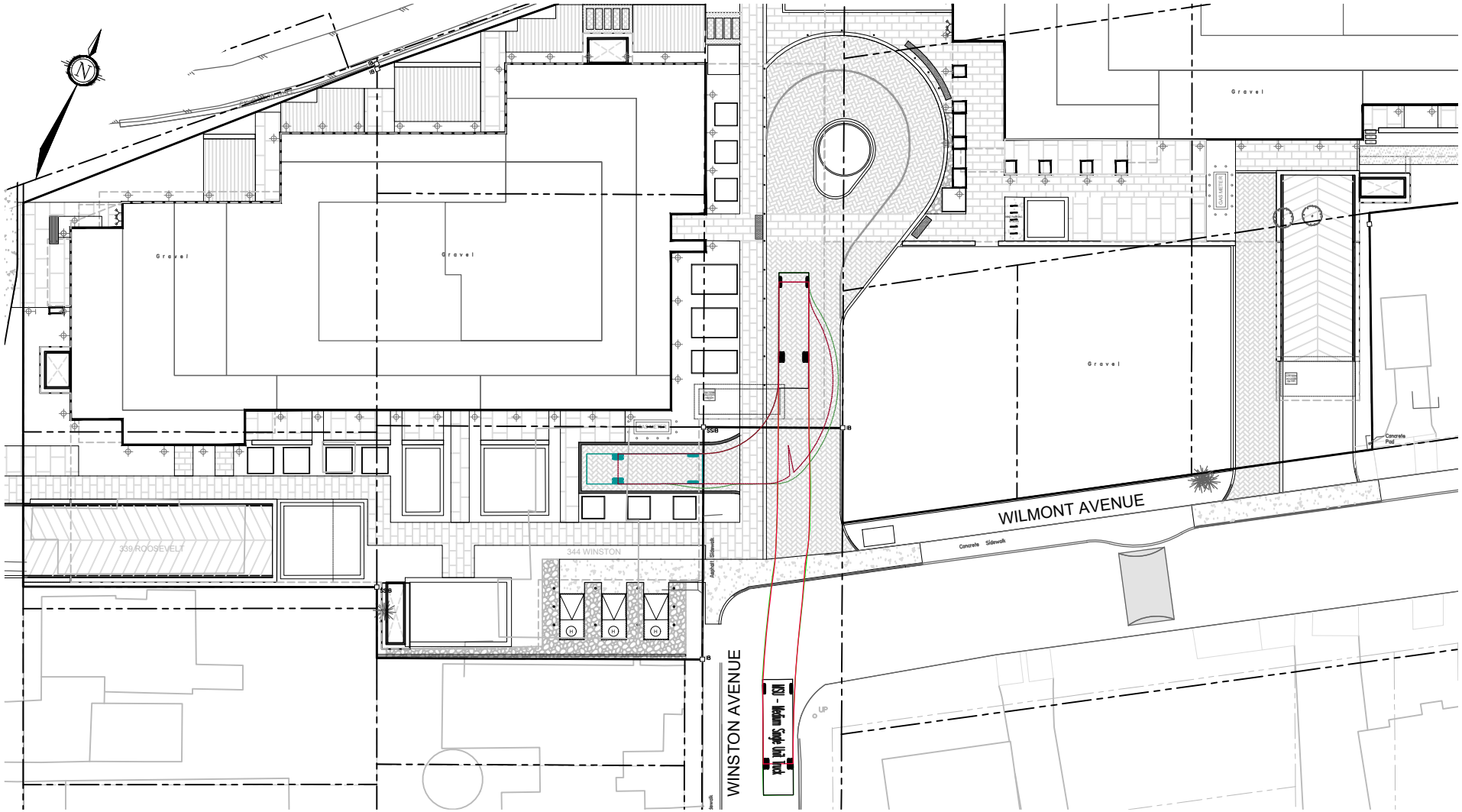
Table 6: Minimum Parking Requirements

Land Use	Minimum Parking Rate	No. of Units	Required Spaces	Provided Spaces
Vehicle Parking				
Phase 1 – West Building (Mid to High-Rise Apartments)	Resident: 0.5 per unit, not including the first 12 units	152 – 12 = 140 units	70 Spaces	134 Spaces
	Visitor: 0.1 per unit, not including the first 12 units		14 Spaces	14 Spaces
Phase 2 – East Building (Mid to High-Rise Apartments)	Resident: 0.5 per unit, not including the first 12 units	160 – 12 = 148 units	74 Spaces	116 Spaces
	Visitor: 0.1 per unit, not including the first 12 units		15 Spaces	15 Spaces
Total Vehicle Parking		312 units	173 Spaces	279 Spaces
Bicycle Parking				
Apartment Building	1.0 per unit[1]	312 units	312 Spaces	447 Spaces

1. Per ZBL Urban Exception 2772

The proposed development is located within 600 meter of a rapid transit station, which also imposes a maximum limit on number of parking spaces as per Section 103 of the City's ZBL. Based on the ZBL, a maximum of 1.75 parking spaces are permitted per unit (combined total of resident and visitor), equating to a maximum of 534 on-site parking spaces. The proposed 279 vehicular parking spaces adhere to the requirements of the City's ZBL.

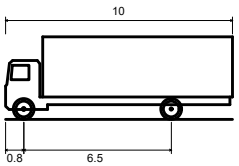
The proposed 447 bike parking spaces exceed the minimum requirements of the ZBL. The proposed bicycle parking will be located in bike storage rooms within the underground parking garage and the surface bike storage room located at the southeast corner of the west building.



* PROPERTY LINES APPROXIMATED FROM GEO OTTAWA

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com



MSU - Medium Single Unit Truck

Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

335 ROOSEVELT AVENUE

TURNING MOVEMENT-IN (MSU)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE SEP 2025 | JOB 110098 | FIGURE FIGURE 11

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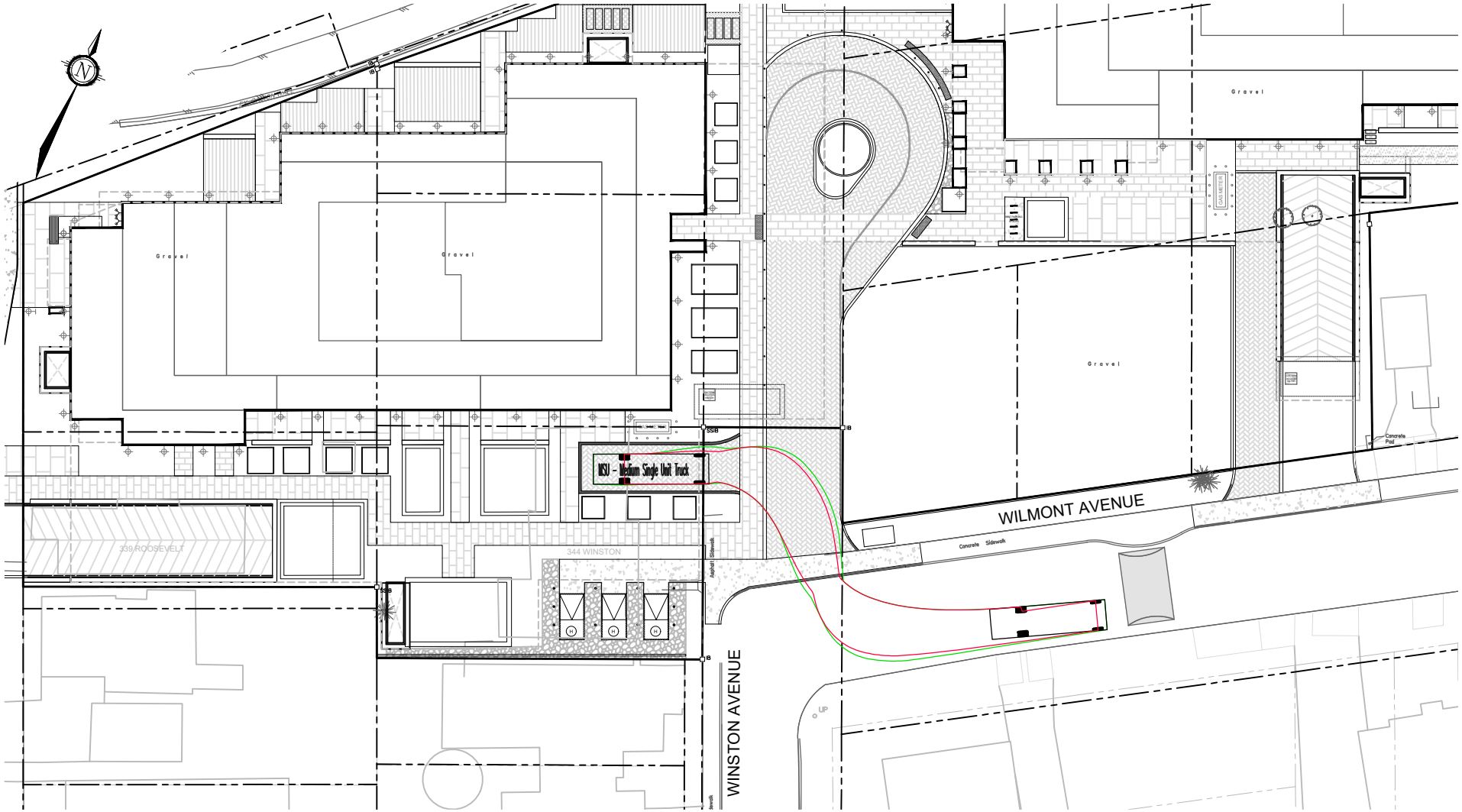

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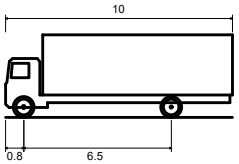

MSU - Medium Single Unit Truck

Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

335 ROOSEVELT AVENUE

TURNING MOVEMENT-OUT (MSU)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE SEP 2025 | JOB 110098 | FIGURE FIGURE 12

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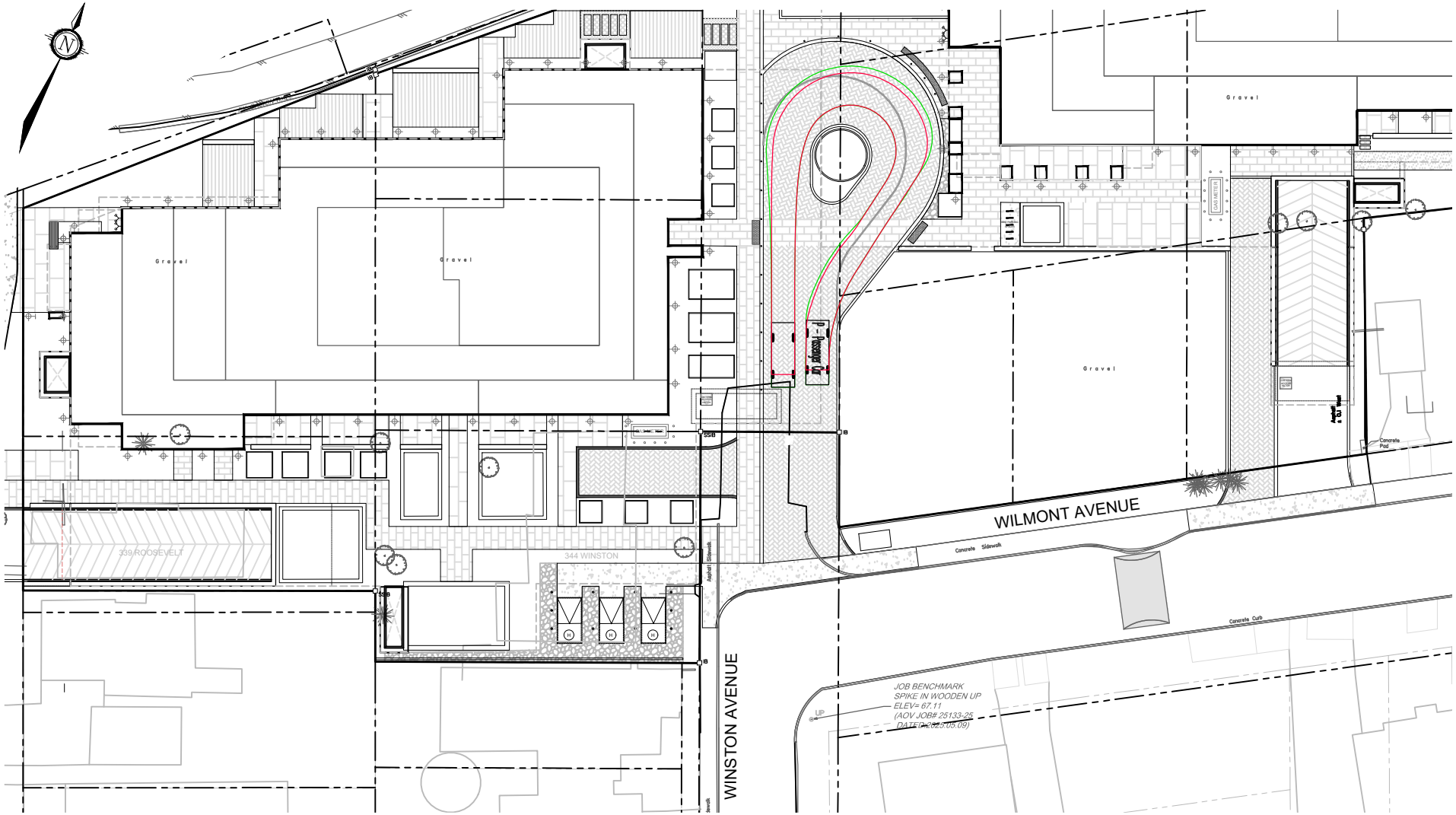

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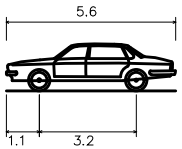

P - Passenger Car

Overall Length	5.600m
Overall Width	2.000m
Overall Body Height	1.555m
Min Body Ground Clearance	0.340m
Track Width	2.000m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.300m

335 ROOSEVELT AVENUE

TURNING MOVEMENT (PCAR)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE SEP 2025 | JOB 110098 | FIGURE FIGURE 13

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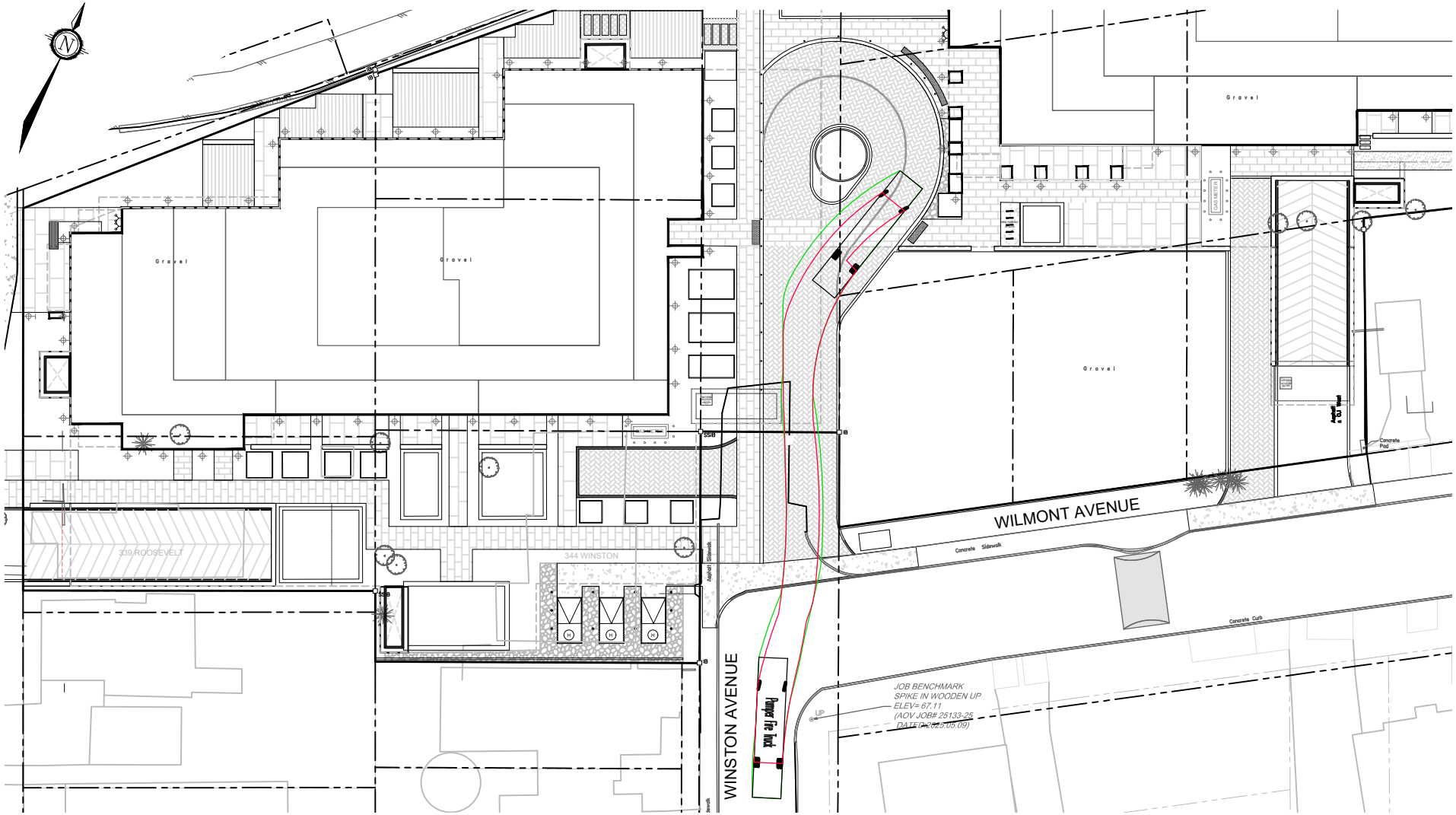

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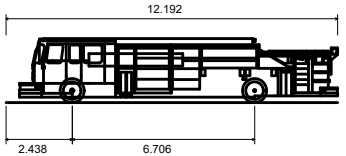

Pumper Fire Truck

Overall Length	12.192m
Overall Width	2.489m
Overall Body Height	2.361m
Min Body Ground Clearance	0.200m
Track Width	2.489m
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

335 ROOSEVELT AVENUE

TURNING MOVEMENT (FIRE TRUCK)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE SEP 2025 | JOB 110098 | FIGURE FIGURE 14

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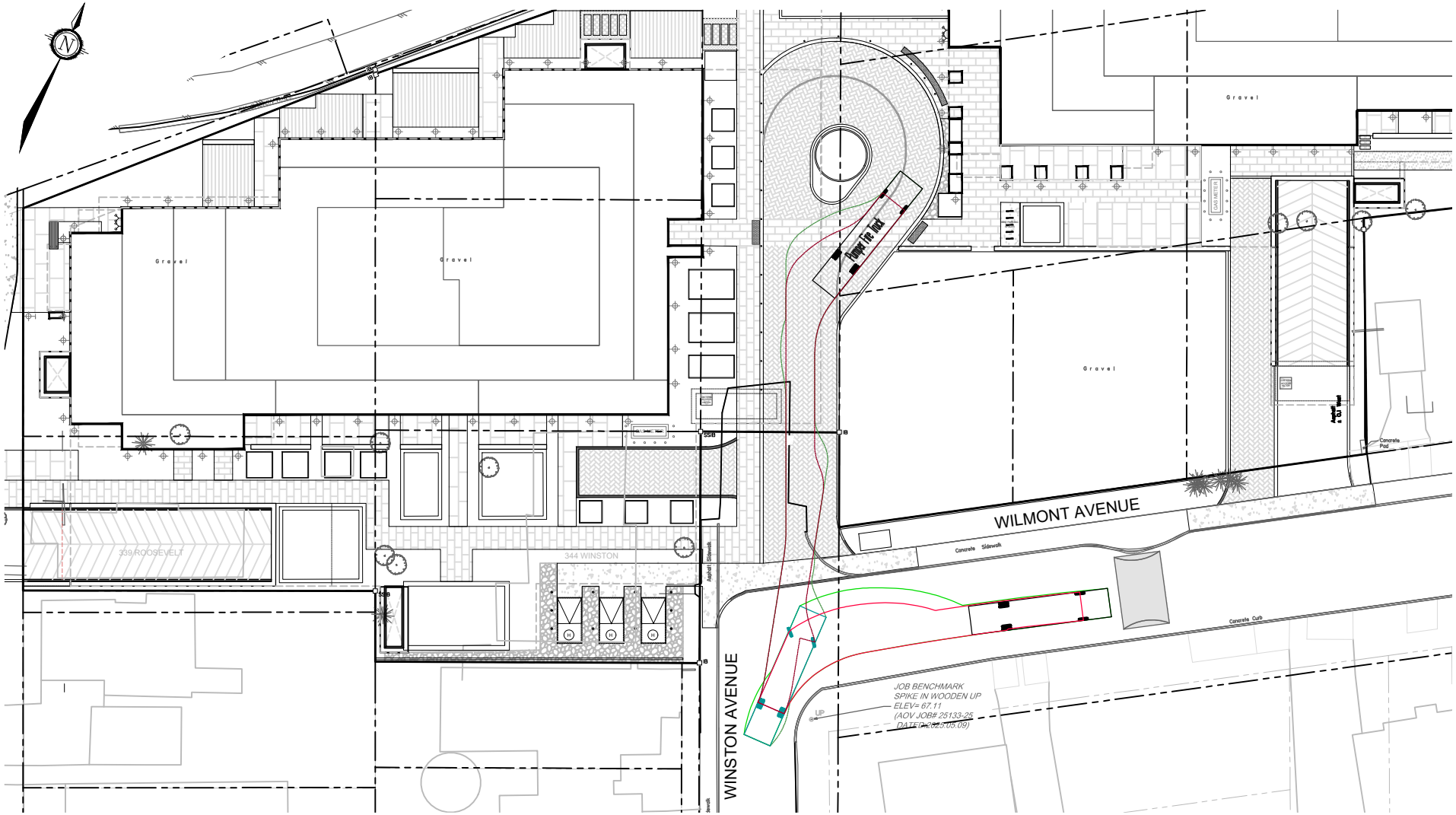

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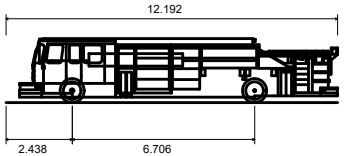

Pumper Fire Truck

Overall Length	12.192m
Overall Width	2.489m
Overall Body Height	2.361m
Min Body Ground Clearance	0.200m
Track Width	2.489m
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

335 ROOSEVELT AVENUE

TURNING MOVEMENT (FIRE TRUCK)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE SEP 2025 | JOB 110098 | FIGURE FIGURE 15

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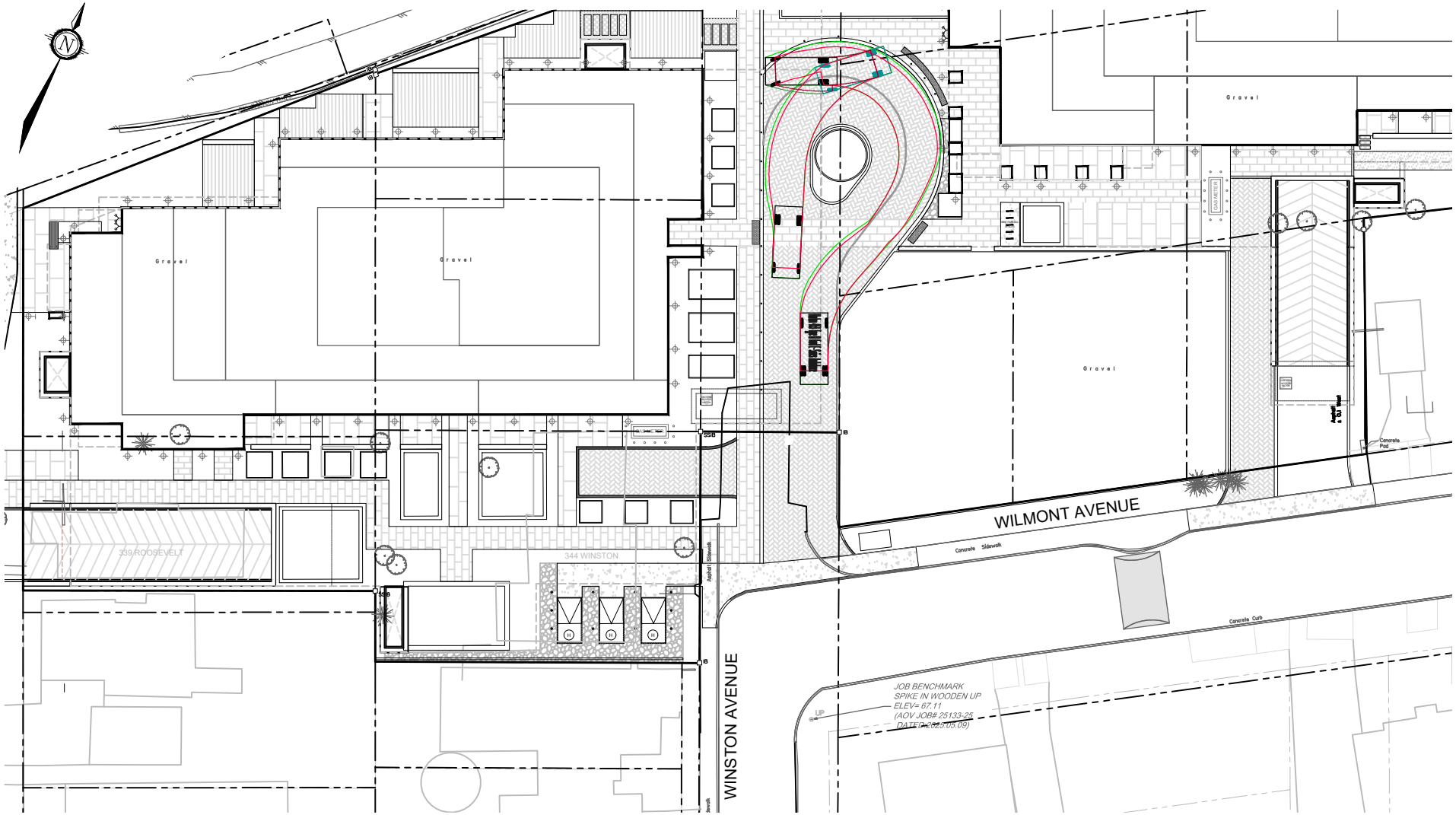

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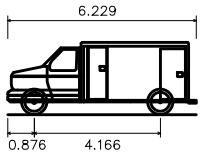

Horton 453 Type III Ambulance

Overall Length	6.229m
Overall Width	2.394m
Overall Body Height	2.394
Min Body Ground Clearance	0.377m
Track Width	2.394m
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	7.407m

335 ROOSEVELT AVENUE

TURNING MOVEMENT (AMBULANCE)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE SEP 2025 | JOB 110098 | FIGURE FIGURE 16

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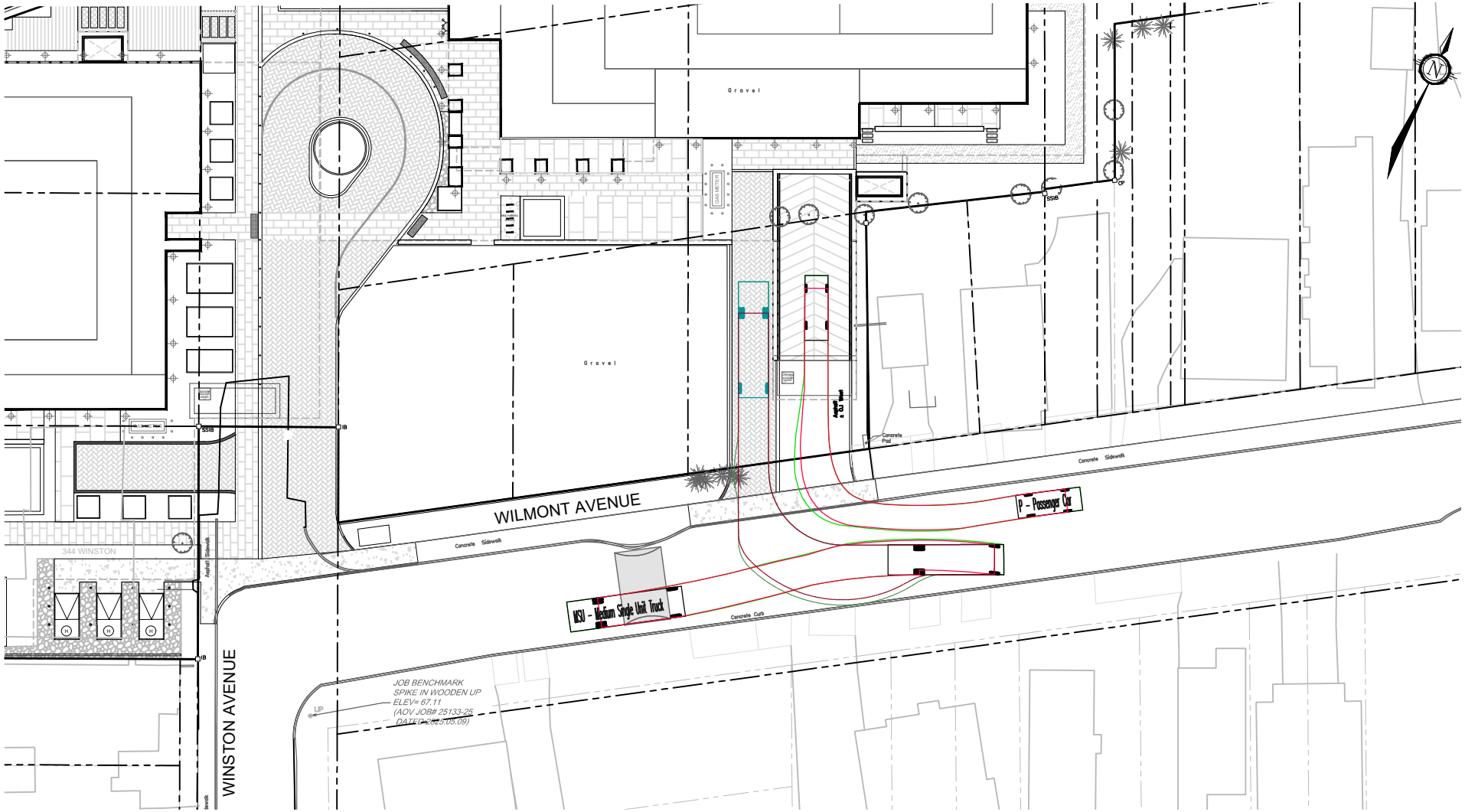

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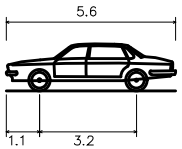
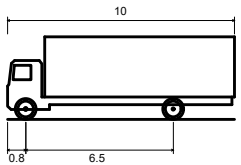


P - Passenger Car

Overall Length	5.600m
Overall Width	2.000m
Overall Body Height	1.555m
Min Body Ground Clearance	0.340m
Track Width	2.000m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.300m



MSU - Medium Single Unit Truck

Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

335 ROOSEVELT AVENUE

TURNING MOVEMENT (MSU / PCAR)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE SEP 2025 | JOB 110098 | FIGURE FIGURE 17

SHT8X11.DWG - 216mmx279mm

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4.3 Boundary Streets

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

Targets for the Pedestrian Level of Service (PLOS), and Bicycle Level of Service (BLOS) for the study area roadways are based on the targets for roadways within 600m of a rapid transit station, as identified in exhibit 22 of the MMLOS guidelines. As none of the boundary roadways service transit and are not classified as truck routes, the Transit Level of Service (TLOS) and Truck Level of Service (TkLOS) have not been reviewed.

A summary of the results of the segment MMLOS analysis for the boundary roadways is provided in the **Table 7**. Detailed segment MMLOS calculations can be found in **Appendix I**.

Table 7: Segment MMLOS Summary

Segment	Condition	PLOS	BLOS	TLOS	TkLOS
Roosevelt Avenue	Existing	E	A	-	-
	Target	A	B	-	-
Wilmont Avenue	Existing	A	A	-	-
	Target	A	D	-	-
Winston Avenue	Existing	E	B	-	-
	Target	A	D	-	-

Based on the above table, all roadways meet the BLOS target. However, only Wilmont Avenue meets the target PLOS.

The east side of Roosevelt Avenue has a 1.5m sidewalk and no boulevard which earns a PLOS of E. A locally widened 2.0m pedestrian sidewalk will be provided adjacent to the site on Roosevelt Avenue achieving a PLOS A.

The west side of Winston Avenue has a 1.5m asphalt sidewalk and no boulevard which earns a PLOS E. A 2.0m wide pedestrian walkway will be provided along Winston Avenue access which will connect to the east-west MUP running along the north property line.

4.4 Transportation Demand Management

4.4.1 Context for TDM

The proposed development consists of a total of 312 residential units. The breakdown of residential units are as follows:

- Bachelor units: 35 units (17 in west building, and 18 in east building);
- 1-bedroom units: 114 units (61 in west building, and 53 in east building);
- 1-bedroom + den units: 29 units (11 in west building, and 18 in east building);
- 2-bedroom units: 30 units (16 in west building, and 14 in east building);
- 2-bedroom + den units: 81 units (31 in west building, and 50 in east building); and
- 3-bedroom units: 23 units (16 in west building, and 7 in east building).

4.4.2 Need and Opportunity

The proposed development is located within TOD Zone as it is within a 600m walking distance of the future Kichi Zībī Mīkan and Westboro LRT stations. As stated in section 2.4.1, the target 15% auto driver, 5% auto passenger, 55% transit, 5% cyclist, and 20% pedestrian modal shares for the proposed development are based on the City's TOD zone modal shares and have been adjusted to reflect a higher non-auto modal share associated with the Ottawa West district.

The *TRANS Trip Generation Manual* identifies the subject site as being within the Ottawa West district and outlines the following average modal shares for residential developments within this district: 30% auto driver, 10% auto passenger, 35% transit, 5% cyclist, and 20% pedestrian.

The TOD modal shares represent an increased transit modal share, and a reduced auto/passenger modal share compared to Ottawa West modal shares. As the proposed development is located in close proximity to the future Kichi Zībī Mīkan and Westboro LRT stations and the development will provide a suite of TDM measures described in the following section, the development is anticipated to meet the target TOD modal shares.

The proposed number of parking spaces is to cater to the needs of the residents that choose to use the non-auto mode of transportation during the peak hours but prefer to maintain a vehicle for personal use during the off-peak hours. As some residents may not be from the area or have seasonal properties outside the City, they may choose to own a vehicle to travel to see friends/family or seasonal residences outside the City on evenings and weekends. Based on this, the proposed parking supply does not necessarily corelate to peak hour auto demand usage.

However, should the development only meet the Ottawa West modal shares, the development is anticipated to generate an additional 17-18 vehicle trips two-way during the weekday peak hours. Distributing the additional traffic to the area results in an additional 9 vehicles two-way on both Roosevelt Avenue and Wilmont Avenue. This equates to one vehicle every 6-7 minutes along both roads. While the additional traffic may increase congestion slightly along these roadways, the roads are anticipated to operate within acceptable thresholds for local roads.

4.4.3 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 H**.

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

- Designate internal coordinator.
- Display local maps with walking/cycling access routes and key destinations,
- Display relevant transit schedules and route maps,
- Offer Presto card preloaded with a one-month transit pass per residence upon first move-in,
- Unbundle parking from monthly rent, and
- Provide multi-modal travel option information package to new residents.

4.5 Transit

Based on the trip generation in section 2.4.1, the development is anticipated to add 76 transit trips (24 IN and 52 OUT) in the AM peak and 73 transit trips (42 IN and 31 OUT) in the PM peak. In

the AM peak the number of transit trips is just one trip higher than the set threshold for the requirement of transit capacity analysis.

The subject site is approximately 150m walking distance from the Kichi Zībī Mīkan rapid transit station. This station will reopen as LRT station once the LRT Line 1 extension and the new Line 3 are open for public use, which is anticipated to be in 2027, i.e., before the subject site's horizon year.

Given the frequency of the LRT Line 1, which is a train every 5 minutes or less in each direction (~12 trains an hour), and with a capacity of each car being 336 passengers comfortably (a total of ~600 per train (two cars make a train for line 1)), it is anticipated that the LRT Line 1 will be able to accommodate the number of transit trips generated by the subject development during the peak hours. The frequency of Line 3 is not available currently; however, upon its anticipated inauguration in 2027, it is anticipated to increase the transit capacity along its route.

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Trip Generation

- The proposed development is anticipated to generate 137 person trips (including 19 vehicle trips) in the AM peak, and 135 person trips (including 19 vehicle trips) in the PM peak.

Access Intersection Design

- Roosevelt Avenue at the north end will be extended to form a cul-de-sac and will provide connectivity to the multi-use pathway. Winston Avenue will also be extended at the north end such that it forms a cul-de-sac between the two proposed buildings and will be used as pickup and drop off location along with a pedestrian walkway connecting to the MUP.
- Wilmont Avenue Access has a width of approximately 10.1m at street line and does not meet the section 25(c) of the City's PABL, and ZBL. This increased width is recommended to accommodate the garage ramp and the loading area beside it.
- Roosevelt Avenue and Wilmont Avenue accesses are located 0.7m and 2.2m from their nearest property lines respectively. The Wilmont Avenue access is located to accommodate the parkland dedication. The location of the Roosevelt Avenue access is not anticipated to create operational and safety concerns. Relief from the section 25(p) of the PABL is being requested from both the Wilmont and Roosevelt Avenue accesses.
- Wilmont Avenue access will have a 3.5% grade towards the road for the first 5.0m within the property line, then a transition of 2% grade, followed by another transition of 10% before transforming to a ramp of 19.8%. The proposed 3.5% downgrade towards the road on Wilmont Avenue is not anticipated to impact sight lines or create a traffic hazard.
- Roosevelt Avenue access will have an 8% grade for the first 4.0m within the property, transitioning to 18.0% ramp to the underground parking garage. Drivers exiting the ramp will have clear sight lines to pedestrians along the sidewalk. Additionally, as the proposed access is at the terminus of Roosevelt Avenue, it is not anticipated to create a traffic hazard.
- Relief from PABL requirements is requested for both Roosevelt Avenue and Wilmont Avenue accesses.

Development Design

- Sidewalk connections will be provided between the proposed development and the existing sidewalks on Roosevelt Avenue, Winston Avenue, and Wilmont Avenue.
- Connections will also be provided to the MUP that runs along the northern property line of the subject site.
- A north-south pathway connecting Winston Avenue to the MUP will bisect the two buildings and will function as a woonerf.
- The proposed on-site cul-de-sac at the terminus of Winston Avenue will function as a woonerf and will facilitate pick-ups and drop-offs for the east building.
- A new cul-de-sac is proposed within the city right-of-way (ROW) at the terminus of Roosevelt Avenue. The proposed cul-de-sac will address an existing deficiency along Roosevelt Avenue, which is approximately 300m in length north of Richmond Road and does not provide a turnaround facility for large vehicles.
- Accesses to the underground parking are proposed from Roosevelt Avenue and Wilmont Avenue.
- A total of 447 bicycle parking spaces will be provided within the underground parking garage and the surface bike storage room located at the southeast corner of the west building.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.
- Garbage bins for the east building will be wheeled up the underground parking ramp and stored in a loading area for curbside collection on Wilmont Avenue. Garbage bins for the west building will be wheeled up the ramp and stored on a garbage pad for curbside collection on Roosevelt Avenue.
- Fire department connection is provided along the site frontage on Roosevelt Avenue for west building, and for east building, fire route is provided along the cul-de-sac formed by extension of Winston Avenue.

Parking

- The proposed number of parking spaces adhere to the requirements of the City's ZBL.
- The proposed 447 bicycle parking spaces will be located in bike storage rooms within the underground parking garage and the surface bike storage room located at the southeast corner of the west building, exceeding the minimum requirements of the City's ZBL.

Boundary Street Design

- Roosevelt Avenue, Winston Avenue, and Wilmont Avenue meet the BLOS target. However, only Wilmont Avenue meets the target PLOS.
- The east side of Roosevelt Avenue has a 1.5m sidewalk and no boulevard which earns a PLOS of E. A locally widened 2.0m pedestrian sidewalk will be provided adjacent to the site on Roosevelt Avenue achieving a PLOS A.
- The west side of Winston Avenue has a 1.5m asphalt sidewalk and no boulevard which earns a PLOS E. A 2.0m wide pedestrian walkway will be provided along Winston Avenue access which will connect to the east-west MUP running along the north property line.

Transportation Demand Management

- As the proposed development is located in close proximity to the future Kichi Zībī Mīkan and Westboro LRT stations and the development will provide a suite of TDM measures, the development is anticipated to meet the target TOD modal shares.

- Should the development only meet the Ottawa West modal shares, the additional traffic may increase congestion slightly along Roosevelt Avenue and Wilmont Avenue, the roads are anticipated to operate within acceptable thresholds for local roads.
- The following measures will be implemented upon opening of the proposed development:
  - Designate internal coordinator.
  - Display local maps with walking/cycling access routes and key destinations,
  - Display relevant transit schedules and route maps,
  - Offer Presto card preloaded with a one-month transit pass per residence upon first move-in,
  - Unbundle parking from monthly rent, and
  - Provide multi-modal travel option information package to new residents.

Transit

- The proposed development is anticipated to generate 76 transit trips (24 IN and 52 OUT) in the AM peak and 73 transit trips (42 IN and 31 OUT) in the PM peak.
- In the AM peak the number of transit trip is just one trip higher than the set threshold for the requirement of transit capacity analysis.
- The LRT Line 1 and Line 3 area anticipated to be inaugurated before the subject site's horizon year. These LRT lines are anticipated to meet the capacity needed by the subject site's transit trips during the peak hours.

NOVATECH

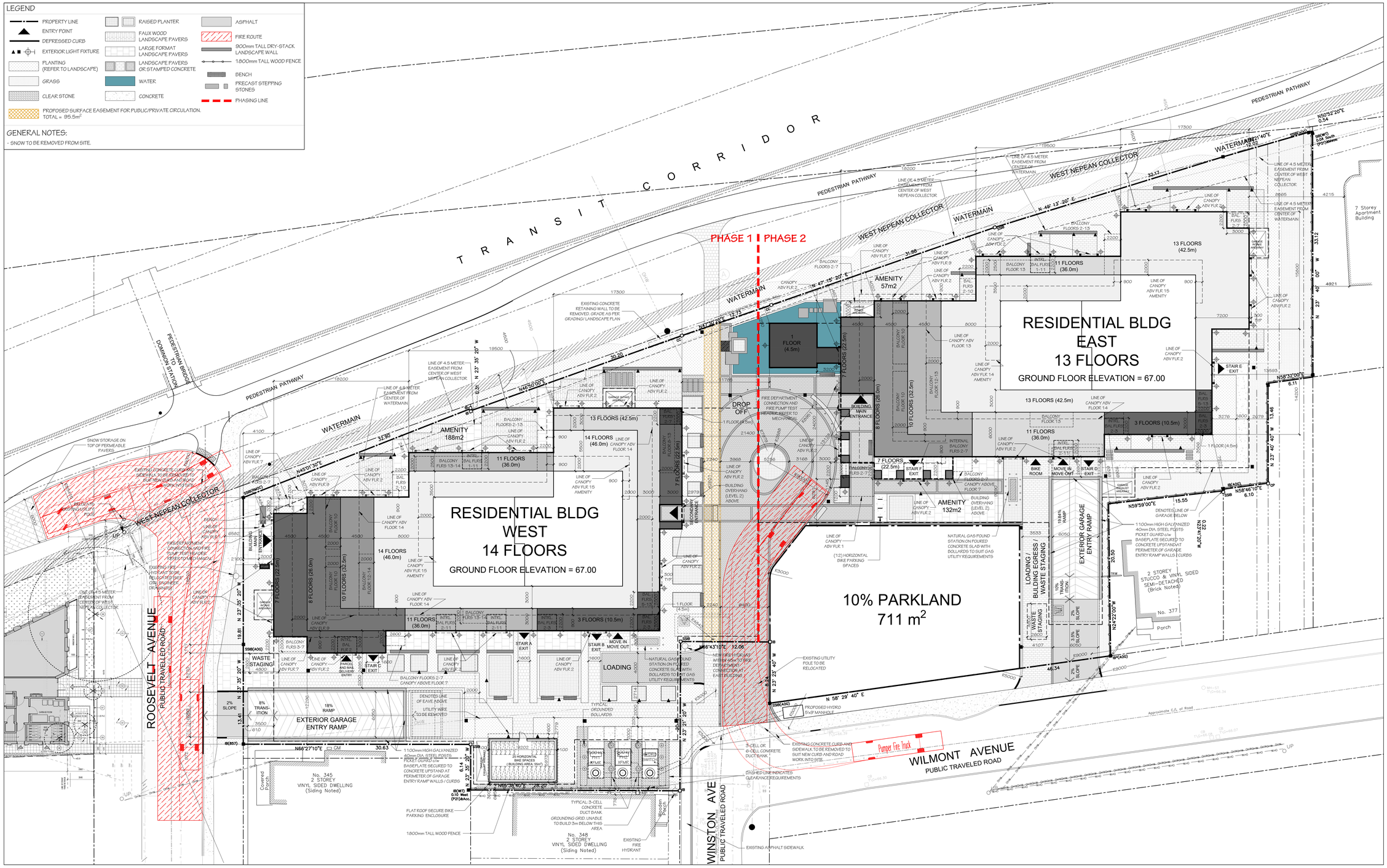
Prepared by:

Mohammed Talha, M. Eng.
Engineering Intern | Transportation

Reviewed by:

Brad Byvelds, P.Eng.
Senior Project Manager | Transportation

Appendix A
Site Plan



LEGEND

PROPERTY LINE	RAISED PLANTER	ASPHALT
▲ ENTRY POINT	FAUX WOOD LANDSCAPE PAVERS	▨ FIRE ROUTE
DEPRESSED CURB	LARGE FORMAT LANDSCAPE PAVERS	900mm TALL DRY-STACK LANDSCAPE WALL
▲ ■ ⌖ EXTERIOR LIGHT FIXTURE	LANDSCAPE PAVERS OR STAMPED CONCRETE	1800mm TALL WOOD FENCE
PLANTING (REFER TO LANDSCAPE)		BENCH
GRASS	WATER	PRECAST STEPPING STONES
CLEAR STONE	CONCRETE	PHASING LINE

PROPOSED SURFACE EASEMENT FOR PUBLIC/PRIVATE CIRCULATION. TOTAL = 95.5m²

GENERAL NOTES:

- SNOW TO BE REMOVED FROM SITE.

SURVEY INFORMATION TAKEN FROM:

TOPOGRAPHIC PLAN OF SURVEY OF
LOT 38, REGISTERED PLAN 114, LOTS 14 AND 15 (West Winston Avenue)
LOTS 21 & 22 AND PART OF LOT 20 (East Winston Avenue),
LOTS 17 AND 18 (West Moira Avenue),
PART OF WINSTON AVENUE (Closed by By-Law 44-79 Inst. NS45831),
PART OF MOIRA AVENUE (Closed By Judge's Order Inst. NS150801)
REGISTERED PLAN 179
CITY OF OTTAWA

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.

SITE SUMMARY:

ZONING: R5B [2772] S454

* REFER TO BY-LAW NUMBER 2024-490

PROPOSED USE:
- RESIDENTIAL RENTAL APARTMENT BUILDINGS
- PHASE 1 WEST BUILDING = 14 RESIDENTIAL FLOORS
- PHASE 2 EAST BUILDING = 13 RESIDENTIAL FLOORS
- 3 LEVELS UNDERGROUND PARKING GARAGE BELOW PHASE 1 BUILDING AND 4 BELOW PHASE 2 BUILDING
- ROOF TOP AMENITY PHASE 1 AND PHASE 2 BUILDINGS
- PHASE 1 ACCESSORY BUILDING (BIKE ENCLOSURE)

SITE AREA: 7,112 m²
- 711 m² (10% PARKLAND)

TOTAL = 6,401 m² (PHASE 1 AND PHASE 2)

BUILDING FOOTPRINT AND COVERAGE PHASE 1 & 2: (VALUES ABOVE GRADE)	PROPOSED
TOTAL SITE COVERAGE - PHASE 1 AND PHASE 2 =	41.8%
BUILDING FOOTPRINT - PHASE 1 WEST BUILDING:	1,284 m²
BUILDING FOOTPRINT - PHASE 1 ACCESSORY BUILDING:	55 m²
BUILDING FOOTPRINT - PHASE 2 EAST BUILDING:	1,336 m²
TOTAL FOOTPRINT - PHASE 1 AND PHASE 2 =	2,675 m²

LANDSCAPE OPEN SPACE PHASE 1 & 2:	PROPOSED
SOFT LANDSCAPING:	1,198 m² (18.7 %)
HARD LANDSCAPING:	1,787 m² (27.9 %)
ARCHITECTURAL ELEMENTS:	413 m² (6.5 %)
TOTAL LANDSCAPE OPEN SPACE =	3,398 m² (53.1%)

BUILDING GFA ZONING: PHASE 1 & 2	PROPOSED
GFA PHASE 1 WEST BUILDING =	15,446 m²
GFA PHASE 2 EAST BUILDING =	15,814 m²
TOTAL GFA PHASE 1 AND PHASE 2 =	31,260 m²

RESIDENTIAL UNITS: PHASE 1 & 2	PROPOSED
PHASE 1 WEST BUILDING =	152 UNITS
PHASE 2 EAST BUILDING =	160 UNITS

BUILDING HEIGHTS: PHASE 1 & 2

MAXIMUM BUILDING HEIGHTS AS PER URBAN EXCEPTIONS AND ZONING SCHEDULE

A ROOFTOP INDOOR AMENITY SPACE IS PERMITTED TO PROJECT ABOVE THE MAXIMUM BUILDING HEIGHT FOR A MAXIMUM OF 4.5 M

REQUIRED SETBACKS: PHASE 1 & 2

MINIMUM SETBACKS AS PER URBAN EXCEPTIONS AND ZONING SCHEDULE

ACCESSORY BUILDING	REQUIRED	PROVIDED
INTERIOR SIDE YARD SETBACK:	0.6m MIN	0.69m
BUILDING HEIGHT:	3.6m MAX	3.108m
EXTERIOR WALL HEIGHT:	3.2m MAX	3.142m
BUILDING AREA:	55m² MAX	55m²

PHASE 1 WEST BUILDING: PARKING AND AMENITY AREA SUMMARY:

VEHICLE PARKING	REQUIRED	PROVIDED
RESIDENTIAL PARKING = 152 UNITS (- 12 UNITS) (X 0.5)	70	134
VISITOR PARKING = 152 UNITS (- 12 UNITS) (X 0.1)	14	14
TOTAL PHASE 1 =	84	148

VEHICLE PARKING DISTRIBUTION:
PARKING LEVEL P1 = 44
PARKING LEVEL P2 = 51
PARKING LEVEL P3 = 53

BICYCLE PARKING	REQUIRED	PROVIDED
BICYCLE PARKING = MINIMUM BICYCLE PARKING RATE: ONE PER DWELLING UNIT.	152	191

BICYCLE PARKING DISTRIBUTION:
INTERIOR = 166
EXTERIOR = 25
STACKED BICYCLE PARKING SYSTEM: DERO-DECKER

BICYCLE PARKING TYPE:
HORIZONTALLY STACKED = 150 (75 'AT GRND LVL')
HORIZONTAL = 33
VERTICAL = 8
HORIZONTAL SPACES 'AT GRND LVL' = 108 (S.111(11))

AMENITY AREA	REQUIRED	PROVIDED
TOTAL AMENITY AREA = 152 UNITS X 6 m² / UNIT	912 m²	2,335 m²
COMMUNAL AMENITY AREA = MIN. 50% OF REQ'D TOTAL AMENITY AREA	456 m²	1,176 m²

URBAN EXCEPTIONS 2772
ROOFTOP INDOOR AMENITY SPACE IS PERMITTED TO A MAXIMUM AREA OF 150 m²

PHASE 1 WEST BUILDING WASTE REQUIREMENTS

TYPE	REQUIRED	PROVIDED
COMPACTED GARBAGE	(152 UNITS x 0.053) = 9 YRDS	12 YRDS
FIBRE	(152 UNITS x 0.038) = 6 YRDS	9 YRDS
GMP	(152 UNITS x 0.018) = 3 YRDS	6 YRDS
ORGANICS	(1 240L CART / 50 UNITS) = 4 CARTS	4 CARTS

PHASE 2 EAST BUILDING: PARKING AND AMENITY AREA SUMMARY:

VEHICLE PARKING	REQUIRED	PROVIDED
RESIDENTIAL PARKING = 160 UNITS (- 12 UNITS) (X 0.5)	74	116
VISITOR PARKING = 160 UNITS (- 12 UNITS) (X 0.1)	15	15
TOTAL PHASE 2 =	89	131

VEHICLE PARKING DISTRIBUTION:
PARKING LEVEL P1 = 26
PARKING LEVEL P2 = 37
PARKING LEVEL P3 = 38
PARKING LEVEL P4 = 30

BICYCLE PARKING	REQUIRED	PROVIDED
BICYCLE PARKING = MINIMUM BICYCLE PARKING RATE: ONE PER DWELLING UNIT.	160	256

BICYCLE PARKING DISTRIBUTION:
INTERIOR = 250
EXTERIOR = 6
STACKED BICYCLE PARKING SYSTEM: DERO-DECKER

BICYCLE PARKING TYPE:
HORIZONTALLY STACKED = 182 (75 'AT GRND LVL")
HORIZONTAL = 6
VERTICAL = 68
HORIZONTAL SPACES 'AT GRND LVL' = 81 (S.111(11))

AMENITY AREA	REQUIRED	PROVIDED
TOTAL AMENITY AREA = 160 UNITS X 6 m² / UNIT	960 m²	1,828 m²
COMMUNAL AMENITY AREA = MIN. 50% OF REQ'D TOTAL AMENITY AREA	480 m²	803 m²

URBAN EXCEPTIONS 2772
ROOFTOP INDOOR AMENITY SPACE IS PERMITTED TO A MAXIMUM AREA OF 150 m²

PHASE 2 EAST BUILDING WASTE REQUIREMENTS

TYPE	REQUIRED	PROVIDED
COMPACTED GARBAGE	(160 UNITS x 0.053) = 9 YRDS	12 YRDS
FIBRE	(160 UNITS x 0.038) = 7 YRDS	9 YRDS
GMP	(160 UNITS x 0.018) = 3 YRDS	6 YRDS
ORGANICS	(1 240L CART / 50 UNITS) = 4 CARTS	4 CARTS

PHASE 1 WEST BUILDING SUMMARY:

LEVEL	GROSS AREA	NET AREA
UPPER MECHANICAL	212 m²	0 m²
MECHANICAL & ROOF AMENITY	338 m²	0 m²
LEVEL 14	702 m²	598 m²
LEVEL 13	811 m²	702 m²
LEVEL 12	811 m²	702 m²
LEVEL 11	896 m²	777 m²
LEVEL 10	963 m²	845 m²
LEVEL 9	963 m²	845 m²
LEVEL 8	1,070 m²	919 m²
LEVEL 7	1,219 m²	1,062 m²
LEVEL 6	1,219 m²	1,062 m²
LEVEL 5	1,219 m²	1,062 m²
LEVEL 4	1,219 m²	1,062 m²
LEVEL 3	1,263 m²	1,106 m²
LEVEL 2	1,257 m²	1,058 m²
LEVEL 1 GROUND	1,284 m²	223 m²
TOTAL ABOVE GRADE =	15,446 m²	12,022 m²
PARKING LEVEL P1	2,533 m²	0 m²
PARKING LEVEL P2	2,533 m²	0 m²
PARKING LEVEL P3	2,533 m²	0 m²
TOTAL BELOW GRADE =	7,599 m²	0 m²
TOTAL ABOVE AND BELOW GRADE =	23,045 m²	12,022 m²

PHASE 2 EAST BUILDING SUMMARY:

LEVEL	GROSS AREA	NET AREA
UPPER MECHANICAL	212 m²	0 m²
MECHANICAL & ROOF AMENITY	338 m²	0 m²
LEVEL 13	836 m²	728 m²
LEVEL 12	836 m²	728 m²
LEVEL 11	980 m²	854 m²
LEVEL 10	1,074 m²	947 m²
LEVEL 9	1,074 m²	947 m²
LEVEL 8	1,195 m²	1,021 m²
LEVEL 7	1,311 m²	1,137 m²
LEVEL 6	1,311 m²	1,137 m²
LEVEL 5	1,311 m²	1,137 m²
LEVEL 4	1,311 m²	1,137 m²
LEVEL 3	1,343 m²	1,168 m²
LEVEL 2	1,343 m²	1,168 m²
LEVEL 1 GROUND	1,336 m²	586 m²
TOTAL ABOVE GRADE =	15,814 m²	12,694 m²
PARKING LEVEL P1	2,245 m²	0 m²
PARKING LEVEL P2	2,245 m²	0 m²
PARKING LEVEL P3	2,245 m²	0 m²
PARKING LEVEL P4	1,841 m²	0 m²
TOTAL BELOW GRADE =	8,576 m²	0 m²
TOTAL ABOVE AND BELOW GRADE =	24,390 m²	12,694 m²

PROJECT CONSULTANTS:

ARCHITECT
HOBIN ARCHITECTURE INC.
63 PAMILLA STREET,
OTTAWA, ON K1S 3K7

CONTACT:
RHEAL LABELLE
TEL. 613-236-7200 X112

DEVELOPER
UNIFORM URBAN
DEVELOPMENTS
117 CENTREPOINTE DR. #300
OTTAWA, ON K2G 5X3

CONTACT:
RYAN MACDOUGALL
TEL. xxx xxx-xxxx EXT. xxx

SITE SERVICES & GRADING
NOVATECH
240 MICHAEL COWPLAND DR.
OTTAWA, ON K2M 1P6

CONTACT:
MARK BISSET
TEL. 613 xxx-xxxx EXT. xxx

GEOTECHNICAL
PATERSON GROUP
613-226-7381,
OTTAWA, ON K2E 7T9

CONTACT:
DAVID GILBERT
TEL. 613 XXX XXXX EXT. XXX

LANDSCAPE ARCHITECT
NOVATECH
240 MICHAEL COWPLAND DR.,
OTTAWA, ON K2M 1P6

CONTACT:
SCOTT COVELL
613 254-9643 EXT. 303

GRAPHIC SCALE
0m 5m 10m 20m

LOCATION PLAN (NOT TO SCALE) :

no.	date	revision
11	2025-09-17	REISSUED FOR SPA
10	2025-09-10	ISSUED FOR COORDINATION
9	2025-08-29	ISSUED FOR COORDINATION
8	2025-08-26	ISSUED FOR REVIEW
7	2025-06-27	ISSUED FOR SPA
6	2025-06-27	ISSUED FOR COORDINATION
5	2025-06-20	ISSUED FOR REVIEW
4	2025-06-04	ISSUED FOR COORDINATION
3	2025-06-03	HYDRO COORDINATION
2	2025-05-08	ISSUED FOR COORDINATION
1	2025-02-21	ISSUED FOR COORDINATION

It is the responsibility of the appropriate contractor to check and verify all dimensions on site and report all errors and/or omissions to the architect.

All contractors must comply with all pertinent codes and by-laws.

Do not scale drawings.

This drawing may not be used for construction until signed.

ONTARIO ASSOCIATION OF ARCHITECTS
BARRY J. HOBIN
LICENCE
3049

uniform
URBAN DEVELOPMENTS
#300, 117 CENTREPOINTE DR, NEPEAN, ON, K2G 5X3

Hobin Architecture Incorporated
63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7
T: 613-238-7200
F: 613-235-2005
E: mail@hobinarc.com
hobinarc.com

HOBIN ARCHITECTURE

PROJECT/LOCATION:
335 ROOSEVELT
HIGHRISE RENTAL APARTMENTS
335 ROOSEVELT AVE, OTTAWA, ONTARIO

DRAWING TITLE:
SITE PLAN
PHASE 1 WEST BUILDING &
PHASE 2 EAST BUILDING

DRAWN BY: JD
DATE: SEP. 4, 2024
SCALE: 1:200
north arrow
PROJECT: 2315
DRAWING NO.: A-1.01
REVISION NO.:

#XX XXX

File No: D07-12-25-0097

None
None

Appendix B
TIA Screening Form

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	355 Roosevelt Avenue
Description of Location	East side and at Northern End of Roosevelt Ave
Land Use Classification	High-Rise Residential
Development Size (units)	312
Development Size square metre (m^2)	
Number of Accesses and Locations	One to Roosevelt Ave + One to Wilmont Ave
Phase of Development	Two
Buildout Year	2029 both phases

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.

Table notes:

1. Table 2, Table 3 & Table 4 TRANS Trip Generation Manual
2. Institute of Transportation Engineers (ITE) Trip Generation Manual 11.1 Ed.

Land Use Type	Minimum Development Size
Single-family homes	**60 units**
Multi-Use Family (Low-Rise)[1]	**90 units**
Multi-Use Family (High-Rise)[1]	**150 units**
Office[2]	**1,400 m^2**
Industrial[2]	**7,000 m^2**
Fast-food restaurant or coffee shop[2]	**110 m^2**
Destination retail[2]	**1,800 m^2**
Gas station or convenience market[2]	**90 m^2**

If the proposed development size is equal to or 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 Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	☐	☑
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?[2]	☐	☑

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 kilometers per hour (km/h) or greater?	☐	☑
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	☐	☑
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 metre [m] of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	☐	☑
Is the proposed driveway within auxiliary lanes of an intersection?	☐	☑
Does the proposed driveway make use of an existing median break that serves an existing site?	☐	☑

[2] Hubs are identified in Schedules B1 to B8 of the City of Ottawa Official Plan. PMTSAs are identified in Schedule C1 of the Official Plan. DPAs are identified in Schedule C7A and C7B of the Official. See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.

	Yes	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	☐	☑
Does the development include a drive-thru facility?	☐	☑

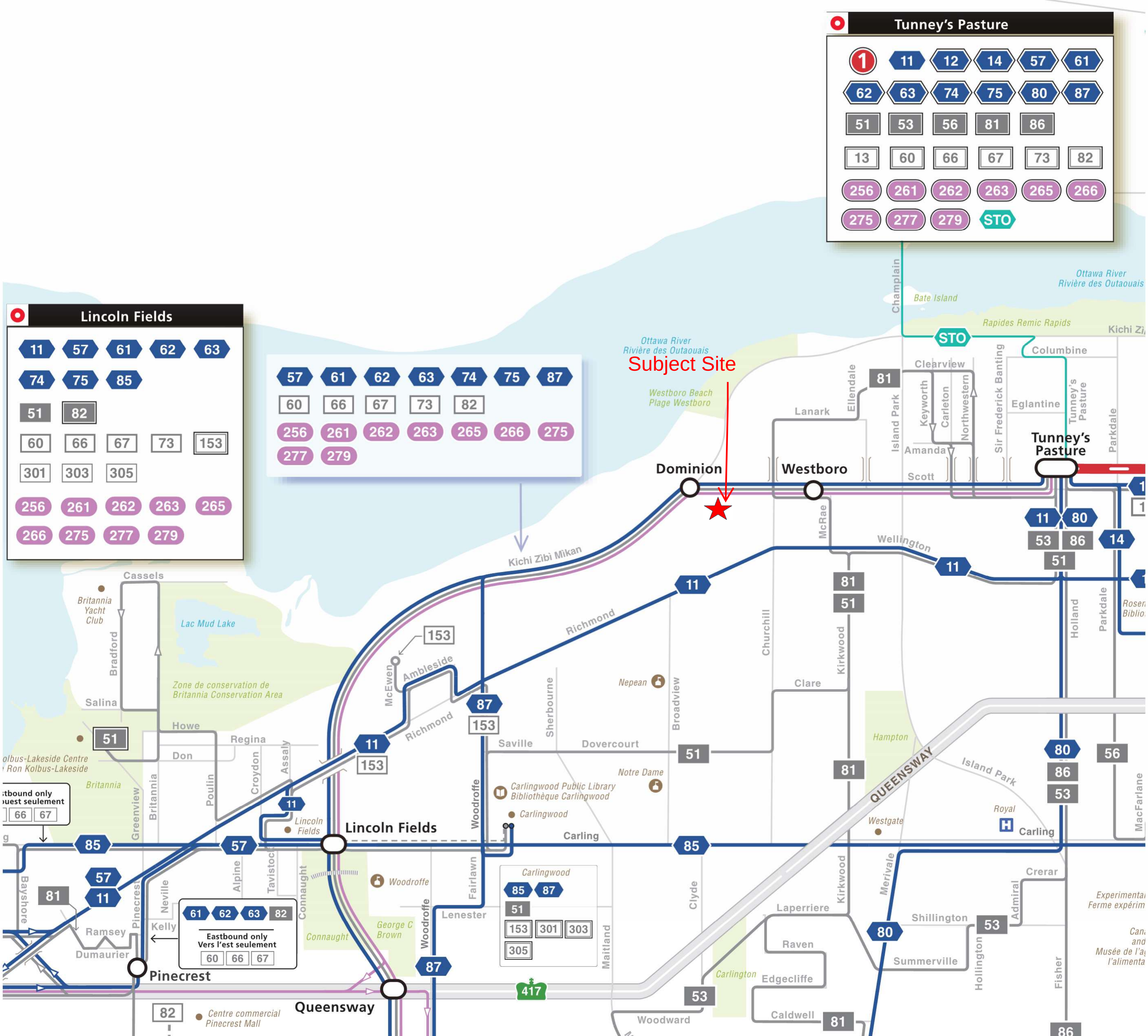
If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

5. Summary

Results of Screening	Yes	No
Does the development satisfy the Trip Generation Trigger?	☑	☐
Does the development satisfy the Location Trigger?	☐	☑
Does the development satisfy the Safety Trigger?	☐	☑

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

Appendix C
OC Transpo System Information


Tunney's Pasture
1 11 12 14 57 61
62 63 74 75 80 87
51 53 56 81 86
13 60 66 67 73 82
256 261 262 263 265 266
275 277 279 STO
Lincoln Fields
11 57 61 62 63
74 75 85
51 82
60 66 67 73 153
301 303 305
256 261 262 263 265
266 275 277 279
57 61 62 63 74 75 87
60 66 67 73 82
256 261 262 263 265 266 275
277 279
Subject Site
Ottawa River
Rivière des Outaouais
Westboro Beach
Plage Westboro
Bate Island
Rapides Remic Rapids
Dominion
Westboro
Tunney's Pasture
Kichi Zibi Mikan
Lincoln Fields
Pinecrest
Queensway
QUEENSWAY
Richmond
Wellington
Carling
Scott
Lanark
Clearview
Columbine
Eglantine
Amanda
Churchill
Kirkwood
McRae
Clare
Broadview
Sherbourne
Dovercourt
Saville
Woodroffe
Island Park
Holland
Parkdale
Fisher
Merivale
Laperriere
Raven
Summerville
Shillington
Crerar
Edgecliffe
Caldwell
Woodward
Cassels
Britannia Yacht Club
Lac Mud Lake
Zone de conservation de
Britannia Conservation Area
Salina
Howe
Regina
Don
Britannia
Carlingwood Public Library
Bibliothèque Carlingwood
Carlingwood
Notre Dame
Nepean
Westgate
Hampton
Royal
Connaught
George C Brown
Carlington
Centre commercial
Pinecrest Mall
Ramsey
Dumaurier
Kelly
Eastbound only
Vers l'est seulement
60 66 67
61 62 63 82
Carlingwood
85 87
51
153 301 303
305
417

57

Fréquent

CARLING CAMPUS
COMPLEXE CARLING
BAYSHORE

TUNNEY'S PASTURE

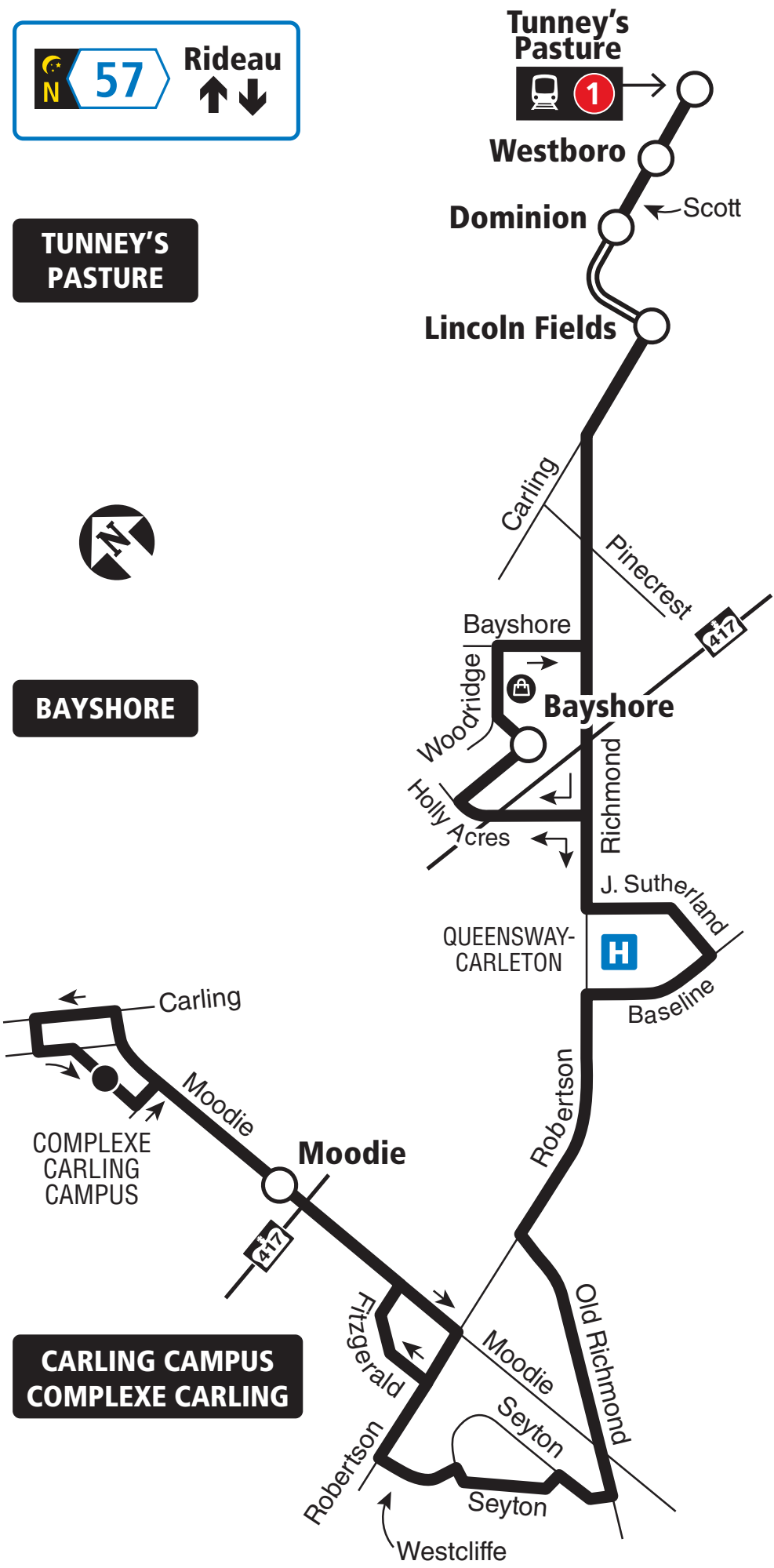
7 days a week / 7 jours par semaine

All day and limited overnight service
Service toute la journée et limité la nuit

TUNNEY'S PASTURE

BAYSHORE

CARLING CAMPUS
COMPLEXE CARLING



Transitway & Station

Shopping Centre / Centre commercial

04.2025

When O-Train Line 1 is not running overnight, Route 57 will be extended downtown to Rideau Station. / Lorsque la Ligne 1 de l'O-Train ne circule pas la nuit, le circuit 57 sera prolongée au centre-ville jusqu'à la station Rideau.

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

60

COPE

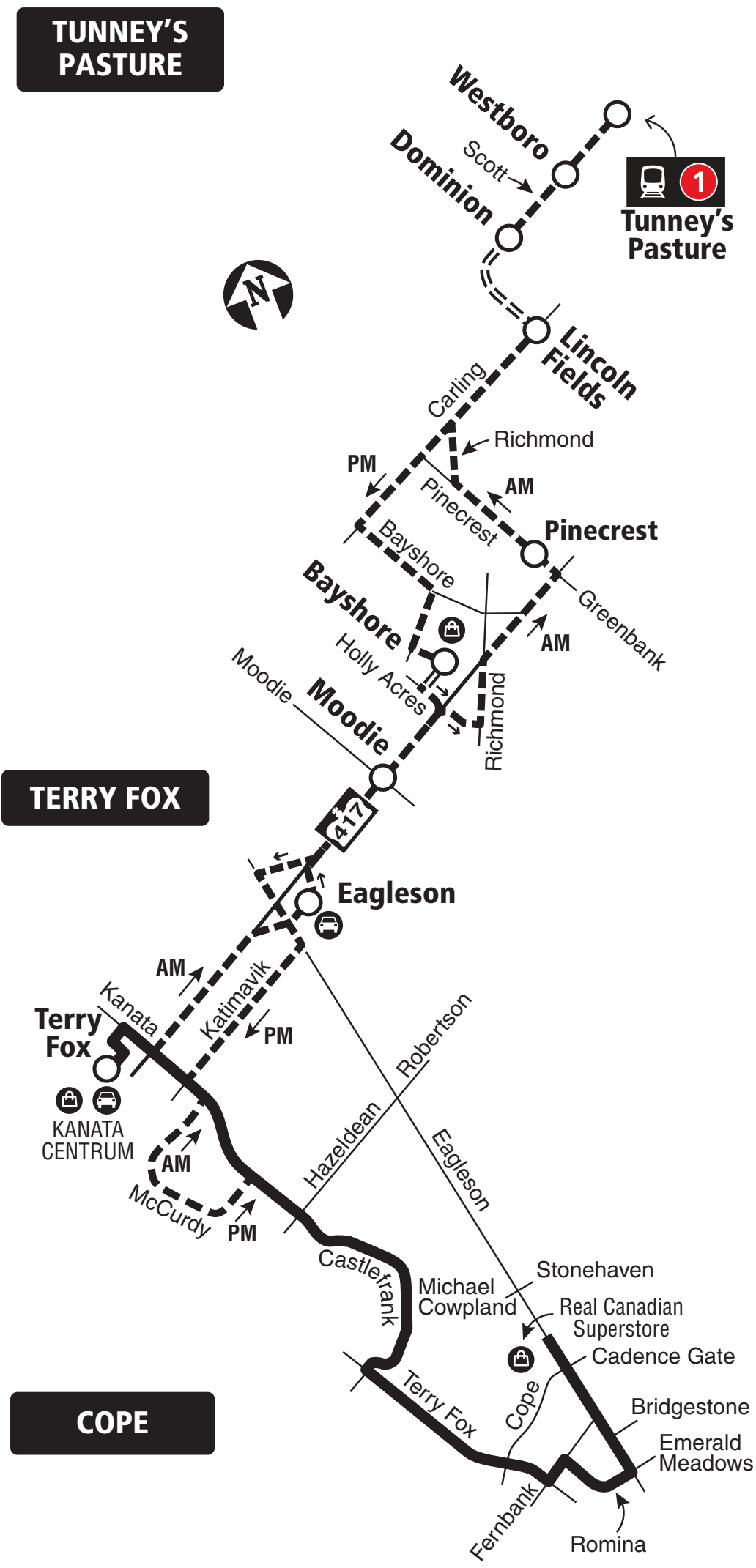
TERRY FOX
TUNNEY'S PASTURE

Local

Monday to Friday / Lundi au vendredi

All day service

Service toute la journée



04/2025

- Station
- Transitway
- Peak Periods Only / Périodes de pointe seulement
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

2025.04

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OC Transpo **octranspo.com**

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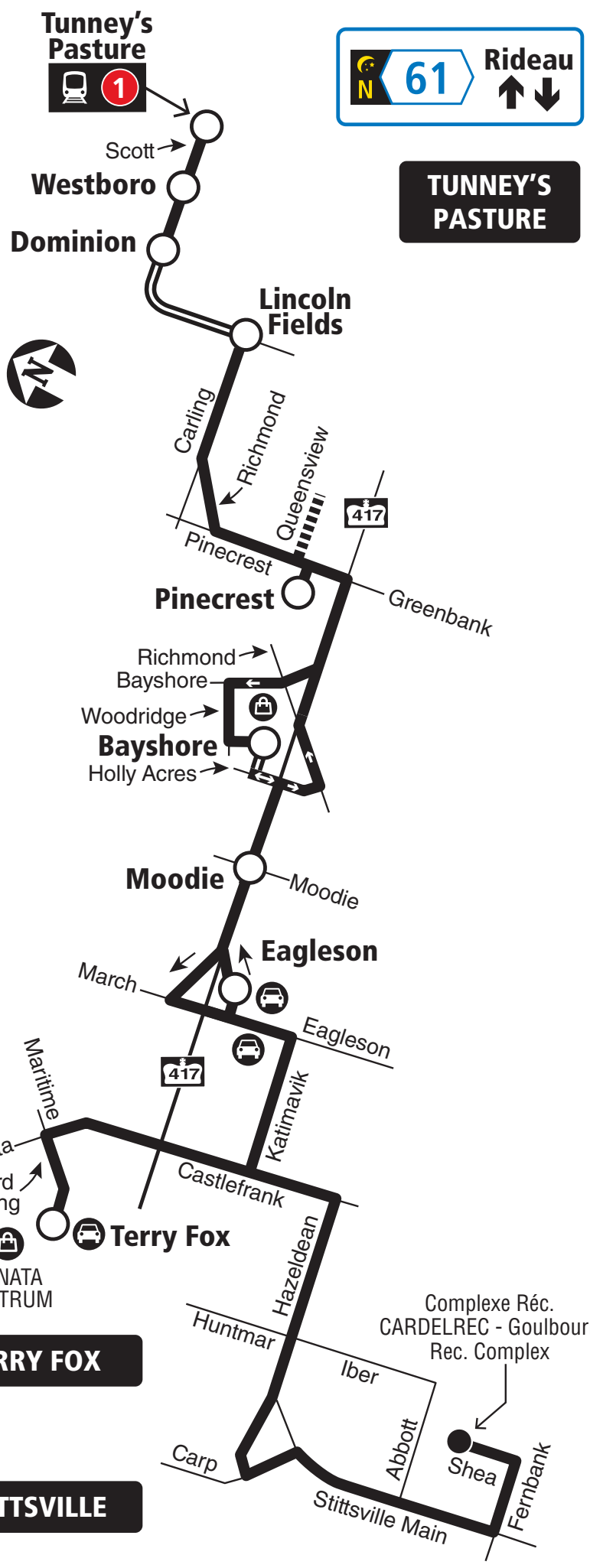
Fréquent

STITTSVILLE TERRY FOX
TUNNEY'S PASTURE

7 days a week / 7 jours par semaine

All day and limited overnight service
Service toute la journée et limité la nuit



05/2025

- Transitway & Station
- Selected time periods / Périodes sélectionnées
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

N 61 When O-Train Line 1 is not running overnight, Route 61 will be extended downtown to Rideau Station. / Lorsque la Ligne 1 de l'O-Train ne circule pas la nuit, le circuit 61 sera prolongée au centre-ville jusqu'à la station Rideau.

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

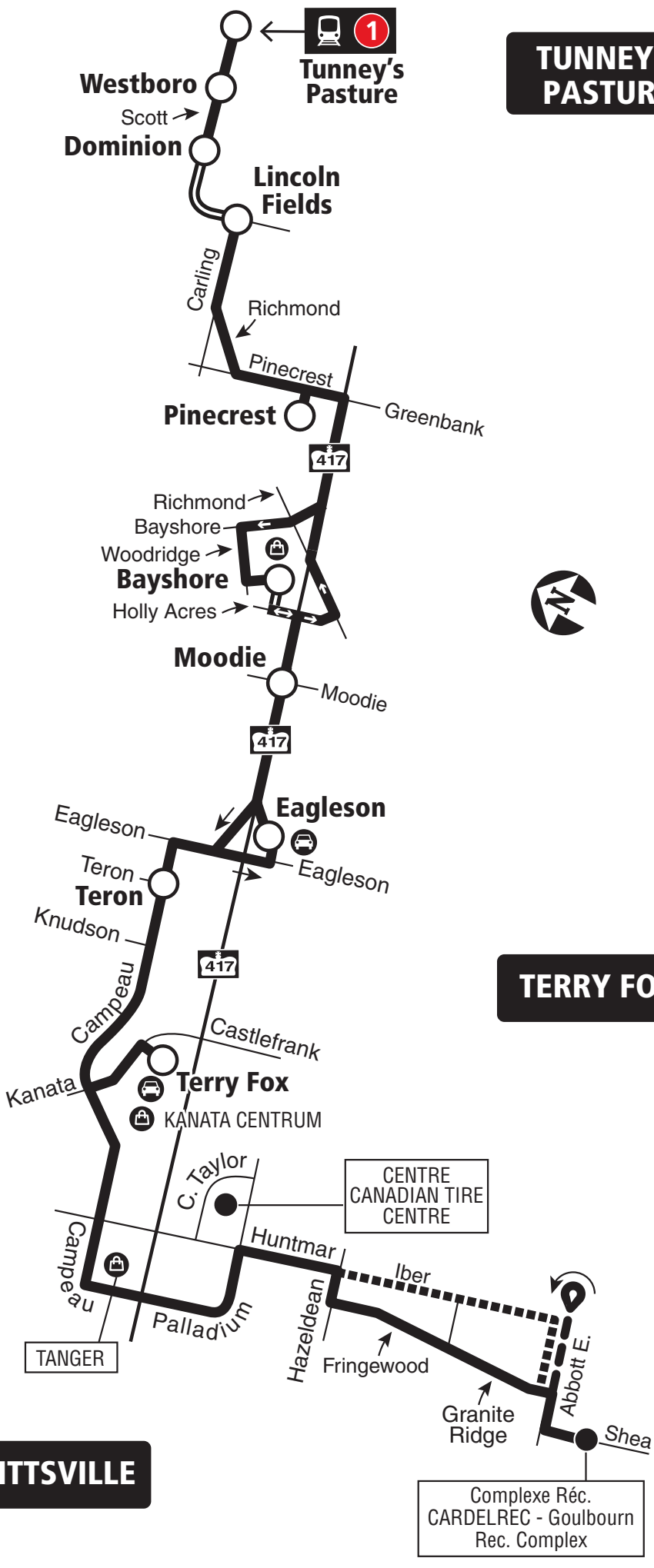
62

STITTSVILLE
TUNNEY'S PASTURE

Fréquent

7 days a week / 7 jours par semaine

All day service
Service toute la journée



04/2025

- Transitway & Station
- Weekday southbound trips before noon and weekday northbound trips between noon and 8 p.m. travel via Iber and Abbott E.
  Trajets en semaine vers le sud en avant midi et trajets en semaine vers le nord entre midi et 20 h via Iber et Abbott E.
- Saturday and Sunday / Samedi et dimanche
- Shopping Centre / Centre commercial
- Park & Ride / Parc relais

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

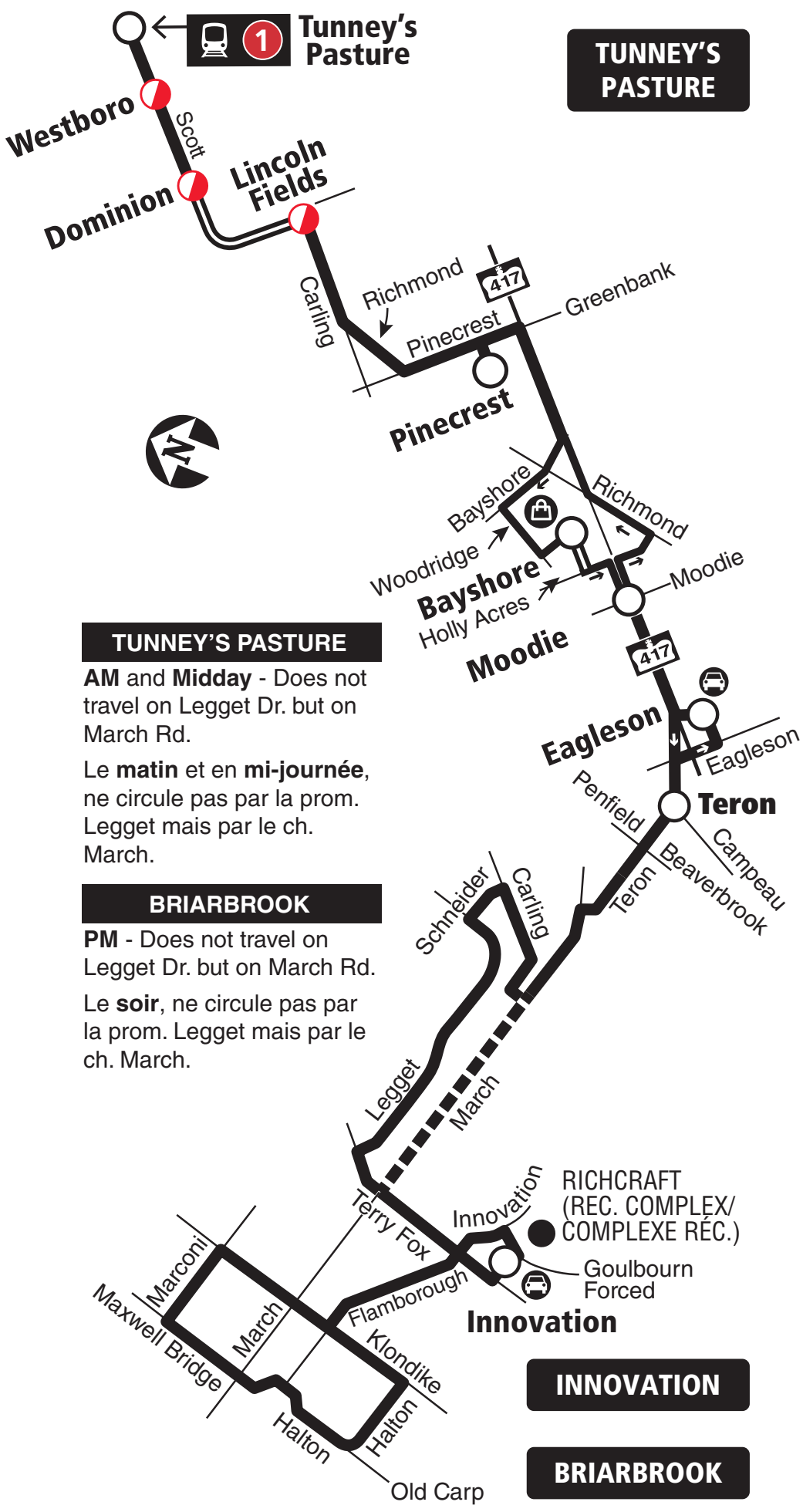
63

Fréquent

BRIARBROOK INNOVATION
TUNNEY'S PASTURE

7 days a week / 7 jours par semaine

All day and limited overnight service
Service toute la journée et limité la nuit



TUNNEY'S PASTURE

AM and **Midday** - Does not travel on Legget Dr. but on March Rd.

Le **matin** et en **mi-journée**, ne circule pas par la prom. Legget mais par le ch. March.

BRIARBROOK

PM - Does not travel on Legget Dr. but on March Rd.

Le **soir**, ne circule pas par la prom. Legget mais par le ch. March.

2024

- Transitway & Station
- Eastbound: AM Off only - Westbound: Full Service
  Vers l'est AM: Débarquement seulement
  Vers l'ouest: Service complet
- Some trips / Certains trajets
- Shopping Centre / Centre commercial
- Park & Ride / Parc relais

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

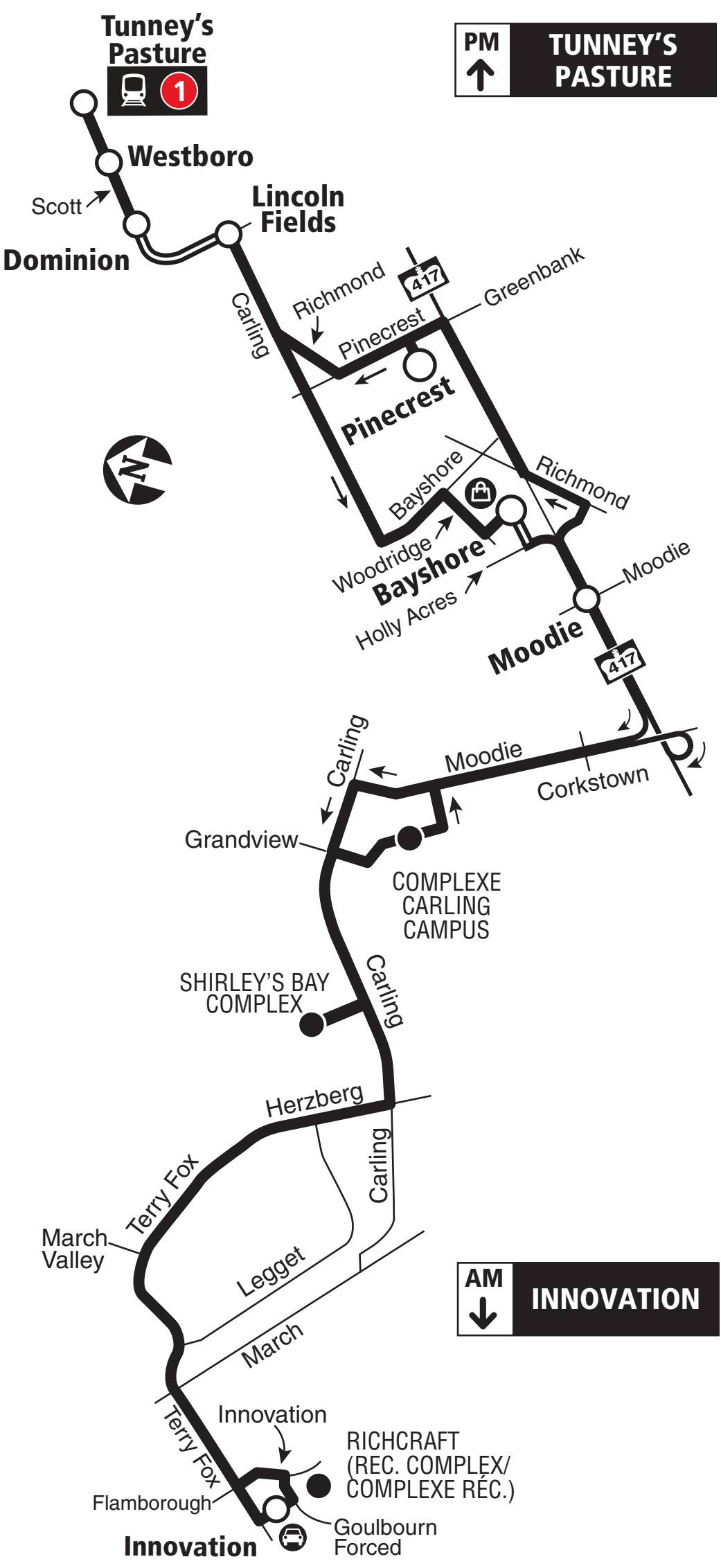
66

INNOVATION
TUNNEY'S PASTURE

Local

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



Transitway & Station

Shopping Centre / Centre commercial

Park & Ride / Parc relais

04/2025

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

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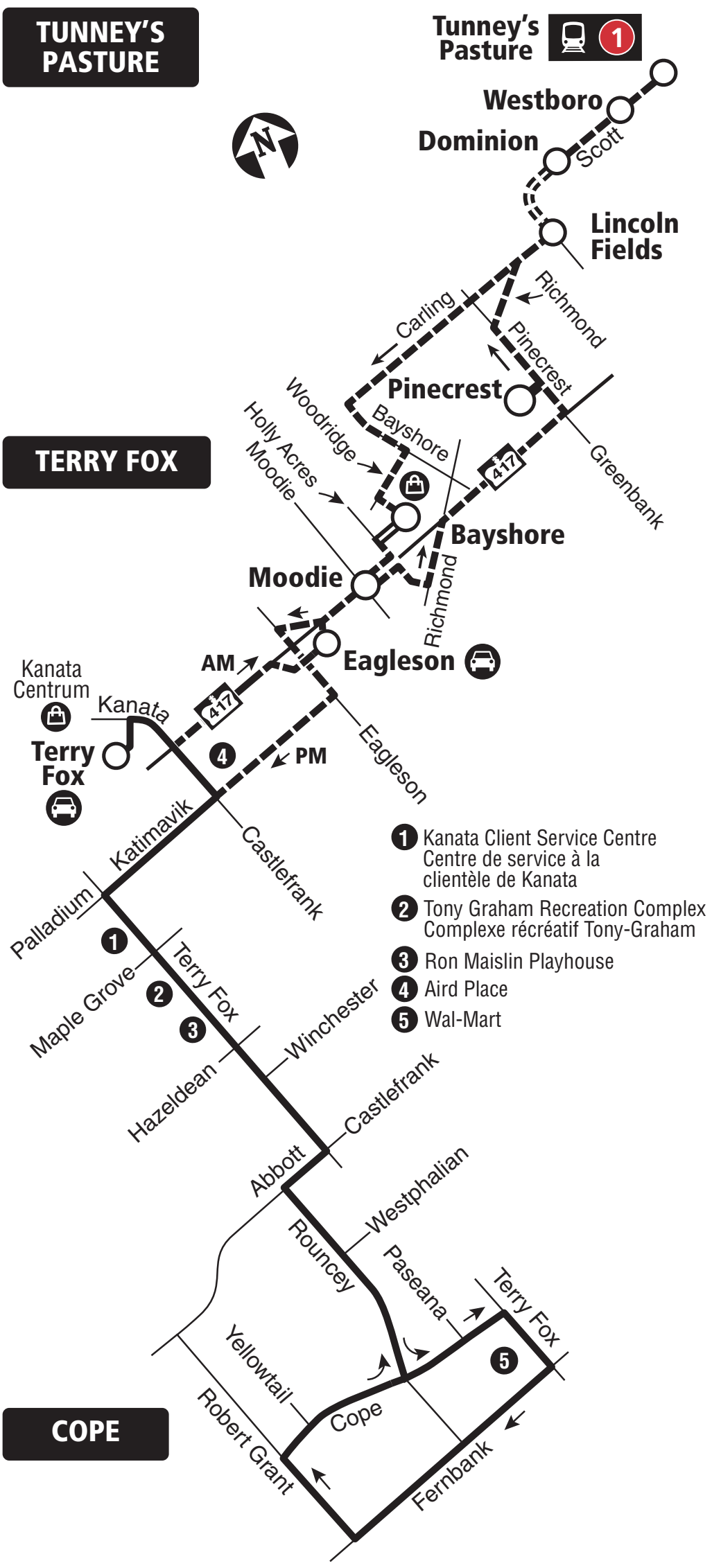
Local

COPE

TERRY FOX
TUNNEY'S PASTURE

7 days a week / 7 jours par semaine
All day service
Service toute la journée



2025.04

Transitway & Station

Peak Periods Only / Périodes de pointe seulement

Park & Ride / Parc relais

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

73

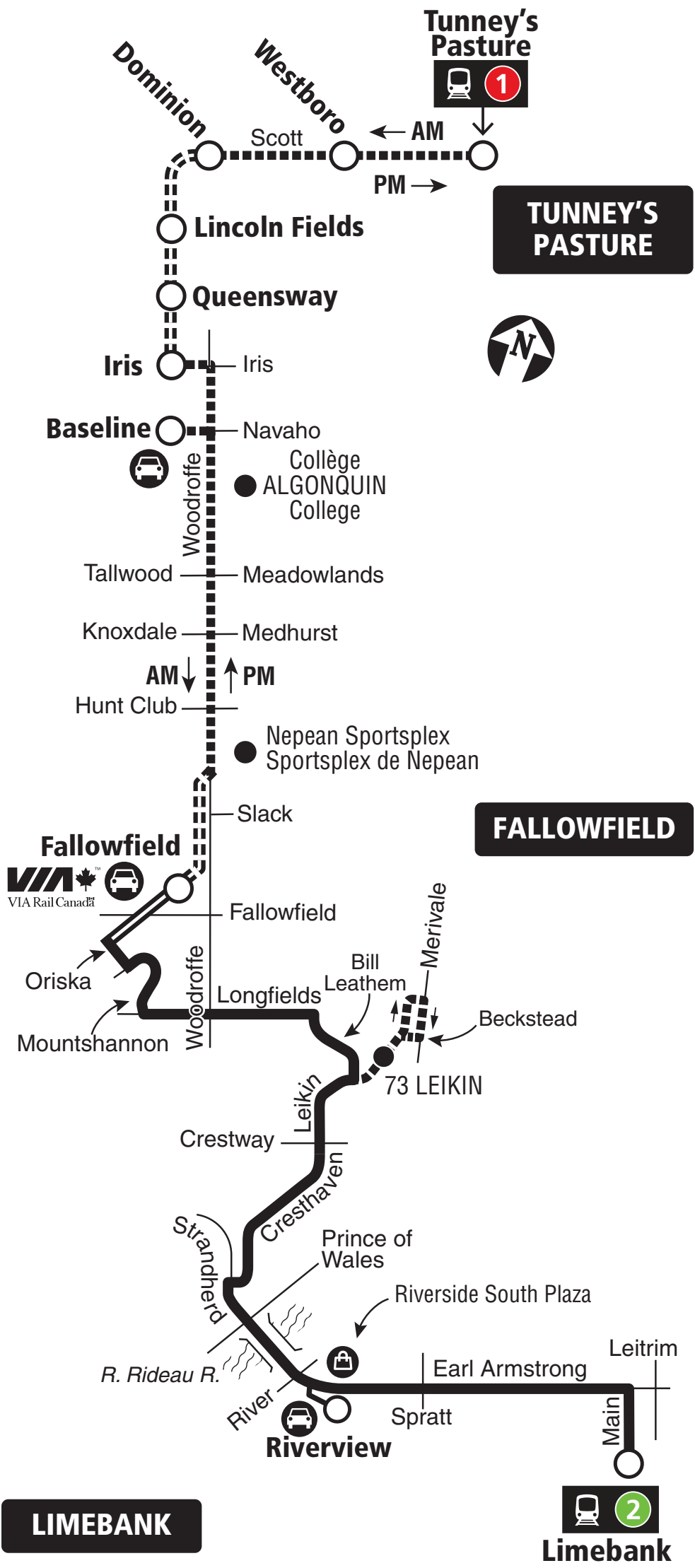
TUNNEY'S PASTURE
FALLOWFIELD
LIMEBANK

Local

Monday to Friday / Lundi au vendredi

All day service

Service toute la journée



04.2025

- Transitway & Station
- Peak Periods / Périodes de pointe
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

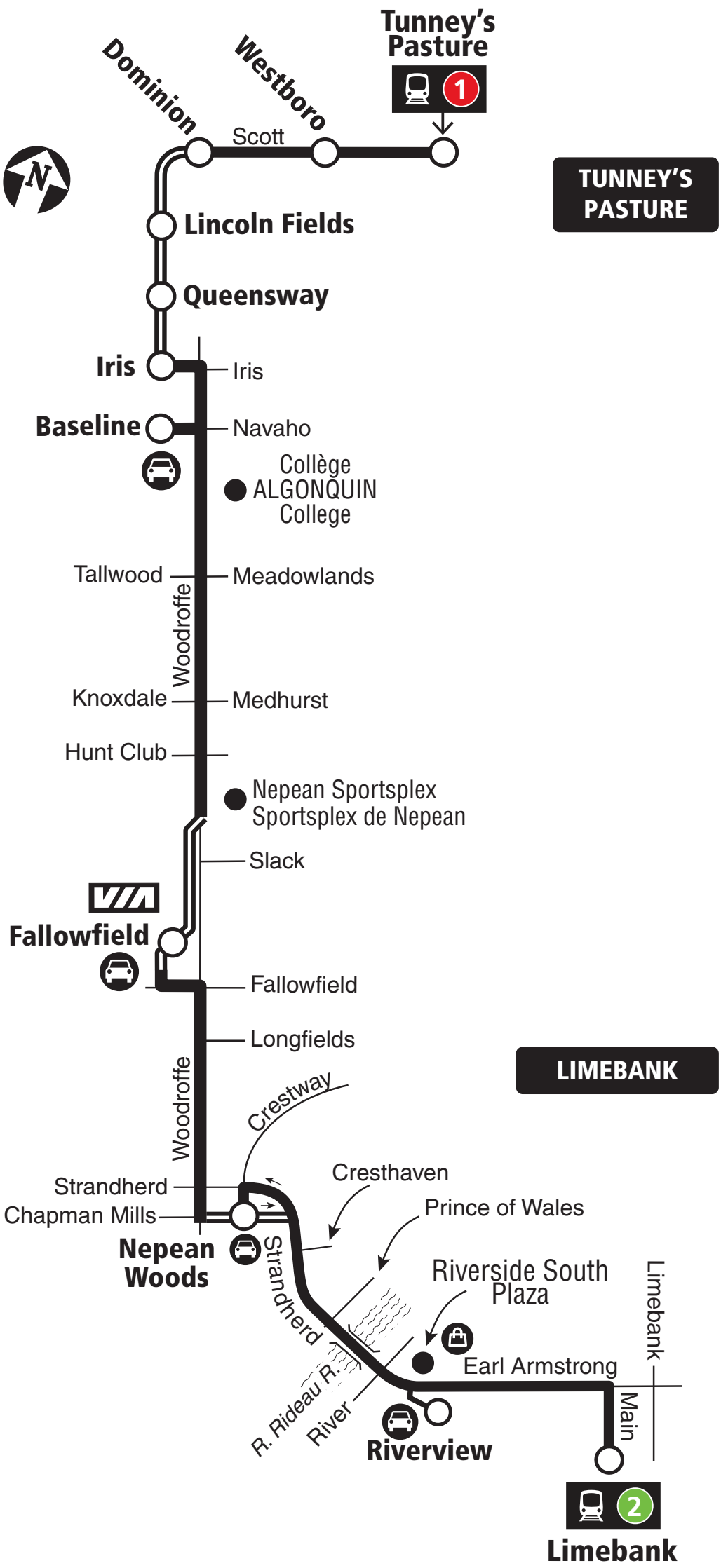
OC Transpo **octranspo.com**

74 Fréquent

TUNNEY'S PASTURE
LIMEBANK

7 days a week / 7 jours par semaine

All day service
Service toute la journée



04.2025

Transitway & Station

Park & Ride / Parc relais

Shopping Centre / Centre commercial

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

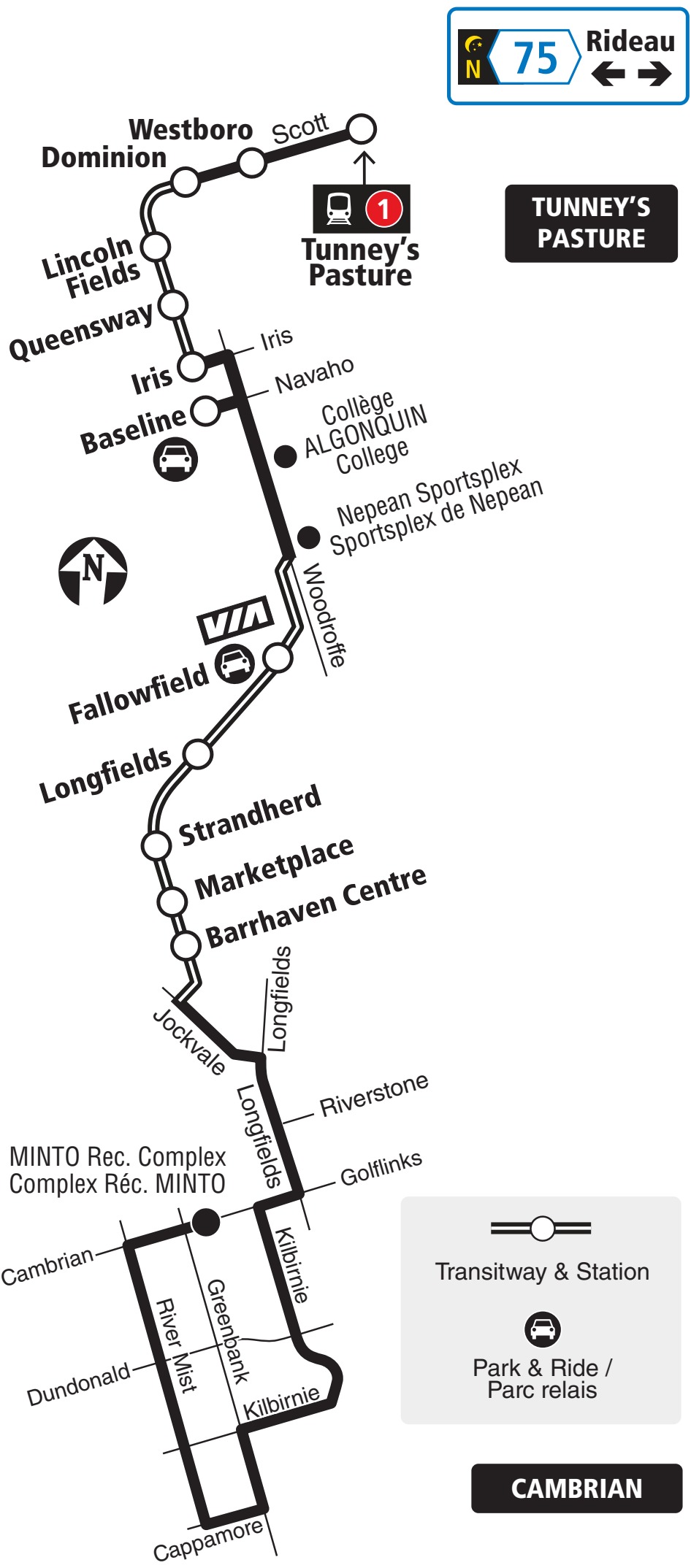
OC Transpo **octranspo.com**

75 Fréquent

CAMBRIAN
TUNNEY'S PASTURE

7 days a week / 7 jours par semaine

All day and overnight service
Service toute la journée et la nuit



04.2025

75 When O-Train Line 1 is not running overnight, Route 75 will be extended downtown to Rideau Station. / Lorsque la Ligne 1 de l'O-Train ne circule pas la nuit, le circuit 75 sera prolongée au centre-ville jusqu'à la station Rideau.

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

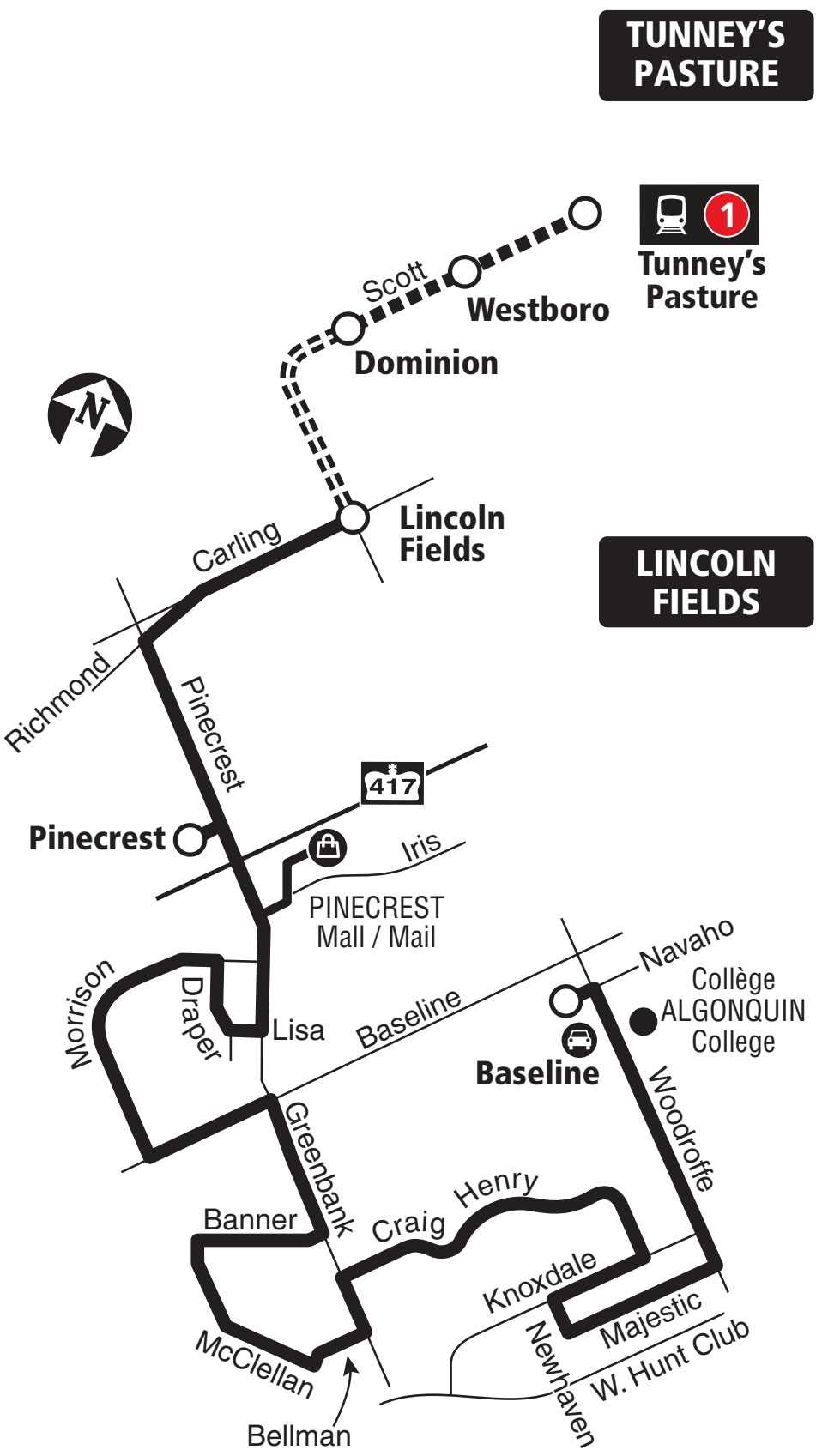
OC Transpo **octranspo.com**

82

TUNNEY'S PASTURE
LINCOLN FIELDS
BASELINE

Local

7 days a week / 7 jours par semaine
All day service
Service toute la journée



04/2025

==○==	Transitway & Station (Peak periods / périodes de pointe)
■■■■■■	Peak periods / périodes de pointe
	Park & Ride / Parc relais
	Shopping Centre / Centre commercial

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

87

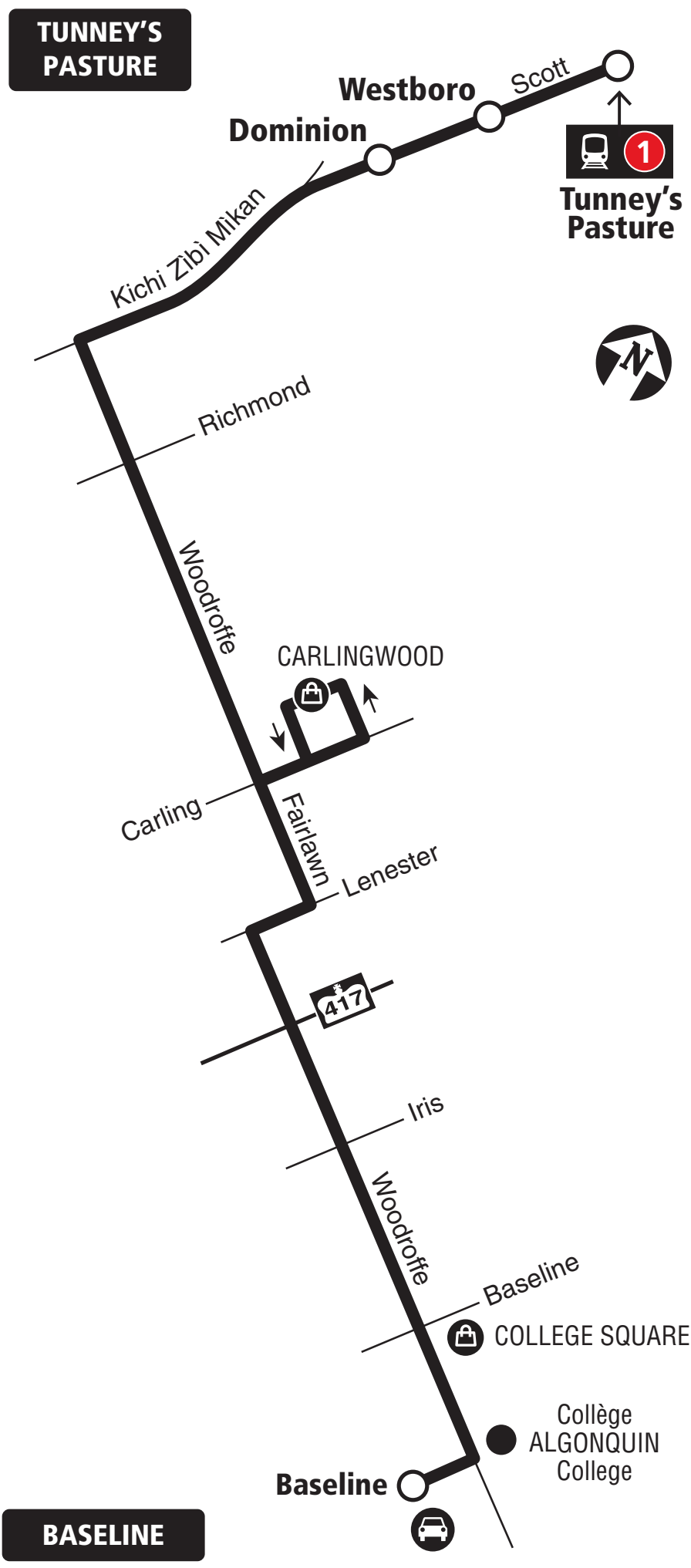
Fréquent

TUNNEY'S PASTURE
BASELINE

7 days a week / 7 jours par semaine

All day service

Service toute la journée



04.2025

Transitway & Station

Park & Ride / Parc relais

Shopping Centre / Centre commercial

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

Appendix D
Traffic Count Data

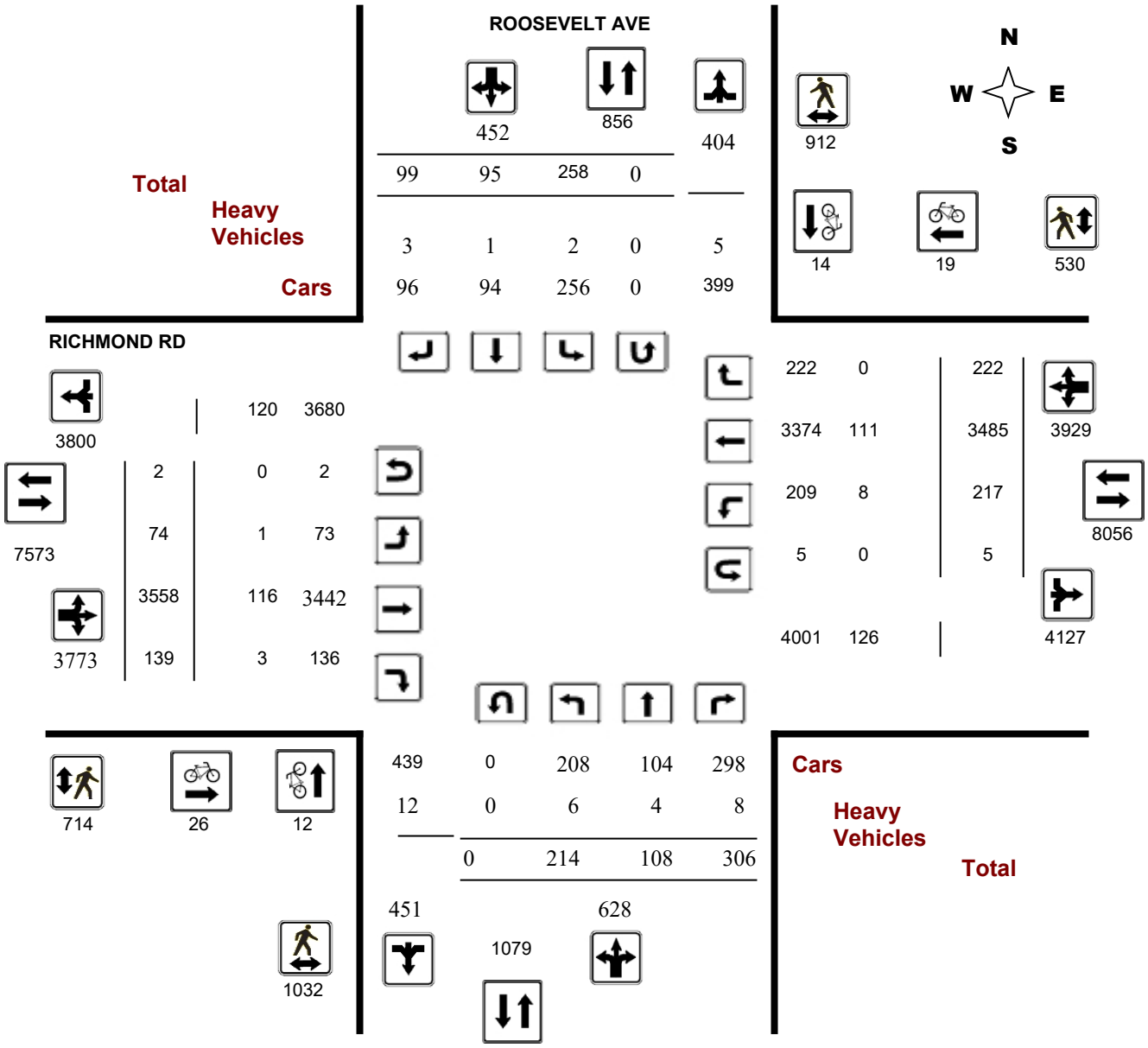
Transportation Services - Traffic Services

Turning Movement Count - Study Results

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020
Start Time: 07:00
WO No: 39385
Device: Miovision

Full Study Diagram



5472203 - THU JAN 23, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

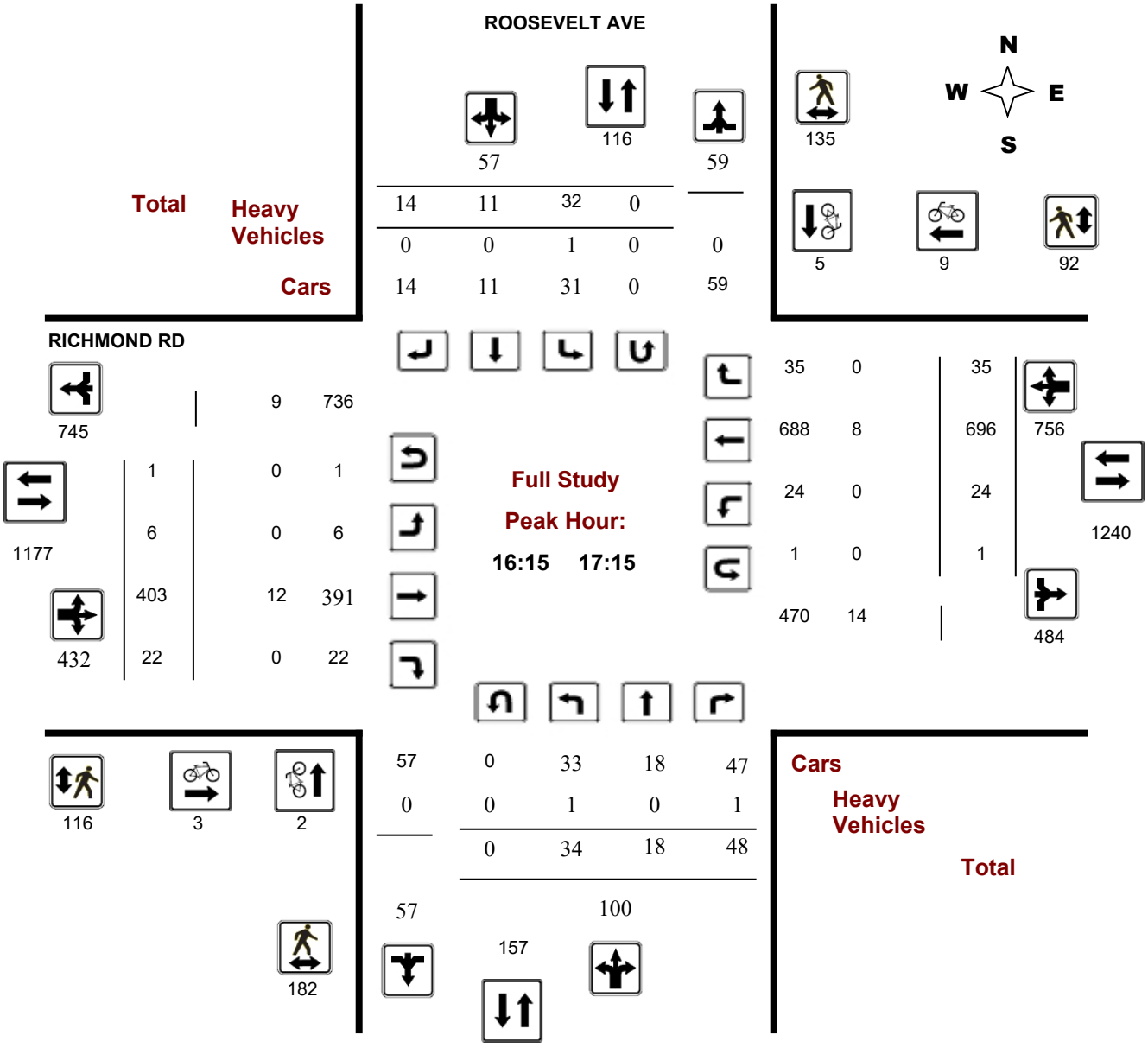
Turning Movement Count - Study Results

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39385

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

Full Study Peak Hour Diagram



5472203 - THU JAN 23, 2020 - 8HRS - LORETTA

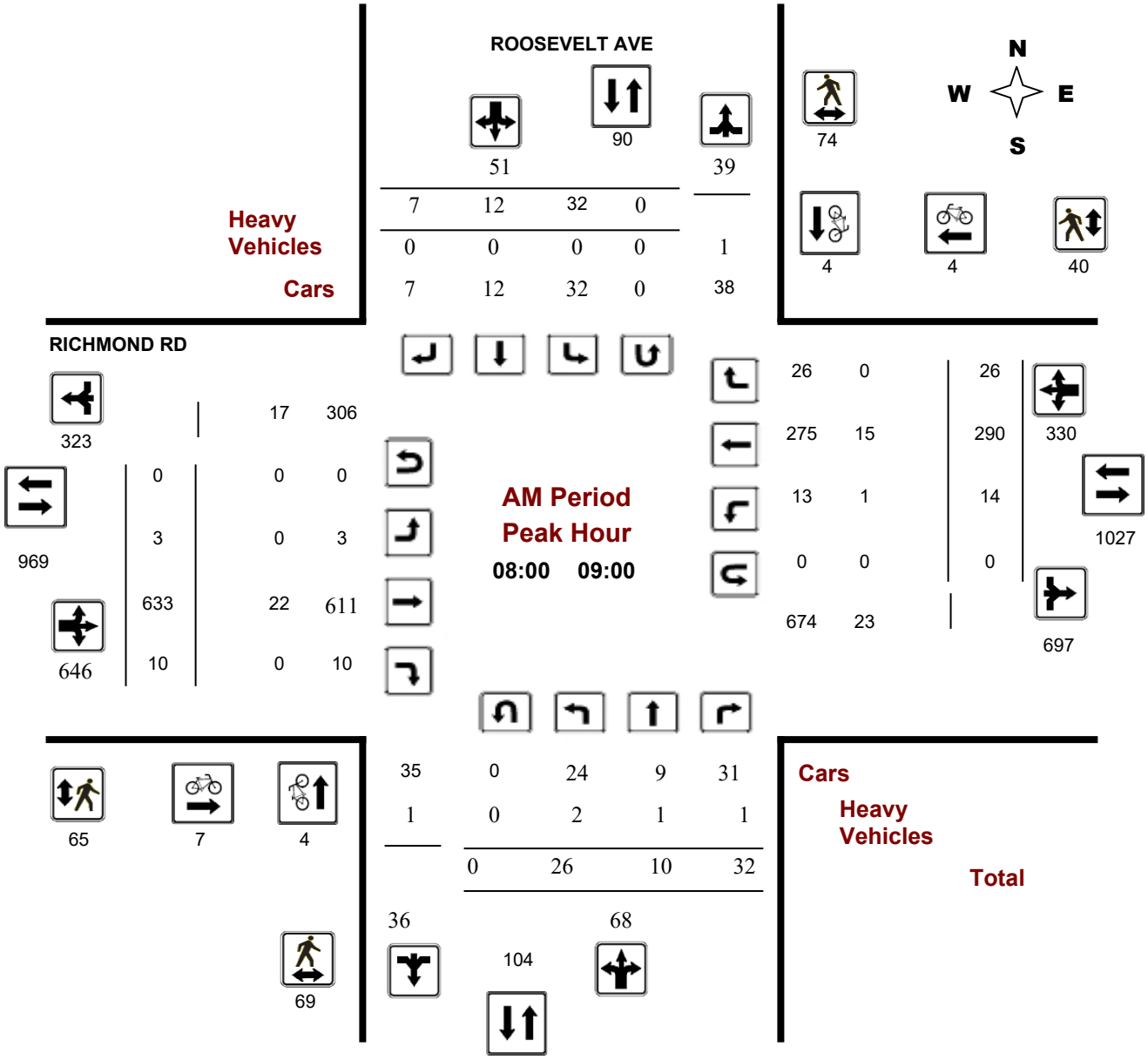
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39385

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



Comments 5472203 - THU JAN 23, 2020 - 8HRS - LORETTA

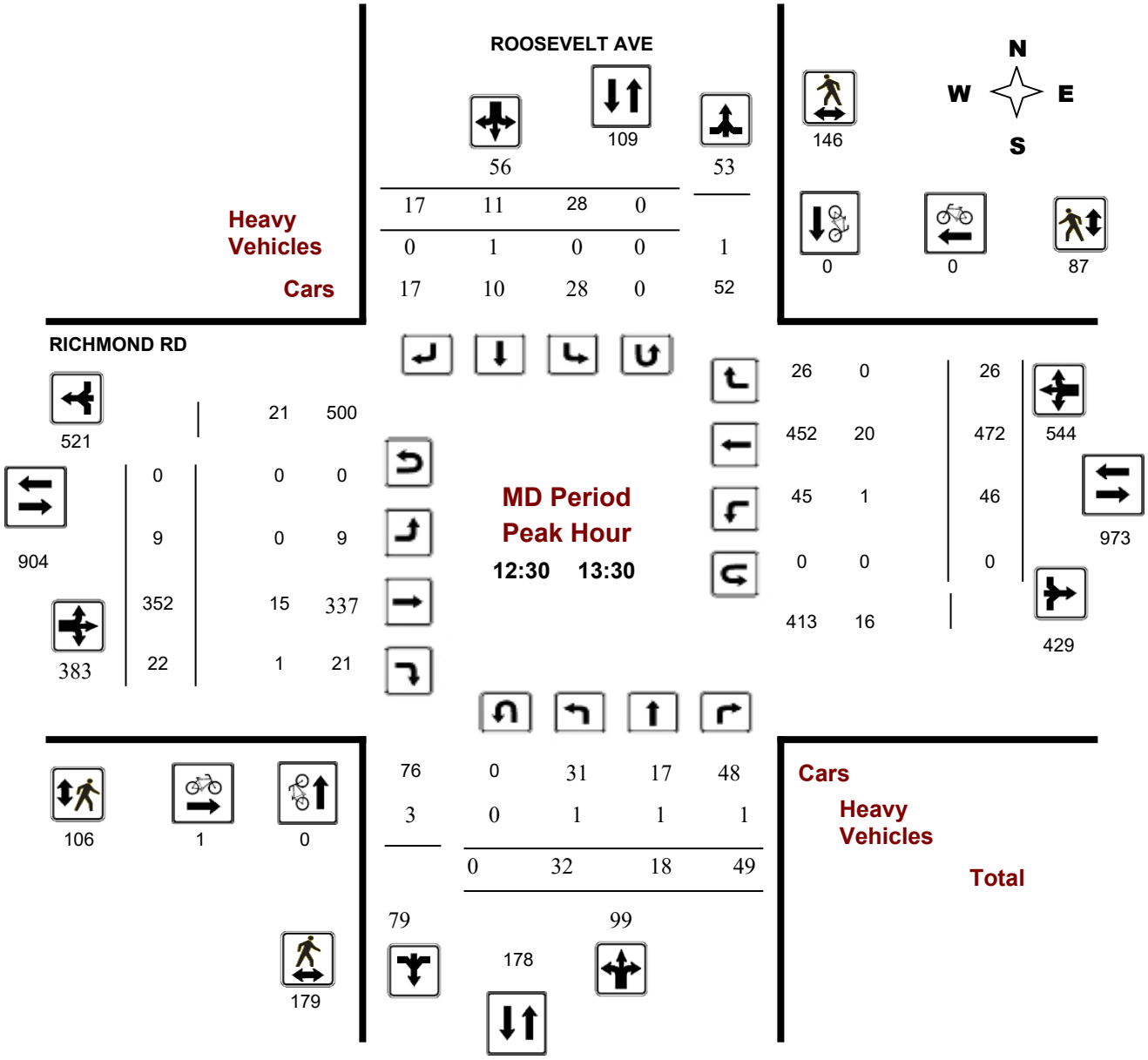
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39385

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



Comments 5472203 - THU JAN 23, 2020 - 8HRS - LORETTA

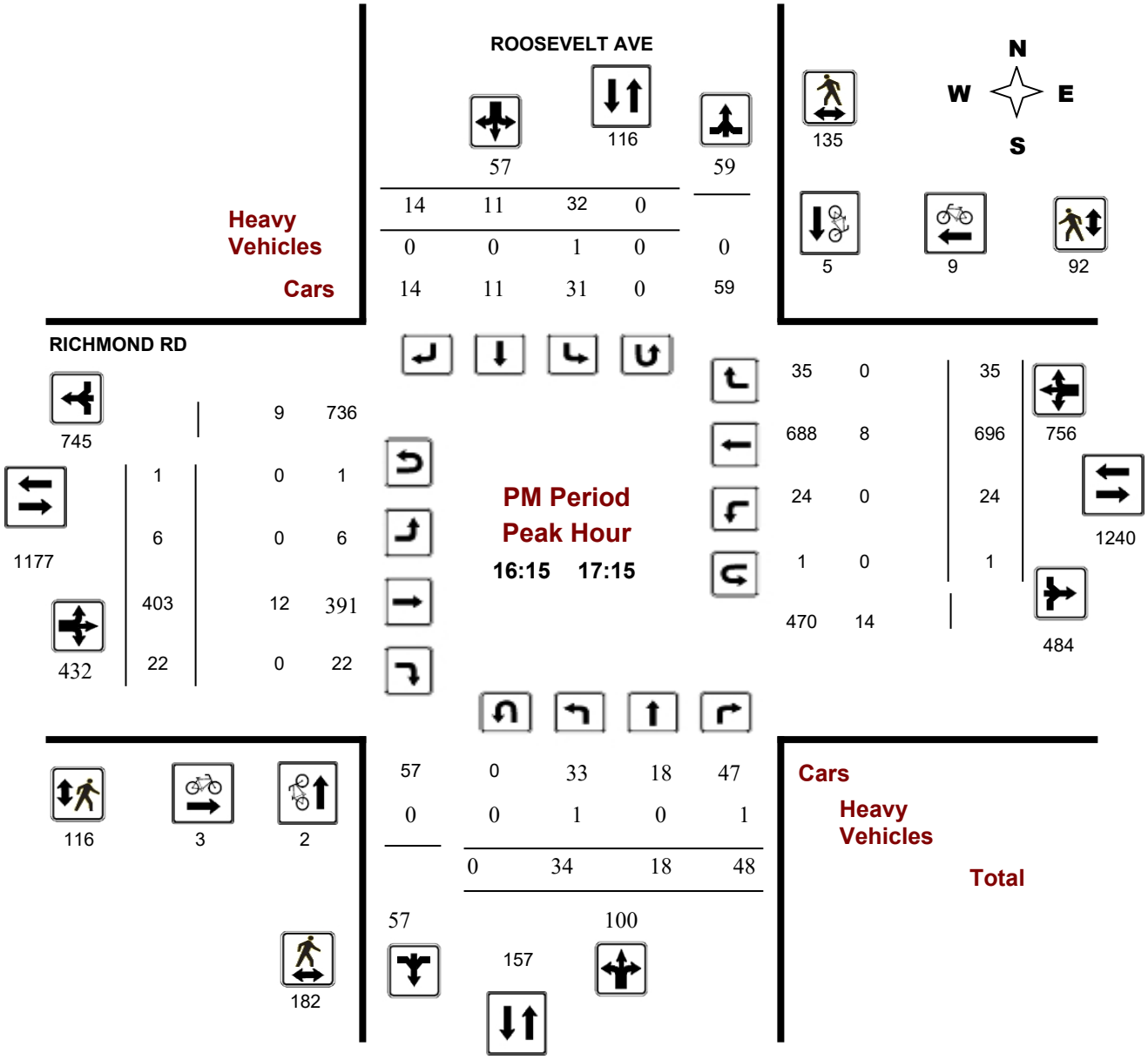
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39385

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



Comments 5472203 - THU JAN 23, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39385

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, January 23, 2020

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 2 Westbound: 5

AADT Factor

1.39

	ROOSEVELT AVE								RICHMOND RD									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	13	3	23	**39**	21	10	6	**37**	**76**	10	605	10	**625**	7	195	8	**210**	**835**	**911**
08:00 09:00	26	10	32	**68**	32	12	7	**51**	**119**	3	633	10	**646**	14	290	26	**330**	**976**	**1095**
09:00 10:00	20	18	27	**65**	34	15	8	**57**	**122**	4	462	12	**478**	25	263	21	**309**	**787**	**909**
11:30 12:30	30	16	62	**108**	39	15	16	**70**	**178**	15	359	20	**394**	41	375	48	**464**	**858**	**1036**
12:30 13:30	32	18	49	**99**	28	11	17	**56**	**155**	9	352	22	**383**	46	472	26	**544**	**927**	**1082**
15:00 16:00	31	14	27	**72**	36	10	21	**67**	**139**	16	401	27	**444**	32	603	27	**662**	**1106**	**1245**
16:00 17:00	27	18	50	**95**	27	13	13	**53**	**148**	8	376	22	**406**	17	670	37	**724**	**1130**	**1278**
17:00 18:00	35	11	36	**82**	41	9	11	**61**	**143**	9	370	16	**395**	35	617	29	**681**	**1076**	**1219**
Sub Total	214	108	306	**628**	258	95	99	**452**	**1080**	74	3558	139	**3771**	217	3485	222	**3924**	**7695**	**8775**
U Turns				**0**				**0**	**0**				**2**				**5**	**7**	**7**
Total	214	108	306	**628**	258	95	99	**452**	**1080**	74	3558	139	**3773**	217	3485	222	**3929**	**7702**	**8782**
EQ 12Hr	297	150	425	**873**	359	132	138	**628**	**1501**	103	4946	193	**5244**	302	4844	309	**5461**	**10706**	**12207**

Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

AVG 12Hr	297	150	425	**873**	359	132	138	**628**	**1501**	103	4946	193	**5244**	302	4844	309	**5461**	**10706**	**12207**

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **1**

AVG 24Hr	390	197	557	**1144**	470	173	180	**823**	**1967**	135	6479	253	**6870**	395	6346	404	**7154**	**14024**	**15991**

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

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

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39385

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

Full Study 15 Minute Increments

		ROOSEVELT AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	1	1	3	2	1	1	4	16	2	132	2	136	0	43	3	46	16	189
07:15	07:30	3	1	2	6	7	4	1	12	34	3	150	2	155	3	47	3	53	34	226
07:30	07:45	7	1	9	17	6	2	2	10	35	1	163	2	166	1	46	1	48	35	241
07:45	08:00	2	0	11	13	6	3	2	11	39	4	160	4	168	3	59	1	63	39	255
08:00	08:15	3	5	7	15	12	3	1	16	52	1	154	4	159	1	68	7	76	52	266
08:15	08:30	4	2	7	13	8	5	1	14	47	1	161	3	165	3	68	6	77	47	269
08:30	08:45	12	2	7	21	6	2	2	10	50	0	154	1	155	6	75	8	89	50	275
08:45	09:00	7	1	11	19	6	2	3	11	45	1	164	2	167	4	79	5	88	45	285
09:00	09:15	5	2	7	14	5	5	2	12	46	1	141	3	145	6	69	3	78	46	249
09:15	09:30	4	5	9	18	11	5	1	17	60	1	122	0	123	6	58	8	73	60	231
09:30	09:45	5	5	4	14	8	4	2	14	56	1	98	6	106	7	79	5	91	56	225
09:45	10:00	6	6	7	19	10	1	3	14	55	1	101	3	105	6	57	5	68	55	206
11:30	11:45	7	3	17	27	9	6	6	21	91	7	88	6	101	10	87	11	108	91	257
11:45	12:00	7	3	18	28	13	1	4	18	88	4	101	6	111	10	79	18	107	88	264
12:00	12:15	8	8	15	31	9	1	4	14	83	2	87	3	92	13	109	11	134	83	271
12:15	12:30	8	2	12	22	8	7	2	17	71	2	83	5	90	8	100	8	116	71	245
12:30	12:45	10	7	19	36	6	2	4	12	74	1	81	4	86	4	102	8	114	74	248
12:45	13:00	8	2	12	22	7	3	5	15	72	1	82	3	86	17	111	9	137	72	260
13:00	13:15	4	5	6	15	7	2	3	12	69	3	90	9	102	18	125	5	148	69	277
13:15	13:30	10	4	12	26	8	4	5	17	72	4	99	6	109	7	134	4	145	72	297
15:00	15:15	6	3	7	16	6	3	7	16	73	4	119	11	134	13	132	7	152	73	318
15:15	15:30	9	5	11	25	12	2	5	19	84	4	98	7	109	11	131	11	153	84	306
15:30	15:45	11	2	7	20	13	3	6	22	65	6	88	4	98	5	176	3	184	65	324
15:45	16:00	5	4	2	11	5	2	3	10	43	2	96	5	103	3	164	6	173	43	297
16:00	16:15	5	5	12	22	7	3	5	15	65	3	74	5	82	5	149	7	162	65	281
16:15	16:30	7	5	13	25	4	5	5	14	70	2	108	5	115	3	179	11	193	70	347
16:30	16:45	9	5	16	30	6	1	2	9	65	2	97	7	106	5	181	6	192	65	337
16:45	17:00	6	3	9	18	10	4	1	15	63	1	97	5	104	4	161	13	179	63	316
17:00	17:15	12	5	10	27	12	1	6	19	75	1	101	5	107	12	175	5	192	75	345
17:15	17:30	8	2	12	22	7	4	1	12	59	1	82	3	86	4	164	11	179	59	299
17:30	17:45	9	2	6	17	16	0	1	17	57	4	93	4	101	5	141	8	155	57	290
17:45	18:00	6	2	8	16	6	4	3	13	61	3	94	4	101	14	137	5	156	61	286
Total:		214	108	306	628	258	95	99	452	1935	74	3558	139	3773	217	3485	222	3929	1935	8,782

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39385

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

Full Study Cyclist Volume

Time Period		ROOSEVELT AVE			RICHMOND RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	1	0	1	1
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	3	1	4	4
07:45	08:00	2	0	2	3	0	3	5
08:00	08:15	0	2	2	3	1	4	6
08:15	08:30	3	1	4	1	2	3	7
08:30	08:45	1	1	2	2	1	3	5
08:45	09:00	0	0	0	1	0	1	1
09:00	09:15	0	1	1	3	0	3	4
09:15	09:30	0	0	0	0	1	1	1
09:30	09:45	0	0	0	1	0	1	1
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	1	0	1	0	0	0	1
12:30	12:45	0	0	0	1	0	1	1
12:45	13:00	0	0	0	0	0	0	0
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	0	0	0	0
15:00	15:15	0	0	0	1	0	1	1
15:15	15:30	1	2	3	0	1	1	4
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	1	0	1	1
16:00	16:15	0	1	1	1	0	1	2
16:15	16:30	0	0	0	0	3	3	3
16:30	16:45	1	2	3	2	3	5	8
16:45	17:00	0	1	1	1	1	2	3
17:00	17:15	1	2	3	0	2	2	5
17:15	17:30	0	1	1	0	1	1	2
17:30	17:45	2	0	2	1	1	2	4
17:45	18:00	0	0	0	0	1	1	1
Total		12	14	**26**	26	19	45	71

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39385

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

Full Study Pedestrian Volume

	ROOSEVELT AVE			RICHMOND RD			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	3	7	**10**	5	3	**8**	**18**
07:15 07:30	6	7	**13**	10	4	**14**	**27**
07:30 07:45	9	10	**19**	18	6	**24**	**43**
07:45 08:00	10	13	**23**	8	9	**17**	**40**
08:00 08:15	9	10	**19**	13	8	**21**	**40**
08:15 08:30	14	15	**29**	20	4	**24**	**53**
08:30 08:45	29	17	**46**	18	13	**31**	**77**
08:45 09:00	17	32	**49**	14	15	**29**	**78**
09:00 09:15	9	18	**27**	16	15	**31**	**58**
09:15 09:30	23	8	**31**	11	7	**18**	**49**
09:30 09:45	15	20	**35**	5	15	**20**	**55**
09:45 10:00	28	25	**53**	19	12	**31**	**84**
11:30 11:45	39	26	**65**	16	14	**30**	**95**
11:45 12:00	50	39	**89**	33	32	**65**	**154**
12:00 12:15	42	66	**108**	31	22	**53**	**161**
12:15 12:30	34	45	**79**	29	13	**42**	**121**
12:30 12:45	36	32	**68**	31	23	**54**	**122**
12:45 13:00	43	31	**74**	21	25	**46**	**120**
13:00 13:15	51	32	**83**	15	19	**34**	**117**
13:15 13:30	49	51	**100**	39	20	**59**	**159**
15:00 15:15	35	39	**74**	20	26	**46**	**120**
15:15 15:30	52	34	**86**	31	20	**51**	**137**
15:30 15:45	57	39	**96**	23	17	**40**	**136**
15:45 16:00	48	46	**94**	36	26	**62**	**156**
16:00 16:15	38	41	**79**	39	24	**63**	**142**
16:15 16:30	39	37	**76**	24	23	**47**	**123**
16:30 16:45	56	34	**90**	29	23	**52**	**142**
16:45 17:00	34	25	**59**	38	23	**61**	**120**
17:00 17:15	53	39	**92**	25	23	**48**	**140**
17:15 17:30	33	21	**54**	17	14	**31**	**85**
17:30 17:45	39	31	**70**	35	17	**52**	**122**
17:45 18:00	32	22	**54**	25	15	**40**	**94**
Total	1032	912	**1944**	714	530	**1244**	**3188**

5472203 - THU JAN 23, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39385

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

Full Study Heavy Vehicles

ROOSEVELT AVE **RICHMOND RD**

Time Period		Northbound				Southbound					Eastbound				Westbound					
		LT	ST	RT	**N TOT**	LT	ST	RT	**S TOT**	**STR TOT**	LT	ST	RT	**E TOT**	LT	ST	RT	**W TOT**	**STR TOT**	**Grand Total**
07:00	07:15	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**7**	0	2	0	**7**	**14**	**7**
07:15	07:30	0	0	0	**2**	0	0	0	**0**	**2**	0	4	1	**8**	1	3	0	**8**	**16**	**9**
07:30	07:45	0	0	1	**1**	0	0	0	**0**	**1**	0	3	0	**8**	0	5	0	**9**	**17**	**9**
07:45	08:00	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**5**	0	3	0	**5**	**10**	**5**
08:00	08:15	0	0	0	**0**	0	0	0	**0**	**0**	0	7	0	**12**	0	5	0	**12**	**24**	**12**
08:15	08:30	1	0	1	**2**	0	0	0	**0**	**2**	0	4	0	**9**	0	4	0	**9**	**18**	**10**
08:30	08:45	1	1	0	**3**	0	0	0	**1**	**4**	0	6	0	**10**	1	3	0	**10**	**20**	**12**
08:45	09:00	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**8**	0	3	0	**8**	**16**	**8**
09:00	09:15	0	0	0	**0**	0	0	1	**2**	**2**	1	4	0	**12**	0	6	0	**10**	**22**	**12**
09:15	09:30	0	0	0	**0**	0	0	1	**1**	**1**	0	5	0	**8**	0	2	0	**7**	**15**	**8**
09:30	09:45	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**11**	0	6	0	**11**	**22**	**11**
09:45	10:00	0	2	1	**3**	0	0	0	**2**	**5**	0	6	0	**10**	0	4	0	**11**	**21**	**13**
11:30	11:45	0	0	1	**2**	0	0	0	**0**	**2**	0	1	0	**4**	1	3	0	**6**	**10**	**6**
11:45	12:00	0	0	0	**2**	0	0	0	**0**	**2**	0	4	0	**7**	2	3	0	**9**	**16**	**9**
12:00	12:15	0	0	1	**2**	0	0	0	**0**	**2**	0	5	0	**11**	1	6	0	**13**	**24**	**13**
12:15	12:30	1	0	0	**2**	0	0	0	**0**	**2**	0	5	0	**9**	1	3	0	**9**	**18**	**10**
12:30	12:45	0	0	1	**2**	0	0	0	**0**	**2**	0	3	1	**13**	0	9	0	**13**	**26**	**14**
12:45	13:00	0	0	0	**1**	0	1	0	**1**	**2**	0	4	0	**8**	0	4	0	**8**	**16**	**9**
13:00	13:15	1	0	0	**2**	0	0	0	**0**	**2**	0	3	0	**5**	1	1	0	**5**	**10**	**6**
13:15	13:30	0	1	0	**1**	0	0	0	**1**	**2**	0	5	0	**11**	0	6	0	**11**	**22**	**12**
15:00	15:15	0	0	1	**1**	0	0	0	**0**	**1**	0	6	0	**8**	0	2	0	**9**	**17**	**9**
15:15	15:30	0	0	0	**0**	1	0	0	**1**	**1**	0	1	0	**6**	0	5	0	**7**	**13**	**7**
15:30	15:45	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**5**	0	2	0	**5**	**10**	**5**
15:45	16:00	0	0	0	**0**	0	0	1	**1**	**1**	0	3	0	**7**	0	3	0	**6**	**13**	**7**
16:00	16:15	1	0	0	**2**	0	0	0	**0**	**2**	0	3	1	**11**	0	6	0	**9**	**20**	**11**
16:15	16:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**5**	0	3	0	**5**	**10**	**5**
16:30	16:45	1	0	1	**2**	0	0	0	**0**	**2**	0	3	0	**5**	0	1	0	**5**	**10**	**6**
16:45	17:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	0	0	**4**	**8**	**4**
17:00	17:15	0	0	0	**0**	1	0	0	**1**	**1**	0	3	0	**7**	0	4	0	**8**	**15**	**8**
17:15	17:30	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**2**	0	1	0	**2**	**4**	**2**
17:30	17:45	0	0	0	**0**	0	0	0	**0**	**0**	0	0	0	**2**	0	2	0	**2**	**4**	**2**
17:45	18:00	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**2**	0	1	0	**2**	**4**	**2**
Total:	None	6	4	8	**30**	2	1	3	**11**	**41**	1	116	3	**240**	8	111	0	**245**	**485**	**263**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ROOSEVELT AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39385

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

Full Study 15 Minute U-Turn Total

		ROOSEVELT AVE		RICHMOND RD		
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	1	1
09:30	09:45	0	0	1	0	1
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	1	1
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	1	1
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	1	1	2
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	1	1
17:45	18:00	0	0	0	0	0
Total		0	0	2	5	7

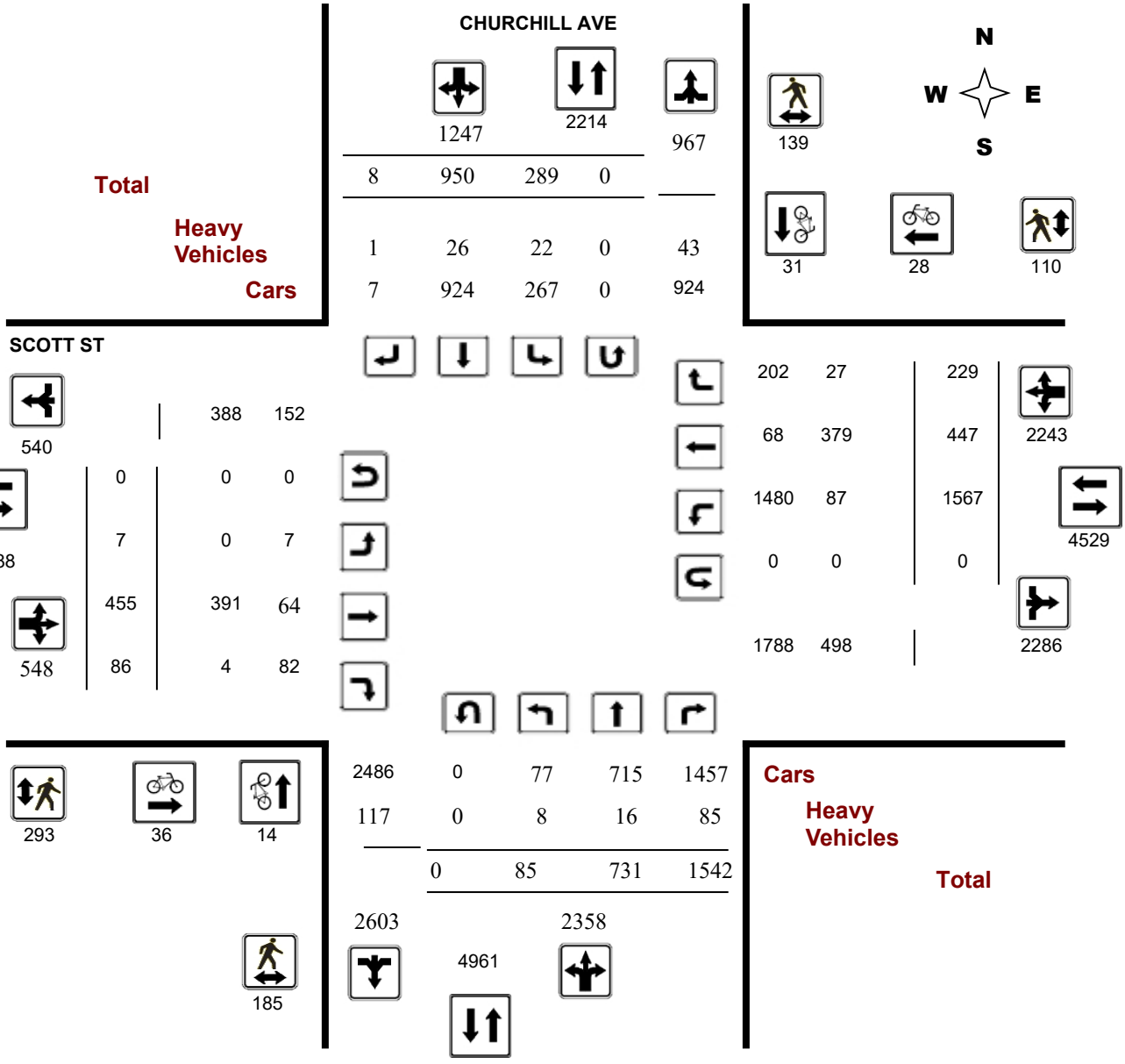
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023
Start Time: 07:00
WO No: 41269
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

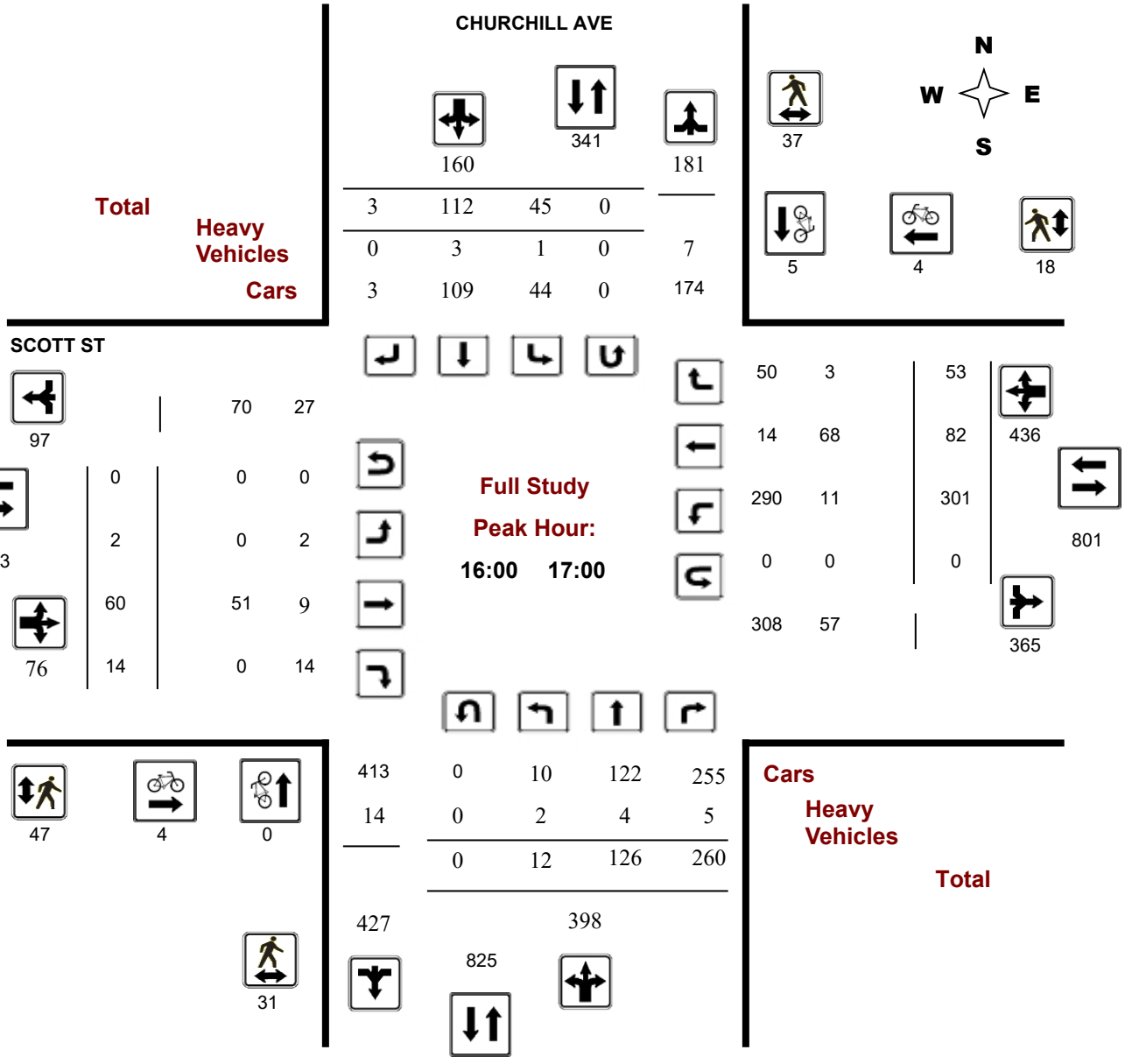
Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023 **WO No:** 41269

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

Full Study Peak Hour Diagram



Transportation Services - Traffic Services

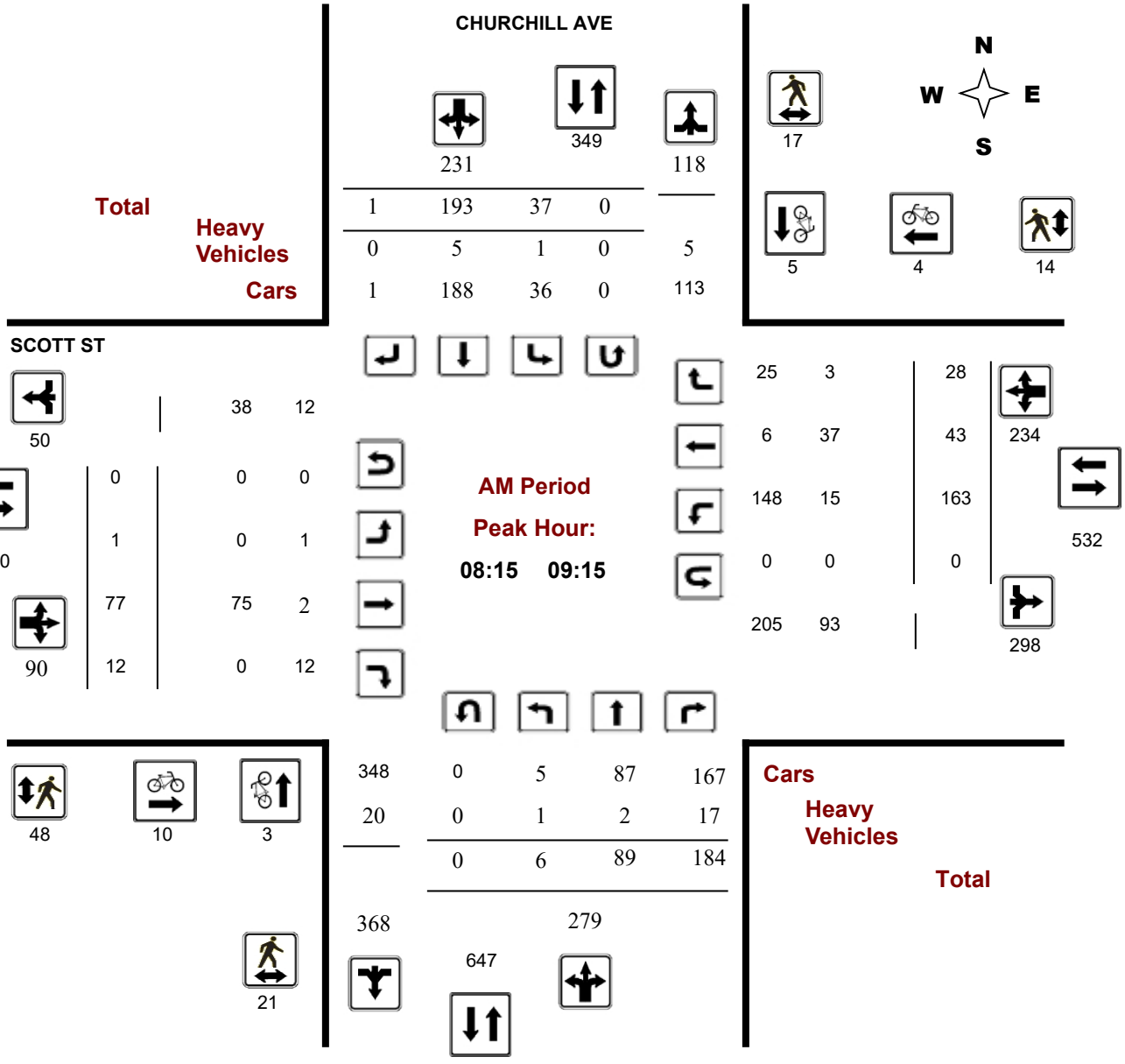
Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023 **WO No:** 41269

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

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

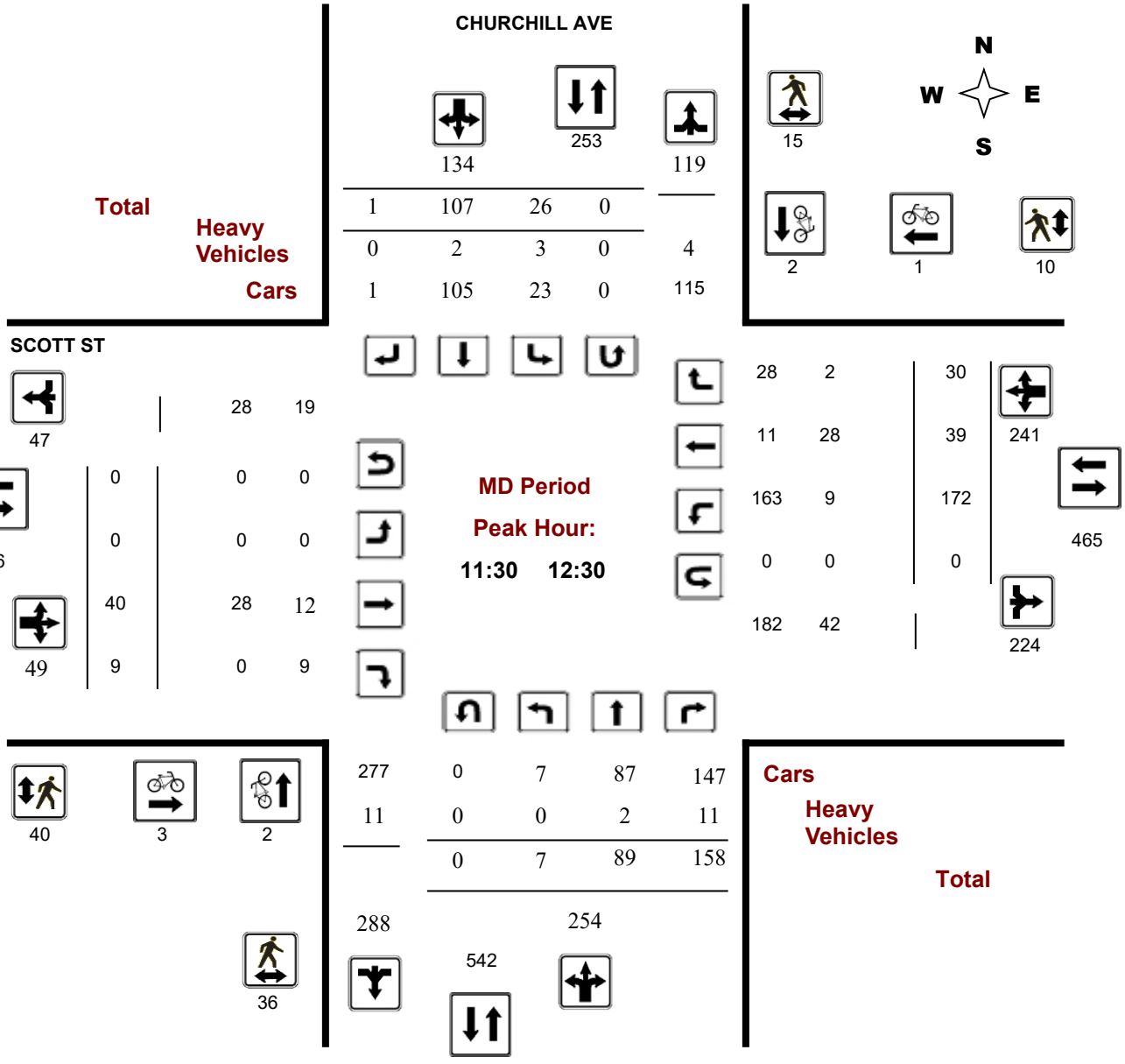
Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023 **WO No:** 41269

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

MD Period Peak Hour Diagram



Transportation Services - Traffic Services

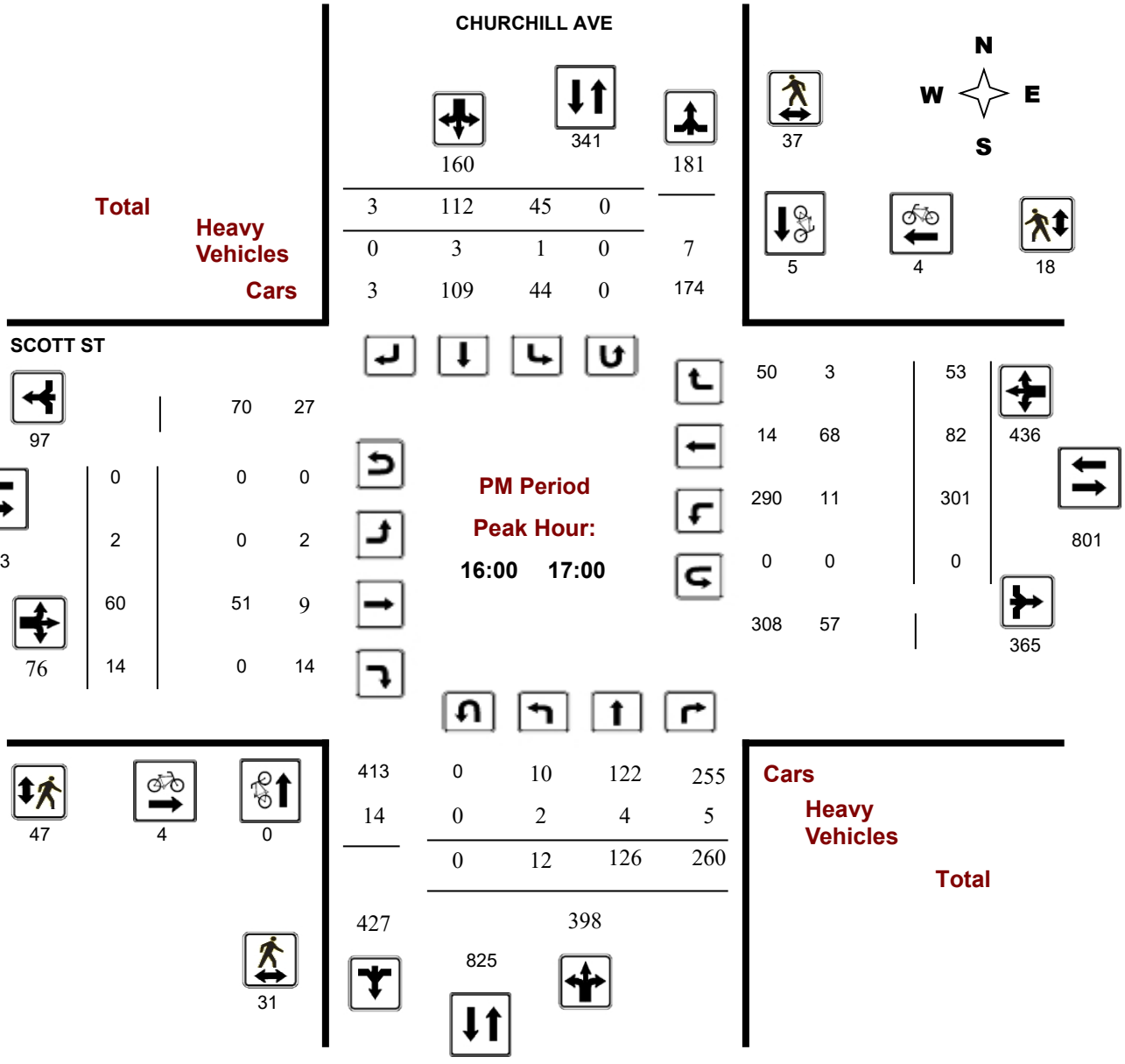
Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023 **WO No:** 41269

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

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023 **WO No:** 41269

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, November 30, 2023

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor

.90

	CHURCHILL AVE									SCOTT ST									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	6	46	119	**171**	33	129	1	**163**	**334**	0	72	6	**78**	137	50	11	**198**	**276**	**610**
08:00 09:00	5	76	196	**277**	39	193	1	**233**	**510**	1	77	10	**88**	159	43	28	**230**	**318**	**828**
09:00 10:00	9	86	130	**225**	28	104	0	**132**	**357**	0	54	11	**65**	179	39	14	**232**	**297**	**654**
11:30 12:30	7	89	158	**254**	26	107	1	**134**	**388**	0	40	9	**49**	172	39	30	**241**	**290**	**678**
12:30 13:30	13	91	155	**259**	29	98	0	**127**	**386**	1	38	11	**50**	140	42	29	**211**	**261**	**647**
15:00 16:00	14	114	272	**400**	48	115	1	**164**	**564**	3	55	10	**68**	228	67	36	**331**	**399**	**963**
16:00 17:00	12	126	260	**398**	45	112	3	**160**	**558**	2	60	14	**76**	301	82	53	**436**	**512**	**1070**
17:00 18:00	19	103	252	**374**	41	92	1	**134**	**508**	0	59	15	**74**	251	85	28	**364**	**438**	**946**
Sub Total	85	731	1542	**2358**	289	950	8	**1247**	**3605**	7	455	86	**548**	1567	447	229	**2243**	**2791**	**6396**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	85	731	1542	**2358**	289	950	8	**1247**	**3605**	7	455	86	**548**	1567	447	229	**2243**	**2791**	**6396**
EQ 12Hr	118	1016	2143	**3278**	402	1320	11	**1733**	**5011**	10	632	120	**762**	2178	621	318	**3118**	**3879**	**8890**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	106	914	1929	**2950**	362	1557	13	**1560**	**4510**	9	569	108	**686**	1960	559	286	**2806**	**3491**	**8001**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**.90**					
AVG 24Hr	139	1197	2527	**3864**	474	2040	17	**2044**	**5908**	12	745	141	**899**	2568	732	375	**3676**	**4573**	**10481**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

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

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023 **WO No:** 41269

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

Full Study 15 Minute Increments

		CHURCHILL AVE									SCOTT ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	14	20	35	8	24	1	33	68	0	21	0	21	20	10	5	35	56	124
07:15	07:30	0	6	22	28	9	25	0	34	62	0	18	1	19	29	10	2	41	60	122
07:30	07:45	0	16	23	39	7	38	0	45	84	0	18	1	19	43	13	0	56	75	159
17:45	18:00	4	18	53	75	5	23	0	28	103	0	18	1	19	65	19	6	90	109	212
07:45	08:00	5	10	54	69	9	42	0	51	120	0	15	4	19	45	17	4	66	85	205
08:00	08:15	0	17	61	78	10	36	0	46	124	0	19	0	19	34	9	8	51	70	194
08:15	08:30	1	15	50	66	16	46	0	62	128	0	23	6	29	38	11	5	54	83	211
08:30	08:45	1	21	49	71	7	54	0	61	132	1	14	3	18	40	11	7	58	76	208
08:45	09:00	3	23	36	62	6	57	1	64	126	0	21	1	22	47	12	8	67	89	215
09:00	09:15	1	30	49	80	8	36	0	44	124	0	19	2	21	38	9	8	55	76	200
09:15	09:30	3	16	36	55	4	30	0	34	89	0	12	4	16	52	12	2	66	82	171
09:30	09:45	3	22	20	45	9	18	0	27	72	0	12	2	14	43	10	3	56	70	142
11:45	12:00	3	17	41	61	10	21	1	32	93	0	13	4	17	51	15	7	73	90	183
12:00	12:15	2	25	34	61	4	28	0	32	93	0	5	3	8	45	9	5	59	67	160
12:15	12:30	2	28	38	68	7	29	0	36	104	0	11	1	12	34	6	10	50	62	166
12:30	12:45	1	25	32	58	6	30	0	36	94	1	6	4	11	41	9	11	61	72	166
12:45	13:00	4	18	41	63	7	24	0	31	94	0	12	3	15	38	10	5	53	68	162
13:00	13:15	3	28	45	76	7	19	0	26	102	0	10	4	14	29	12	7	48	62	164
13:15	13:30	5	20	37	62	9	25	0	34	96	0	10	0	10	32	11	6	49	59	155
15:00	15:15	4	19	52	75	9	27	1	37	112	1	17	4	22	58	11	8	77	99	211
15:30	15:45	3	32	79	114	14	32	0	46	160	0	11	2	13	59	17	10	86	99	259
15:45	16:00	3	28	57	88	10	15	0	25	113	1	16	1	18	57	21	10	88	106	219
16:00	16:15	3	37	64	104	14	26	1	41	145	1	16	2	19	76	22	8	106	125	270
16:45	17:00	4	36	65	105	10	36	1	47	152	0	21	4	25	80	18	18	116	141	293
17:00	17:15	6	21	78	105	16	16	1	33	138	0	13	9	22	71	24	6	101	123	261
17:15	17:30	3	33	68	104	12	30	0	42	146	0	11	4	15	63	27	11	101	116	262
17:30	17:45	6	31	53	90	8	23	0	31	121	0	17	1	18	52	15	5	72	90	211
16:30	16:45	3	23	67	93	13	21	1	35	128	0	11	4	15	67	25	14	106	121	249
09:45	10:00	2	18	25	45	7	20	0	27	72	0	11	3	14	46	8	1	55	69	141
11:30	11:45	0	19	45	64	5	29	0	34	98	0	11	1	12	42	9	8	59	71	169
15:15	15:30	4	35	84	123	15	41	0	56	179	1	11	3	15	54	18	8	80	95	274
16:15	16:30	2	30	64	96	8	29	0	37	133	1	12	4	17	78	17	13	108	125	258
Total:		85	731	1542	2358	289	950	8	1247	3605	7	455	86	548	1567	447	229	2243	2791	6,396

Note: U-Turns are included in Totals, cyclist volume is not included in totals. For cycliste volumes reffer to Cyclist Volume report.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023 **WO No:** 41269

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

Full Study Cyclist Volume

Time Period		CHURCHILL AVE			SCOTT ST			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	1	1	0	0	0	1
07:15	07:30	1	0	1	0	0	0	1
07:30	07:45	0	1	1	0	1	1	2
17:45	18:00	0	1	1	0	2	2	3
07:45	08:00	0	0	0	3	0	3	3
08:00	08:15	0	2	2	4	1	5	7
08:15	08:30	1	3	4	4	3	7	11
08:30	08:45	1	1	2	3	0	3	5
08:45	09:00	1	1	2	3	1	4	6
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	1	0	1	1	0	1	2
09:30	09:45	0	0	0	0	0	0	0
11:45	12:00	1	0	1	1	0	1	2
12:00	12:15	0	1	1	0	0	0	1
12:15	12:30	0	1	1	2	0	2	3
12:30	12:45	1	1	2	0	2	2	4
12:45	13:00	0	0	0	2	0	2	2
13:00	13:15	0	1	1	0	1	1	2
13:15	13:30	0	2	2	2	0	2	4
15:00	15:15	0	1	1	0	2	2	3
15:30	15:45	4	0	4	2	0	2	6
15:45	16:00	1	2	3	1	0	1	4
16:00	16:15	0	1	1	0	0	0	1
16:45	17:00	0	1	1	2	0	2	3
17:00	17:15	0	4	4	0	4	4	8
17:15	17:30	0	0	0	0	2	2	2
17:30	17:45	0	2	2	0	3	3	5
16:30	16:45	0	0	0	1	1	2	2
09:45	10:00	0	1	1	2	1	3	4
11:30	11:45	1	0	1	0	1	1	2
15:15	15:30	1	0	1	2	0	2	3
16:15	16:30	0	3	3	1	3	4	7
Total		14	31	**45**	36	28	64	109

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023 **WO No:** 41269

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

Full Study Pedestrian Volume

	CHURCHILL AVE			SCOTT ST			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	4	1	**5**	2	6	**8**	**13**
07:15 07:30	2	3	**5**	5	0	**5**	**10**
07:30 07:45	6	3	**9**	18	6	**24**	**33**
17:45 18:00	7	2	**9**	12	2	**14**	**23**
07:45 08:00	5	0	**5**	2	0	**2**	**7**
08:00 08:15	6	3	**9**	3	3	**6**	**15**
08:15 08:30	2	4	**6**	11	5	**16**	**22**
08:30 08:45	7	4	**11**	14	4	**18**	**29**
08:45 09:00	7	5	**12**	14	3	**17**	**29**
09:00 09:15	5	4	**9**	9	2	**11**	**20**
09:15 09:30	4	1	**5**	5	1	**6**	**11**
09:30 09:45	3	8	**11**	5	1	**6**	**17**
11:45 12:00	3	2	**5**	7	0	**7**	**12**
12:00 12:15	12	3	**15**	12	1	**13**	**28**
12:15 12:30	14	9	**23**	12	5	**17**	**40**
12:30 12:45	4	6	**10**	6	4	**10**	**20**
12:45 13:00	5	6	**11**	15	3	**18**	**29**
13:00 13:15	5	4	**9**	10	4	**14**	**23**
13:15 13:30	5	0	**5**	7	4	**11**	**16**
15:00 15:15	3	1	**4**	9	4	**13**	**17**
15:30 15:45	15	8	**23**	22	6	**28**	**51**
15:45 16:00	2	2	**4**	6	4	**10**	**14**
16:00 16:15	9	11	**20**	14	7	**21**	**41**
16:45 17:00	3	7	**10**	10	0	**10**	**20**
17:00 17:15	3	4	**7**	9	6	**15**	**22**
17:15 17:30	6	6	**12**	5	4	**9**	**21**
17:30 17:45	7	1	**8**	4	5	**9**	**17**
16:30 16:45	8	14	**22**	12	5	**17**	**39**
09:45 10:00	5	3	**8**	6	4	**10**	**18**
11:30 11:45	7	1	**8**	9	4	**13**	**21**
15:15 15:30	0	8	**8**	7	1	**8**	**16**
16:15 16:30	11	5	**16**	11	6	**17**	**33**
Total	185	139	**324**	293	110	**403**	**727**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023 **WO No:** 41269

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

Full Study Heavy Vehicles

		CHURCHILL AVE									SCOTT ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	2	6	**8**	0	0	1	**1**	**9**	0	19	0	**19**	3	10	1	**14**	**33**	**42**
07:15	07:30	0	0	4	**4**	1	6	0	**7**	**11**	0	18	0	**18**	1	10	1	**12**	**30**	**41**
07:30	07:45	0	1	1	**2**	1	1	0	**2**	**4**	0	18	0	**18**	4	13	0	**17**	**35**	**39**
17:45	18:00	0	0	1	**1**	0	1	0	**1**	**2**	0	17	0	**17**	0	18	1	**19**	**36**	**38**
07:45	08:00	0	1	6	**7**	1	1	0	**2**	**9**	0	14	0	**14**	0	16	2	**18**	**32**	**41**
08:00	08:15	0	1	6	**7**	0	2	0	**2**	**9**	0	17	0	**17**	3	9	3	**15**	**32**	**41**
08:15	08:30	0	0	5	**5**	1	1	0	**2**	**7**	0	23	0	**23**	4	11	1	**16**	**39**	**46**
08:30	08:45	1	0	5	**6**	0	1	0	**1**	**7**	0	13	0	**13**	3	10	0	**13**	**26**	**33**
08:45	09:00	0	1	0	**1**	0	2	0	**2**	**3**	0	21	0	**21**	4	9	1	**14**	**35**	**38**
09:00	09:15	0	1	7	**8**	0	1	0	**1**	**9**	0	18	0	**18**	4	7	1	**12**	**30**	**39**
09:15	09:30	1	0	2	**3**	1	0	0	**1**	**4**	0	11	1	**12**	4	10	1	**15**	**27**	**31**
09:30	09:45	0	0	0	**0**	1	0	0	**1**	**1**	0	10	0	**10**	3	9	2	**14**	**24**	**25**
11:45	12:00	0	1	2	**3**	1	1	0	**2**	**5**	0	7	0	**7**	6	10	1	**17**	**24**	**29**
12:00	12:15	0	1	3	**4**	0	1	0	**1**	**5**	0	5	0	**5**	2	6	0	**8**	**13**	**18**
12:15	12:30	0	0	3	**3**	1	0	0	**1**	**4**	0	8	0	**8**	0	5	1	**6**	**14**	**18**
12:30	12:45	0	1	0	**1**	1	0	0	**1**	**2**	0	5	0	**5**	2	7	1	**10**	**15**	**17**
12:45	13:00	0	0	2	**2**	1	0	0	**1**	**3**	0	7	1	**8**	3	8	1	**12**	**20**	**23**
13:00	13:15	2	0	0	**2**	1	2	0	**3**	**5**	0	7	1	**8**	6	6	2	**14**	**22**	**27**
13:15	13:30	1	0	4	**5**	1	0	0	**1**	**6**	0	8	0	**8**	2	8	0	**10**	**18**	**24**
15:00	15:15	0	0	2	**2**	2	2	0	**4**	**6**	0	14	0	**14**	5	9	1	**15**	**29**	**35**
15:30	15:45	0	2	1	**3**	0	1	0	**1**	**4**	0	8	0	**8**	7	16	1	**24**	**32**	**36**
15:45	16:00	0	0	1	**1**	3	0	0	**3**	**4**	0	14	0	**14**	1	21	1	**23**	**37**	**41**
16:00	16:15	1	2	2	**5**	0	1	0	**1**	**6**	0	14	0	**14**	6	17	0	**23**	**37**	**43**
16:45	17:00	1	0	2	**3**	0	0	0	**0**	**3**	0	18	0	**18**	2	16	1	**19**	**37**	**40**
17:00	17:15	0	0	4	**4**	1	0	0	**1**	**5**	0	9	0	**9**	1	16	0	**17**	**26**	**31**
17:15	17:30	0	0	1	**1**	2	0	0	**2**	**3**	0	10	0	**10**	1	24	1	**26**	**36**	**39**
17:30	17:45	0	0	2	**2**	0	0	0	**0**	**2**	0	12	0	**12**	1	14	0	**15**	**27**	**29**
16:30	16:45	0	1	0	**1**	0	1	0	**1**	**2**	0	8	0	**8**	1	23	1	**25**	**33**	**35**
09:45	10:00	1	0	5	**6**	0	0	0	**0**	**6**	0	10	1	**11**	3	7	0	**10**	**21**	**27**
11:30	11:45	0	0	3	**3**	1	0	0	**1**	**4**	0	8	0	**8**	1	7	0	**8**	**16**	**20**
15:15	15:30	0	0	4	**4**	0	0	0	**0**	**4**	0	9	0	**9**	2	15	0	**17**	**26**	**30**
16:15	16:30	0	1	1	**2**	1	1	0	**2**	**4**	0	11	0	**11**	2	12	1	**15**	**26**	**30**
Total:	None	8	16	85	**109**	22	26	1	**49**	**158**	0	391	4	**395**	87	379	27	**493**	**888**	**1,046**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ SCOTT ST

Survey Date: Thursday, November 30, 2023 **WO No:** 41269

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

Full Study 15 Minute U-Turn Total

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

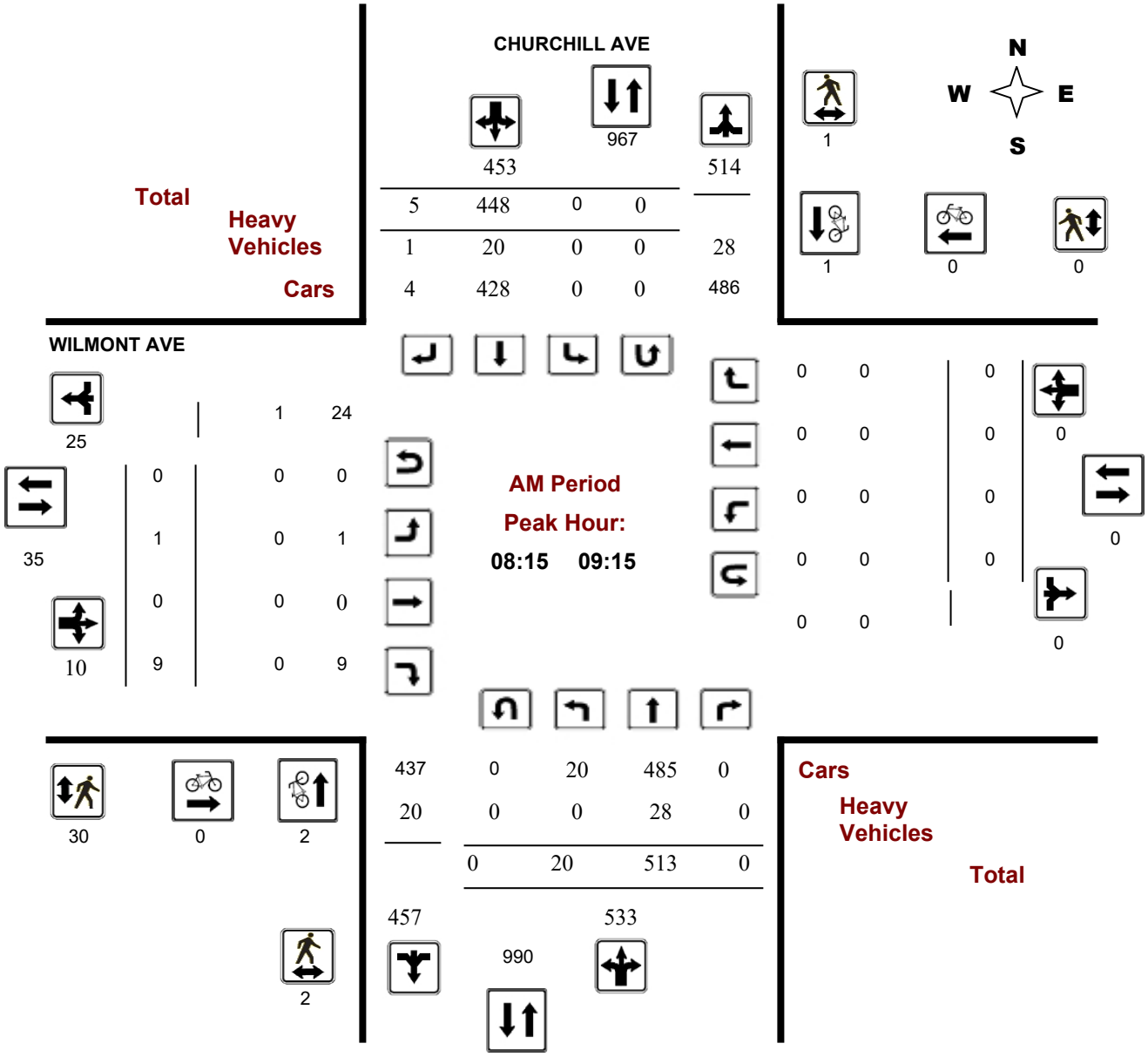
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CHURCHILL AVE @ WILMONT AVE

Survey Date: Wednesday, January 13, 2016 **WO No:** 35638

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



Comments

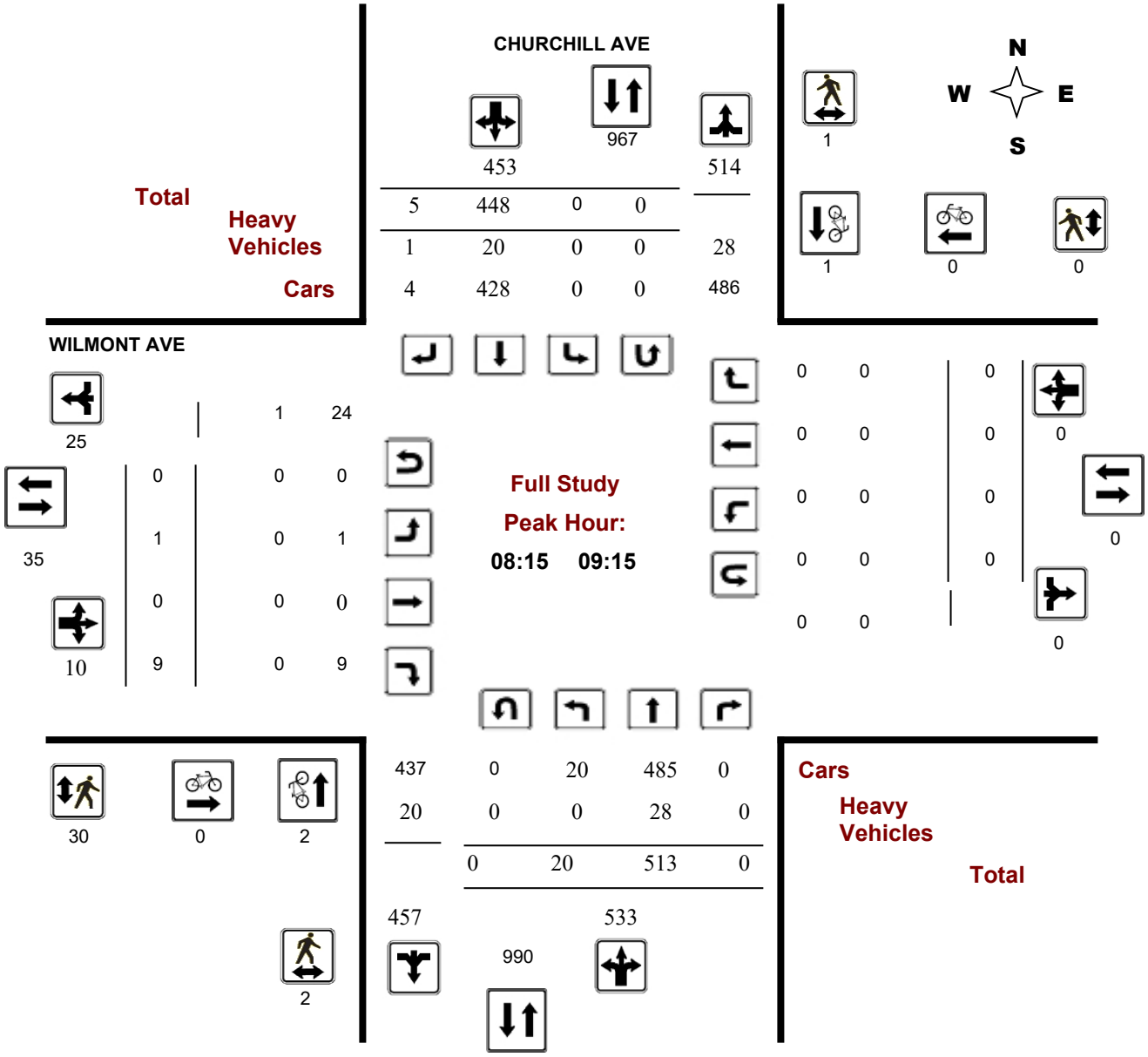
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CHURCHILL AVE @ WILMONT AVE

Survey Date: Wednesday, January 13, 2016 **WO No:** 35638

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



Comments

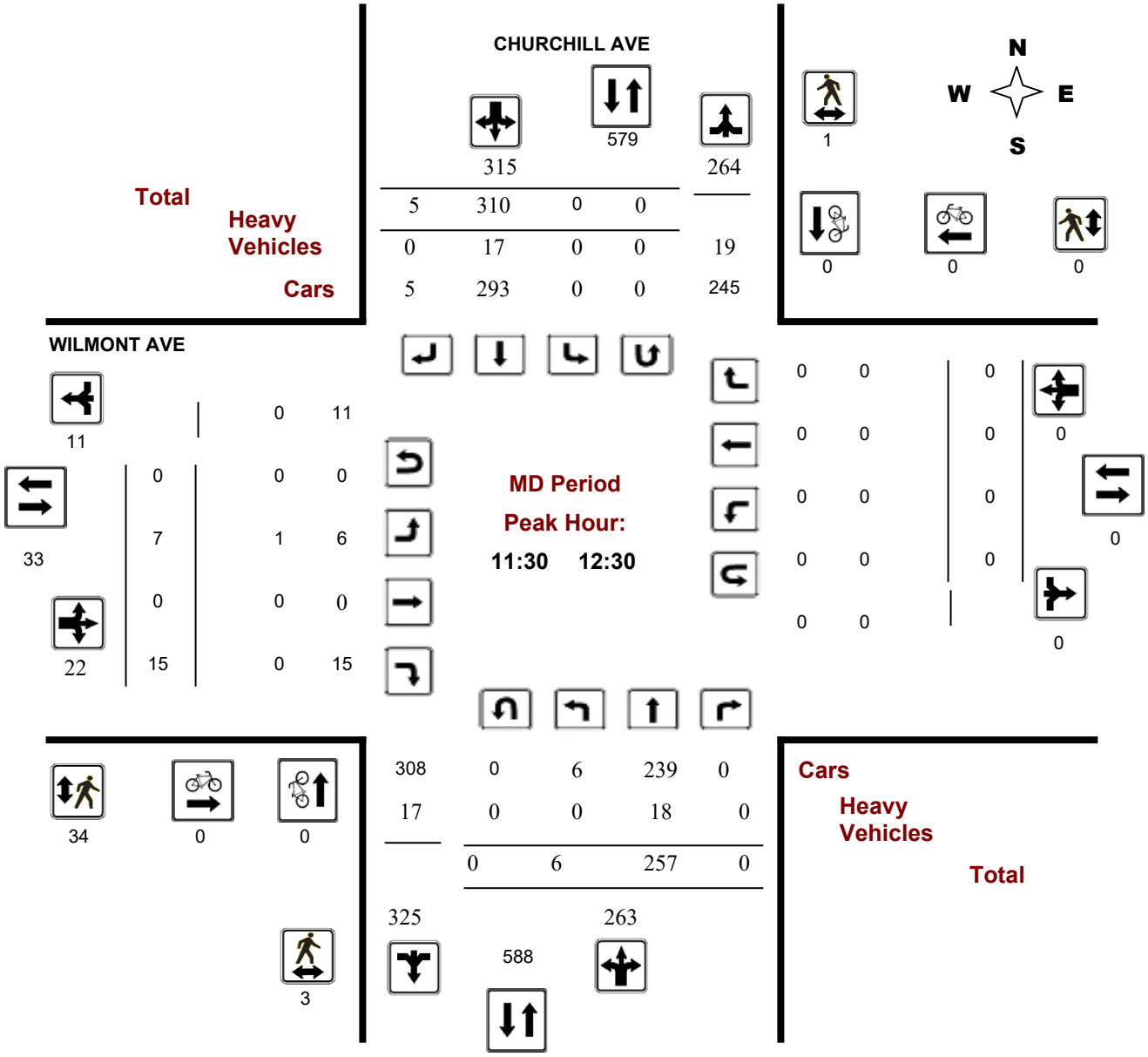
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CHURCHILL AVE @ WILMONT AVE

Survey Date: Wednesday, January 13, 2016 **WO No:** 35638

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



Comments

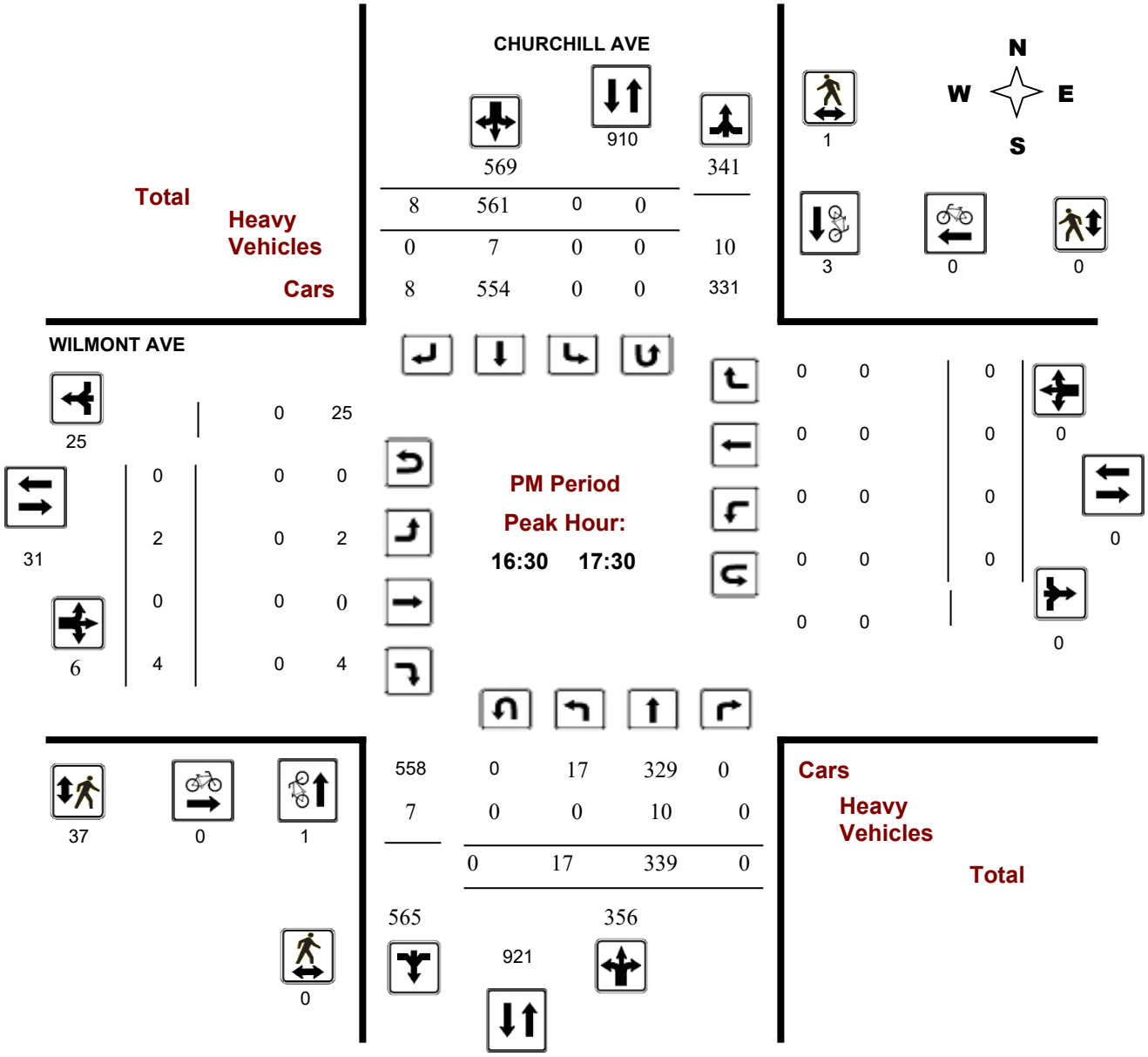
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CHURCHILL AVE @ WILMONT AVE

Survey Date: Wednesday, January 13, 2016 **WO No:** 35638

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



Comments

Transportation Services - Traffic Services

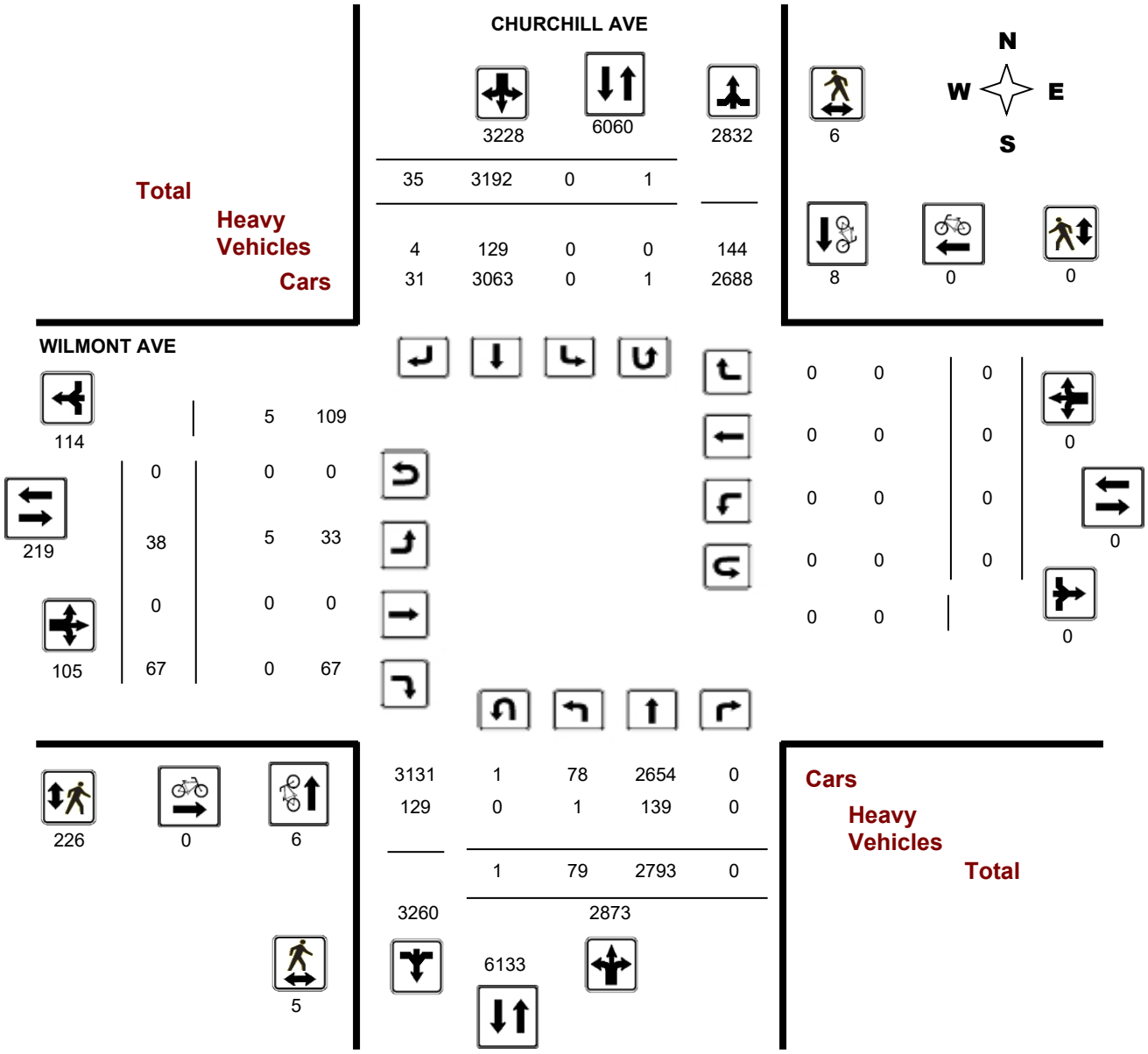
Turning Movement Count - Full Study Diagram

CHURCHILL AVE @ WILMONT AVE

Survey Date: Wednesday, January 13, 2016

WO#: 35638

Device: Miovision



Comments

Transportation Services - Traffic Services

Work Order 35638

Turning Movement Count - Full Study Summary Report

CHURCHILL AVE @ WILMONT AVE

Survey Date: Wednesday, January 13, 201

Total Observed U-Turns

Northbound: 1 Southbound: 1

Eastbound: 0 Westbound: 0

AADT Factor 1.00

Full Study

	CHURCHILL AVE									WILMONT AVE									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	3	360	0	**363**	0	315	2	**317**	**680**	6	0	4	**10**	0	0	0	**0**	**10**	**690**
08:00 09:00	15	506	0	**521**	0	425	3	**428**	**949**	2	0	8	**10**	0	0	0	**0**	**10**	**959**
09:00 10:00	15	381	0	**396**	0	378	3	**381**	**777**	7	0	10	**17**	0	0	0	**0**	**17**	**794**
11:30 12:30	6	257	0	**263**	0	310	5	**315**	**578**	7	0	15	**22**	0	0	0	**0**	**22**	**600**
12:30 13:30	8	238	0	**246**	0	271	5	**276**	**522**	5	0	9	**14**	0	0	0	**0**	**14**	**536**
15:00 16:00	7	373	0	**380**	0	439	3	**442**	**822**	2	0	10	**12**	0	0	0	**0**	**12**	**834**
16:00 17:00	10	339	0	**349**	0	537	5	**542**	**891**	7	0	8	**15**	0	0	0	**0**	**15**	**906**
17:00 18:00	15	339	0	**354**	0	517	9	**526**	**880**	2	0	3	**5**	0	0	0	**0**	**5**	**885**
Sub Total	79	2793	0	**2872**	0	3192	35	**3227**	**6099**	38	0	67	**105**	0	0	0	**0**	**105**	**6204**
U Turns				**1**				**1**	**2**				**0**				**0**	**0**	**2**
Total	79	2793	0	**2873**	0	3192	35	**3228**	**6101**	38	0	67	**105**	0	0	0	**0**	**105**	**6206**
EQ 12Hr	110	3882	0	**3993**	0	4437	49	**4487**	**8480**	53	0	93	**146**	0	0	0	**0**	**146**	**8626**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	110	3882	0	**3993**	0	4437	49	**4487**	**8480**	53	0	93	**146**	0	0	0	**0**	**146**	**8626**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**1.00**						
AVG 24Hr	144	5086	0	**5231**	0	5812	64	**5878**	**11109**	69	0	122	**191**	0	0	0	**0**	**191**	**11300**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

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

Transportation Services - Traffic Services

W.O. 35638

Turning Movement Count - 15 Minute Summary Report

CHURCHILL AVE @ WILMONT AVE

Survey Date: Wednesday, January 13, 2016

Total Observed U-Turns

Northbound: 1 Southbound: 1

Eastbound: 0 Westbound: 0

		CHURCHILL AVE									WILMONT AVE									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	72	0	**73**	0	68	0	**68**	**141**	1	0	1	**2**	0	0	0	**0**	**2**	**143**
07:15	07:30	0	81	0	**81**	0	82	0	**82**	**163**	1	0	0	**1**	0	0	0	**0**	**1**	**164**
07:30	07:45	2	88	0	**90**	0	70	1	**71**	**161**	2	0	2	**4**	0	0	0	**0**	**4**	**165**
07:45	08:00	0	119	0	**119**	0	95	1	**97**	**216**	2	0	1	**3**	0	0	0	**0**	**3**	**219**
08:00	08:15	1	121	0	**122**	0	86	1	**87**	**209**	1	0	3	**4**	0	0	0	**0**	**4**	**213**
08:15	08:30	5	131	0	**136**	0	115	0	**115**	**251**	0	0	1	**1**	0	0	0	**0**	**1**	**252**
08:30	08:45	7	131	0	**138**	0	108	1	**109**	**247**	1	0	1	**2**	0	0	0	**0**	**2**	**249**
08:45	09:00	2	123	0	**125**	0	116	1	**117**	**242**	0	0	3	**3**	0	0	0	**0**	**3**	**245**
09:00	09:15	6	128	0	**134**	0	109	3	**112**	**246**	0	0	4	**4**	0	0	0	**0**	**4**	**250**
09:15	09:30	6	97	0	**103**	0	80	0	**80**	**183**	3	0	3	**6**	0	0	0	**0**	**6**	**189**
09:30	09:45	1	90	0	**91**	0	95	0	**95**	**186**	3	0	1	**4**	0	0	0	**0**	**4**	**190**
09:45	10:00	2	66	0	**68**	0	94	0	**94**	**162**	1	0	2	**3**	0	0	0	**0**	**3**	**165**
11:30	11:45	2	59	0	**61**	0	89	1	**90**	**151**	4	0	3	**7**	0	0	0	**0**	**7**	**158**
11:45	12:00	0	69	0	**69**	0	80	0	**80**	**149**	1	0	5	**6**	0	0	0	**0**	**6**	**155**
12:00	12:15	3	60	0	**63**	0	73	2	**75**	**138**	2	0	5	**7**	0	0	0	**0**	**7**	**145**
12:15	12:30	1	69	0	**70**	0	68	2	**70**	**140**	0	0	2	**2**	0	0	0	**0**	**2**	**142**
12:30	12:45	2	65	0	**67**	0	71	1	**72**	**139**	1	0	1	**2**	0	0	0	**0**	**2**	**141**
12:45	13:00	1	50	0	**51**	0	62	1	**63**	**114**	2	0	2	**4**	0	0	0	**0**	**4**	**118**
13:00	13:15	3	71	0	**74**	0	67	0	**67**	**141**	0	0	5	**5**	0	0	0	**0**	**5**	**146**
13:15	13:30	2	52	0	**54**	0	71	3	**74**	**128**	2	0	1	**3**	0	0	0	**0**	**3**	**131**
15:00	15:15	2	86	0	**88**	0	100	1	**101**	**189**	1	0	2	**3**	0	0	0	**0**	**3**	**192**
15:15	15:30	2	98	0	**100**	0	107	0	**107**	**207**	0	0	2	**2**	0	0	0	**0**	**2**	**209**
15:30	15:45	1	97	0	**98**	0	122	0	**122**	**220**	1	0	3	**4**	0	0	0	**0**	**4**	**224**
15:45	16:00	2	92	0	**94**	0	110	2	**112**	**206**	0	0	3	**3**	0	0	0	**0**	**3**	**209**
16:00	16:15	2	101	0	**104**	0	136	3	**139**	**243**	4	0	1	**5**	0	0	0	**0**	**5**	**248**
16:15	16:30	1	73	0	**74**	0	113	1	**114**	**188**	2	0	4	**6**	0	0	0	**0**	**6**	**194**
16:30	16:45	2	97	0	**99**	0	154	0	**154**	**253**	0	0	2	**2**	0	0	0	**0**	**2**	**255**
16:45	17:00	5	68	0	**73**	0	134	1	**135**	**208**	1	0	1	**2**	0	0	0	**0**	**2**	**210**
17:00	17:15	8	73	0	**81**	0	135	3	**138**	**219**	0	0	1	**1**	0	0	0	**0**	**1**	**220**
17:15	17:30	2	101	0	**103**	0	138	4	**142**	**245**	1	0	0	**1**	0	0	0	**0**	**1**	**246**
17:30	17:45	0	94	0	**94**	0	121	1	**122**	**216**	1	0	1	**2**	0	0	0	**0**	**2**	**218**
17:45	18:00	5	71	0	**76**	0	123	1	**124**	**200**	0	0	1	**1**	0	0	0	**0**	**1**	**201**
TOTAL:		79	2793	0	**2873**	0	3192	35	**3228**	**6101**	38	0	67	**105**	0	0	0	**0**	**105**	**6206**

Note: U-Turns are included in Totals.

Comment:

Transportation Services - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order
35638

CHURCHILL AVE @ WILMONT AVE

Count Date: Wednesday, January 13, 2016 **Start Time:** 07:00

	CHURCHILL AVE			WILMONT AVE			
Time Period	Northbound	Southbound	**Street Total**	Eastbound	Westbound	**Street Total**	**Grand Total**
07:00 08:00	1	1	**2**	0	0	**0**	**2**
08:00 09:00	1	1	**2**	0	0	**0**	**2**
09:00 10:00	2	0	**2**	0	0	**0**	**2**
11:30 12:30	0	0	**0**	0	0	**0**	**0**
12:30 13:30	0	1	**1**	0	0	**0**	**1**
15:00 16:00	0	1	**1**	0	0	**0**	**1**
16:00 17:00	2	0	**2**	0	0	**0**	**2**
17:00 18:00	0	4	**4**	0	0	**0**	**4**
Total	6	8	**14**	0	0	**0**	**14**

Comment:

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

Transportation Services - Traffic Services

W.O. 35638

Turning Movement Count - Heavy Vehicle Report

CHURCHILL AVE @ WILMONT AVE

Survey Date: Wednesday, January 13, 2016

		CHURCHILL AVE									WILMONT AVE									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	08:00	0	19	0	**19**	0	20	1	**21**	**40**	1	0	0	**1**	0	0	0	**0**	**1**	**41**
08:00	09:00	0	32	0	**32**	0	18	1	**19**	**51**	0	0	0	**0**	0	0	0	**0**	**0**	**51**
09:00	10:00	0	23	0	**23**	0	16	0	**16**	**39**	1	0	0	**1**	0	0	0	**0**	**1**	**40**
11:30	12:30	0	18	0	**18**	0	17	0	**17**	**35**	1	0	0	**1**	0	0	0	**0**	**1**	**36**
12:30	13:30	0	15	0	**15**	0	16	1	**17**	**32**	0	0	0	**0**	0	0	0	**0**	**0**	**32**
15:00	16:00	0	9	0	**9**	0	22	1	**23**	**32**	1	0	0	**1**	0	0	0	**0**	**1**	**33**
16:00	17:00	1	15	0	**16**	0	11	0	**11**	**27**	1	0	0	**1**	0	0	0	**0**	**1**	**28**
17:00	18:00	0	8	0	**8**	0	9	0	**9**	**17**	0	0	0	**0**	0	0	0	**0**	**0**	**17**
Sub Total		1	139	0	**140**	0	129	4	**133**	**273**	5	0	0	**5**	0	0	0	**0**	**5**	**278**
U-Turns (Heavy Vehicles)					**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total		1	139	0	**0**	0	129	4	**133**	**273**	5	0	0	**5**	0	0	0	**0**	**5**	**278**

Heavy Vehicles include Buses, Single-Unit Trucks and Articulated Trucks. Further, they ARE included in the Turning Movement Count Summary.

Transportation Services - Traffic Services

Work Order
35638

Turning Movement Count - Pedestrian Volume Report

CHURCHILL AVE @ WILMONT AVE

Count Date: Wednesday, January 13, 2016 **Start Time:** 07:00

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	**0**	3	0	**3**	**3**
07:15 07:30	0	0	**0**	5	0	**5**	**5**
07:30 07:45	0	0	**0**	5	0	**5**	**5**
07:45 08:00	0	0	**0**	12	0	**12**	**12**
07:00 08:00	0	0	**0**	25	0	**25**	**25**
08:00 08:15	0	0	**0**	5	0	**5**	**5**
08:15 08:30	1	0	**1**	9	0	**9**	**10**
08:30 08:45	1	0	**1**	3	0	**3**	**4**
08:45 09:00	0	1	**1**	8	0	**8**	**9**
08:00 09:00	2	1	**3**	25	0	**25**	**28**
09:00 09:15	0	0	**0**	10	0	**10**	**10**
09:15 09:30	0	1	**1**	3	0	**3**	**4**
09:30 09:45	0	0	**0**	6	0	**6**	**6**
09:45 10:00	0	0	**0**	8	0	**8**	**8**
09:00 10:00	0	1	**1**	27	0	**27**	**28**
11:30 11:45	2	1	**3**	6	0	**6**	**9**
11:45 12:00	0	0	**0**	8	0	**8**	**8**
12:00 12:15	1	0	**1**	9	0	**9**	**10**
12:15 12:30	0	0	**0**	11	0	**11**	**11**
11:30 12:30	3	1	**4**	34	0	**34**	**38**
12:30 12:45	0	0	**0**	2	0	**2**	**2**
12:45 13:00	0	1	**1**	7	0	**7**	**8**
13:00 13:15	0	1	**1**	3	0	**3**	**4**
13:15 13:30	0	0	**0**	7	0	**7**	**7**
12:30 13:30	0	2	**2**	19	0	**19**	**21**
15:00 15:15	0	0	**0**	4	0	**4**	**4**
15:15 15:30	0	0	**0**	5	0	**5**	**5**
15:30 15:45	0	0	**0**	14	0	**14**	**14**
15:45 16:00	0	0	**0**	8	0	**8**	**8**
15:00 16:00	0	0	**0**	31	0	**31**	**31**
16:00 16:15	0	0	**0**	8	0	**8**	**8**
16:15 16:30	0	0	**0**	9	0	**9**	**9**
16:30 16:45	0	1	**1**	5	0	**5**	**6**
16:45 17:00	0	0	**0**	13	0	**13**	**13**
16:00 17:00	0	1	**1**	35	0	**35**	**36**
17:00 17:15	0	0	**0**	8	0	**8**	**8**
17:15 17:30	0	0	**0**	11	0	**11**	**11**
17:30 17:45	0	0	**0**	4	0	**4**	**4**
17:45 18:00	0	0	**0**	7	0	**7**	**7**
17:00 18:00	0	0	**0**	30	0	**30**	**30**
Total	5	6	**11**	226	0	**226**	**237**

Comment:

Transportation Services - Traffic Services

Work Order
35638

Turning Movement Count - 15 Min U-Turn Total Report

CHURCHILL AVE @ WILMONT AVE

Survey Date: Wednesday, January 13, 2016

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	1	0	0	1
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	1	0	0	0	1
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		1	1	0	0	2

Transportation Services - Traffic Services

1814

W.O. 34652

Turning Movement Count - 15 Minute Summary Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Monday, June 08, 2015

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

		CHURCHILL AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	26	5	**32**	4	32	28	**64**	**96**	54	61	7	**122**	7	16	3	**26**	**148**	**244**
07:15	07:30	5	15	4	**24**	5	45	27	**77**	**101**	51	56	3	**110**	1	20	4	**25**	**135**	**236**
07:30	07:45	1	15	7	**23**	2	63	24	**89**	**112**	50	64	2	**116**	6	46	2	**54**	**170**	**282**
07:45	08:00	4	41	14	**59**	7	75	30	**112**	**171**	61	60	3	**124**	5	34	7	**46**	**170**	**341**
08:00	08:15	17	60	14	**91**	9	76	42	**127**	**218**	74	99	14	**187**	13	61	6	**80**	**267**	**485**
08:15	08:30	6	61	21	**88**	3	68	32	**103**	**191**	67	69	3	**139**	9	50	6	**65**	**204**	**395**
08:30	08:45	3	60	11	**74**	4	62	57	**123**	**197**	62	87	13	**162**	12	46	8	**66**	**228**	**425**
08:45	09:00	1	39	23	**63**	3	79	55	**137**	**200**	52	55	8	**115**	13	73	7	**93**	**208**	**408**
09:00	09:15	8	66	11	**85**	6	75	45	**126**	**211**	53	77	20	**150**	11	55	6	**72**	**222**	**433**
09:15	09:30	6	59	13	**78**	4	56	40	**100**	**178**	41	69	5	**115**	12	42	7	**61**	**176**	**354**
09:30	09:45	14	45	13	**72**	2	56	29	**87**	**159**	34	67	9	**110**	10	60	6	**76**	**186**	**345**
09:45	10:00	5	39	22	**66**	4	41	20	**65**	**131**	39	65	17	**121**	9	76	14	**99**	**220**	**351**
11:30	11:45	1	5	4	**10**	11	138	38	**187**	**197**	5	17	1	**23**	19	168	8	**195**	**218**	**415**
11:45	12:00	13	30	13	**56**	11	62	44	**117**	**173**	42	62	9	**113**	16	92	21	**129**	**242**	**415**
12:00	12:15	4	42	9	**55**	9	45	56	**110**	**165**	24	64	10	**98**	15	158	12	**185**	**283**	**448**
12:15	12:30	7	43	17	**67**	8	54	50	**112**	**179**	35	71	23	**129**	13	82	9	**104**	**233**	**412**
12:30	12:45	7	28	17	**52**	5	44	54	**103**	**155**	33	75	16	**124**	22	71	14	**107**	**231**	**386**
12:45	13:00	4	36	17	**57**	7	57	47	**111**	**168**	19	57	13	**89**	17	159	12	**188**	**277**	**445**
13:00	13:15	8	37	12	**57**	13	39	29	**81**	**138**	27	54	13	**94**	17	123	9	**149**	**243**	**381**
13:15	13:30	2	25	12	**39**	2	45	18	**65**	**104**	31	44	13	**88**	9	91	3	**103**	**191**	**295**
15:00	15:15	6	52	16	**74**	10	58	59	**127**	**201**	24	65	17	**106**	30	124	15	**169**	**275**	**476**
15:15	15:30	10	33	19	**62**	5	79	106	**190**	**252**	39	59	10	**108**	15	157	12	**184**	**292**	**544**
15:30	15:45	5	51	23	**79**	10	89	61	**160**	**239**	43	72	6	**121**	24	185	9	**218**	**339**	**578**
15:45	16:00	5	39	13	**57**	14	106	97	**217**	**274**	21	31	3	**55**	22	188	4	**214**	**269**	**543**
16:00	16:15	6	43	19	**68**	8	111	126	**245**	**313**	43	68	13	**124**	26	152	9	**187**	**311**	**624**
16:15	16:30	3	59	12	**74**	2	78	99	**179**	**253**	39	50	9	**98**	21	152	13	**186**	**284**	**537**
16:30	16:45	6	42	12	**60**	12	126	138	**276**	**336**	25	46	7	**78**	29	122	14	**165**	**243**	**579**
16:45	17:00	15	41	6	**62**	3	131	154	**288**	**350**	28	56	9	**93**	22	153	6	**181**	**274**	**624**
17:00	17:15	3	51	16	**70**	8	80	106	**194**	**264**	30	52	7	**89**	23	151	15	**189**	**278**	**542**
17:15	17:30	10	47	20	**77**	3	128	111	**242**	**319**	25	42	2	**69**	48	210	9	**267**	**336**	**655**
17:30	17:45	6	68	19	**93**	6	102	100	**208**	**301**	59	72	8	**139**	29	192	26	**247**	**386**	**687**
17:45	18:00	10	36	19	**65**	16	90	54	**160**	**225**	25	45	3	**73**	19	142	16	**177**	**250**	**475**
TOTAL:		202	1334	453	**1989**	216	2390	1976	**4582**	**6571**	1255	1931	296	**3482**	544	3451	312	**4307**	**7789**	**14360**

Note: U-Turns are included in Totals.

Comment:

Transportation Services - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order
34652

CHURCHILL AVE @ RICHMOND RD

Count Date: Monday, June 08, 2015 **Start Time:** 07:00

	CHURCHILL AVE			RICHMOND RD			
Time Period	Northbound	Southbound	**Street Total**	Eastbound	Westbound	**Street Total**	**Grand Total**
07:00 08:00	0	2	**2**	2	2	**4**	**6**
08:00 09:00	2	1	**3**	6	2	**8**	**11**
09:00 10:00	5	0	**5**	2	2	**4**	**9**
11:30 12:30	0	2	**2**	1	0	**1**	**3**
12:30 13:30	1	1	**2**	0	2	**2**	**4**
15:00 16:00	4	0	**4**	7	5	**12**	**16**
16:00 17:00	4	2	**6**	7	7	**14**	**20**
17:00 18:00	3	4	**7**	7	8	**15**	**22**
Total	19	12	**31**	32	28	**60**	**91**

Comment:

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

Transportation Services - Traffic Services

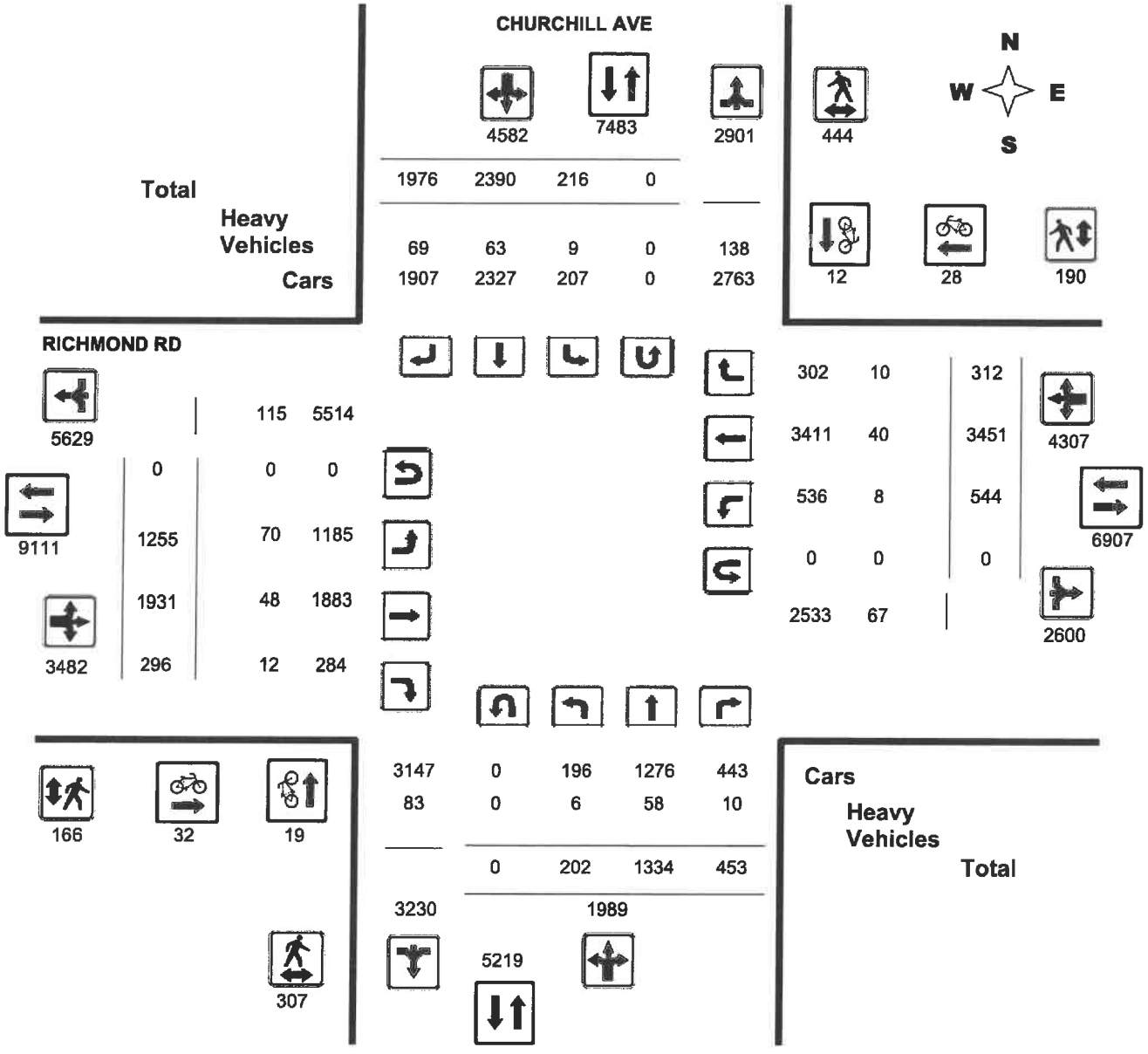
Turning Movement Count - Full Study Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Monday, June 08, 2015

WO#: 34652

Device: Jamar Technologies, Inc



Comments

Transportation Services - Traffic Services

W.O. 34652

Turning Movement Count - Heavy Vehicle Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Monday, June 08, 2015

		CHURCHILL AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	08:00	1	7	0	**8**	2	14	7	**23**	**31**	13	6	0	**19**	1	3	1	**5**	**24**	**55**
08:00	09:00	2	13	4	**19**	5	9	14	**28**	**47**	12	2	2	**16**	0	7	1	**8**	**24**	**71**
09:00	10:00	1	11	1	**13**	0	7	8	**15**	**28**	8	17	4	**29**	3	10	3	**16**	**45**	**73**
11:30	12:30	1	8	2	**11**	0	4	10	**14**	**25**	9	7	2	**18**	1	3	2	**6**	**24**	**49**
12:30	13:30	1	7	2	**10**	1	9	8	**18**	**28**	7	9	1	**17**	3	9	2	**14**	**31**	**59**
15:00	16:00	0	3	0	**3**	0	9	10	**19**	**22**	11	3	1	**15**	0	2	0	**2**	**17**	**39**
16:00	17:00	0	6	0	**6**	0	7	8	**15**	**21**	8	1	1	**10**	0	4	0	**4**	**14**	**35**
17:00	18:00	0	3	1	**4**	1	4	4	**9**	**13**	2	3	1	**6**	0	2	1	**3**	**9**	**22**
Sub Total		6	58	10	**74**	9	63	69	**141**	**215**	70	48	12	**130**	8	40	10	**58**	**188**	**403**
U-Turns (Heavy Vehicles)					**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total		6	58	10	**0**	9	63	69	**141**	**215**	70	48	12	**130**	8	40	10	**58**	**188**	**403**

Heavy Vehicles include Buses, Single-Unit Trucks and Articulated Trucks. Further, they ARE included in the Turning Movement Count Summary.

Transportation Services - Traffic Services

Work Order 34652

Turning Movement Count - Pedestrian Volume Report

CHURCHILL AVE @ RICHMOND RD

Count Date: Monday, June 08, 2015 **Start Time:** 07:00

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	**0**	0	1	**1**	**1**
07:15 07:30	1	4	**5**	0	0	**0**	**5**
07:30 07:45	0	3	**3**	0	6	**6**	**9**
07:45 08:00	1	1	**2**	6	2	**8**	**10**
07:00 08:00	2	8	**10**	6	9	**15**	**25**
08:00 08:15	6	3	**9**	5	3	**8**	**17**
08:15 08:30	0	5	**5**	4	2	**6**	**11**
08:30 08:45	0	9	**9**	6	5	**11**	**20**
08:45 09:00	3	4	**7**	3	3	**6**	**13**
08:00 09:00	9	21	**30**	18	13	**31**	**61**
09:00 09:15	6	2	**8**	4	8	**12**	**20**
09:15 09:30	4	4	**8**	2	3	**5**	**13**
09:30 09:45	2	3	**5**	4	3	**7**	**12**
09:45 10:00	1	7	**8**	2	1	**3**	**11**
09:00 10:00	13	16	**29**	12	15	**27**	**56**
11:30 11:45	0	14	**14**	3	8	**11**	**25**
11:45 12:00	8	4	**12**	11	3	**14**	**26**
12:00 12:15	5	13	**18**	7	6	**13**	**31**
12:15 12:30	8	10	**18**	9	6	**15**	**33**
11:30 12:30	21	41	**62**	30	23	**53**	**115**
12:30 12:45	19	16	**35**	8	12	**20**	**55**
12:45 13:00	10	15	**25**	10	0	**10**	**35**
13:00 13:15	13	9	**22**	4	6	**10**	**32**
13:15 13:30	16	8	**24**	7	12	**19**	**43**
12:30 13:30	58	48	**106**	29	30	**59**	**165**
15:00 15:15	8	18	**26**	4	2	**6**	**32**
15:15 15:30	16	25	**41**	4	5	**9**	**50**
15:30 15:45	21	17	**38**	9	4	**13**	**51**
15:45 16:00	19	24	**43**	1	3	**4**	**47**
15:00 16:00	64	84	**148**	18	14	**32**	**180**
16:00 16:15	12	10	**22**	14	2	**16**	**38**
16:15 16:30	19	25	**44**	9	9	**18**	**62**
16:30 16:45	16	29	**45**	2	7	**9**	**54**
16:45 17:00	18	29	**47**	4	2	**6**	**53**
16:00 17:00	65	93	**158**	29	20	**49**	**207**
17:00 17:15	16	32	**48**	11	1	**12**	**60**
17:15 17:30	19	37	**56**	1	6	**7**	**63**
17:30 17:45	20	37	**57**	5	21	**26**	**83**
17:45 18:00	20	27	**47**	7	38	**45**	**92**
17:00 18:00	75	133	**208**	24	66	**90**	**298**
Total	307	444	**751**	166	190	**356**	**1107**

Comment:

Transportation Services - Traffic Services

Work Order
34652

Turning Movement Count - Full Study Summary Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Monday, June 08, 2015

Total Observed U-Turns

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

AADT Factor

.90

Full Study

	CHURCHILL AVE									RICHMOND RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	11	97	30	**138**	18	215	109	**342**	**480**	216	241	15	**472**	19	116	16	**151**	**623**	**1103**
08:00 09:00	27	220	69	**316**	19	285	186	**490**	**806**	255	310	38	**603**	47	230	27	**304**	**907**	**1713**
09:00 10:00	33	209	59	**301**	16	228	134	**378**	**679**	167	278	51	**496**	42	233	33	**308**	**804**	**1483**
11:30 12:30	25	120	43	**188**	39	299	188	**526**	**714**	106	214	43	**363**	63	500	50	**613**	**976**	**1690**
12:30 13:30	21	126	58	**205**	27	185	148	**360**	**565**	110	230	55	**395**	65	444	38	**547**	**942**	**1507**
15:00 16:00	26	175	71	**272**	39	332	323	**694**	**966**	127	227	36	**390**	91	654	40	**785**	**1175**	**2141**
16:00 17:00	30	185	49	**264**	25	446	517	**988**	**1252**	135	220	38	**393**	98	579	42	**719**	**1112**	**2364**
17:00 18:00	29	202	74	**305**	33	400	371	**804**	**1109**	139	211	20	**370**	119	695	66	**880**	**1250**	**2359**
Sub Total	202	1334	453	**1989**	216	2390	1976	**4582**	**6571**	1255	1931	296	**3482**	544	3451	312	**4307**	**7789**	**14360**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	202	1334	453	**1989**	216	2390	1976	**4582**	**6571**	1255	1931	296	**3482**	544	3451	312	**4307**	**7789**	**14360**
EQ 12Hr	281	1854	630	**2765**	300	3322	2747	**6369**	**9134**	1744	2684	411	**4840**	756	4797	434	**5987**	**10827**	**19961**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	253	1669	567	**2488**	270	2990	2472	**5732**	**8220**	1570	2416	370	**4356**	681	4317	390	**5388**	**9744**	**17964**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**.90**						
AVG 24Hr	331	2186	742	**3260**	354	3917	3238	**7509**	**10769**	2057	3165	485	**5706**	892	5656	511	**7058**	**12764**	**23533**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

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

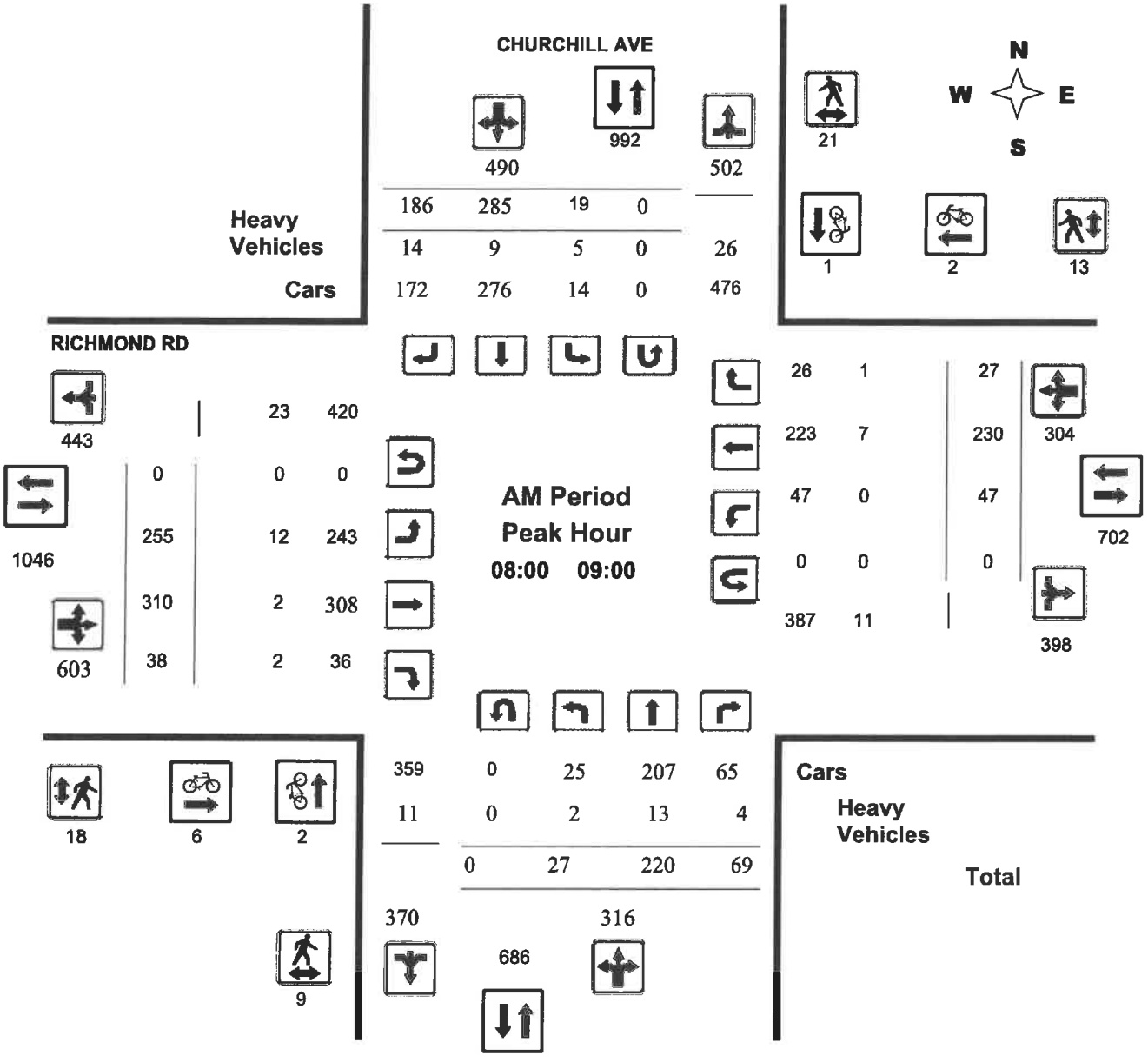
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Monday, June 08, 2015
Start Time: 07:00

WO No: 34652
Device: Jamar Technologies, Inc



Comments

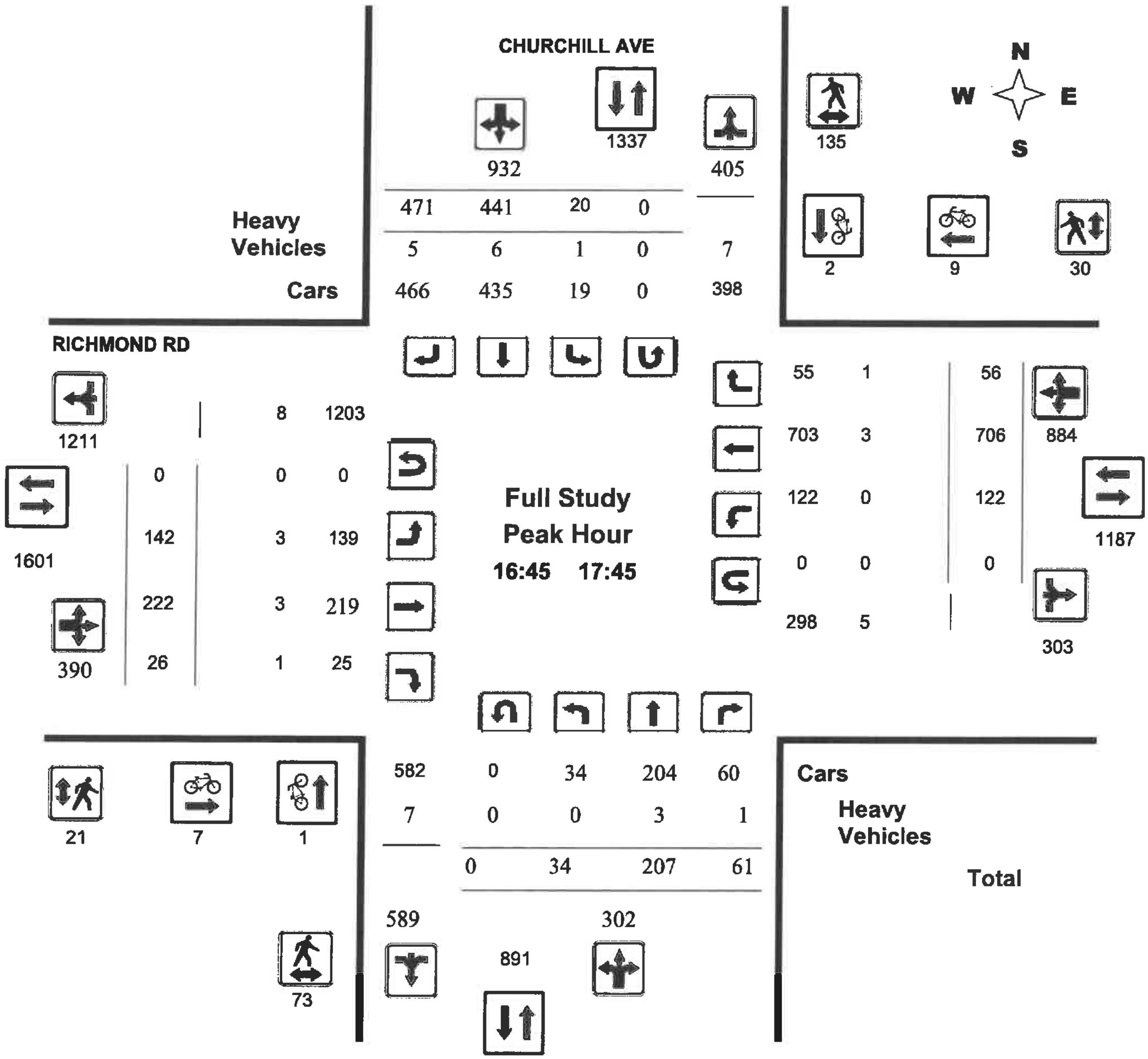
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Monday, June 08, 2015
Start Time: 07:00

WO No: 34652
Device: Jamar Technologies, Inc



Comments

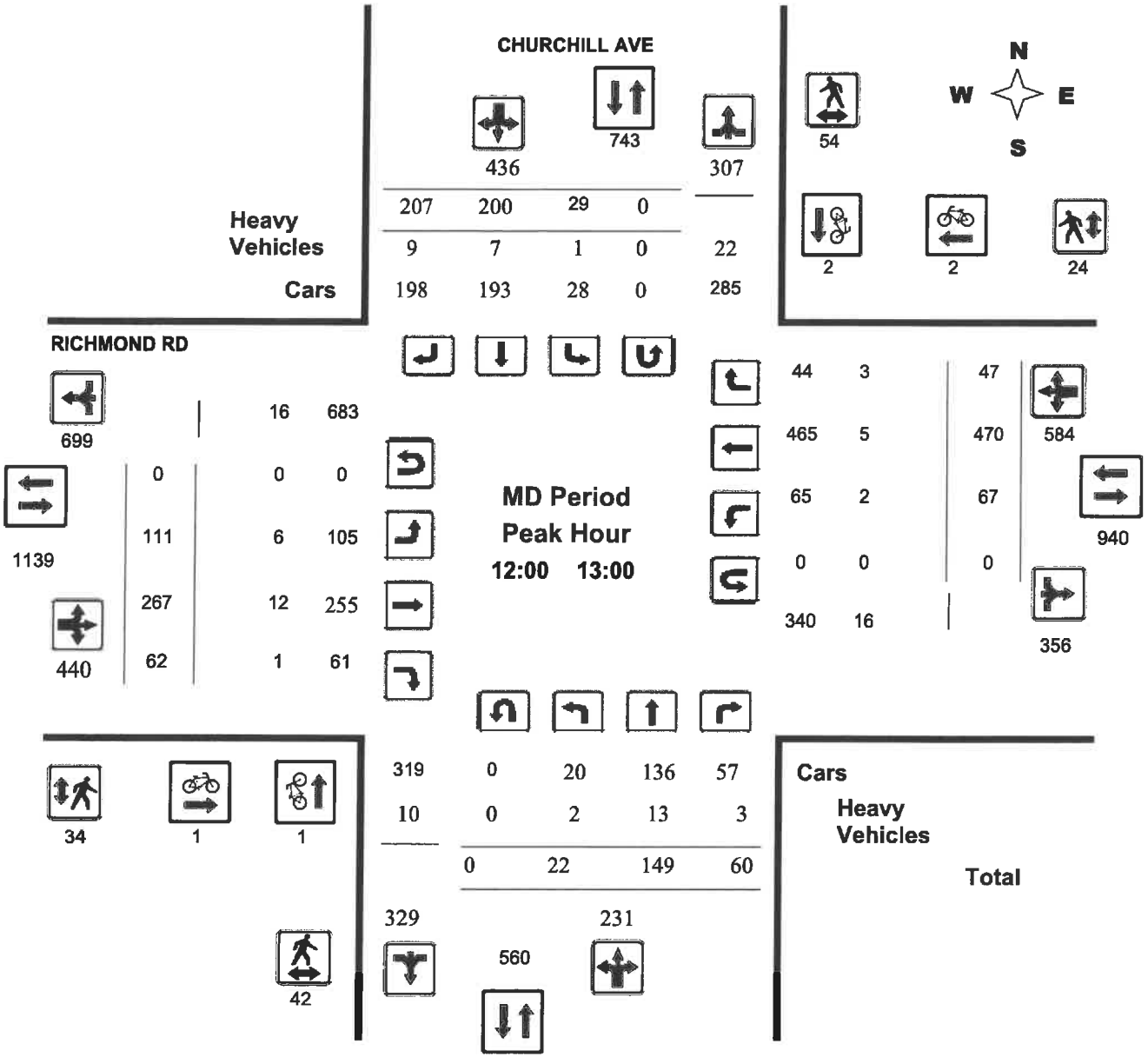
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Monday, June 08, 2015
Start Time: 07:00

WO No: 34652
Device: Jamar Technologies, Inc



Comments

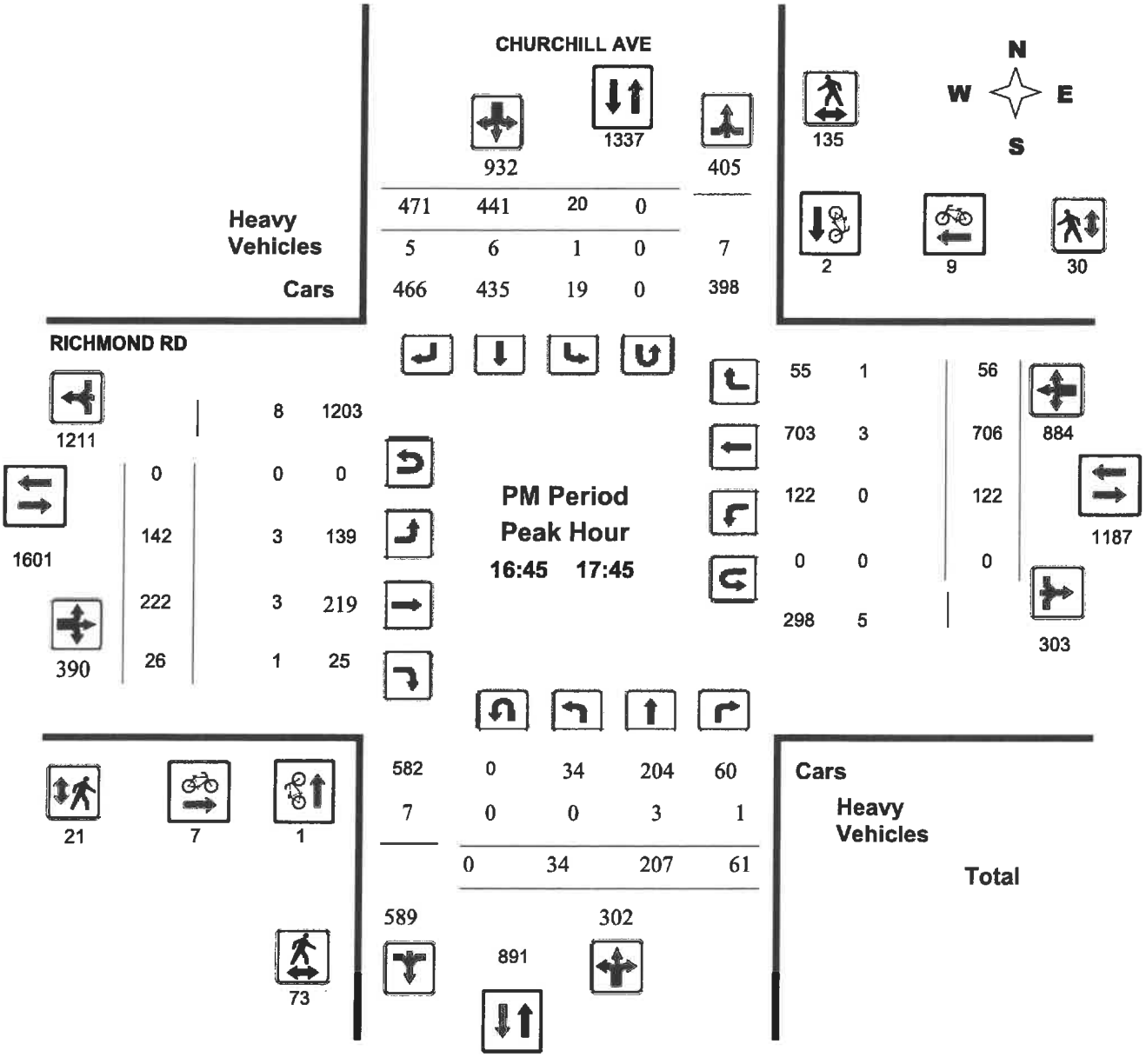
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Monday, June 08, 2015
Start Time: 07:00

WO No: 34652
Device: Jamar Technologies, Inc



Comments

Turning Movement Count - 15 Min U-Turn Total Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Monday, June 08, 2015

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

Transportation Services - Traffic Services

1815 W.O. 36417

Turning Movement Count - 15 Minute Summary Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, October 26, 2016

Total Observed U-Turns

Northbound: 2 Southbound: 0

Eastbound: 0 Westbound: 0

		CHURCHILL AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	6	31	12	**49**	4	50	24	**78**	**127**	37	64	4	**105**	7	35	5	**47**	**152**	**279**
07:15	07:30	11	39	7	**57**	8	47	31	**86**	**143**	52	77	7	**136**	7	28	2	**37**	**173**	**316**
07:30	07:45	9	37	6	**52**	4	54	33	**91**	**143**	62	94	10	**166**	7	37	6	**50**	**216**	**359**
07:45	08:00	3	49	9	**61**	7	55	30	**92**	**153**	82	96	8	**186**	11	49	4	**64**	**250**	**403**
08:00	08:15	12	56	10	**78**	6	69	36	**111**	**189**	73	93	9	**175**	9	46	4	**59**	**234**	**423**
08:15	08:30	8	79	23	**110**	5	69	35	**109**	**219**	66	94	7	**167**	14	52	4	**70**	**237**	**456**
08:30	08:45	11	81	25	**117**	2	74	52	**128**	**245**	77	108	15	**200**	13	52	5	**70**	**270**	**515**
08:45	09:00	4	72	23	**99**	6	68	45	**119**	**218**	63	97	13	**173**	14	51	4	**69**	**242**	**460**
09:00	09:15	6	61	20	**87**	6	66	42	**114**	**201**	61	85	8	**154**	16	50	7	**73**	**227**	**428**
09:15	09:30	7	55	16	**78**	4	63	38	**105**	**183**	43	92	14	**149**	13	48	11	**72**	**221**	**404**
09:30	09:45	2	49	18	**69**	10	62	29	**101**	**170**	39	78	11	**128**	11	52	8	**71**	**199**	**369**
09:45	10:00	18	48	22	**88**	10	49	39	**98**	**186**	37	74	9	**120**	11	48	8	**67**	**187**	**373**
11:30	11:45	6	43	17	**66**	7	63	39	**109**	**175**	30	83	17	**130**	18	72	5	**95**	**225**	**400**
11:45	12:00	10	43	19	**74**	8	56	49	**113**	**187**	33	74	18	**125**	25	93	7	**125**	**250**	**437**
12:00	12:15	12	55	13	**80**	12	54	37	**103**	**183**	35	61	31	**127**	23	85	5	**113**	**240**	**423**
12:15	12:30	12	54	26	**92**	4	62	47	**113**	**205**	36	82	16	**134**	18	80	8	**106**	**240**	**445**
12:30	12:45	8	59	21	**88**	8	48	41	**97**	**185**	30	63	15	**108**	21	79	3	**103**	**211**	**396**
12:45	13:00	13	57	21	**91**	11	53	39	**103**	**194**	48	60	18	**126**	13	79	9	**101**	**227**	**421**
13:00	13:15	14	38	25	**77**	7	52	34	**93**	**170**	39	95	17	**151**	35	84	5	**124**	**275**	**445**
13:15	13:30	8	44	27	**79**	8	46	44	**98**	**177**	30	94	17	**141**	21	76	6	**103**	**244**	**421**
15:00	15:15	7	46	24	**77**	9	60	48	**117**	**194**	33	69	18	**120**	22	92	4	**118**	**238**	**432**
15:15	15:30	7	61	20	**88**	6	75	72	**153**	**241**	34	66	17	**117**	17	92	5	**114**	**231**	**472**
15:30	15:45	7	63	23	**93**	5	65	63	**133**	**226**	38	60	9	**107**	26	120	5	**151**	**258**	**484**
15:45	16:00	5	45	23	**73**	6	63	64	**133**	**206**	41	67	11	**119**	34	116	11	**161**	**280**	**486**
16:00	16:15	6	69	16	**91**	6	51	53	**110**	**201**	47	77	6	**130**	28	128	2	**158**	**288**	**489**
16:15	16:30	7	63	14	**84**	3	56	56	**115**	**199**	29	74	11	**114**	32	139	5	**176**	**290**	**489**
16:30	16:45	6	72	27	**105**	4	62	75	**141**	**246**	43	51	7	**101**	38	123	6	**167**	**268**	**514**
16:45	17:00	4	73	18	**95**	2	60	64	**126**	**221**	46	54	20	**120**	21	115	14	**150**	**270**	**491**
17:00	17:15	5	77	19	**101**	3	65	83	**151**	**252**	24	81	12	**117**	38	132	10	**180**	**297**	**549**
17:15	17:30	3	73	20	**96**	4	69	62	**135**	**231**	40	65	14	**119**	32	128	9	**169**	**288**	**519**
17:30	17:45	7	80	21	**108**	1	77	79	**157**	**265**	22	73	19	**114**	35	102	10	**147**	**261**	**526**
17:45	18:00	9	66	15	**90**	6	60	64	**130**	**220**	52	55	13	**120**	31	92	11	**134**	**254**	**474**
TOTAL:		253	1838	600	**2693**	192	1923	1547	**3662**	**6355**	1422	2456	421	**4299**	661	2575	208	**3444**	**7743**	**14098**

Note: U-Turns are included in Totals.

Comment:

Transportation Services - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order
36417

CHURCHILL AVE @ RICHMOND RD

Count Date: Wednesday, October 26, 2016 **Start Time:** 07:00

	CHURCHILL AVE			RICHMOND RD			
Time Period	Northbound	Southbound	**Street Total**	Eastbound	Westbound	**Street Total**	**Grand Total**
07:00 08:00	7	4	**11**	10	3	**13**	**24**
08:00 09:00	7	8	**15**	8	1	**9**	**24**
09:00 10:00	3	3	**6**	7	4	**11**	**17**
11:30 12:30	1	3	**4**	4	1	**5**	**9**
12:30 13:30	3	3	**6**	8	2	**10**	**16**
15:00 16:00	4	4	**8**	4	10	**14**	**22**
16:00 17:00	2	2	**4**	12	10	**22**	**26**
17:00 18:00	2	9	**11**	9	15	**24**	**35**
Total	29	36	**65**	62	46	**108**	**173**

Comment:

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

Transportation Services - Traffic Services

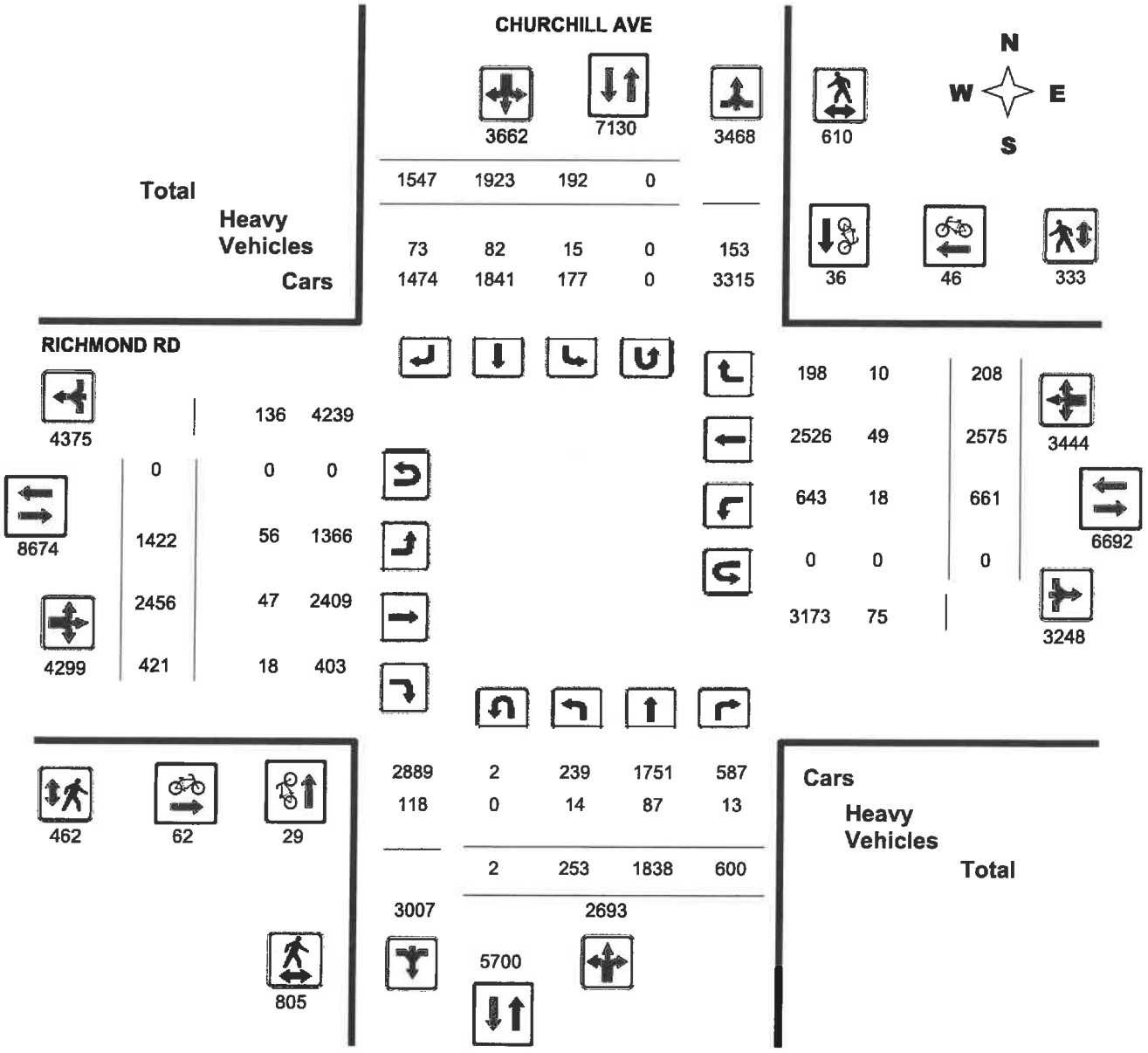
Turning Movement Count - Full Study Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, October 26, 2016

WO#: 36417

Device: Miovision



Comments

Transportation Services - Traffic Services

W.O. 36417

Turning Movement Count - Heavy Vehicle Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, October 26, 2016

		CHURCHILL AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	08:00	1	11	1	**13**	4	6	8	**18**	**31**	7	4	2	**13**	4	3	0	**7**	**20**	**51**
08:00	09:00	2	14	3	**19**	2	5	11	**18**	**37**	10	14	1	**25**	0	7	1	**8**	**33**	**70**
09:00	10:00	3	11	2	**16**	2	15	13	**30**	**46**	7	9	5	**21**	2	9	3	**14**	**35**	**81**
11:30	12:30	3	15	1	**19**	1	16	8	**25**	**44**	5	4	3	**12**	3	6	1	**10**	**22**	**66**
12:30	13:30	3	18	1	**22**	3	11	12	**26**	**48**	7	6	1	**14**	6	11	1	**18**	**32**	**80**
15:00	16:00	0	6	5	**11**	3	11	7	**21**	**32**	8	5	1	**14**	2	5	1	**8**	**22**	**54**
16:00	17:00	1	9	0	**10**	0	9	8	**17**	**27**	7	3	3	**13**	1	5	1	**7**	**20**	**47**
17:00	18:00	1	3	0	**4**	0	9	6	**15**	**19**	5	2	2	**9**	0	3	2	**5**	**14**	**33**
Sub Total		14	87	13	**114**	15	82	73	**170**	**284**	56	47	18	**121**	18	49	10	**77**	**198**	**482**
U-Turns (Heavy Vehicles)					**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total		14	87	13	**0**	15	82	73	**170**	**284**	56	47	18	**121**	18	49	10	**77**	**198**	**482**

Heavy Vehicles include Buses, Single-Unit Trucks and Articulated Trucks. Further, they ARE included in the Turning Movement Count Summary.

Transportation Services - Traffic Services

Work Order 36417

Turning Movement Count - Pedestrian Volume Report

CHURCHILL AVE @ RICHMOND RD

Count Date: Wednesday, October 26, 2016 **Start Time:** 07:00

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	4	7	**11**	7	2	**9**	**20**
07:15 07:30	3	3	**6**	3	3	**6**	**12**
07:30 07:45	6	8	**14**	5	4	**9**	**23**
07:45 08:00	9	7	**16**	10	6	**16**	**32**
07:00 08:00	22	25	**47**	25	15	**40**	**87**
08:00 08:15	8	8	**16**	12	10	**22**	**38**
08:15 08:30	7	9	**16**	15	2	**17**	**33**
08:30 08:45	22	19	**41**	12	14	**26**	**67**
08:45 09:00	9	20	**29**	17	2	**19**	**48**
08:00 09:00	46	56	**102**	56	28	**84**	**186**
09:00 09:15	10	9	**19**	5	8	**13**	**32**
09:15 09:30	10	9	**19**	14	5	**19**	**38**
09:30 09:45	24	11	**35**	6	4	**10**	**45**
09:45 10:00	15	21	**36**	7	3	**10**	**46**
09:00 10:00	59	50	**109**	32	20	**52**	**161**
11:30 11:45	30	17	**47**	9	18	**27**	**74**
11:45 12:00	34	26	**60**	19	13	**32**	**92**
12:00 12:15	38	26	**64**	16	16	**32**	**96**
12:15 12:30	36	26	**62**	9	14	**23**	**85**
11:30 12:30	138	95	**233**	53	61	**114**	**347**
12:30 12:45	22	26	**48**	36	12	**48**	**96**
12:45 13:00	28	24	**52**	16	14	**30**	**82**
13:00 13:15	50	30	**80**	25	19	**44**	**124**
13:15 13:30	40	24	**64**	33	19	**52**	**116**
12:30 13:30	140	104	**244**	110	64	**174**	**418**
15:00 15:15	26	19	**45**	16	8	**24**	**69**
15:15 15:30	48	28	**76**	19	10	**29**	**105**
15:30 15:45	29	22	**51**	21	16	**37**	**88**
15:45 16:00	41	24	**65**	13	11	**24**	**89**
15:00 16:00	144	93	**237**	69	45	**114**	**351**
16:00 16:15	28	32	**60**	24	18	**42**	**102**
16:15 16:30	31	17	**48**	12	14	**26**	**74**
16:30 16:45	27	20	**47**	7	14	**21**	**68**
16:45 17:00	43	29	**72**	11	16	**27**	**99**
16:00 17:00	129	98	**227**	54	62	**116**	**343**
17:00 17:15	21	23	**44**	9	5	**14**	**58**
17:15 17:30	46	24	**70**	14	8	**22**	**92**
17:30 17:45	26	23	**49**	17	11	**28**	**77**
17:45 18:00	34	19	**53**	23	14	**37**	**90**
17:00 18:00	127	89	**216**	63	38	**101**	**317**
Total	805	610	**1415**	462	333	**795**	**2210**

Comment:

Transportation Services - Traffic Services

Work Order 36417

Turning Movement Count - Full Study Summary Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, October 26, 2016

Total Observed U-Turns

Northbound: 2 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor .90

Full Study

	CHURCHILL AVE									RICHMOND RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	29	156	34	**219**	23	206	118	**347**	**566**	233	331	29	**593**	32	149	17	**198**	**791**	**1357**
08:00 09:00	35	288	81	**404**	19	280	168	**467**	**871**	279	392	44	**715**	50	201	17	**268**	**983**	**1854**
09:00 10:00	33	213	76	**322**	30	240	148	**418**	**740**	180	329	42	**551**	51	198	34	**283**	**834**	**1574**
11:30 12:30	40	195	75	**310**	31	235	172	**438**	**748**	134	300	82	**516**	84	330	25	**439**	**955**	**1703**
12:30 13:30	43	198	94	**335**	34	199	158	**391**	**726**	147	312	67	**526**	90	318	23	**431**	**957**	**1683**
15:00 16:00	26	215	90	**331**	26	263	247	**536**	**867**	146	262	55	**463**	99	420	25	**544**	**1007**	**1874**
16:00 17:00	23	277	75	**375**	15	229	248	**492**	**867**	165	256	44	**465**	119	505	27	**651**	**1116**	**1983**
17:00 18:00	24	296	75	**395**	14	271	288	**573**	**968**	138	274	58	**470**	136	454	40	**630**	**1100**	**2068**
Sub Total	253	1838	600	**2691**	192	1923	1547	**3662**	**6353**	1422	2456	421	**4299**	661	2575	208	**3444**	**7743**	**14096**
U Turns				**2**				**0**	**2**				**0**				**0**	**0**	**2**
Total	253	1838	600	**2693**	192	1923	1547	**3662**	**6355**	1422	2456	421	**4299**	661	2575	208	**3444**	**7743**	**14098**
EQ 12Hr	352	2555	834	**3743**	267	2673	2150	**5090**	**8833**	1977	3414	585	**5976**	919	3579	289	**4787**	**10763**	**19596**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	317	2299	751	**3369**	240	2406	1935	**4581**	**7950**	1779	3072	527	**5378**	827	3221	260	**4308**	**9686**	**17636**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**.90**						
AVG 24Hr	415	3012	983	**4413**	315	3151	2535	**6001**	**10414**	2330	4025	690	**7045**	1083	4220	341	**5644**	**12689**	**23103**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

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

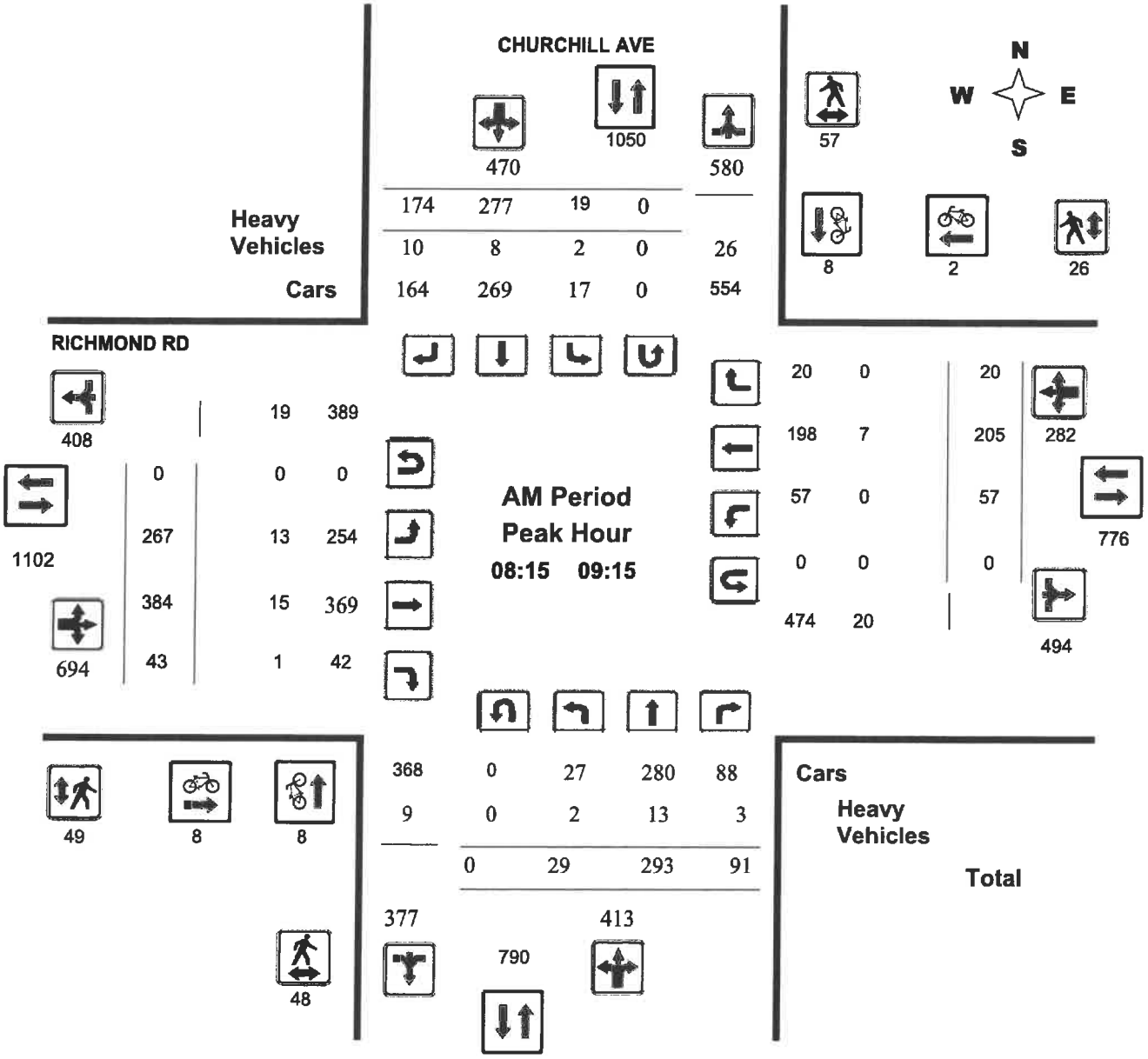
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, October 26, 2016 **WO No:** 36417

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



Comments

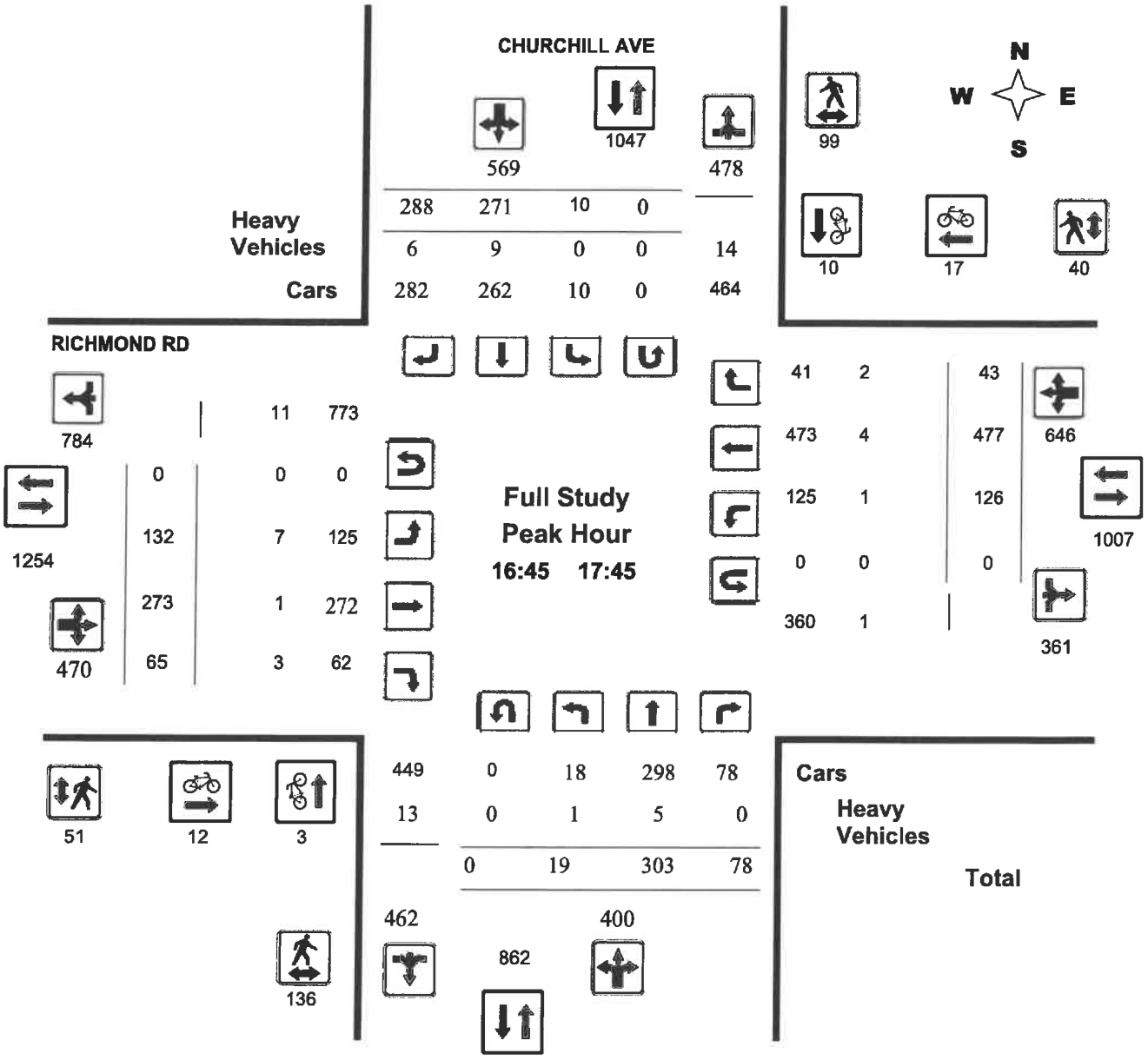
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, October 26, 2016 **WO No:** 36417

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



Comments

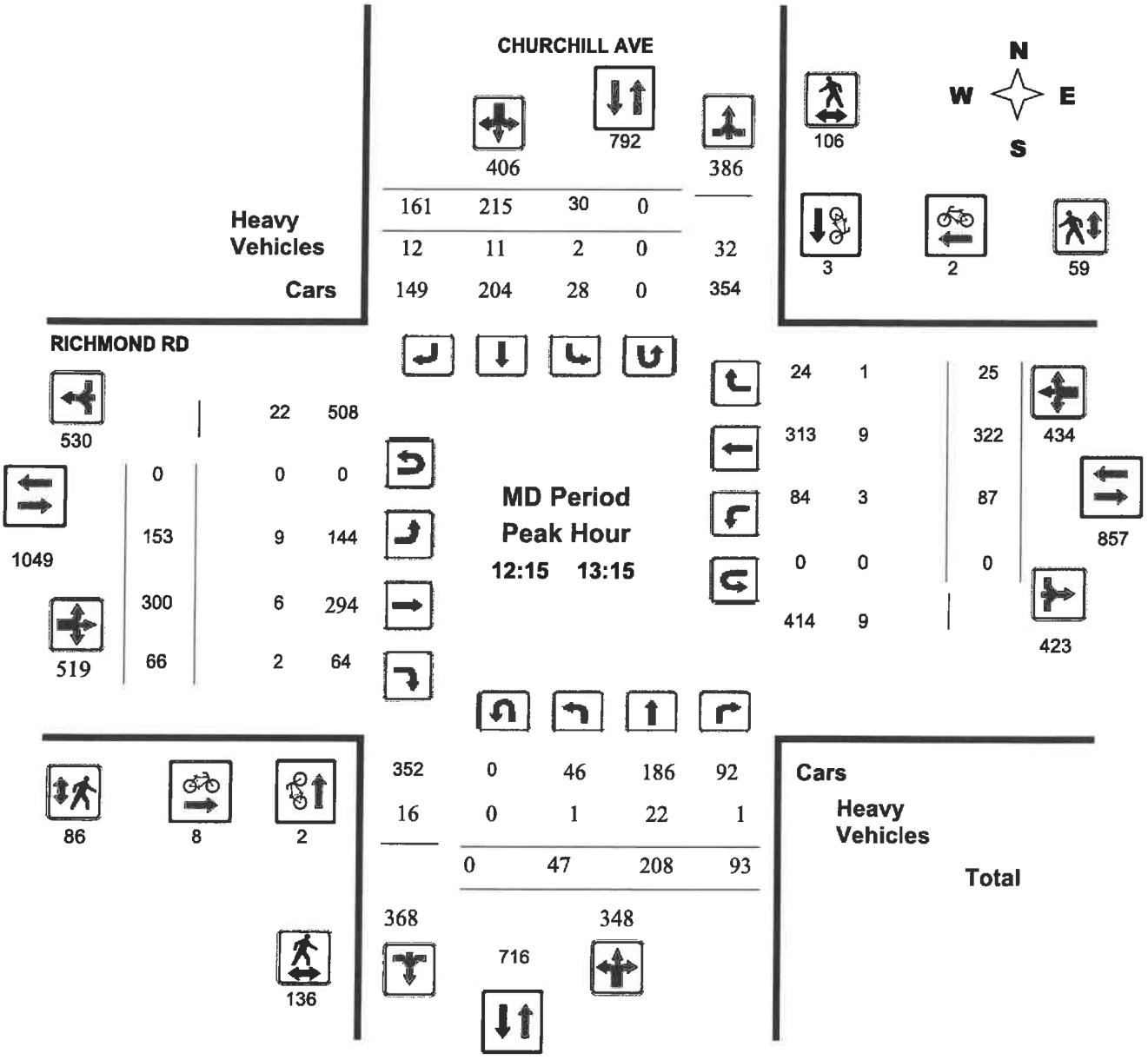
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, October 26, 2016 **WO No:** 36417

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



Comments

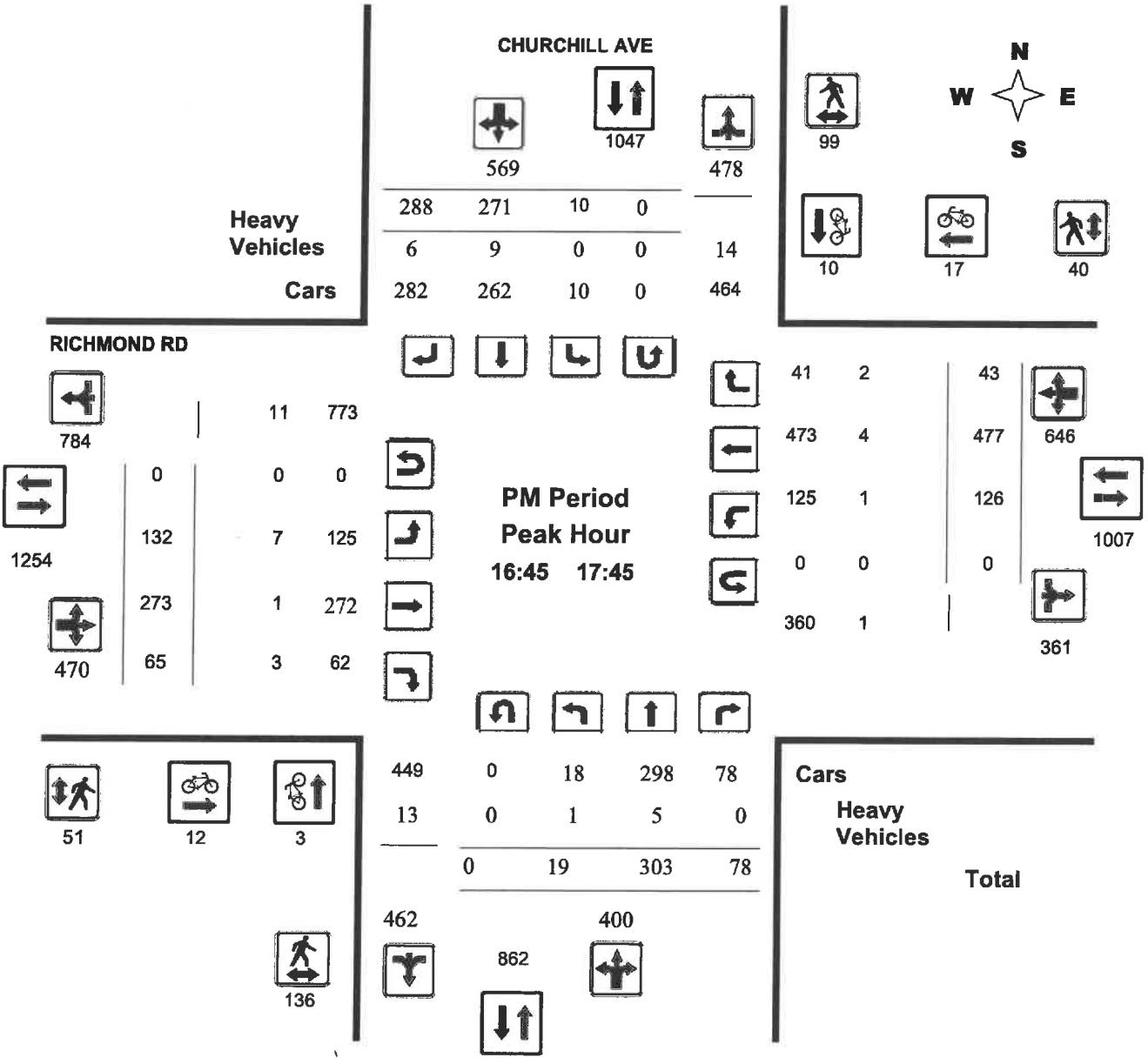
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, October 26, 2016 **WO No:** 36417

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



Comments

Turning Movement Count - 15 Min U-Turn Total Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, October 26, 2016

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	2	0	0	0	2
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		2	0	0	0	2

Transportation Services - Traffic Services

1817
W.O. 37319

Turning Movement Count - 15 Minute Summary Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, November 22, 2017

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 1 Westbound: 0

		CHURCHILL AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	2	26	5	**33**	3	44	17	**64**	**97**	48	83	12	**143**	8	27	3	**38**	**181**	**278**
07:15	07:30	3	35	9	**47**	5	62	22	**89**	**136**	53	76	4	**133**	13	26	8	**47**	**180**	**316**
07:30	07:45	6	39	9	**54**	4	80	33	**117**	**171**	68	76	8	**152**	14	28	2	**44**	**196**	**367**
07:45	08:00	9	42	21	**72**	7	68	32	**107**	**179**	75	93	8	**176**	14	31	6	**51**	**227**	**406**
08:00	08:15	7	66	5	**78**	3	78	21	**102**	**180**	69	114	6	**189**	20	48	12	**80**	**269**	**449**
08:15	08:30	7	68	23	**98**	7	52	33	**92**	**190**	91	81	12	**184**	11	40	9	**60**	**244**	**434**
08:30	08:45	6	79	26	**111**	4	90	44	**138**	**249**	85	90	6	**181**	17	36	4	**57**	**238**	**487**
08:45	09:00	9	77	27	**113**	3	63	33	**99**	**212**	67	116	10	**193**	8	49	5	**62**	**255**	**467**
09:00	09:15	4	77	27	**108**	3	69	29	**101**	**209**	52	97	9	**158**	17	63	3	**83**	**241**	**450**
09:15	09:30	8	53	19	**80**	3	62	32	**97**	**177**	53	85	9	**147**	14	43	8	**65**	**212**	**389**
09:30	09:45	8	51	17	**76**	3	47	29	**79**	**155**	45	66	12	**123**	17	45	7	**69**	**192**	**347**
09:45	10:00	11	46	18	**75**	1	48	37	**86**	**161**	24	73	8	**105**	15	43	3	**61**	**166**	**327**
11:30	11:45	11	51	18	**80**	7	58	39	**104**	**184**	29	80	17	**126**	13	81	9	**103**	**229**	**413**
11:45	12:00	10	54	24	**88**	7	49	43	**99**	**187**	37	70	17	**124**	15	96	7	**118**	**242**	**429**
12:00	12:15	11	46	24	**81**	11	51	34	**96**	**177**	36	51	24	**111**	14	83	8	**105**	**216**	**393**
12:15	12:30	11	55	26	**92**	11	62	42	**115**	**207**	44	93	17	**154**	18	89	9	**116**	**270**	**477**
12:30	12:45	17	51	18	**86**	6	63	42	**111**	**197**	39	84	16	**139**	19	83	6	**108**	**247**	**444**
12:45	13:00	10	44	26	**80**	6	49	35	**90**	**170**	45	84	28	**157**	20	62	9	**91**	**248**	**418**
13:00	13:15	11	54	21	**86**	4	38	34	**76**	**162**	38	89	17	**144**	18	82	3	**103**	**247**	**409**
13:15	13:30	11	46	27	**84**	5	49	33	**87**	**171**	32	97	26	**155**	15	71	7	**93**	**248**	**419**
15:00	15:15	11	36	17	**64**	6	63	62	**131**	**195**	40	64	14	**118**	20	75	8	**103**	**221**	**416**
15:15	15:30	10	56	16	**82**	6	66	70	**142**	**224**	34	67	13	**114**	30	97	0	**127**	**241**	**465**
15:30	15:45	3	60	17	**80**	7	58	72	**137**	**217**	42	56	10	**108**	34	96	7	**137**	**245**	**462**
15:45	16:00	3	56	19	**78**	6	60	78	**144**	**222**	43	69	10	**122**	30	102	7	**139**	**261**	**483**
16:00	16:15	8	54	15	**77**	4	59	90	**153**	**230**	42	62	8	**112**	32	111	9	**152**	**264**	**494**
16:15	16:30	5	71	16	**92**	1	67	66	**134**	**226**	39	73	11	**123**	33	113	3	**149**	**272**	**498**
16:30	16:45	4	73	13	**90**	10	55	71	**136**	**226**	30	70	14	**114**	35	124	8	**167**	**281**	**507**
16:45	17:00	8	73	20	**101**	2	63	82	**147**	**248**	40	67	13	**120**	38	126	3	**167**	**287**	**535**
17:00	17:15	6	73	21	**100**	4	54	83	**141**	**241**	37	61	8	**106**	36	115	7	**158**	**264**	**505**
17:15	17:30	7	62	23	**92**	3	58	74	**135**	**227**	48	87	16	**151**	20	127	6	**153**	**304**	**531**
17:30	17:45	9	74	13	**96**	2	64	78	**144**	**240**	50	80	15	**145**	41	116	6	**163**	**308**	**548**
17:45	18:00	5	82	10	**97**	6	61	77	**144**	**241**	56	101	16	**174**	32	121	6	**159**	**333**	**574**
TOTAL:		251	1830	590	**2671**	160	1910	1567	**3637**	**6308**	1531	2555	414	**4501**	681	2449	198	**3328**	**7829**	**14137**

Note: U-Turns are included in Totals.

Comment:

Transportation Services - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order 37319

CHURCHILL AVE @ RICHMOND RD

Count Date: Wednesday, November 22, 2017 **Start Time:** 07:00

	CHURCHILL AVE			RICHMOND RD			
Time Period	Northbound	Southbound	**Street Total**	Eastbound	Westbound	**Street Total**	**Grand Total**
07:00 08:00	2	2	**4**	3	5	**8**	**12**
08:00 09:00	3	0	**3**	8	4	**12**	**15**
09:00 10:00	1	3	**4**	2	0	**2**	**6**
11:30 12:30	1	0	**1**	0	2	**2**	**3**
12:30 13:30	2	0	**2**	3	0	**3**	**5**
15:00 16:00	1	1	**2**	3	3	**6**	**8**
16:00 17:00	2	2	**4**	10	1	**11**	**15**
17:00 18:00	0	2	**2**	1	0	**1**	**3**
Total	12	10	**22**	30	15	**45**	**67**

Comment:

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

Transportation Services - Traffic Services

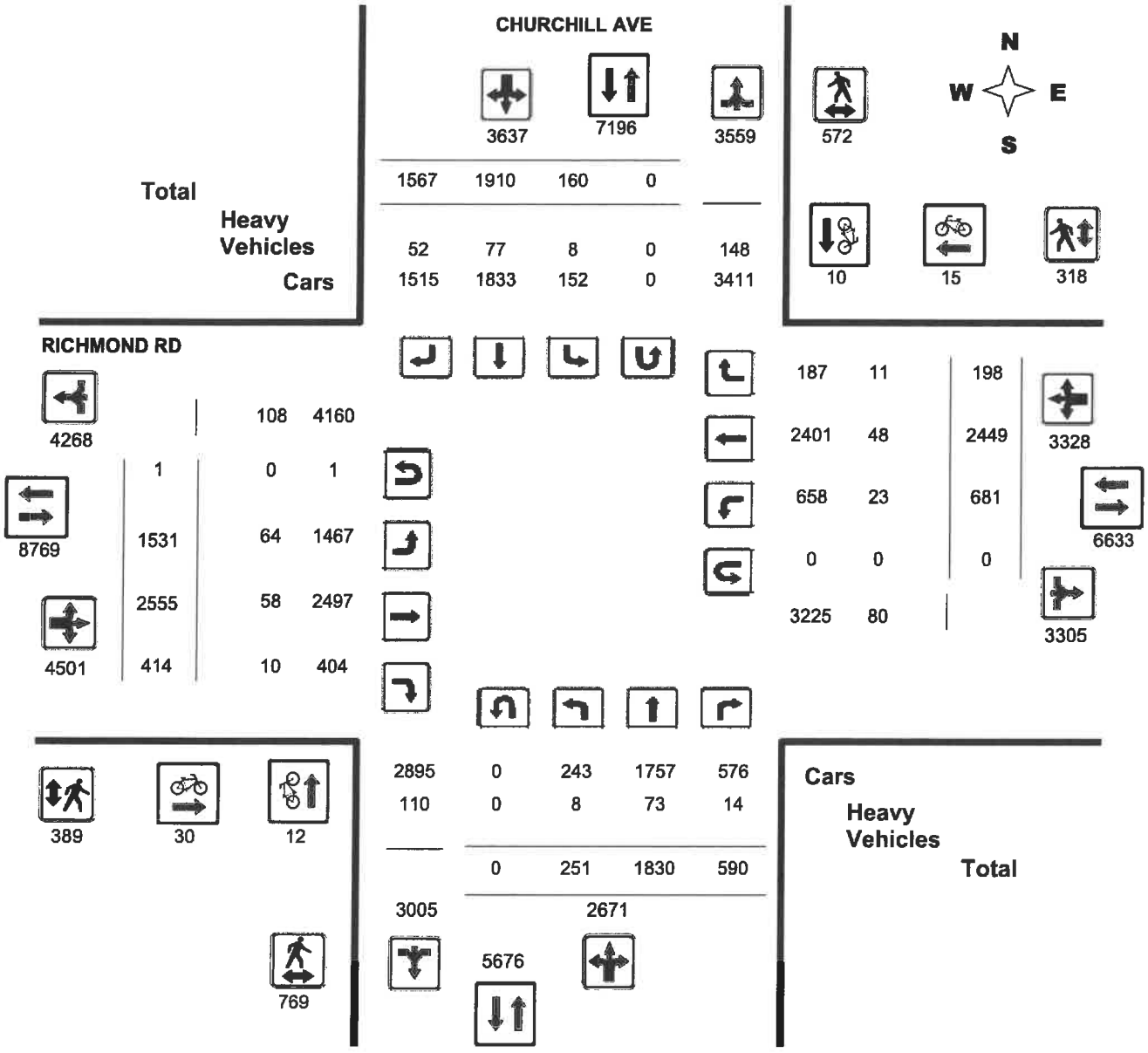
Turning Movement Count - Full Study Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, November 22, 2017

WO#: 37319

Device: Miovision



Comments

Transportation Services - Traffic Services

W.O. 37319

Turning Movement Count - Heavy Vehicle Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, November 22, 2017

		CHURCHILL AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	08:00	0	8	1	**9**	2	11	7	**20**	**29**	7	10	1	**18**	3	3	1	**7**	**25**	**54**
08:00	09:00	1	13	3	**17**	2	12	4	**18**	**35**	8	7	0	**15**	5	11	1	**17**	**32**	**67**
09:00	10:00	2	10	5	**17**	0	13	7	**20**	**37**	7	14	1	**22**	5	5	2	**12**	**34**	**71**
11:30	12:30	1	10	2	**13**	2	7	8	**17**	**30**	9	8	4	**21**	4	8	2	**14**	**35**	**65**
12:30	13:30	2	12	0	**14**	1	8	8	**17**	**31**	10	11	3	**24**	2	9	4	**15**	**39**	**70**
15:00	16:00	2	7	0	**9**	1	9	6	**16**	**25**	12	5	1	**18**	2	5	0	**7**	**25**	**50**
16:00	17:00	0	6	3	**9**	0	13	7	**20**	**29**	5	2	0	**7**	2	5	1	**8**	**15**	**44**
17:00	18:00	0	7	0	**7**	0	4	5	**9**	**16**	6	1	0	**7**	0	2	0	**2**	**9**	**25**
Sub Total		8	73	14	**95**	8	77	52	**137**	**232**	64	58	10	**132**	23	48	11	**82**	**214**	**446**
U-Turns (Heavy Vehicles)					**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total		8	73	14	**0**	8	77	52	**137**	**232**	64	58	10	**132**	23	48	11	**82**	**214**	**446**

Heavy Vehicles include Buses, Single-Unit Trucks and Articulated Trucks. Further, they ARE included in the Turning Movement Count Summary.

Transportation Services - Traffic Services

Work Order 37319

Turning Movement Count - Pedestrian Volume Report

CHURCHILL AVE @ RICHMOND RD

Count Date: Wednesday, November 22, 2017 **Start Time:** 07:00

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	4	5	**9**	3	2	**5**	**14**
07:15 07:30	2	6	**8**	2	4	**6**	**14**
07:30 07:45	7	12	**19**	9	6	**15**	**34**
07:45 08:00	9	10	**19**	11	7	**18**	**37**
07:00 08:00	22	33	**55**	25	19	**44**	**99**
08:00 08:15	8	8	**16**	12	8	**20**	**36**
08:15 08:30	7	9	**16**	6	8	**14**	**30**
08:30 08:45	16	20	**36**	12	9	**21**	**57**
08:45 09:00	15	15	**30**	15	8	**23**	**53**
08:00 09:00	46	52	**98**	45	33	**78**	**176**
09:00 09:15	9	6	**15**	5	5	**10**	**25**
09:15 09:30	15	9	**24**	5	6	**11**	**35**
09:30 09:45	23	8	**31**	3	5	**8**	**39**
09:45 10:00	19	12	**31**	12	9	**21**	**52**
09:00 10:00	66	35	**101**	25	25	**50**	**151**
11:30 11:45	22	31	**53**	20	14	**34**	**87**
11:45 12:00	37	17	**54**	10	8	**18**	**72**
12:00 12:15	42	16	**58**	14	21	**35**	**93**
12:15 12:30	32	32	**64**	22	14	**36**	**100**
11:30 12:30	133	96	**229**	66	57	**123**	**352**
12:30 12:45	32	23	**55**	26	7	**33**	**88**
12:45 13:00	52	22	**74**	14	16	**30**	**104**
13:00 13:15	38	22	**60**	16	16	**32**	**92**
13:15 13:30	40	14	**54**	18	15	**33**	**87**
12:30 13:30	162	81	**243**	74	54	**128**	**371**
15:00 15:15	27	25	**52**	17	8	**25**	**77**
15:15 15:30	19	14	**33**	11	5	**16**	**49**
15:30 15:45	34	36	**70**	16	12	**28**	**98**
15:45 16:00	37	23	**60**	16	9	**25**	**85**
15:00 16:00	117	98	**215**	60	34	**94**	**309**
16:00 16:15	27	14	**41**	11	12	**23**	**64**
16:15 16:30	27	20	**47**	11	13	**24**	**71**
16:30 16:45	25	14	**39**	10	10	**20**	**59**
16:45 17:00	27	25	**52**	12	11	**23**	**75**
16:00 17:00	106	73	**179**	44	46	**90**	**269**
17:00 17:15	28	29	**57**	16	9	**25**	**82**
17:15 17:30	31	31	**62**	16	13	**29**	**91**
17:30 17:45	32	20	**52**	12	18	**30**	**82**
17:45 18:00	26	24	**50**	6	10	**16**	**66**
17:00 18:00	117	104	**221**	50	50	**100**	**321**
Total	769	572	**1341**	389	318	**707**	**2048**

Comment:

Transportation Services - Traffic Services

Work Order
37319

Turning Movement Count - Full Study Summary Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, November 22, 2017

Total Observed U-Turns

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

AADT Factor

.90

Full Study

	CHURCHILL AVE									RICHMOND RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	20	142	44	**206**	19	254	104	**377**	**583**	244	328	32	**604**	49	112	19	**180**	**784**	**1367**
08:00 09:00	29	290	81	**400**	17	283	131	**431**	**831**	312	401	34	**747**	56	173	30	**259**	**1006**	**1837**
09:00 10:00	31	227	81	**339**	10	226	127	**363**	**702**	174	321	38	**533**	63	194	21	**278**	**811**	**1513**
11:30 12:30	43	206	92	**341**	36	220	158	**414**	**755**	146	294	75	**515**	60	349	33	**442**	**957**	**1712**
12:30 13:30	49	195	92	**336**	21	199	144	**364**	**700**	154	354	87	**595**	72	298	25	**395**	**990**	**1690**
15:00 16:00	27	208	69	**304**	25	247	282	**554**	**858**	159	256	47	**462**	114	370	22	**506**	**968**	**1826**
16:00 17:00	25	271	64	**360**	17	244	309	**570**	**930**	151	272	46	**469**	138	474	23	**635**	**1104**	**2034**
17:00 18:00	27	291	67	**385**	15	237	312	**564**	**949**	191	329	55	**575**	129	479	25	**633**	**1208**	**2157**
Sub Total	251	1830	590	**2671**	160	1910	1567	**3637**	**6308**	1531	2555	414	**4500**	681	2449	198	**3328**	**7828**	**14136**
U Turns				**0**				**0**	**0**				**1**				**0**	**1**	**1**
Total	251	1830	590	**2671**	160	1910	1567	**3637**	**6308**	1531	2555	414	**4501**	681	2449	198	**3328**	**7829**	**14137**
EQ 12Hr	349	2544	820	**3713**	222	2655	2178	**5055**	**8768**	2128	3551	575	**6256**	947	3404	275	**4626**	**10882**	**19650**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	314	2289	738	**3341**	200	2389	1960	**4550**	**7891**	1915	3196	518	**5631**	852	3064	248	**4163**	**9794**	**17685**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**.90**						
AVG 24Hr	411	2999	967	**4377**	262	3130	2568	**5960**	**10337**	2509	4187	678	**7376**	1116	4013	324	**5454**	**12830**	**23167**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

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

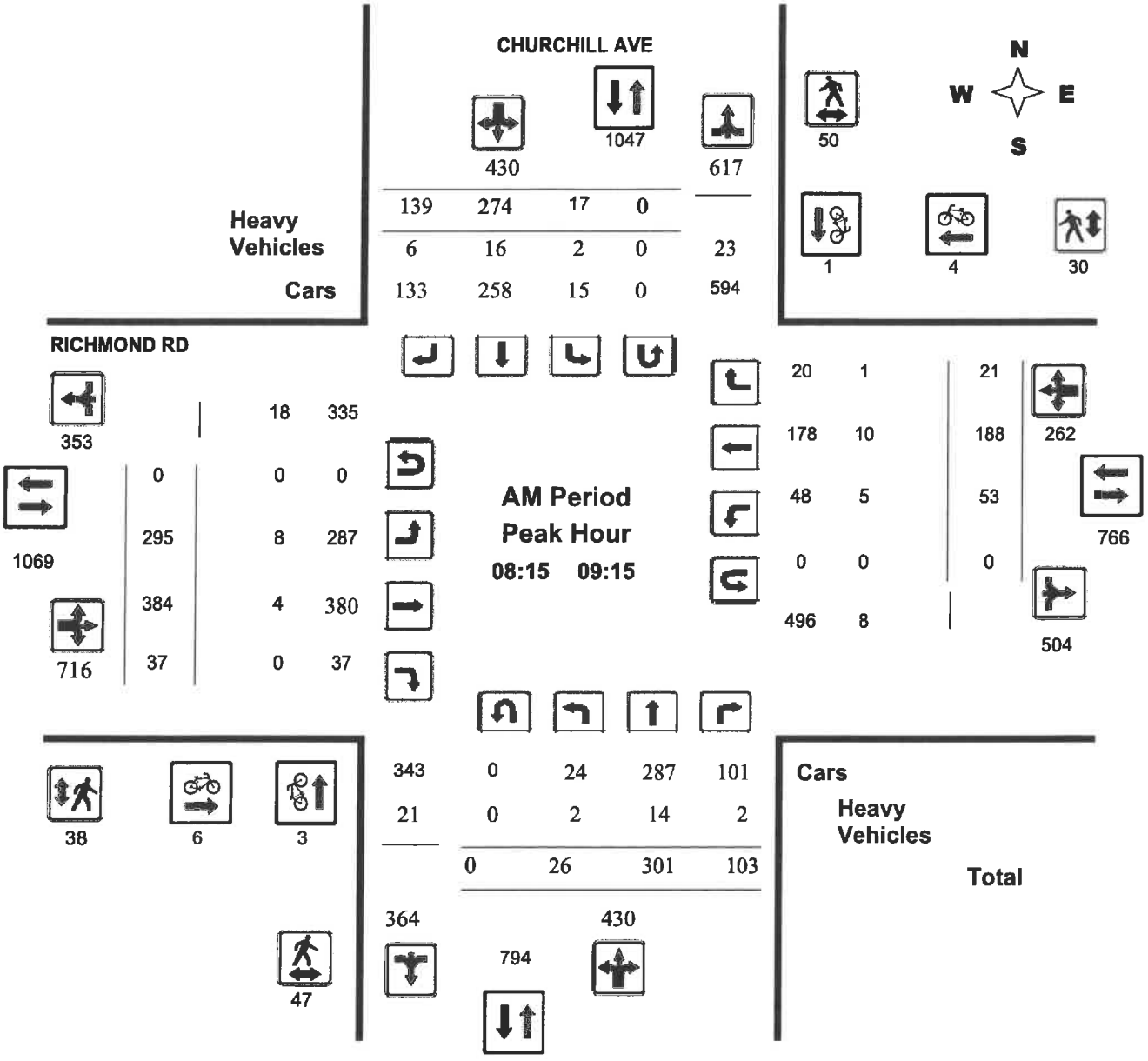
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, November 22, 2017 **WO No:** 37319

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



Comments

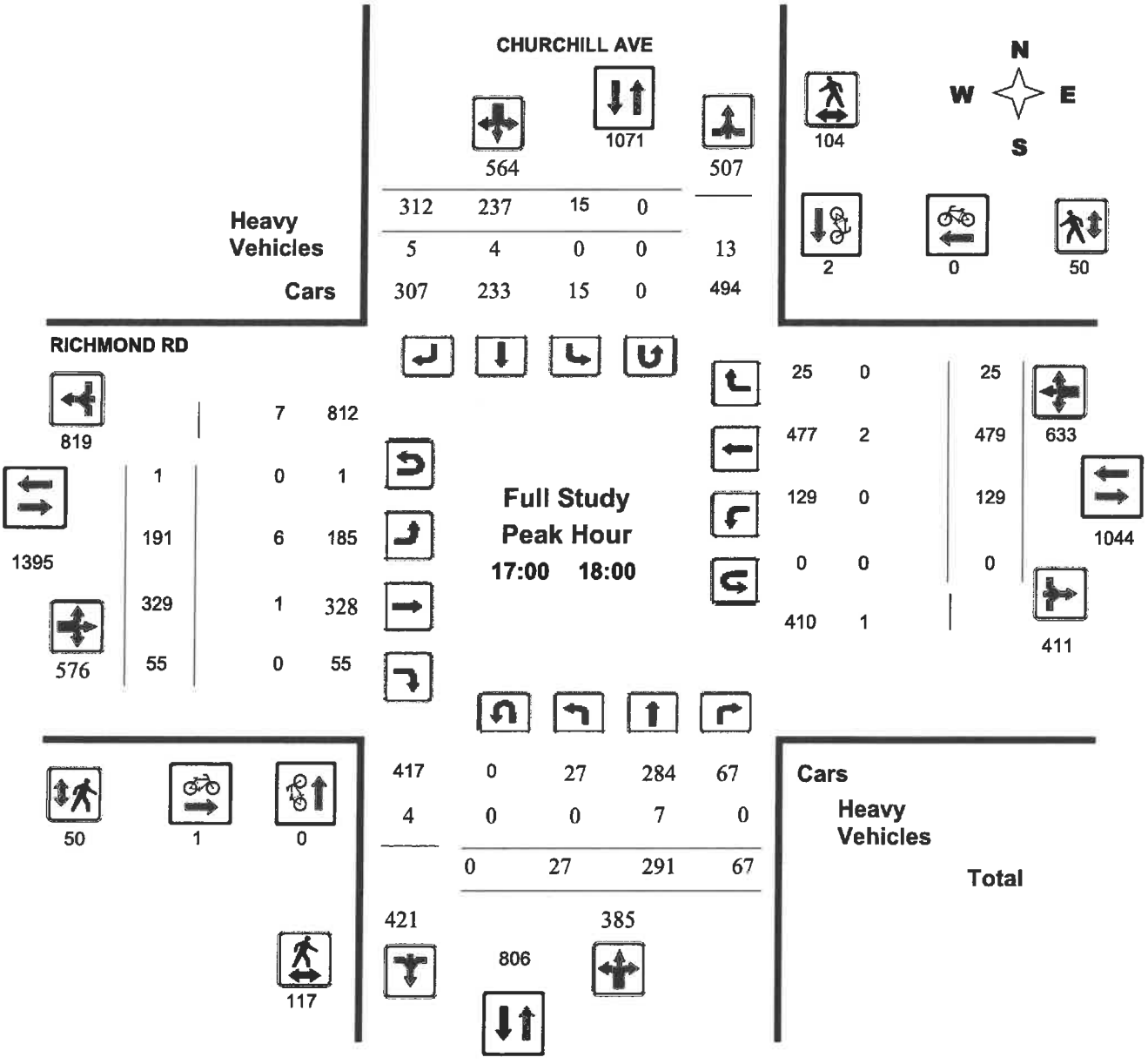
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, November 22, 2017 **WO No:** 37319

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



Comments

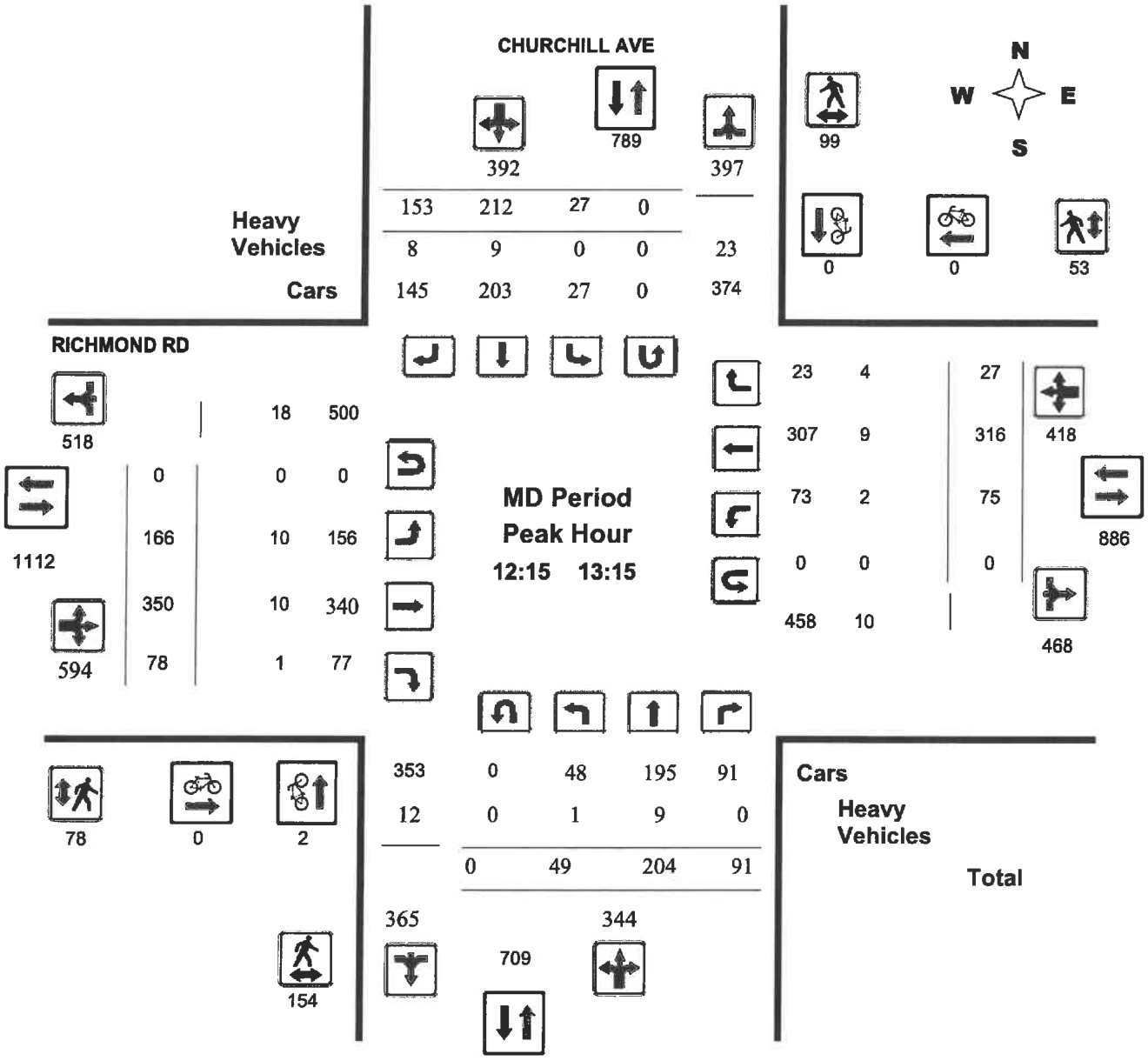
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, November 22, 2017 **WO No:** 37319

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



Comments

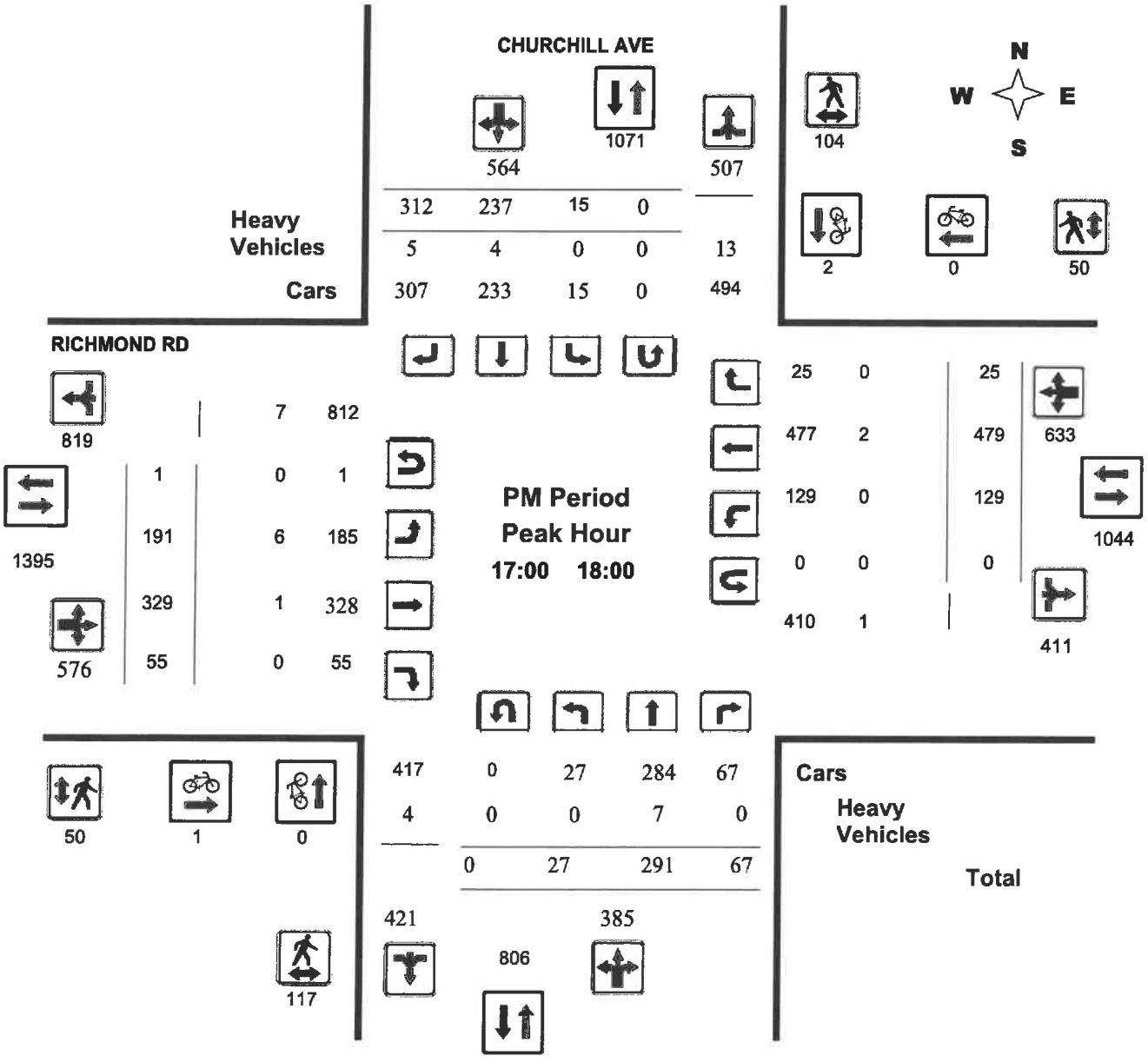
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, November 22, 2017 **WO No:** 37319

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



Comments

Turning Movement Count - 15 Min U-Turn Total Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Wednesday, November 22, 2017

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

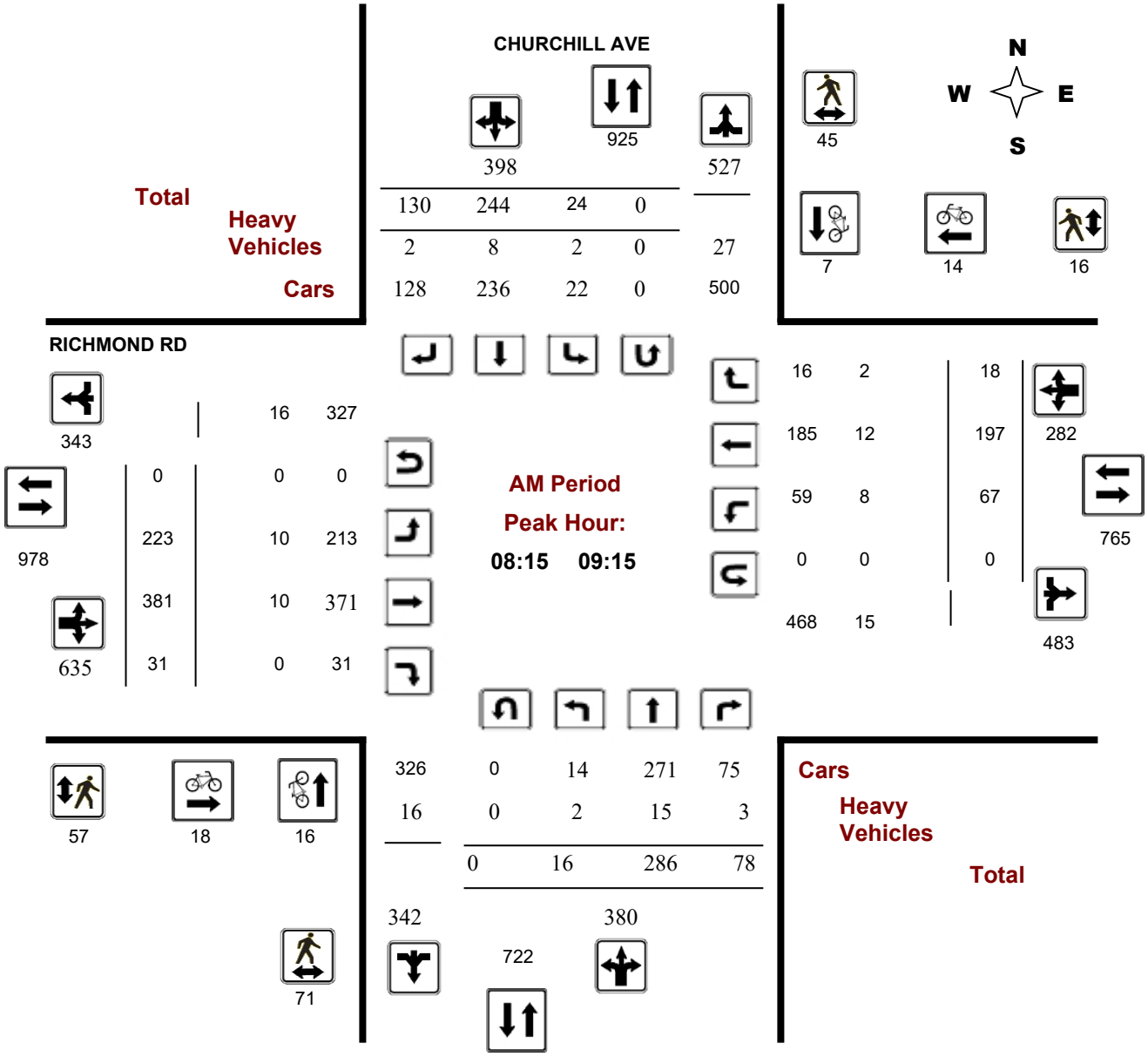
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, August 01, 2019 **WO No:** 38640

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



Comments

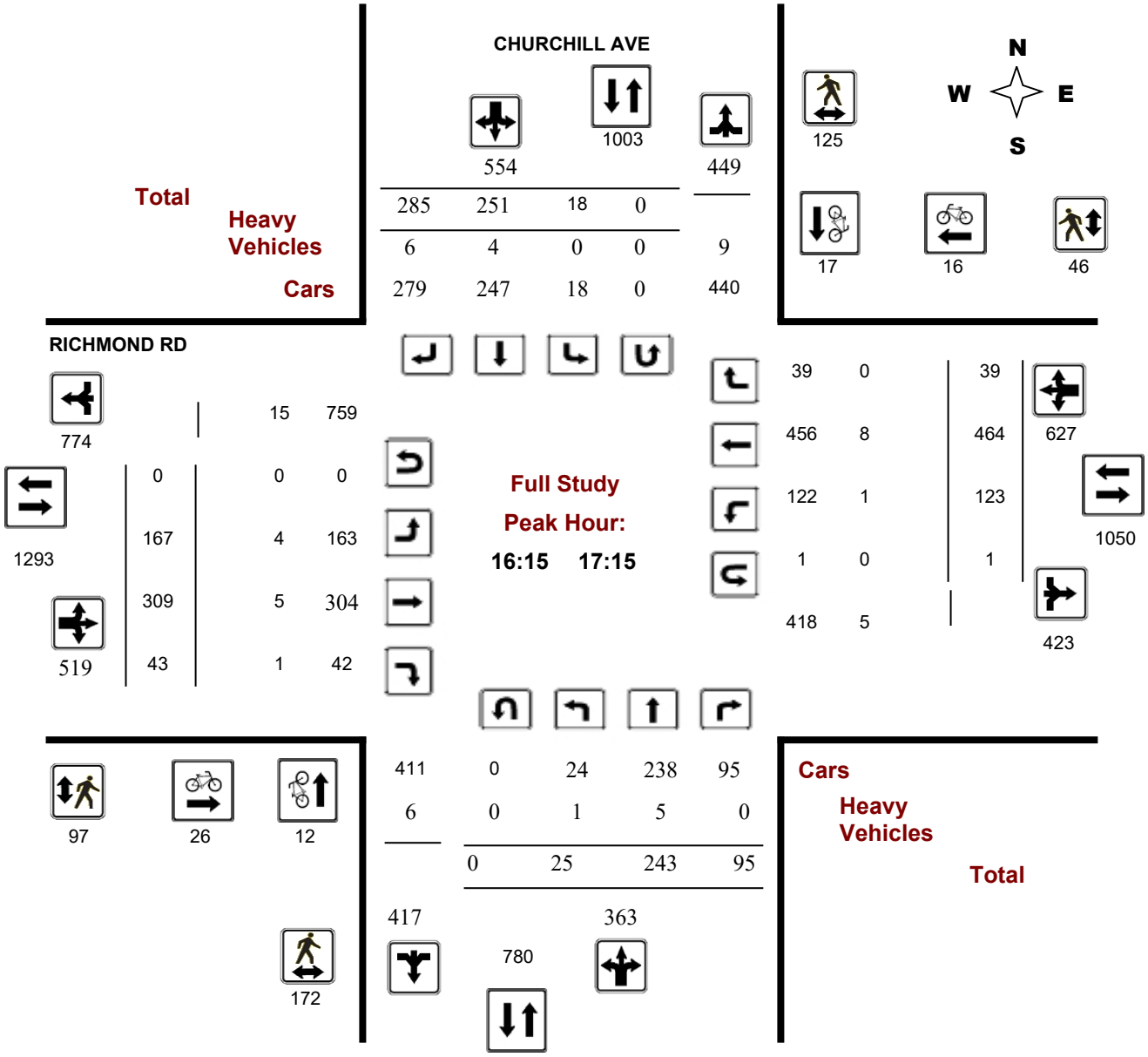
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, August 01, 2019 **WO No:** 38640

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



Comments

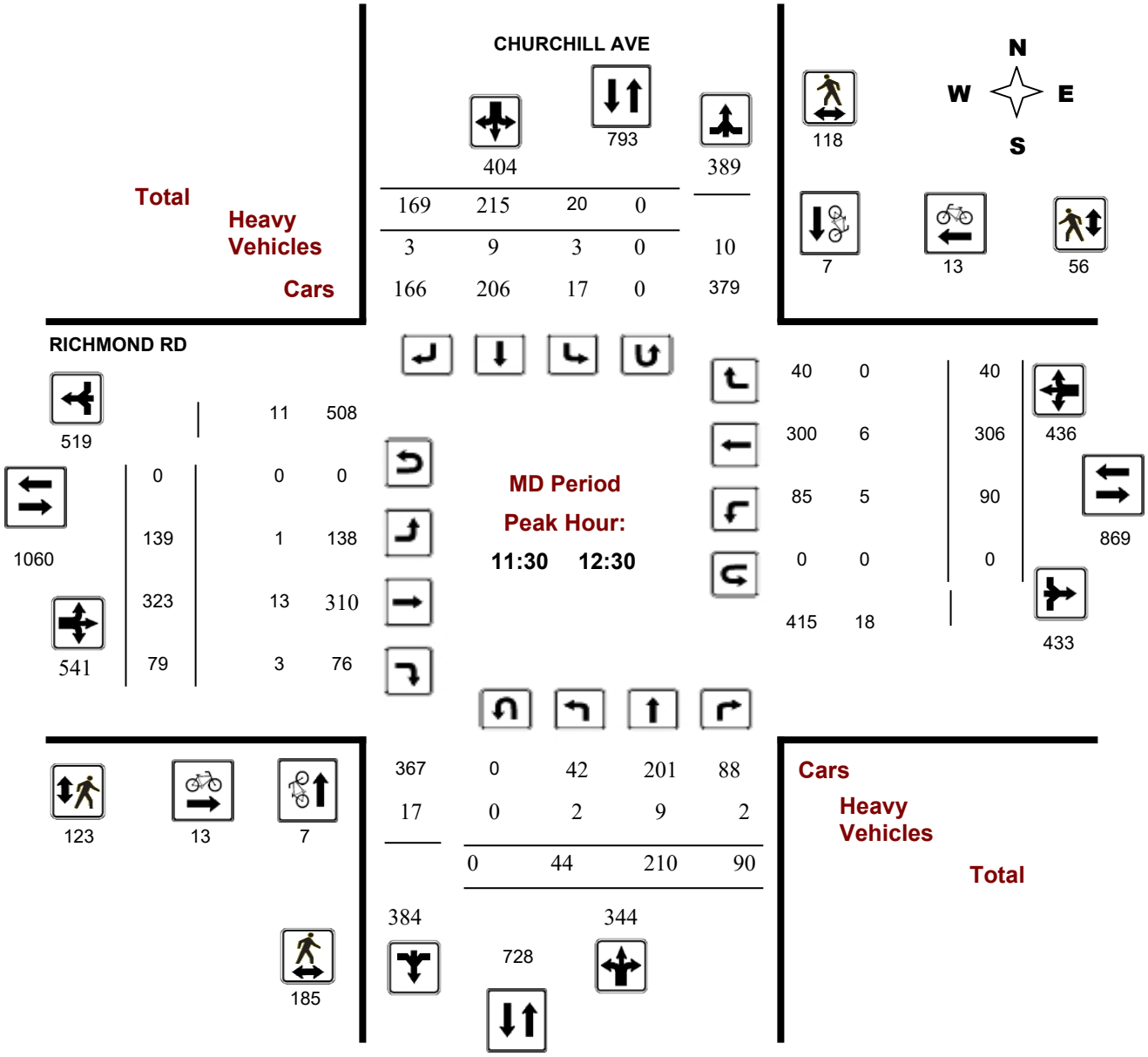
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, August 01, 2019 **WO No:** 38640

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



Comments

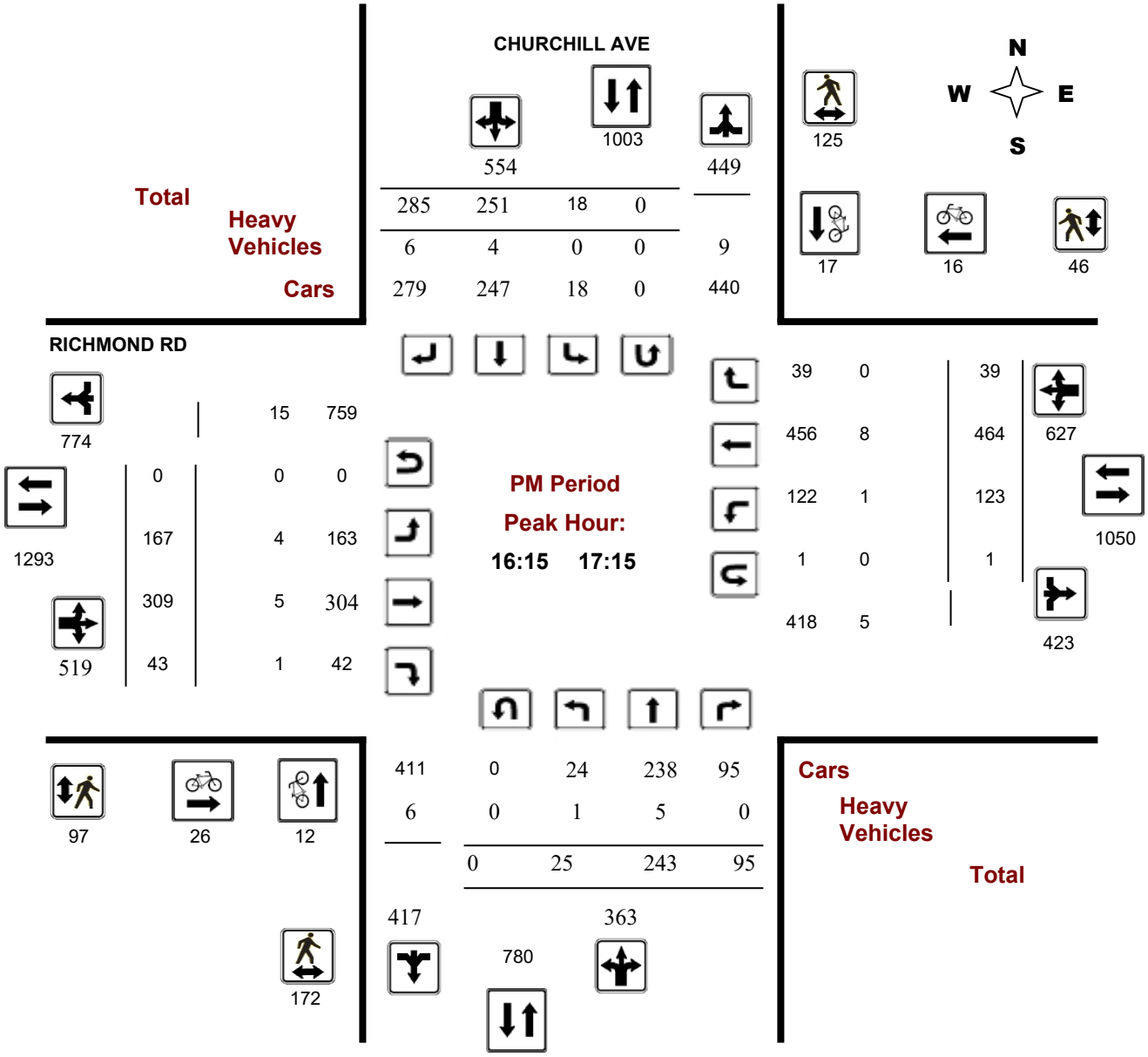
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, August 01, 2019 **WO No:** 38640

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



Comments

Transportation Services - Traffic Services

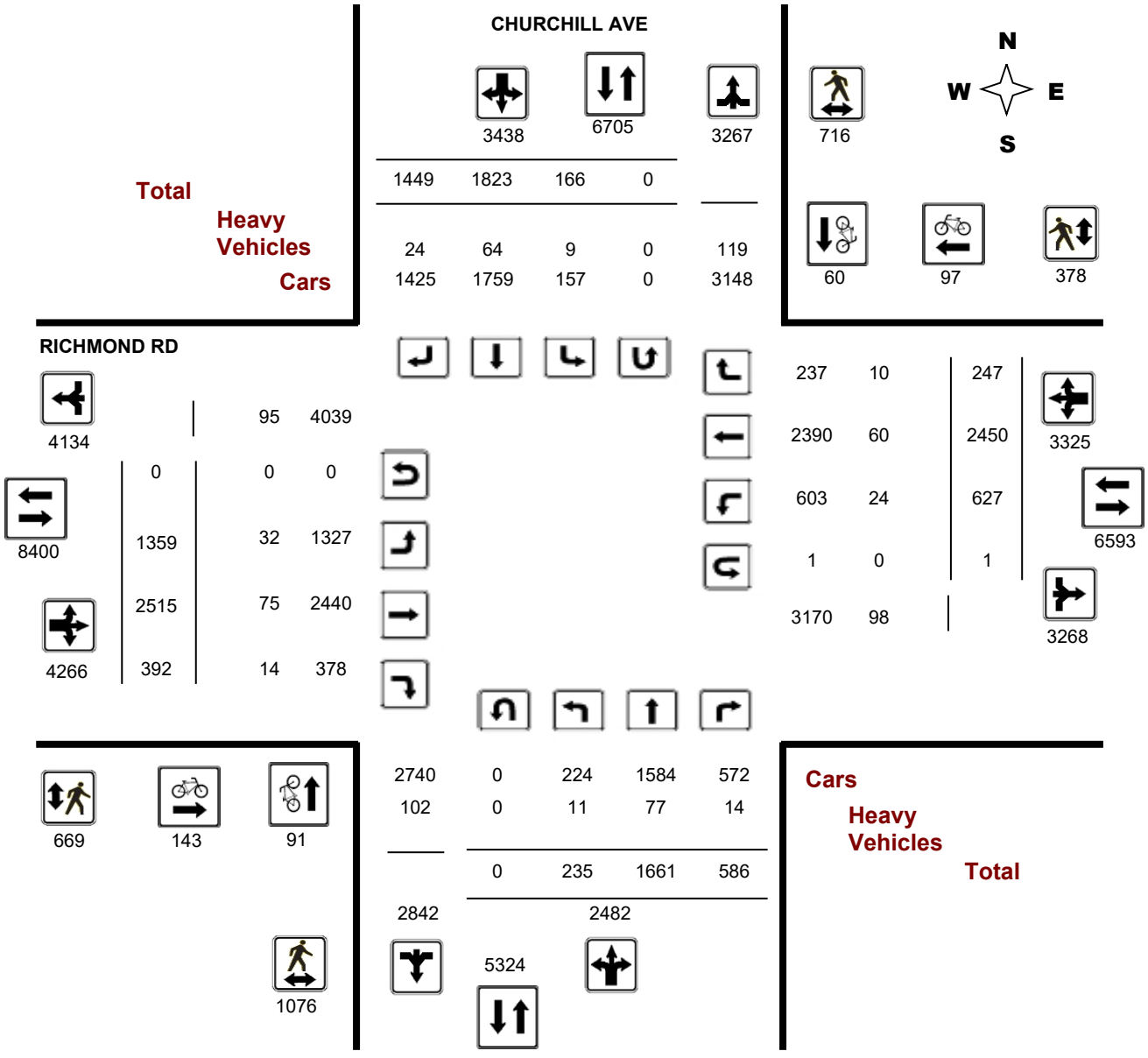
Turning Movement Count - Full Study Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, August 01, 2019

WO#: 38640

Device: Miovision



Comments

Transportation Services - Traffic Services

Work Order 38640

Turning Movement Count - Full Study Summary Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, August 01, 2019

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 1

AADT Factor .90

Full Study

	CHURCHILL AVE									RICHMOND RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	15	132	39	**186**	8	194	93	**295**	**481**	197	280	30	**507**	26	123	21	**170**	**677**	**1158**
08:00 09:00	15	286	74	**375**	22	254	106	**382**	**757**	240	373	33	**646**	61	182	20	**263**	**909**	**1666**
09:00 10:00	24	211	70	**305**	23	197	159	**379**	**684**	158	303	38	**499**	39	200	24	**263**	**762**	**1446**
11:30 12:30	44	210	90	**344**	20	215	169	**404**	**748**	139	323	79	**541**	90	306	40	**436**	**977**	**1725**
12:30 13:30	43	156	73	**272**	24	232	155	**411**	**683**	150	305	71	**526**	81	319	45	**445**	**971**	**1654**
15:00 16:00	27	211	64	**302**	27	236	234	**497**	**799**	153	326	47	**526**	108	448	24	**580**	**1106**	**1905**
16:00 17:00	30	239	96	**365**	23	248	276	**547**	**912**	161	320	48	**529**	113	455	34	**602**	**1131**	**2043**
17:00 18:00	37	216	80	**333**	19	247	257	**523**	**856**	161	285	46	**492**	109	417	39	**565**	**1057**	**1913**
Sub Total	235	1661	586	**2482**	166	1823	1449	**3438**	**5920**	1359	2515	392	**4266**	627	2450	247	**3324**	**7590**	**13510**
U Turns				**0**				**0**	**0**				**0**				**1**	**1**	**1**
Total	235	1661	586	**2482**	166	1823	1449	**3438**	**5920**	1359	2515	392	**4266**	627	2450	247	**3325**	**7591**	**13511**
EQ 12Hr	327	2309	815	**3450**	231	2534	2014	**4779**	**8229**	1889	3496	545	**5930**	872	3405	343	**4622**	**10552**	**18781**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	294	2078	733	**3105**	208	2281	1813	**4301**	**7406**	1700	3146	490	**5337**	784	3065	309	**4160**	**9497**	**16903**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**.90**						
AVG 24Hr	385	2722	960	**4068**	272	2988	2375	**5634**	**9702**	2227	4122	642	**6991**	1028	4015	405	**5449**	**12440**	**22142**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

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

Transportation Services - Traffic Services

W.O. 38640

Turning Movement Count - 15 Minute Summary Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, August 01, 2019

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 1

CHURCHILL AVE **RICHMOND RD**

Time Period		Northbound				Southbound					Eastbound				Westbound					
		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	2	24	3	**29**	1	37	22	**60**	**89**	36	49	9	**94**	7	23	7	**37**	**131**	**220**
07:15	07:30	5	32	10	**47**	0	53	24	**77**	**124**	40	73	7	**120**	6	37	4	**47**	**167**	**291**
07:30	07:45	5	32	10	**47**	3	52	23	**78**	**125**	65	90	5	**160**	7	28	5	**40**	**200**	**325**
07:45	08:00	3	44	16	**63**	4	52	24	**80**	**143**	56	68	9	**133**	6	35	5	**46**	**179**	**322**
08:00	08:15	4	60	13	**77**	5	61	26	**92**	**169**	57	80	12	**149**	7	37	6	**50**	**199**	**368**
08:15	08:30	5	70	20	**95**	4	72	25	**101**	**196**	59	90	9	**158**	14	39	7	**60**	**218**	**414**
08:30	08:45	2	75	22	**99**	7	65	35	**107**	**206**	53	99	6	**158**	13	43	3	**59**	**217**	**423**
08:45	09:00	4	81	19	**104**	6	56	20	**82**	**186**	71	104	6	**181**	27	63	4	**94**	**275**	**461**
09:00	09:15	5	60	17	**82**	7	51	50	**108**	**190**	40	88	10	**138**	13	52	4	**69**	**207**	**397**
09:15	09:30	9	53	18	**80**	3	51	33	**87**	**167**	31	64	6	**101**	10	43	5	**58**	**159**	**326**
09:30	09:45	6	50	20	**76**	5	54	36	**95**	**171**	40	76	9	**125**	6	47	7	**60**	**185**	**356**
09:45	10:00	4	48	15	**67**	8	41	40	**89**	**156**	47	75	13	**135**	10	58	8	**76**	**211**	**367**
11:30	11:45	11	54	24	**89**	5	50	37	**92**	**181**	46	64	20	**130**	21	67	8	**96**	**226**	**407**
11:45	12:00	9	49	22	**80**	4	53	51	**108**	**188**	31	98	24	**153**	22	74	18	**114**	**267**	**455**
12:00	12:15	13	53	26	**92**	5	48	42	**95**	**187**	34	83	17	**134**	27	75	5	**107**	**241**	**428**
12:15	12:30	11	54	18	**83**	6	64	39	**109**	**192**	28	78	18	**124**	20	90	9	**119**	**243**	**435**
12:30	12:45	11	32	16	**59**	4	64	33	**101**	**160**	25	70	22	**117**	14	71	12	**97**	**214**	**374**
12:45	13:00	8	37	19	**64**	5	59	43	**107**	**171**	34	79	21	**134**	22	79	11	**112**	**246**	**417**
13:00	13:15	12	47	21	**80**	7	50	46	**103**	**183**	45	77	15	**137**	18	94	13	**125**	**262**	**445**
13:15	13:30	12	40	17	**69**	8	59	33	**100**	**169**	46	79	13	**138**	27	75	9	**111**	**249**	**418**
15:00	15:15	6	49	14	**69**	9	55	60	**124**	**193**	41	72	16	**129**	36	96	3	**135**	**264**	**457**
15:15	15:30	8	55	19	**82**	4	55	52	**111**	**193**	33	82	17	**132**	27	104	5	**136**	**268**	**461**
15:30	15:45	5	51	23	**79**	7	66	70	**143**	**222**	36	75	8	**119**	21	123	8	**152**	**271**	**493**
15:45	16:00	8	56	8	**72**	7	60	52	**119**	**191**	43	97	6	**146**	24	125	8	**157**	**303**	**494**
16:00	16:15	11	62	21	**94**	10	57	56	**123**	**217**	37	81	16	**134**	27	109	5	**141**	**275**	**492**
16:15	16:30	5	52	24	**81**	3	76	75	**154**	**235**	34	71	9	**114**	29	110	11	**150**	**264**	**499**
16:30	16:45	8	61	28	**97**	4	52	75	**131**	**228**	41	95	10	**146**	33	119	9	**161**	**307**	**535**
16:45	17:00	6	64	23	**93**	6	63	70	**139**	**232**	49	73	13	**135**	24	117	9	**151**	**286**	**518**
17:00	17:15	6	66	20	**92**	5	60	65	**130**	**222**	43	70	11	**124**	37	118	10	**165**	**289**	**511**
17:15	17:30	4	59	17	**80**	3	63	77	**143**	**223**	37	64	8	**109**	32	116	6	**154**	**263**	**486**
17:30	17:45	15	50	18	**83**	4	62	48	**114**	**197**	40	75	16	**131**	25	92	10	**127**	**258**	**455**
17:45	18:00	12	41	25	**78**	7	62	67	**136**	**214**	41	76	11	**128**	15	91	13	**119**	**247**	**461**
TOTAL:		235	1661	586	**2482**	166	1823	1449	**3438**	**5920**	1359	2515	392	**4266**	627	2450	247	**3325**	**7591**	**13511**

Note: U-Turns are included in Totals.

Comment:

Transportation Services - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order
38640

CHURCHILL AVE @ RICHMOND RD

Count Date: Thursday, August 01, 2019 **Start Time:** 07:00

	CHURCHILL AVE			RICHMOND RD			
Time Period	Northbound	Southbound	**Street Total**	Eastbound	Westbound	**Street Total**	**Grand Total**
07:00 08:00	18	6	**24**	23	5	**28**	**52**
08:00 09:00	15	6	**21**	20	11	**31**	**52**
09:00 10:00	7	5	**12**	11	11	**22**	**34**
11:30 12:30	7	7	**14**	13	13	**26**	**40**
12:30 13:30	16	3	**19**	20	11	**31**	**50**
15:00 16:00	8	3	**11**	8	13	**21**	**32**
16:00 17:00	10	13	**23**	24	14	**38**	**61**
17:00 18:00	10	17	**27**	24	19	**43**	**70**
Total	91	60	**151**	143	97	**240**	**391**

Comment:

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

Transportation Services - Traffic Services

W.O. 38640

Turning Movement Count - Heavy Vehicle Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, August 01, 2019

		CHURCHILL AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	08:00	1	13	2	**16**	0	12	4	**16**	**32**	5	8	1	**14**	1	6	1	**8**	**22**	**54**
08:00	09:00	1	13	1	**15**	3	9	3	**15**	**30**	11	11	0	**22**	7	12	3	**22**	**44**	**74**
09:00	10:00	3	15	6	**24**	2	8	1	**11**	**35**	3	14	1	**18**	3	9	3	**15**	**33**	**68**
11:30	12:30	2	9	2	**13**	3	9	3	**15**	**28**	1	13	3	**17**	5	6	0	**11**	**28**	**56**
12:30	13:30	1	11	3	**15**	0	6	3	**9**	**24**	4	11	2	**17**	5	11	2	**18**	**35**	**59**
15:00	16:00	2	7	0	**9**	1	10	4	**15**	**24**	1	8	3	**12**	2	5	1	**8**	**20**	**44**
16:00	17:00	1	7	0	**8**	0	6	6	**12**	**20**	4	5	3	**12**	0	8	0	**8**	**20**	**40**
17:00	18:00	0	2	0	**2**	0	4	0	**4**	**6**	3	5	1	**9**	1	3	0	**4**	**13**	**19**
Sub Total		11	77	14	**102**	9	64	24	**97**	**199**	32	75	14	**121**	24	60	10	**94**	**215**	**414**
U-Turns (Heavy Vehicles)					**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total		11	77	14	**0**	9	64	24	**97**	**199**	32	75	14	**121**	24	60	10	**94**	**215**	**414**

Heavy Vehicles include Buses, Single-Unit Trucks and Articulated Trucks. Further, they ARE included in the Turning Movement Count Summary.

Transportation Services - Traffic Services

Work Order
38640

Turning Movement Count - Pedestrian Volume Report

CHURCHILL AVE @ RICHMOND RD

Count Date: Thursday, August 01, 2019 **Start Time:** 07:00

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	2	**2**	2	0	**2**	**4**
07:15 07:30	2	8	**10**	2	8	**10**	**20**
07:30 07:45	15	5	**20**	5	9	**14**	**34**
07:45 08:00	6	10	**16**	8	5	**13**	**29**
07:00 08:00	23	25	**48**	17	22	**39**	**87**
08:00 08:15	13	12	**25**	8	9	**17**	**42**
08:15 08:30	12	8	**20**	8	5	**13**	**33**
08:30 08:45	17	9	**26**	13	4	**17**	**43**
08:45 09:00	23	13	**36**	15	3	**18**	**54**
08:00 09:00	65	42	**107**	44	21	**65**	**172**
09:00 09:15	19	15	**34**	21	4	**25**	**59**
09:15 09:30	18	14	**32**	9	7	**16**	**48**
09:30 09:45	15	10	**25**	11	10	**21**	**46**
09:45 10:00	39	7	**46**	6	7	**13**	**59**
09:00 10:00	91	46	**137**	47	28	**75**	**212**
11:30 11:45	44	20	**64**	21	18	**39**	**103**
11:45 12:00	50	20	**70**	25	13	**38**	**108**
12:00 12:15	48	37	**85**	46	12	**58**	**143**
12:15 12:30	43	41	**84**	31	13	**44**	**128**
11:30 12:30	185	118	**303**	123	56	**179**	**482**
12:30 12:45	67	42	**109**	46	22	**68**	**177**
12:45 13:00	65	34	**99**	54	28	**82**	**181**
13:00 13:15	57	39	**96**	31	31	**62**	**158**
13:15 13:30	45	29	**74**	36	10	**46**	**120**
12:30 13:30	234	144	**378**	167	91	**258**	**636**
15:00 15:15	53	33	**86**	24	23	**47**	**133**
15:15 15:30	39	26	**65**	27	14	**41**	**106**
15:30 15:45	40	24	**64**	14	11	**25**	**89**
15:45 16:00	42	21	**63**	17	13	**30**	**93**
15:00 16:00	174	104	**278**	82	61	**143**	**421**
16:00 16:15	36	23	**59**	16	11	**27**	**86**
16:15 16:30	48	28	**76**	17	8	**25**	**101**
16:30 16:45	46	32	**78**	31	11	**42**	**120**
16:45 17:00	40	30	**70**	19	12	**31**	**101**
16:00 17:00	170	113	**283**	83	42	**125**	**408**
17:00 17:15	38	35	**73**	30	15	**45**	**118**
17:15 17:30	32	23	**55**	19	13	**32**	**87**
17:30 17:45	24	37	**61**	30	11	**41**	**102**
17:45 18:00	40	29	**69**	27	18	**45**	**114**
17:00 18:00	134	124	**258**	106	57	**163**	**421**
Total	1076	716	**1792**	669	378	**1047**	**2839**

Comment:

Transportation Services - Traffic Services

Work Order
38640

Turning Movement Count - 15 Min U-Turn Total Report

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, August 01, 2019

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

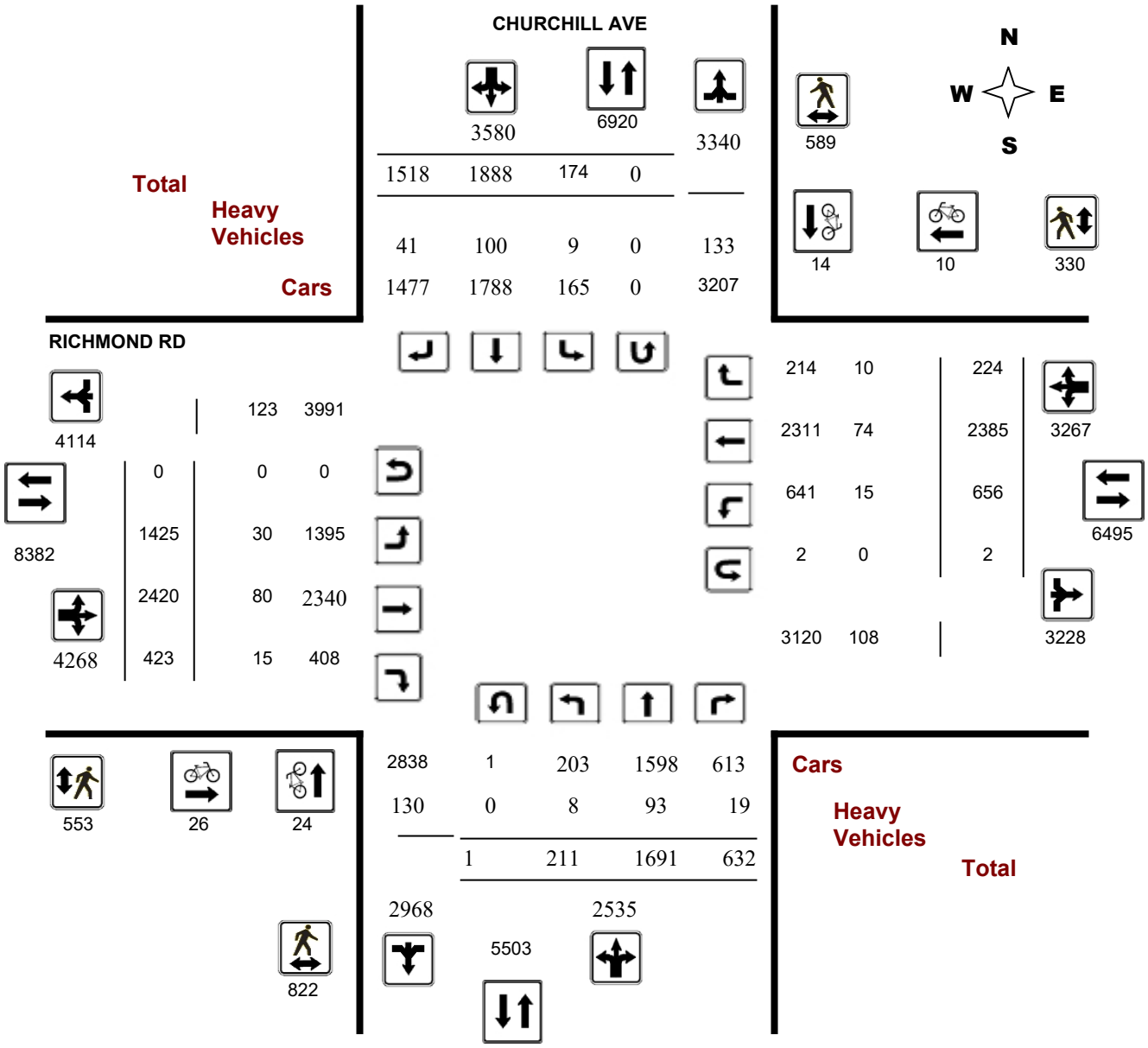
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020
Start Time: 07:00
WO No: 39644
Device: Miovision

Full Study Diagram



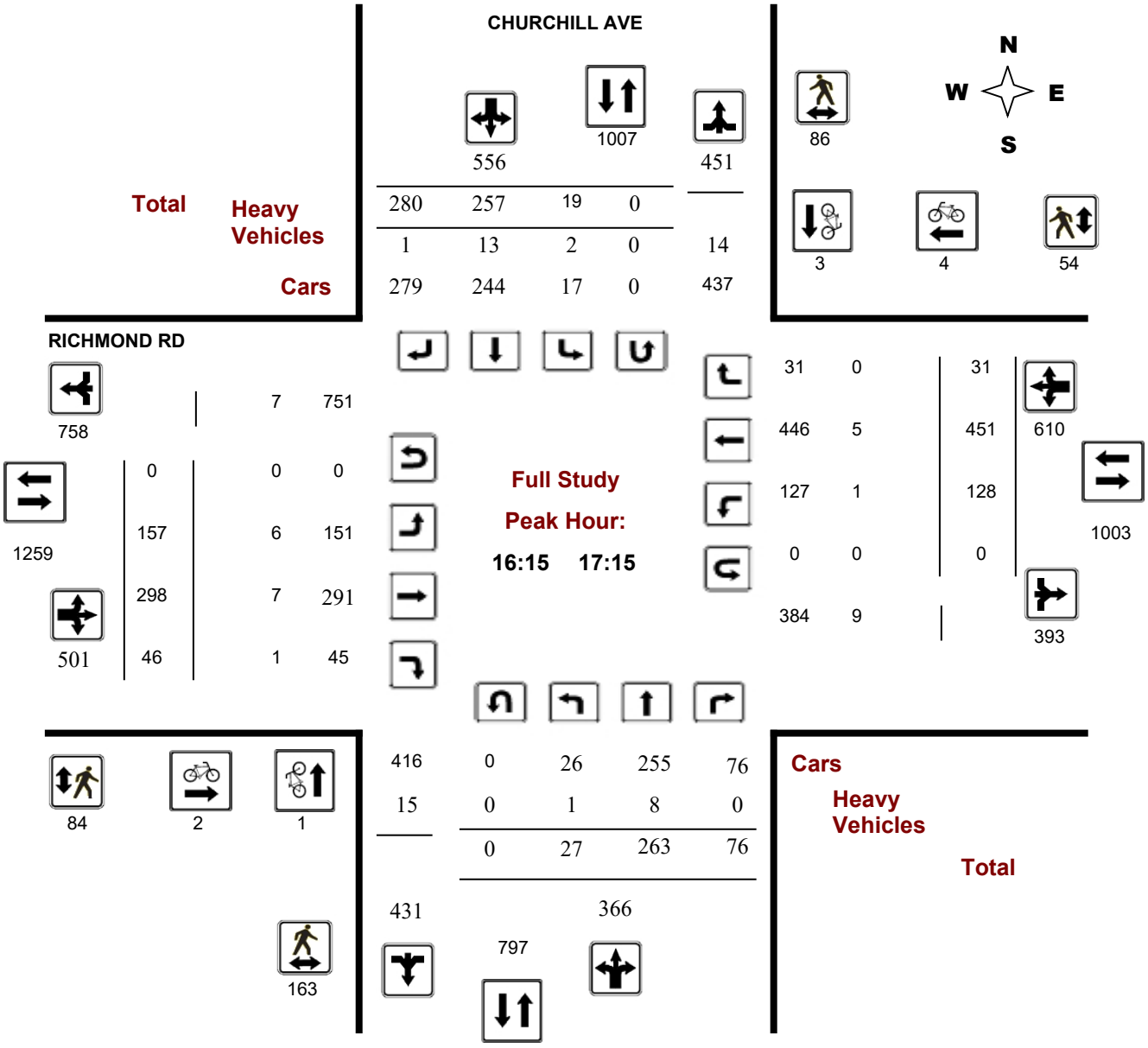
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020
Start Time: 07:00
WO No: 39644
Device: Miovision

Full Study Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39644

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, January 23, 2020

Total Observed U-Turns

Northbound: 1 Southbound: 0

Eastbound: 0 Westbound: 2

AADT Factor

1.00

	CHURCHILL AVE								RICHMOND RD									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	14	161	59	**234**	16	226	90	**332**	**566**	274	347	24	**645**	35	126	22	**183**	**828**	**1394**
08:00 09:00	16	270	93	**379**	21	296	136	**453**	**832**	287	373	32	**692**	40	182	16	**238**	**930**	**1762**
09:00 10:00	27	205	81	**313**	18	219	137	**374**	**687**	162	329	35	**526**	64	173	33	**270**	**796**	**1483**
11:30 12:30	42	173	77	**292**	36	195	161	**392**	**684**	122	289	72	**483**	79	308	33	**420**	**903**	**1587**
12:30 13:30	31	183	83	**297**	30	215	187	**432**	**729**	128	254	83	**465**	73	340	27	**440**	**905**	**1634**
15:00 16:00	28	201	84	**313**	18	247	276	**541**	**854**	145	283	78	**506**	116	393	29	**538**	**1044**	**1898**
16:00 17:00	28	260	71	**359**	16	256	270	**542**	**901**	145	279	57	**481**	132	453	25	**610**	**1091**	**1992**
17:00 18:00	25	238	84	**347**	19	234	261	**514**	**861**	162	266	42	**470**	117	410	39	**566**	**1036**	**1897**
Sub Total	211	1691	632	**2534**	174	1888	1518	**3580**	**6114**	1425	2420	423	**4268**	656	2385	224	**3265**	**7533**	**13647**
U Turns				**1**				**0**	**1**				**0**				**2**	**2**	**3**
Total	211	1691	632	**2535**	174	1888	1518	**3580**	**6115**	1425	2420	423	**4268**	656	2385	224	**3267**	**7535**	**13650**
EQ 12Hr	293	2350	878	**3524**	242	2624	2110	**4976**	**8500**	1981	3364	588	**5933**	912	3315	311	**4541**	**10474**	**18974**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	276	2215	828	**3321**	228	2473	1989	**4690**	**8500**	1867	3170	554	**5591**	859	3124	293	**4280**	**10474**	**18974**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1**					
AVG 24Hr	362	2902	1085	**4350**	299	3240	2605	**6144**	**10494**	2445	4153	726	**7324**	1126	4093	384	**5606**	**12930**	**23424**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

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

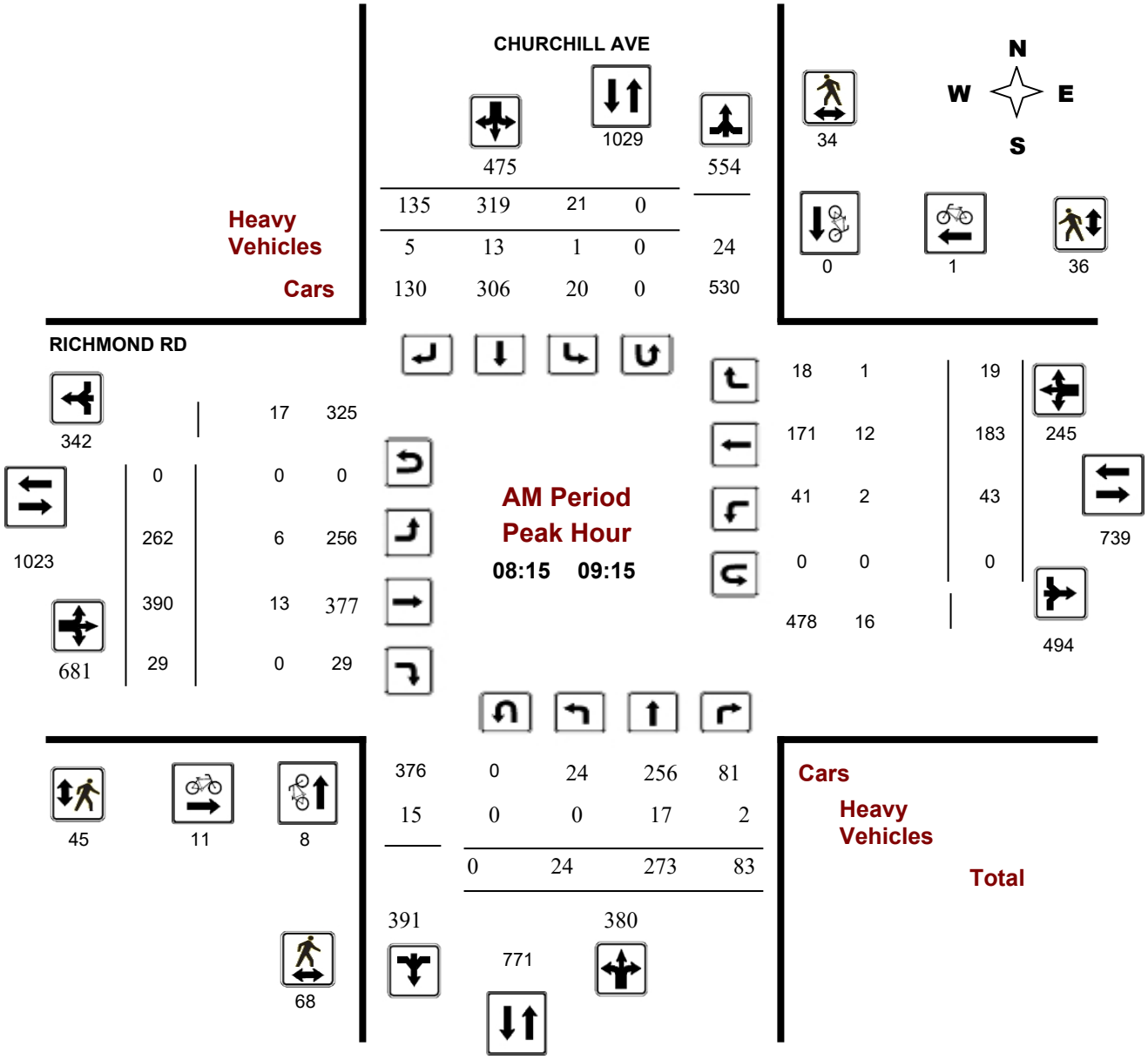
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39644

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



Comments

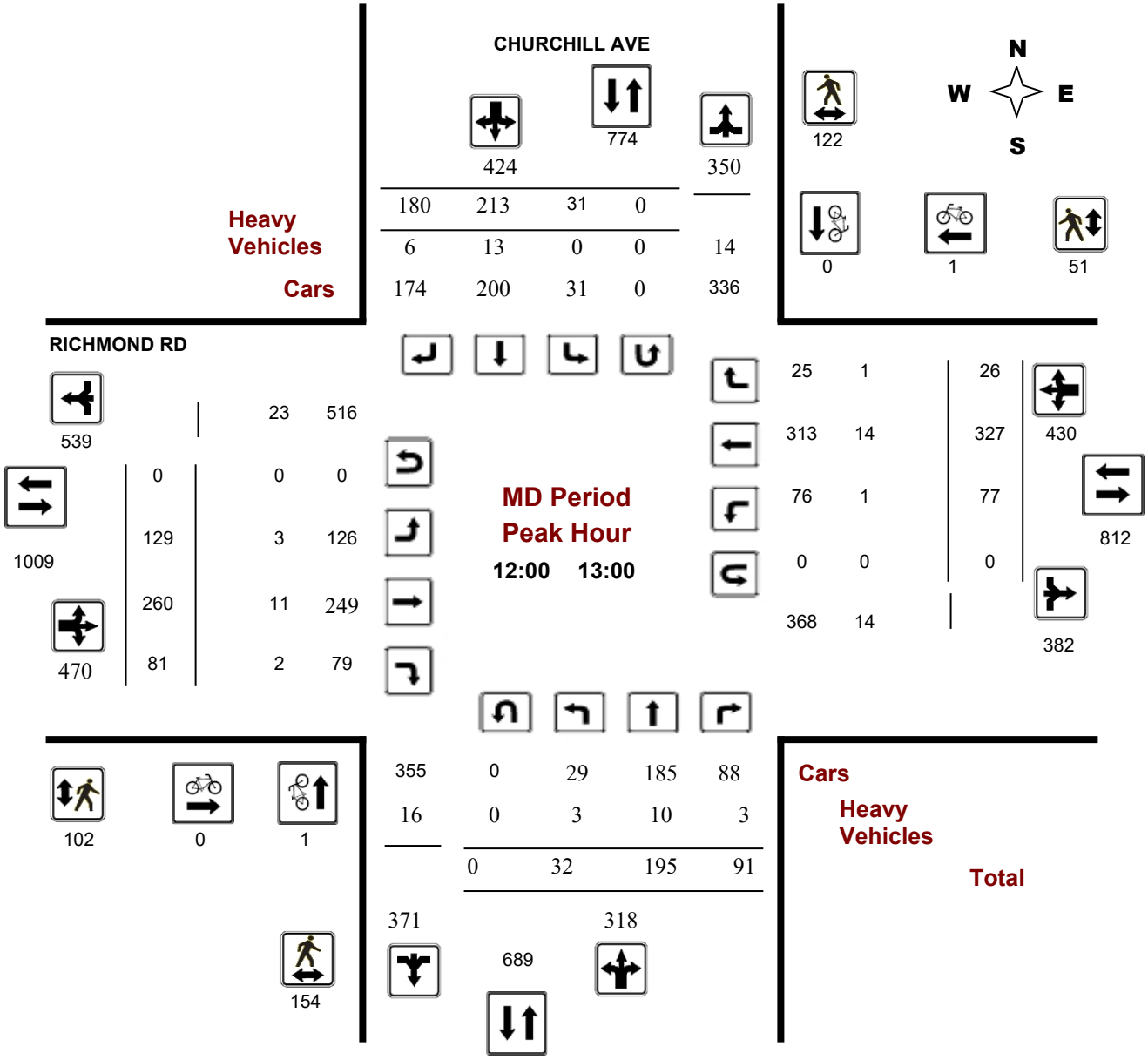
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39644

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



Comments

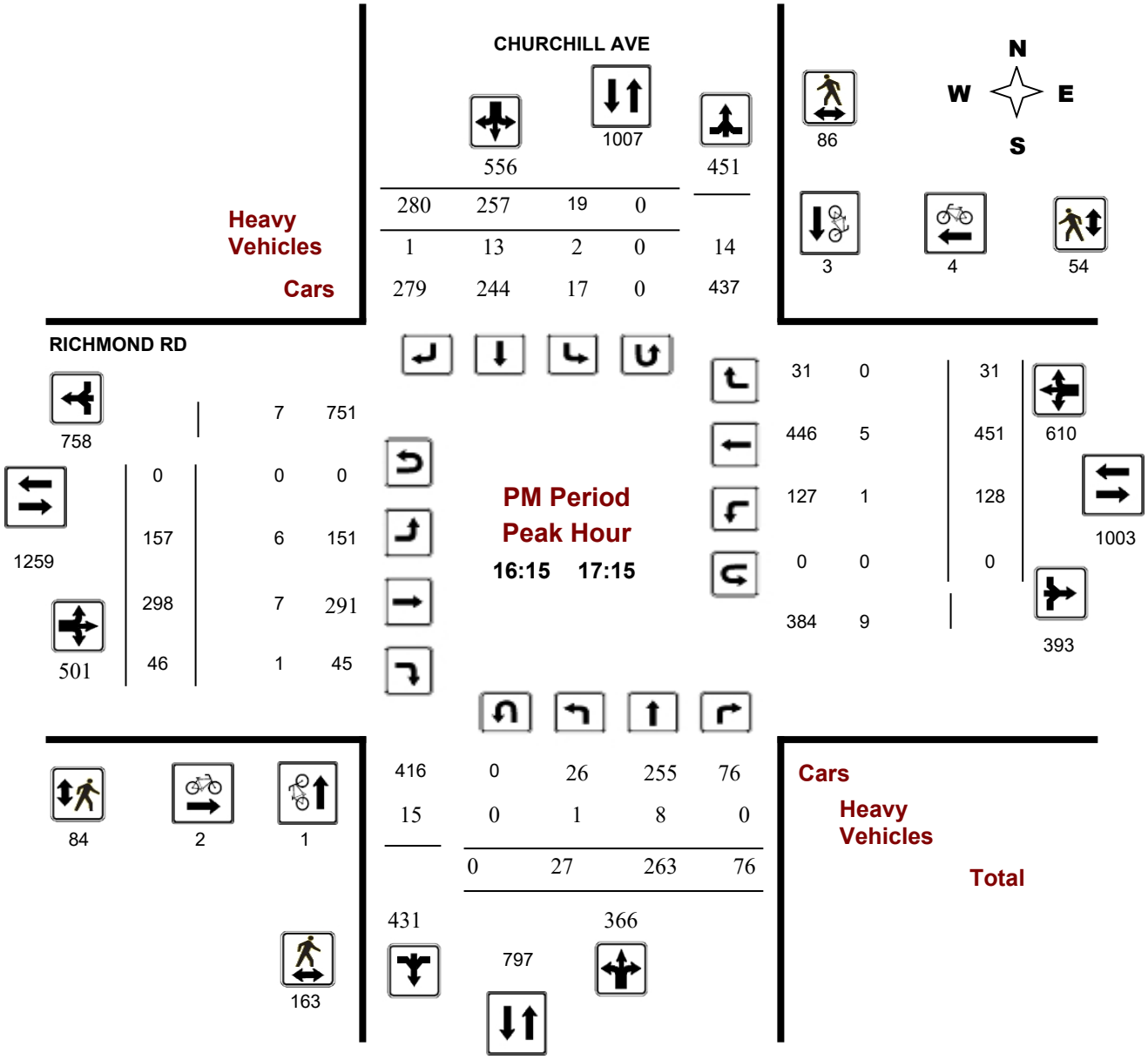
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39644

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39644

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

Full Study 15 Minute Increments

		CHURCHILL AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	4	25	10	39	3	46	20	69	4	56	75	5	136	7	27	6	40	4	284
07:15	07:30	4	28	8	40	2	50	19	71	6	63	91	5	159	5	35	2	42	6	312
07:30	07:45	2	37	18	57	9	59	24	92	13	80	85	10	175	11	26	4	41	13	365
07:45	08:00	4	71	23	98	2	71	27	100	8	75	96	4	175	12	38	10	60	8	433
08:00	08:15	1	69	22	93	6	60	32	98	10	72	83	11	166	11	39	3	53	10	410
08:15	08:30	6	60	30	96	7	83	29	119	7	77	95	7	179	9	43	7	59	7	453
08:30	08:45	4	66	20	90	3	74	36	113	11	76	83	8	167	8	53	4	65	11	435
08:45	09:00	5	75	21	101	5	79	39	123	8	62	112	6	180	12	47	2	61	8	465
09:00	09:15	9	72	12	93	6	83	31	120	12	47	100	8	155	14	40	6	60	12	428
09:15	09:30	4	48	27	79	5	55	39	99	13	46	79	12	137	14	37	6	58	13	373
09:30	09:45	6	46	19	71	4	43	34	81	17	38	74	8	120	19	56	10	85	17	357
09:45	10:00	8	39	23	70	3	38	33	74	12	31	76	7	114	17	40	11	68	12	326
11:30	11:45	9	32	16	57	12	46	29	87	14	28	75	13	116	22	78	11	111	14	371
11:45	12:00	15	52	19	86	8	43	39	90	14	31	73	22	126	19	63	12	94	14	396
12:00	12:15	10	48	22	80	7	59	44	110	14	31	82	20	133	17	90	6	113	14	436
12:15	12:30	8	41	20	69	9	47	49	105	5	32	59	17	108	21	77	4	102	5	384
12:30	12:45	5	46	25	76	9	51	41	101	10	31	52	27	110	16	77	6	99	10	386
12:45	13:00	9	60	24	93	6	56	46	108	6	35	67	17	119	23	83	10	116	6	436
13:00	13:15	11	42	13	66	6	50	56	112	9	30	70	24	124	17	83	4	104	9	406
13:15	13:30	6	35	21	62	9	58	44	111	12	32	65	15	112	17	97	7	121	12	406
15:00	15:15	10	48	16	74	5	61	62	128	7	32	77	34	143	28	98	11	137	7	482
15:15	15:30	10	53	24	87	6	66	71	143	8	46	74	18	138	32	84	7	123	8	491
15:30	15:45	4	49	15	68	6	57	61	124	4	35	68	9	112	30	110	8	148	4	452
15:45	16:00	4	51	29	84	1	63	82	146	3	32	64	17	113	26	101	3	131	3	474
16:00	16:15	4	53	15	72	4	57	62	123	7	28	60	18	106	36	114	5	155	7	456
16:15	16:30	8	70	12	90	4	60	68	132	6	37	76	12	125	29	113	7	149	6	496
16:30	16:45	6	64	23	93	4	71	67	142	8	43	72	13	128	35	114	7	156	8	519
16:45	17:00	10	73	21	104	4	68	73	145	7	37	71	14	122	32	112	6	150	7	521
17:00	17:15	3	56	20	79	7	58	72	137	4	40	79	7	126	32	112	11	155	4	497
17:15	17:30	10	62	16	88	5	61	68	134	4	44	52	16	112	28	116	8	152	4	486
17:30	17:45	8	59	22	89	3	68	66	137	6	40	72	5	117	28	89	7	124	6	467
17:45	18:00	4	61	26	91	4	47	55	106	1	38	63	14	115	29	93	13	135	1	447
Total:		211	1691	632	2535	174	1888	1518	3580	270	1425	2420	423	4268	656	2385	224	3267	270	13,650

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39644

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

Full Study Cyclist Volume

Time Period		CHURCHILL AVE			RICHMOND RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	1	0	1	1
07:15	07:30	2	0	2	0	0	0	2
07:30	07:45	1	0	1	0	0	0	1
07:45	08:00	3	0	3	4	0	4	7
08:00	08:15	4	1	5	0	1	1	6
08:15	08:30	5	0	5	4	0	4	9
08:30	08:45	2	0	2	2	1	3	5
08:45	09:00	0	0	0	2	0	2	2
09:00	09:15	1	0	1	3	0	3	4
09:15	09:30	2	1	3	0	1	1	4
09:30	09:45	0	1	1	1	1	2	3
09:45	10:00	1	0	1	0	0	0	1
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	1	1	1
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	1	0	1	0	0	0	1
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	0	0	0	0
15:00	15:15	0	0	0	1	0	1	1
15:15	15:30	0	0	0	1	0	1	1
15:30	15:45	0	0	0	2	0	2	2
15:45	16:00	0	1	1	1	0	1	2
16:00	16:15	0	2	2	0	1	1	3
16:15	16:30	0	0	0	0	1	1	1
16:30	16:45	0	1	1	0	0	0	1
16:45	17:00	0	0	0	1	0	1	1
17:00	17:15	1	2	3	1	3	4	7
17:15	17:30	0	2	2	0	0	0	2
17:30	17:45	0	1	1	2	0	2	3
17:45	18:00	1	2	3	0	0	0	3
Total		24	14	**38**	26	10	36	74

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39644

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

Full Study Pedestrian Volume

	CHURCHILL AVE			RICHMOND RD			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	3	2	**5**	2	2	**4**	**9**
07:15 07:30	4	3	**7**	6	3	**9**	**16**
07:30 07:45	10	8	**18**	4	2	**6**	**24**
07:45 08:00	17	4	**21**	14	4	**18**	**39**
08:00 08:15	11	9	**20**	6	3	**9**	**29**
08:15 08:30	18	5	**23**	10	11	**21**	**44**
08:30 08:45	19	15	**34**	18	10	**28**	**62**
08:45 09:00	15	7	**22**	8	10	**18**	**40**
09:00 09:15	16	7	**23**	9	5	**14**	**37**
09:15 09:30	8	16	**24**	6	4	**10**	**34**
09:30 09:45	14	8	**22**	12	6	**18**	**40**
09:45 10:00	14	9	**23**	10	7	**17**	**40**
11:30 11:45	26	24	**50**	19	7	**26**	**76**
11:45 12:00	23	28	**51**	24	14	**38**	**89**
12:00 12:15	46	21	**67**	31	12	**43**	**110**
12:15 12:30	34	35	**69**	20	16	**36**	**105**
12:30 12:45	32	34	**66**	24	8	**32**	**98**
12:45 13:00	42	32	**74**	27	15	**42**	**116**
13:00 13:15	37	19	**56**	18	11	**29**	**85**
13:15 13:30	35	28	**63**	33	14	**47**	**110**
15:00 15:15	33	27	**60**	26	14	**40**	**100**
15:15 15:30	28	20	**48**	24	12	**36**	**84**
15:30 15:45	23	28	**51**	17	18	**35**	**86**
15:45 16:00	28	24	**52**	16	12	**28**	**80**
16:00 16:15	27	16	**43**	24	5	**29**	**72**
16:15 16:30	29	23	**52**	16	15	**31**	**83**
16:30 16:45	48	20	**68**	24	11	**35**	**103**
16:45 17:00	48	25	**73**	18	17	**35**	**108**
17:00 17:15	38	18	**56**	26	11	**37**	**93**
17:15 17:30	31	27	**58**	27	11	**38**	**96**
17:30 17:45	33	24	**57**	17	16	**33**	**90**
17:45 18:00	32	23	**55**	17	24	**41**	**96**
Total	822	589	**1411**	553	330	**883**	**2294**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39644

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

Full Study Heavy Vehicles

		CHURCHILL AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	1	1	**2**	0	1	1	**2**	**4**	3	2	0	**5**	0	1	0	**1**	**6**	**10**
07:15	07:30	0	1	2	**3**	0	2	1	**3**	**6**	1	4	0	**5**	0	2	0	**2**	**7**	**13**
07:30	07:45	0	5	1	**6**	1	2	4	**7**	**13**	1	1	2	**4**	1	1	0	**2**	**6**	**19**
07:45	08:00	1	2	1	**4**	1	3	0	**4**	**8**	1	2	0	**3**	1	4	1	**6**	**9**	**17**
08:00	08:15	0	8	0	**8**	1	1	0	**2**	**10**	2	4	0	**6**	0	5	1	**6**	**12**	**22**
08:15	08:30	0	2	0	**2**	1	4	0	**5**	**7**	1	4	0	**5**	0	3	1	**4**	**9**	**16**
08:30	08:45	0	5	2	**7**	0	1	3	**4**	**11**	3	3	0	**6**	0	2	0	**2**	**8**	**19**
08:45	09:00	0	7	0	**7**	0	1	0	**1**	**8**	2	2	0	**4**	1	3	0	**4**	**8**	**16**
09:00	09:15	0	3	0	**3**	0	7	2	**9**	**12**	0	4	0	**4**	1	4	0	**5**	**9**	**21**
09:15	09:30	0	6	1	**7**	0	5	1	**6**	**13**	0	5	0	**5**	1	1	1	**3**	**8**	**21**
09:30	09:45	1	7	2	**10**	1	3	3	**7**	**17**	0	5	0	**5**	1	3	0	**4**	**9**	**26**
09:45	10:00	0	2	3	**5**	0	4	3	**7**	**12**	1	5	0	**6**	2	1	1	**4**	**10**	**22**
11:30	11:45	0	2	1	**3**	1	10	0	**11**	**14**	0	1	1	**2**	0	4	2	**6**	**8**	**22**
11:45	12:00	1	7	2	**10**	0	2	2	**4**	**14**	0	3	0	**3**	0	2	1	**3**	**6**	**20**
12:00	12:15	0	4	2	**6**	0	6	2	**8**	**14**	0	4	2	**6**	0	4	1	**5**	**11**	**25**
12:15	12:30	1	0	0	**1**	0	4	0	**4**	**5**	2	2	0	**4**	0	3	0	**3**	**7**	**12**
12:30	12:45	1	4	0	**5**	0	3	2	**5**	**10**	1	2	0	**3**	0	6	0	**6**	**9**	**19**
12:45	13:00	1	2	1	**4**	0	0	2	**2**	**6**	0	3	0	**3**	1	1	0	**2**	**5**	**11**
13:00	13:15	0	4	0	**4**	1	3	1	**5**	**9**	1	2	1	**4**	0	1	0	**1**	**5**	**14**
13:15	13:30	0	2	0	**2**	0	8	2	**10**	**12**	3	1	1	**5**	2	4	0	**6**	**11**	**23**
15:00	15:15	1	1	0	**2**	0	3	2	**5**	**7**	1	5	4	**10**	2	4	0	**6**	**16**	**23**
15:15	15:30	0	3	0	**3**	0	4	1	**5**	**8**	0	1	1	**2**	0	2	0	**2**	**4**	**12**
15:30	15:45	0	0	0	**0**	0	2	2	**4**	**4**	0	2	1	**3**	0	0	0	**0**	**3**	**7**
15:45	16:00	0	1	0	**1**	0	1	1	**2**	**3**	1	2	0	**3**	0	2	0	**2**	**5**	**8**
16:00	16:15	0	2	0	**2**	0	1	4	**5**	**7**	0	2	0	**2**	1	3	1	**5**	**7**	**14**
16:15	16:30	0	2	0	**2**	0	4	0	**4**	**6**	1	1	1	**3**	0	2	0	**2**	**5**	**11**
16:30	16:45	1	2	0	**3**	1	4	0	**5**	**8**	3	1	0	**4**	0	0	0	**0**	**4**	**12**
16:45	17:00	0	2	0	**2**	0	5	0	**5**	**7**	1	3	0	**4**	1	0	0	**1**	**5**	**12**
17:00	17:15	0	2	0	**2**	1	0	1	**2**	**4**	1	2	0	**3**	0	3	0	**3**	**6**	**10**
17:15	17:30	0	2	0	**2**	0	1	1	**2**	**4**	0	1	1	**2**	0	1	0	**1**	**3**	**7**
17:30	17:45	0	2	0	**2**	0	4	0	**4**	**6**	0	0	0	**0**	0	1	0	**1**	**1**	**7**
17:45	18:00	0	0	0	**0**	0	1	0	**1**	**1**	0	1	0	**1**	0	1	0	**1**	**2**	**3**
Total:	None	8	93	19	**120**	9	100	41	**150**	**270**	30	80	15	**125**	15	74	10	**99**	**224**	**494**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CHURCHILL AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020 **WO No:** 39644

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

Full Study 15 Minute U-Turn Total

Time Period		CHURCHILL AVE Northbound U-Turn Total	CHURCHILL AVE Southbound U-Turn Total	RICHMOND RD Eastbound U-Turn Total	RICHMOND RD Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	1	0	0	0	1
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	1	1
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	1	1
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		1	0	0	2	3

TRANS Regional Model

Version 2.13 - Assigned February 07, 2019

AM Peak Hour Total Traffic Volume

Westboro

2011 Model - Base Scenario

No Modifications

User Initials: SG
Plot Prepared: July 30, 2019
EMME Scenario: 21311

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

50 100 150 200 250

451

742

803

340

508

538

538

538

TRANS Regional Model

Version 2.11 - Assigned July 26, 2019

AM Peak Hour Total Traffic Volume

Westboro

2031 Model - TMP Affordable Network

No Modifications

User Initials: SG
Plot Prepared: July 30, 2019
EMME Scenario: 21131

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

Distance (m)

50 100 150 200 250

N

390

670

753

245

536

465

520

520

Appendix E
Collision Records

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: CHURCHILL AVE @ WILMONT AVE

Traffic Control: Stop sign **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Oct-25, Thu,18:13	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Location: CHURCHILL AVE btwn MADISON AVE & RICHMOND RD

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
2019-Jul-10, Wed,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2021-Oct-23, Sat,15:17	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2022-May-20, Fri,17:49	Clear	Sideswipe	Non-fatal injury	Dry	North	Pulling away from shoulder or curb	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	

Location: CHURCHILL AVE btwn SCOTT ST & WILMONT AVE

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Jan-20, Mon,10:31	Clear	Turning movement	P.D. only	Packed snow	North	Turning right	Truck and trailer	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2020-Mar-05, Thu,23:47	Clear	SMV other	P.D. only	Dry	South	Unknown	Pick-up truck	Building or wall	0

Location: CHURCHILL AVE btwn WHITBY AVE & MADISON AVE

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-25, Fri,00:00	Clear	SMV unattended vehicle	P.D. only	Slush	Unknown	Unknown	Unknown	Unattended vehicle	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: CHURCHILL AVE btwn WILMONT AVE & WHITBY AVE

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-18, Thu,23:03	Clear	Approaching	Non-fatal injury	Dry	South	Going ahead	Passenger van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: RICHMOND RD btwn ROOSEVELT AVE & WINSTON AVE

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-14, Mon,10:54	Clear	SMV unattended vehicle	P.D. only	Dry	East	Unknown	Unknown	Unattended vehicle	0
2022-Oct-12, Wed,11:41	Rain	Sideswipe	P.D. only	Wet	West	Pulling away from shoulder or curb	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: RICHMOND RD btwn WINSTON AVE & CHURCHILL AVE

Traffic Control: No control **Total Collisions:** 16

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-07, Sun,12:45	Clear	Turning movement	P.D. only	Dry	West	Making "U" turn	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-24, Sat,12:19	Clear	Other	P.D. only	Dry	East	Reversing	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-07, Fri,13:40	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Pulling onto shoulder or toward curb	Automobile, station wagon	Other motor vehicle	
2019-Jan-03, Thu,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	East	Unknown	Unknown	Unattended vehicle	0
2019-Jan-12, Sat,19:30	Clear	Turning movement	P.D. only	Wet	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: RICHMOND RD btwn WINSTON AVE & CHURCHILL AVE

Traffic Control: No control **Total Collisions:** 16

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-02, Sat,16:02	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-12, Tue,15:52	Drifting Snow	Rear end	Non-fatal injury	Slush	East	Slowing or stopping	Delivery van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-14, Thu,17:29	Clear	Sideswipe	P.D. only	Dry	East	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-17, Sun,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	East	Unknown	Automobile, station wagon	Unattended vehicle	0
2020-Mar-08, Sun,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2020-Aug-10, Mon,14:46	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2021-Mar-15, Mon,10:46	Clear	Angle	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Sep-13, Mon,13:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2022-Feb-04, Fri,13:30	Clear	Angle	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-May-28, Sat,10:22	Clear	Other	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Reversing	Automobile, station wagon	Other motor vehicle	
2022-Jun-09, Thu,17:53	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	

Location: ROOSEVELT AVE @ RICHMOND RD

Traffic Control: Traffic signal **Total Collisions:** 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: ROOSEVELT AVE @ RICHMOND RD

Traffic Control: Traffic signal **Total Collisions:** 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-02, Tue,12:14	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-03, Thu,14:19	Snow	Rear end	Non-fatal injury	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jan-03, Thu,15:48	Snow	Rear end	P.D. only	Slush	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jul-26, Fri,07:45	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	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-17, Tue,13:51	Clear	Sideswipe	P.D. only	Dry	East	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2020-Jan-06, Mon,10:55	Snow	Rear end	P.D. only	Slush	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2020-Jul-22, Wed,08:44	Clear	Other	P.D. only	Dry	East	Reversing	Unknown	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2022-Aug-01, Mon,12:23	Clear	SMV other	Non-fatal injury	Dry	South	Turning left	Pick-up truck	Pedestrian	1

Location: ROOSEVELT AVE btwn END & RICHMOND RD

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
2018-Feb-10, Sat,12:22	Clear	SMV unattended vehicle	P.D. only	Loose snow	East	Reversing	Automobile, station wagon	Unattended vehicle	0
2019-Oct-31, Thu,09:39	Rain	Angle	Non-fatal injury	Wet	West	Reversing	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: ROOSEVELT AVE btwn END & RICHMOND RD

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
2021-Jan-14, Thu,22:06	Clear	Angle	P.D. only	Wet	East	Reversing	Unknown	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	

Location: WILMONT AVE btwn WINSTON AVE & CHURCHILL AVE

Traffic Control: No control **Total Collisions:** 1

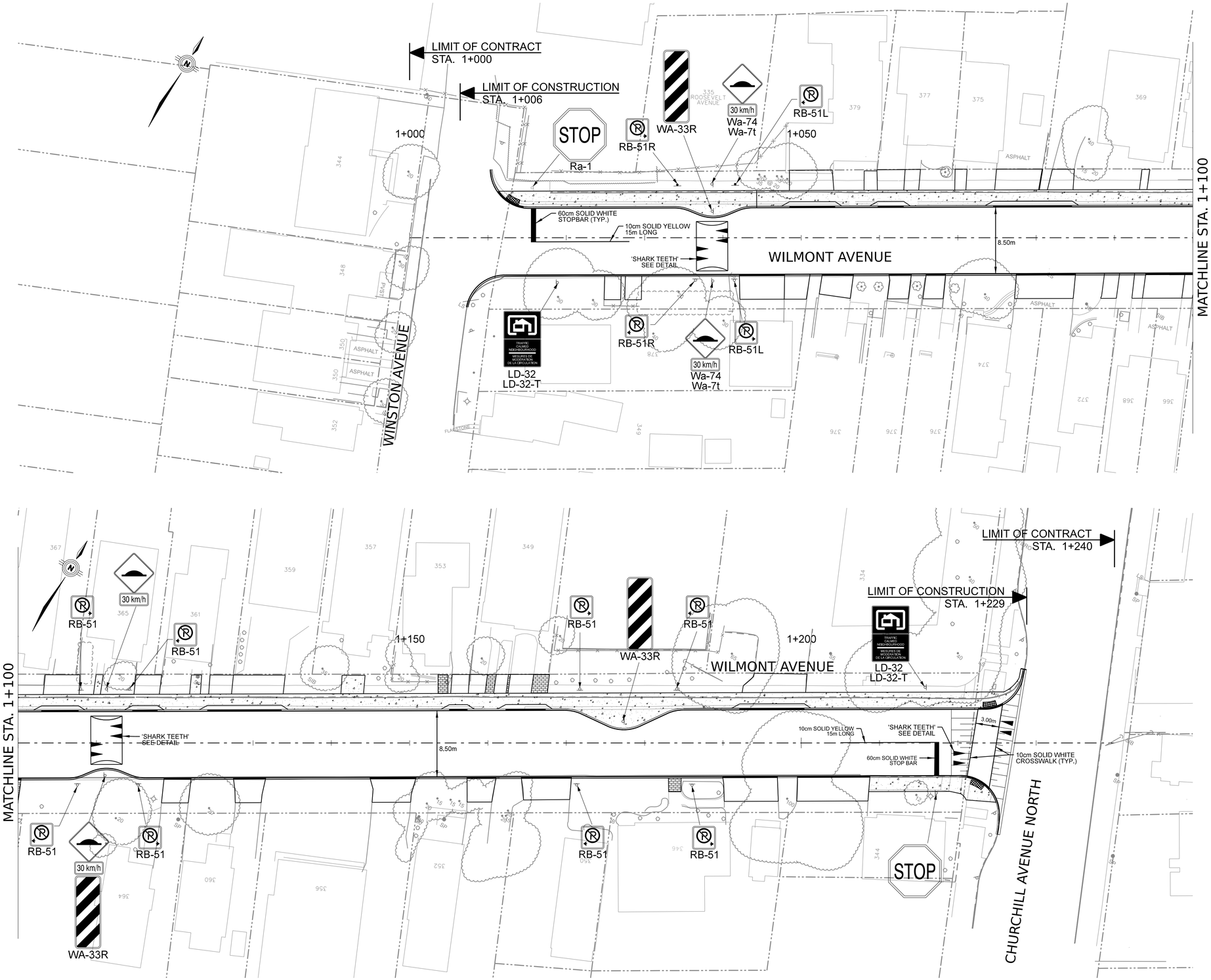
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Apr-02, Thu,10:54	Clear	SMV other	P.D. only	Dry	West	Going ahead	Truck - open	Other	0

Location: WINSTON AVE btwn WILMONT AVE & WHITBY AVE

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jun-15, Fri,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0

Appendix F
Wilmont Avenue Design



INTEGRATED RENEWAL:
WINONA, WILMONT, ELMGROVE AND PICTON

PROPOSED PAINT & SIGNAGE
WILMONT AVENUE
STA 1+000 TO STA. 1+240

C. Duclos, P.Eng.	K. Pearce, P.Eng.
Director, Infrastructure Projects	Senior Engineer, Infrastructure Projects

Robinson Consultants

LICENSED PROFESSIONAL ENGINEER
R. E. COTNAM
100079713
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
March 26/24
D. W. SHURB
PROVINCE OF ONTARIO

Ottawa

Contract No.	Dwg. No.
CP000540	PS01

Sheet 30 of 33

Asset No. ----------

Asset Group ---

Des.	Chk'd.
R.C.	D.S.
Dwn.	Chk'd.
D.H.	D.S.
Utility Circ. No.	Index No.
CTY2110156	------

Const. Inspector ----------

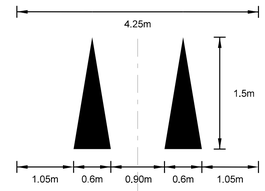
Scale: HORIZONTAL 0m 5 10
0m VERTICAL

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1.	ISSUED FOR FUNCTIONAL GEOMETRY REVIEW	D.S.	25.08.21
2.	ISSUED FOR PRELIMINARY DESIGN	D.S.	20.10.21
3.	ISSUED FOR DETAILED DESIGN	D.S.	22.06.22
4.	ISSUED FOR 100% DETAILED DESIGN	D.S.	09.09.22
5.	ISSUED FOR TENDER REVIEW	D.S.	27.01.23
6.	ISSUED FOR MECP APPROVAL	D.S.	27.01.23
7.	ISSUED FOR TENDER	D.S.	19.01.24
8.	ISSUED FOR CONSTRUCTION	D.S.	26.03.24

'SHARK TOOTH' TYPICALS



4.25m SINGLE LANE

NOTE:

FROM CURB FACE TO CURB FACE, FOR EVERY 1.50m ADD AN EXTRA TOOTH AND ALWAYS CENTER TEETH SETS

Appendix G
Other Area Developments

TRANSPORTATION IMPACT ASSESSMENT REPORT

1. DESCRIPTION OF PROPOSED DEVELOPMENT

1.1. PROPOSED DEVELOPMENT

A six-storey building with approximately 16 residential apartment units, 230 square metres of office space, and 230 square metres of ground floor retail is being proposed along the south side of Richmond Road, east of Roosevelt Avenue. No vehicle access is proposed for the subject development. No parking will be provided on site. The estimated date of occupancy is 2020, with one planned phase of development. The lot currently contains an unoccupied single storey commercial building. The site's local context is depicted as Figure 1, the Ground Floor Site Plan is depicted as Figure 2. The subject mixed-use development was examined used the TIA Screening Form (see Appendix A). Using this form, it was determined that the proposed development would not meet the Trip Generation Trigger. However, both the Location Trigger and the Safety Trigger were met. This study has been prepared accordingly.

Figure 1: Local Context

Strategy Report

1. SCREENING FORM

The screening form was submitted for the subject development on December 1st, 2017 to City of Ottawa staff for review and confirmation of the need for a Transportation Impact Assessment (TIA). The Location and Safety triggers were met based on the proximity to the Richmond Road corridor and adjacent intersection of Roosevelt Avenue and Richmond Road. City staff provided confirmation to proceed with Step 2 – Scoping Report on December 4th, 2017.

The Screening and Scoping Report was submitted on December 8th, 2017 to City of Ottawa staff for review and confirmation of the study area scope, trip generation requirements, and exemptions review for the future steps of the TIA process. It was recommended that Module 3.1 Elements 3.1.2 Trip Distribution and 3.1.3 Trip Assignment be excluded from the forecasting report. City staff provided confirmation on December 15th to exclude Step 3 – Forecasting and proceed with Step 4 – Analysis, excluding Module 4.1 Element 4.1.3 New Street Networks, Module 4.2 Element 4.2.2 Spillover Parking, Module 4.4 Elements 4.4.2 Intersection Control and 4.4.3 Intersection Design, and the Network Impact Components, Modules 4.5 through 4.9

The Screening Form, Exemptions Review, and City Responses are provided in Appendix A.

2. DESCRIPTION OF PROPOSED DEVELOPMENT

From the information provided, it is our understanding that the proponent is proposing to construct a multi-use development located at 398-406 Roosevelt Avenue. The development will consist of 33 residential apartment units and approximately 555m^2 of ground floor retail. The site is currently occupied by three residential houses. Surface and underground parking is proposed for the site. The local context of the site is provided as Figure 1 and the proposed Site Plan is provided as Figure 2. The site is currently zoned for a townhouse development and a Zoning By-Law Amendment will need to be completed.

3. Forecasting Report

3.1. Development Generated Travel Demand

Exempt, see **Table 1**. Given the low number of units proposed, 28, this section was previously exempt and has been exempt in this submission as well as it will have negligible impacts to the study area network.

3.2. Background Network Travel Demands

3.2.1. TRANSPORTATION NETWORK PLANS

Refer to **Section 2.1.3** Planned Conditions – Planned Study Area Transportation Network Changes.

3.2.2. BACKGROUND GROWTH

The background traffic growth was projected to increase by approximately 0.25% to 0.80% in the previous TIA (Section 10 of that report, with further details provided in **Appendix E**), which led to the assumption of 1% annual growth for a more conservative analysis. The most recent count from January 23, 2020 showed a total decrease in traffic volumes of 12% for the AM over 5 years and 33% for the PM over 5 years. Given the recent counts available, it will be assumed that a very conservative 0% annual growth will occur in future years. The known other area developments proposed will be layered on individually.

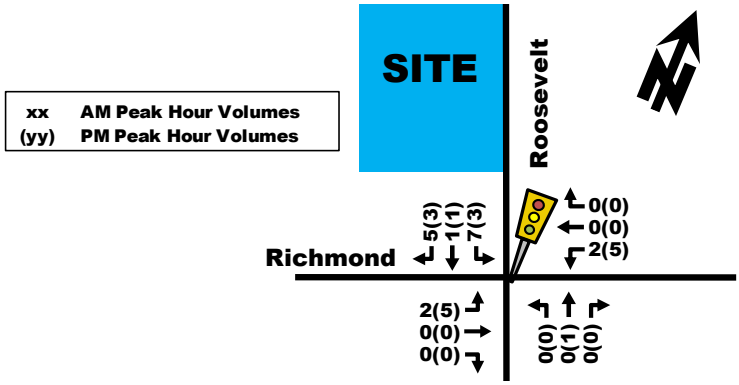
3.2.3. OTHER AREA DEVELOPMENTS

Trips generated by other area developments were accounted within the study area. A summary of each development was provided in **Section 2.1.4**.

335 Roosevelt

Figure 8 illustrates the projected traffic volumes for 335 Roosevelt at full build-out, obtained from the TIA Report completed by Novatech.

Figure 8: 335 Roosevelt Projected Peak Hour Traffic Volumes – Full Build Out



397 Winston

Figure 9 illustrates the projected traffic volumes for 397 Winston at full build-out, obtained from the TIA Report completed by Novatech. Note that these volumes were estimates based on the projected number of vehicles generated within the TIA report.

The Annex B of the TMP Guiding Principles[3] "encourages transit-oriented development and support intensification where transit, walking and cycling can be made most attractive". The site is located in an area that already has a high level of transportation facility options, including biking, transit and walking.

Within Volume 2 of the Official Plan, the Richmond Rd Secondary Plan Section 2.1[4] states that "Compatible intensification will occur primarily on appropriate sites on Richmond Road and Scott Street and adjacent to the future Westboro and Kichi Sibi O-Train stations", with this site being both very close to Richmond Rd and Kichi Sibi LRT Station.

Lastly, from a transportation perspective, an increase in 33 units would result in less than 5 new vehicle trips two-way during the morning and afternoon peak hours, which equates to less than one vehicle every 12 minutes. The traffic impacts to the adjacent intersections and surrounding transportation network are considered negligible.

> ***Both the Official Plan and the Transportation Master Plan Update support an increase in unit counts as part of intensification given the site's location, 15-minute neighbourhood principles and nearby alternate mode of transportation facilities available. The proposed unit count, combined with the reduced tenant parking, would have a negligible traffic impact to the surrounding transportation network.***

4.0 Proposed Parking Reduction

The revised Site Plan proposes a reduction in parking spaces from 47 to 15 spaces (0.33 spaces/unit after applicable reductions, refer to **Table 2** footnotes) for residents and an increase in visitor parking spaces from 2 to 5 spaces (rate of 0.1 spaces/unit after applicable reductions) to meet the minimum visitor parking space requirements. **Table 2** summarizes the vehicle parking minimums required under the Parking By-Law. According to the City of Ottawa Parking By-Law, Part 4 Sections 100-114, the proposed development is located in Area B in Schedule 1 and Area X in Schedule 1A, within 600m walk to Kichi Sibi Rapid Transit Station according to Schedule 2A.

Table 2: Vehicle Parking Space Supply

Land Use		Rate per Unit		Required Vehicle Spaces			Proposed Spaces		
		Base	Visitor	Base	Visitors	Total	Base	Visitors	Total
R12 Mid- High-Rise Apartment	62 units	0.5 per unit[1]	0.1 per unit[1]	22	5	30	15	5	20

1) no off-street motor vehicle parking is required for the first 12 dwelling units
2) 101(6)(c) - where all parking spaces provided or required for a permitted land use are located below grade in the same building as that land use, the parking required by Table 101 for that land use may be reduced by 10 per cent of the required parking spaces (3 spaces);

Table 3 summarizes the bicycle parking requirements as per City of Ottawa Parking By-Law. The proposed bike parking more than doubles the minimum required parking spaces, providing a higher than 1 to 1 parking spaces per unit. Bike storage is predominantly located indoors in secured areas on P1, with convenient access to elevators. The site is located near high quality biking trails such as the NCC pathways (Ottawa River Pathway), multi-use pathways (MUP) on the north side of Scott St and south side of Richmond Rd west of the site, and scattered cycling facilities on Richmond Rd and Churchill Ave. The site context offers the opportunity to promote sustainable modes of transportation and a reduced reliance on vehicles, which justifies the reduced proposed residential occupant vehicle parking rates.

Table 3: Bicycle Parking Requirements

Land Use		Rate	Required Bicycle Spaces	Proposed Spaces
			Required	
Apartment Building	62 units	0.5 per unit	31	78

The site is located near commercial and office uses, which can promote walkable neighbourhoods where tenants can live, work and shop within a walkable distance. The city has already seen changes in travel behaviours post Covid-19, with

[3] New TMP Guiding Principles, Annex B page 2.
[4] Official Plan Volume 2, Richmond Rd Secondary Plan, pg3

Screening and Scoping Report

1. DESCRIPTION OF PROPOSED DEVELOPMENT

1.1. PROPOSED DEVELOPMENT

A 12-storey building with approximately 60 residential apartment units is being proposed along the south side of Scott Street, just west of Lanark Avenue. Vehicle access is proposed to Scott Street via a single full-movement driveway connection. A total of 13 parking spaces are proposed to serve the subject development in an above-ground on-site parking lot. The estimated date of occupancy is 2019, with one planned phase of development. The site is currently vacant and zoned as residential. The site's local context is depicted as Figure 1 and the Ground Floor Site Plan is depicted as Figure 2.

Figure 1: Local Context

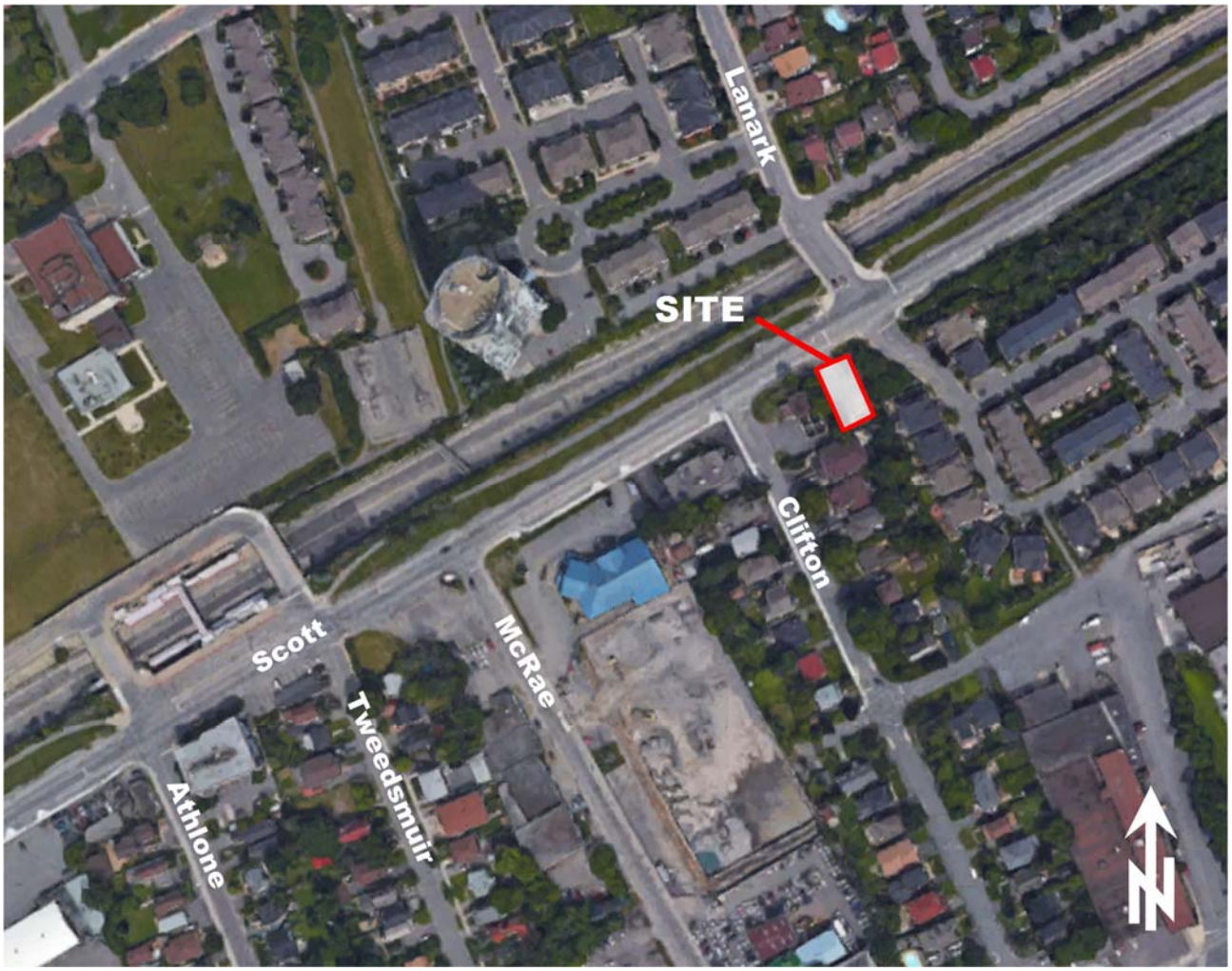


Figure 7: 2019 Background Traffic Volumes

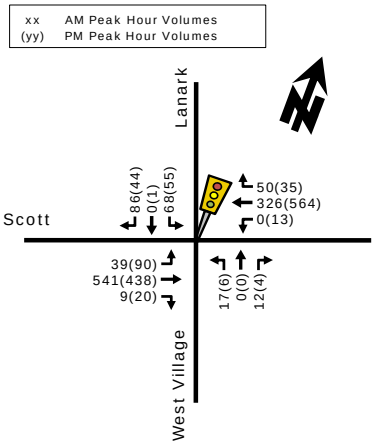
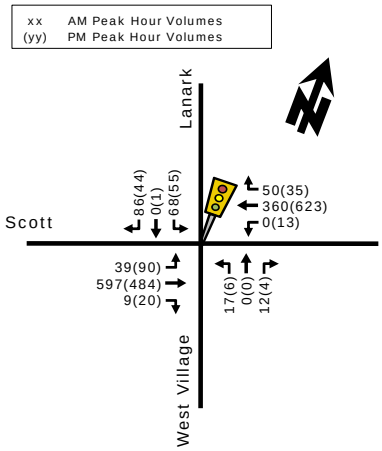


Figure 8: 2024 Background Traffic Volumes



7. EXEMPTIONS REVIEW

7.1. MODULES 3.1, 3.2, 3.3

The development is planned to be a 60-unit apartment building. According to the City's 2017 TIA Guidelines (Table 2), the trip generation trigger for apartment building developments is 90 units or more. As this site does not meet that trigger, no further site-trip generation analysis is included herein, and Modules 3.1, 3.2, and 3.3 are exempt from the TIA.

7.2. DEVELOPMENT DESIGN

7.2.1. CIRCULATION AND ACCESS

As shown on the Site Plan (Figure 2), vehicle parking is proposed at the rear of the building, with driveway access to Scott Street. The driveway is located at the site's western boundary to maximize the distance between the driveway and the adjacent intersection. The driveway is approximately 25 m from West Village Private, which meets the Private Approach By-Law (No. 2003-447-25(l)). It is noteworthy, that the driveway is approximately 12 m west of the westbound stop bar at the Scott/West Village & Lanark intersection.

The driveway width is noted to be 3.0 m wide. According to the City's Parking, Queues and Loading By-Law, an apartment building is permitted to have a driveway width of 3.6 m if there are less than 20 parking spaces on-site. As such, efforts should be made to increase the width of the driveway by 0.6 m, or a minor By-Law variance may be required. Similarly, the drive aisle width within the parking lot is noted to be 6.0 m wide. The City's Parking By-Law requires a minimum width of 6.7 m wide for perpendicular parking spaces. Given the low traffic volumes projected to travel to/from and within this parking lot, the proposed drive aisle widths will operate acceptably, however, a By-Law variance may be required.

7.2.2. DESIGN FOR SUSTAINABLE MODES

Pedestrian and cycling facilities are provided along both sides of Scott Street in the form of sidewalks and bicycle lanes. As shown in the attached Appendix D, cycle tracks are planned along both sides of Scott Street.

Transit stops and a rapid transit station (Westboro Station) are within 400 m walking distance for all future residents of the proposed apartment building. OC Transpo bus stops are located adjacent to the site along Scott Street.

PARSONS

1223 Michael Street, Suite 100 • Ottawa, Ontario K1J 7T2 • (613) 738-4160 • Fax: (613) 739-7105 • www.parsons.com

29 July 2014 OUR REF: TO3152TOC

Domicile
1-371A Richmond Road
Ottawa, ON K2A 0E7

Attention: David Renfroe

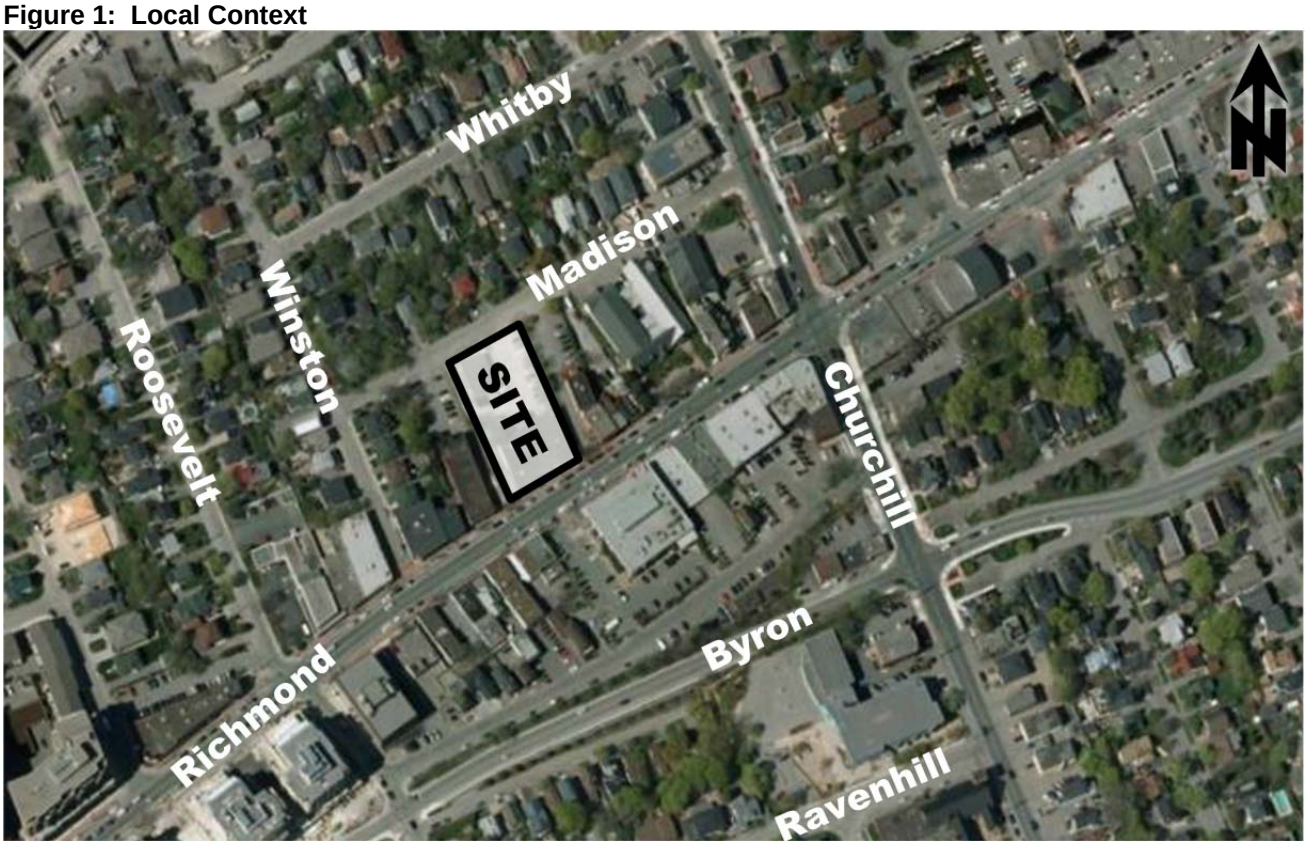
Dear David:

Re: 371 Richmond Road – Transportation Brief

1. Introduction

From the information provided, a 9 storey high-rise condominium development, consisting of approximately 100 dwelling units is being proposed on the north side of Richmond Road, approximately 150 m west of Churchill Avenue. The site is currently occupied by a commercial/office land use fronting Richmond Road and a surface parking lot and small retail land use fronting Madison Avenue. Access to the site is currently provided via two full-movement driveway connections to Madison Avenue. The proposed vehicular access/egress will be via the same two existing driveway connections. The most westerly driveway connection will provide access/egress to/from the proposed lower level parking and the most easterly driveway connection will provide access/egress to/from the existing surface parking (to be maintained). The site's local context is depicted as Figure 1 and the proposed Site Plan is depicted as Figure 2.

Figure 1: Local Context



Based on the ensuing trip generation and our review of the City's Transportation Impact Assessment Guidelines (TIA), the proposed development is projected to generate less than the City's 75 veh/h TIA threshold for requiring any traffic assessment. As such, no further traffic analysis is required. However, to assist in the application/review process, we have prepared this report that captures only the relevant transportation issues, which are as follows:

- Existing operational conditions at the adjacent intersections;
- Peak hour site traffic generation and assignment;
- Future requirements (if any) of the site traffic superimposed onto existing traffic; and
- Site Plan issues (if any), including proposed parking supply and garage access/egress/circulation.

By default, this report is being called a Transportation Brief. However, it does not contain all the requirements of a Transportation Brief, as one is not required for this application.

2. Existing Conditions

2.1 Area Road Network

Richmond Road is an east-west arterial roadway that extends from Robertson Road in the west to Island Park Drive in the east, where it continues east into Ottawa's downtown area as Wellington Street and then Somerset Street. Within the study area, its cross-section consists of a single travel lane in each direction with on-street parking bays provided along both sides of the roadway. The unposted speed limit is understood to be 50 km/h and auxiliary left-turn lanes are provided along Richmond Road at major intersections.

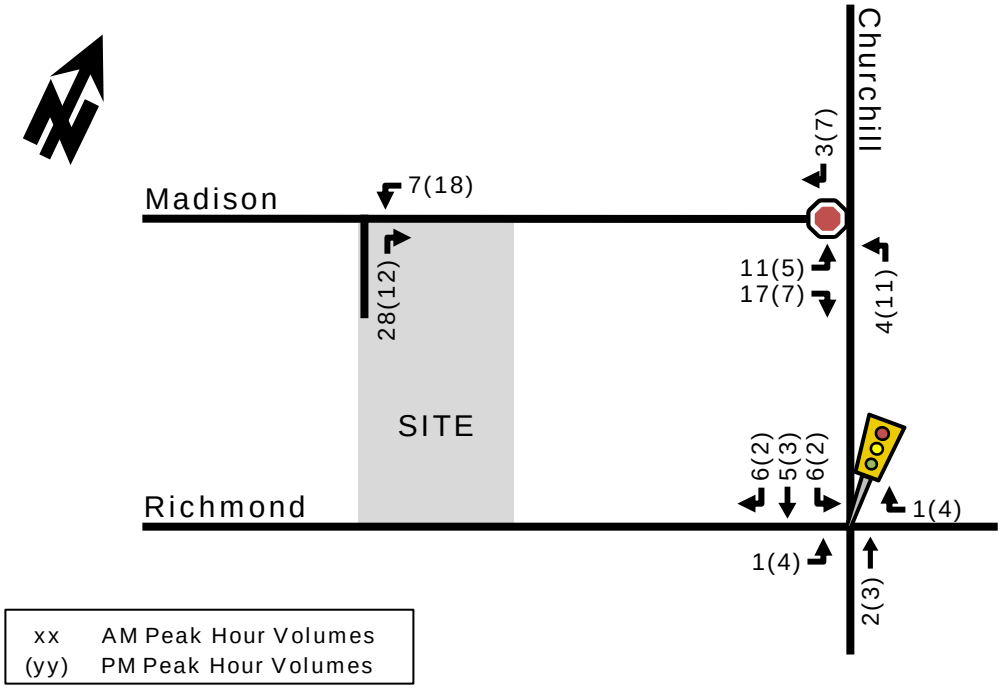
Churchill Avenue is a north-south major collector roadway south of Richmond Road, an arterial roadway between Richmond Road/Scott Street and a collector roadway north of Scott Street. Within the study area, its cross-section consists of a single travel lane in each direction with on-street parking bays provided along both sides of the roadway. Its intersection with Richmond Road is traffic signal controlled and the unposted speed limit is understood to be 50 km/h.

Madison Avenue is an east-west local roadway with a two lane cross-section and limited on-street parking. Auxiliary turn lanes are not provided on Madison Avenue and the unposted speed limit is understood to be 50 km/h.

2.2 Existing Intersection Operations

Illustrated as Figure 3, are the most recent weekday morning and afternoon peak hour traffic volumes collected by Delcan (a Parsons company) at the signalized Richmond/Churchill and unsignalized Churchill/Madison intersections (June 2013 and June 2014, respectively). These peak hour traffic volumes are also included as Appendix A.

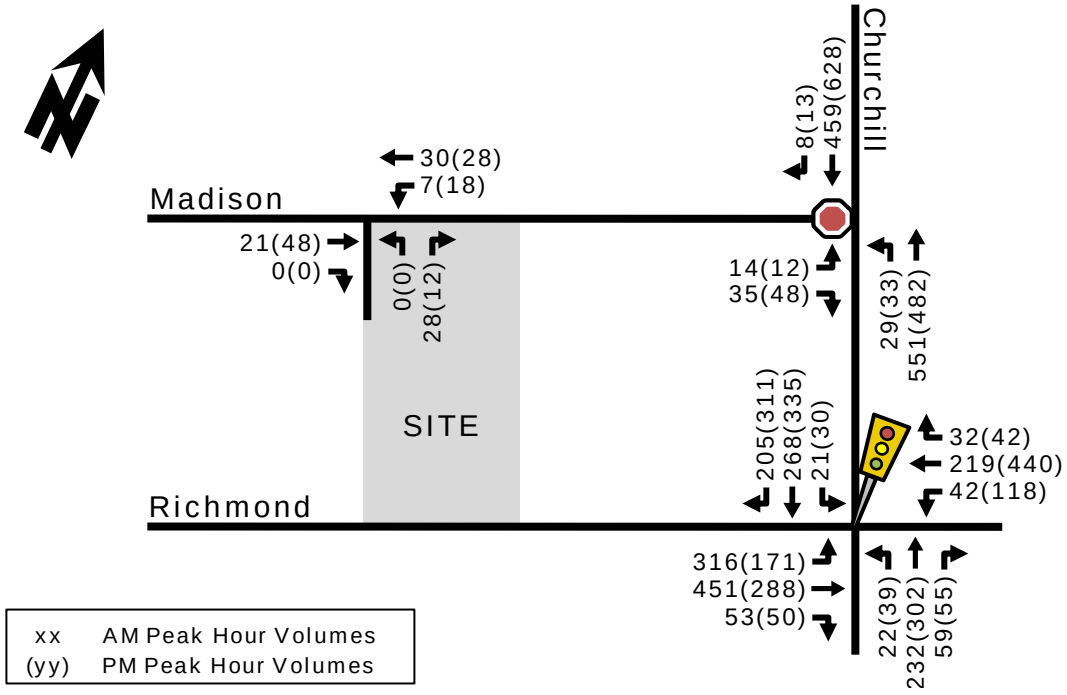
Figure 4: 'New' Site-Generated Traffic Volumes



4. Future Traffic Operations

For the purpose of this study, the total projected traffic volumes were derived by superimposing 'new' site-generated traffic (Figure 4) onto existing volumes (Figure 3). As the amount of site traffic generation does not require any traffic analysis based on the City guidelines, we have not accounted for any potential background growth. The resulting total projected traffic volumes used in the subsequent analysis are illustrated as Figure 5.

Figure 5: Projected Traffic Volumes



2.0 PROPOSED DEVELOPMENT

The proposed development will include 76 apartment units and two retail units with a combined gross floor area (GFA) of approximately 3,450ft^2. The proposed development will include an underground parking garage containing 65 vehicle parking spaces and 45 bicycle parking spaces.

A preliminary review of various access options was conducted, including access to Churchill Avenue, Byron Avenue, Byron Place and Highcroft Avenue. Access to Highcroft Avenue is recommended based on the following factors.

- Access along Byron Avenue and Churchill Avenue requires a minimum corner clearance of 55m from the Churchill Avenue/Byron Avenue intersection, and is unachievable.
- OC Transpo bus stop and school bus loading zone are located along the west side of Churchill Avenue and create additional conflict opposite the site.
- The northbound left turn lane and taper at the Churchill Avenue/Byron Avenue extend past the site.
- The raised northbound cycle track transitions to on-road shared travel lane across the Churchill Avenue frontage.
- Westbound and northbound queues at the Churchill Avenue/Byron Avenue intersection periodically extend to Highcroft Avenue and Ravenhill Avenue during weekday peak hours.
- The non-standard intersection configuration/traffic calming feature at Byron Place/Highcroft Avenue/Byron Avenue currently operates with low-volume on Byron Place.
- The City of Ottawa's Private Approach By-law requires the access to be located on the lower class of roadway where possible.

Site access to Highcroft Avenue will provide access to the full movement intersection at Byron Avenue. A 16 unit residential development was recently constructed at 450 Churchill Avenue. All movement access to this development is provided along Churchill Avenue south of Ravenhill Avenue. This driveway serves a smaller development compared to the proposed development, is not located in close proximity to a signalized intersection with turn lanes and tapers, and is not located across from a transit stop/school bus loading zone. The access provided for 450 Churchill Avenue development is not comparable to the proposed development.

The existing curb extension restricting the southbound through movement along Highcroft Avenue south of Byron Place will be moved to south of the proposed access to the parking garage for the proposed development. This will eliminate any opportunity for vehicles leaving the site to turn right to travel southbound on Highcroft Avenue.

The proposed development will be constructed in one phase, with an estimated completion date of 2020. The proposed Site Plan is included in **Appendix A**.

3.0 SCREENING AND SCOPING

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

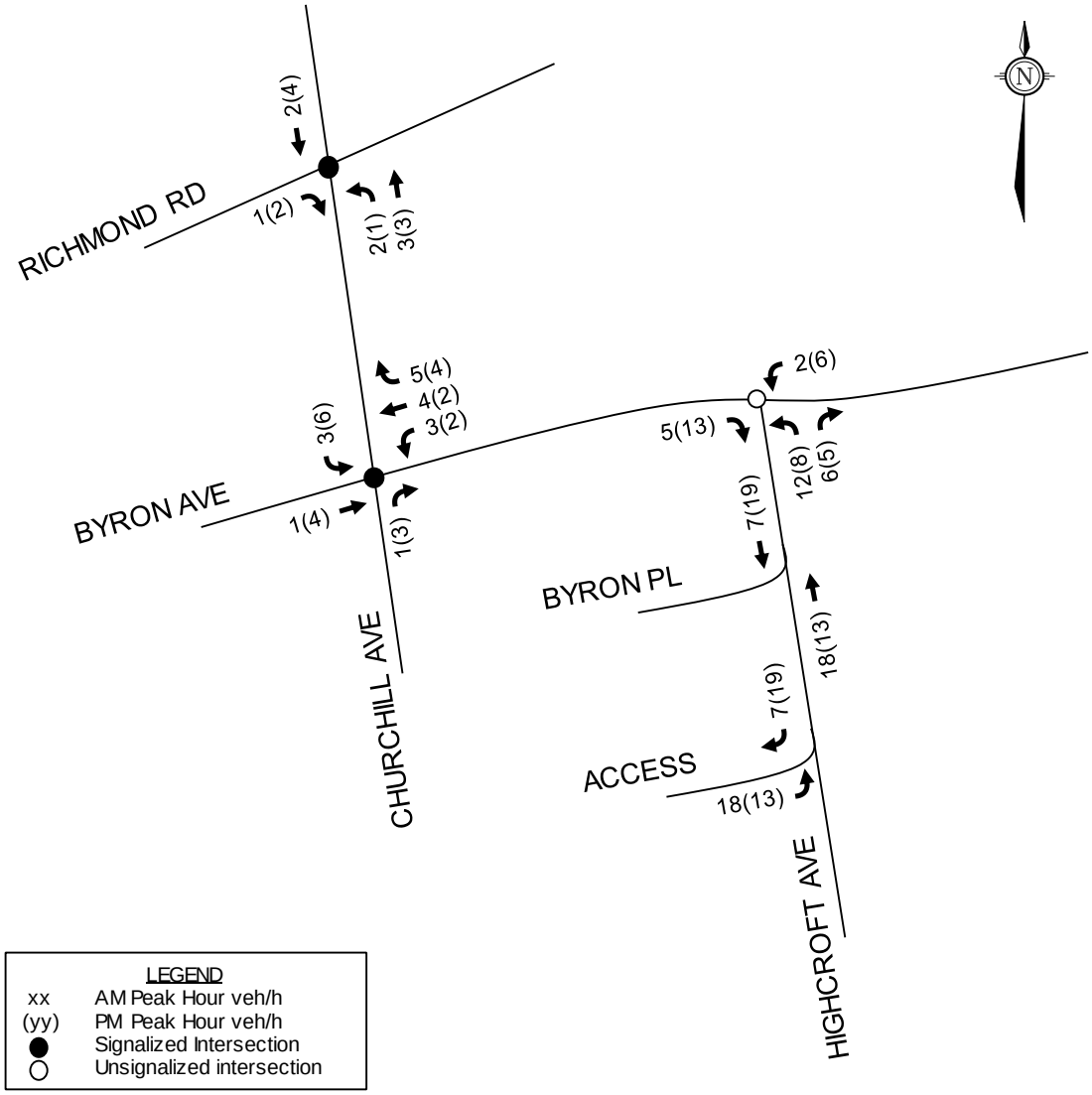
4.1.2 Trip Distribution

The assumed distribution of trips generated by the proposed development has been derived from existing traffic patterns on the roadways within the study area. As the proposed development is predominantly residential, the majority of peak hour trips are anticipated to be to/from work. It is appropriate for the assumed trip distribution to be based on the distribution of existing traffic volumes exiting the study area during the AM peak hour and arriving to the study area during the PM peak hour. The projected distribution of trips is summarized as follows:

- 35% to/from the east via either Byron Avenue or Richmond Road
- 30% to/from the west via either Byron Avenue or Richmond Road
- 20% to/from the north via Churchill Avenue
- 15% to/from the south via Churchill Avenue

Site generated traffic volumes are shown in **Figure 4**.

Figure 4: Site Generated Traffic



1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for TIA Study PM. As shown in the Screening Form, a TIA is required including the Design Review component and the Network Impact Component. This study has been prepared to support a site plan application for 320 McRae Avenue.

2 Existing and Planned Conditions

2.1 Proposed Development

The proposed development located at 320 McRae Avenue is currently a mix of residential and commercial buildings. The site is in an area that is zoned as part Traditional Mainstreet (TM 2489 S382-h), part Parks and Open Space (O 1) and part General Mixed Zone (GM2490 H (15) h). The proposed development is within 400 metres of the future Westboro LRT Station to be built by 2025 and therefore TOD principles apply to the applicable future horizons.

The proposed development is made up of a four-storey commercial / residential tower, and a commercial / residential tower with both a 26-storey and a six-storey component. The development is expected to have 882 square metres (9,494 square feet) of commercial space, 307 apartment units, 11 townhouse units, 185 underground automobile parking spaces and 163 bicycle parking spaces. Of the 163 bicycle spaces, 123 will be underground and due to space restrictions, 15 bicycle parking spaces will be slightly off the property and 25 will be in the loading area. The site is proposed to have two full-movement accesses, one approximately 40 metres, curb to curb, south of Scott Street on Tweedsmuir Avenue (Site Access #1) and the second approximately 120 metres, curb to curb, south of Scott Street on McRae Avenue (Site Access #2). Site Access #2 is a loading access and is intended for truck use only. A drop-off area is located on McRae Avenue, approximately 23 metres, curb to curb, south of Scott Street. The anticipated full build-out and occupancy horizon is 2022. Figure 1 illustrates the Study Area Context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan

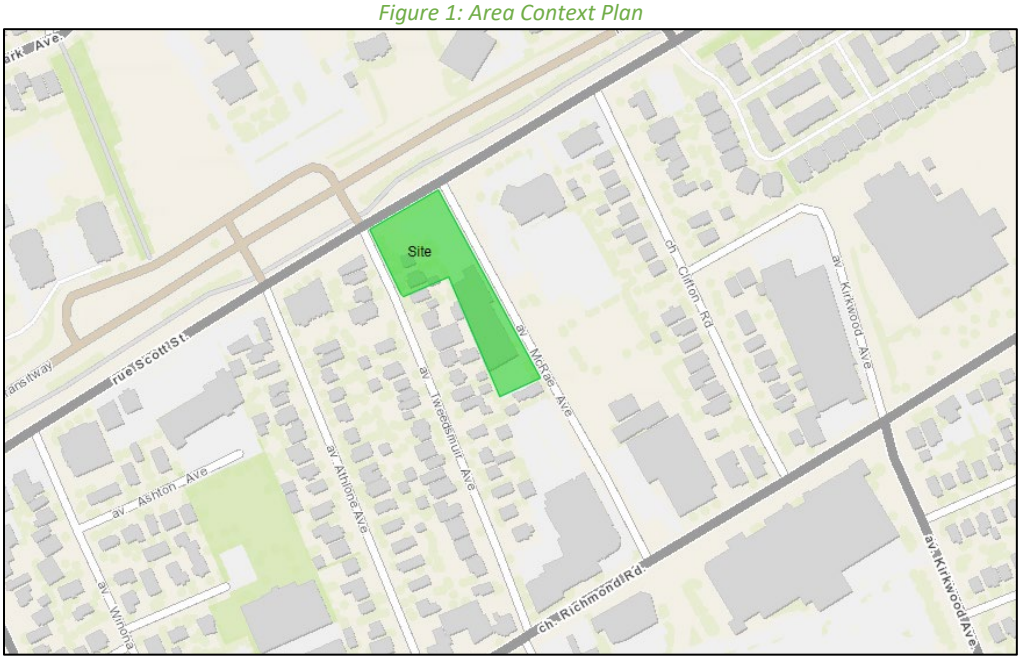


Figure 13: New 2022 Site Generation Auto Volumes

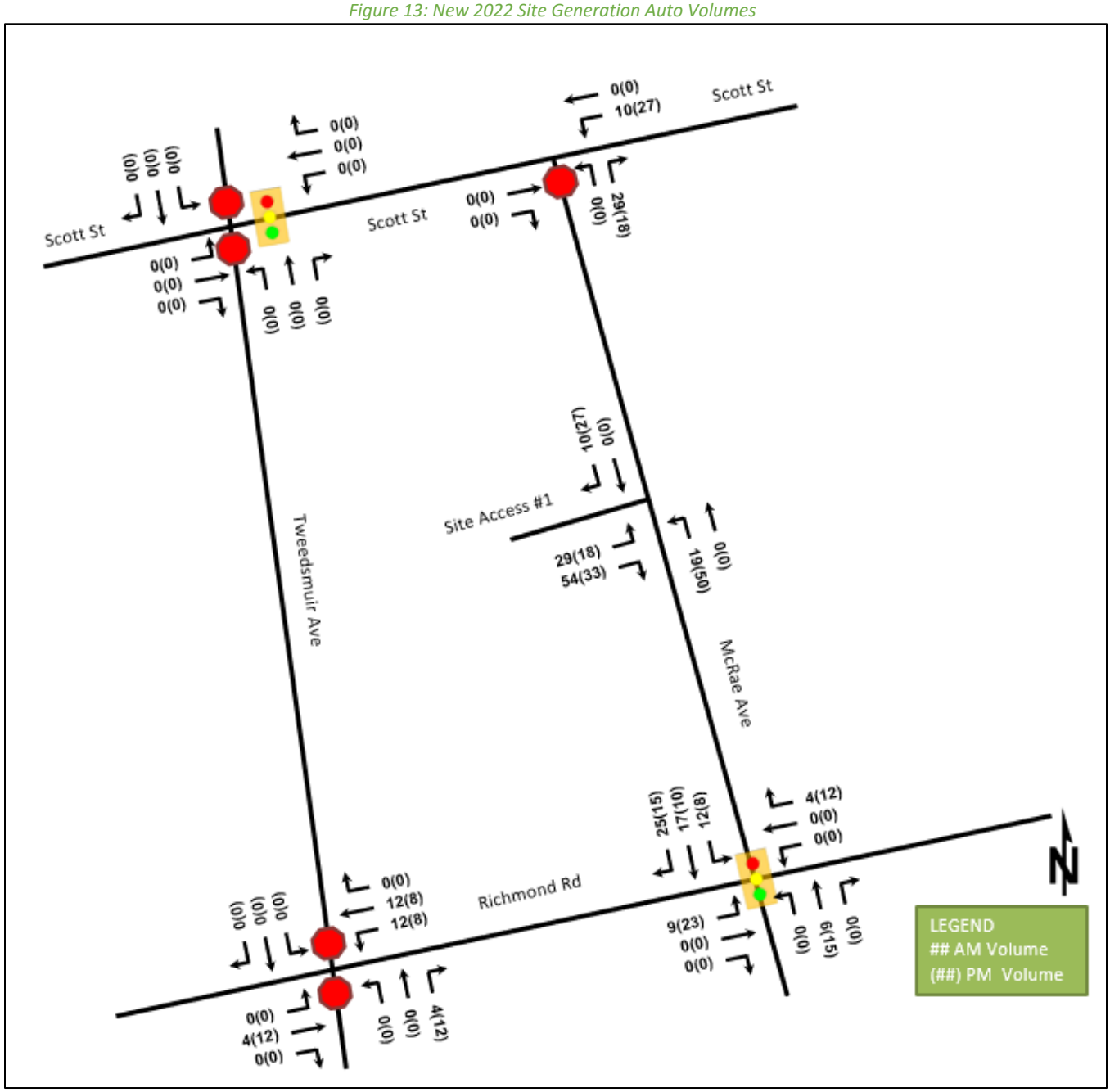
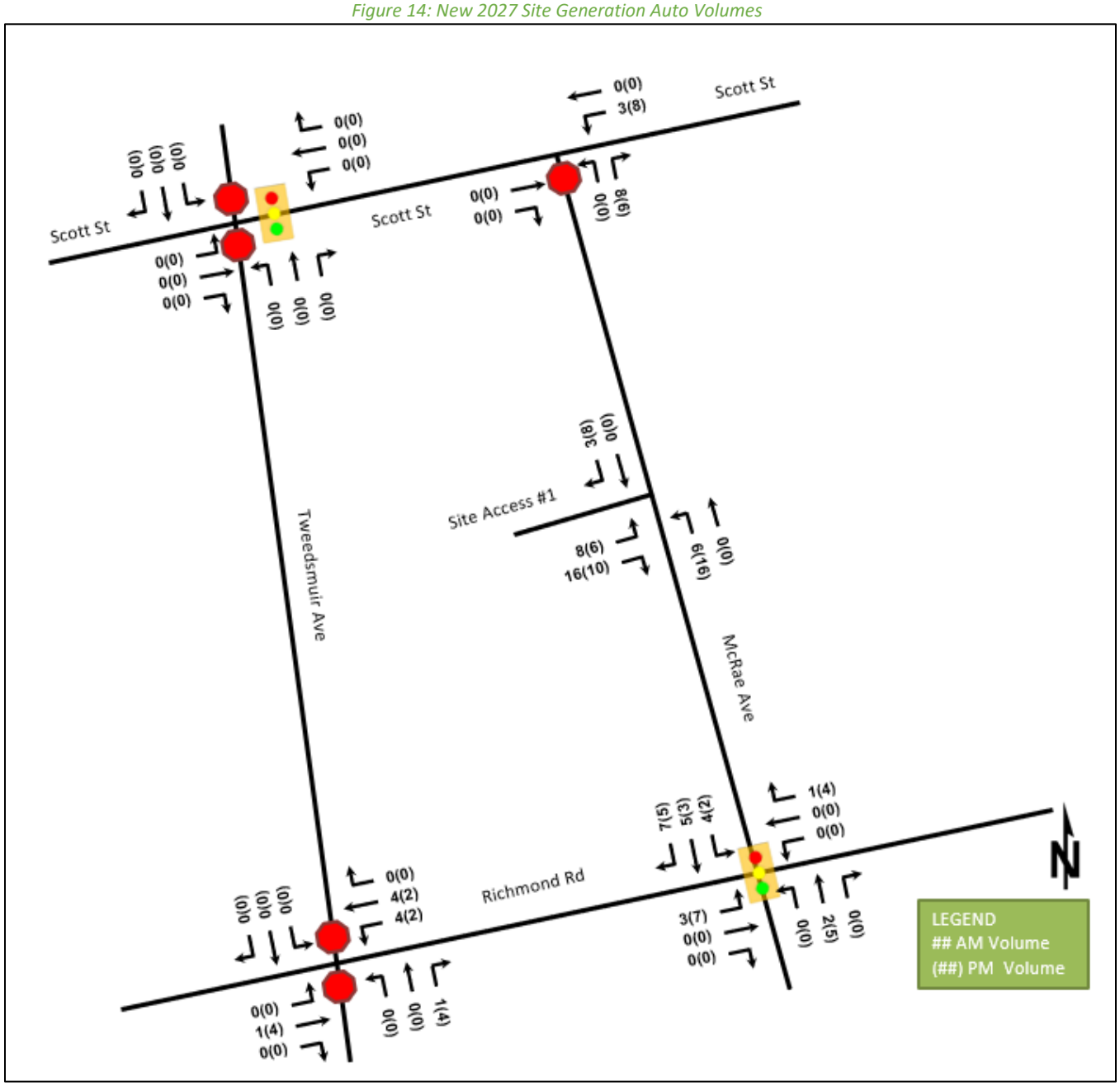


Figure 14: New 2027 Site Generation Auto Volumes



6 Background Network Travel Demands

6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3.1. The opening of the Westboro LRT station and Dominion LRT station, isolated measure transit priority along Richmond Road and TOD policies have been accounted for within the modal share assumptions. No road improvements within the study horizons are noted for this area.

The additional connectivity provided by future bicycle spine routes along Scott Street and Richmond Road as part of the City of Ottawa ultimate cycling plan will improve the active mode network.

2.0 SCOPING

2.1 EXISTING AND PLANNED CONDITIONS

2.1.1 Proposed Development

Azure Urban Developments Inc. (Azure) is proceeding with a Zoning By-Law Amendment and Site Plan Control for a proposed 23-storey tower located at 2070 Scott Street in the Westboro community of Ottawa, Ontario. The site is located at the southeast quadrant of the Churchill Avenue N and Scott Street intersection. The site is bound by Churchill Avenue N to the west, Scott Street to the north, Winona Avenue to the east, and existing residential to the south.

Figure 1 illustrates the location of the proposed site.

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

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

Figure 2 illustrates the proposed site plan.

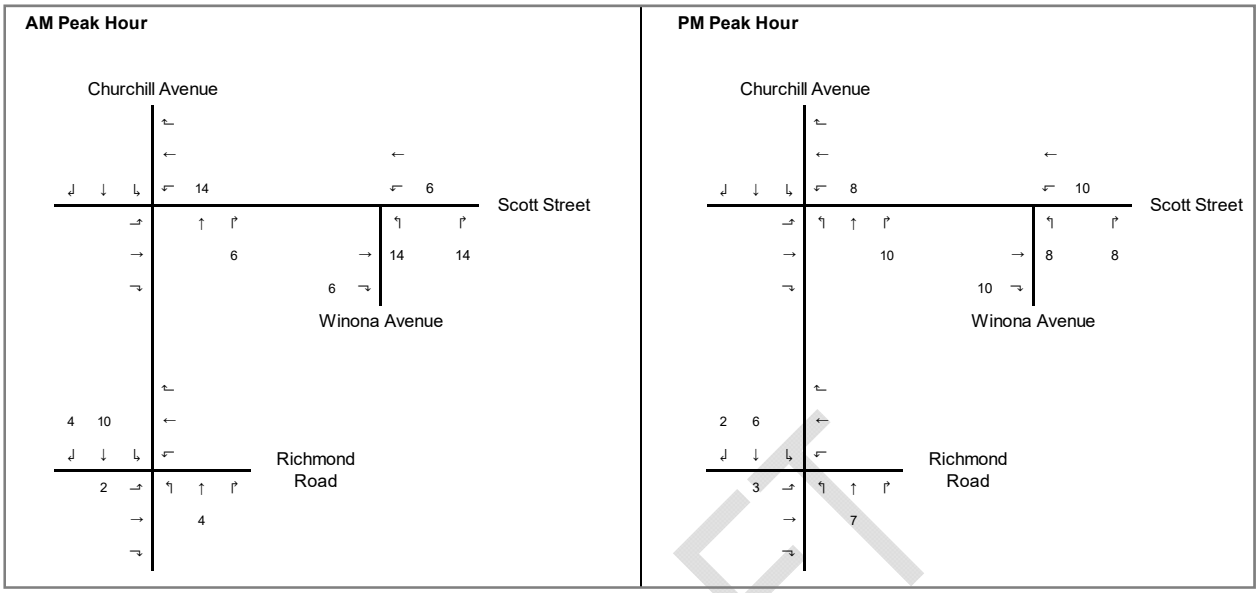
Table 1 outlines the land uses assumed for the analysis to forecast the trips generated by the proposed development. The *TRANS Trip Generation Residential Trip Rates Study Report* was used for the residential land use and the *Institute of Transportation Engineers (10th Edition)* was used for the retail land use.

Table 1 - Proposed Land Uses / Land Use Codes

Land Use	Size	Land Use Code (LUC)
Residential	241 units	232 – High-Rise Condominiums
Retail	5,500 ft^2	820 – Shopping Centre

The subject site includes an underground parking garage with access off Winona Avenue on the east side of the building. This will be a full movements access and there will be no turning restrictions.

Figure 12 - Site Trips



3.2 BACKGROUND NETWORK TRAVEL DEMAND

3.2.1 Transportation Network Plans

As outlined in **Table 4** in **Section 2.1.3.1**, there are two transit projects that are expected to occur within the vicinity of the proposed development; Western Light Rail Transit and the Richmond Road Transit Signal Priority. Based on direction from the City of Ottawa, the Western LRT is planned to be implemented by the 2027 ultimate horizon of the subject development.

3.2.2 Background Growth

The City of Ottawa provided **Figure 13** below, which outlines the average annual growth rates based on trend lines. As illustrated in this figure, the average annual growth in the Westboro neighbourhood is in the range of 0.2% - 2.0%. To be conservative, a 2% annual background growth rate was used in the subject analysis.

1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for TIA Study PM. As shown in the Screening Form, a TIA is required including the Design Review Component and the Network Impact Component.

2 Existing and Planned Conditions

2.1 Proposed Development

The proposed development, located at 381 Churchill Avenue, 380 Winona Avenue, 319, 325, and 327 Richmond Road, is currently zoned as part Traditional Mainstreet (TM H15), part General Mixed Use (GM1), and part Residential Fourth Density (R4). The existing land uses include a car garage and maintenance shop, two small retail stores and a residential apartment with six units. TOD principles apply to the proposed development Study Area.

The proposed development is a nine-storey building with 184 apartment units, 1738 square metres of retail space, 130 vehicle parking spots, and 99 bicycle parking spaces. The site is proposed to have two accesses; one of which is a full movement access on Churchill Avenue approximately 65 metres north of the Churchill Avenue / Richmond Road intersection (measured from access centreline to intersection centre). The second access is located on Winona Avenue approximately 50 metres north of the Winona Avenue / Richmond Road intersection (measured from access centreline to intersection centre) and is a loading entrance with access solely to loading aisles. The anticipated full build-out and occupancy horizon is 2022. Figure 1 illustrates the Study Area context. Figure 2 illustrates the proposed site plan of the development.

Figure 1: Area Context Plan

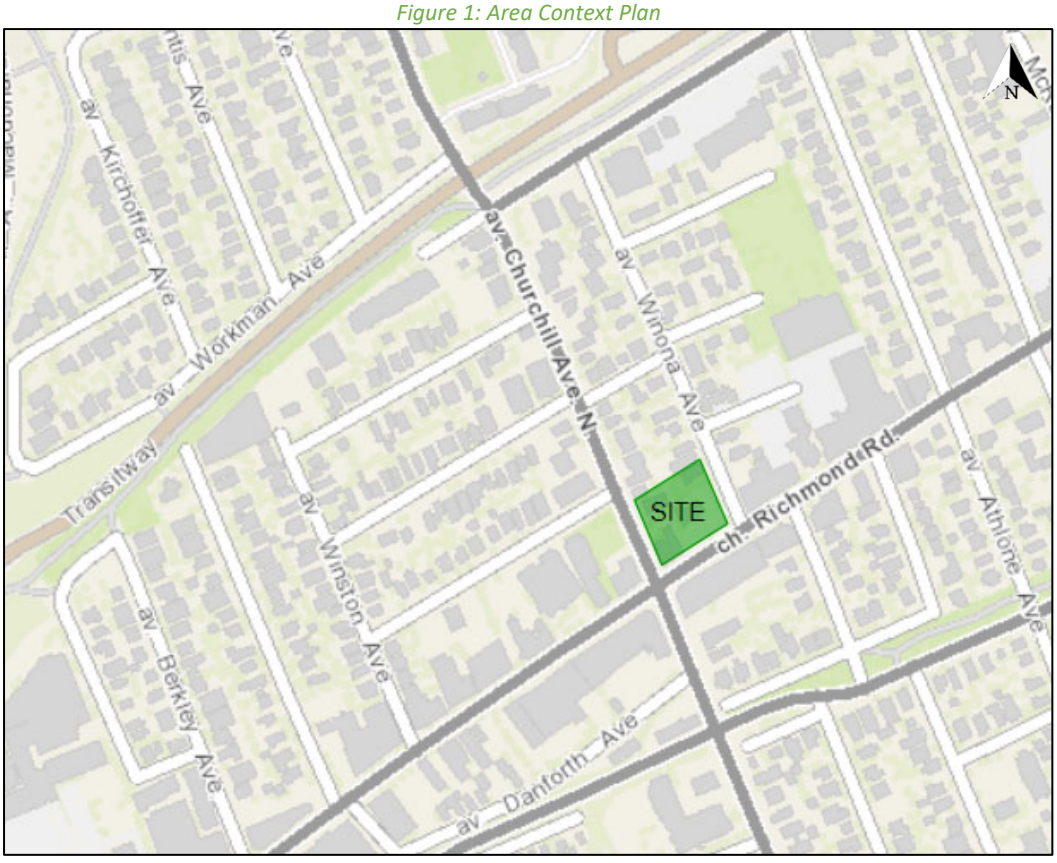
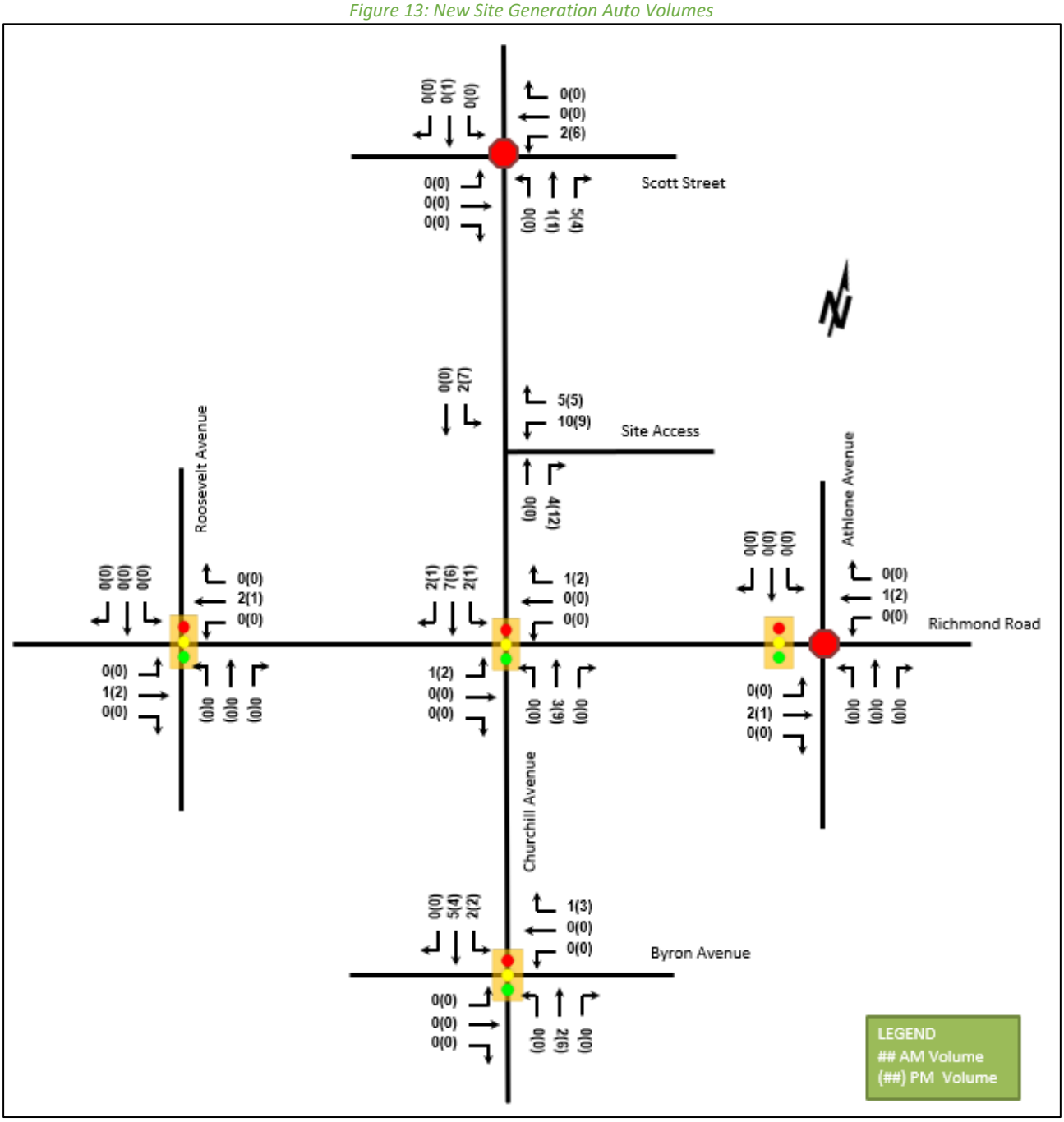


Figure 13: New Site Generation Auto Volumes



6 Background Network Travel Demands

6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3.1. Both TOD policies and the opening of the Westboro LRT station and Dominion LRT station have been accounted for within the modal share assumptions. No road improvements are noted for this area with the exception of future road sewer, and water work along Winona Avenue.

1. Step 1 - Screening Form

With respect to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines, the proposed development (described below in Section 2.1) triggered the trip generation, location, and the safety criteria outlined in the City's TIA Step 1 – Screening form. Given these three (3) triggers were met, a formal TIA (i.e. completed Steps 1-5) must accompany the subject development application.

2. Step 2 - Scoping

2.1 Existing and Planned Conditions

Description of Proposed Development

The subject site is municipally known as 403 Richmond Road and 389 Roosevelt Avenue, and is currently bound by Richmond Road to the south, Roosevelt Avenue to the west, commercial/residential land uses to the east and residential land uses to the north. Based on the available/provided information, the subject site is currently occupied by a funeral home (403 Richmond Road) and a single family home (389 Roosevelt Avenue) and is planned to be replaced by a 9 storey mix-used building with 141 residential units, a 10th floor amenity space and 5,283 ft^2 of ground floor commercial space. The development will be constructed in a single phase, with an estimated build-out year of 2025.

The latest Concept Plan depicts that the development will have one vehicular full-movement access point utilizing the existing driveway connection at Roosevelt Avenue, which is to the west of the site. All parking will be provided in an underground parking facility with access/egress located on the back side of the building. There will be no vehicular access point from Richmond Road (i.e. the existing driveway connection to Richmond Road will be closed).

Pedestrians will have direct access to existing sidewalks along both Roosevelt Avenue and Richmond Road, which connects with a well-developed surrounding pedestrian network. Cyclists will be able to use the dedicated cycling network along Scott Street to the north, or Byron Avenue to the south to access the City's established off-road cycling network. The surrounding active transportation network also provides convenient access to/from the public transit via the existing BRT Dominion station, as well as local bus service along Richmond Road and Churchill Avenue.

The local context of the subject development site is provided in the following **Figure 1**, and the proposed Concept Plan is provided in the subsequent **Figure 2**.

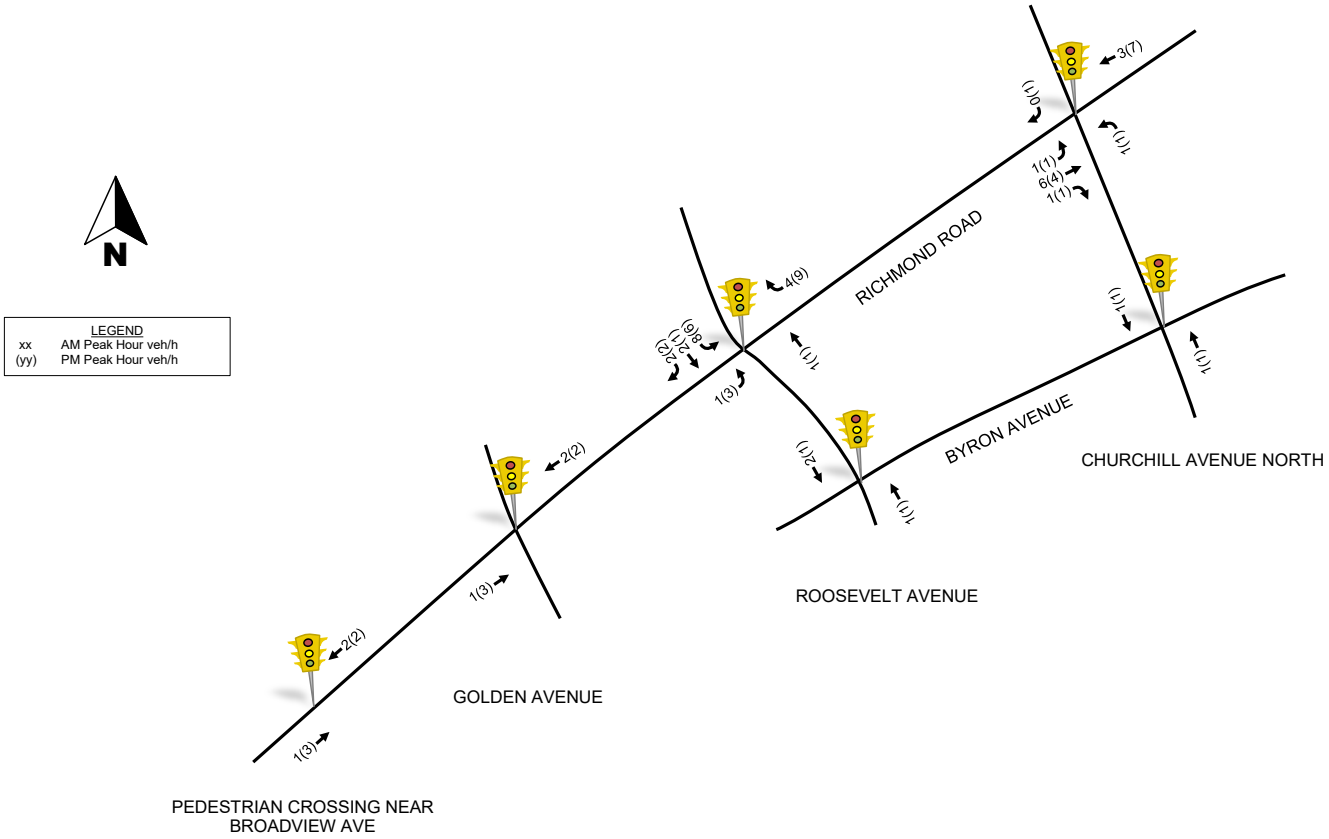
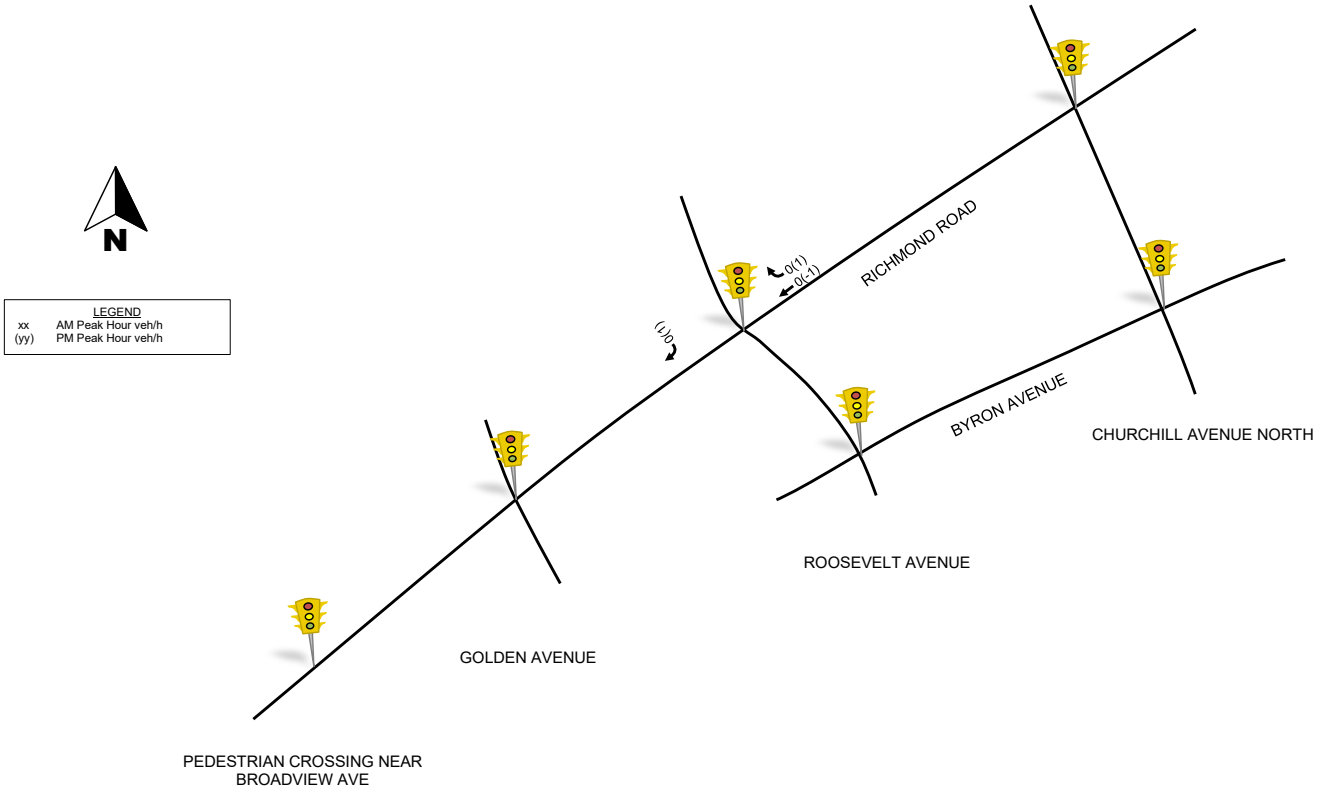


Figure 14: 'New' Projected Site-Generated Traffic



TIA STRATEGY REPORT

The following Strategy Report has been prepared in support of a Site Plan Application (SPA) for the proposed residential development located at 2050 Scott Street. This document follows the TIA process, as outlined in the City Transportation Impact Assessment (TIA) Guidelines (2017). City comments and responses have been included as Appendix A.

1. Screening Form

The completed Screening Form for the proposed residential development at 2050 Scott Street confirmed the need for a TIA in support of the proposed development based on the Trip Generation, Location and Safety triggers. The proposed development consists of approximately 355 residential units; is located in a Design Priority Area (DPA) and Transit Oriented Development (TOD) area; and has a proposed driveway within the influence area of an adjacent traffic signal. The Screening Form is provided in Appendix B.

2. Scoping Report

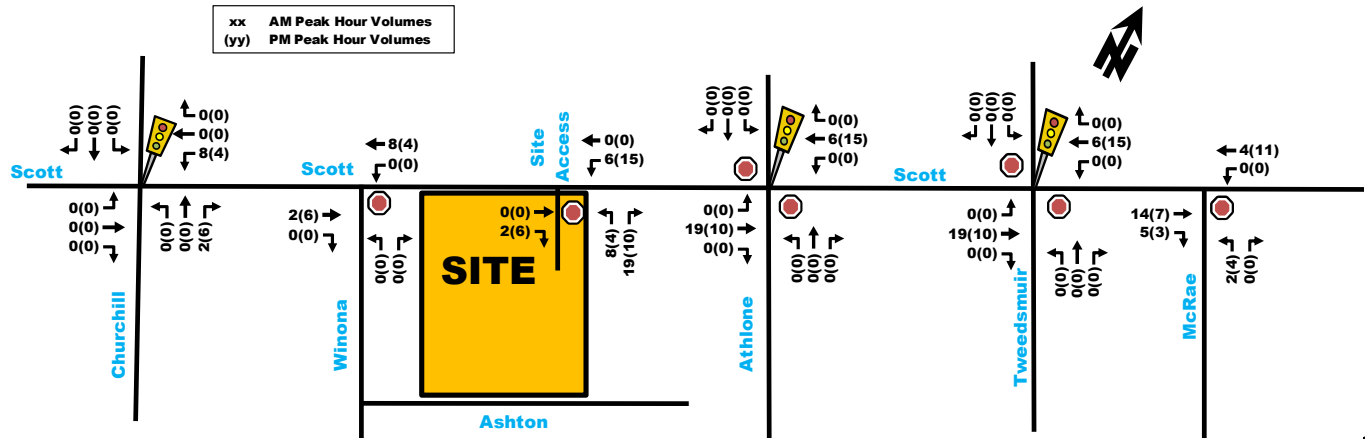
2.1. Existing and Planned Conditions

2.1.1. PROPOSED DEVELOPMENT

It is our understanding that the proponent is proposing to construct a residential development located at 2050 Scott Street. A single-phased project is proposed with assumed buildout year of 2021. The development will consist of a 30-storey residential building on a 3- and 6-storey podiums with approximately 353 units and 233 m² of ground commercial/office. The taller portion of the building is located closer to Scott Street while the 3- and 6-storey podiums extend towards Ashton Avenue. Vehicle access is proposed at Scott Street via a single all movement driveway. An underground parking lot with 210 vehicle spaces and 292 bicycle spaces are proposed. The site is located between 2 different land zonings, TM[103] fronting Scott Street and R4G on the south portion of the parcel towards Ashton Avenue. This TIA is in support of a Zoning By-Law Amendment (ZBLA) and Site Plan Application (SPA) to vary the height schedule from 6-storeys (18 meters) to 30-storeys within the TM zoning and from 4-storeys (11 meters) to 6-storeys within the R4 zoning. Height step-backs (staggering) are proposed to assist in the transition from low-rise to mid- and high-rise from south to north. The site is currently occupied by a mechanic garage, a hot tub retailer and 3 residential houses. The local context of the site is provided as **Figure 1** and the proposed Site Plan is provided as **Figure 2**.

Figure 1: Local Context

Figure 9: 'New' Site-Generated Traffic

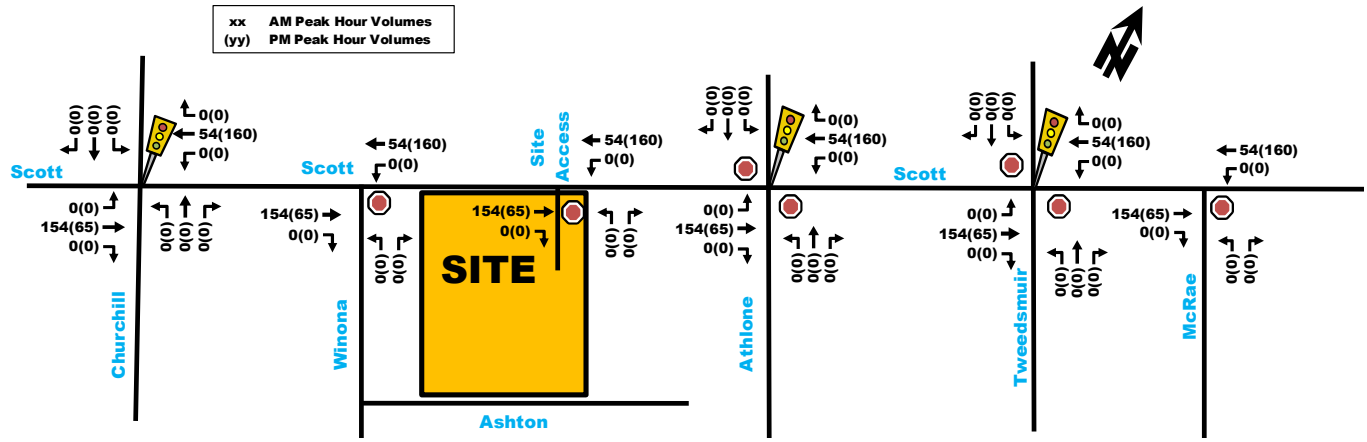


3.2. Background Network Travel Demands

3.2.1. TRANSPORTATION NETWORK PLANS

As mentioned in Section 2.1.3 Planned Conditions, 210 to 225 buses will be detoured on to Scott Street for the AM and PM peak periods respectively as part of the Stage 2 LRT West Extension construction. These buses were layered on to the study area intersections for the duration of anticipated construction (2021 to 2025) and are exhibited in **Figure 10**. Note that as part of the bus detours, Churchill/Scott intersection will be upgraded to a signalized intersection.

Figure 10: Buses Detoured on Scott Street



3.2.2. BACKGROUND GROWTH & OTHER DEVELOPMENTS

The emphasis in the City's recent Official Plan and Transportation Master Plan is to place priority on transit, encourage intensification around transit stations, encourage mixed-use developments and provide "complete streets" that better accommodate the active transportation needs of its residents and reduce the use of the private auto. Given the location of the site near future Confederation Line LRT Extension and future Scott Street 'Complete Street' plan, the trips generated from this development as well as nearby developments will likely choose alternate modes of transportation over driving. It is expected to see a decrease in vehicle traffic along Scott Street in the future as the public transportation network near the site becomes mature and alternate modes of transportation become more desirable (see map of anticipated background growth attached as Appendix F). As such, the background vehicle traffic volumes for horizon year 2026 is assumed to be the same as year 2021.

The projected vehicle volumes from the planned area developments as discussed in Section 2.1.3. 'Planned Conditions – Other Area Developments' were added to the study area intersections and are shown in **Figure 11**. The volumes from the other area development along with detoured buses were layered onto the existing traffic volumes for the future interim analysis volumes. Since the bus detour are anticipated between 2021 and 2025, they have been removed from 2026

Phase 2A will consist of a new 9 storey residential building (161 units) and reprogramming of the Convert building to include 1,700m^2 of commercial space (two restaurants), 5 residential units and amenity space. Its parking will be in a new garage located beneath Phase 2A and will total approximately 120 parking spaces. The garage will be designed/controlled so that all Phase 2A traffic can be directed to the site's existing right-in/right-out driveway connection to Leighton Terrance. Phase 2 traffic volumes are estimated to be approximately 35 veh/h two-way total during both the morning and afternoon peak hours. The impact and requirement (if any) of this Phase 2 traffic using the Richmond/Leighton Terrance intersection will be analyzed / discussed herein.

Phase 2B is proposed to include 62 residential units and 200 retirement units and approximately 90 to 100 parking spaces. The total parking supply for Phase 2A and 2B is approximately 215 to 230 spaces. The Phase 2B garage, that will be an extension of the Phase 2A garage, will contain approximately 120 parking spaces, and will be controlled such that are Phase 2B traffic will connect to enter Shannon or Byron (to be determined) at the south end of the site.

3. SCOPE OF WORK FOR PHASE 2 TRANSPORTATION REVIEW

As agreed to with the City's lead planner on the Q West file, the scope of work for the study herein includes:

- A description of Phase 2A in the context of Phase 1 and Phase 2B;
- A description of the site's Richmond Road and Leighton Terrace frontages;
- Phase 2A's peak hour trip generation broken down into vehicles, transit riders and the bike/walk component;
- The assignment of Phase 2A traffic to the right-in/right-out Leighton Terrace intersection and to the Richmond/Leighton Terrace intersections;
- Analysis of the Leighton Terrace intersection with regard to vehicular level of service, multi-modal level of services (MMLOS) and collision history;
- MMLOS analysis of the overall site's Richmond and Byron frontages;
- Identification of TDM measures applicable to Phase 2A development; and
- A report containing the foregoing and also addressing the City's Transportation Comments in their October 28th, 2019 correspondence.

4. EXISTING CONDITIONS

4.1. STUDY AREA ROAD

Richmond Road extends from Robertson Road in the west to Island Park Drive in the east, where it continues east into Ottawa's downtown area as Wellington Street and then Somerset Street. It is designated as an arterial roadway in the City of Ottawa's Official Plan, with a right-of-way (ROW) protection of 26 m in the vicinity of the site. Within the study area, it has a four-lane cross-section and a posted speed limit of 50 km/h. One hour parking is permitted from 7 a.m. – 7 p.m. in the eastbound direction, with no stopping permitted between 3:30 – 5:30 p.m. Dedicated turn lanes are not provided on Richmond Road at study area intersections, except for the Island Park intersection. The section of Richmond Road adjacent to the site has recently been reconstructed as a result of recent development and has wide streetscaped sidewalks.

Island Park Drive extends from the Ottawa River Parkway in the north to Carling Avenue in the South. It provides a connection to the City of Gatineau (Quebec) via the Champlain Bridge. It is designated as a Federal roadway in the City Ottawa's Official Plan. Within the study area, it has a two-lane cross-section with designated on-street cycling lanes and a posted speed limit 40 km/h. Northbound and southbound left-turn lanes are provided at the signalized Richmond/Island Park intersection. No turn lanes are currently provided at the signalized Byron/Island Park intersection.

Figure 4: Phase 2A Residential Traffic Distribution Assumptions

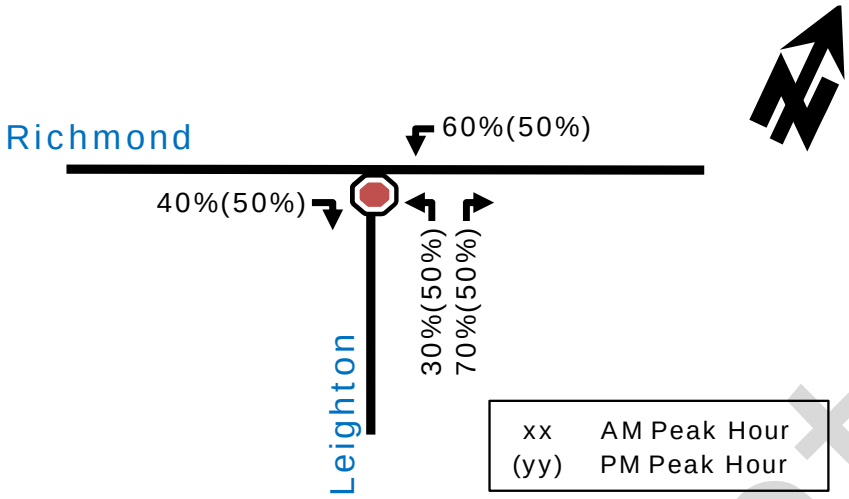
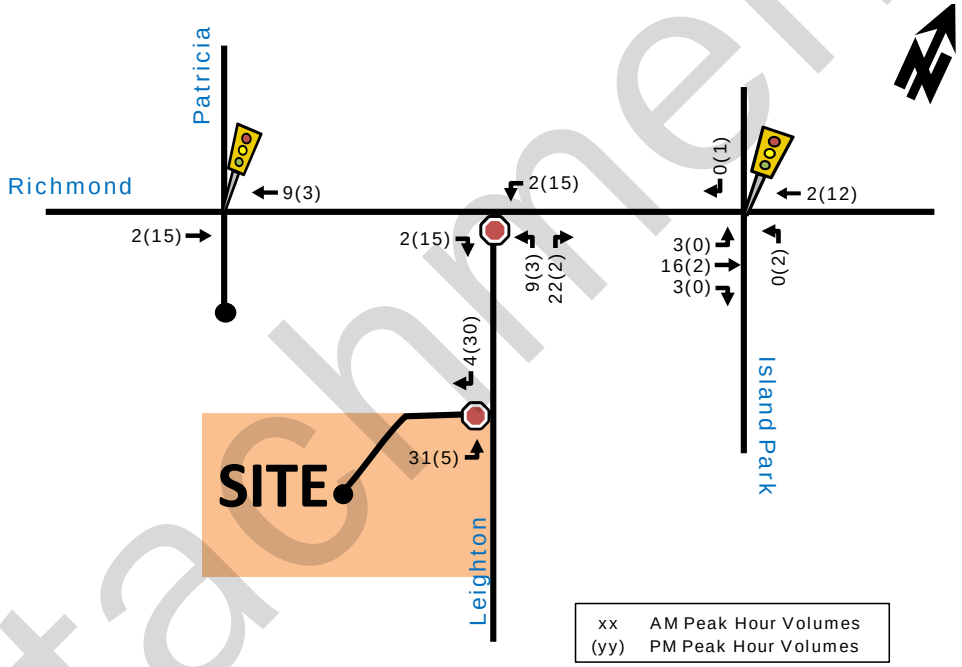
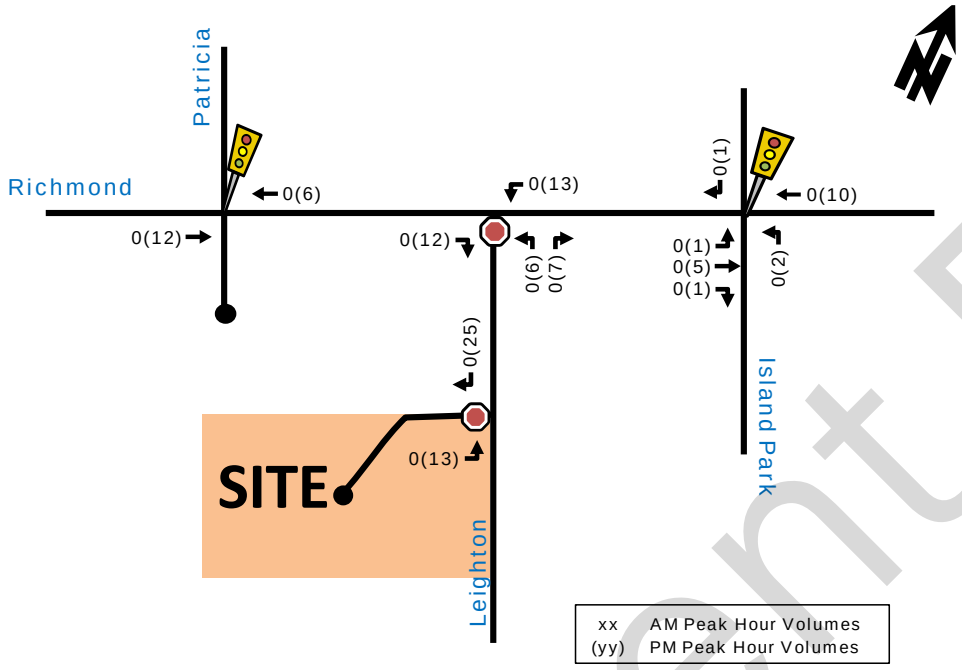


Figure 5: Phase 2A Residential Vehicle Trip Assignment



With regard to the distribution of restaurant-generated traffic, the afternoon commuter peak hour is 4:30 to 5:30 and as such is a bit earlier than the peak hour of restaurant traffic generation. This will impact the site traffic generation as will the desire for restaurant patrons to use the area's on-street parking instead of the on-site underground visitor parking. For purposes of traffic assignment to the site's Leighton Terrace driveway connection, it has been assumed that 50% of the restaurant traffic (25 veh/h) will park on-street within the study area and 50% (25 vph) will use the garage. The resultant restaurant traffic assignment is depicted in Figure 6.

Figure 6: Restaurant-Generated Traffic Assignment



5.4. INTERSECTION LEVEL OF SERVICE AS A RESULT OF PHASE 2A DEVELOPMENT

The following Figure 7 depicts the projected Phase 2A residential and restaurant traffic (Figures 5 and 6) superimposed onto existing volumes (Figure 3). Note that traffic growth analysis was partaken at the intersection of Richmond/Island Park through a regression analysis of three different traffic counts (2011, 2016 and 2017 counts) conducted by the City of Ottawa at the intersection. The analysis determined that traffic growth is on a decline along Richmond Rd and as such, 0% traffic growth has been applied to the study area.

for a broad range of uses including retail, service commercial, office, residential and institutional uses, including mixed-use buildings but excluding auto-related uses.

The proposed development will replace the existing commercial retail building, restaurant, and single residential unit with a nine-storey condo building containing 104 dwelling units, approximately 390 square metres of retail space and 189 square metres of restaurant space. The development is anticipated to be constructed in a single phase with full occupancy in the year 2024. Access will be provided via the existing commercial driveway to Tweedsmuir Avenue. An existing residential driveway to Tweedsmuir Avenue will be removed, as well as two existing driveways to Richmond Road. The development has proposed 94 underground vehicle parking spaces. Additionally, two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 188 will be provided within the underground parking garage. In total, 190 bicycle parking spaces will be provided.

A copy of the 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 net traffic generated by the site development is anticipated to generate marginally over 60 person trips/peak hour; after discussion with City staff, it has been determined that further assessment is **not required** based on this trigger.

- Location Triggers – The proposed development is located within a '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; further assessment is **not required** based on this trigger.

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

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.

Richmond Road is an arterial roadway that runs on an east-west alignment between Baseline Road and Island Park Drive. East of Island Park Drive, Richmond Road continues as Wellington Street and West of Baseline Road, Richmond Road continues as Robertson Road. Within the study area, Richmond Road has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, and a regulatory speed limit of 50 km/h under the Highway Traffic Act. Richmond Road is classified as a full-load truck route within the study area. On-street parking is permitted on both sides of the road with a maximum 90-minute time restriction between 7:00AM and 7:00PM.

3.5 SCREENING CONCLUSIONS

The screening results indicate that since the Safety and Location Triggers are satisfied, while the Trip Generation Trigger is not, **therefore, the TIA is required to address only the "Design Review" component.**

The completed certification form is contained within Appendix ñAò and the completed stamped and signed screening form can be found within Appendix ñBò.

3.6 STUDY AREA AND TIME PERIODS

3.6.1 Study Area

A total of 6 intersections adjacent to the site were analyzed:

1. Richmond Road and Roosevelt Avenue (Traffic Signal Controlled);
2. Roosevelt Avenue and Byron Avenue (Traffic Signal Controlled);
3. Richmond Road and Churchill Avenue North (Traffic Signal Controlled);
4. Churchill Avenue North and Byron Avenue (Traffic Signal Controlled);
5. Churchill Avenue North and Danforth Avenue (Minor Leg STOP-Controlled);
6. Roosevelt Avenue and Danforth Avenue (Minor Leg STOP-Controlled);

3.6.2 Time Periods

The study provided an analysis of the weekday morning and afternoon peak hours of travel demand which represent the ñworst-caseò scenario in terms of weekday commuter traffic volumes.

3.6.3 Horizon Years

The proposed development, at this point in time, is anticipated to be achieved by the end of 2025. The analysis includes a period five-years-after-buildout, or 2030.

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of a Site Plan application for a proposed development at 2006 Scott Street, 2020 Scott Street, 2026 Scott Street, 314 Athlone Avenue, 316 Athlone Avenue, and 318 Athlone Avenue.

The subject site is surrounded by the following:

- Scott Street and the OC Transpo East-West Transitway to the north;
- Ashton Avenue, Lion's Park, and residential properties fronting Athlone Avenue to the south;
- Athlone Avenue and residential uses to the east; and
- Various existing low-rise retail uses along Scott Street to the west. A residential development is proposed at 2050 Scott Street, directly abutting the subject site to the west.

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

The property at 2026 Scott Street is currently occupied by the Granite Curling Club, which will be relocated to 2740 Queensview Drive. The site is currently served by an existing full-movement access to Scott Street and a rear access at the eastern terminus of Ashton Avenue.

The property at 2020 Scott Street was previously occupied by a used car dealer, with access to Scott Street. The property at 2006 Scott Street was previously occupied by a retail store, with access to Scott Street. The property at 314 Athlone Avenue is currently being used as an office space, while the properties at 316 and 318 Athlone Avenue are residential homes. All existing buildings on-site will be demolished as part of this application.

1.2 Proposed Development

The subject site is designated as 'Corridor – Mainstreet' (Scott Street) in Schedule B2 of the City of Ottawa's Official Plan and zoned as 'Traditional Mainstreet' (TM[2829]). The original TIA in support of a Zoning By-Law Amendment application for this development was submitted in April 2022 and resubmitted in September 2022 (City Application No. D02-02-22-0037).

The proposed development consists of two 40-storey towers with a total of 856 dwelling units and approximately 3,207 ft^2 of ground-floor commercial space. Phase 1 of the development includes the East Building, which consists of 392 dwellings and 1,287 ft^2 of commercial space. Phase 2 of the development includes the West Building, which consists of 464 dwellings and 1,920 ft^2 of commercial space. An underground parking garage with a total of 373 parking spaces will be provided beneath the entire development. The development will be accessed via one full-movement driveway to Athlone Avenue, which will be the only access constructed as part of Phase 1. One full-movement driveway to Scott Street will be constructed as part of Phase 2. The parking garage will be constructed in two phases, but the two phases will not be separated once complete (i.e. vehicles will be able to access any parking area from either driveway). Buildout of Phase 1 is anticipated to occur in 2026 and buildout of Phase 2 is anticipated to occur in 2029.

A copy of the site plan is included in **Appendix A**. A site context plan, which includes the site plan and shows all details of the roadway network immediately surrounding the site, is included in **Figure 2**.

Figure 8: Proposed Site-Generated Traffic Volumes (2026)

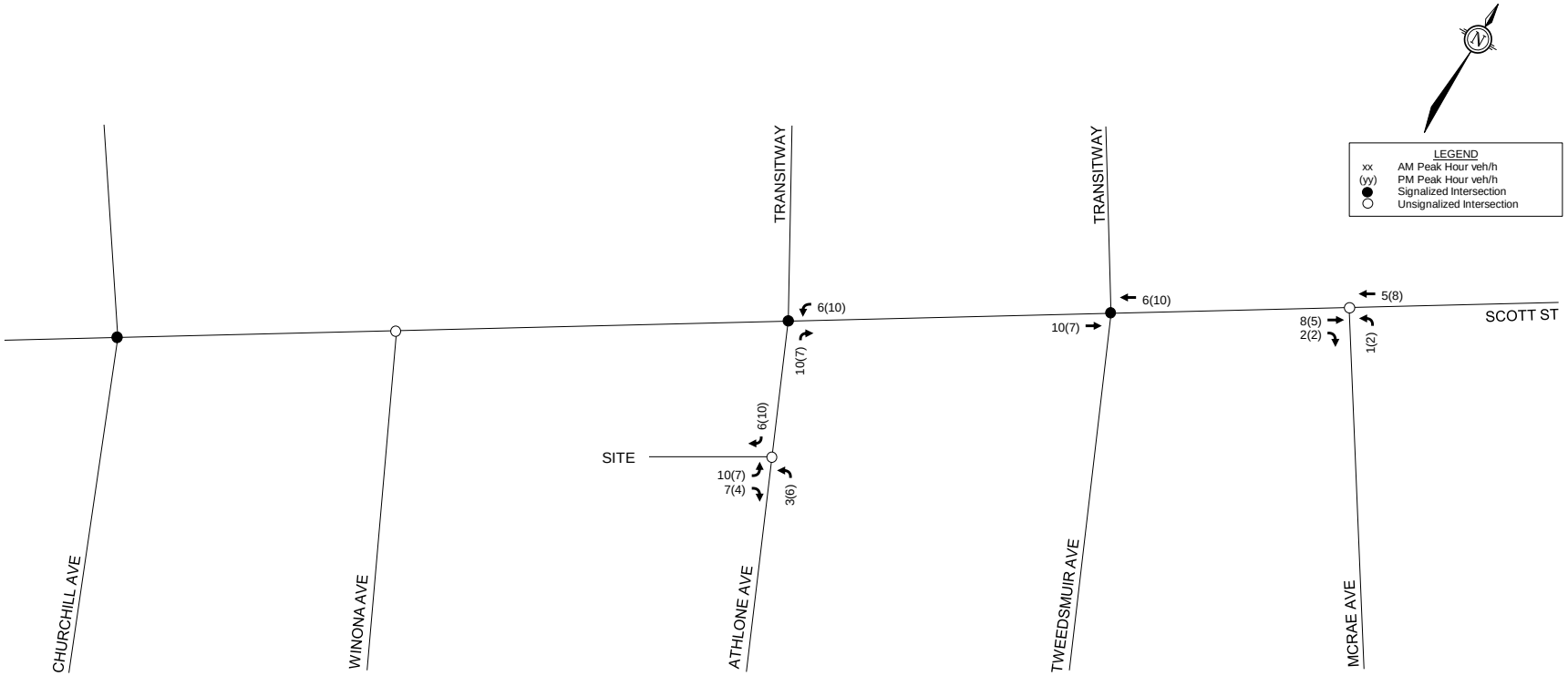


Figure 9: Proposed Site-Generated Traffic Volumes (2031)

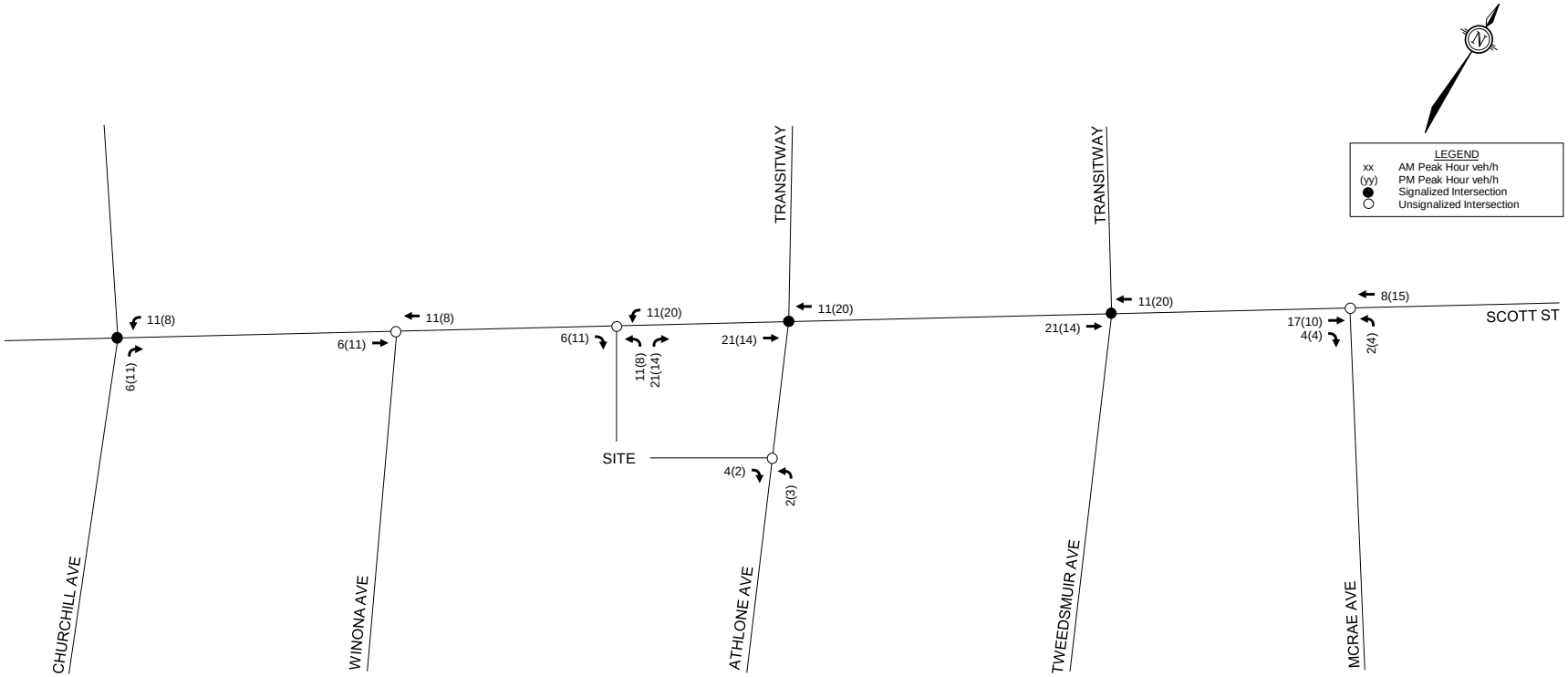


Figure 10: Net Site-Generated Traffic Volumes (2026)

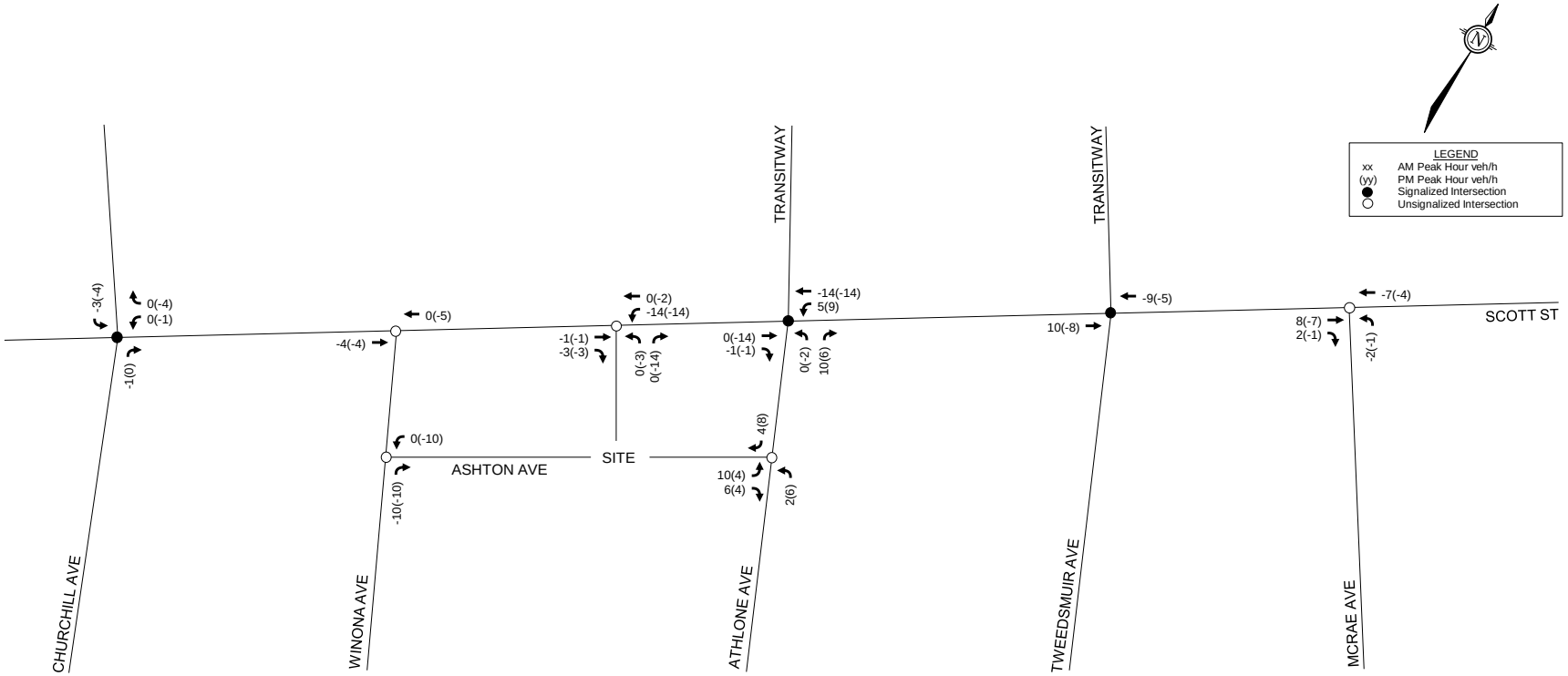
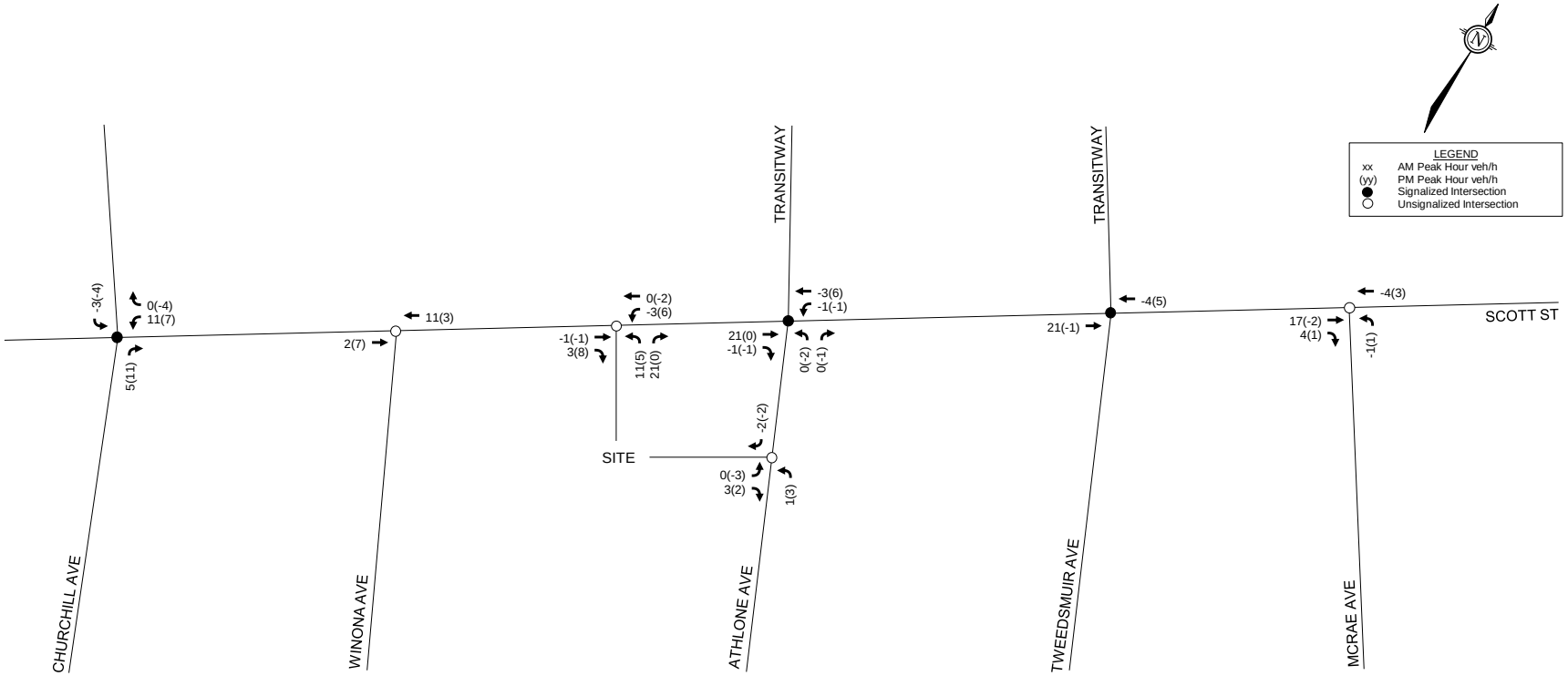


Figure 11: Net Site-Generated Traffic Volumes (2031)



1 Screening

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

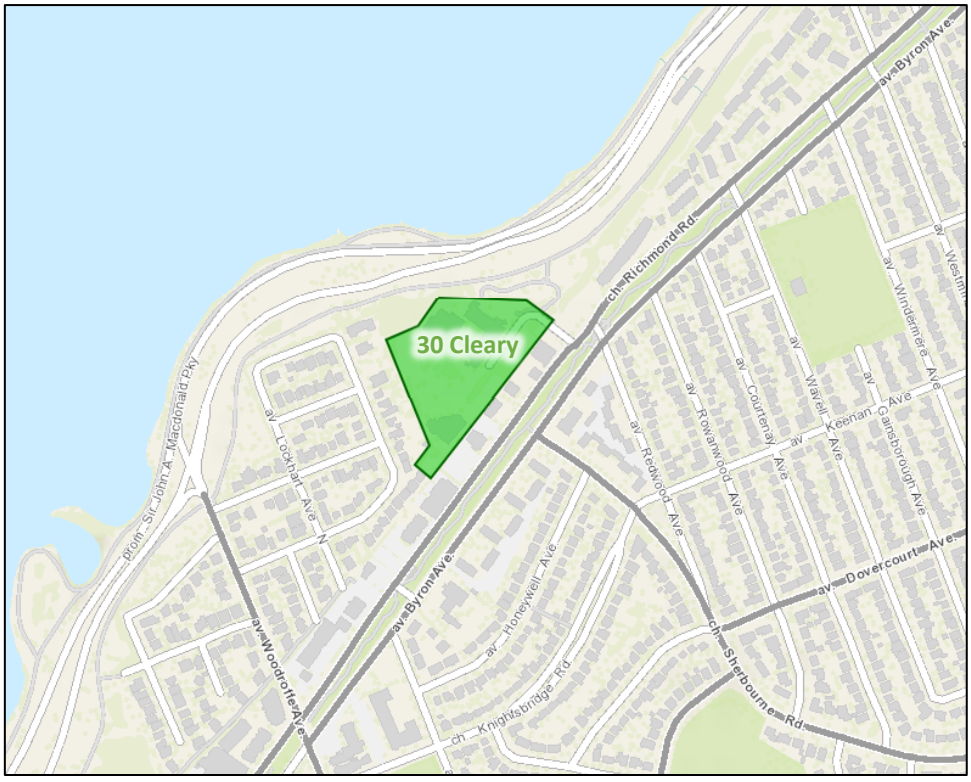
2 Existing and Planned Conditions

2.1 Proposed Development

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

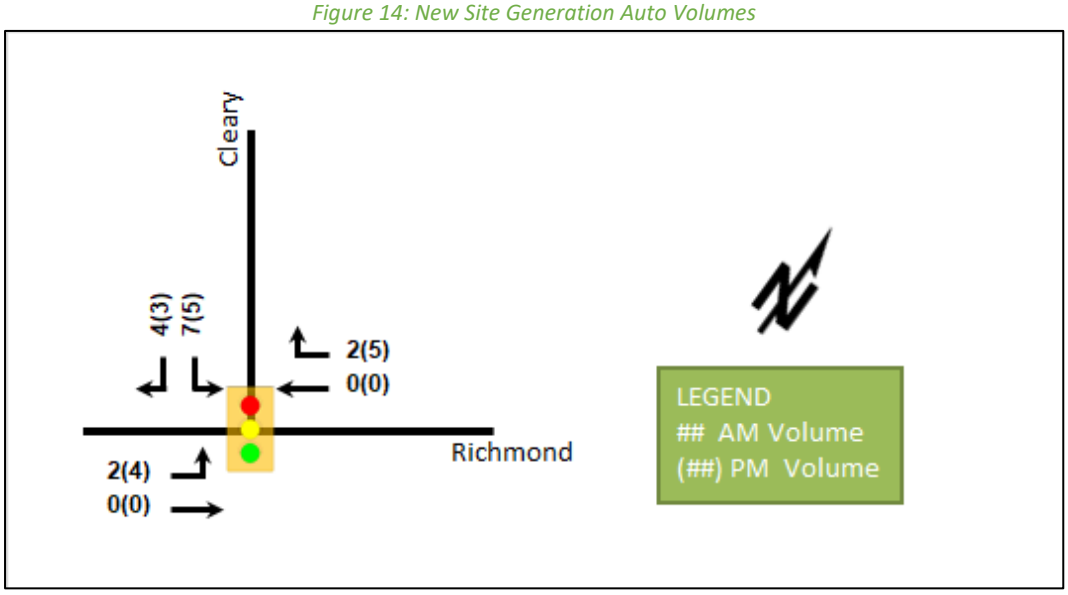
Figure 1 illustrates the study area context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan



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

Figure 14: New Site Generation Auto Volumes



5 Exemption Review

Table 11 summarizes the exemptions for this TIA.

Table 11: Exemption Review

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

1.2 Proposed Development

The subject site is designated as 'Corridor – Mainstreet' (Scott Street) in Schedule B2 of the City of Ottawa's Official Plan and zoned as 'Traditional Mainstreet' (TM[2581] S400-h).

The proposed development consists of one 22-storey residential tower with a total of 244 dwellings and approximately 2,098 ft^2 of ground-floor commercial space. Based on the site plan, the development will include an underground parking garage with a total of 87 parking spaces and access via one full-movement driveway to Clifton Road. A residential loading access to Clifton Road is proposed immediately south of the parking garage access. The proposed development will be completed in one phase, and is anticipated to be fully occupied in 2026.

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

1.3 Screening Form

The City's *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, which is included in **Appendix B**. The trigger results are as follows:

- Trip Generation Trigger – The development is anticipated to generate over 60 peak hour person trips; further assessment **is required** based on this trigger.

- Location Triggers – The development site is located within a Mainstreet – Corridor Design Priority Area; further assessment **is required** based on this trigger.

- Safety Triggers – None of the Safety Triggers are met; further assessment **is not required** based on this trigger.

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

Scott Street falls under the jurisdiction of the City of Ottawa, and is classified as an arterial roadway east of Churchill Avenue, and a local roadway west of Churchill Avenue. It runs on an east-west alignment from Bayview Station Road/Albert Street to Churchill Avenue. Transit vehicles are able to travel on a temporary detour route west of Churchill Avenue, which connects to Kichi Sibi Mikan (formerly the Sir John A. Macdonald Parkway). Within the study area, Scott Street has a two-lane undivided urban cross-section, with sidewalks and cycle tracks on both sides. On-street parking is permitted on the north side of Scott Street between Clifton Road and Tweedsmuir Avenue. Scott Street has a posted speed limit of 50km/h. East of Churchill Avenue, it is also designated as a truck route, permitting full loads. The Official Plan reserves a 26m right-of-way (ROW) for Scott Street; a widening has been taken along the property frontage as part of a previous application.

2.5.2 Trip Distribution and Assignment

As the proposed development is projected to generate significantly less than 75 vehicle trips during the peak hours, intersection analysis is exempt from analysis (as shown in Section 2.6), and the site-generated volumes have not been distributed to the road network. All vehicle trips would be assigned to the proposed access to Clifton Road.

2.6 Exemptions Review

This module reviews possible exemptions from the final TIA, as outlined in the *TIA Guidelines*. The applicable exemptions for this site are shown in **Table 10**.

Table 10: TIA Exemptions

Module	Element	Exemption Criteria	Status
4.1 Development Design	*4.1.2* Circulation and Access	• Required for site plan control and zoning by-law amendment applications	Not Exempt
	4.1.3 New Street Networks	• Required for draft plan of subdivision applications	Exempt
4.2 Parking	*All elements*	• Required for site plan control and zoning by-law amendment applications	Not Exempt
4.6 Neighbourhood Traffic Calming	*All elements*	• If all of the following criteria are met: 1. Access is provided to a collector or local roadway 2. Application is for zoning by-law amendment or draft plan of subdivision 3. Proposed development generated more than 75 vehicle trips 4. Site trip infiltration is expected, and site-generated traffic will increase peak hour volumes by 50% or more along the route between the site and an arterial roadway 5. The subject street segment is adjacent to two or more of the following significant sensitive land uses: ○ School (within 250m walking distance) ○ Park ○ Retirement/older adult facility ○ Licensed child care centre ○ Community centre ○ 50+% of adjacent properties along the route(s) are occupied by residential lands and at least ten dwellings are occupied	Exempt
4.7 Transit	*4.7.1* Transit Route Capacity	• Required when proposed development generates more than 75 transit trips	Exempt
	4.7.2 Transit Priority Requirements	• Required when proposed development generates more than 75 vehicle trips	Exempt
4.8 Network Concept	*All elements*	• Required when development generates more than 200 person trips during the peak hour in excess of the equivalent volume permitted by the established zoning	Exempt

1 Screening

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

2 Existing and Planned Conditions

2.1 Proposed Development

The existing site, located at 200 Clearview Avenue, is planned to redevelop the existing surface parking lot. Approximately 103 existing surface parking spaces will be replaced with the two-level underground parking. The proposed development address will become 210 Clearview Avenue. The proposed building will consist of a four-storey podium and 25-storey tower with a total of 184 apartment units. The existing 26-storey apartment building will remain on the east side of the parcel with 110 existing parking spaces located underground. The two existing accesses to the surface parking lot will be converted to an access to the underground parking from Clearview Avenue and the Lanark Avenue access will be to the loading area. A new loop will be created from the existing drive aisle from Ellendale Crescent to connect to Lanark Avenue at a new access. A total of 233 residential vehicle parking spaces, 17 visitor parking spaces, and 217 bike parking spaces are proposed. Among these parking spaces, a total of ten vehicle parking spaces and ten bicycle parking spaces are proposed to be located on the surface, while the remaining spaces are planned for the underground levels. The anticipated full build-out and occupancy horizon is 2027 with construction occurring in a single phase. The site is zoned as Residential Fifth Density Zone (R5C[2909]S216) and located within the Richmond Road/Westboro secondary plan and Richmond Road/Westboro community design plan areas. Figure 1 illustrates the study area context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan

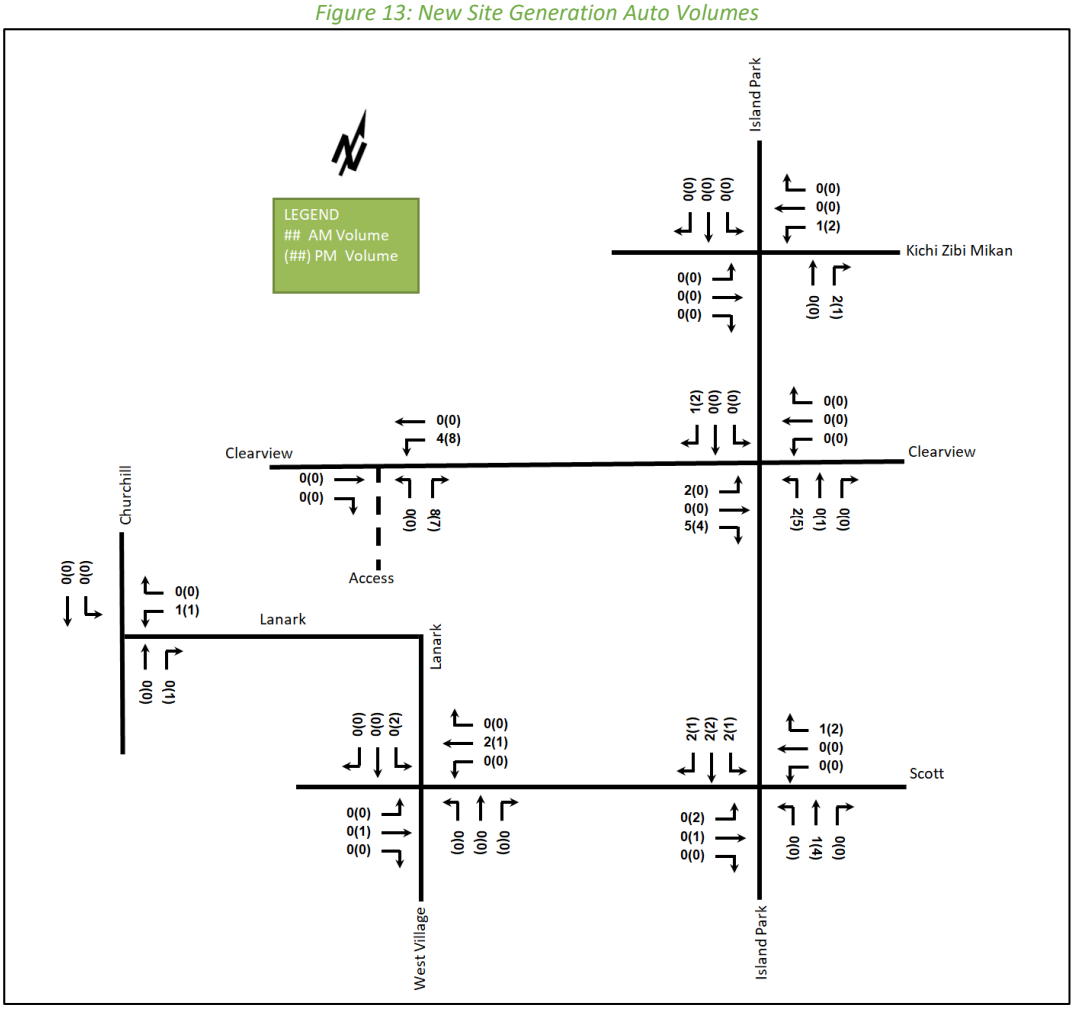
Source: http://maps.ottawa.ca/geoOttawa/ Accessed: August 14, 2024

To/From	Via
East	20% Kichi Zibi Mikan Parkway (E) 20% Scott Street (E)
West	2% Churchill Avenue (S) 2% Kichi Zibi Mikan Parkway (W) 1% Island Park Drive (N)
Total	**100%**

Table 12: Trip Assignment – PM Peak Hour

To/From	Inbound Via	Outbound Via
North	3% Kichi Zibi Mikan Parkway (E) 2% Island Park Drive (N)	3% Kichi Zibi Mikan Parkway (E) 2% Island Park Drive (N)
South	30% Island Park Drive (S) 20% Churchill Avenue (S)	30% Island Park Drive (S) 20% Churchill Avenue (S)
East	20% Kichi Zibi Mikan Parkway (E) 20% Scott Street (E)	40% Scott Street (E)
West	2% Churchill Avenue (S) 2% Kichi Zibi Mikan Parkway (W) 1% Island Park Drive (N)	2% Churchill Avenue (S) 2% Kichi Zibi Mikan Parkway (W) 1% Island Park Drive (N)
Total	**100%**	**100%**

Figure 13: New Site Generation Auto Volumes



Appendix H
TDM Checklists

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	☐

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)	☐

Appendix I
MMLOS Analysis

1.0 SEGMENT MMLOS

1.1.1 Pedestrian Level of Service (PLOS)

Exhibit 4 of the MMLOS guidelines has been used to evaluate the segment PLOS of Roosevelt Avenue, Wilmont Avenue, and Winston Avenue. Targets for PLOS, and BLOS for the study area are based on the targets for roadways within 600m of a rapid transit station, as identified in Exhibit 22 of the MMLOS guidelines. The results of the segment PLOS analysis are summarized in **Table 1**.

Table 1: Segment PLOS

Sidewalk Width (m)	Boulevard Width (m)	Avg. Daily Curb Lane Traffic Volume	Prescence of On-Street Parking	Operating Speed	Segment PLOS	Target PLOS
Roosevelt Avenue (East Curb)						
1.5m	0m	< 3000	Yes	40 km/h	E	A
Wilmont Avenue (North Curb)						
2.0m	0m	< 3000	Yes	30 km/h	A	A
Winston Avenue (West Curb)						
1.5m	0m	< 3000	Yes	50 km/h	E	A

1.1.2 Bicycle Level of Service (BLOS)

Exhibit 11 of the MMLOS guidelines has been used to evaluate the segment PLOS of Roosevelt Avenue, Wilmont Avenue, and Winston Avenue. Targets for PLOS, and BLOS for the study area are based on the targets for roadways within 600m of a rapid transit station, as identified in Exhibit 22 of the MMLOS guidelines. The results of the segment BLOS analysis are summarized in **Table 2**.

Table 2: Segment BLOS

Road Class	Bike Route	Type of Bikeway	Travel Lanes	Operating Speed	Segment BLOS	Target BLOS
Roosevelt Avenue						
Local Road	Suggested Route	Mixed Traffic	2	40 km/h	A	B
Wilmont Avenue						
Local Road	N/A	Mixed Traffic	2	30 km/h	A	D
Winston Avenue						
Local Road	N/A	Mixed Traffic	2	50 km/h	B	D

1.1.3 Transit Level of Service (TLOS)

Since the boundary streets do not serve transit, the TLOS has not been reviewed.

1.1.4 Truck Level of Service (TkLOS)

Since the boundary streets are not classified as truck routes, the TkLOS has not been reviewed.