

# 4000 RIVERSIDE DRIVE CITY OF OTTAWA

Gas Bar Redevelopment TIA  
Step 3 - Strategy Report



Prepared For: IGP Realty Advisors Inc.

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## Certification

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan, and the Transportation Impact Assessment (2017) Guidelines (Update effective July 2023);
2. I have sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
4. I am either a licensed or registered professional in good standing, whose field of expertise is either transportation engineering or transportation planning.

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

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## AUTHORSHIP

Date	Revision	Update
22/09/2025	Version 1 - Final	Step 2 –Scoping
17/10/2025	Version 2 – Revised Final	Step 2 –Scoping
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## OVERVIEW

BA Group was retained by IGP Realty Advisors Inc. to prepare a Transportation Impact Assessment (TIA) Report in support of a Site Plan Application (SPA) to add a drive-thru facility to an existing gas station located at 4000 Riverside Drive. This document follows the TIA process outlined in the City of Ottawa's Transportation Impact Assessment Guidelines (2017) and Revisions to Transportation Impact Assessment Guidelines (2023). This report represents Step 3 – Strategy Report.

### 1.0 SCREENING

The completed Screening Form (Step 1), dated November 2024, was submitted to the City of Ottawa and confirmed the need to proceed to Step 2 of the TIA process (due to the Safety trigger). The Safety trigger was met due to the site's proximity to a boundary street with a posted speed limit of 80 km/hr or greater, as well as the inclusion of a drive-thru facility on the site. A copy of the completed screening form is attached in **Appendix A**.



## 2.0 SCOPING

### 2.1 Existing and Planned Conditions

#### 2.1.1 Proposed Development

IGP Realty Advisors Inc. is preparing a Site Plan Control application for a proposed gas bar redevelopment in the Hunt Club-Ottawa Airport area in Ottawa. The proposed development is located at 4000 Riverside Drive, at the southwest quadrant of the Riverside Drive / Hunt Club Road intersection. The Site is bound by Hunt Club Road to the north, Riverside Drive to the east, a restaurant use to the south and the Rideau River to the west. The redevelopment proposal maintains the existing site accesses, which include a Right-in Right-out (RIRO) access off Hunt Club Road, a RIRO access off Riverside Drive and a driveway connection to the south, leading to the neighboring property (4100 Riverside Drive) with access to an all-moves signalized intersection on Riverside Drive, south of Hunt Club Road. The location of the subject site is illustrated in **Figure 1**.

The proposed development maintains the 8 fueling positions and standalone carwash and reconfigures the existing convenience store building to add a drive-through quick service restaurant (QSR), with a combined GFA of approximately 148.7 m<sup>2</sup>. It is noted that the total GFA of the convenience store and restaurant are consistent with the existing GFA on the site. The redevelopment is anticipated to be completed in a single phase, by horizon year 2026.

There are currently 12 parking spaces provided on site for the existing convenience store use. The redevelopment proposes a total of 14 parking spaces (including one accessible space) to accommodate the existing convenience store and car wash uses and proposed QSR use on site. A summary of the proposed changes to the commercial GFA is summarized in **Table 1** and the proposed site plan is illustrated in **Figure 2**. Reduced scale architectural plans are attached in **Appendix B**.

A dedicated loading space is proposed south of the drive-thru facility to accommodate the site's waste collection and delivery needs. Vehicle maneuvering diagrams have been prepared for the following vehicle types and are attached in **Appendix C**:

- Fuel Truck
- Heavy Single Unit Delivery Truck
- Refuse Collection Vehicle



**Table 1 Existing and Proposed Development**

Land Use	Existing	Proposed
<b>GFA</b>		
Convenience Store / Gas Station	148.7 m <sup>2</sup>	94.3 m <sup>2</sup>
Fast-Food Restaurant with Drive Through Window	N/A	54.4 m <sup>2</sup>
<b>Total Commercial GFA</b>	<b>148.7 m<sup>2</sup></b>	<b>148.7 m<sup>2</sup></b>
<b>Car Wash GFA</b> (Stand alone building)	<b>133.9 m<sup>2</sup></b>	<b>133.9 m<sup>2</sup></b>
<b>Parking Supply</b>		
Convenience Store / Gas Station	12 spaces	6 spaces (including 1 accessible space)
Fast-Food Restaurant with Drive Through Window	N/A	6 spaces (plus 9 cars stacking)
Car Wash	-	2 spaces
<b>Total Parking Spaces</b>	<b>12 spaces</b>	<b>14 spaces</b>

Notes:

1. Site stats provided by K Paul Architect Inc., dated November 17<sup>th</sup>, 2025.
2. ITE Land Use code 945 for a Convenience Store / Gas Station.
3. ITE Land Use code 934 for a Fast-Food Restaurant with Drive Through Window.

The subject site is currently zoned as Light industrial Zone (IL). The purpose of the IL Zone, according to the City of Ottawa's Zoning By-Law, is to:

- permit a wide range of low impact light industrial uses, as well as office and office-type uses in a campus-like industrial park setting, in accordance with the Employment Area designation of the Official Plan or, the General Urban Area designation where applicable.
- allow in certain Employment Areas or General Urban Areas, a variety of complementary uses such as recreational, health and fitness uses and service commercial (e.g. convenience store, personal service business, restaurant, automobile service station and gas bar), occupying small sites on individual pads or in groupings as part of a small plaza, to serve the employees of the Employment or General Urban Area, the general public in the immediate vicinity, and passing traffic;
- prohibit retail uses in areas designated as Employment Area but allow limited sample and showroom space that is secondary and subordinate to the primary use of buildings for the manufacturing or warehousing of the product;
- prohibit uses which are likely to generate noise, fumes, odors, or are hazardous or obnoxious; and
- provide development standards that would ensure compatibility between uses and would minimize the negative impact of the uses on adjacent non-industrial areas.

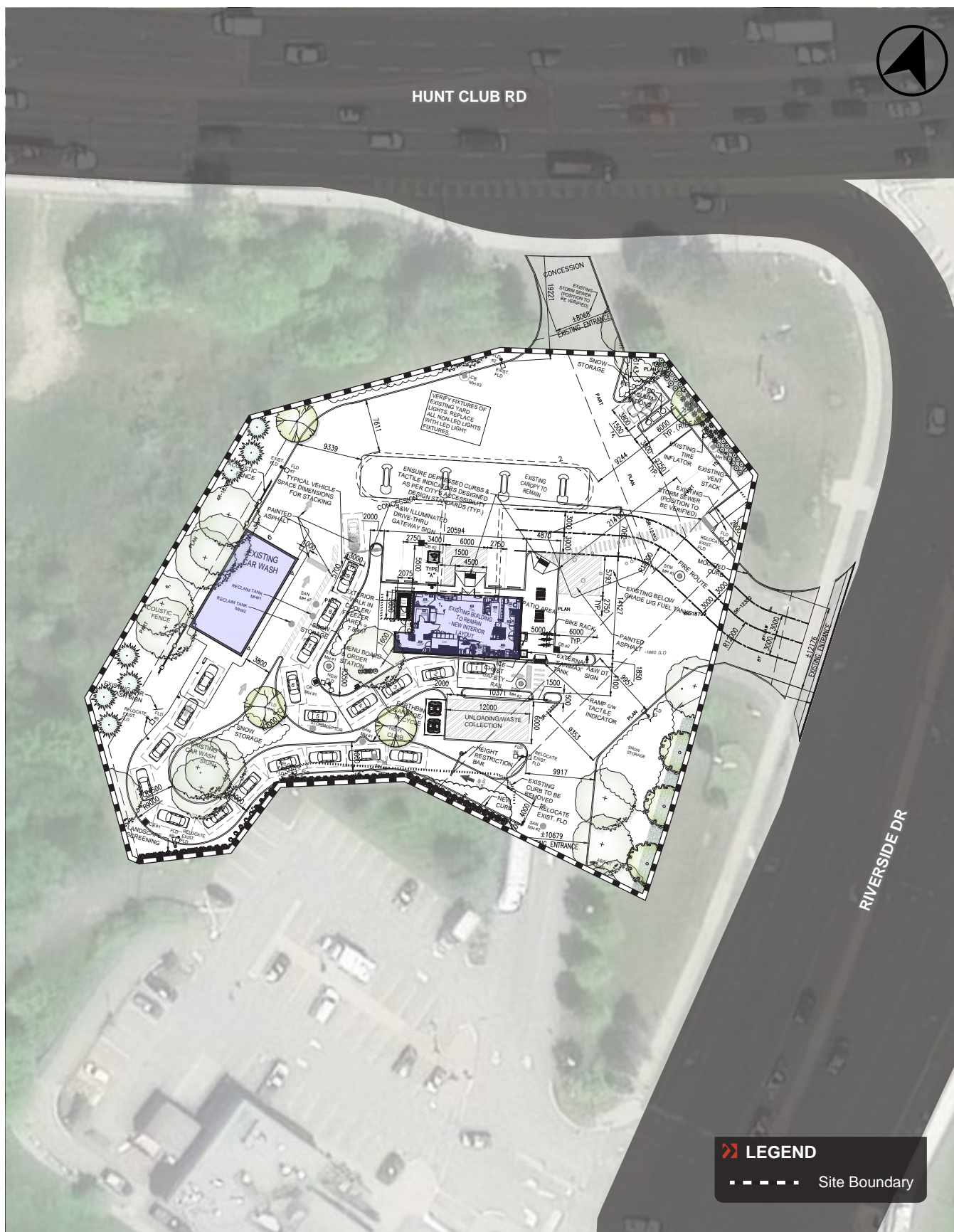




**Figure 1 Site Location**









## 2.1.2 Existing Conditions

### 2.1.2.1 Roads and Traffic Control

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

**Table 2 Existing Area Road Network**

Route (s)	Route Description
Hunt Club Road	Hunt Club Road is a municipal four-lane arterial roadway with a median, within the vicinity of the Site. The posted speed limit along Hunt Club Road across the Site frontage is 80 km/hr. A sidewalk and an on-street cycle lane is provided along the north and south side.
Riverside Drive	Within the Site vicinity, Riverside Drive is a municipal four-lane arterial roadway with a median. The posted speed limit along Riverside Drive in the Site vicinity is 60 km/hr. A sidewalk and an on-street cycle lane is provided along the east and west side of Riverside Drive. Along the west side, there is a sidewalk that transitions into a multi-use pathway as well as paved shoulders. The intersection with Hunt Club Road is signalized and it includes northbound, southbound, eastbound and westbound left turn auxiliary lanes, as well as right turn channelized lanes.

The City has recently made modifications at the Riverside Drive and Hunt Club Road intersection, including:

- Extension of the northbound left turn lane, addition of a northbound cycle track, reconfiguration of the southbound right turn channel and northbound right turn channel.
- Protected left turns signal heads were installed at the Riverside Drive signals.

The redevelopment proposal maintains the existing site accesses, which include a Right-in Right-out (RIRO) access off Hunt Club Road and a RIRO access off Riverside Drive. An additional driveway is provided to the south, connecting to the neighboring property to the south at a signalized all moves intersection on Riverside Drive, south of Hunt Club Road.

**Figure 3** illustrates the existing lane configuration and traffic control.



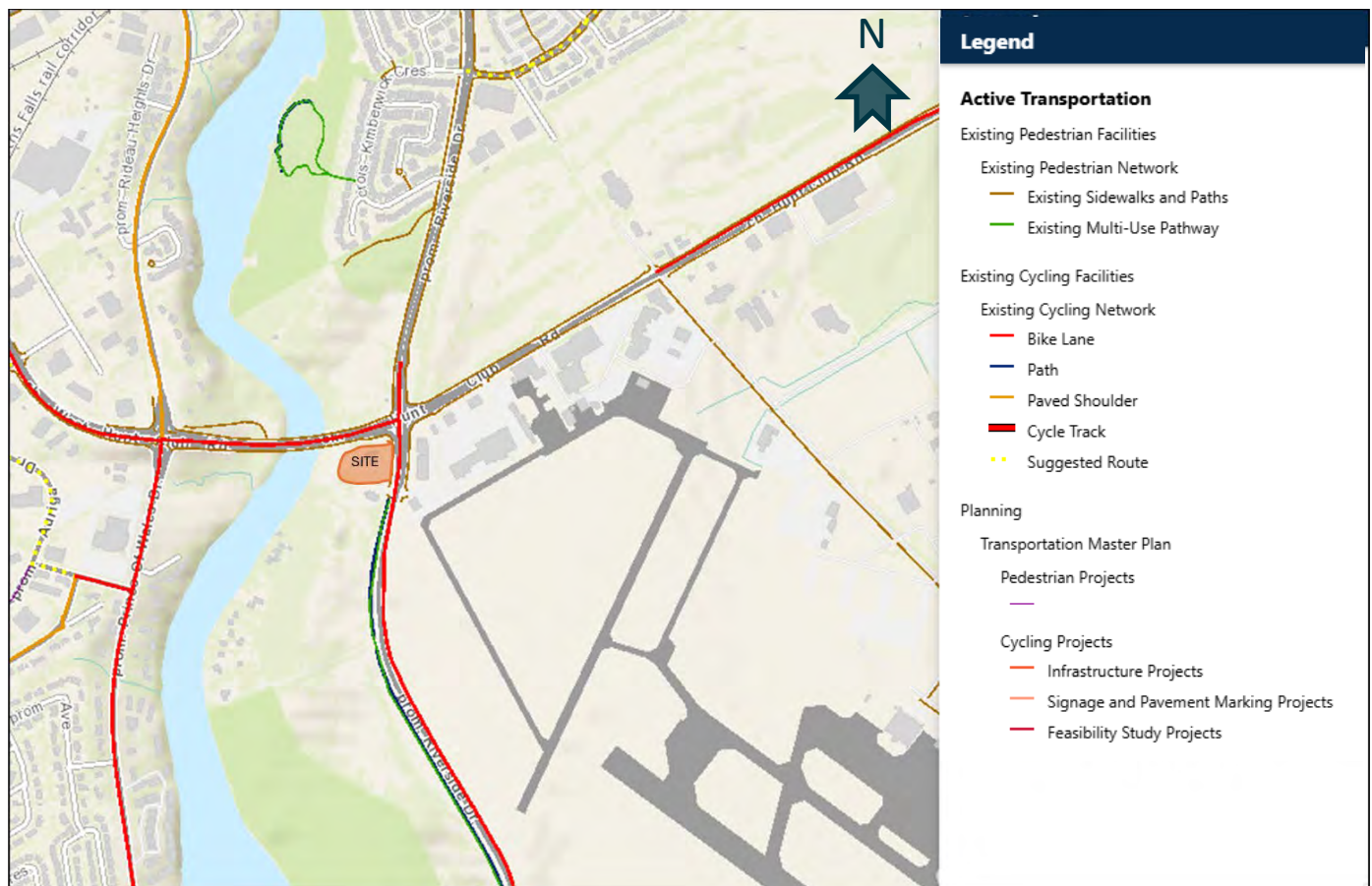
Figure 3 Existing Lane Configuration and Traffic Control



### 2.1.2.2 Walking and Cycling

Within the vicinity of the site, a sidewalk and an on-street cycle lane is provided along the north and south side of Hunt Club Road, and on the east and west of Riverside Drive. **Figure 4** illustrates the existing and planned pedestrian and cycling facilities within the vicinity of the subject site.

**Figure 4 Existing and Proposed Pedestrian and Cycling Network**



Source: geoOttawa, accessed August 2025



### 2.1.2.3 Transit

Transit service is currently provided in the immediate vicinity of the proposed development via the following routes:

**Table 3 Existing Area Transit Network**

Route (s)	Route Description
Route 198 (Greenboro <-> Limebank)	Route 198 is a Local Route that runs between Limebank Station and Greenboro Station. The route starts and ends at the Line 2 stations, Limebank Station and Greenboro Station, while providing connections to Line 2 and Line 4 at South Keys Station. It operates 1-2 times per hour during the morning and afternoon peaks.
Route 116 (Greenboro <-> Baseline)	Route 116 is a Local Route that runs between Baseline Station and Greenboro Station. The Greenboro Station provides a connection to Line 2. The route also connects to Line 2 and Line 4 at South Keys Station. It operates in the afternoon peak hour with a headway of 30 minutes.
Route 117 (Greenboro <-> Baseline)	Route 117 is a Local Route that runs between Baseline Station and Greenboro Station. The Greenboro Station provides a connection to Line 2. The route also connects to Line 2 and Line 4 at South Keys Station. This route only operates in one direction in each peak hour. It operates in the morning and afternoon peak hours with a headway of 30 minutes, respectively.

The South Keys Station connecting Line 4 to Line 2 of the O-Train is located approximately 2 km away from the subject development.

**Figure 5** illustrates nearby transit routes and bus stop locations.



Figure 5 Existing Area Transit Routes and Stops



#### 2.1.2.4 Traffic Management Measures

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

#### 2.1.2.5 Traffic Volumes

Traffic volumes at the signalized intersection of Riverside Drive and Hunt Club Road was provided by the City of Ottawa, collected on Tuesday March 25<sup>th</sup>, 2025. Traffic volumes at the signalized intersection of 4100 Riverside Drive and Hunt Club Road were collected by Spectrum Inc. on Friday 3<sup>rd</sup> October 2025. The volumes at Riverside Drive at Hunt Club Road have been adjusted to reflect the more recent traffic counts at 4100 Riverside Drive and Riverside Drive intersection. Volumes are illustrated in **Figure 6**.

It should be noted that the traffic volumes in this report were balanced and rounded up to the nearest five vehicles. Active transport volumes have not been rounded. **Appendix D** contains the raw traffic data and is provided for reference.





**Figure 6 2025 Existing Traffic Volumes**



### 2.1.2.6 Collision History

The City of Ottawa noted in the feedback form correspondence, dated January 8, 2025, that the Hunt Club Road at Riverside Drive intersection in the vicinity of the subject site is considered a high-collision area. Collision data at this intersection was provided by the City of Ottawa for the period of 2019-2022 and 2024. The data was reviewed to identify the collision pattern during the five (5) year period.

**Table 4** includes the collision summary for the study area intersection.

**Table 4 Collision Data**

		Hunt Club at Riverside
Classification	Property Damage Only	192
	Non-Fatal Injury	22
	Fatal Injury	0
Collision Type	Rear End	162
	Angle / Turning	22
	Sideswipe	26
	Single Motor Vehicle	4
	Other	3
Event	Other motor vehicle	210
	Skidding / Sliding	4
	Pole (Utility, power)	1
	Curb	2

Per the data above, Hunt Club Road at Riverside Drive experienced the majority of the collisions across the study years. Upon further review, the rear end collision type were the most prevalent, encompassing over 75% of the total collisions at this location. These collisions were further reviewed to determine if there are any discernible patterns. **Table 5** further breaks down the rear end collision types at the Hunt Club Road at Riverside Drive intersection.



**Table 5     Hunt Club Road / Riverside Drive Rear-End Collisions**

		Hunt Club at Riverside Drive
Environment	Clear	135
	Rain	10
	Snow	12
	Freezing Rain	4
	Strong Wind	1
Vehicle Direction	Northbound	28
	Southbound	58
	Eastbound	34
	Westbound	42

Per the data above, the vast majority of the collisions occurred during clear environmental conditions (83%). It is noted that the majority (36% and 30%) of collisions at this location occurred between southbound and westbound vehicles. **Table 6** further breaks down the southbound vehicle collisions by manoeuvres at the Hunt Club at Riverside Drive intersection.

**Table 6     Hunt Club Road at Riverside Drive Southbound Collisions**

Direction	Maneuver	Collisions
Southbound	Going Ahead	11
	Slowing / Stopping	8
	Turning Left	0
	Turning Right	35
	Changing Lanes	0
	Merging	0
	Stopped	2
	Unknown	2
Westbound	Going Ahead	17
	Slowing / Stopping	14
	Turning Left	2
	Turning Right	1



Direction	Maneuver	Collisions
	Changing Lanes	2
	Merging	0
	Stopped	3
	Unknown	3
Northbound	Going Ahead	7
	Slowing / Stopping	6
	Turning Left	2
	Turning Right	10
	Changing Lanes	0
	Merging	0
	Stopped	0
	Unknown	3
Eastbound	Going Ahead	12
	Slowing / Stopping	6
	Turning Left	0
	Turning Right	7
	Changing Lanes	3
	Merging	1
	Stopped	3
	Unknown	2

In the southbound direction, majority (60%) of the collisions occurred between southbound right vehicles, while in the westbound direction, majority (74%) of the collisions occurred between westbound through vehicles going ahead, slowing / stopping vehicles. In the northbound direction, majority (36%) of the collisions occurred between northbound right vehicles, while in the eastbound direction, majority (35%) of the collisions occurred between eastbound through vehicles.

This intersection has been known for years to be a high collision zone, due to the high traffic volumes leading to longer queues and delays with poor sightlines.



The Hunt Club Road at Riverside Drive intersection has undergone a number of intersection upgrades / modifications in 2025, since the 2019-2022 and 2024 collision data. The modifications include and not limited to:

- The extension of the northbound left turn lane, addition of a northbound cycle track, and reconfiguration of the southbound and northbound right turn channel.
- Protected left turns were installed at the Riverside Drive signalized access.

The City may wish to compare the latest collision data from 2025 with the previous data to determine the impact of the modifications on collisions. **Appendix E** contains the collision data and is provided for reference.

### 2.1.3 Planned Conditions

#### 2.1.3.1 Changes to the Study Area Transportation Network

The City of Ottawa's recently approved Phase 2 of the 2025 Transportation Master Plan (TMP), identifies roadway, transit and active transportation projects within the study area and broader road network. An overview of planned changes identified within the 2025 TMP Road Network Development Report are as follows:

- The widening of Prince of Wales Drive (~500m west of the site) from two to four lanes, 200 m south of Deakin Street and Amberwood Crescent as a Phase 1 project. As part of Phase 2 projects, it identifies the widening of Prince of Wales Drive between Colonnade Road to Hunt Club Road from two lanes to four lanes.
- The urbanization of Prince of Wales Drive between Meadowlands Drive and Colonnade Road (~2 km north west of the site) under its "Priority Network Road Urbanization Projects" by implementing new sidewalks and cycle tracks to improve connectivity, safety and accessibility.
- The widening of the Hunt Club Road Bridge from four to six lanes between Prince of Wales Drive and Riverside Drive to address the capacity deficiencies when crossing the Rideau River in its Needs Based Road Network.

The 2025 TMP Transit Network Development Report identifies the corridor along Prince Wale Drive, north of Hunt Club Road, the corridor along Hunt Club Road east of Prince of Wales and the corridor along Riverside Drive, north of Hunt Club Road as transit priority corridors that require improvements to reduce transit delays and improve reliability.

The 2023 TMP Active Transportation Projects list highlights Riverside Drive from Walkley Road to Rivergate Way (~1.3 km north of the site) as a candidate for separated cycling facilities or multi-use pathway.

#### 2.1.3.2 Other Study Area Developments

Traffic allowances were made for 3 other specific proposed developments in the area, per the City of Ottawa's Development Applications website. These sites represent a total development in the order of 674 residential units and 21,364 m<sup>2</sup> GFA of non-residential space, and 400 hotel rooms.



Area background developments are summarized in **Table 7** together with a description of the key development statistics for each. Traffic allowances made for each development were based upon traffic impact studies submitted to the City of Ottawa as part of the development application process.

**Table 7 Area Background Developments**

	Development	Residential Units	Non-residential	Source
1.	3960 & 3930 Riverside Drive	Phase 1 – 260 units Phase 2 – 407 units	--	Parsons, December 2023
2.	2009-2013 Prince of Wales Drive	7 units	--	Novatech, June 2023
3.	2175 Prince of Wales	--	7,432 m <sup>2</sup> auto dealership, 7,432 m <sup>2</sup> office space, 400 hotel rooms, 6,500 m <sup>2</sup>	Castleglenn Consultants Inc. May 2024
Total		674 residential units, 21,364 m <sup>2</sup> of non-residential GFA		





## **2.2 Study Area and Time Periods**

### **2.2.1 Study Area**

The proposed study area is limited to the following intersections:

1. Hunt Club Road / Riverside Drive
2. 4100 Riverside Drive at Hunt Club Road
3. Hunt Club Road / North Site Access
4. Riverside Drive / East Site Access

### **2.2.2 Time Periods**

The scope of the transportation assessment proposes the following analysis time periods:

1. Weekday AM peak hour of roadway;
2. Weekday PM peak hour of roadway; and
3. Weekend Saturday peak hour of roadway

### **2.2.3 Study Area**

The scope of the transportation assessment proposes the following horizon years;

1. 2025 Existing Conditions
2. 2027 Future Background Conditions;
3. 2027 Future Total Conditions (site build-out); and
4. 2032 Ultimate Conditions (5 years beyond build-out)



## 2.3 Development Generated Travel Demand

### 2.3.1 Trip Generation

#### 2.3.1.1 ITE

The proposed addition of a drive through quick service restaurant (QSR) by reconfiguring the existing convenience store has a total GFA of 54.4 m<sup>2</sup>. The *Institute of Transportation (ITE) Trip Generation Manual (11<sup>th</sup> Edition)* was used to forecast the auto trip generation of the proposed QSR drive through facility. By nature of land use (gas station) and site location, the majority of the trips are anticipated to be vehicle based. Therefore, it is assumed that 100% of the person trips generated on site will be vehicle trips.

**Table 8 Proposed Person Trips Generated**

LUC	Land Use	Trip Conversion	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
			In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
934	Fast Food With Drive Through Window (General Urban Suburban) 54.4 m <sup>2</sup> / 586 ft <sup>2</sup>	Trip Rates	51%	49%	44.61	52%	48%	33.03	51%	49%	55.25
		Auto Trips	15	10	25	10	10	20	15	15	30

BA Group has reviewed the trip generation potential for the proposed A&W restaurant with a drive-through facility based on LUC 934 “Fast -Food Restaurant with Drive-Through Window” in **Table 8** using ITE’s Trip Generation Manual 11<sup>th</sup> Edition.

The City of Ottawa’s Transportation Assessment Guidelines (TIA) indicates that a traffic operations assessment is triggered at the Site Plan Application stage when the application generates over 75 additional auto trips in the peak hour. Application of the ITE trip rates would generate in the order of 20 to 30 additional auto trips in the peak hours, which is lower than the threshold for a traffic assessment to be required.

The resultant trips from the average trip rates in the ITE Trip Generation Manual are higher than those estimated from proxy A&W restaurants within gas bars as in the proposed context. This overestimation of trips by the ITE Trip Generation Manual is due to its trip rates being derived from standalone fast-food restaurants in the USA which function differently than ones auxiliary to a gas bar, given the much more generous parking supply for the standalone restaurants. It should also be noted that the range in possible trip rates is extremely large in the ITE data set which illustrates the variance in trip generation depending on the actual fast-food chain being proposed. The proposed A&W brand generates less traffic than a similarly sized and located McDonalds chain which should be considered in the traffic forecast. The ITE trip rates make no differentiation between fast food restaurant brands and are considered to overstate trip generation for the site.



### 2.3.1.2 Proxy Sites

BA Group has used proxy gas bar sites with drive through restaurants with similar locational characteristics in Ontario as the proposed development to forecast the trips for the proposed A&W drive through restaurant. The outlined trip forecasts in the **Table 9** better reflects the proposed condition.

New A&W restaurant drive-through traffic activity was forecasted based on the A&W capture rate of the total gas bar arrivals at 3733 Highway 7 and 3700 Major Mackenzie Drive (i.e. 4% to 11% depending on the time period). Assuming this capture rate for the proposed A&W, the proposed A&W restaurant is anticipated to have drive-through demand of 5 new vehicles, after accounting for those patrons that also got gas from the station.

**Table 9** provides a summary of the forecasted demand for the proposed A&W restaurant.

**Table 9 A&W Trip Generation from Proxy Sites**

	AM Peak Hour		PM Peak Hour		SAT Peak Hour	
	In	Out	In	Out	In	Out
Existing Site Traffic	45	55	80	90	90	85
Assumed A&W Capture Rate of Total Gas Bar <sup>1</sup>	7%		8%		6%	
New A&W Drive-Through Traffic	5	5	5	5	5	5
Interaction between A&W and Gas Pump <sup>2</sup>	7%		5%		11%	
A&W Gas Pump interaction	0	0	0	0	0	0
<b>Net New A&amp;W Traffic</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>

Notes:

1. Capture rates for A&W traffic out of total gas bar trips are based on the average observations at 3700 Major Mackenzie Drive and 3733 Highway 7 (See **Appendix F**)
2. Reflects proportion of A&W trips that also get gas at the pumps (i.e. they are already part of the original gas bar traffic)

Should the more appropriate proxy-based trip forecast be considered, the proposal generates only in the order of 10 additional auto trips (well below the City of Ottawa's threshold for a traffic assessment to be warranted).

As such, the development proposal does not meet the traffic threshold to warrant a full traffic operations assessment to review existing, future background and future total traffic analyses in the area. Furthermore, given the proposed land use, the new traffic activity will primarily be pass-by in nature and will not add noticeable net new traffic to adjacent intersections surrounding the gas station.

### 2.3.2 Trip Distribution and Assignment

The proposed development is anticipated to generate less than 75 vehicle trips during the weekday morning and afternoon peak hours and weekend peak hours, therefore intersection analysis is exempted per **Section 2.4**. Therefore, site generated volumes have not been distributed to the study area intersections.



## 2.4 Exemptions Review

**Table 5** summarizes the Exemptions Review table from the City of Ottawa 2017 Transportation Impact Assessment Guidelines as amended by the May 2023 updates.

**Table 10 Exemptions Review as Amended by Revisions to the TIA Guidelines May 2023**

Element	Exemption Consideration	Exempted
<b>Development Design</b>		
4.1.1 Design for Sustainable Modes	All	No
4.1.3 Circulation and Access	All site plan and zoning by-law applications	No
4.1.3 New Street Networks	All plans of subdivision	Yes
<b>Parking</b>		
4.2.1 Parking Supply	All site plan and zoning by-law applications	No
4.3 Boundary Street Design	All	No
<b>TDM</b>		
4.5.1 Context for TDM	All	No
4.5.2 Need for Opportunity	All	No
4.5.3 TDM Program	All	No
4.4.1 Access Location and Design	Reviewed in Scoping Design	
4.6 Neighbourhood Traffic Calming	<p>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:</p> <ol style="list-style-type: none"> <li>1. Access to Collector or Local;</li> <li>2. "Significant sensitive land use presence" exists, where there is at least two of the following adjacent to the subject street segment: <ul style="list-style-type: none"> <li>• School (within 250m walking distance);</li> <li>• Park;</li> <li>• Retirement / Older Adult Facility (i.e. long-term care and retirement homes);</li> <li>• Licenced Child Care Centre;</li> <li>• Community Centre; or</li> <li>• 50%, or greater, of adjacent property along the route(s) is occupied by residential lands and a minimum of 10 occupied residential units are present on the route.</li> </ul> </li> <li>3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision;</li> <li>4. At least 75 site-generated auto trips;</li> <li>5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.</li> </ol>	Yes



Element	Exemption Consideration	Exempted
<b>Transit</b>		
4.7.1 Transit Route Capacity	>75 site transit trips	Yes
4.7.2 Transit Priority Requirements	>75 site auto trips	Yes
4.8 Network Concept	When proposed development generates >200 person trips during the peak hour in excess of the equivalent volume permitted by established zoning.	Yes
<b>Intersection Design</b>		
4.9.1 Intersection Controls (including site accesses) – access control and design	>75 site auto trips	Yes
4.9.2 Intersection Design	>75 site auto trips	Yes

### 3.0 BACKGROUND NETWORK TRAVEL DEMAND

This section is excluded as Network Impact modules are exempt as the proposed development trips generated are below the threshold of 75 vehicle trips (as discussed in Section 2.3.1).



## 4.0 ANALYSIS

### 4.1 Development Design

#### 4.1.1 Design for Sustainable Modes

**Pedestrian Facilities:** Pedestrian infrastructure on Site has been provided off Riverside Drive on the northern eastern portion of the Site, via a 2-metre concrete sidewalk, connecting from the Riverside pedestrian sidewalk to an internal pedestrian crossing to provide pedestrian access to the quick service restaurant and convenience store with accessibility features. A pedestrian crossing is provided from the patio area across the drive-through, to provide connectivity to the south of the Site and neighbouring property. A curb cut has been provided at pedestrian crossings for accessibility.

**Bicycle Facilities:** Bicycle parking is provided on Site at the quick service restaurant patio. A total of 6 short-term bike parking spaces will be provided. The required bicycle parking spaces detail is reviewed in **Section 4.2**. The existing bike lane on Hunt Club Road, at the Site access will be coated with green thermal plastic coating by the City to enhance the visibility of the bike lane approaching the channelized intersection at the Riverside Drive and Hunt Club Road.

**Transit Facilities:** The Site is within 400 m walking distance to the OC Transpo bus stops for routes 116, 117 and 198. Provision of transit services within a five minute (400 m) walk of home, work or school for 95% of urban residents is OC Transpo's design guideline for peak period service.

The City of Ottawa's *Transportation Demand Management (TDM) - Supportive Development Design and Infrastructure Checklist* has been reviewed. The applicable non-residential measures have been met on Site. The non-residential TDM checklist is attached in **Appendix G**. The proposed development provides two basic measures in addition to the required measures:

- Locate building entrances to minimize walking distances to sidewalks and transit stops/stations.
- Provide safe and attractive walking routes from building entrances to nearby transit stops.

**Parking Locations:** A total of 14 vehicle parking spaces will be provided for the proposed redevelopment. The car wash has 2 parking / vacuum spaces at the northeast corner of the Site and 11 cars stacking on the south west corner of the Site. The convenience store and the fast-food restaurant with drive through window have a total of 12 spaces located along the building, 5 parking spaces on the north building frontage (including 1 accessible space) and 3 parking spaces on the east building frontage. The remainder of the spaces are located adjacent to the 2 proposed car wash parking / vacuum spaces at the north east corner of the Site.

#### 4.1.2 Circulation and Access

The redevelopment proposal will maintain the existing Site accesses, which include a Right-in Right-out (RIRO) access off Hunt Club Road, a RIRO access off Riverside Drive, and a driveway connection to the south, leading to the neighbouring property (4100 Riverside Drive) with access to an all moves signalized intersection on Riverside Drive, south of Hunt Club Road.





The on-Site fire route proposed as part of the redevelopment is along the RIRO access off Hunt Club Road and the RIRO access off Riverside Drive.

A dedicated loading space is proposed south of the drive-through facility to accommodate the Site's waste collection and delivery needs. The Site driveways will provide access to the unloading / waste collection area on the Site. The loading / waste collection area on Site has been reconfigured to accommodate the quick service restaurant addition.

The car wash and the quick service accesses are separated to aid in Site functionality and sufficient queue provision for each land use on Site.

Vehicle maneuvering diagrams have been prepared for the fuel truck, heavy single unit delivery truck and refuse collection vehicle types and are attached in **Appendix D**.

#### **4.1.3 New Street Networks**

Exempt during Scoping.



## 4.2 Parking

### 4.2.1 Vehicle Parking

As per Schedule 1A of the City of Ottawa's Official Plan, the subject Site is located within Area C: Suburban Area. Based on this designation, the City of Ottawa's Zoning By-law 2008-250 (Section 101 – 102) was reviewed to determine the minimum parking space requirements for the proposed redevelopment, summarized in **Table 11**.

**Table 11 Zoning By-Law 2008-250 (Section 101 – 102) Requirements – Area C**

Land Use	GFA	Minimum Requirement	Required Spaces	Proposed Spaces
Restaurant – Fast Food (By-law 2011-124)	54.4 m <sup>2</sup>	10 spaces / 100 m <sup>2</sup>	5	6 spaces (plus 9 cars stacking) <sup>4</sup>
Convenience Store	94.3 m <sup>2</sup>	3.4 spaces / 100 m <sup>2</sup>	3	6 spaces (including 1 accessible space) <sup>3</sup>
<b>Total Minimum Requirements</b>			<b>8</b>	<b>12</b>

Notes:

1. Rounded to the nearest whole number.
2. Based on statistics by K Paul Architect Inc., dated July 21, 2024.
3. Based on the Zoning By-Law 2017-301 – Part C, Section 112, provide 1 Type A accessible space
4. Based on Zoning By-Law 2008 – 250, Section 112, 7 before / at order board and a minimum total of 11.

The proposed redevelopment includes 6 parking spaces for the convenience store and 6 spaces for the fast-food restaurant, meeting the By-law requirements. **Section 4.1.1** includes a detailed description of the vehicle parking spaces location on Site.

### 4.2.2 Bicycle Parking

The Site is subject to the bicycle parking requirements stipulated in Zoning By-law 2008-250 (Section 111). A minimum requirement of 1 bicycle parking space for each 250 m<sup>2</sup> of GFA for a convenience store and restaurant land use.

**Table 12** summarizes bicycle parking requirements for the Site.

**Table 12 Zoning By-Law 2008-250 Bicycle Parking Requirements (Area C)**

Land Use	GFA	Minimum Rate	Minimum Requirement <sup>1</sup>	Proposed
Restaurant – Fast Food (By-law 2011-124)	54.4 m <sup>2</sup>	1 space / 250 m <sup>2</sup>	1	--
Convenience Store	94.3 m <sup>2</sup>	1 space / 250 m <sup>2</sup>	1	--
<b>Total Minimum Requirements</b>	<b>148.7 m<sup>2</sup></b>		<b>2</b>	<b>6</b>

Notes:

1. Minimum requirements rounded to the nearest whole number.



## 4.3 Stacking Lane

### 4.3.1 Quick Service Restaurant Stacking Lane Requirements

The pre-consultation comments from the City of Ottawa identified concerns with potential queuing for the proposed Quick Service Restaurant drive-through. Zoning By-law 2008-250 (Section 112) provides requirements for the minimum number of queues stacking spaces for the proposed drive-through restaurant. Based on provisions in Table 112 within the By-law, the restaurant drive-through requires a minimum of 11 vehicle queueing spaces with 7 before / at order board.

### 4.3.2 Proposed Stacking Lane Supply

Based on a review of the proposed site plan, 9 vehicle queueing spaces are provided for the drive through from the entry to the pick-up window. Of these spaces, 6 spaces are provided between the entry and the order board while the remaining 3 spaces are provided from the pick-up window and the order board.

It is noted that the stacking lane capacity between the pick-up window and the order station, as well as between the order station and the drive-through entrance are slightly less (1 space less) than the By-law requirement. Nonetheless, based on a review of observable queuing behind the order station and the drive through design at other similarly located A&W drive-throughs, the proposed drive-through restaurant stacking provisions are considered sufficient to accommodate typical operational queues. Proxy site queuing review is provided below.

#### Stacking Lane between Pickup Window and Order Station

Two A&W locations have been identified within the City of Ottawa with similar site transportation context – both facilities are also along busy arterial roads:

- 1454 Merivale Road
- 2948 Bank Street

The A&W drive throughs at these comparable sites operate with 3 stacking lane spaces between the pick-up window and order station. This number of spaces provides an adequate buffer to avoid queues from the pick-up window backing into and beyond the order station.

The proposed A&W drive-through also includes 3 stacking lane spaces between the pick-up and order station which, based on the above observations, would be sufficient buffer between these areas in the drive through.

#### Stacking Lane between Order Station and Drive Through Entrance

Per the trip generation for the new A&W restaurant presented in **Section 2.3.1.2**, the drive-through is expected to have in the order of 5 vehicles arrive per hour. This level of drive through demand was compared to the observed demand at other A&W drive-throughs in gas bars (see **Appendix H**) and it is noted the subject site is most similar to proxy sites 2 and 5 (i.e. 3733 Highway 7 and 3100 Ellesmere).

**Table 13** summarizes the forecast queue demand of the A&W at observed proxy sites. The maximum observed queue throughout the day at the A&W drive through of these proxy sites with the most similar demand is in the order of 1 to 2 vehicles behind the order station. As such, it is expected the maximum queue forecast for the



proposed A&W drive through behind the order station will be 2 or less vehicles. Given the provision of a 6-vehicle storage length behind the order board in the proposed site plan, the site has sufficient queue storage capacity to support the demand for the A&W drive-through restaurant.

Queuing capacity for the proposed A&W drive-through will appropriately accommodate the forecast demand and avoid spillback onto the site where other vehicle maneuvering occurs.

**Table 13 A&W Drive Through Queues Queue Comparison with Demand**

Proxy Site	Site 1	Site 2	Site 3	Site 4	Site 5	4000 Riverside Drive
A&W Arrivals <sup>1</sup>	8 / 26 / 13	6 / 14 / 11	10 / 23 / 34	13 / 23 / 23	6 / 15 / 11	5 / 5 / 5
Service Time <sup>2</sup>						
Order	1:01	0:54	1:07	1:14	1:20	--
Pickup	1:34	1:05	1:22	1:50	2:48	
Max Queue Observed / Expected	3	2	5	5	1	2

Notes:

1. xx / xx / xx – AM Peak Hour / PM Peak Hour / SAT Peak Hour
2. Reflects the higher of Friday and Saturday observed average order and pick up dwell times
3. Arrival values based on **Table 9**.

The proposed drive-through at the A&W has a capacity of 9 cars in queue. Of these stacking spaces, 6 are located behind the order station to the drive through entry and the remaining three are between the pickup window and order station. These individual drive through segment lengths are sufficient to support the anticipated demand to the proposed A&W drive through and would provide sufficient buffer between pick up and ordering. This stacking lane supply is anticipated to meet the drive-through operational needs.



## 4.4 Boundary Street Design

### 4.4.1 Design Concept

A multi-modal level of service analysis was performed along the segment of Hunt Club Road and Riverside Drive across the frontage of the subject Site. As the subject Site is located in the Outer Urban or Suburban Area, it is subject to a PLOS target of C, a BLOS target of C, a TLOS target of E, and a PRLOS target of D.

On Hunt Club Road, the MMLOS targets are not met for pedestrians and bicycles but are met for transit. The public realm scores are acceptable. The PLOS is one deviation away from the target, due to a large distance between controlled crossings, however, a continuous sidewalk is provided on both sides on the roadway. Majority of this segment is along a bridge with little to no room to provide controlled crossing or widening of facilities. The BLOS is one deviation away from the target BLOS. To meet the BLOS target of C, a buffer with a width of 0.5 m would need to be added to the paved shoulder, however, do to space constraints and the opportunity for expansion as majority of the segment is along a bridge. .

On Riverside Drive, the MMLOS targets for bicycle are not met on the west side frontage of the subject Site due to the lack of a buffer, cycle track or physically separated bike lane. The targets are met for pedestrians and transit use. To meet the BLOS target, a buffer on the paved shoulder with a width of 0.5 m would need to be added.

The large vehicle design check list for the Hunt Club Road and Riverside Drive segments are provided to confirm that the design process has properly considered the accommodation of the large vehicles along the segment. The checklist is summarized in **Table 14**.

**Table 14 Segment Large Vehicle Design Checklist**

Condition	Check
Have the design and control vehicle(s) been identifies for each leg of the intersection and for each movement?	N/A
Has a turning template analysis been carried out?	N/A
Have constraints and tradeoffs been addressed and documented?	N/A
Are minimum lane widths provided?	Yes
Is there more design work needed to address constraints and tradeoffs?	No

The MMLOS segment results at Hunt Club Road and Riverside Drive are summarized in **Table 15** and the spreadsheet provided in **Appendix I**.



**Table 15 MMLOS Segment Results**

Mode	LOS Target	Overall MMLOS Score		Critical MMLOS Score	
		North / West	South / East	North / West	South / East
Hunt Club Road					
PLOS	C	D	D	D	D
BLOS	C	D	D	E	E
TLOS	E	B	B	--	--
PRLOS	-	D	D	--	--
Riverside Drive					
PLOS	C	B	B	B	D
BLOS	C	D	A	D	C
TLOS	E	B	B	--	--
PRLOS	-	B	B	--	--

## 4.5 Access Intersection Design

Reviewed in Scoping Design



## 4.6 Transportation Demand Management

### 4.6.1 Context for TDM

The subject site is not located within a Design Priority Area nor a Transit-Oriented Development Zone, as prescribed by the City of Ottawa's Official Plan. The proposal suggests an addition of a drive through quick service restaurant by reconfiguring the existing convenience store. By nature, and land use (gas station) and site location, it was assumed in **Section 2.3** that the majority of the trips are anticipated to be vehicle based. Therefore, it was assumed that 100% of the person trips generated on site will be vehicle trips.

However, as outlined in the **Section 4.1.1**, provision has been made on Site; by providing pedestrian infrastructure connectivity, bicycle facilities and transit services are available in the Site's vicinity. In addition, the required applicable non-residential TDM measures have been met on Site, reflected in the TDM checklist in **Appendix G**.

### 4.6.2 Need for Opportunity

Although the proposed development is predominantly a vehicle trip generator land use, the Transportation Demand Management (TDM) measures for non-residential developments have been considered on Site, with potential of encouraging the employees to utilize sustainable modes, as well as promoting opportunities for pedestrians and cyclists on the road network to access the Site.

### 4.6.3 TDM Program

The City of Ottawa's TDM checklists for non-residential developments was used in the development of design supportive and additional TDM measures.

As part of the TDM Supportive Development Design and Infrastructure Checklist, the following features have been considered.

- 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 convenient, direct access to stations or major stops along rapid transit routes within 600 meters; 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)
- 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).



- 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).
- 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).
- 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).
- Provide safe, direct and attractive walking routes from building entrances to nearby transit stops.
- Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see Official Plan policy 4.3.6).
- 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).
- 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).
- Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for.

**Appendix G** contains the checklist.

## **4.7 Neighbourhood Traffic Calming**

Exempt in Scoping

## **4.8 Transit**

Exempt in Scoping

## **4.9 Network Concept**

Exempt in Scoping

## **4.10 Intersection Design**

Exempt in Scoping





## 5.0 SUMMARY AND CONCLUSION

IGP Realty Advisors Inc. is preparing a Site Plan Control application for a proposed gas bar redevelopment in the Hunt Club-Ottawa Airport area in Ottawa. The proposed development is located at 4000 Riverside Drive, at the southwest quadrant of the Riverside Drive / Hunt Club Road intersection.

The redevelopment proposal maintains the existing site accesses, which include a Right-in Right-out (RIRO) access off Hunt Club Road, a RIRO access off Riverside Drive and a driveway connection to the south, leading to the neighboring property (4100 Riverside Drive) with access to an all-moves signalized intersection on Riverside Drive, south of Hunt Club Road.

The proposed development maintains the 8 fueling positions and standalone carwash and reconfigures the existing convenience store building to add a drive-through quick service restaurant (QSR), with a combined GFA of approximately 148.7 m<sup>2</sup>. It is noted that the total GFA of the convenience store and restaurant are consistent with the existing GFA on the site. The redevelopment is anticipated to be completed in a single phase, by horizon year 2026.

There are currently 12 parking spaces provided on site for the existing convenience store use. The redevelopment proposes a total of 14 parking spaces (including one accessible space) to accommodate the existing convenience store and car wash uses and proposed QSR use on site. Bicycle parking is provided on Site at the quick service restaurant patio. A total of 6 short-term bike parking spaces will be provided.

The proposed site will provide stacking lane with 9 total spaces for the A&W drive through. Despite being 1 less than the by-law requirement (both in the number numbers between the pick up to order station, and the order station to the drive aisle), the proposed drive-through restaurant stacking spaces will be sufficient to accommodate the operational queues of the facility based on a review of observable queuing behind the order station and the drive through design at other similarly located A&W drive throughs.

The MMLOS analysis found that the segment of Hunt Club Road across the north frontage of the subject site does not meet the Pedestrian nor Bicycle Level of Service (LOS) targets, due to the existing cross section of the roadway, of which majority is along a bridge. To meet the Pedestrian Level of Service (PLOS) target, a controlled crossing would need to be provided midblock of the segment, however, this is not applicable due to space constraints. To meet the Bicycle Level of Service (BLOS), a buffer with a width of 0.5 m would need to be added to the paved shoulder, however, space constraints along the segment limits opportunities for providing a buffer. The analysis found that the segment along Riverside Drive on the west side the frontage of the subject site does not meet the BLOS. To meet the BLOS target of C, a buffer with a width of 0.5 m would need to be added to the paved shoulder, however, do to space constraints and the opportunity for expansion as majority of the segment is along a bridge.

The proposed development is anticipated to generate 10 net new two-way trips in weekday morning and afternoon peak hours and weekend peak hour, respectively. The impact of the proposed development on the surrounding transportation network is anticipated to be negligible.

Overall, the subject development will have a negligible impact on the surrounding transportation network, therefore, the development is recommended to proceed from a transportation perspective.



## **Appendix A: Screening Form**





## Certification Form for TIA Study PM

### 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



I am either a licensed or registered<sup>1</sup> professional in good standing, whose field of expertise



is either transportation engineering



or transportation planning.

<sup>1</sup> 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.

**Transportation Impact Assessment Guidelines**

Dated at Ottawa this 6 day of November, 20 24.  
(City)

Name : Kristie Ellis

Professional title: Associate / Urban Planner



Signature of individual certifier that s/he/they meet the above criteria

**Office Contact Information (Please Print)**

Address: 1000 - 95 St. Clair Avenue West

City / Postal Code: Toronto, M4V 1N6

Telephone / Extension: 416 961 7110 x176

Email Address: ellis@bagroup.com

**Stamp**



**Revision Date: June 2023**

## City of Ottawa 2017 TIA Guidelines Screening Form

### 1. Description of Proposed Development

Municipal Address	4000 Riverside Dr
Description of Location	Southwest corner of Riverside Dr and Hunt Club Rd
Land Use Classification	Gas station, car wash, restaurant, drive-thru
Development Size (units)	
Development Size (m <sup>2</sup> )	282.6
Number of Accesses and Locations	1 on Riverside Dr, 1 on Hunt Club Rd
Phase of Development	1
Buildout Year	2025

**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) <sup>1</sup>	90 units
Multi-Use Family (High-Rise) <sup>1</sup>	150 units
Office <sup>2</sup>	1,400 m <sup>2</sup>
Industrial <sup>2</sup>	7,000 m <sup>2</sup>
Fast-food restaurant or coffee shop <sup>2</sup>	110 m <sup>2</sup>
Destination retail <sup>2</sup>	1,800 m <sup>2</sup>
Gas station or convenience market <sup>2</sup>	90 m <sup>2</sup>

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



### 3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?		X
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)? <sup>2</sup>		X

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 80 km/hr or greater?	X	
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?		X
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?		X
Is the proposed driveway within auxiliary lanes of an intersection?		X
Does the proposed driveway make use of an existing median break that serves an existing site?		X
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		X
Does the development include a drive-thru facility?	X	

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

### 5. Summary

	Yes	No
Does the development satisfy the results of screening?		X
Does the development satisfy the Location Trigger?		X
Does the development satisfy the Safety Trigger?	X	

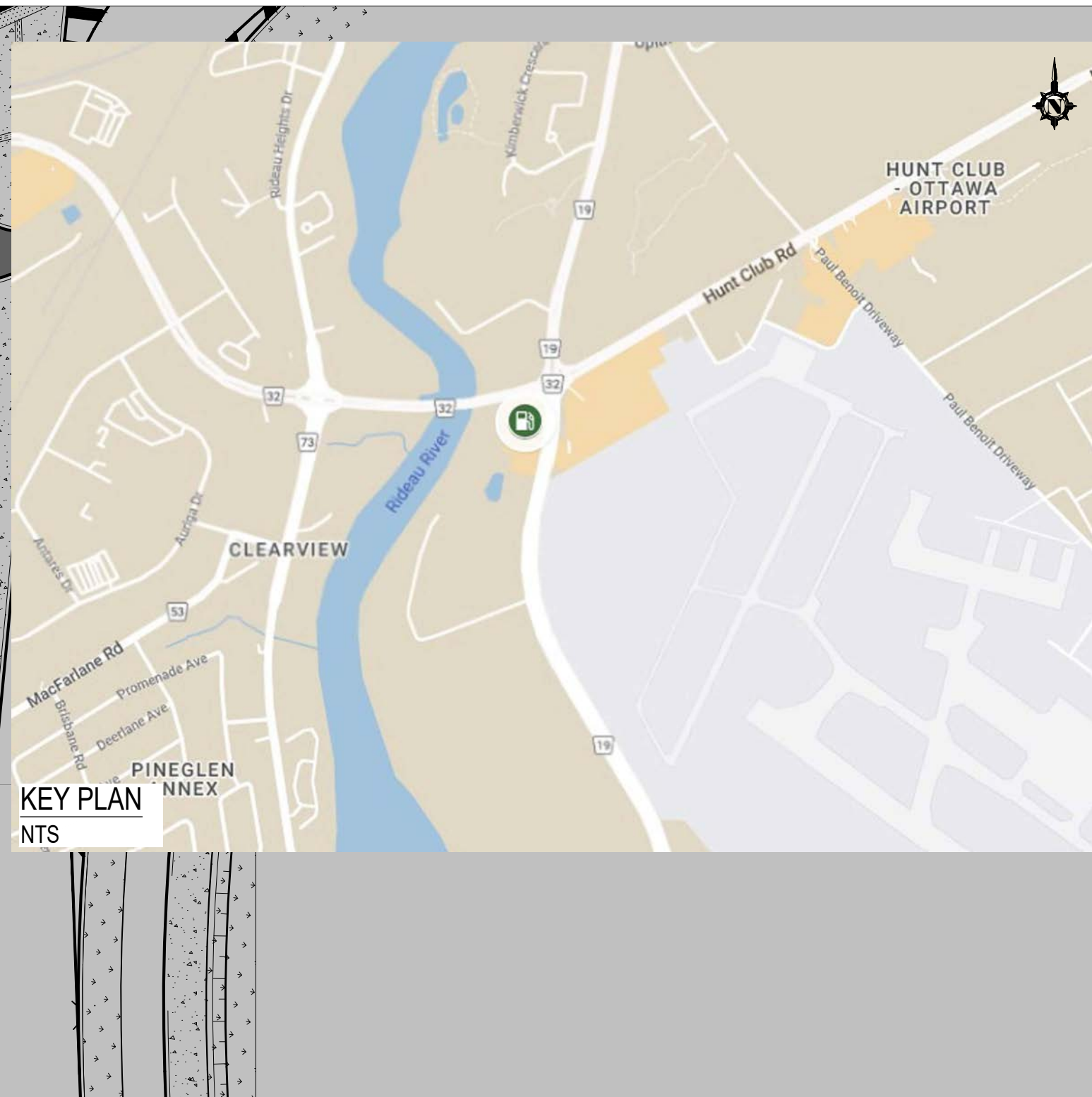
<sup>2</sup> Hubs are identified in Schedules B1 to B8 of the City of Ottawa Official Plan. PMTSAs are identified in Schedule C1 of the Official Plan. DPAs are identified in Schedule C7A and C7B of the Official. See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support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

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

## **Appendix B: Reduced Scale Architectural Plan**







SITE INFORMATION				
ADDRESS: 4000 RIVERSIDE DRIVE, OTTAWA, ONTARIO				
ZONE: LIGHT INDUSTRIAL (IL)				
	PROPOSED AREA: SQ.M.	EXISTING AREA: SQ.M.	AREA: ACRES	% OF TOTAL LOT AREA
TOTAL LOT AREA	5,274.2 M²	5,274.2 M²	1.3	100%
TOTAL BUILDING AREA	282.6 M²	282.6 M²		5.4%
LANDSCAPED AREA	1,437.2 M²	1,373.4 M²		27.2%
ASPHALT PAVED AREA	2,814.4 M²	3,118.8 M²		53.4%
CONCRETE PAVED AREA	737.8 M²	499.4 M²		14%

	PROPOSED	EXISTING	% OF TOTAL
TOTAL BUILDING AREA (GROSS)	148.7 M²	148.7 M²	100%
C-STORE GFA	94.3 M²	148.7 M²	63.4%
A&W GFA	54.4 M²	NA	36.6%

CAR WASH (NET)	133.9 M²	133.9 M²	
CANOPY COVERAGE	307.1 M²	307.1 M²	5.8%

	PROPOSED	EXISTING	
BUILDING HEIGHT - CANOPY:	5.50 M	5.50M	
BUILDING HEIGHT - STORE:	4.39 M	4.39 M	
BUILDING HEIGHT - CAR WASH:	4.63 M	4.63 M	

PARKING				
	MINIMUM REQUIRED	REQUIRED	EXISTING	PROPOSED
CAR WASH	NONE	0	0	2 PARKING/ VACUUM (+ 11 CARS STACKING)
C-STORE	CONVENIENCE STORE: 3.4 PARKING SPACES FOR EACH 100 M² OF GFA (94.3/100) 3.4 = 3.2 = ROUNDED DOWN TO 3	3	12	6 PARKING INCLUDING 1- HANDICAP
A&W	FAST FOOD: 10 PARKING SPACES FOR EACH 100 M² OF GFA (54.4/100) 10 = 5.4 = ROUNDED DOWN TO 5	5	NA	6 PARKING (+ 9 CARS STACKING)
TOTAL:		8	12	14
LOADING SPACE PROVIDED				
C-STORE & A&W	5.5M x 12M	1	1	1

ISSUED		
NO.	DATE	DESCRIPTION
01	MMM DD/YY	ISSUE DESCRIPTION
REVISION		
2	2025-04-16 DRAWN JN	RECONFIGURED CAR WASH & DRIVE-THRU STACKING LANES
3	2025-05-05 DRAWN F.E	A&W COMMENTS
4	2025-05-23 DRAWN JN	ADDED MUNICIPAL ROAD SIGNS AND MARKINGS
5	2025-08-26 DRAWN F.E	BA COMMENTS
6	2025-09-26 DRAWN RD	YARD LIGHTS AT CARWASH ENTRANCE STACKING TO REFLECT EXISTING
7	2025-11-17 DRAWN JN	REVISED D-T STACKING PER TRAFFIC CONSULTANT COMMENTS
8	2025-12-05 DRAWN RD	UPDATED YARD LIGHTS AS PER PHOTOMETRICS
9	2025-12-16 DRAWN F.E	UPDATED LANDSCAPE & SNOW STORAGE
SEAL		
The contractor will check and verify dimensions and report errors and omissions to the designer and the design professional whose seal is affixed to this drawing. Do not scale the drawings.		
This drawing will not be used for construction purposes until issued for construction by the design professional whose seal is affixed to this drawing and whose signature is below.		
ISSUED FOR CONSTRUCTION		DATE
DIMENSIONS AND CONDITIONS TO BE VERIFIED ON THE PREMISES		
K. PAUL ARCHITECT INC.		
TORONTO • VANCOUVER • ORLANDO		
2660 Sherwood Heights Dr. Suite 200, Oakville, Ontario, L6J 7Y8 www.kpaularchitect.com (905)337-9800 fax (905)337-1986		
CLIENT		
PETRO-CANADA A Suncor business		
DRAWING TITLE		
PROPOSED SITE LAYOUT		
PROJECT		
RIVERSIDE DRIVE @ HUNT CLUB DRIVE		
OTTAWA, ON		
DRAWN		CHECKED
F.E.		DATE
SCALE		1:250
PROJECT NO.		35197
DRAWING NO.		SP1



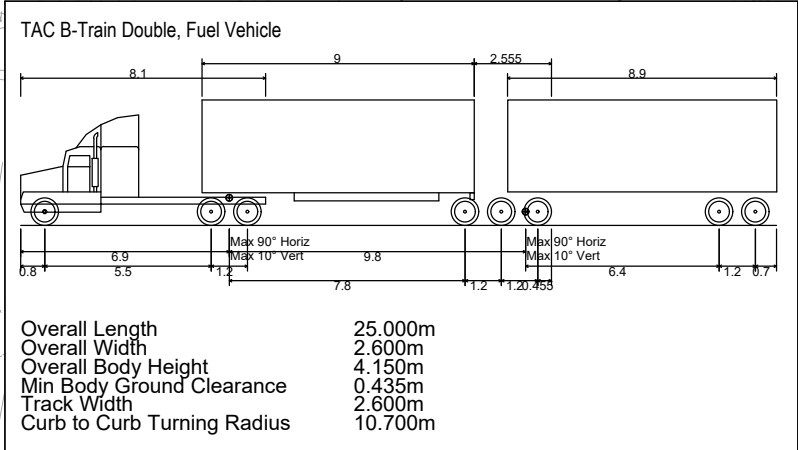
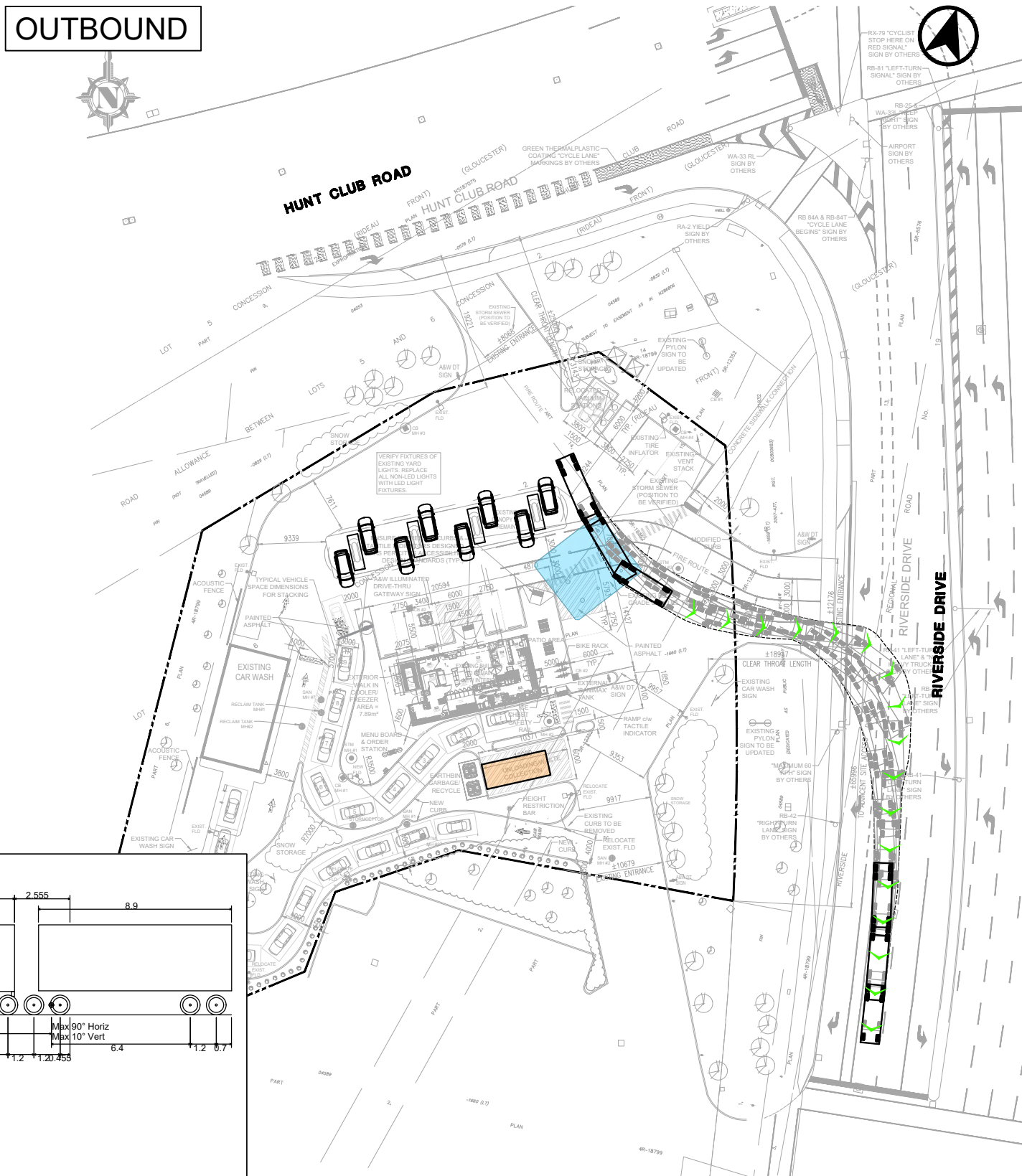
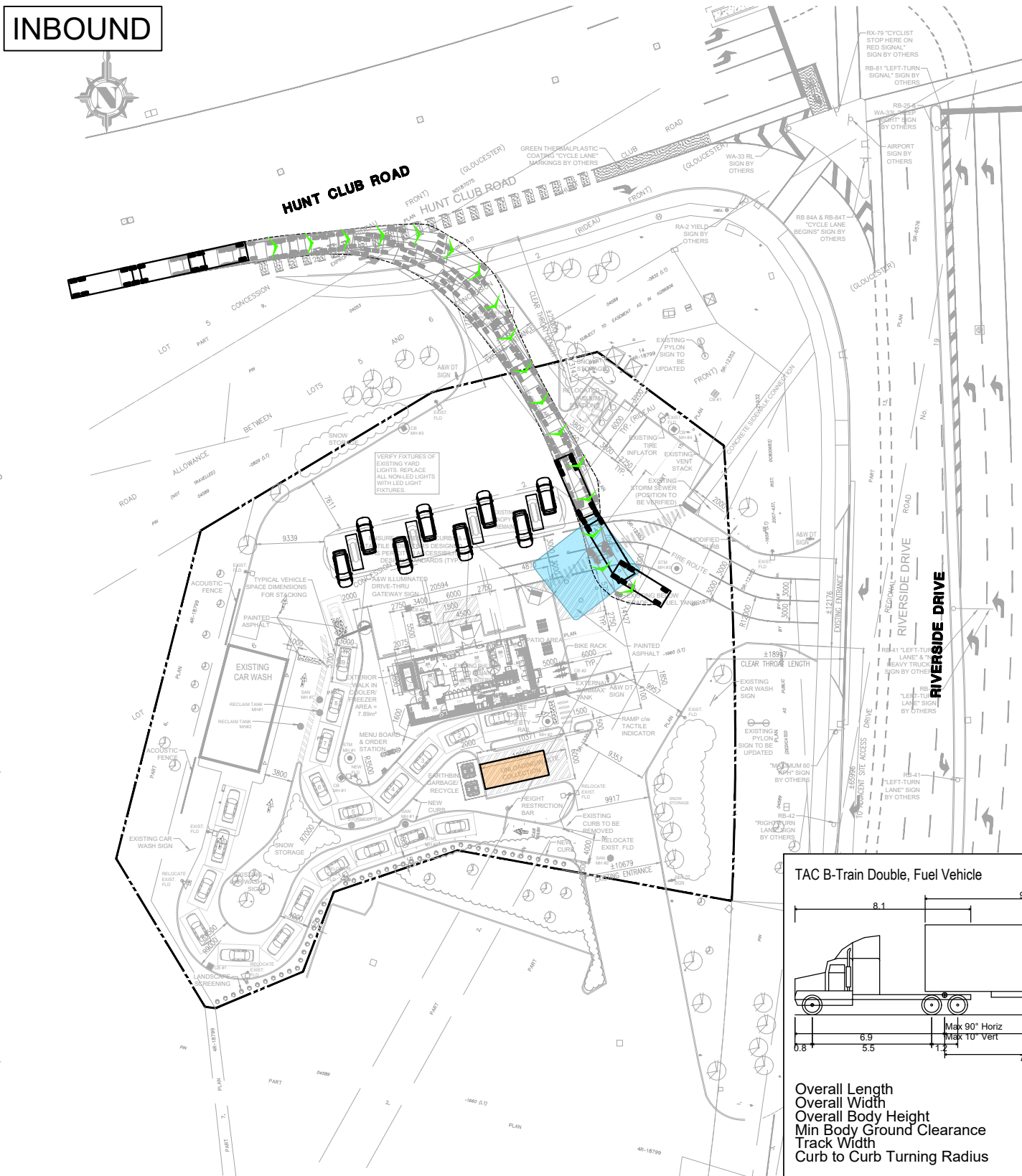
## **Appendix C: Vehicle Maneuvering Diagrams**



INBOUND

OUTBOUND

Date Plotted: December 1, 2025    Filename: J:\8223-35\BA\SPR03\_ Dec01, 2025\BA-4000 Riverside-SPR-R03-822335-Dec01-25.dwg



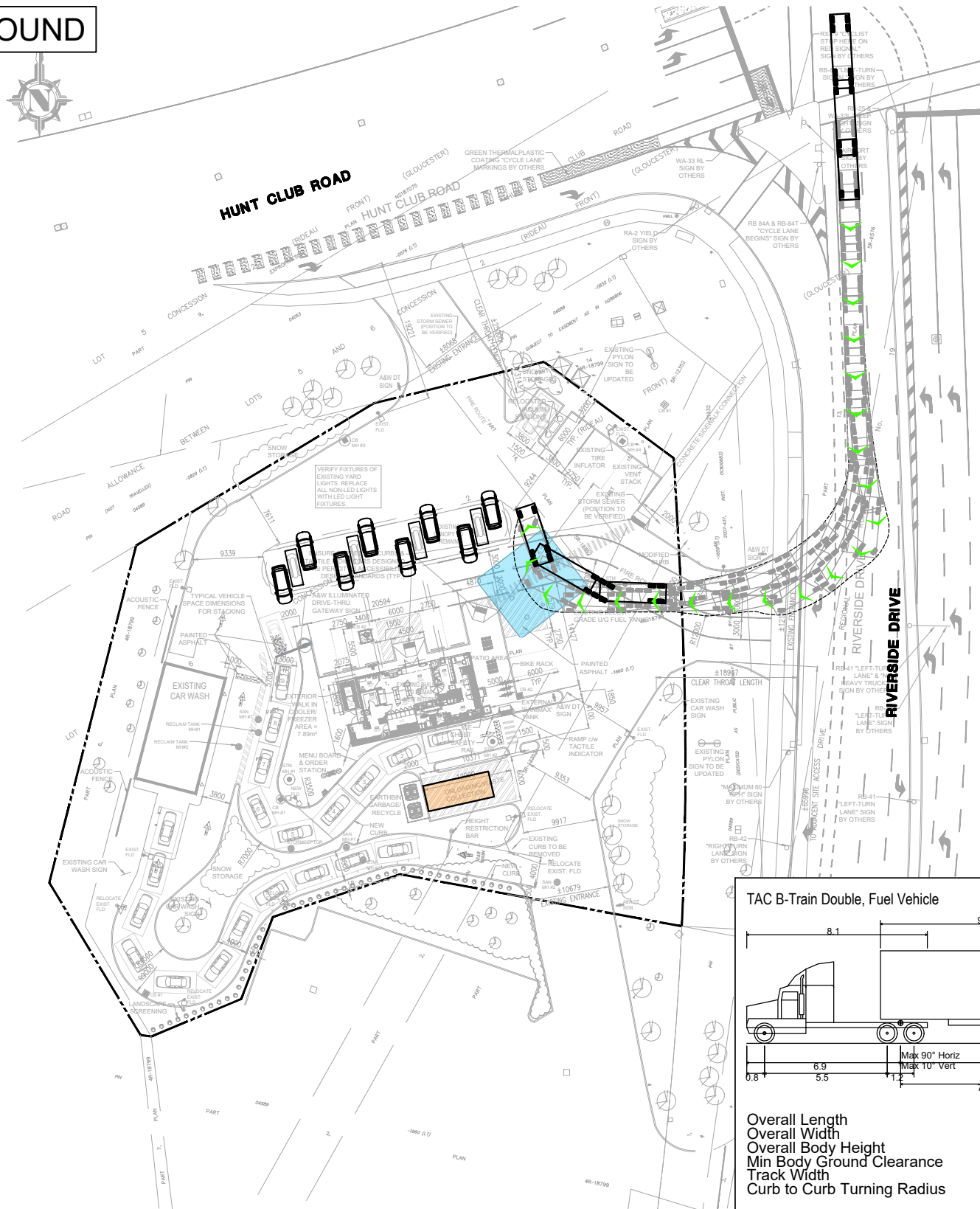
4000 RIVERSIDE DRIVE  
Vehicle Manoeuvring Diagram  
B-Train Fuel Truck  
Inbound / Outbound

Project: 4000 RIVERSIDE DR  
Project No. 8223-35  
Date: September 18, 2025  
Revised: December 1, 2025

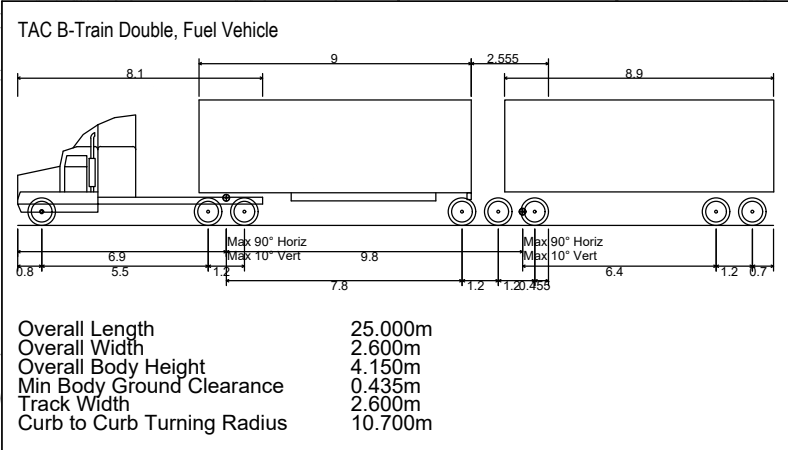
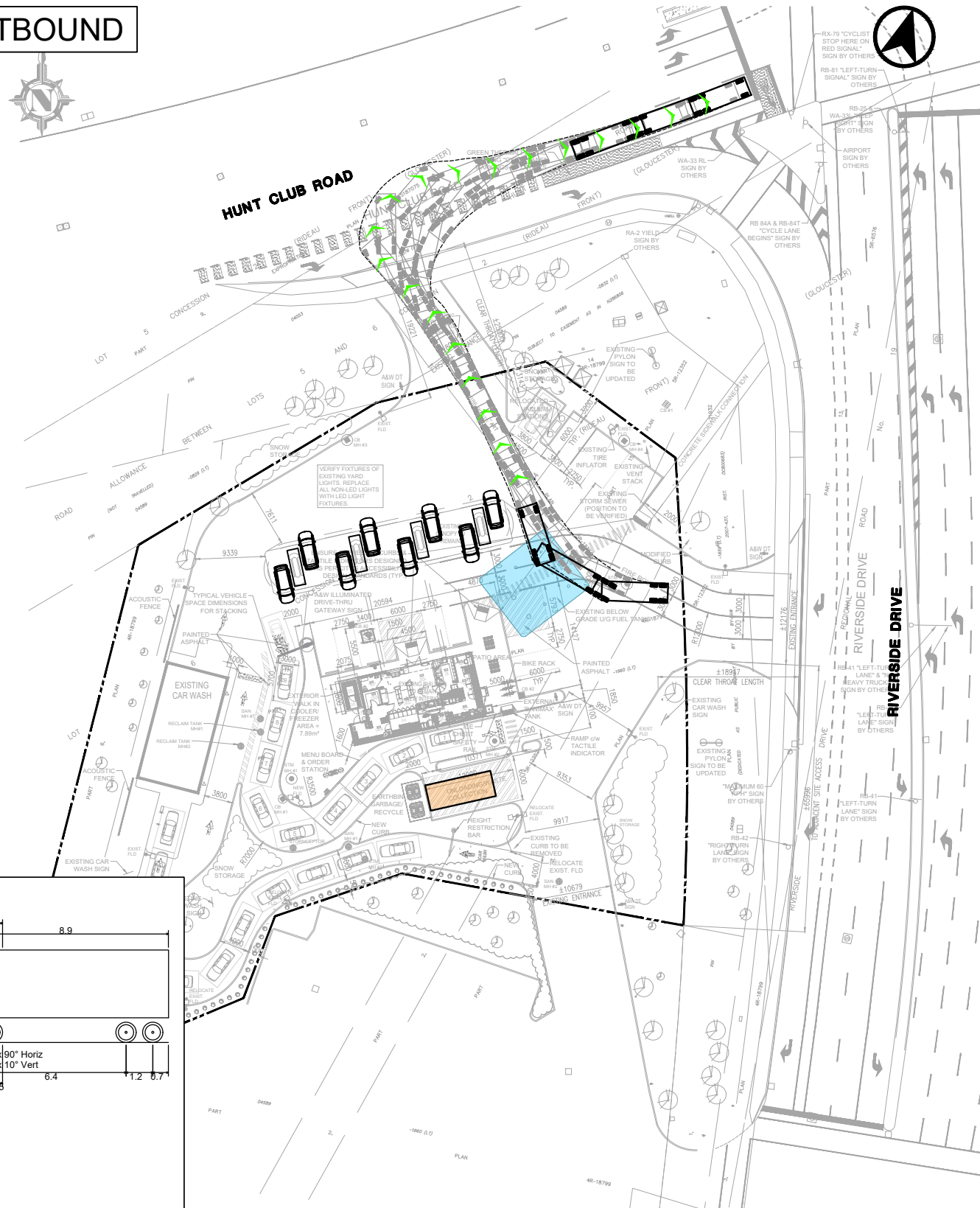
Scale 0 15 30m  
1:750

Drawing No. **VMD-01**

INBOUND



OUTBOUND



4000 RIVERSIDE DRIVE  
Vehicle Manoeuvring Diagram  
B-Train Fuel Truck  
Inbound / Outbound

Project: 4000 RIVERSIDE DR  
Project No. 8223-35  
Date: September 18, 2025  
Revised: December 1, 2025

Scale 0 15 30m  
1:750  
Drawing No. VMD-02



INBOUND

OUTBOUND

Date Plotted: December 1, 2025    Filename: J:\8223-35\BA\SPR\03\_December 01, 2025\BA-4000 Riverside-SPR-R03-822335-Dec01-25.dwg



Design Vehicle - Heavy Single Unit Truck

Overall Length	11.500m
Overall Width	2.600m
Overall Body Height	4.110m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Curb to Curb Turning Radius	14.100m



4000 RIVERSIDE DRIVE  
Vehicle Manoeuvring Diagram  
Heavy Single Unit Delivery Truck  
Inbound / Outbound

Project: 4000 RIVERSIDE DR  
Project No. 8223-35  
Date: September 18, 2025  
Revised: December 1, 2025

Scale 1:750

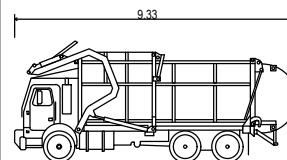
Drawing No. VMD-03



INBOUND



Design Vehicle -  
TURTLE ISLAND GARBAGE - FRONT LOADER



Overall Length	9.330m
Overall Width	2.440m
Overall Body Height	4.021m
Min Body Ground Clearance	0.250m
Track Width	2.440m
Wall to Wall Turning Radius	11.700m

OUTBOUND

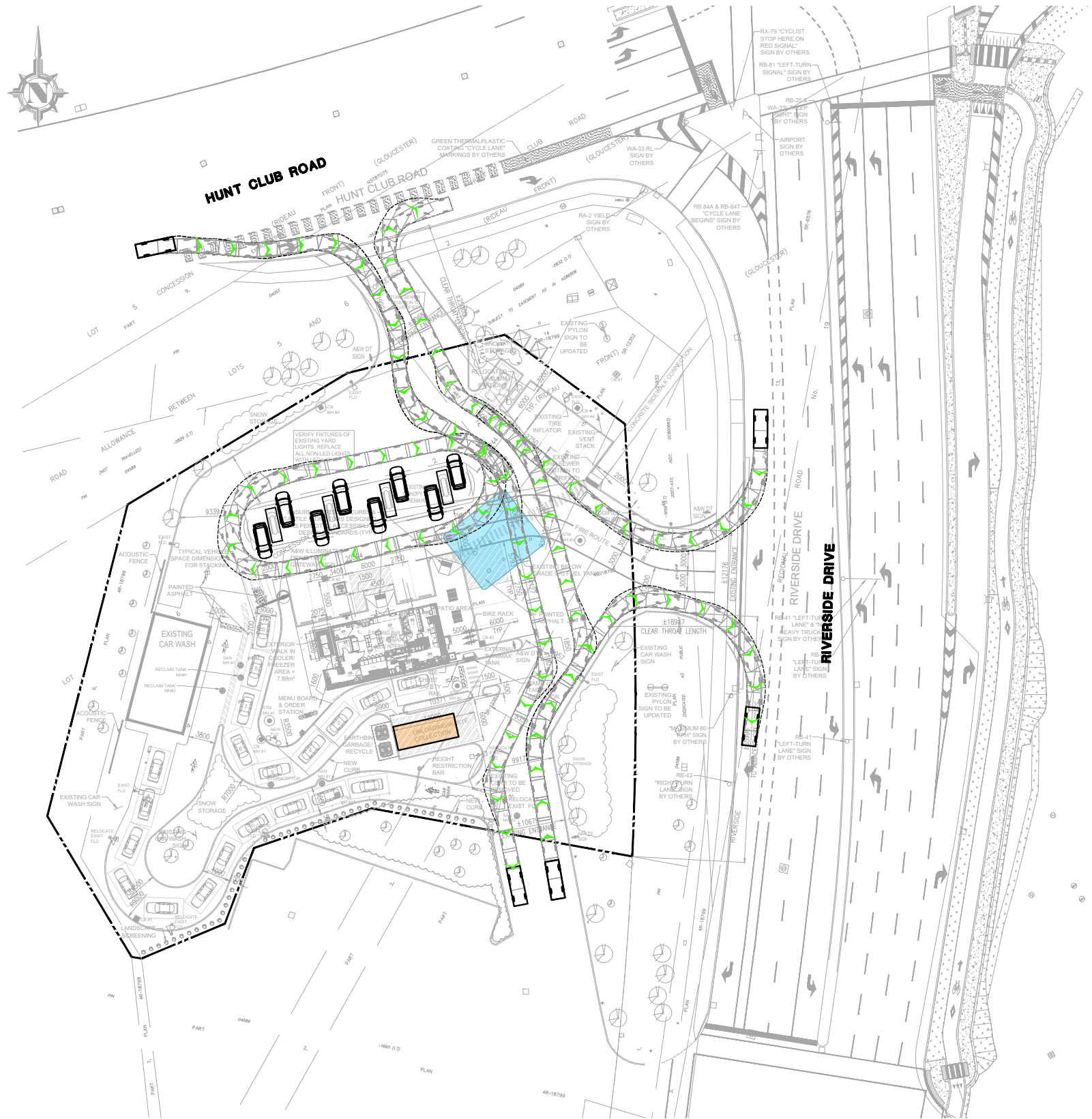


4000 RIVERSIDE DRIVE  
Vehicle Manoeuvring Diagram  
Refuse Collection Vehicle  
Inbound / Outbound

Project: 4000 RIVERSIDE DR  
Project No. 8223-35  
Date: September 18, 2025  
Revised: December 1, 2025

Scale	
Drawing No.	VMD-04

SITE CIRCULATION



Design Vehicle - TAC P CAR	
Overall Length	5.60m
Overall Width	2.00m
Overall Body Height	1.56m
Outside Turning Radius	6.90m
Inside Turning Radius	3.40m

Date Plotted: December 1, 2025    Filename: J:\8223-35\BA\SPR\03\_December 01, 2025\BA-4000 Riverside-SPR-R03-822335-Dec01-25.dwg



4000 RIVERSIDE DRIVE  
Vehicle Manoeuvring Diagram  
TAC P Car - Passenger Vehicle  
Circulation of the Site

Project: 4000 RIVERSIDE DR  
Project No. 8223-35  
Date: September 18, 2025  
Revised: December 1, 2025

Scale

01530m

1:750

Drawing No.

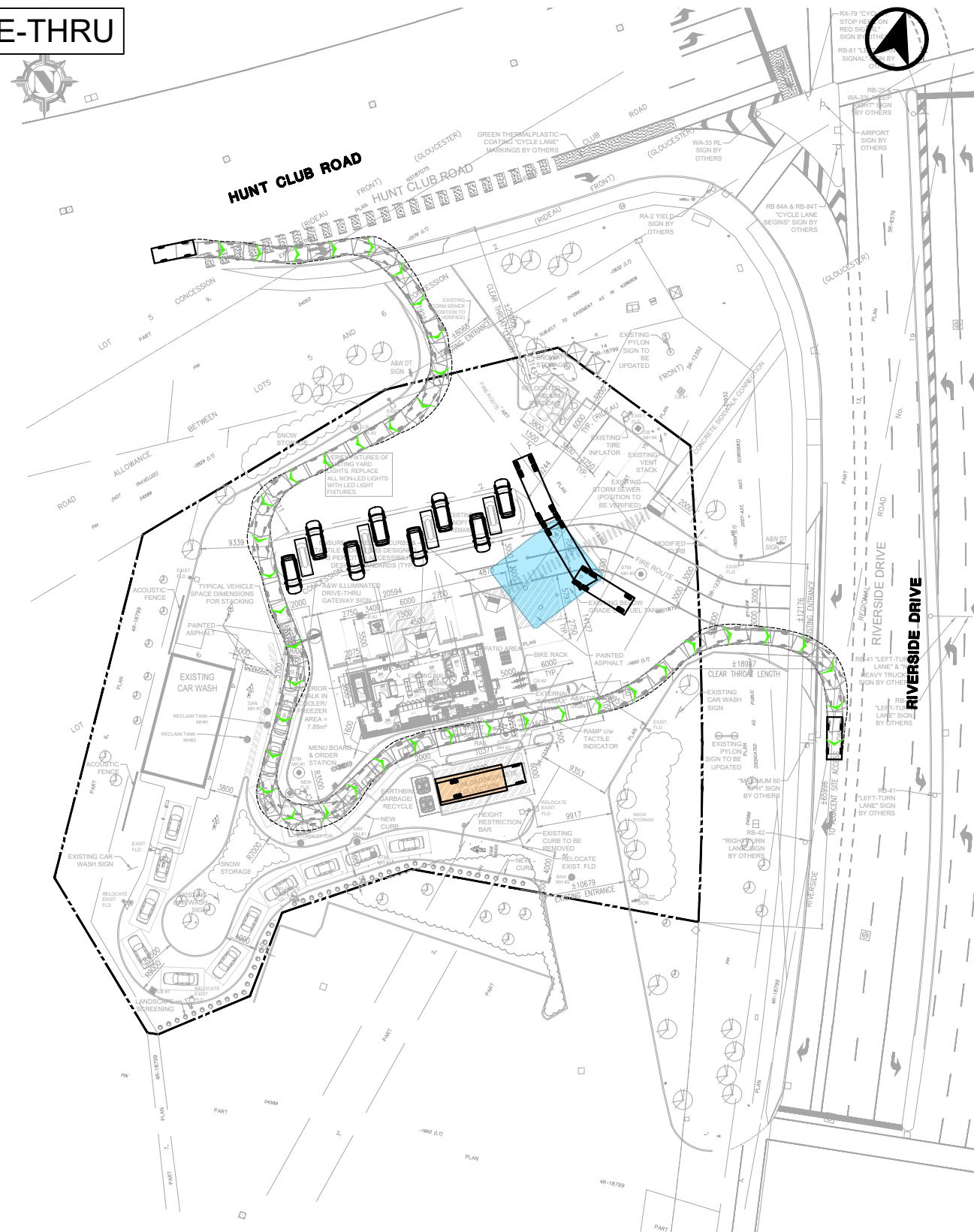
VMD-05



CAR WASH



DRIVE-THRU



Date Plotted: December 1, 2025    Filename: J:\8223-35\BA\SPR\03\_December 01, 2025\BA-4000 Riverside-SPR-R03-822335-Dec01-25.dwg



4000 RIVERSIDE DRIVE  
Vehicle Manoeuvring Diagram  
TAC P Car- Passenger Vehicle  
Car Wash and Drive-Thru

Project: 4000 RIVERSIDE DR  
Project No. 8223-35  
Date: September 18, 2025  
Revised: December 1, 2025

Scale 0 15 30m  
1:750

Drawing No. VMD-06



## **Appendix D: Turning Movement Counts**



## Turning Movement Count - Study Results

### HUNT CLUB RD @ RIVERSIDE DR

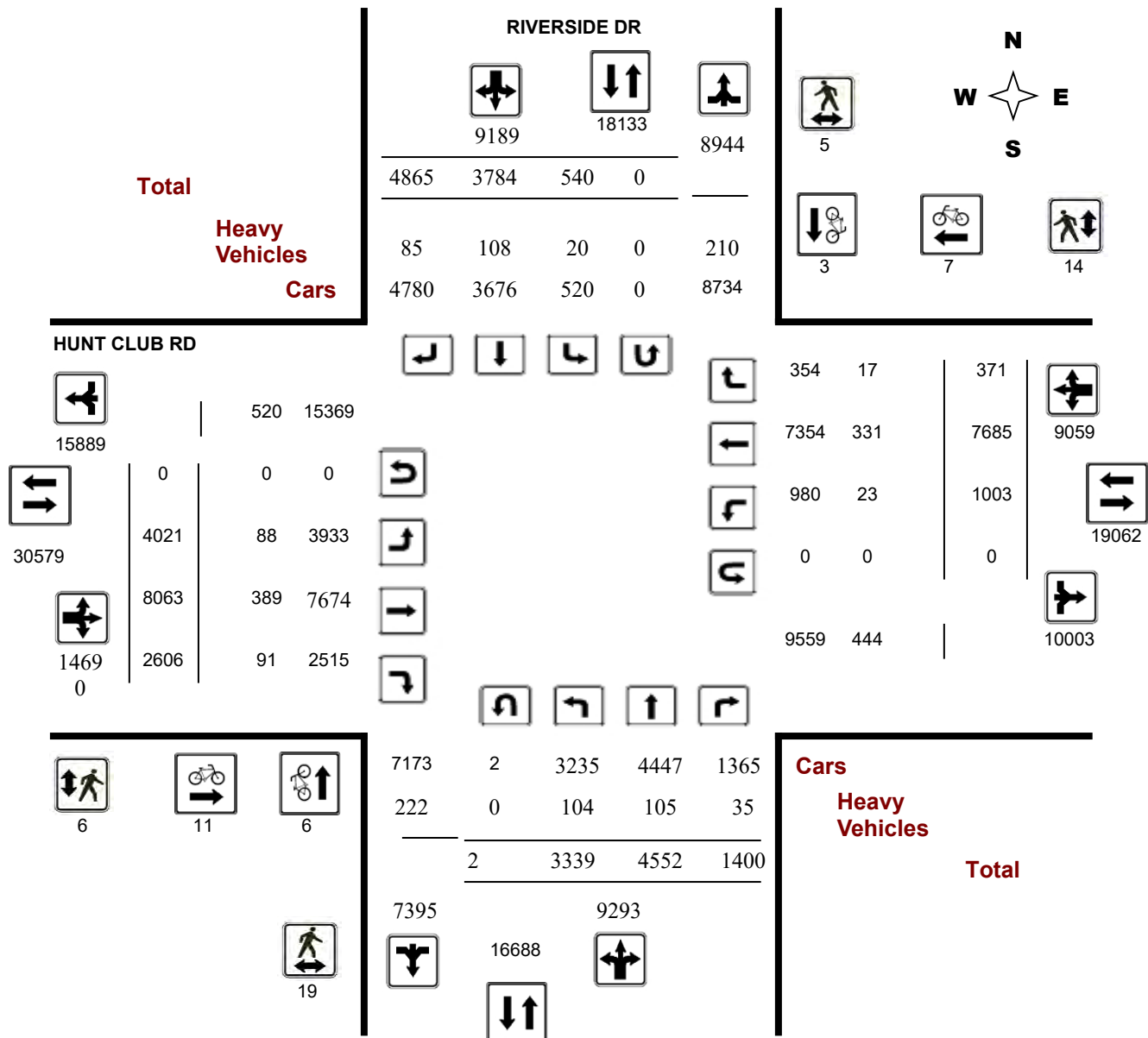
**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

### Full Study Diagram



## Turning Movement Count - Study Results

### HUNT CLUB RD @ RIVERSIDE DR

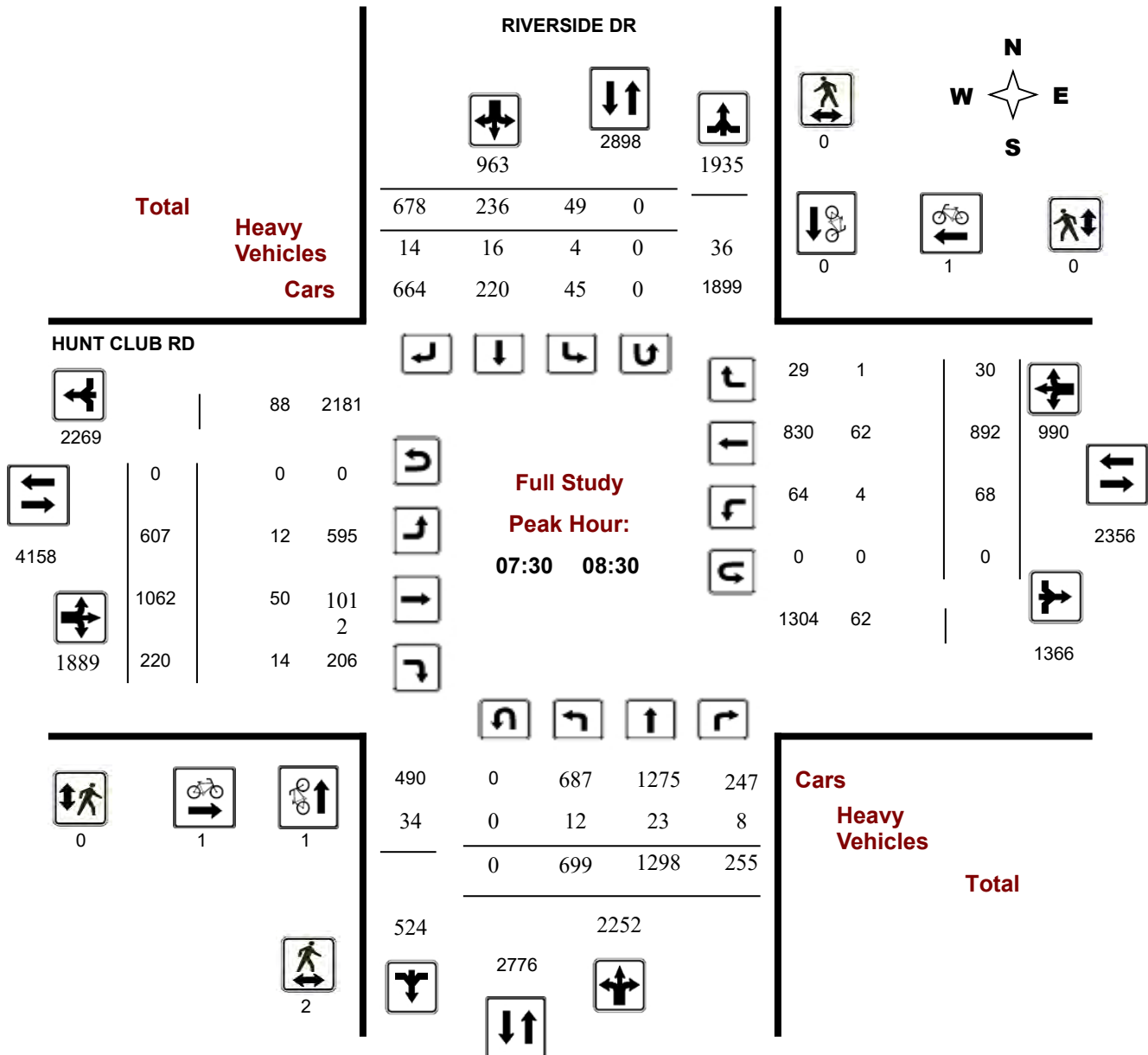
**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

### Full Study Peak Hour Diagram



## Turning Movement Count - Study Results

### HUNT CLUB RD @ RIVERSIDE DR

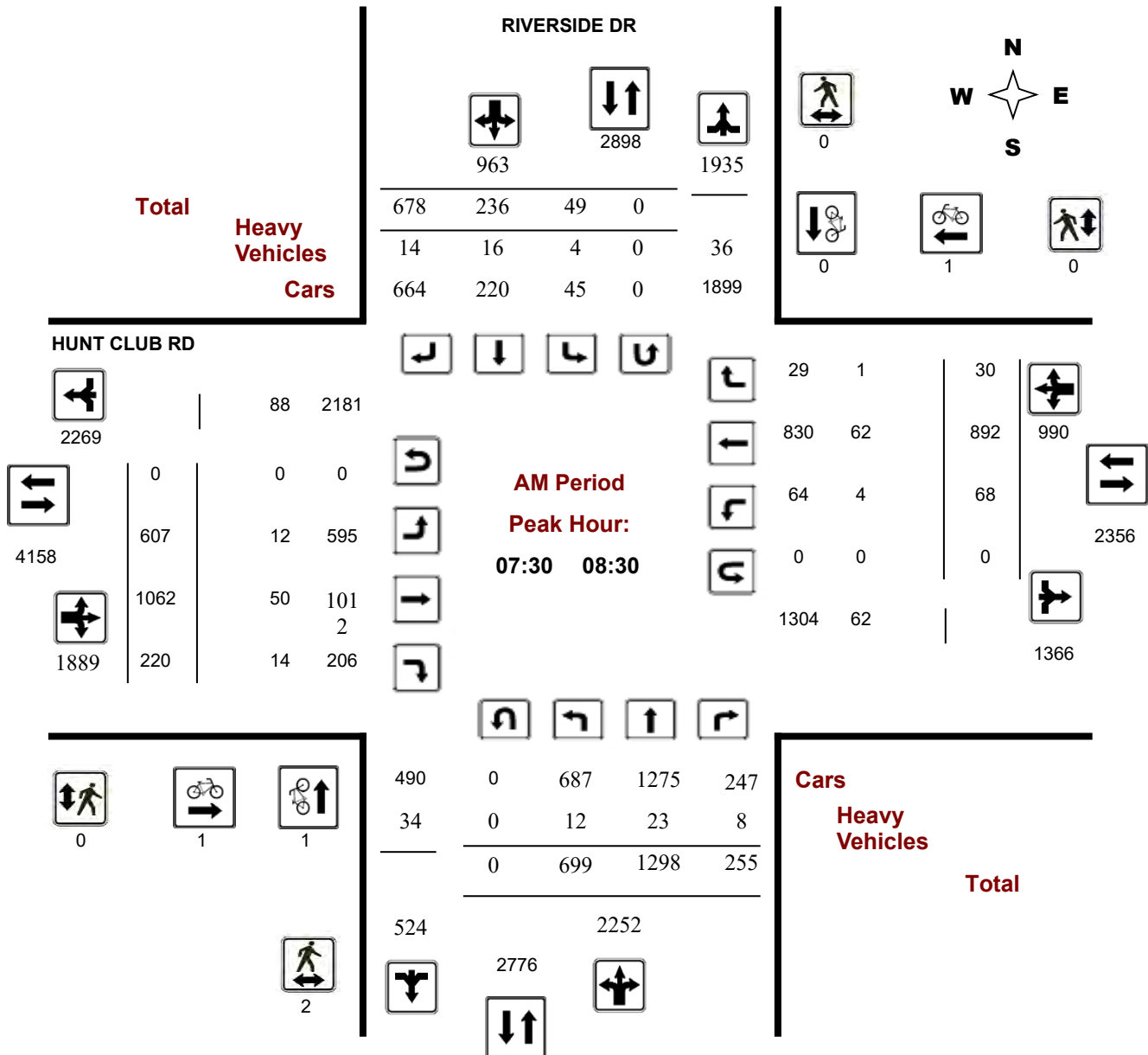
**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

### AM Period Peak Hour Diagram



## Turning Movement Count - Study Results

### HUNT CLUB RD @ RIVERSIDE DR

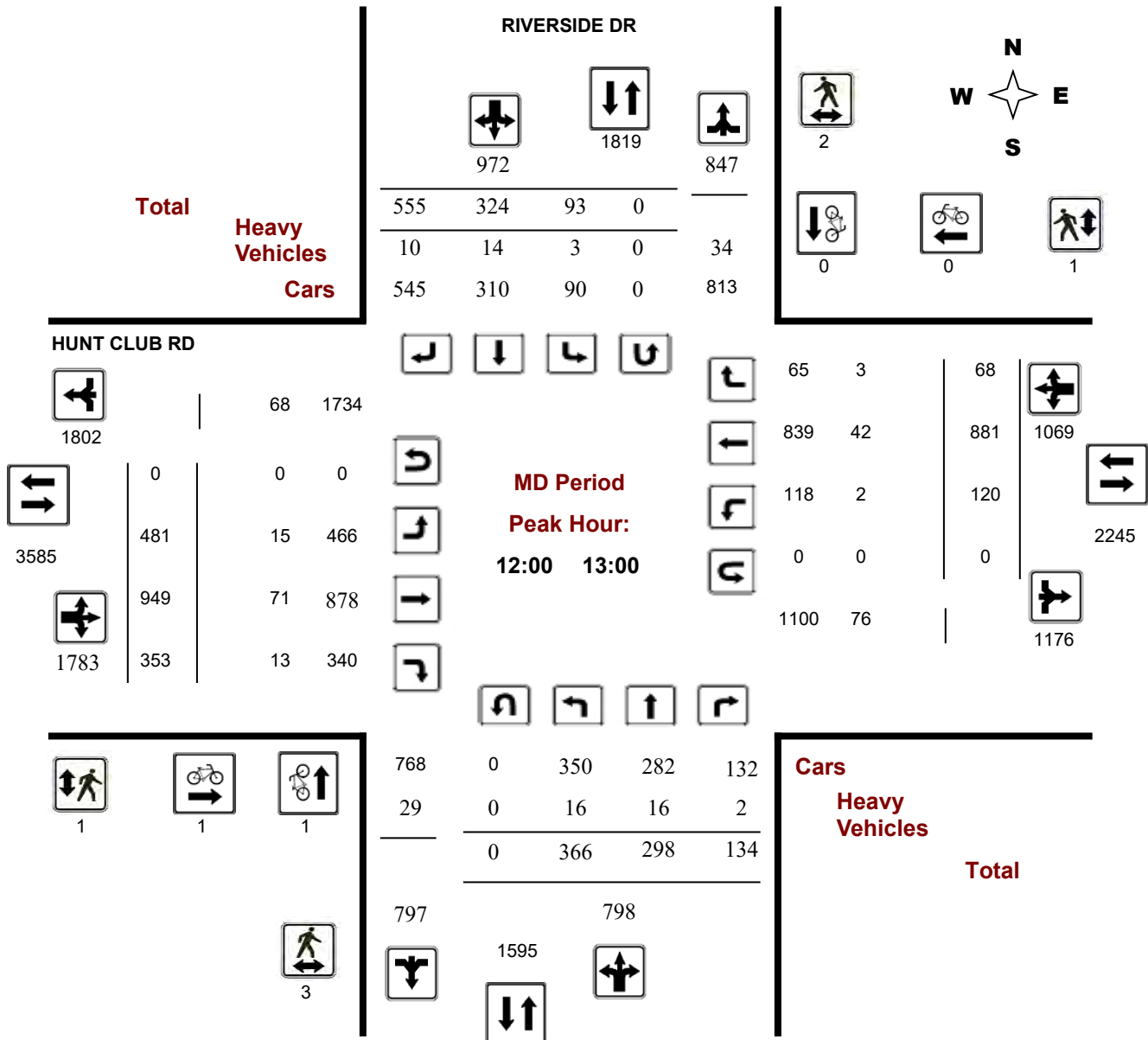
**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

### MD Period Peak Hour Diagram



## Turning Movement Count - Study Results

### HUNT CLUB RD @ RIVERSIDE DR

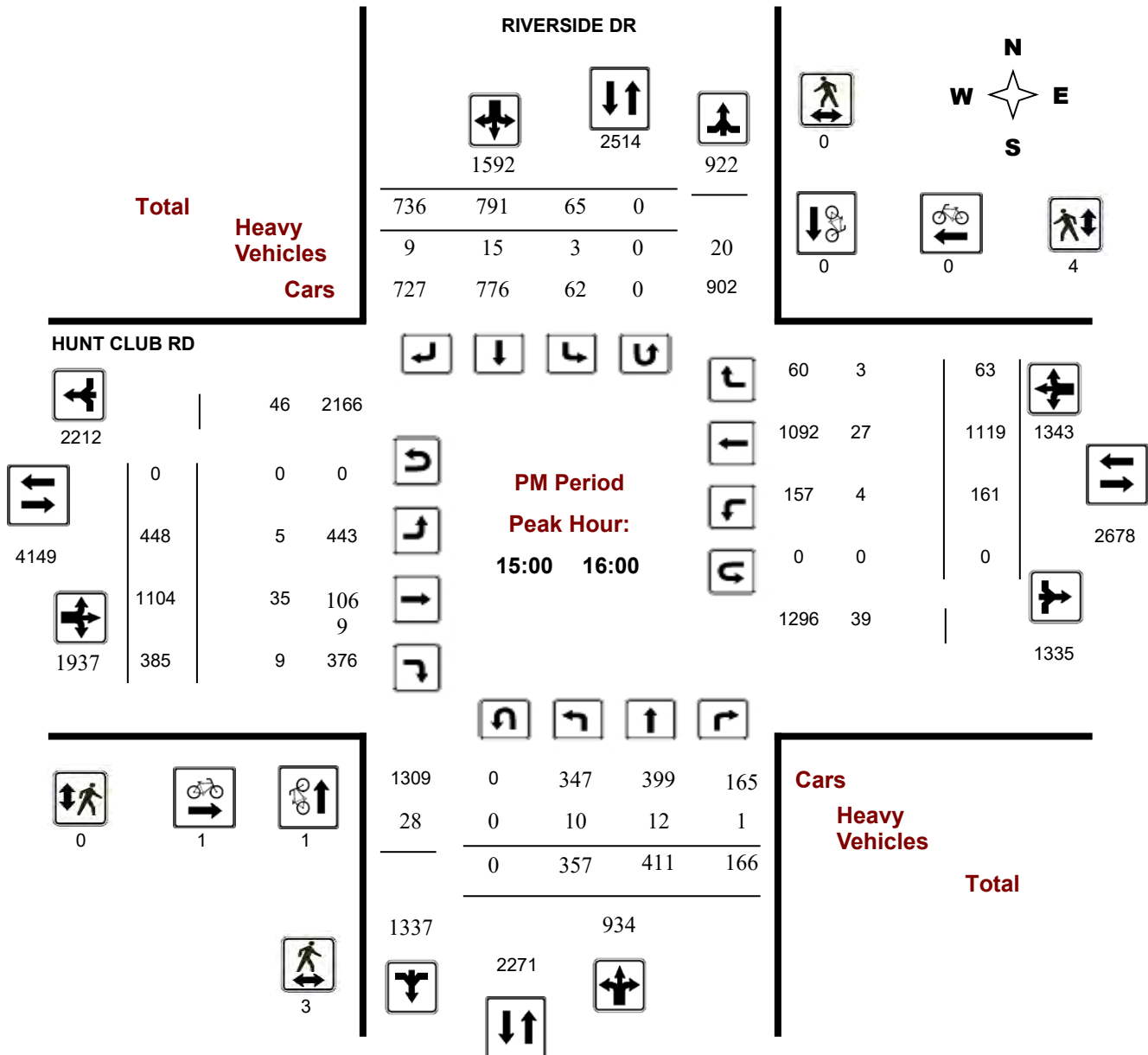
**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

### PM Period Peak Hour Diagram





# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HUNT CLUB RD @ RIVERSIDE DR

**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

### Full Study Summary (8 HR Standard)

**Survey Date:** Tuesday, March 25, 2025

#### Total Observed U-Turns

#### AADT Factor

Northbound: 2 Southbound: 0  
Eastbound: 0 Westbound: 0

1.00

#### RIVERSIDE DR

#### HUNT CLUB RD

		Northbound				Southbound				Eastbound				Westbound						Grand Total				
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					
07:00	08:00	576	1209	235	2020	38	227	577	842	2862	586	945	222	1753	70	879	33	982	2735	5597				
08:00	09:00	621	1112	261	1994	59	259	674	992	2986	594	1079	235	1908	78	918	32	1028	2936	5922				
09:00	10:00	405	500	156	1061	66	192	504	762	1823	552	948	238	1738	84	804	29	917	2655	4478				
11:30	12:30	332	270	118	720	85	279	564	928	1648	467	944	304	1715	104	890	59	1053	2768	4416				
12:30	13:30	347	297	111	755	92	305	506	903	1658	526	982	333	1841	128	851	76	1055	2896	4554				
15:00	16:00	357	411	166	934	65	791	736	1592	2526	448	1104	385	1937	161	1119	63	1343	3280	5806				
16:00	17:00	342	403	197	942	66	874	659	1599	2541	393	1035	415	1843	185	1146	37	1368	3211	5752				
17:00	18:00	359	350	156	865	69	857	645	1571	2436	455	1026	474	1955	193	1078	42	1313	3268	5704				
Sub Total		3339	4552	1400	9291	540	3784	4865	9189	18480	4021	8063	2606	14690	1003	7685	371	9059	23749	42229				
U Turns		2								0	2				0				0				0	2
Total		3339	4552	1400	9293	540	3784	4865	9189	18482	4021	8063	2606	14690	1003	7685	371	9059	23749	42231				
EQ 12Hr		4641	6327	1946	12917	751	5260	6762	12773	25690	5589	11208	3622	20419	1394	10682	516	12592	33011	58701				
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														1.39										
AVG 12Hr		4641	6327	1946	12917	751	6890	8859	12773	25690	5589	11208	3622	20419	1394	10682	516	12592	33011	58701				
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														1.00										
AVG 24Hr		6080	8288	2549	16921	984	9026	11605	16733	33654	7322	14682	4745	26749	1826	13993	676	16496	43244	76898				
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

### HUNT CLUB RD @ RIVERSIDE DR

**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

## Full Study 15 Minute Increments

### RIVERSIDE DR

### HUNT CLUB 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
09:15 09:30	95	139	41	275	7	45	138	190	465	149	205	64	418	24	189	10	223	641	1106
09:30 09:45	112	123	41	276	25	48	128	201	477	142	217	68	427	26	199	6	231	658	1135
09:45 10:00	85	99	31	216	21	37	98	156	372	127	263	55	445	17	211	8	236	681	1053
08:30 08:45	151	258	77	486	8	87	178	273	759	149	256	64	469	19	213	12	244	713	1472
12:00 12:15	97	56	35	188	30	60	164	254	442	124	235	99	458	24	210	17	251	709	1151
12:15 12:30	83	80	36	199	16	85	161	262	461	82	238	75	395	31	242	19	292	687	1148
12:30 12:45	93	83	29	205	24	80	108	212	417	142	250	95	487	33	206	16	255	742	1159
12:45 13:00	93	79	34	206	23	99	122	244	450	133	226	84	443	32	223	16	271	714	1164
13:00 13:15	88	73	26	187	17	49	133	199	386	147	264	74	485	27	192	22	241	726	1112
13:15 13:30	73	62	22	157	28	77	143	248	405	104	242	80	426	36	230	22	288	714	1119
15:00 15:15	90	100	39	229	11	176	190	377	606	120	305	89	514	36	251	24	311	825	1431
15:30 15:45	85	105	41	231	12	203	181	396	627	97	262	95	454	40	287	11	338	792	1419
15:45 16:00	89	92	45	226	19	215	181	415	641	115	280	102	497	35	286	14	335	832	1473
16:00 16:15	86	110	45	241	13	202	179	394	635	105	254	81	440	45	281	6	332	772	1407
16:30 16:45	83	103	50	236	13	227	148	388	624	96	248	123	467	52	282	5	339	806	1430
17:00 17:15	97	92	49	238	15	226	138	379	617	114	274	112	500	56	264	10	330	830	1447
17:15 17:30	88	103	36	227	14	228	192	434	661	105	241	143	489	51	280	8	339	828	1489
07:00 07:15	82	197	45	324	7	32	105	144	468	151	232	62	445	13	210	11	234	679	1147
07:30 07:45	167	343	55	565	5	63	147	215	780	152	252	52	456	19	232	10	261	717	1497
08:00 08:15	182	325	59	566	11	51	173	235	801	154	292	56	502	23	221	10	254	756	1557
08:15 08:30	175	322	64	561	19	62	184	265	826	149	254	52	455	15	214	4	233	688	1514
07:45 08:00	175	308	77	560	14	60	174	248	808	152	264	60	476	11	225	6	242	718	1526
11:30 11:45	83	70	22	175	18	62	134	214	389	117	217	61	395	20	226	13	259	654	1043
11:45 12:00	69	64	25	159	21	72	105	198	357	144	254	69	467	29	212	10	251	718	1075
15:15 15:30	93	114	41	248	23	197	184	404	652	116	257	99	472	50	295	14	359	831	1483
08:45 09:00	113	207	61	381	21	59	139	219	600	142	277	63	482	21	270	6	297	779	1379
16:15 16:30	89	100	53	242	18	229	170	417	659	95	266	107	468	50	285	14	349	817	1476
17:45 18:00	83	68	34	185	17	187	151	355	540	118	261	120	499	38	269	15	322	821	1361
16:45 17:00	84	90	49	223	22	216	162	400	623	97	267	104	468	38	298	12	348	816	1439
17:30 17:45	91	87	37	215	23	216	164	403	618	118	250	99	467	48	265	9	322	789	1407
09:00 09:15	113	139	43	295	13	62	140	215	510	134	263	51	448	17	205	5	227	675	1185
07:15 07:30	152	361	58	571	12	72	151	235	806	131	197	48	376	27	212	6	245	621	1427
Total:	3339	4552	1400	9293	540	3784	4865	9189	18482	4021	8063	2606	14690	1003	7685	371	9059	23749	42,231

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



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HUNT CLUB RD @ RIVERSIDE DR

**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

### Full Study Cyclist Volume

		RIVERSIDE DR			HUNT CLUB RD			Grand Total
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	
09:15	09:30	0	0	0	0	0	0	0
09:30	09:45	0	0	0	2	1	3	3
09:45	10:00	0	0	0	1	0	1	1
08:30	08:45	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	1	0	1	1
12:30	12:45	1	0	1	0	0	0	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	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	1	0	1	0	0	0	1
16:00	16:15	1	0	1	0	1	1	2
16:30	16:45	1	1	2	1	0	1	3
17:00	17:15	0	1	1	0	0	0	1
17:15	17:30	1	0	1	1	0	1	2
07:00	07:15	0	1	1	0	0	0	1
07:30	07:45	0	0	0	0	1	1	1
08:00	08:15	1	0	1	1	0	1	2
08:15	08:30	0	0	0	0	0	0	0
07:45	08:00	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	1	1	1
15:15	15:30	0	0	0	1	0	1	1
08:45	09:00	0	0	0	2	0	2	2
16:15	16:30	0	0	0	0	1	1	1
17:45	18:00	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	1	1	1
09:00	09:15	0	0	0	0	1	1	1
07:15	07:30	0	0	0	1	0	1	1
Total		6	3	9	11	7	18	27



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HUNT CLUB RD @ RIVERSIDE DR

**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

### Full Study Pedestrian Volume

#### RIVERSIDE DR

#### HUNT CLUB 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
09:15 09:30	0	0	0	0	0	0	0
09:30 09:45	1	0	1	0	0	0	1
09:45 10:00	1	0	1	0	0	0	1
08:30 08:45	0	0	0	1	1	2	2
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	2	2	1	1	2	4
12:45 13:00	2	0	2	0	0	0	2
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	2	0	2	0	1	1	3
15:30 15:45	1	0	1	0	3	3	4
15:45 16:00	0	0	0	0	0	0	0
16:00 16:15	0	0	0	0	1	1	1
16:30 16:45	1	0	1	0	0	0	1
17:00 17:15	0	0	0	1	0	1	1
17:15 17:30	1	0	1	1	0	1	2
07:00 07:15	0	0	0	0	0	0	0
07:30 07:45	1	0	1	0	0	0	1
08:00 08:15	1	0	1	0	0	0	1
08:15 08:30	0	0	0	0	0	0	0
07:45 08:00	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	3	3	3
11:45 12:00	2	1	3	0	1	1	4
15:15 15:30	0	0	0	0	0	0	0
08:45 09:00	0	1	1	1	0	1	2
16:15 16:30	1	1	2	0	0	0	2
17:45 18:00	1	0	1	0	0	0	1
16:45 17:00	2	0	2	1	0	1	3
17:30 17:45	0	0	0	0	1	1	1
09:00 09:15	1	0	1	0	0	0	1
07:15 07:30	0	0	0	0	2	2	2
<b>Total .....</b>	<b>19</b>	<b>5</b>	<b>24</b>	<b>6</b>	<b>14</b>	<b>20</b>	<b>44</b>



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HUNT CLUB RD @ RIVERSIDE DR

**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

## Full Study Heavy Vehicles

### RIVERSIDE DR

### HUNT CLUB RD

Northbound

Southbound

Eastbound

Westbound

Time Period		Northbound			N TOT	Southbound			S TOT	STR TOT	Eastbound			E TOT	Westbound			W TOT	STR TOT	Grand Total
		LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT			
09:15	09:30	8	5	0	13	1	4	5	10	23	5	21	5	31	0	13	1	14	45	68
09:30	09:45	6	3	2	11	0	5	4	9	20	3	15	3	21	1	18	1	20	41	61
09:45	10:00	2	4	2	8	1	5	2	8	16	4	8	5	17	2	19	0	21	38	54
08:30	08:45	4	4	1	9	0	5	3	8	17	2	28	5	35	0	22	4	26	61	78
12:00	12:15	6	4	0	10	1	2	1	4	14	5	15	4	24	1	10	1	12	36	50
12:15	12:30	2	3	0	5	1	4	3	8	13	6	16	1	23	0	13	1	14	37	50
12:30	12:45	3	7	2	12	1	4	4	9	21	2	24	2	28	1	11	1	13	41	62
12:45	13:00	5	2	0	7	0	4	2	6	13	2	16	6	24	0	8	0	8	32	45
13:00	13:15	7	3	1	11	2	4	2	8	19	3	13	1	17	1	7	0	8	25	44
13:15	13:30	3	6	1	10	1	8	8	17	27	5	12	3	20	2	11	1	14	34	61
15:00	15:15	5	6	0	11	0	3	3	6	17	0	8	3	11	1	11	2	14	25	42
15:30	15:45	1	1	0	2	0	3	2	5	7	2	10	1	13	1	7	1	9	22	29
15:45	16:00	2	3	1	6	3	4	1	8	14	1	8	3	12	1	4	0	5	17	31
16:00	16:15	2	1	2	5	0	4	2	6	11	3	8	1	12	1	4	0	5	17	28
16:30	16:45	3	3	4	10	1	3	2	6	16	3	13	2	18	0	3	0	3	21	37
17:00	17:15	2	0	0	2	0	0	0	0	2	3	7	1	11	0	4	0	4	15	17
17:15	17:30	3	1	0	4	1	0	0	1	5	0	7	0	7	1	5	0	6	13	18
07:00	07:15	2	1	1	4	0	0	2	2	6	4	12	8	24	1	9	1	11	35	41
07:30	07:45	2	9	3	14	1	3	7	11	25	4	15	2	21	1	19	1	21	42	67
08:00	08:15	4	3	1	8	0	2	2	4	12	4	11	5	20	1	14	0	15	35	47
08:15	08:30	1	5	0	6	1	6	3	10	16	2	14	4	20	1	10	0	11	31	47
07:45	08:00	5	6	4	15	2	5	2	9	24	2	10	3	15	1	19	0	20	35	59
11:30	11:45	3	3	1	7	0	5	3	8	15	3	8	2	13	0	8	0	8	21	36
11:45	12:00	3	3	0	6	0	4	0	4	10	6	9	2	17	0	10	0	10	27	37
15:15	15:30	2	2	0	4	0	5	3	8	12	2	9	2	13	1	5	0	6	19	31
08:45	09:00	3	2	1	6	1	1	4	6	12	4	19	4	27	1	14	2	17	44	56
16:15	16:30	4	3	1	8	0	2	2	4	12	2	7	1	10	0	8	0	8	18	30
17:45	18:00	2	0	1	3	0	1	3	4	7	0	4	1	5	1	2	0	3	8	15
16:45	17:00	2	0	2	4	0	1	0	1	5	1	8	2	11	1	5	0	6	17	22
17:30	17:45	3	0	1	4	0	2	0	2	6	1	5	0	6	0	7	0	7	13	19
09:00	09:15	3	4	3	10	1	3	6	10	20	2	17	1	20	1	19	0	20	40	60
07:15	07:30	1	8	0	9	1	6	4	11	20	2	12	8	22	0	12	0	12	34	54
Total:	None	104	105	35	244	20	108	85	213	457	88	389	91	568	23	331	17	371	939	1,396



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HUNT CLUB RD @ RIVERSIDE DR

**Survey Date:** Tuesday, March 25, 2025

**WO No:** 42628

**Start Time:** 07:00

**Device:** Miovision

#### Full Study 15 Minute U-Turn Total

##### RIVERSIDE DR

##### HUNT CLUB RD

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



Turning Movement Count (4 . RIVERSIDE DR & 4100 RIVERSIDE DR)

Start Time	N Approach RIVERSIDE DR						E Approach EAST PLAZA						S Approach RIVERSIDE DR						W Approach 4100 RIVERSIDE DR						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-10-03 07:00:00	0	131	3	0	0	134	1	0	1	0	1	2	0	321	0	0	1	321	2	1	3	0	0	6	463	
2025-10-03 07:15:00	0	146	0	1	0	147	3	0	2	0	1	5	10	389	0	0	0	399	1	0	0	0	4	1	552	
2025-10-03 07:30:00	0	167	4	1	0	172	3	0	7	0	0	10	6	463	2	0	0	471	1	1	4	0	1	6	659	
2025-10-03 07:45:00	0	146	2	2	0	150	6	0	8	0	0	14	11	456	2	0	0	469	1	0	4	0	1	5	638	2312
2025-10-03 08:00:00	0	159	6	2	0	167	7	0	8	0	0	15	9	427	2	0	0	438	0	0	2	0	1	2	622	2471
2025-10-03 08:15:00	3	158	3	0	0	164	3	0	5	0	0	8	15	387	3	0	0	405	5	0	6	0	0	11	588	2507
2025-10-03 08:30:00	0	161	4	1	0	166	8	0	3	0	0	11	16	437	2	0	0	455	0	0	5	0	2	5	637	2485
2025-10-03 08:45:00	0	151	12	2	1	165	3	0	5	0	0	8	12	376	2	0	0	390	4	0	1	0	1	5	568	2415
***BREAK***																										
2025-10-03 16:00:00	8	313	20	1	0	342	26	1	32	0	0	59	28	243	3	0	0	274	7	1	7	0	2	15	690	
2025-10-03 16:15:00	6	301	19	2	0	328	22	2	27	0	0	51	31	258	4	0	0	293	10	0	13	0	1	23	695	
2025-10-03 16:30:00	1	307	16	2	0	326	16	2	31	0	0	49	24	300	5	0	0	329	10	0	8	0	2	18	722	
2025-10-03 16:45:00	9	279	14	1	0	303	19	1	27	0	0	47	28	295	4	0	0	327	10	1	7	0	2	18	695	2802
2025-10-03 17:00:00	6	310	17	1	5	334	30	3	36	0	0	69	33	242	6	0	0	281	8	1	6	0	4	15	699	2811
2025-10-03 17:15:00	8	290	21	0	0	319	26	2	27	0	0	55	28	246	7	0	0	281	7	2	9	0	0	18	673	2789
2025-10-03 17:30:00	9	231	29	2	1	271	24	1	36	0	0	61	41	255	4	0	0	300	17	2	8	0	0	27	659	2726
2025-10-03 17:45:00	5	242	14	0	0	261	18	0	28	0	0	46	35	254	3	0	0	292	10	0	8	0	0	18	617	2648
Grand Total	55	3492	184	18	7	3749	215	12	283	0	2	510	327	5349	49	0	1	5725	93	9	91	0	21	193	10177	-
Approach%	1.5%	93.1%	4.9%	0.5%		-	42.2%	2.4%	55.5%	0%		-	5.7%	93.4%	0.9%	0%		-	48.2%	4.7%	47.2%	0%		-	-	-
Totals %	0.5%	34.3%	1.8%	0.2%		36.8%	2.1%	0.1%	2.8%	0%		5%	3.2%	52.6%	0.5%	0%		56.3%	0.9%	0.1%	0.9%	0%		1.9%	-	-
Heavy	0	130	1	0		-	4	0	1	0		-	1	148	2	0		-	0	0	2	0		-	-	-
Heavy %	0%	3.7%	0.5%	0%		-	1.9%	0%	0.4%	0%		-	0.3%	2.8%	4.1%	0%		-	0%	0%	2.2%	0%		-	-	-
Bicycles	0	7	0	0		-	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	-	-
Bicycle %	0%	0.2%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	-	-



Peak Hour: 07:30 AM - 08:30 AM Weather: Broken Clouds (6 °C)

Start Time	N Approach RIVERSIDE DR						E Approach EAST PLAZA						S Approach RIVERSIDE DR						W Approach 4100 RIVERSIDE DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-10-03 07:30:00	0	167	4	1	0	172	3	0	7	0	0	10	6	463	2	0	0	471	1	1	4	0	1	6	659
2025-10-03 07:45:00	0	146	2	2	0	150	6	0	8	0	0	14	11	456	2	0	0	469	1	0	4	0	1	5	638
2025-10-03 08:00:00	0	159	6	2	0	167	7	0	8	0	0	15	9	427	2	0	0	438	0	0	2	0	1	2	622
2025-10-03 08:15:00	3	158	3	0	0	164	3	0	5	0	0	8	15	387	3	0	0	405	5	0	6	0	0	11	588
Grand Total	3	630	15	5	0	653	19	0	28	0	0	47	41	1733	9	0	0	1783	7	1	16	0	3	24	2507
Approach%	0.5%	96.5%	2.3%	0.8%		-	40.4%	0%	59.6%	0%		-	2.3%	97.2%	0.5%	0%		-	29.2%	4.2%	66.7%	0%		-	-
Totals %	0.1%	25.1%	0.6%	0.2%		26%	0.8%	0%	1.1%	0%		1.9%	1.6%	69.1%	0.4%	0%		71.1%	0.3%	0%	0.6%	0%		1%	-
PHF	0.25	0.94	0.63	0.63		0.95	0.68	0	0.88	0		0.78	0.68	0.94	0.75	0		0.95	0.35	0.25	0.67	0		0.55	0.95
Heavy	0	48	1	0		49	0	0	0	0		0	1	64	0	0		65	0	0	0	0		0	114
Heavy %	0%	7.6%	6.7%	0%		7.5%	0%	0%	0%	0%		0%	2.4%	3.7%	0%	0%		3.6%	0%	0%	0%	0%		0%	4.5%
Lights	3	582	14	5		604	19	0	28	0		47	40	1669	9	0		1718	7	1	16	0		24	2393
Lights %	100%	92.4%	93.3%	100%		92.5%	100%	0%	100%	0%		100%	97.6%	96.3%	100%	0%		96.4%	100%	100%	100%	0%		100%	95.5%
Single-Unit Trucks	0	40	0	0		40	0	0	0	0		0	1	40	0	0		41	0	0	0	0		0	81
Single-Unit Trucks %	0%	6.3%	0%	0%		6.1%	0%	0%	0%	0%		0%	2.4%	2.3%	0%	0%		2.3%	0%	0%	0%	0%		0%	3.2%
Buses	0	7	0	0		7	0	0	0	0		0	0	20	0	0		20	0	0	0	0		0	27
Buses %	0%	1.1%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.1%	0%	0%	0%	0%		0%	1.1%
Articulated Trucks	0	1	1	0		2	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	6
Articulated Trucks %	0%	0.2%	6.7%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0.2%
Pedestrians	-	-	-	-	0	-	-	-	-	0		-	-	-	-	0		-	-	-	-	1		-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	33.3%		-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0		-	-	-	-	0		-	-	-	-	2		-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	66.7%		-	-
Bicycles on Road	0	1	0	0		-	0	0	0	0		-	0	0	0	0		-	0	0	0	0		-	-
Bicycles on Road%	0%	100%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	-

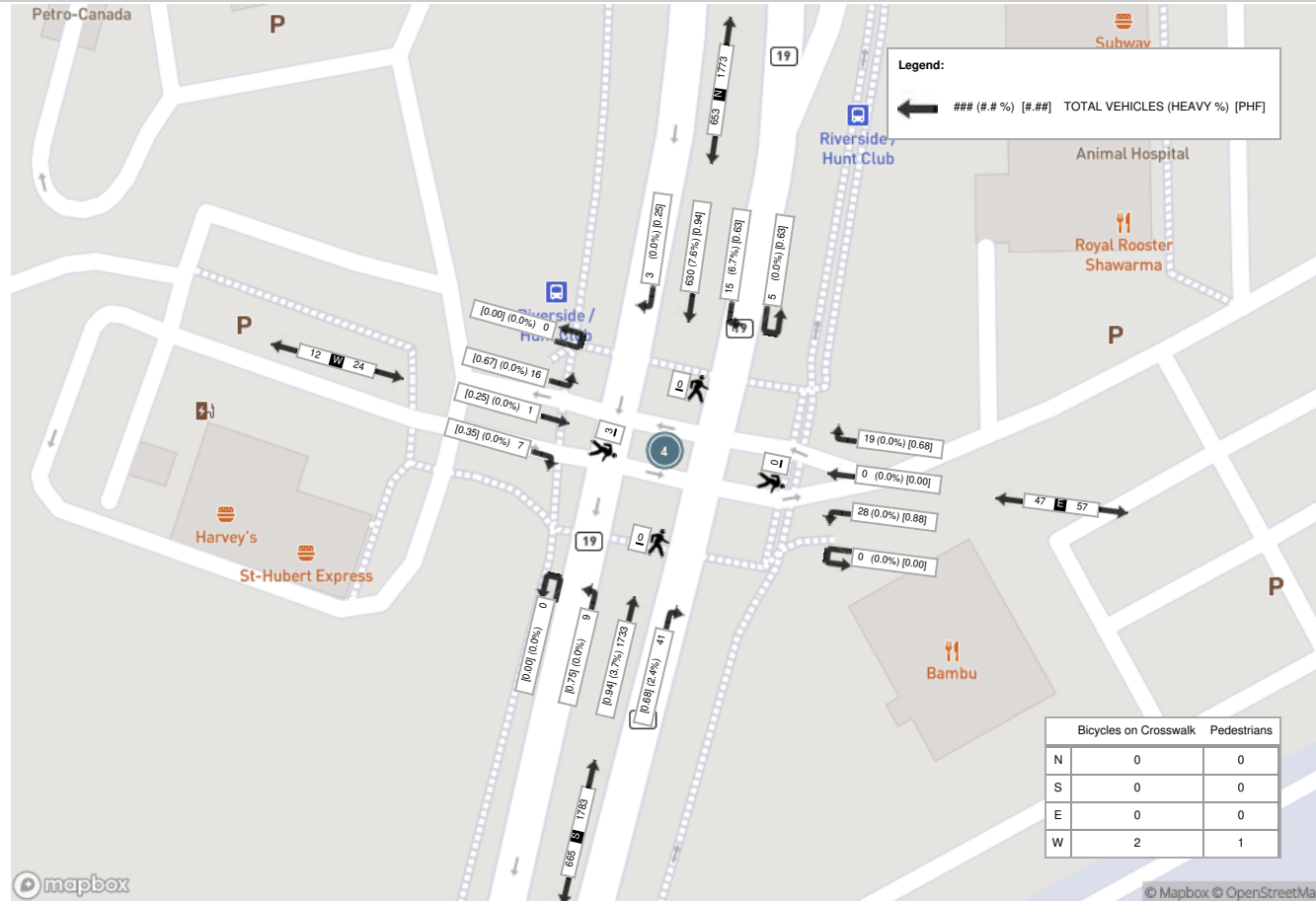




Peak Hour: 04:15 PM - 05:15 PM Weather: Broken Clouds (26 °C)

Start Time	N Approach RIVERSIDE DR						E Approach EAST PLAZA						S Approach RIVERSIDE DR						W Approach 4100 RIVERSIDE DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-10-03 16:15:00	6	301	19	2	0	328	22	2	27	0	0	51	31	258	4	0	0	293	10	0	13	0	1	23	695
2025-10-03 16:30:00	1	307	16	2	0	326	16	2	31	0	0	49	24	300	5	0	0	329	10	0	8	0	2	18	722
2025-10-03 16:45:00	9	279	14	1	0	303	19	1	27	0	0	47	28	295	4	0	0	327	10	1	7	0	2	18	695
2025-10-03 17:00:00	6	310	17	1	5	334	30	3	36	0	0	69	33	242	6	0	0	281	8	1	6	0	4	15	699
Grand Total	22	1197	66	6	5	1291	87	8	121	0	0	216	116	1095	19	0	0	1230	38	2	34	0	9	74	2811
Approach%	1.7%	92.7%	5.1%	0.5%		-	40.3%	3.7%	56%	0%		-	9.4%	89%	1.5%	0%		-	51.4%	2.7%	45.9%	0%		-	-
Totals %	0.8%	42.6%	2.3%	0.2%		45.9%	3.1%	0.3%	4.3%	0%		7.7%	4.1%	39%	0.7%	0%		43.8%	1.4%	0.1%	1.2%	0%		2.6%	-
PHF	0.61	0.97	0.87	0.75		0.97	0.73	0.67	0.84	0		0.78	0.88	0.91	0.79	0		0.93	0.95	0.5	0.65	0		0.8	0.97
Heavy	0	18	0	0		18	1	0	0	0		1	0	24	0	0		24	0	0	0	0		0	43
Heavy %	0%	1.5%	0%	0%		1.4%	1.1%	0%	0%	0%		0.5%	0%	2.2%	0%	0%		2%	0%	0%	0%	0%		0%	1.5%
Lights	22	1179	66	6		1273	86	8	121	0		215	116	1071	19	0		1206	38	2	34	0		74	2768
Lights %	100%	98.5%	100%	100%		98.6%	98.9%	100%	100%	0%		99.5%	100%	97.8%	100%	0%		98%	100%	100%	100%	0%		100%	98.5%
Single-Unit Trucks	0	12	0	0		12	1	0	0	0		1	0	12	0	0		12	0	0	0	0		0	25
Single-Unit Trucks %	0%	1%	0%	0%		0.9%	1.1%	0%	0%	0%		0.5%	0%	1.1%	0%	0%		1%	0%	0%	0%	0%		0%	0.9%
Buses	0	4	0	0		4	0	0	0	0		0	0	9	0	0		9	0	0	0	0		0	13
Buses %	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.7%	0%	0%	0%	0%		0%	0.5%
Articulated Trucks	0	2	0	0		2	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	5
Articulated Trucks %	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.2%	0%	0%	0%	0%		0%	0.2%
Pedestrians	-	-	-	-	2	-	-	-	-	0		-	-	-	-	0		-	-	-	-	1		-	-
Pedestrians%	-	-	-	-	14.3%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	7.1%		-	-
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	0		-	-	-	-	0		-	-	-	-	8		-	-
Bicycles on Crosswalk%	-	-	-	-	21.4%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	57.1%		-	-
Bicycles on Road	0	1	0	0		-	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	-
Bicycles on Road%	0%	100%	0%	0%			0%	0%	0%	0%			0%	100%	0%	0%			0%	0%	0%	0%			-

Peak Hour: 07:30 AM - 08:30 AM Weather: Broken Clouds (6 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Broken Clouds (26 °C)





### Turning Movement Count (1 . HWY 32 & 4000 RIVERSIDE DR ACCESS)

Start Time	E Approach HWY 32			S Approach 4000 RIVERSIDE DR ACCESS				W Approach HWY 32				Int. Total (15 min)	Int. Total (1 hr)
	UTurn E:E	Peds E:	Approach Total	Right S:E	UTurn S:S	Peds S:	Approach Total	Right W:S	UTurn W:W	Peds W:	Approach Total		
2025-10-03 07:00:00	0	0	0	0	0	1	0	2	0	0	2	2	
2025-10-03 07:15:00	0	0	0	0	0	2	0	2	0	0	2	2	
2025-10-03 07:30:00	0	0	0	1	0	0	1	3	0	0	3	4	
2025-10-03 07:45:00	0	0	0	2	0	0	2	4	0	0	4	6	14
2025-10-03 08:00:00	0	0	0	1	0	0	1	3	0	0	3	4	16
2025-10-03 08:15:00	0	0	0	1	0	3	1	7	0	0	7	8	22
2025-10-03 08:30:00	0	0	0	2	0	2	2	2	0	0	2	4	22
2025-10-03 08:45:00	0	0	0	1	0	0	1	6	0	0	6	7	23
2025-10-03 09:00:00	0	0	0	0	0	0	0	5	0	0	5	5	24
2025-10-03 09:15:00	0	0	0	2	0	0	2	6	0	0	6	8	24
2025-10-03 09:30:00	0	0	0	3	0	0	3	7	0	0	7	10	30
2025-10-03 09:45:00	0	0	0	4	0	0	4	9	0	0	9	13	36
2025-10-03 10:00:00	0	0	0	1	0	0	1	3	0	0	3	4	35
2025-10-03 10:15:00	0	0	0	3	0	0	3	9	0	0	9	12	39
2025-10-03 10:30:00	0	0	0	1	0	0	1	5	0	0	5	6	35
2025-10-03 10:45:00	0	0	0	1	0	0	1	13	0	0	13	14	36
2025-10-03 11:00:00	0	0	0	3	0	2	3	5	0	0	5	8	40
2025-10-03 11:15:00	0	0	0	2	0	1	2	11	0	0	11	13	41
2025-10-03 11:30:00	0	0	0	1	0	0	1	7	0	0	7	8	43
2025-10-03 11:45:00	0	0	0	0	0	1	0	9	0	0	9	9	38
2025-10-03 12:00:00	0	0	0	3	0	0	3	9	0	0	9	12	42
2025-10-03 12:15:00	0	0	0	1	0	1	1	13	0	0	13	14	43
2025-10-03 12:30:00	0	0	0	4	0	0	4	9	0	0	9	13	48
2025-10-03 12:45:00	0	0	0	3	0	0	3	3	0	0	3	6	45
2025-10-03 13:00:00	0	0	0	4	0	3	4	9	0	0	9	13	46
2025-10-03 13:15:00	0	0	0	1	0	0	1	6	0	0	6	7	39
2025-10-03 13:30:00	0	0	0	2	0	0	2	6	0	0	6	8	34
2025-10-03 13:45:00	0	0	0	2	0	0	2	6	0	0	6	8	36
2025-10-03 14:00:00	0	0	0	3	0	0	3	7	0	0	7	10	33
2025-10-03 14:15:00	0	0	0	1	0	2	1	4	0	0	4	5	31
2025-10-03 14:30:00	0	0	0	3	0	2	3	10	0	0	10	13	36
2025-10-03 14:45:00	0	0	0	2	0	1	2	12	0	0	12	14	42
2025-10-03 15:00:00	0	0	0	4	0	0	4	5	0	0	5	9	41



2025-10-03 15:15:00	0	0	0	2	0	2	2	6	0	0	6	8	44
2025-10-03 15:30:00	0	0	0	1	0	2	1	3	0	0	3	4	35
2025-10-03 15:45:00	0	0	0	2	0	3	2	8	0	0	8	10	31
2025-10-03 16:00:00	0	0	0	1	0	0	1	5	0	0	5	6	28
2025-10-03 16:15:00	0	0	0	2	0	0	2	11	0	0	11	13	33
2025-10-03 16:30:00	0	0	0	4	0	0	4	8	0	0	8	12	41
2025-10-03 16:45:00	0	0	0	7	0	4	7	5	0	0	5	12	43
2025-10-03 17:00:00	0	0	0	5	0	1	5	7	0	0	7	12	49
2025-10-03 17:15:00	0	0	0	2	0	2	2	8	0	0	8	10	46
2025-10-03 17:30:00	0	0	0	1	0	3	1	12	0	0	12	13	47
2025-10-03 17:45:00	0	0	0	5	0	1	5	11	0	0	11	16	51
2025-10-03 18:00:00	0	0	0	2	0	0	2	10	0	0	10	12	51
2025-10-03 18:15:00	0	0	0	3	0	0	3	9	0	0	9	12	53
2025-10-03 18:30:00	0	0	0	2	0	0	2	6	0	0	6	8	48
2025-10-03 18:45:00	0	0	0	3	0	0	3	10	0	0	10	13	45
Grand Total	0	0	0	104	0	39	104	336	0	0	336	440	-
Approach%	0%	-	100%	0%	-	100%	0%	-	-	-	-	-	
Totals %	0%	0%	23.6%	0%	23.6%	76.4%	0%	76.4%	-	-	-	-	
Heavy	0	-	2	0	-	13	0	-	-	-	-	-	
Heavy %	0%	-	1.9%	0%	-	3.9%	0%	-	-	-	-	-	
Bicycles	0	-	0	0	-	5	0	-	-	-	-	-	
Bicycle %	0%	-	0%	0%	-	1.5%	0%	-	-	-	-	-	



Peak Hour: 05:30 PM - 06:30 PM Weather: Broken Clouds (6 °C)

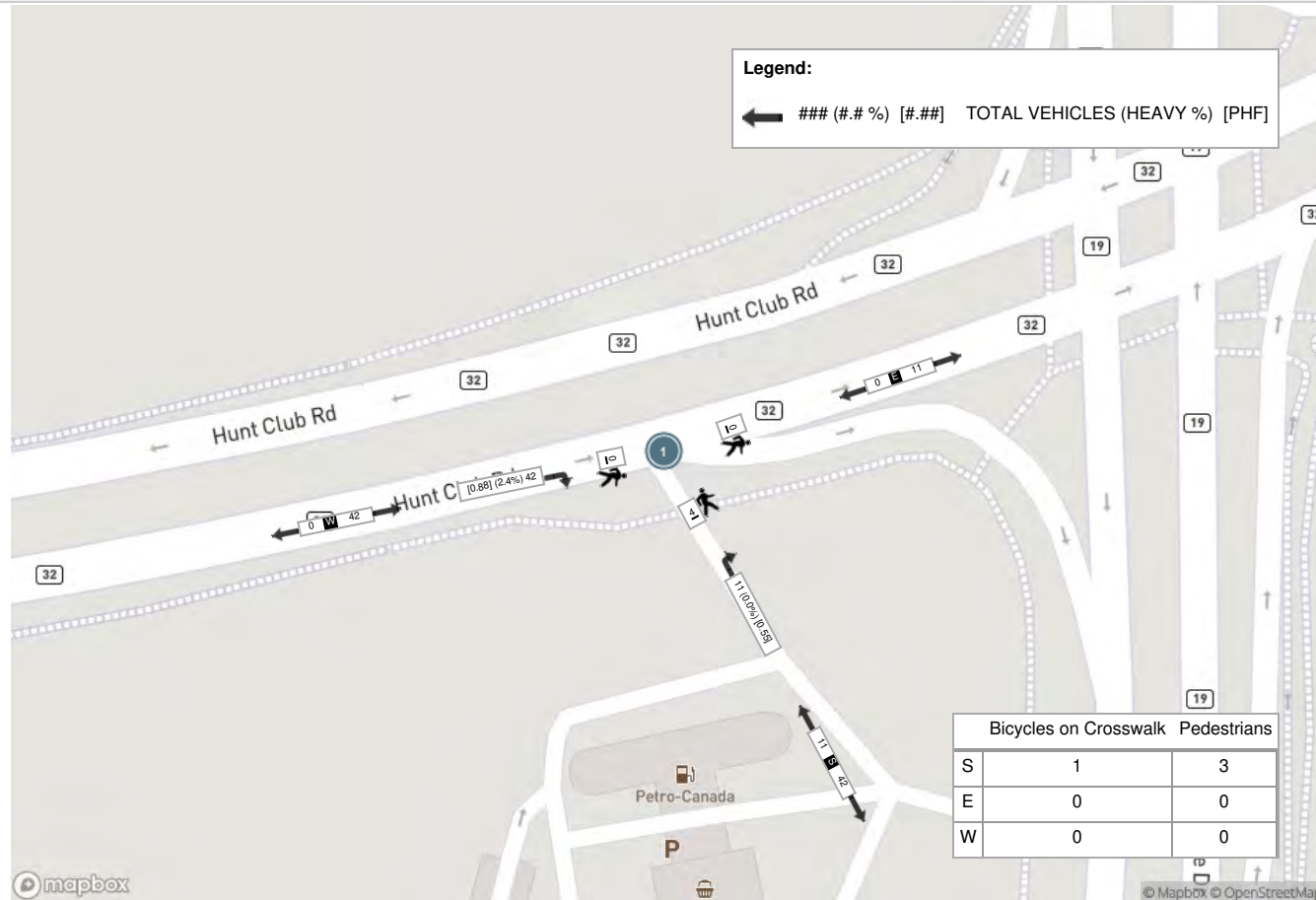
Start Time	E Approach HWY 32			S Approach 4000 RIVERSIDE DR ACCESS				W Approach HWY 32				Int. Total (15 min)
	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	
2025-10-03 17:30:00	0	0	0	1	0	3	1	12	0	0	12	13
2025-10-03 17:45:00	0	0	0	5	0	1	5	11	0	0	11	16
2025-10-03 18:00:00	0	0	0	2	0	0	2	10	0	0	10	12
2025-10-03 18:15:00	0	0	0	3	0	0	3	9	0	0	9	12
Grand Total	0	0	0	11	0	4	11	42	0	0	42	53
Approach%	0%		-	100%	0%		-	100%	0%		-	-
Totals %	0%		0%	20.8%	0%		20.8%	79.2%	0%		79.2%	-
PHF	0		0	0.55	0		0.55	0.88	0		0.88	0.83
Heavy	0		0	0	0		0	1	0		1	1
Heavy %	0%		0%	0%	0%		0%	2.4%	0%		2.4%	1.9%
Lights	0		0	11	0		11	41	0		41	52
Lights %	0%		0%	100%	0%		100%	97.6%	0%		97.6%	98.1%
Single-Unit Trucks	0		0	0	0		0	1	0		1	1
Single-Unit Trucks %	0%		0%	0%	0%		0%	2.4%	0%		2.4%	1.9%
Buses	0		0	0	0		0	0	0		0	0
Buses %	0%		0%	0%	0%		0%	0%	0%		0%	0%
Articulated Trucks	0		0	0	0		0	0	0		0	0
Articulated Trucks %	0%		0%	0%	0%		0%	0%	0%		0%	0%
Pedestrians	-	0	-	-	-	3	-	-	-	0	-	-
Pedestrians%	-	0%		-	-	75%		-	-	0%		-
Bicycles on Crosswalk	-	0	-	-	-	1	-	-	-	0	-	-
Bicycles on Crosswalk%	-	0%		-	-	25%		-	-	0%		-
Bicycles on Road	0		-	0	0		-	0	0		-	-
Bicycles on Road%	0%			0%	0%			0%	0%			-



**Selected Hour: 09:00 AM - 10:00 AM Weather: Broken Clouds (6 °C)**

Start Time	E Approach HWY 32			S Approach 4000 RIVERSIDE DR ACCESS				W Approach HWY 32				Int. Total (15 min)
	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	
2025-10-03 09:00:00	0	0	0	0	0	0	0	5	0	0	5	5
2025-10-03 09:15:00	0	0	0	2	0	0	2	6	0	0	6	8
2025-10-03 09:30:00	0	0	0	3	0	0	3	7	0	0	7	10
2025-10-03 09:45:00	0	0	0	4	0	0	4	9	0	0	9	13
Grand Total	0	0	0	9	0	0	9	27	0	0	27	36
Approach%	0%		-	100%	0%		-	100%	0%		-	-
Totals %	0%		0%	25%	0%		25%	75%	0%		75%	-
PHF	0		0	0.56	0		0.56	0.75	0		0.75	0.69
Heavy	0		0	1	0		1	3	0		3	4
Heavy %	0%		0%	11.1%	0%		11.1%	11.1%	0%		11.1%	11.1%
Lights	0		0	8	0		8	24	0		24	32
Lights %	0%		0%	88.9%	0%		88.9%	88.9%	0%		88.9%	88.9%
Single-Unit Trucks	0		0	1	0		1	2	0		2	3
Single-Unit Trucks %	0%		0%	11.1%	0%		11.1%	7.4%	0%		7.4%	8.3%
Buses	0		0	0	0		0	1	0		1	1
Buses %	0%		0%	0%	0%		0%	3.7%	0%		3.7%	2.8%
Articulated Trucks	0		0	0	0		0	0	0		0	0
Articulated Trucks %	0%		0%	0%	0%		0%	0%	0%		0%	0%
Pedestrians	-	0	-	-	-	0	-	-	-	0	-	-
Pedestrians%	-	0%	-	-	-	0%	-	-	-	0%	-	-
Bicycles on Crosswalk	-	0	-	-	-	0	-	-	-	0	-	-
Bicycles on Crosswalk%	-	0%	-	-	-	0%	-	-	-	0%	-	-
Bicycles on Road	0		-	0	0		-	1	0		-	-
Bicycles on Road%	0%			0%	0%			100%	0%			-

**Peak Hour: 05:30 PM - 06:30 PM Weather: Broken Clouds (6 °C)**





**Legend:**

← ### (#.# %) [#.##] TOTAL VEHICLES (HEAVY %) [PHF]

	Bicycles on Crosswalk	Pedestrians
S	0	0
E	0	0
W	0	0



### Turning Movement Count (1 . HWY 32 & 4000 RIVERSIDE DR ACCESS)

Start Time	E Approach HWY 32			S Approach 4000 RIVERSIDE DR ACCESS				W Approach HWY 32				Int. Total (15 min)	Int. Total (1 hr)
	UTurn E:E	Peds E:	Approach Total	Right S:E	UTurn S:S	Peds S:	Approach Total	Right W:S	UTurn W:W	Peds W:	Approach Total		
2025-10-04 07:00:00	0	0	0	2	0	0	2	2	0	0	2	4	
2025-10-04 07:15:00	0	0	0	0	0	0	0	0	0	0	0	0	
2025-10-04 07:30:00	0	0	0	1	0	0	1	1	0	0	1	2	
2025-10-04 07:45:00	0	0	0	1	0	0	1	4	0	0	4	5	11
2025-10-04 08:00:00	0	0	0	2	0	0	2	3	0	0	3	5	12
2025-10-04 08:15:00	0	0	0	0	0	2	0	3	0	0	3	3	15
2025-10-04 08:30:00	0	0	0	1	0	0	1	2	0	0	2	3	16
2025-10-04 08:45:00	0	0	0	0	0	1	0	2	0	0	2	2	13
2025-10-04 09:00:00	0	0	0	2	0	0	2	3	0	0	3	5	13
2025-10-04 09:15:00	0	0	0	2	0	0	2	3	0	0	3	5	15
2025-10-04 09:30:00	0	0	0	0	0	2	0	3	0	0	3	3	15
2025-10-04 09:45:00	0	0	0	2	0	2	2	4	0	0	4	6	19
2025-10-04 10:00:00	0	0	0	1	0	0	1	2	0	0	2	3	17
2025-10-04 10:15:00	0	0	0	0	0	1	0	3	0	0	3	3	15
2025-10-04 10:30:00	0	0	0	2	0	1	2	3	0	0	3	5	17
2025-10-04 10:45:00	0	0	0	5	0	0	5	5	0	0	5	10	21
2025-10-04 11:00:00	0	0	0	1	0	0	1	5	0	0	5	6	24
2025-10-04 11:15:00	0	0	0	1	0	0	1	4	0	0	4	5	26
2025-10-04 11:30:00	0	0	0	2	0	0	2	4	0	0	4	6	27
2025-10-04 11:45:00	0	0	0	3	0	2	3	8	0	0	8	11	28
2025-10-04 12:00:00	0	0	0	4	0	5	4	8	0	0	8	12	34
2025-10-04 12:15:00	0	0	0	1	0	1	1	7	0	0	7	8	37
2025-10-04 12:30:00	0	0	0	1	0	1	1	8	0	0	8	9	40
2025-10-04 12:45:00	0	0	0	2	0	2	2	3	0	0	3	5	34
2025-10-04 13:00:00	0	0	0	3	0	2	3	5	0	0	5	8	30
2025-10-04 13:15:00	0	0	0	0	0	1	0	10	0	0	10	10	32
2025-10-04 13:30:00	0	0	0	2	0	1	2	4	0	0	4	6	29
2025-10-04 13:45:00	0	0	0	0	0	2	0	7	0	0	7	7	31
2025-10-04 14:00:00	0	0	0	0	0	3	0	7	0	0	7	7	30
2025-10-04 14:15:00	0	0	0	1	0	3	1	5	0	0	5	6	26
2025-10-04 14:30:00	0	0	0	1	0	5	1	5	0	0	5	6	26
2025-10-04 14:45:00	0	0	0	2	0	1	2	7	0	0	7	9	28
2025-10-04 15:00:00	0	0	0	3	0	1	3	7	0	0	7	10	31



2025-10-04 15:15:00	0	0	0	5	0	1	5	3	0	0	3	8	33
2025-10-04 15:30:00	0	0	0	1	0	1	1	4	0	0	4	5	32
2025-10-04 15:45:00	0	0	0	1	0	0	1	5	0	0	5	6	29
2025-10-04 16:00:00	0	0	0	0	0	0	0	5	0	0	5	5	24
2025-10-04 16:15:00	0	0	0	5	0	0	5	7	0	0	7	12	28
2025-10-04 16:30:00	0	0	0	5	0	0	5	11	0	0	11	16	39
2025-10-04 16:45:00	0	0	0	2	0	2	2	6	0	0	6	8	41
2025-10-04 17:00:00	0	0	0	1	0	3	1	5	0	0	5	6	42
2025-10-04 17:15:00	0	0	0	5	0	1	5	6	0	0	6	11	41
2025-10-04 17:30:00	0	0	0	1	0	1	1	6	0	2	6	7	32
2025-10-04 17:45:00	0	0	0	3	0	1	3	8	0	0	8	11	35
2025-10-04 18:00:00	0	0	0	0	0	2	0	8	0	0	8	8	37
2025-10-04 18:15:00	0	0	0	1	0	3	1	5	0	0	5	6	32
2025-10-04 18:30:00	0	0	0	4	0	1	4	10	0	0	10	14	39
2025-10-04 18:45:00	0	0	0	1	0	0	1	8	0	0	8	9	37
Grand Total	0	0	0	83	0	55	83	244	0	2	244	327	-

Approach%	0%	-	100%	0%	-	100%	0%	-	-	-
Totals %	0%	0%	25.4%	0%	25.4%	74.6%	0%	74.6%	-	-
Heavy	0	-	1	0	-	0	0	-	-	-
Heavy %	0%	-	1.2%	0%	-	0%	0%	-	-	-
Bicycles	0	-	0	0	-	12	0	-	-	-
Bicycle %	0%	-	0%	0%	-	4.9%	0%	-	-	-



Peak Hour: 04:15 PM - 05:15 PM Weather: Few Clouds (13 °C)

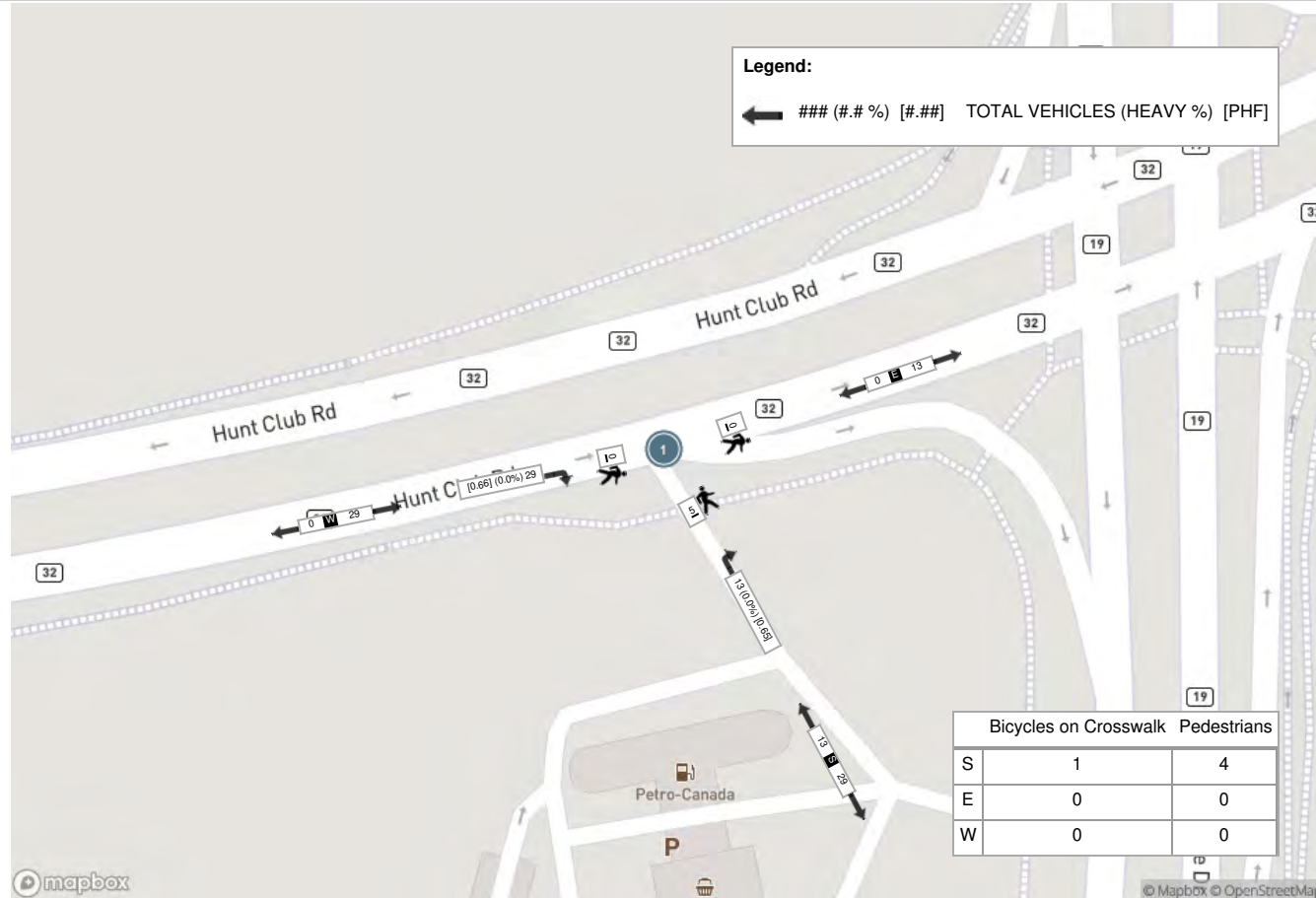
Start Time	E Approach HWY 32			S Approach 4000 RIVERSIDE DR ACCESS				W Approach HWY 32				Int. Total (15 min)
	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	
2025-10-04 16:15:00	0	0	0	5	0	0	5	7	0	0	7	12
2025-10-04 16:30:00	0	0	0	5	0	0	5	11	0	0	11	16
2025-10-04 16:45:00	0	0	0	2	0	2	2	6	0	0	6	8
2025-10-04 17:00:00	0	0	0	1	0	3	1	5	0	0	5	6
Grand Total	0	0	0	13	0	5	13	29	0	0	29	42
Approach%	0%		-	100%	0%		-	100%	0%		-	-
Totals %	0%		0%	31%	0%		31%	69%	0%		69%	-
PHF	0		0	0.65	0		0.65	0.66	0		0.66	0.66
Heavy	0		0	0	0		0	0	0		0	0
Heavy %	0%		0%	0%	0%		0%	0%	0%		0%	0%
Lights	0		0	13	0		13	29	0		29	42
Lights %	0%		0%	100%	0%		100%	100%	0%		100%	100%
Single-Unit Trucks	0		0	0	0		0	0	0		0	0
Single-Unit Trucks %	0%		0%	0%	0%		0%	0%	0%		0%	0%
Pedestrians	-	0	-	-	-	4	-	-	-	0	-	-
Pedestrians%	-	0%		-	-	80%		-	-	0%		-
Bicycles on Crosswalk	-	0	-	-	-	1	-	-	-	0	-	-
Bicycles on Crosswalk%	-	0%		-	-	20%		-	-	0%		-
Bicycles on Road	0		-	0	0		-	1	0		-	-
Bicycles on Road%	0%			0%	0%			100%	0%			-



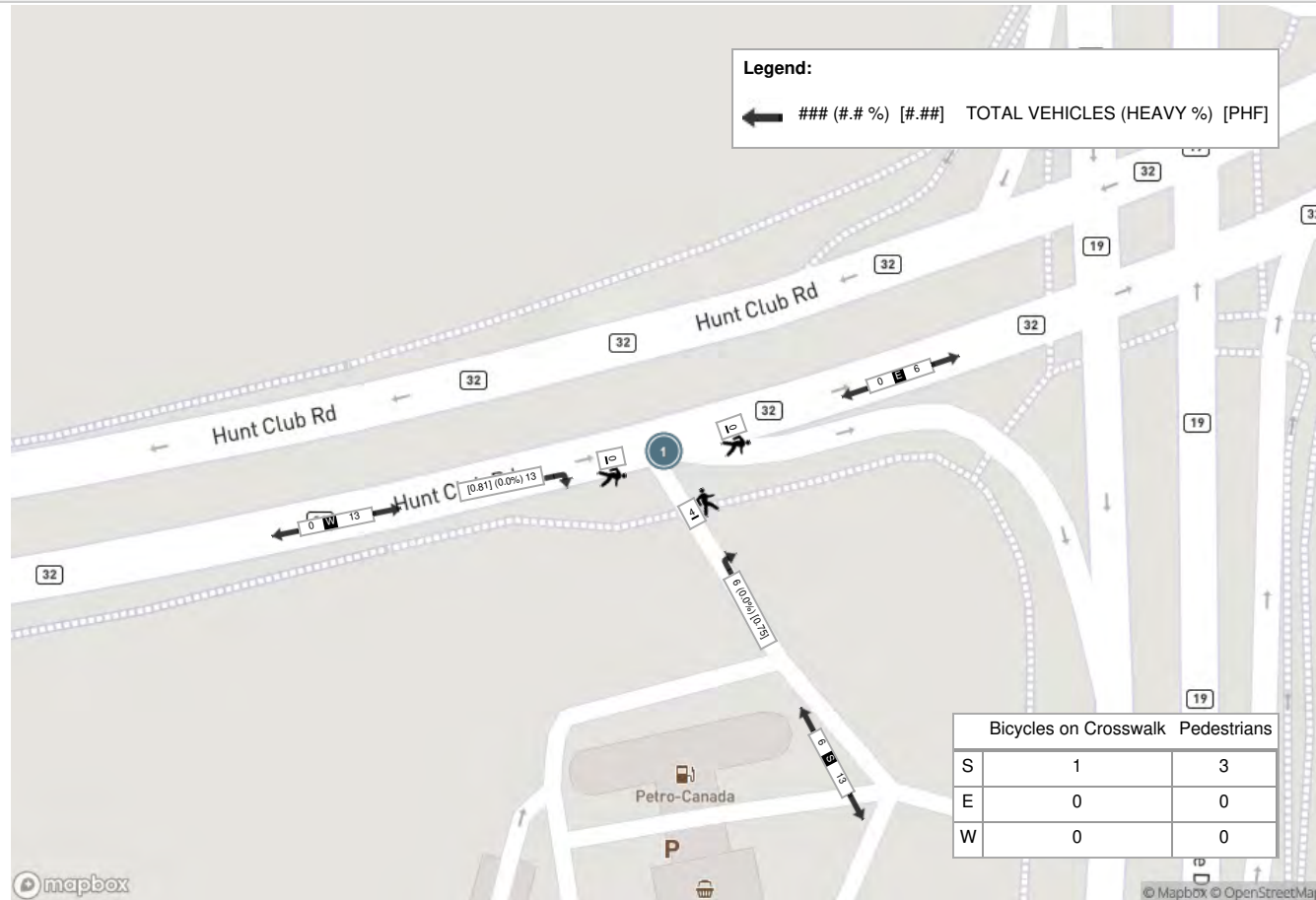
**Selected Hour: 09:00 AM - 10:00 AM Weather: Few Clouds (13 °C)**

Start Time	E Approach HWY 32			S Approach 4000 RIVERSIDE DR ACCESS				W Approach HWY 32				Int. Total (15 min)
	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	
2025-10-04 09:00:00	0	0	0	2	0	0	2	3	0	0	3	5
2025-10-04 09:15:00	0	0	0	2	0	0	2	3	0	0	3	5
2025-10-04 09:30:00	0	0	0	0	0	2	0	3	0	0	3	3
2025-10-04 09:45:00	0	0	0	2	0	2	2	4	0	0	4	6
Grand Total	0	0	0	6	0	4	6	13	0	0	13	19
Approach%	0%		-	100%	0%		-	100%	0%		-	-
Totals %	0%		0%	31.6%	0%		31.6%	68.4%	0%		68.4%	-
PHF	0		0	0.75	0		0.75	0.81	0		0.81	0.79
Heavy	0		0	0	0		0	0	0		0	0
Heavy %	0%		0%	0%	0%		0%	0%	0%		0%	0%
Lights	0		0	6	0		6	13	0		13	19
Lights %	0%		0%	100%	0%		100%	100%	0%		100%	100%
Single-Unit Trucks	0		0	0	0		0	0	0		0	0
Single-Unit Trucks %	0%		0%	0%	0%		0%	0%	0%		0%	0%
Pedestrians	-	0	-	-	-	3	-	-	-	0	-	-
Pedestrians%	-	0%		-	-	75%		-	-	0%		-
Bicycles on Crosswalk	-	0	-	-	-	1	-	-	-	0	-	-
Bicycles on Crosswalk%	-	0%		-	-	25%		-	-	0%		-
Bicycles on Road	0		-	0	0		-	0	0		-	-
Bicycles on Road%	0%			0%	0%			0%	0%			-

**Peak Hour: 04:15 PM - 05:15 PM Weather: Few Clouds (13 °C)**



**Selected Hour: 09:00 AM - 10:00 AM Weather: Few Clouds (13 °C)**





Turning Movement Count (3 . 4000 RIVERSIDE DR (INTERNAL RD) & 4010 RIVERSIDE DR (INTERNAL RD))

Start Time	N Approach 4000 RIVERSIDE DR (INTERNAL RD)					S Approach 4010 RIVERSIDE DR (INTERNAL RD)					W Approach 4000 RIVERSIDE DR (INTERNAL RD)					Int. Total (15 min)		Int. Total (1 hr)	
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total				
2025-10-04 07:00:00	0	2	0	0	2	2	0	0	0	2	0	0	0	0	0	4			
2025-10-04 07:15:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1			
2025-10-04 07:30:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1			
2025-10-04 07:45:00	1	2	0	0	3	0	1	0	0	1	0	0	0	0	0	4	10		
2025-10-04 08:00:00	0	3	0	0	3	1	0	0	0	1	0	1	0	0	1	5	11		
2025-10-04 08:15:00	1	4	2	0	7	2	0	0	0	2	2	0	0	0	2	11	21		
2025-10-04 08:30:00	0	3	0	0	3	1	0	0	0	1	0	0	0	0	0	4	24		
2025-10-04 08:45:00	0	4	0	0	4	2	0	0	0	2	1	0	0	0	1	7	27		
2025-10-04 09:00:00	0	5	0	0	5	7	1	0	0	8	2	0	0	0	2	15	37		
2025-10-04 09:15:00	0	4	0	0	4	3	1	0	0	4	0	0	0	0	0	8	34		
2025-10-04 09:30:00	1	9	0	0	10	2	0	0	0	2	0	2	0	0	2	14	44		
2025-10-04 09:45:00	0	5	0	0	5	3	1	0	0	4	1	0	0	0	1	10	47		
2025-10-04 10:00:00	0	4	0	0	4	3	0	0	0	3	0	0	0	0	0	7	39		
2025-10-04 10:15:00	1	8	0	0	9	0	2	0	0	2	1	0	0	0	1	12	43		
2025-10-04 10:30:00	1	1	0	0	2	4	0	0	0	4	2	0	0	0	2	8	37		
2025-10-04 10:45:00	0	5	0	0	5	2	0	0	0	2	0	0	0	0	0	7	34		
2025-10-04 11:00:00	2	4	0	0	6	3	1	0	0	4	1	0	0	0	1	11	38		
2025-10-04 11:15:00	1	6	0	1	7	3	0	0	0	3	1	0	0	0	1	11	37		
2025-10-04 11:30:00	1	9	0	10	10	2	0	0	0	2	1	0	0	0	1	13	42		
2025-10-04 11:45:00	1	6	0	0	7	2	1	0	0	3	0	0	0	0	0	10	45		
2025-10-04 12:00:00	0	5	0	0	5	5	0	0	0	5	2	0	0	0	2	12	46		
2025-10-04 12:15:00	0	9	0	0	9	2	0	0	0	2	2	1	0	0	3	14	49		
2025-10-04 12:30:00	0	7	0	0	7	7	0	0	0	7	1	0	0	0	1	15	51		
2025-10-04 12:45:00	0	6	0	0	6	1	0	0	0	1	1	0	0	0	1	8	49		
2025-10-04 13:00:00	2	5	0	0	7	7	1	0	0	8	0	0	0	0	0	15	52		
2025-10-04 13:15:00	2	10	0	0	12	2	0	0	0	2	3	0	0	0	3	17	55		
2025-10-04 13:30:00	0	10	0	0	10	2	0	0	0	2	1	1	0	0	2	14	54		
2025-10-04 13:45:00	1	6	0	0	7	5	0	0	0	5	1	0	0	0	1	13	59		
2025-10-04 14:00:00	0	11	0	0	11	3	2	0	1	5	0	0	0	0	0	16	60		
2025-10-04 14:15:00	0	12	0	0	12	6	0	0	0	6	1	0	0	0	1	19	62		
2025-10-04 14:30:00	1	12	0	0	13	4	2	0	0	6	2	0	0	0	2	21	69		
2025-10-04 14:45:00	2	4	0	0	6	4	1	0	0	5	1	0	0	0	1	12	68		
2025-10-04 15:00:00	1	14	0	0	15	4	0	0	0	4	2	0	0	0	2	21	73		





2025-10-04 15:15:00	0	3	0	0	3	2	0	0	3	2	0	0	0	0	0	5	59
2025-10-04 15:30:00	0	9	0	0	9	8	1	0	0	9	1	0	0	0	1	19	57
2025-10-04 15:45:00	0	15	0	0	15	6	0	0	0	6	1	0	0	0	1	22	67
2025-10-04 16:00:00	0	9	0	0	9	4	0	0	1	4	1	0	0	2	1	14	60
2025-10-04 16:15:00	0	12	0	0	12	5	1	0	0	6	4	0	0	0	4	22	77
2025-10-04 16:30:00	1	7	0	0	8	1	0	0	0	1	1	1	0	1	2	11	69
2025-10-04 16:45:00	1	10	0	0	11	4	0	0	0	4	2	0	0	0	2	17	64
2025-10-04 17:00:00	1	11	0	0	12	8	0	0	0	8	1	0	0	2	1	21	71
2025-10-04 17:15:00	0	11	0	0	11	6	0	0	0	6	2	0	0	0	2	19	68
2025-10-04 17:30:00	0	3	0	2	3	3	0	0	0	3	0	0	0	0	0	6	63
2025-10-04 17:45:00	1	8	0	0	9	0	0	0	0	0	1	0	0	0	1	10	56
2025-10-04 18:00:00	1	8	0	0	9	3	0	0	0	3	1	0	0	0	1	13	48
2025-10-04 18:15:00	1	9	0	0	10	3	0	0	0	3	1	0	0	0	1	14	43
2025-10-04 18:30:00	0	8	0	0	8	6	0	0	0	6	2	1	0	0	3	17	54
2025-10-04 18:45:00	0	14	0	0	14	2	0	0	0	2	0	0	0	1	0	16	60
Grand Total	25	333	2	13	360	155	16	0	5	171	48	7	0	6	55	586	-

Approach%	6.9%	92.5%	0.6%	-	90.6%	9.4%	0%	-	87.3%	12.7%	0%	-	-	-
Totals %	4.3%	56.8%	0.3%	61.4%	26.5%	2.7%	0%	29.2%	8.2%	1.2%	0%	9.4%	-	-
Heavy	0	2	0	-	2	0	0	-	0	0	0	-	-	-
Heavy %	0%	0.6%	0%	-	1.3%	0%	0%	-	0%	0%	0%	-	-	-
Bicycles	0	9	0	-	2	0	0	-	0	0	0	-	-	-
Bicycle %	0%	2.7%	0%	-	1.3%	0%	0%	-	0%	0%	0%	-	-	-



Peak Hour: 03:30 PM - 04:30 PM Weather: Few Clouds (13 °C)

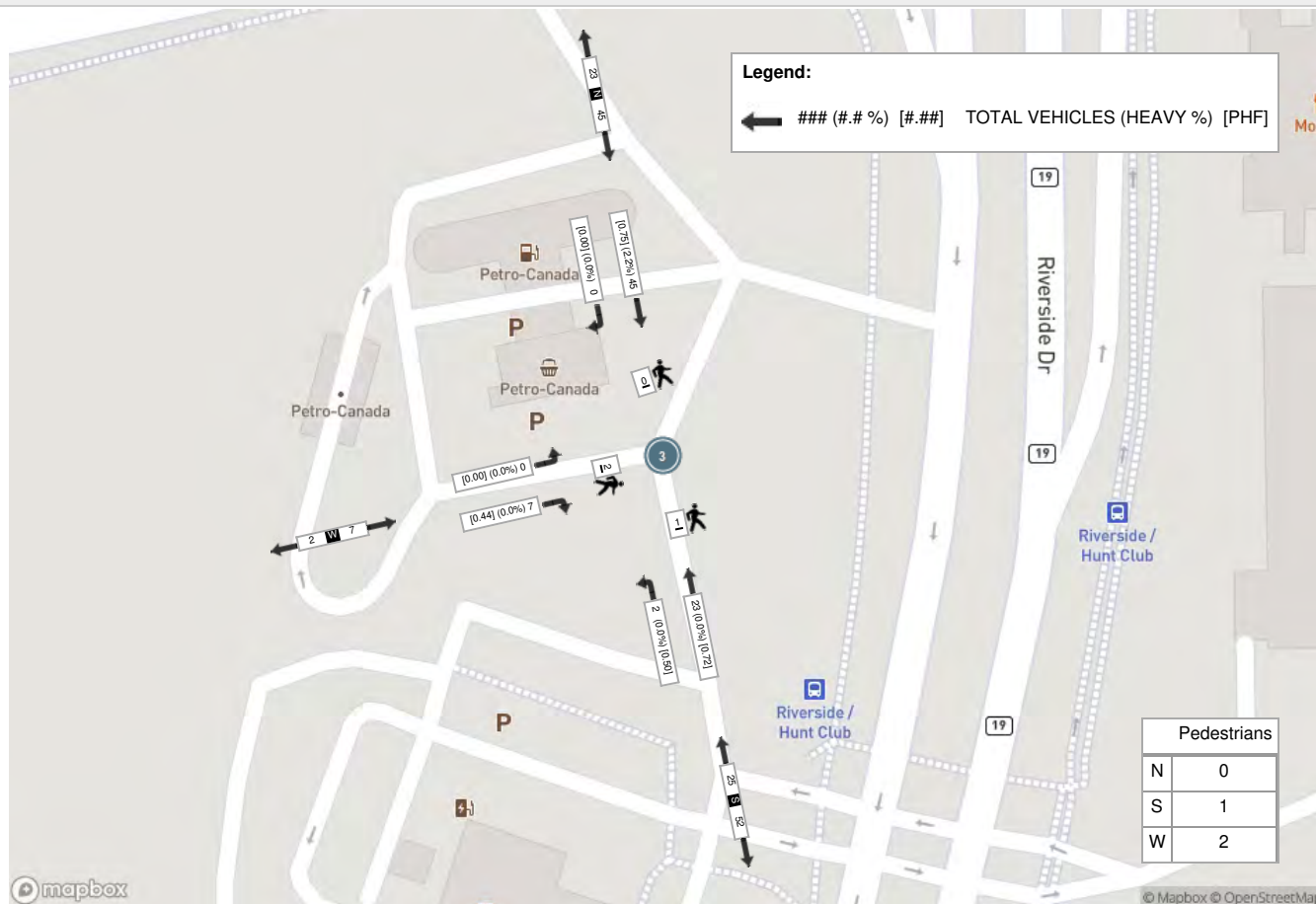
Start Time	N Approach 4000 RIVERSIDE DR (INTERNAL RD)					S Approach 4010 RIVERSIDE DR (INTERNAL RD)					W Approach 4000 RIVERSIDE DR (INTERNAL RD)					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-10-04 15:30:00	0	9	0	0	9	8	1	0	0	9	1	0	0	0	1	19
2025-10-04 15:45:00	0	15	0	0	15	6	0	0	0	6	1	0	0	0	1	22
2025-10-04 16:00:00	0	9	0	0	9	4	0	0	1	4	1	0	0	2	1	14
2025-10-04 16:15:00	0	12	0	0	12	5	1	0	0	6	4	0	0	0	4	22
Grand Total	0	45	0	0	45	23	2	0	1	25	7	0	0	2	7	77
Approach%	0%	100%	0%		-	92%	8%	0%		-	100%	0%	0%		-	-
Totals %	0%	58.4%	0%		58.4%	29.9%	2.6%	0%		32.5%	9.1%	0%	0%		9.1%	-
PHF	0	0.75	0		0.75	0.72	0.5	0		0.69	0.44	0	0		0.44	0.88
Heavy	0	1	0		1	0	0	0		0	0	0	0		0	1
Heavy %	0%	2.2%	0%		2.2%	0%	0%	0%		0%	0%	0%	0%		0%	1.3%
Lights	0	44	0		44	23	2	0		25	7	0	0		7	76
Lights %	0%	97.8%	0%		97.8%	100%	100%	0%		100%	100%	0%	0%		100%	98.7%
Single-Unit Trucks	0	1	0		1	0	0	0		0	0	0	0		0	1
Single-Unit Trucks %	0%	2.2%	0%		2.2%	0%	0%	0%		0%	0%	0%	0%		0%	1.3%
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	2	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	33.3%	-	-	-	-	66.7%	-	-
Bicycles on Road	0	2	0		-	0	0	0		-	0	0	0		-	-
Bicycles on Road%	0%	100%	0%		-	0%	0%	0%		-	0%	0%	0%		-	-



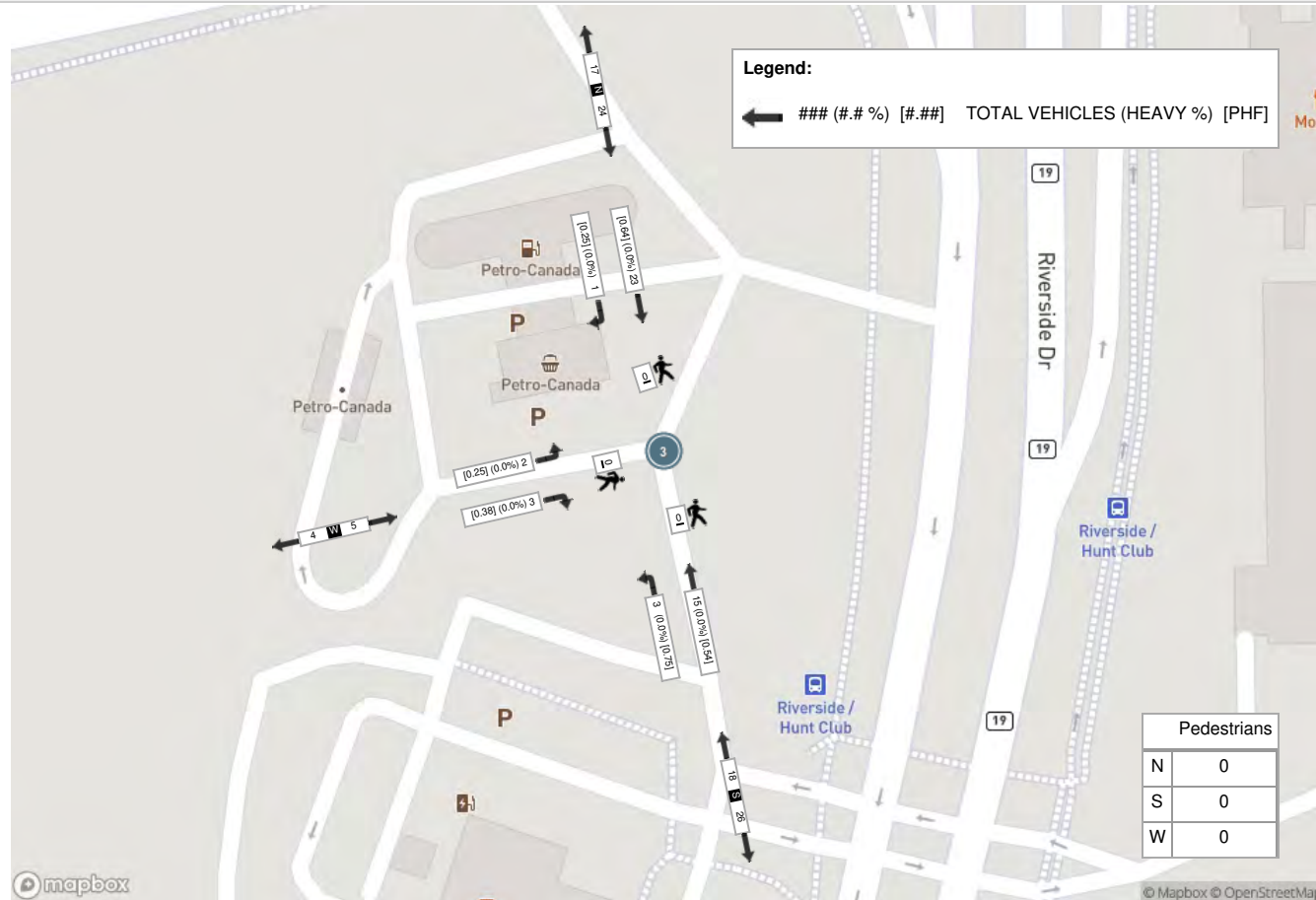
**Selected Hour: 09:00 AM - 10:00 AM Weather: Few Clouds (13 °C)**

Start Time	N Approach 4000 RIVERSIDE DR (INTERNAL RD)					S Approach 4010 RIVERSIDE DR (INTERNAL RD)					W Approach 4000 RIVERSIDE DR (INTERNAL RD)					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-10-04 09:00:00	0	5	0	0	5	7	1	0	0	8	2	0	0	0	2	15
2025-10-04 09:15:00	0	4	0	0	4	3	1	0	0	4	0	0	0	0	0	8
2025-10-04 09:30:00	1	9	0	0	10	2	0	0	0	2	0	2	0	0	2	14
2025-10-04 09:45:00	0	5	0	0	5	3	1	0	0	4	1	0	0	0	1	10
Grand Total	1	23	0	0	24	15	3	0	0	18	3	2	0	0	5	47
Approach%	4.2%	95.8%	0%		-	83.3%	16.7%	0%		-	60%	40%	0%		-	-
Totals %	2.1%	48.9%	0%		51.1%	31.9%	6.4%	0%		38.3%	6.4%	4.3%	0%		10.6%	-
PHF	0.25	0.64	0		0.6	0.54	0.75	0		0.56	0.38	0.25	0		0.63	0.78
Heavy	0	0	0		0	0	0	0		0	0	0	0		0	0
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Lights	1	23	0		24	15	3	0		18	3	2	0		5	47
Lights %	100%	100%	0%		100%	100%	100%	0%		100%	100%	100%	0%		100%	100%
Single-Unit Trucks	0	0	0		0	0	0	0		0	0	0	0		0	0
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0		-	0	0	0		-	0	0	0		-	-
Bicycles on Road%	0%	0%	0%		-	0%	0%	0%		-	0%	0%	0%		-	-

Peak Hour: 03:30 PM - 04:30 PM Weather: Few Clouds (13 °C)



**Selected Hour: 09:00 AM - 10:00 AM Weather: Few Clouds (13 °C)**





Turning Movement Count (2 . RIVERSIDE DR & 4000 RIVERSIDE DR ACCESS)

Start Time	N Approach RIVERSIDE DR				S Approach RIVERSIDE DR			W Approach 4000 RIVERSIDE DR ACCESS				Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	UTurn N:N	Peds N:	Approach Total	UTurn S:S	Peds S:	Approach Total	Right W:S	UTurn W:W	Peds W:	Approach Total		
2025-10-04 07:00:00	2	0	0	2	0	0	0	1	0	0	1	3	
2025-10-04 07:15:00	0	0	0	0	0	0	0	2	0	1	2	2	
2025-10-04 07:30:00	2	0	0	2	0	0	0	1	0	0	1	3	
2025-10-04 07:45:00	1	0	0	1	0	0	0	0	0	1	0	1	9
2025-10-04 08:00:00	0	0	0	0	0	0	0	2	0	1	2	2	8
2025-10-04 08:15:00	3	0	0	3	0	0	0	1	0	1	1	4	10
2025-10-04 08:30:00	3	0	0	3	0	0	0	1	0	0	1	4	11
2025-10-04 08:45:00	3	0	0	3	0	0	0	1	0	0	1	4	14
2025-10-04 09:00:00	2	0	0	2	0	0	0	4	0	3	4	6	18
2025-10-04 09:15:00	4	0	0	4	0	0	0	3	0	1	3	7	21
2025-10-04 09:30:00	7	0	0	7	0	0	0	3	0	0	3	10	27
2025-10-04 09:45:00	6	0	0	6	0	0	0	4	0	3	4	10	33
2025-10-04 10:00:00	4	0	0	4	0	0	0	6	0	0	6	10	37
2025-10-04 10:15:00	5	0	0	5	0	0	0	3	0	1	3	8	38
2025-10-04 10:30:00	2	0	0	2	0	0	0	1	0	2	1	3	31
2025-10-04 10:45:00	4	0	0	4	0	0	0	2	0	2	2	6	27
2025-10-04 11:00:00	2	0	0	2	0	0	0	4	0	2	4	6	23
2025-10-04 11:15:00	10	0	0	10	0	0	0	3	0	0	3	13	28
2025-10-04 11:30:00	3	0	0	3	0	0	0	5	0	1	5	8	33
2025-10-04 11:45:00	3	0	0	3	0	0	0	2	0	2	2	5	32
2025-10-04 12:00:00	6	0	0	6	0	0	0	3	0	2	3	9	35
2025-10-04 12:15:00	4	0	0	4	0	0	0	8	0	2	8	12	34
2025-10-04 12:30:00	3	0	0	3	0	0	0	5	0	1	5	8	34
2025-10-04 12:45:00	4	0	0	4	0	0	0	4	0	2	4	8	37
2025-10-04 13:00:00	4	0	0	4	0	0	0	3	0	0	3	7	35
2025-10-04 13:15:00	6	0	0	6	0	0	0	4	0	1	4	10	33
2025-10-04 13:30:00	4	0	0	4	0	0	0	6	0	0	6	10	35
2025-10-04 13:45:00	5	0	0	5	0	0	0	8	0	0	8	13	40
2025-10-04 14:00:00	6	0	0	6	0	0	0	5	0	2	5	11	44
2025-10-04 14:15:00	4	0	0	4	0	0	0	2	0	0	2	6	40
2025-10-04 14:30:00	4	0	0	4	0	0	0	2	0	2	2	6	36
2025-10-04 14:45:00	12	0	0	12	0	0	0	5	0	0	5	17	40
2025-10-04 15:00:00	3	0	0	3	0	0	0	4	0	2	4	7	36



2025-10-04 15:15:00	7	0	0	7	0	0	0	3	0	4	3	10	40
2025-10-04 15:30:00	7	0	0	7	0	0	0	4	0	2	4	11	45
2025-10-04 15:45:00	8	0	0	8	0	0	0	9	0	0	9	17	45
2025-10-04 16:00:00	14	0	0	14	0	0	0	6	0	2	6	20	58
2025-10-04 16:15:00	6	0	0	6	0	0	0	5	0	0	5	11	59
2025-10-04 16:30:00	4	0	0	4	0	0	0	5	0	0	5	9	57
2025-10-04 16:45:00	8	0	0	8	0	0	0	1	0	0	1	9	49
2025-10-04 17:00:00	5	0	0	5	0	0	0	2	0	0	2	7	36
2025-10-04 17:15:00	4	0	0	4	0	0	0	5	0	1	5	9	34
2025-10-04 17:30:00	6	0	0	6	0	0	0	5	0	2	5	11	36
2025-10-04 17:45:00	4	0	0	4	0	0	0	3	0	0	3	7	34
2025-10-04 18:00:00	2	0	0	2	0	0	0	5	0	0	5	7	34
2025-10-04 18:15:00	10	0	0	10	0	0	0	6	0	0	6	16	41
2025-10-04 18:30:00	10	0	0	10	0	0	0	9	0	1	9	19	49
2025-10-04 18:45:00	3	0	0	3	0	0	0	3	0	0	3	6	48
Grand Total	229	0	0	229	0	0	0	179	0	47	179	408	-
Approach%	100%	0%	-	0%	-	100%	0%	-	-	-	-	-	-
Totals %	56.1%	0%	56.1%	0%	0%	43.9%	0%	43.9%	-	-	-	-	-
Heavy	1	0	-	0	-	0	0	-	-	-	-	-	-
Heavy %	0.4%	0%	-	0%	-	0%	0%	-	-	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 03:30 PM - 04:30 PM Weather: Few Clouds (13 °C)

Start Time	N Approach RIVERSIDE DR				S Approach RIVERSIDE DR			W Approach 4000 RIVERSIDE DR ACCESS				Int. Total (15 min)
	Right	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	
2025-10-04 15:30:00	7	0	0	7	0	0	0	4	0	2	4	11
2025-10-04 15:45:00	8	0	0	8	0	0	0	9	0	0	9	17
2025-10-04 16:00:00	14	0	0	14	0	0	0	6	0	2	6	20
2025-10-04 16:15:00	6	0	0	6	0	0	0	5	0	0	5	11
Grand Total	35	0	0	35	0	0	0	24	0	4	24	59
Approach%	100%	0%		-	0%		-	100%	0%		-	-
Totals %	59.3%	0%		59.3%	0%		0%	40.7%	0%		40.7%	-
PHF	0.63	0		0.63	0		0	0.67	0		0.67	0.74
Heavy	1	0		1	0		0	0	0		0	1
Heavy %	2.9%	0%		2.9%	0%		0%	0%	0%		0%	1.7%
Lights	34	0		34	0		0	24	0		24	58
Lights %	97.1%	0%		97.1%	0%		0%	100%	0%		100%	98.3%
Single-Unit Trucks	1	0		1	0		0	0	0		0	1
Single-Unit Trucks %	2.9%	0%		2.9%	0%		0%	0%	0%		0%	1.7%
Pedestrians	-	-	0	-	-	0	-	-	-	2	-	-
Pedestrians%	-	-	0%	-	-	0%	-	-	-	50%	-	-
Bicycles on Crosswalk	-	-	0	-	-	0	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	0%	-	-	0%	-	-	-	50%	-	-

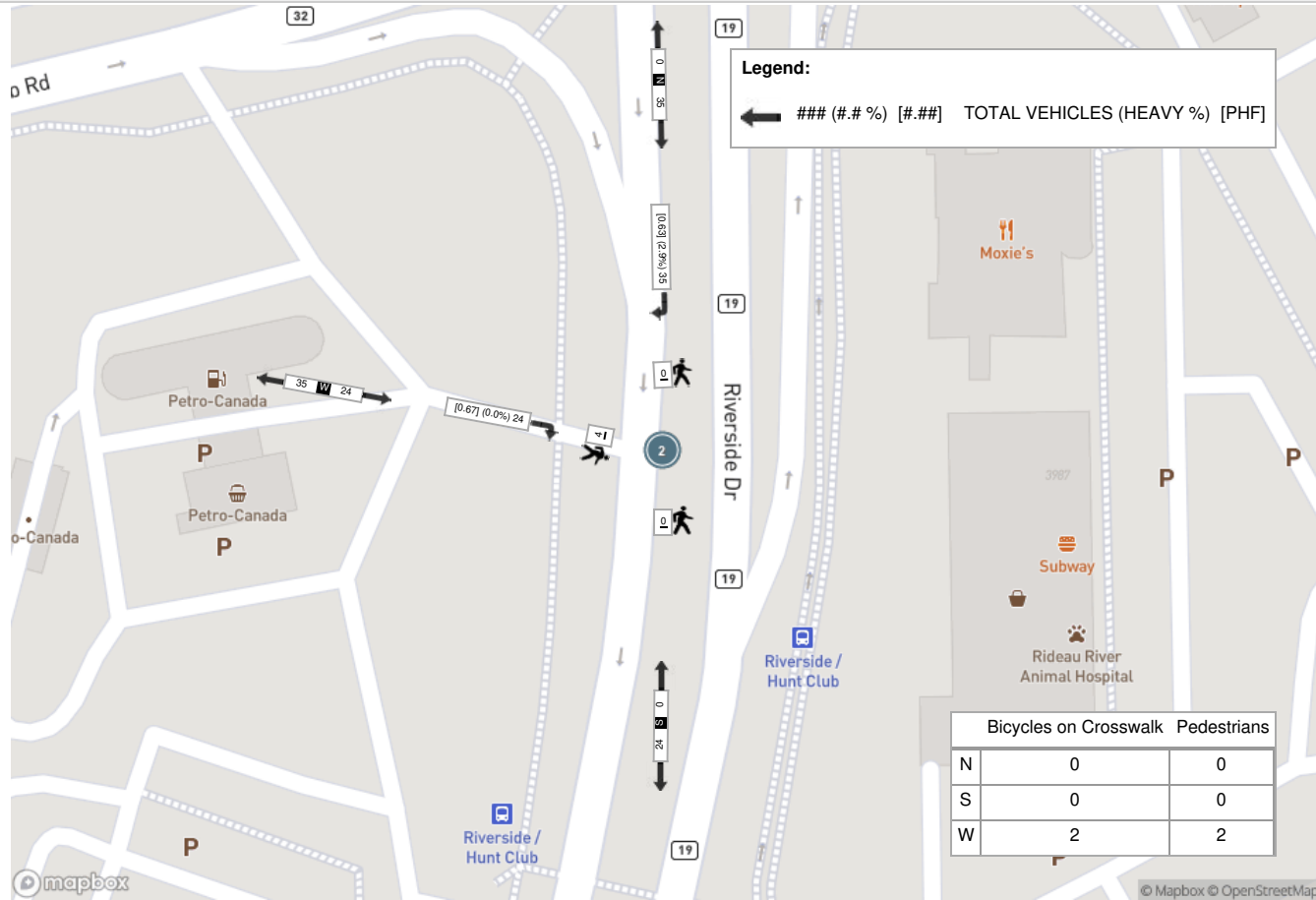




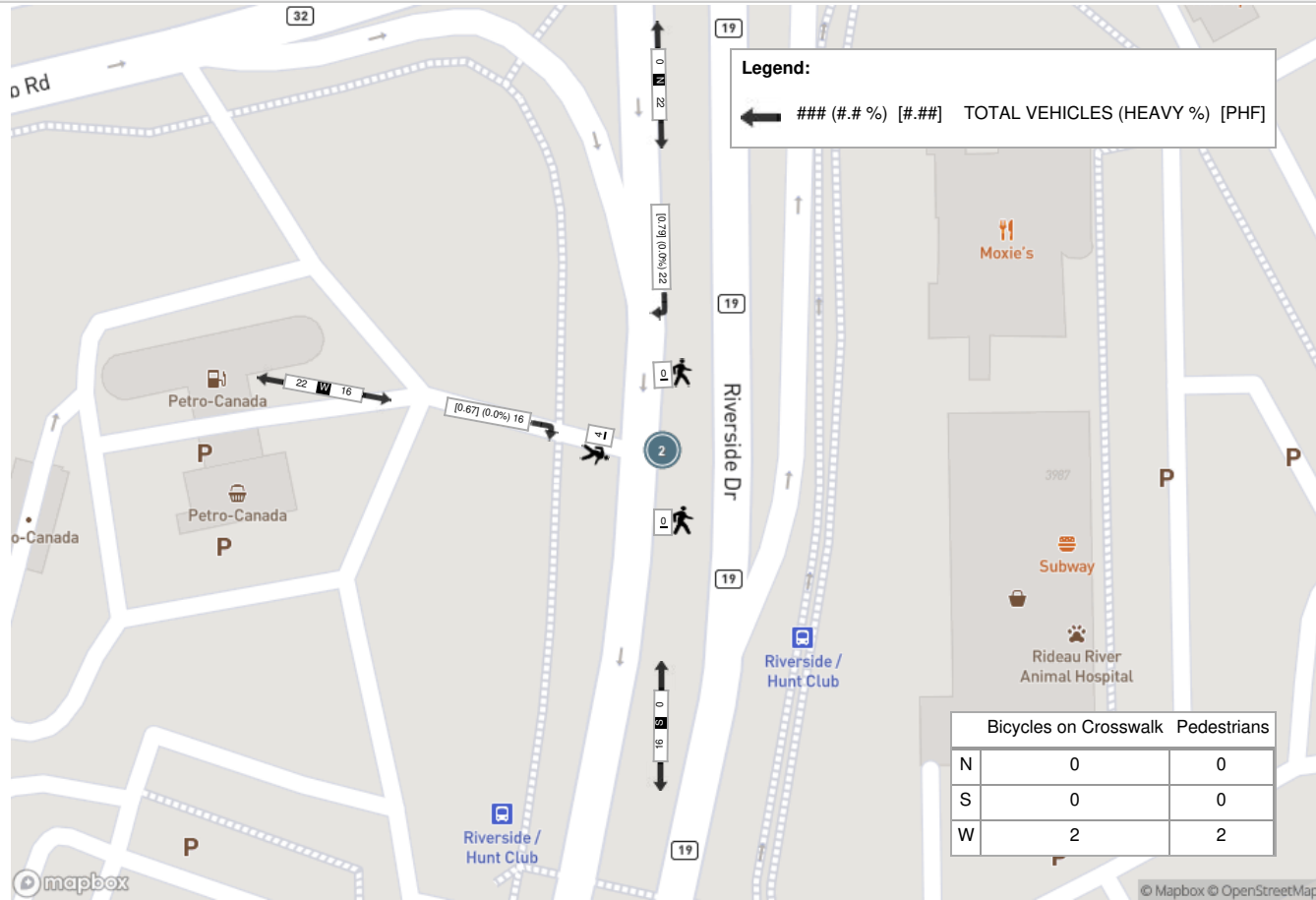
**Selected Hour: 09:30 AM - 10:30 AM Weather: Few Clouds (13 °C)**

Start Time	N Approach RIVERSIDE DR				S Approach RIVERSIDE DR			W Approach 4000 RIVERSIDE DR ACCESS				Int. Total (15 min)
	Right	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	
2025-10-04 09:30:00	7	0	0	7	0	0	0	3	0	0	3	10
2025-10-04 09:45:00	6	0	0	6	0	0	0	4	0	3	4	10
2025-10-04 10:00:00	4	0	0	4	0	0	0	6	0	0	6	10
2025-10-04 10:15:00	5	0	0	5	0	0	0	3	0	1	3	8
Grand Total	22	0	0	22	0	0	0	16	0	4	16	38
Approach%	100%	0%		-	0%		-	100%	0%		-	-
Totals %	57.9%	0%		57.9%	0%		0%	42.1%	0%		42.1%	-
PHF	0.79	0		0.79	0		0	0.67	0		0.67	0.95
Heavy	0	0		0	0		0	0	0		0	0
Heavy %	0%	0%		0%	0%		0%	0%	0%		0%	0%
Lights	22	0		22	0		0	16	0		16	38
Lights %	100%	0%		100%	0%		0%	100%	0%		100%	100%
Single-Unit Trucks	0	0		0	0		0	0	0		0	0
Single-Unit Trucks %	0%	0%		0%	0%		0%	0%	0%		0%	0%
Pedestrians	-	-	0	-	-	0	-	-	-	2	-	-
Pedestrians%	-	-	0%		-	0%		-	-	50%		-
Bicycles on Crosswalk	-	-	0	-	-	0	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	0%		-	0%		-	-	50%		-

**Peak Hour: 03:30 PM - 04:30 PM Weather: Few Clouds (13 °C)**



**Selected Hour: 09:30 AM - 10:30 AM Weather: Few Clouds (13 °C)**





Turning Movement Count (4 . RIVERSIDE DR & 4100 RIVERSIDE DR)

Start Time	N Approach RIVERSIDE DR						E Approach EAST PLAZA						S Approach RIVERSIDE DR						W Approach 4100 RIVERSIDE DR						Int. Total (15 min)	Int. Total (1 hr)
	Right N-W	Thru N-S	Left N-E	UTurn N-N	Peds N:	Approach Total	Right E-N	Thru E-W	Left E-S	UTurn E-E	Peds E:	Approach Total	Right S-E	Thru S-N	Left S-W	UTurn S-S	Peds S:	Approach Total	Right W-S	Thru W-E	Left W-N	UTurn W-W	Peds W:	Approach Total		
2025-10-04 12:00:00	2	169	22	2	0	195	33	0	28	0	0	61	29	264	4	0	0	297	4	0	4	0	2	8	561	
2025-10-04 12:15:00	2	217	28	3	0	250	27	1	22	0	1	50	30	252	4	0	0	286	4	3	8	0	2	15	601	
2025-10-04 12:30:00	6	207	24	2	0	239	30	1	22	0	0	53	23	258	6	0	0	287	4	2	6	1	1	13	592	
2025-10-04 12:45:00	3	166	24	2	2	195	25	1	21	0	0	47	16	231	3	0	2	250	1	2	10	0	0	13	505	2259
2025-10-04 13:00:00	3	189	20	0	0	212	33	2	24	0	0	59	20	221	7	0	0	248	3	0	5	0	0	8	527	2225
2025-10-04 13:15:00	5	212	24	0	0	241	23	1	25	0	0	49	20	256	4	0	0	280	7	5	10	0	2	22	592	2216
2025-10-04 13:30:00	4	207	26	2	1	239	26	1	25	0	1	52	21	280	3	1	0	305	5	1	8	0	0	14	610	2234
2025-10-04 13:45:00	6	161	27	5	0	199	39	2	29	0	0	70	34	262	3	0	0	299	3	1	7	0	2	11	579	2308
2025-10-04 14:00:00	4	213	22	1	0	240	35	2	30	0	0	67	19	240	5	0	0	264	8	3	10	0	1	21	592	2373
2025-10-04 14:15:00	6	192	24	1	1	223	24	0	25	0	0	49	20	231	6	0	0	257	7	4	11	0	1	22	551	2332
2025-10-04 14:30:00	4	199	24	2	0	229	32	3	23	0	0	58	20	255	6	0	0	281	8	2	9	0	2	19	587	2309
2025-10-04 14:45:00	4	193	20	1	0	218	25	4	24	0	0	53	27	247	6	0	0	280	5	1	9	0	0	15	566	2296
Grand Total	49	2325	285	21	4	2680	352	18	298	0	2	668	279	2997	57	1	2	3334	59	24	97	1	13	181	6863	-
Approach%	1.8%	86.8%	10.6%	0.8%	-	-	52.7%	2.7%	44.6%	0%	-	-	8.4%	89.9%	1.7%	0%	-	-	32.6%	13.3%	53.6%	0.6%	-	-	-	-
Totals %	0.7%	33.9%	4.2%	0.3%	-	39%	5.1%	0.3%	4.3%	0%	-	9.7%	4.1%	43.7%	0.8%	0%	-	48.6%	0.9%	0.3%	1.4%	0%	-	2.6%	-	-
Heavy	5	25	1	0	-	-	1	0	2	0	-	-	0	34	0	0	-	-	1	0	0	0	-	-	-	-
Heavy %	10.2%	1.1%	0.4%	0%	-	-	0.3%	0%	0.7%	0%	-	-	0%	1.1%	0%	0%	-	-	1.7%	0%	0%	0%	-	-	-	-
Bicycles	0	20	0	0	-	-	0	0	0	0	-	-	0	3	3	0	-	-	0	2	0	0	-	-	-	-
Bicycle %	0%	0.9%	0%	0%	-	-	0%	0%	0%	0%	-	-	0%	0.1%	5.3%	0%	-	-	0%	8.3%	0%	0%	-	-	-	-



Peak Hour: 01:15 PM - 02:15 PM Weather: Few Clouds (23 °C)

Start Time	N Approach RIVERSIDE DR						E Approach EAST PLAZA						S Approach RIVERSIDE DR						W Approach 4100 RIVERSIDE DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-10-04 13:15:00	5	212	24	0	0	241	23	1	25	0	0	49	20	256	4	0	0	280	7	5	10	0	2	22	592
2025-10-04 13:30:00	4	207	26	2	1	239	26	1	25	0	1	52	21	280	3	1	0	305	5	1	8	0	0	14	610
2025-10-04 13:45:00	6	161	27	5	0	199	39	2	29	0	0	70	34	262	3	0	0	299	3	1	7	0	2	11	579
2025-10-04 14:00:00	4	213	22	1	0	240	35	2	30	0	0	67	19	240	5	0	0	264	8	3	10	0	1	21	592
Grand Total	19	793	99	8	1	919	123	6	109	0	1	238	94	1038	15	1	0	1148	23	10	35	0	5	68	2373
Approach%	2.1%	86.3%	10.8%	0.9%		-	51.7%	2.5%	45.8%	0%		-	8.2%	90.4%	1.3%	0.1%		-	33.8%	14.7%	51.5%	0%		-	-
Totals %	0.8%	33.4%	4.2%	0.3%		38.7%	5.2%	0.3%	4.6%	0%		10%	4%	43.7%	0.6%	0%		48.4%	1%	0.4%	1.5%	0%		2.9%	-
PHF	0.79	0.93	0.92	0.4		0.95	0.79	0.75	0.91	0		0.85	0.69	0.93	0.75	0.25		0.94	0.72	0.5	0.88	0		0.77	0.97
Heavy	1	11	0	0		12	1	0	1	0		2	0	7	0	0		7	1	0	0	0		1	22
Heavy %	5.3%	1.4%	0%	0%		1.3%	0.8%	0%	0.9%	0%		0.8%	0%	0.7%	0%	0%		0.6%	4.3%	0%	0%	0%		1.5%	0.9%
Lights	18	782	99	8		907	122	6	108	0		236	94	1031	15	1		1141	22	10	35	0		67	2351
Lights %	94.7%	98.6%	100%	100%		98.7%	99.2%	100%	99.1%	0%		99.2%	100%	99.3%	100%	100%		99.4%	95.7%	100%	100%	0%		98.5%	99.1%
Single-Unit Trucks	1	8	0	0		9	1	0	0	0		1	0	5	0	0		5	1	0	0	0		1	16
Single-Unit Trucks %	5.3%	1%	0%	0%		1%	0.8%	0%	0%	0%		0.4%	0%	0.5%	0%	0%		0.4%	4.3%	0%	0%	0%		1.5%	0.7%
Buses	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	3
Buses %	0%	0.3%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0.1%
Articulated Trucks	0	1	0	0		1	0	0	1	0		1	0	1	0	0		1	0	0	0	0		0	3
Articulated Trucks %	0%	0.1%	0%	0%		0.1%	0%	0%	0.9%	0%		0.4%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	14.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	5	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	14.3%	-	-	-	-	-	0%	-	-	-	-	-	71.4%	-	-
Bicycles on Road	0	7	0	0		-	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	-
Bicycles on Road%	0%	100%	0%	0%			0%	0%	0%	0%			0%	100%	0%	0%			0%	0%	0%	0%			-

Peak Hour: 01:15 PM - 02:15 PM Weather: Few Clouds (23 °C)





Turning Movement Count (2 . RIVERSIDE DR & 4000 RIVERSIDE DR ACCESS)

Start Time	N Approach RIVERSIDE DR				S Approach RIVERSIDE DR			W Approach 4000 RIVERSIDE DR ACCESS				Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	UTurn N:N	Peds N:	Approach Total	UTurn S:S	Peds S:	Approach Total	Right W:S	UTurn W:W	Peds W:	Approach Total		
2025-10-03 07:00:00	1	0	0	1	0	0	0	1	0	0	1	2	
2025-10-03 07:15:00	1	0	0	1	0	0	0	0	0	4	0	1	
2025-10-03 07:30:00	1	0	0	1	0	0	0	0	0	2	0	1	
2025-10-03 07:45:00	3	0	0	3	0	0	0	3	0	1	3	6	10
2025-10-03 08:00:00	1	0	0	1	0	0	0	1	0	2	1	2	10
2025-10-03 08:15:00	3	0	0	3	0	0	0	3	0	0	3	6	15
2025-10-03 08:30:00	3	0	0	3	0	0	0	2	0	2	2	5	19
2025-10-03 08:45:00	6	0	0	6	0	0	0	6	0	0	6	12	25
2025-10-03 09:00:00	3	0	0	3	0	0	0	1	0	0	1	4	27
2025-10-03 09:15:00	1	0	0	1	0	0	0	2	0	4	2	3	24
2025-10-03 09:30:00	2	0	0	2	0	0	0	1	0	0	1	3	22
2025-10-03 09:45:00	4	0	0	4	0	0	0	1	0	0	1	5	15
2025-10-03 10:00:00	3	0	0	3	0	0	0	3	0	0	3	6	17
2025-10-03 10:15:00	6	0	0	6	0	0	0	3	0	0	3	9	23
2025-10-03 10:30:00	8	0	0	8	0	0	0	6	0	0	6	14	34
2025-10-03 10:45:00	3	0	0	3	0	0	0	6	0	1	6	9	38
2025-10-03 11:00:00	4	0	0	4	0	0	0	3	0	1	3	7	39
2025-10-03 11:15:00	6	0	0	6	0	0	0	5	0	1	5	11	41
2025-10-03 11:30:00	3	0	0	3	0	0	0	9	0	0	9	12	39
2025-10-03 11:45:00	2	0	0	2	0	0	0	4	0	1	4	6	36
2025-10-03 12:00:00	7	0	0	7	0	0	0	0	0	1	0	7	36
2025-10-03 12:15:00	8	0	0	8	0	0	0	10	0	3	10	18	43
2025-10-03 12:30:00	4	0	0	4	0	0	0	2	0	0	2	6	37
2025-10-03 12:45:00	7	0	0	7	0	0	0	1	0	0	1	8	39
2025-10-03 13:00:00	3	0	0	3	0	0	0	2	0	2	2	5	37
2025-10-03 13:15:00	5	0	0	5	0	0	0	6	0	1	6	11	30
2025-10-03 13:30:00	9	0	0	9	0	0	0	5	0	0	5	14	38
2025-10-03 13:45:00	12	0	0	12	0	0	0	5	0	0	5	17	47
2025-10-03 14:00:00	4	0	0	4	0	0	0	5	0	3	5	9	51
2025-10-03 14:15:00	6	0	0	6	0	0	0	4	0	0	4	10	50
2025-10-03 14:30:00	3	0	0	3	0	0	0	6	0	0	6	9	45
2025-10-03 14:45:00	6	0	0	6	0	0	0	4	0	0	4	10	38
2025-10-03 15:00:00	5	0	0	5	0	0	0	2	0	0	2	7	36



2025-10-03 15:15:00	3	0	0	3	0	0	0	2	0	2	2	5	31
2025-10-03 15:30:00	5	0	0	5	0	0	0	3	0	1	3	8	30
2025-10-03 15:45:00	7	0	0	7	0	0	0	2	0	1	2	9	29
2025-10-03 16:00:00	7	0	0	7	0	0	0	4	0	2	4	11	33
2025-10-03 16:15:00	12	0	0	12	0	0	0	8	0	0	8	20	48
2025-10-03 16:30:00	6	0	0	6	0	0	0	4	0	0	4	10	50
2025-10-03 16:45:00	5	0	0	5	0	0	0	3	0	2	3	8	49
2025-10-03 17:00:00	8	0	0	8	0	0	0	4	0	0	4	12	50
2025-10-03 17:15:00	9	0	0	9	0	0	0	9	0	0	9	18	48
2025-10-03 17:30:00	6	0	0	6	0	0	0	5	0	0	5	11	49
2025-10-03 17:45:00	5	0	0	5	0	0	0	5	0	0	5	10	51
2025-10-03 18:00:00	3	0	0	3	0	0	0	6	0	0	6	9	48
2025-10-03 18:15:00	4	0	0	4	0	0	0	5	0	0	5	9	39
2025-10-03 18:30:00	12	0	0	12	0	0	0	5	0	2	5	17	45
2025-10-03 18:45:00	8	0	0	8	0	0	0	8	0	1	8	16	51
Grand Total	243	0	0	243	0	0	0	185	0	40	185	428	-
Approach%	100%	0%	-	0%	-	100%	0%	-	-	-	-	-	
Totals %	56.8%	0%	56.8%	0%	0%	43.2%	0%	43.2%	-	-	-		
Heavy	4	0	-	0	-	2	0	-	-	-	-		
Heavy %	1.6%	0%	-	0%	-	1.1%	0%	-	-	-	-		
Bicycles	-	-	-	-	-	-	-	-	-	-	-		
Bicycle %	-	-	-	-	-	-	-	-	-	-	-		





Peak Hour: 06:00 PM - 07:00 PM Weather: Broken Clouds (6 °C)

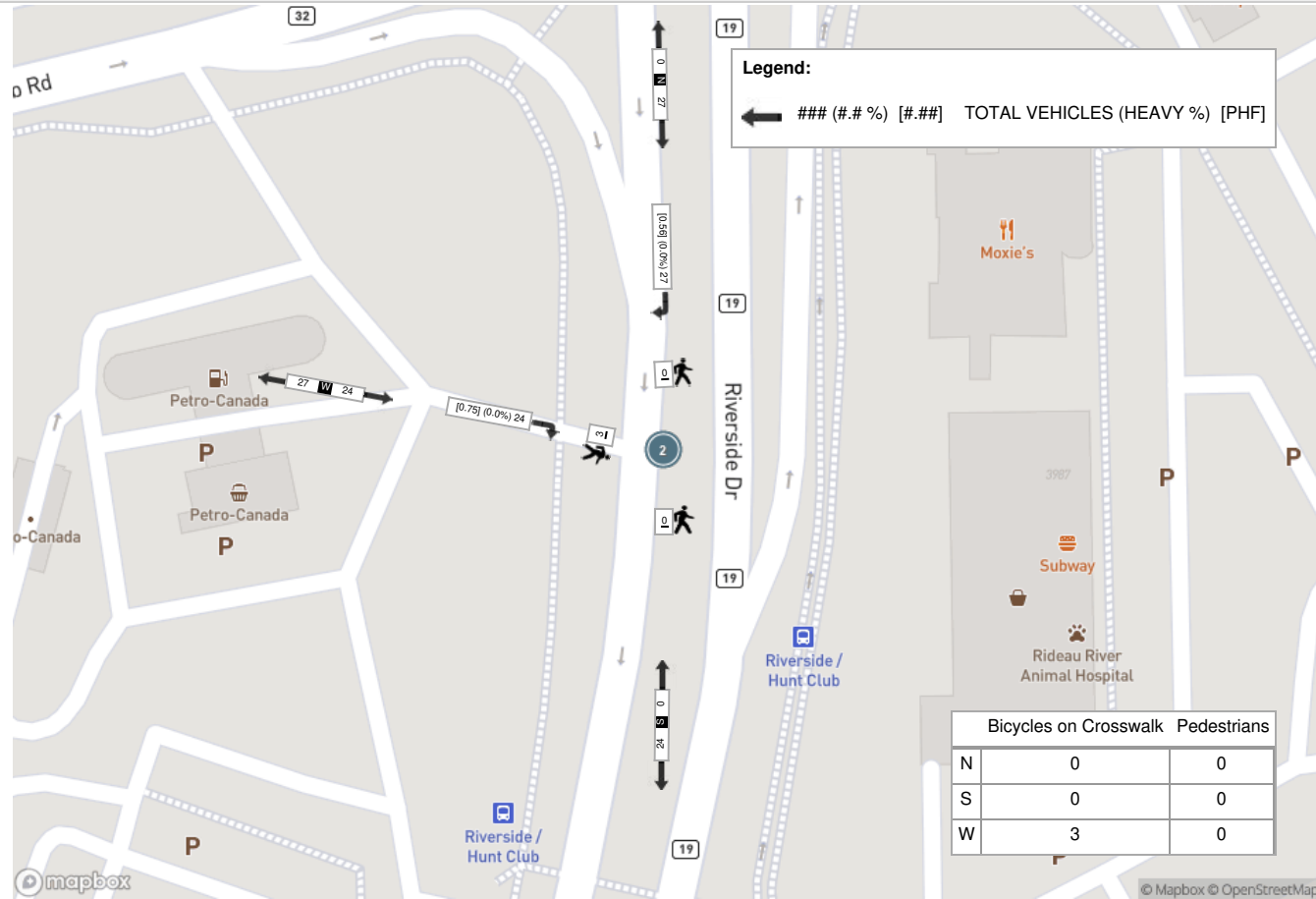
Start Time	N Approach RIVERSIDE DR				S Approach RIVERSIDE DR			W Approach 4000 RIVERSIDE DR ACCESS				Int. Total (15 min)
	Right	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	
2025-10-03 18:00:00	3	0	0	3	0	0	0	6	0	0	6	9
2025-10-03 18:15:00	4	0	0	4	0	0	0	5	0	0	5	9
2025-10-03 18:30:00	12	0	0	12	0	0	0	5	0	2	5	17
2025-10-03 18:45:00	8	0	0	8	0	0	0	8	0	1	8	16
Grand Total	27	0	0	27	0	0	0	24	0	3	24	51
Approach%	100%	0%		-	0%		-	100%	0%		-	-
Totals %	52.9%	0%		52.9%	0%		0%	47.1%	0%		47.1%	-
PHF	0.56	0		0.56	0		0	0.75	0		0.75	0.75
Heavy	0	0		0	0		0	0	0		0	0
Heavy %	0%	0%		0%	0%		0%	0%	0%		0%	0%
Lights	27	0		27	0		0	24	0		24	51
Lights %	100%	0%		100%	0%		0%	100%	0%		100%	100%
Single-Unit Trucks	0	0		0	0		0	0	0		0	0
Single-Unit Trucks %	0%	0%		0%	0%		0%	0%	0%		0%	0%
Buses	0	0		0	0		0	0	0		0	0
Buses %	0%	0%		0%	0%		0%	0%	0%		0%	0%
Articulated Trucks	0	0		0	0		0	0	0		0	0
Articulated Trucks %	0%	0%		0%	0%		0%	0%	0%		0%	0%
Pedestrians	-	-	0	-	-	0	-	-	-	0	-	-
Pedestrians%	-	-	0%	-	-	0%	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	0	-	-	0	-	-	-	3	-	-
Bicycles on Crosswalk%	-	-	0%	-	-	0%	-	-	-	100%	-	-



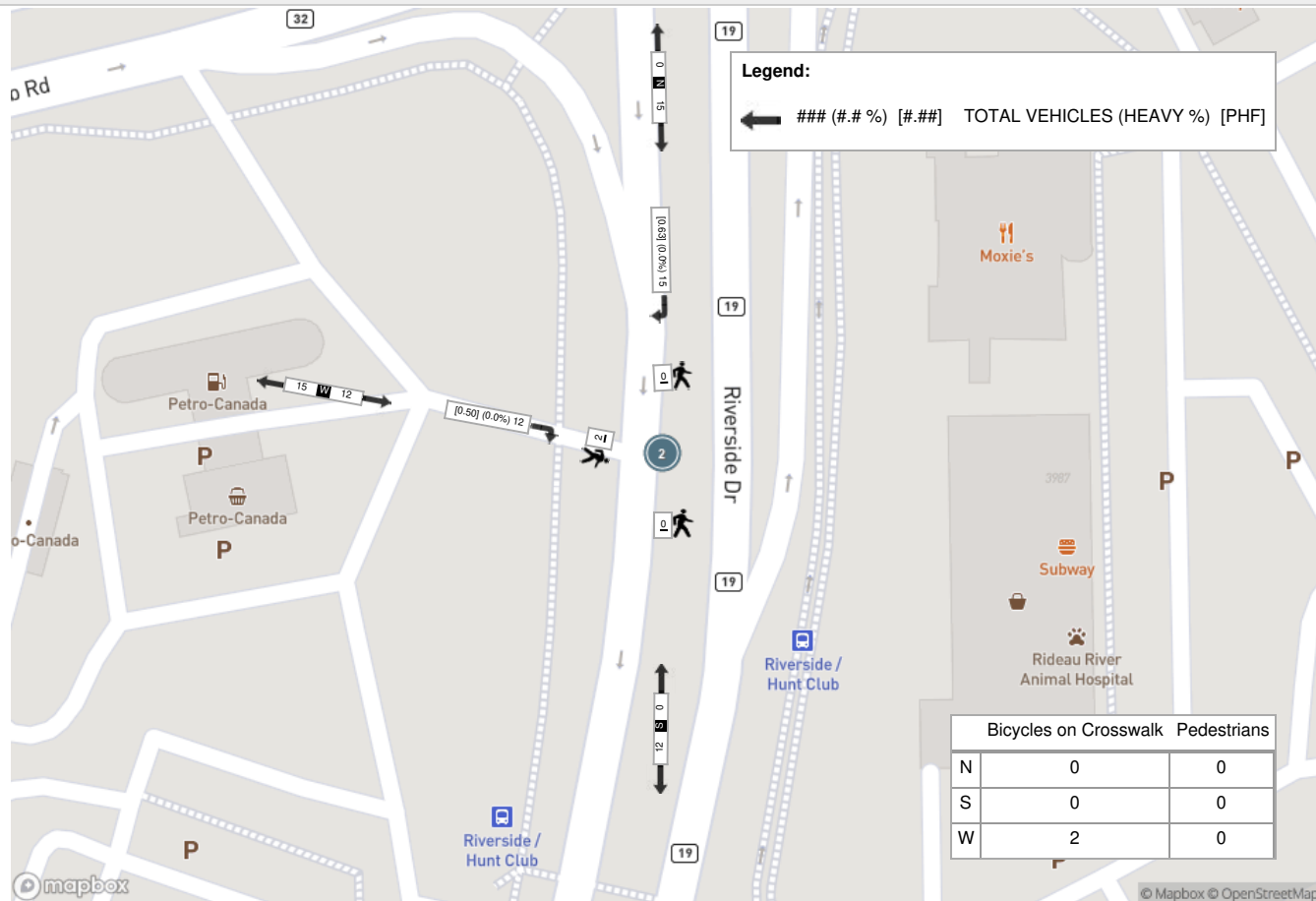
**Selected Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (6 °C)**

Start Time	N Approach RIVERSIDE DR				S Approach RIVERSIDE DR			W Approach 4000 RIVERSIDE DR ACCESS				Int. Total (15 min)
	Right	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total	
2025-10-03 08:15:00	3	0	0	3	0	0	0	3	0	0	3	6
2025-10-03 08:30:00	3	0	0	3	0	0	0	2	0	2	2	5
2025-10-03 08:45:00	6	0	0	6	0	0	0	6	0	0	6	12
2025-10-03 09:00:00	3	0	0	3	0	0	0	1	0	0	1	4
Grand Total	15	0	0	15	0	0	0	12	0	2	12	27
Approach%	100%	0%		-	0%		-	100%	0%		-	-
Totals %	55.6%	0%		55.6%	0%		0%	44.4%	0%		44.4%	-
PHF	0.63	0		0.63	0		0	0.5	0		0.5	0.56
Heavy	0	0		0	0		0	0	0		0	0
Heavy %	0%	0%		0%	0%		0%	0%	0%		0%	0%
Lights	15	0		15	0		0	12	0		12	27
Lights %	100%	0%		100%	0%		0%	100%	0%		100%	100%
Single-Unit Trucks	0	0		0	0		0	0	0		0	0
Single-Unit Trucks %	0%	0%		0%	0%		0%	0%	0%		0%	0%
Buses	0	0		0	0		0	0	0		0	0
Buses %	0%	0%		0%	0%		0%	0%	0%		0%	0%
Articulated Trucks	0	0		0	0		0	0	0		0	0
Articulated Trucks %	0%	0%		0%	0%		0%	0%	0%		0%	0%
Pedestrians	-	-	0	-	-	0	-	-	-	0	-	-
Pedestrians%	-	-	0%	-	-	0%	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	0	-	-	0	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	0%	-	-	0%	-	-	-	100%	-	-

Peak Hour: 06:00 PM - 07:00 PM Weather: Broken Clouds (6 °C)



**Selected Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (6 °C)**





Turning Movement Count (3 . 4000 RIVERSIDE DR (INTERNAL RD) & 4010 RIVERSIDE DR (INTERNAL RD))

Start Time	N Approach 4000 RIVERSIDE DR (INTERNAL RD)					S Approach 4010 RIVERSIDE DR (INTERNAL RD)					W Approach 4000 RIVERSIDE DR (INTERNAL RD)					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-10-03 07:00:00	0	4	0	0	4	0	0	0	0	0	2	0	0	0	2	6	
2025-10-03 07:15:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
2025-10-03 07:30:00	0	5	0	0	5	2	0	0	1	2	1	0	0	0	1	8	
2025-10-03 07:45:00	0	4	0	0	4	2	0	0	0	2	0	0	0	0	0	6	21
2025-10-03 08:00:00	1	3	0	0	4	2	0	0	0	2	0	0	0	0	0	6	21
2025-10-03 08:15:00	0	7	0	0	7	3	0	0	0	3	1	0	0	0	1	11	31
2025-10-03 08:30:00	0	4	0	0	4	2	0	0	0	2	1	1	0	0	2	8	31
2025-10-03 08:45:00	0	3	0	0	3	0	0	0	0	0	1	0	0	2	1	4	29
2025-10-03 09:00:00	1	4	0	0	5	3	0	0	0	3	1	0	0	0	1	9	32
2025-10-03 09:15:00	0	6	0	0	6	2	0	0	0	2	3	0	0	0	3	11	32
2025-10-03 09:30:00	1	5	0	2	6	2	1	0	0	3	2	0	0	0	2	11	35
2025-10-03 09:45:00	5	9	0	2	14	2	0	0	0	2	2	1	0	0	3	19	50
2025-10-03 10:00:00	1	9	0	0	10	1	0	0	0	1	1	1	0	0	2	13	54
2025-10-03 10:15:00	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	7	50
2025-10-03 10:30:00	2	3	0	0	5	3	3	0	0	6	0	1	0	0	1	12	51
2025-10-03 10:45:00	0	15	0	0	15	4	0	0	0	4	3	0	0	0	3	22	54
2025-10-03 11:00:00	0	4	0	0	4	3	0	0	0	3	4	0	0	0	4	11	52
2025-10-03 11:15:00	4	7	0	0	11	2	1	0	0	3	2	0	0	0	2	16	61
2025-10-03 11:30:00	2	9	0	0	11	2	0	0	0	2	2	1	0	0	3	16	65
2025-10-03 11:45:00	1	5	0	0	6	4	1	0	0	5	1	0	0	0	1	12	55
2025-10-03 12:00:00	2	12	0	0	14	2	1	0	0	3	1	0	0	0	1	18	62
2025-10-03 12:15:00	2	13	0	0	15	6	1	0	0	7	4	0	0	0	4	26	72
2025-10-03 12:30:00	2	12	0	0	14	3	1	0	0	4	3	1	0	0	4	22	78
2025-10-03 12:45:00	3	11	0	0	14	3	0	0	0	3	2	0	0	0	2	19	85
2025-10-03 13:00:00	4	7	0	1	11	5	0	0	0	5	0	0	0	0	0	16	83
2025-10-03 13:15:00	0	7	0	0	7	1	1	0	0	2	2	0	0	0	2	11	68
2025-10-03 13:30:00	1	7	0	0	8	7	0	0	0	7	2	0	0	0	2	17	63
2025-10-03 13:45:00	4	14	0	0	18	3	1	0	0	4	2	0	0	0	2	24	68
2025-10-03 14:00:00	1	12	0	0	13	8	0	0	0	8	2	0	0	0	2	23	75
2025-10-03 14:15:00	3	8	0	0	11	1	2	0	0	3	1	1	0	0	2	16	80
2025-10-03 14:30:00	0	9	0	0	9	1	1	0	0	2	1	1	0	0	2	13	76
2025-10-03 14:45:00	1	13	0	0	14	5	0	0	0	5	3	1	0	0	4	23	75
2025-10-03 15:00:00	0	7	0	0	7	5	0	0	0	5	2	0	0	1	2	14	66



2025-10-03 15:15:00	1	6	0	0	7	4	0	0	0	4	1	0	0	0	1	12	62
2025-10-03 15:30:00	1	6	0	0	7	1	0	0	2	1	0	0	0	0	0	8	57
2025-10-03 15:45:00	0	11	0	0	11	5	0	0	1	5	1	0	0	0	1	17	51
2025-10-03 16:00:00	0	8	0	0	8	3	1	0	0	4	4	1	0	0	5	17	54
2025-10-03 16:15:00	0	11	0	0	11	1	0	0	0	1	1	0	0	0	1	13	55
2025-10-03 16:30:00	1	11	0	0	12	4	0	0	0	4	2	0	0	0	2	18	65
2025-10-03 16:45:00	2	8	0	0	10	4	1	0	0	5	1	0	0	0	1	16	64
2025-10-03 17:00:00	1	8	0	0	9	5	0	0	0	5	2	0	0	0	2	16	63
2025-10-03 17:15:00	2	10	0	0	12	4	0	0	0	4	1	0	0	0	1	17	67
2025-10-03 17:30:00	2	12	0	0	14	4	0	0	0	4	3	0	0	0	3	21	70
2025-10-03 17:45:00	0	9	0	0	9	4	0	0	0	4	3	0	0	0	3	16	70
2025-10-03 18:00:00	0	10	0	0	10	3	0	0	0	3	2	0	0	0	2	15	69
2025-10-03 18:15:00	2	8	0	0	10	5	0	0	0	5	1	0	0	0	1	16	68
2025-10-03 18:30:00	0	11	1	0	12	3	0	0	0	3	1	0	0	0	1	16	63
2025-10-03 18:45:00	0	9	0	0	9	4	1	0	0	5	0	0	0	0	0	14	61
Grand Total	54	383	1	5	438	143	17	0	4	160	75	10	0	3	85	683	-
Approach%	12.3%	87.4%	0.2%	-	-	89.4%	10.6%	0%	-	-	88.2%	11.8%	0%	-	-	-	-
Totals %	7.9%	56.1%	0.1%	64.1%	20.9%	2.5%	0%	23.4%	11%	1.5%	0%	12.4%	-	-	-	-	-
Heavy	2	9	0	-	3	0	0	-	7	1	0	-	-	-	-	-	-
Heavy %	3.7%	2.3%	0%	-	2.1%	0%	0%	-	9.3%	10%	0%	-	-	-	-	-	-
Bicycles	0	3	0	-	3	0	0	-	0	0	0	-	-	-	-	-	-
Bicycle %	0%	0.8%	0%	-	2.1%	0%	0%	-	0%	0%	0%	-	-	-	-	-	-



Peak Hour: 12:00 PM - 01:00 PM Weather: Broken Clouds (6 °C)

Start Time	N Approach 4000 RIVERSIDE DR (INTERNAL RD)					S Approach 4010 RIVERSIDE DR (INTERNAL RD)					W Approach 4000 RIVERSIDE DR (INTERNAL RD)					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-10-03 12:00:00	2	12	0	0	14	2	1	0	0	3	1	0	0	0	1	18
2025-10-03 12:15:00	2	13	0	0	15	6	1	0	0	7	4	0	0	0	4	26
2025-10-03 12:30:00	2	12	0	0	14	3	1	0	0	4	3	1	0	0	4	22
2025-10-03 12:45:00	3	11	0	0	14	3	0	0	0	3	2	0	0	0	2	19
Grand Total	9	48	0	0	57	14	3	0	0	17	10	1	0	0	11	85
Approach%	15.8%	84.2%	0%		-	82.4%	17.6%	0%		-	90.9%	9.1%	0%		-	-
Totals %	10.6%	56.5%	0%		67.1%	16.5%	3.5%	0%		20%	11.8%	1.2%	0%		12.9%	-
PHF	0.75	0.92	0		0.95	0.58	0.75	0		0.61	0.63	0.25	0		0.69	0.82
Heavy	0	1	0		1	0	0	0		0	0	0	0		0	1
Heavy %	0%	2.1%	0%		1.8%	0%	0%	0%		0%	0%	0%	0%		0%	1.2%
Lights	9	47	0		56	14	3	0		17	10	1	0		11	84
Lights %	100%	97.9%	0%		98.2%	100%	100%	0%		100%	100%	100%	0%		100%	98.8%
Single-Unit Trucks	0	1	0		1	0	0	0		0	0	0	0		0	1
Single-Unit Trucks %	0%	2.1%	0%		1.8%	0%	0%	0%		0%	0%	0%	0%		0%	1.2%
Buses	0	0	0		0	0	0	0		0	0	0	0		0	0
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0		-	0	0	0		-	0	0	0		-	-
Bicycles on Road%	0%	0%	0%		-	0%	0%	0%		-	0%	0%	0%		-	-



**Selected Hour: 09:15 AM - 10:15 AM Weather: Broken Clouds (6 °C)**

Start Time	N Approach 4000 RIVERSIDE DR (INTERNAL RD)					S Approach 4010 RIVERSIDE DR (INTERNAL RD)					W Approach 4000 RIVERSIDE DR (INTERNAL RD)					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-10-03 09:15:00	0	6	0	0	6	2	0	0	0	2	3	0	0	0	3	11
2025-10-03 09:30:00	1	5	0	2	6	2	1	0	0	3	2	0	0	0	2	11
2025-10-03 09:45:00	5	9	0	2	14	2	0	0	0	2	2	1	0	0	3	19
2025-10-03 10:00:00	1	9	0	0	10	1	0	0	0	1	1	1	0	0	2	13
Grand Total	7	29	0	4	36	7	1	0	0	8	8	2	0	0	10	54
Approach%	19.4%	80.6%	0%		-	87.5%	12.5%	0%		-	80%	20%	0%		-	-
Totals %	13%	53.7%	0%		66.7%	13%	1.9%	0%		14.8%	14.8%	3.7%	0%		18.5%	-
PHF	0.35	0.81	0		0.64	0.88	0.25	0		0.67	0.67	0.5	0		0.83	0.71
Heavy	0	2	0		2	1	0	0		1	1	1	0		2	5
Heavy %	0%	6.9%	0%		5.6%	14.3%	0%	0%		12.5%	12.5%	50%	0%		20%	9.3%
Lights	7	27	0		34	6	1	0		7	7	1	0		8	49
Lights %	100%	93.1%	0%		94.4%	85.7%	100%	0%		87.5%	87.5%	50%	0%		80%	90.7%
Single-Unit Trucks	0	2	0		2	1	0	0		1	1	0	0		1	4
Single-Unit Trucks %	0%	6.9%	0%		5.6%	14.3%	0%	0%		12.5%	12.5%	0%	0%		10%	7.4%
Buses	0	0	0		0	0	0	0		0	0	1	0		1	1
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	50%	0%		10%	1.9%
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	100%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Road	0	1	0		-	2	0	0		-	0	0	0		-	-
Bicycles on Road%	0%	100%	0%			100%	0%	0%			0%	0%	0%			-

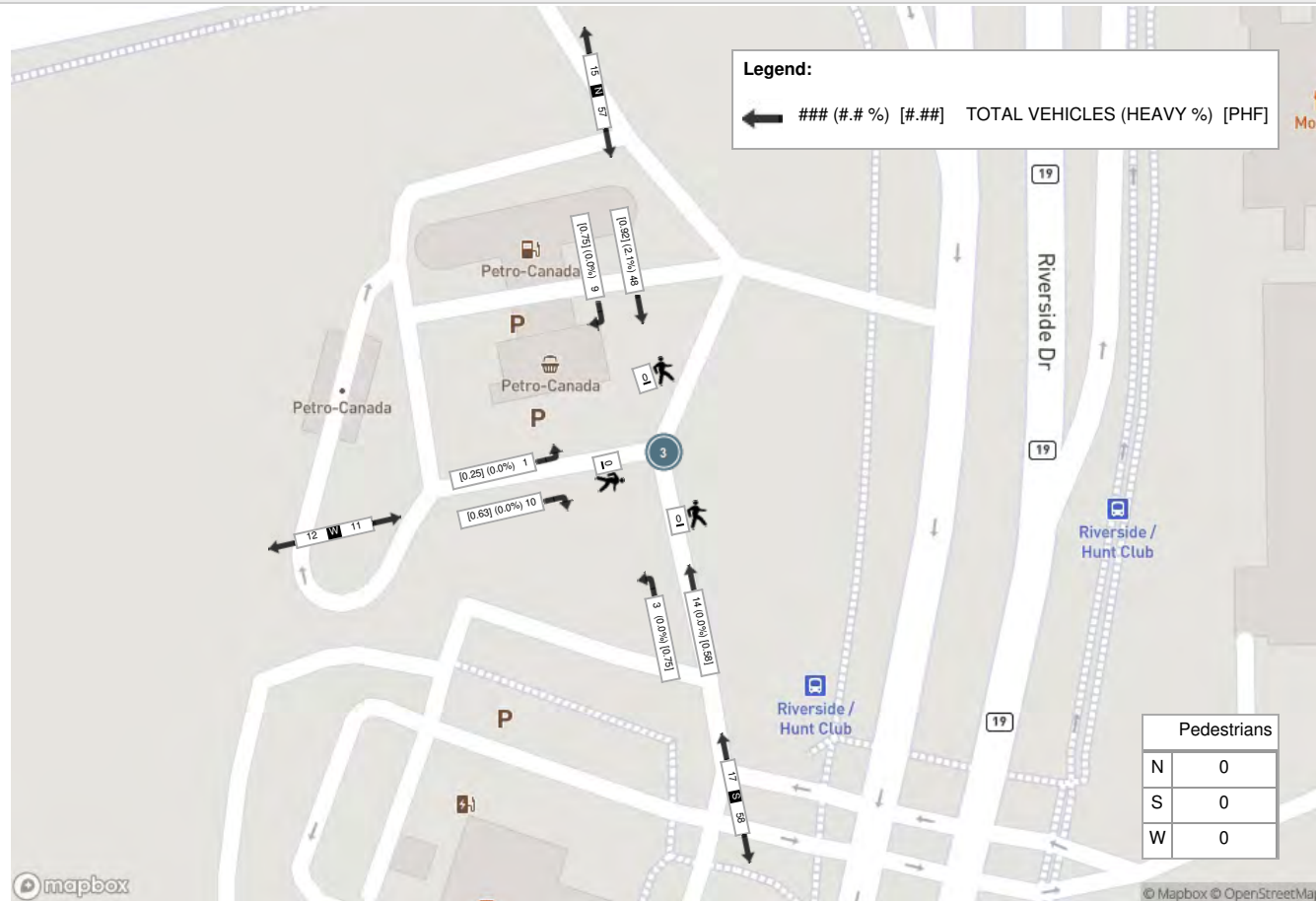




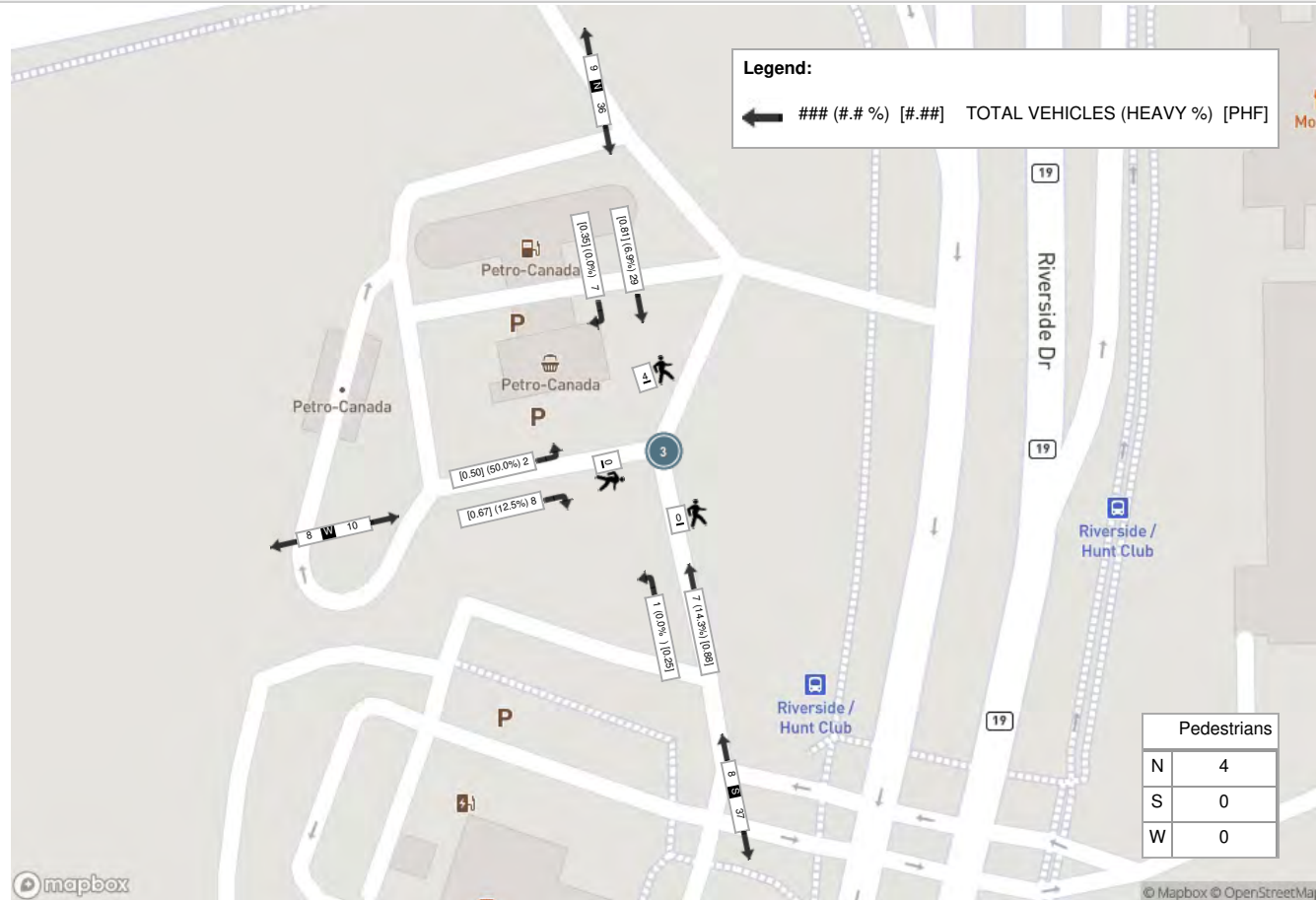
Selected Hour: 04:45 PM - 05:45 PM Weather: Broken Clouds (6 °C)

Start Time	N Approach 4000 RIVERSIDE DR (INTERNAL RD)					S Approach 4010 RIVERSIDE DR (INTERNAL RD)					W Approach 4000 RIVERSIDE DR (INTERNAL RD)					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-10-03 16:45:00	2	8	0	0	10	4	1	0	0	5	1	0	0	0	1	16
2025-10-03 17:00:00	1	8	0	0	9	5	0	0	0	5	2	0	0	0	2	16
2025-10-03 17:15:00	2	10	0	0	12	4	0	0	0	4	1	0	0	0	1	17
2025-10-03 17:30:00	2	12	0	0	14	4	0	0	0	4	3	0	0	0	3	21
Grand Total	7	38	0	0	45	17	1	0	0	18	7	0	0	0	7	70
Approach%	15.6%	84.4%	0%		-	94.4%	5.6%	0%		-	100%	0%	0%		-	-
Totals %	10%	54.3%	0%		64.3%	24.3%	1.4%	0%		25.7%	10%	0%	0%		10%	-
PHF	0.88	0.79	0		0.8	0.85	0.25	0		0.9	0.58	0	0		0.58	0.83
Heavy	0	1	0		1	0	0	0		0	0	0	0		0	1
Heavy %	0%	2.6%	0%		2.2%	0%	0%	0%		0%	0%	0%	0%		0%	1.4%
Lights	7	37	0		44	17	1	0		18	7	0	0		7	69
Lights %	100%	97.4%	0%		97.8%	100%	100%	0%		100%	100%	0%	0%		100%	98.6%
Single-Unit Trucks	0	0	0		0	0	0	0		0	0	0	0		0	0
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Buses	0	0	0		0	0	0	0		0	0	0	0		0	0
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Articulated Trucks	0	1	0		1	0	0	0		0	0	0	0		0	1
Articulated Trucks %	0%	2.6%	0%		2.2%	0%	0%	0%		0%	0%	0%	0%		0%	1.4%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0		-	0	0	0		-	0	0	0		-	-
Bicycles on Road%	0%	0%	0%		-	0%	0%	0%		-	0%	0%	0%		-	-

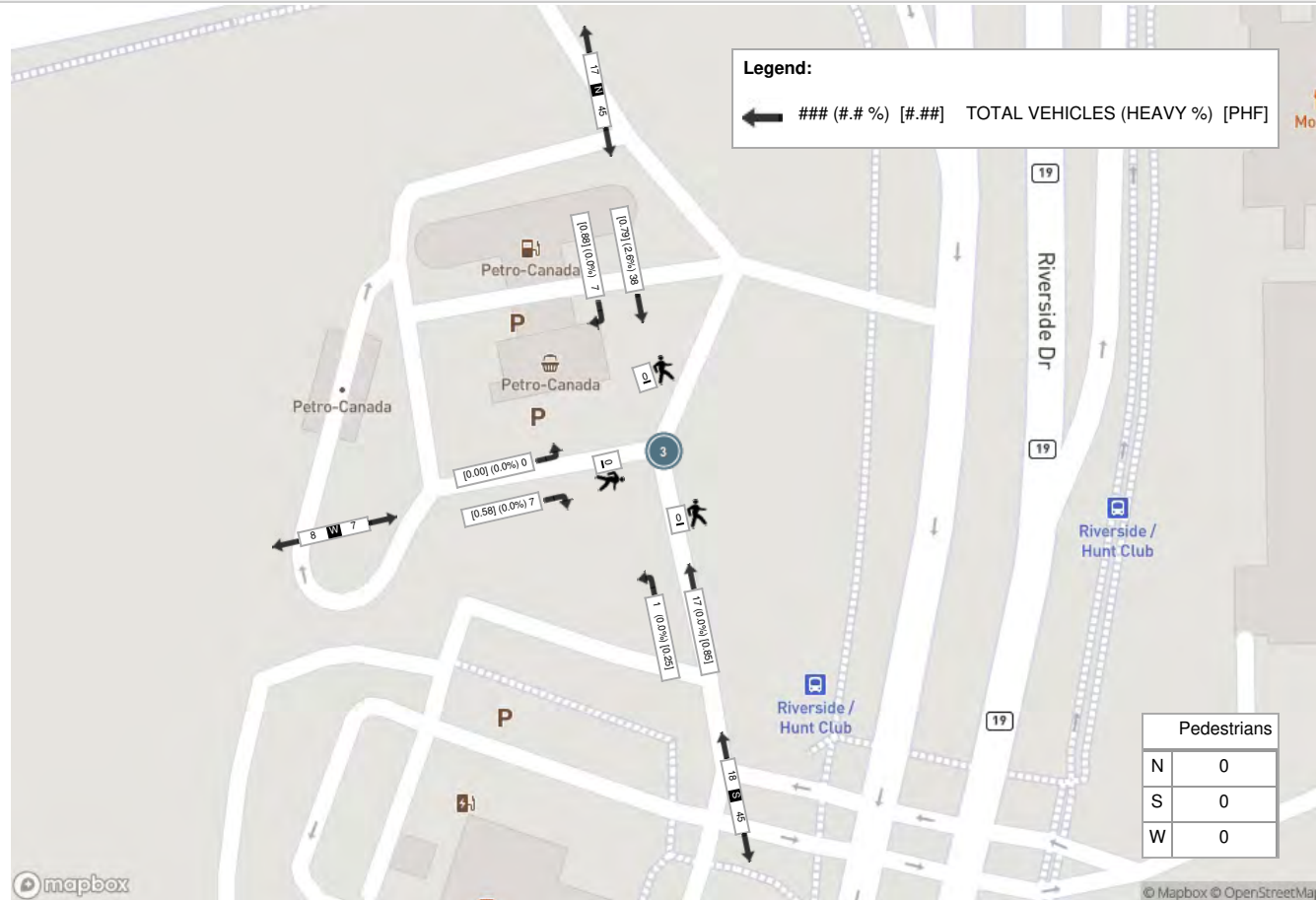
**Peak Hour: 12:00 PM - 01:00 PM Weather: Broken Clouds (6 °C)**



**Selected Hour: 09:15 AM - 10:15 AM Weather: Broken Clouds (6 °C)**



**Selected Hour: 04:45 PM - 05:45 PM Weather: Broken Clouds (6 °C)**



## **Appendix E: Collision Data**





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2019 **To:** December 31, 2024

**Location:** HUNT CLUB RD @ RIVERSIDE DR

**Traffic Control:** Traffic signal

**Total Collisions:** 217

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jan-14, Mon,08:15	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jan-21, Mon,07:21	Freezing Rain	Rear end	P.D. only	Ice	South	Turning right	Unknown	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jan-23, Wed,12:10	Snow	Angle	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Feb-04, Mon,08:37	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-04, Mon,08:45	Clear	Sideswipe	P.D. only	Slush	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Feb-06, Wed,18:16	Freezing Rain	Rear end	P.D. only	Ice	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Feb-14, Thu,13:00	Snow	Sideswipe	P.D. only	Slush	West	Unknown	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-17, Sun,04:30	Clear	Sideswipe	P.D. only	Dry	North	Turning left	Unknown	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Feb-17, Sun,13:17	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Feb-20, Wed,18:00	Clear	Rear end	P.D. only	Loose snow	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-27, Wed,19:17	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2019 **To:** December 31, 2024

**Location:** HUNT CLUB RD @ RIVERSIDE DR

**Traffic Control:** Traffic signal

**Total Collisions:** 217

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Apr-04, Thu,09:47	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Apr-09, Tue,14:00	Snow	Rear end	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-11, Thu,14:55	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Apr-25, Thu,15:41	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Apr-26, Fri,11:00	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Passenger van	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Apr-28, Sun,14:00	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Unknown	Unknown	Other motor vehicle	
2019-May-02, Thu,11:50	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Unknown	Other motor vehicle	0
					South	Turning right	Passenger van	Other motor vehicle	
2019-May-04, Sat,13:14	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-09, Thu,06:30	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-May-11, Sat,20:30	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-May-31, Fri,11:02	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	

# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2019 **To:** December 31, 2024

**Location:** HUNT CLUB RD @ RIVERSIDE DR

**Traffic Control:** Traffic signal

**Total Collisions:** 217

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jun-03, Mon,07:18	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jun-06, Thu,02:06	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	
2019-Jun-07, Fri,14:44	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jun-09, Sun,19:28	Clear	Rear end	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2019-Jun-14, Fri,06:51	Clear	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jun-14, Fri,14:50	Rain	Sideswipe	P.D. only	Wet	East	Going ahead	Unknown	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Unknown	Other motor vehicle	
2019-Jul-03, Wed,21:30	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jul-08, Mon,15:07	Clear	Rear end	P.D. only	Dry	West	Going ahead	Truck - closed	Other motor vehicle	0
					West	Going ahead	Delivery van	Other motor vehicle	
2019-Aug-02, Fri,09:03	Clear	Sideswipe	P.D. only	Dry	East	Turning left	Truck - closed	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Aug-10, Sat,13:19	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-15, Thu,21:00	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2019 **To:** December 31, 2024

**Location:** HUNT CLUB RD @ RIVERSIDE DR

**Traffic Control:** Traffic signal

**Total Collisions:** 217

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Aug-16, Fri,15:40	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-17, Sat,14:45	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-30, Fri,07:15	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-30, Fri,18:00	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-07, Sat,08:10	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Passenger van	Other motor vehicle	
2019-Sep-10, Tue,17:08	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-13, Fri,11:44	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Sep-19, Thu,22:18	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Sep-22, Sun,14:35	Clear	Rear end	P.D. only	Dry	North	Turning right	Passenger van	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Sep-25, Wed,09:20	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-30, Mon,05:19	Clear	SMV other	P.D. only	Dry	North	Unknown	Automobile, station wagon	Pole (utility, power)	0
2019-Oct-15, Tue,09:58	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2019 **To:** December 31, 2024

**Location:** HUNT CLUB RD @ RIVERSIDE DR

**Traffic Control:** Traffic signal

**Total Collisions:** 217

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Oct-22, Tue,20:21	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Passenger van	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Oct-26, Sat,12:23	Clear	Rear end	P.D. only	Dry	South	Going ahead	Tow truck	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Oct-26, Sat,12:50	Clear	Rear end	P.D. only	Dry	East	Turning right	Motorcycle	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Nov-04, Mon,15:18	Rain	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2019-Nov-05, Tue,11:45	Clear	Rear end	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Nov-07, Thu,07:19	Snow	Angle	P.D. only	Slush	West	Turning right	Automobile, station wagon	Skidding/sliding	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-13, Wed,07:55	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Nov-13, Wed,18:30	Clear	Rear end	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Passenger van	Other motor vehicle	
2019-Nov-18, Mon,11:41	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-02, Mon,08:21	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-03, Tue,07:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	

# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2019 **To:** December 31, 2024

**Location:** HUNT CLUB RD @ RIVERSIDE DR

**Traffic Control:** Traffic signal

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Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Dec-05, Thu,06:18	Clear	Other	P.D. only	Dry	East	Reversing	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Dec-27, Fri,19:07	Clear	Rear end	P.D. only	Ice	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Dec-31, Tue,23:15	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Unknown	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Jan-06, Mon,15:07	Snow	Rear end	P.D. only	Slush	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Jan-06, Mon,18:10	Clear	Sideswipe	P.D. only	Packed snow	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Jan-16, Thu,23:00	Clear	Sideswipe	P.D. only	Dry	North	Turning left	Unknown	Other motor vehicle	0
					North	Turning left	Pick-up truck	Other motor vehicle	
2020-Jan-26, Sun,15:55	Snow	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2020-Feb-02, Sun,15:34	Clear	Rear end	P.D. only	Wet	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2020-Feb-07, Fri,14:15	Snow	Rear end	P.D. only	Slush	North	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-11, Tue,09:45	Clear	Rear end	Non-fatal injury	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Feb-14, Fri,11:30	Clear	Rear end	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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## Collision Details Report - Public Version

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Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2020-Feb-18, Tue,13:40	Snow	Rear end	P.D. only	Slush	South	Turning right	Passenger van	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2020-Feb-19, Wed,08:59	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Unknown	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Feb-20, Thu,09:23	Clear	Rear end	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Mar-02, Mon,11:10	Clear	SMV other	P.D. only	Ice	North	Changing lanes	Automobile, station wagon	Curb	0
2020-Mar-14, Sat,11:06	Rain	Sideswipe	P.D. only	Wet	West	Unknown	Unknown	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Mar-18, Wed,16:49	Clear	Rear end	Non-fatal injury	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Apr-02, Thu,16:42	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Apr-06, Mon,13:45	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Apr-16, Thu,22:12	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Apr-23, Thu,08:55	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2020-May-01, Fri,20:02	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Jul-02, Thu,16:02	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	

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**Traffic Control:** Traffic signal

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Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2020-Jul-18, Sat,14:45	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Jul-20, Mon,14:30	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2020-Jul-25, Sat,11:55	Clear	SMV other	Non-fatal injury	Dry	South	Turning right	Motorcycle	Curb	0
2020-Aug-03, Mon,15:20	Clear	Angle	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Aug-06, Thu,13:40	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2020-Aug-14, Fri,14:30	Clear	Rear end	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2020-Aug-17, Mon,09:34	Clear	Rear end	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Sep-24, Thu,15:46	Clear	Angle	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Sep-25, Fri,18:45	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2020-Oct-23, Fri,16:57	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2020-Nov-06, Fri,09:03	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Dec-24, Thu,21:17	Rain	Turning movement	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	

# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2019 **To:** December 31, 2024

**Location:** HUNT CLUB RD @ RIVERSIDE DR

**Traffic Control:** Traffic signal

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Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Jan-08, Fri,09:15	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2021-Jan-22, Fri,13:03	Clear	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2021-Jan-29, Fri,16:03	Clear	Sideswipe	P.D. only	Dry	East	Unknown	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Feb-05, Fri,15:09	Strong wind	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2021-Feb-06, Sat,16:09	Clear	Rear end	P.D. only	Dry	South	Turning right	Unknown	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Feb-21, Sun,10:40	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2021-Feb-27, Sat,11:25	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2021-Mar-13, Sat,19:00	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Mar-17, Wed,11:40	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Apr-15, Thu,15:25	Clear	Rear end	Non-reportable	Dry	East	Slowing or stopping	Passenger van	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2021-Apr-24, Sat,11:40	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Apr-27, Tue,14:30	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Delivery van	Other motor vehicle	0
					West	Going ahead	Delivery van	Other motor vehicle	

# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2019 **To:** December 31, 2024

**Location:** HUNT CLUB RD @ RIVERSIDE DR

**Traffic Control:** Traffic signal

**Total Collisions:** 217

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Jun-02, Wed,14:26	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Jun-07, Mon,19:00	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2021-Jun-17, Thu,19:05	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2021-Jun-26, Sat,19:41	Rain	SMV other	Non-fatal injury	Wet	East	Changing lanes	Automobile, station wagon	Skidding/sliding	0
2021-Jul-05, Mon,11:45	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2021-Jul-21, Wed,09:15	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2021-Jul-22, Thu,15:20	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2021-Jul-24, Sat,08:48	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2021-Jul-31, Sat,13:57	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2021-Aug-12, Thu,21:25	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2021-Aug-18, Wed,16:18	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2021-Aug-25, Wed,11:50	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	





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Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Aug-26, Thu, 17:34	Clear	Rear end	P.D. only	Dry	South	Turning right	Unknown	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Sep-04, Sat, 16:05	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2021-Sep-08, Wed, 16:58	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2021-Sep-22, Wed, 19:51	Rain	Rear end	Non-fatal injury	Wet	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Sep-23, Thu, 16:05	Clear	Rear end	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2021-Oct-10, Sun, 22:49	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2021-Oct-17, Sun, 10:49	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Nov-06, Sat, 23:20	Clear	Angle	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2021-Nov-19, Fri, 21:18	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2021-Nov-21, Sun, 12:39	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Nov-22, Mon, 10:39	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	

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2021-Nov-27, Sat,19:22	Clear	Rear end	P.D. only	Dry	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Dec-04, Sat,23:52	Snow	Rear end	P.D. only	Slush	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Dec-10, Fri,19:15	Clear	Rear end	P.D. only	Wet	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Dec-15, Wed,14:14	Snow	Rear end	Non-fatal injury	Loose snow	South	Going ahead	Pick-up truck	Skidding/sliding	0
					South	Stopped	Pick-up truck	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Dec-20, Mon,21:01	Snow	Rear end	P.D. only	Loose snow	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Dec-24, Fri,12:00	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Dec-30, Thu,15:25	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Dec-31, Fri,11:10	Clear	Rear end	P.D. only	Wet	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Passenger van	Other motor vehicle	
2022-Jan-05, Wed,13:20	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Truck - closed	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2022-Jan-12, Wed,08:20	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Jan-12, Wed,08:20	Snow	Rear end	P.D. only	Loose snow	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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2022-Jan-26, Wed,11:20	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Feb-01, Tue,03:01	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Feb-18, Fri,09:00	Freezing Rain	Rear end	P.D. only	Ice	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Slowing or stopping	Pick-up truck	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2022-Feb-24, Thu,14:00	Clear	Rear end	P.D. only	Loose snow	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2022-Mar-19, Sat,19:00	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2022-Mar-24, Thu,15:44	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2022-Mar-25, Fri,17:43	Rain	Rear end	P.D. only	Wet	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Apr-15, Fri,21:00	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Apr-29, Fri,08:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Unknown	Unknown	Other motor vehicle	
2022-Apr-29, Fri,14:45	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2022-May-21, Sat,10:50	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

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**Location:** HUNT CLUB RD @ RIVERSIDE DR

**Traffic Control:** Traffic signal

**Total Collisions:** 217

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2022-May-21, Sat,18:10	Clear	Angle	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Jun-01, Wed,12:40	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Jun-22, Wed,08:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2022-Jul-09, Sat,08:34	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2022-Jul-09, Sat,13:34	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Jul-21, Thu,13:30	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Jul-22, Fri,14:45	Clear	Rear end	P.D. only	Dry	South	Unknown		Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Aug-10, Wed,21:59	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Fire vehicle	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Aug-12, Fri,14:34	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2022-Aug-24, Wed,21:13	Clear	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Aug-28, Sun,02:48	Clear	Sideswipe	P.D. only	Dry	West	Unknown		Other motor vehicle	0
					West			Other motor vehicle	

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2022-Aug-29, Mon,12:18	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2022-Aug-29, Mon,17:28	Clear	Rear end	P.D. only	Dry	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North			Other motor vehicle	
2022-Aug-31, Wed,20:30	Rain	Rear end	P.D. only	Wet	South	Stopped	Automobile, station wagon	Other motor vehicle	0
					South			Other motor vehicle	
2022-Sep-13, Tue,19:15	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Sep-24, Sat,12:47	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Truck - closed	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2022-Oct-01, Sat,07:20	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Oct-05, Wed,07:09	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2022-Oct-13, Thu,09:39	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Unknown	Unknown	Other motor vehicle	
2022-Oct-16, Sun,12:40	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Oct-20, Thu,11:09	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Oct-31, Mon,07:00	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

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Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2022-Nov-01, Tue,17:00	Clear	Angle	P.D. only	Dry	South	Stopped	Automobile, station wagon	Other motor vehicle	0
					West	Changing lanes	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Nov-09, Wed,17:50	Clear	Rear end	Non-reportable	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Nov-11, Fri,18:45	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2022-Nov-21, Mon,13:05	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Nov-28, Mon,07:00	Clear	Rear end	Non-reportable	Wet	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Dec-02, Fri,12:15	Clear	Sideswipe	P.D. only	Dry	West	Merging	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Dec-11, Sun,14:15	Clear	Turning movement	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Making "U" turn	Unknown	Other motor vehicle	
2022-Dec-17, Sat,13:00	Clear	Sideswipe	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Dec-19, Mon,07:05	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Dec-24, Sat,10:38	Snow	Other	P.D. only	Loose snow	North	Reversing	Snow plow	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Jan-08, Mon,15:25	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Slowing or stopping	Truck - open	Other motor vehicle	



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2024-Jan-15, Mon,12:15	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Jan-22, Mon,09:45	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2024-Jan-26, Fri,09:40	Freezing Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2024-Jan-26, Fri,12:15	Freezing Rain	Turning movement	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Feb-03, Sat,11:00	Clear	Rear end	P.D. only	Dry	West	Stopped	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Passenger van	Other motor vehicle	
2024-Feb-08, Thu,09:10	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Merging	Truck - closed	Other motor vehicle	
2024-Feb-08, Thu,14:40	Clear	Turning movement	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2024-Feb-09, Fri,08:20	Clear	Rear end	P.D. only	Dry	West	Stopped	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Feb-13, Tue,07:05	Clear	Rear end	P.D. only	Dry	South	Stopped	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Feb-20, Tue,03:55	Clear	Rear end	P.D. only	Dry	East	Stopped	Delivery van	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2024-Feb-27, Tue,15:15	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2024-Feb-28, Wed,12:00	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



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2024-Apr-02, Tue,07:15	Clear	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Jun-03, Mon,15:25	Clear	Rear end	P.D. only	Dry	East	Stopped	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2024-Jun-04, Tue,09:00	Clear	Rear end	P.D. only	Dry	West	Stopped	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Delivery van	Other motor vehicle	
2024-Jun-27, Thu,13:15	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2024-Jul-02, Tue,06:10	Clear	Rear end	P.D. only	Dry	East	Changing lanes	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2024-Jul-09, Tue,05:00	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Jul-09, Tue,12:00	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2024-Jul-10, Wed,17:10	Rain	Other	P.D. only	Wet	South	Reversing	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2024-Jul-11, Thu,12:50	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Delivery van	Other motor vehicle	
2024-Jul-19, Fri,18:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2024-Jul-20, Sat,21:15	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	



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2024-Jul-22, Mon,07:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2024-Jul-30, Tue,08:45	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Truck - dump	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Jul-31, Wed,18:11	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2024-Aug-02, Fri,07:15	Clear	Rear end	P.D. only	Dry	East	Merging	Unknown	Other motor vehicle	0
					East	Going ahead	Truck - tractor	Other motor vehicle	
2024-Aug-06, Tue,15:58	Clear	Rear end	P.D. only	Dry	South	Stopped	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2024-Aug-07, Wed,13:00	Clear	Turning movement	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2024-Aug-09, Fri,09:00	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Aug-16, Fri,18:15	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2024-Aug-25, Sun,09:12	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2024-Aug-30, Fri,00:23	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Oct-05, Sat,18:00	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2024-Nov-26, Tue,06:45	Rain	Turning movement	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	



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2024-Dec-18, Wed, 18:00	Rain	Turning movement	P.D. only	Wet	West	Turning right	Passenger van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

## **Appendix F: Proxy A&W Arrivals Forecast**



Hwy Proximity	600	700
Density	Med	Low
Adj Flow	High	Med
Gas Pumps	16	12

	Site 2			Site 3		
	3733 Hwy 7			3700 Major Mackenzie		
	AM	PM	Sat	AM	PM	Sat
Peak Hour	7:15 - 8:15 AM	5:30 - 6:30 PM	2:45 - 3:45 PM	9:30 - 10:30 AM	4:45 - 5:45 PM	12:45 - 1:45 PM
Adj Street Traffic	2487	3575	3793	1349	2354	2107
In/Out Total Gas Bar	194	288	265	249	355	400
In Total Gas Bar	88	149	107	124	164	177
Arrivals for A&W	6	8	4	10	18	13
Arrivals for Car Wash	8	13	16	15	47	44
Max Arrivals for A&W						
Max Arrivals for Car Wash	18	17	19	34	47	56
Max Queue for A&W	1	1	1	0	1	3
Max Queue for Car Wash	1	1	2	1	13	22
Absolute Max Queue for A&W	2		2	2		4
Absolute Max Queue for Car Wash	3			6		

Total Gas Bar Traffic wrt Adj Street	4%	4%	3%	9%	7%	8%
A&W Traffic wrt Gas Bar	7%	5%	4%	8%	11%	7%
Car Wash Traffic wrt Gas Bar	9%	9%	15%	12%	29%	25%

Average		
AM	PM	Sat
7%	8%	6%

## **Appendix G: TDM Checklist**



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

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

<b>TDM-supportive design &amp; infrastructure measures:</b> <i>Non-residential developments</i>		<b>Check if completed &amp; add descriptions, explanations or plan/drawing references</b>
<b>1. WALKING &amp; CYCLING: ROUTES</b>		
<b>1.1 Building location &amp; access points</b>		
<b>BASIC</b>	1.1.1 Locate building close to the street, and do not locate parking areas between the street and building entrances	<input type="checkbox"/>
<b>BASIC</b>	1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	<input type="checkbox"/>
<b>BASIC</b>	1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	<input checked="" type="checkbox"/> same as existing
<b>1.2 Facilities for walking &amp; cycling</b>		
<b>REQUIRED</b>	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 ( <i>see Official Plan policy 4.3.3</i> )	<input checked="" type="checkbox"/>  A quality pedestrian linkage is proposed between the existing sidewalk on Riverside Drive via a concrete walkway, connecting to the pedestrian crossing providing access to the building entrance, with curb cuts at either site of the crossing
<b>REQUIRED</b>	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 ( <i>see Official Plan policy 4.3.12</i> )	<input checked="" type="checkbox"/>  A quality pedestrian linkage is proposed between the existing sidewalk on Riverside Drive via a concrete walkway, connecting to the pedestrian crossing providing access to the building entrance, with curb cuts at either site of the crossing



TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		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 ( <i>see Official Plan policy 4.3.10</i> )	<input checked="" type="checkbox"/> A quality pedestrian linkage is proposed between the existing sidewalk on Riverside Drive via a concrete walkway, connecting to the pedestrian crossing providing access to the building entrance, with curb cuts at either site of the crossing
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 ( <i>see Official Plan policy 4.3.10</i> )	<input checked="" type="checkbox"/> curb cuts are provided at pedestrian crossings
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 ( <i>see Official Plan policy 4.3.11</i> )	<input checked="" type="checkbox"/>  The sidewalk connection to the on site crossing provided on Site facilitates active transportation
BASIC	1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	<input checked="" type="checkbox"/> The site is well lit at night, with pedestrian connections 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	<input type="checkbox"/>
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	<input type="checkbox"/>
<b>1.3 Amenities for walking &amp; cycling</b>		
BASIC	1.3.1 Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	<input type="checkbox"/>
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)	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>2. WALKING &amp; CYCLING: END-OF-TRIP FACILITIES</b>		
<b>2.1 Bicycle parking</b>		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible ( <i>see Official Plan policy 4.3.6</i> )	<input checked="" type="checkbox"/> bike racks are provided adjacent to the existing building on the patio area
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 ( <i>see Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/> Bicycle parking spaces have been provided in accordance with Zoning By-law Section 111). Refer to Site Plan
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 ( <i>see Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/> Provided in accordance to By-law Section 111. Refer to Site Plan
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	<input type="checkbox"/>
BETTER	2.1.5 Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	<input type="checkbox"/>
<b>2.2 Secure bicycle parking</b>		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers ( <i>see Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/> Does not apply to this land use.
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	<input type="checkbox"/>
<b>2.3 Shower &amp; change facilities</b>		
BASIC	2.3.1 Provide shower and change facilities for the use of active commuters	<input type="checkbox"/>
BETTER	2.3.2 In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	<input type="checkbox"/>
<b>2.4 Bicycle repair station</b>		
BETTER	2.4.1 Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>3. TRANSIT</b>		
<b>3.1 Customer amenities</b>		
BASIC	3.1.1 Provide shelters, lighting and benches at any on-site transit stops	<input type="checkbox"/>
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	<input type="checkbox"/>
BETTER	3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	<input type="checkbox"/>
<b>4. RIDESHARING</b>		
<b>4.1 Pick-up &amp; drop-off facilities</b>		
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	<input type="checkbox"/>
<b>4.2 Carpool parking</b>		
BASIC	4.2.1 Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	<input type="checkbox"/>
BETTER	4.2.2 At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	<input type="checkbox"/>
<b>5. CARSHARING &amp; BIKESHARING</b>		
<b>5.1 Carshare parking spaces</b>		
BETTER	5.1.1 Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces ( <i>see Zoning By-law Section 94</i> )	<input type="checkbox"/>
<b>5.2 Bikeshare station location</b>		
BETTER	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>6. PARKING</b>		
<b>6.1 Number of parking spaces</b>		
<b>REQUIRED</b>	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	<input checked="" type="checkbox"/> Parking provided in accordance with By-law 2008-250) Section 101-102
<b>BASIC</b>	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	<input type="checkbox"/>
<b>BASIC</b>	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly ( <i>see Zoning By-law Section 104</i> )	<input type="checkbox"/>
<b>BETTER</b>	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 ( <i>see Zoning By-law Section 111</i> )	<input type="checkbox"/>
<b>6.2 Separate long-term &amp; short-term parking areas</b>		
<b>BETTER</b>	6.2.1 Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	<input type="checkbox"/>
<b>7. OTHER</b>		
<b>7.1 On-site amenities to minimize off-site trips</b>		
<b>BETTER</b>	7.1.1 Provide on-site amenities to minimize mid-day or mid-commute errands	<input type="checkbox"/>

## **TDM Measures Checklist:** *Non-Residential Developments (office, institutional, retail or industrial)*

<b>Legend</b>	
<b>BASIC</b>	The measure is generally feasible and effective, and in most cases would benefit the development and its users
<b>BETTER</b>	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

<b>TDM measures: <i>Non-residential developments</i></b>		<b>Check if proposed &amp; add descriptions</b>
<b>1. TDM PROGRAM MANAGEMENT</b>		
<b>1.1 Program coordinator</b>		
<b>BASIC</b> ★	1.1.1 Designate an internal coordinator, or contract with an external coordinator	<input type="checkbox"/>
<b>1.2 Travel surveys</b>		
<b>BETTER</b>	1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	<input type="checkbox"/>
<b>2. WALKING AND CYCLING</b>		
<b>2.1 Information on walking/cycling routes &amp; destinations</b>		
<b>BASIC</b>	2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances	<input type="checkbox"/>
<b>2.2 Bicycle skills training</b>		
<i>Commuter travel</i>		
<b>BETTER</b> ★	2.2.1 Offer on-site cycling courses for commuters, or subsidize off-site courses	<input type="checkbox"/>
<b>2.3 Valet bike parking</b>		
<i>Visitor travel</i>		
<b>BETTER</b>	2.3.1 Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	<input type="checkbox"/>

TDM measures: <i>Non-residential developments</i>		Check if proposed & add descriptions
<b>3. TRANSIT</b>		
<b>3.1 Transit information</b>		
BASIC	3.1.1 Display relevant transit schedules and route maps at entrances	<input type="checkbox"/>
BASIC	3.1.2 Provide online links to OC Transpo and STO information	<input type="checkbox"/>
BETTER	3.1.3 Provide real-time arrival information display at entrances	<input type="checkbox"/>
<b>3.2 Transit fare incentives</b>		
<i>Commuter travel</i>		
BETTER	3.2.1 Offer preloaded PRESTO cards to encourage commuters to use transit	<input type="checkbox"/>
BETTER ★	3.2.2 Subsidize or reimburse monthly transit pass purchases by employees	<input type="checkbox"/>
<i>Visitor travel</i>		
BETTER	3.2.3 Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	<input type="checkbox"/>
<b>3.3 Enhanced public transit service</b>		
<i>Commuter travel</i>		
BETTER	3.3.1 Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	<input type="checkbox"/>
<i>Visitor travel</i>		
BETTER	3.3.2 Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	<input type="checkbox"/>
<b>3.4 Private transit service</b>		
<i>Commuter travel</i>		
BETTER	3.4.1 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	<input type="checkbox"/>
<i>Visitor travel</i>		
BETTER	3.4.2 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	<input type="checkbox"/>

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



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

## **Appendix H: A&W Queue Study**



## MEMORANDUM

**TO:**

Gus Sarantopoulos  
IGP Realty Advisors Inc.  
19 Galsworthy Ave  
Scarborough, Ontario  
M1R 2N5

**FROM:**

Tim Arnott  
Justin Kwok  
Catherine Yokhana

**PROJECT:**

8223-03  
Gas Bar Operations Study

**DATE:**

October 13, 2023

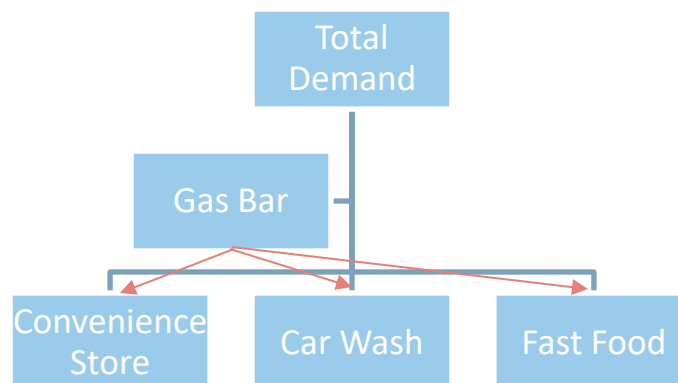
**RE: SUNCOR-A&W DRIVE THRU QUEUING STUDY**

### 1.0 INTRODUCTION

BA Group has been retained by Suncor Energy Products “Petro Canada” to investigate the demand and operational metrics at various existing gas bars throughout the Greater Toronto Area (GTA) to establish, based upon various characteristics and location context of the gas bar, the potential traffic demand and operational requirements of new gas bars.

Gas bar operations are typically coupled with secondary uses such as convenience stores, drive-through fast food, and car wash facilities that further augment demand at the location. Additional demand to these secondary facilities may potentially interact with the gas bar such that a vehicle uses both the primary gas bar and one or more secondary facilities in the same visit. A schematic of the flow of vehicle demand through the potential facilities is provided in **Figure 1**.

**Figure 1: Schematic of Gas Bar Facility Demand Flows**



## 2.0 PROXY SITE SELECTION

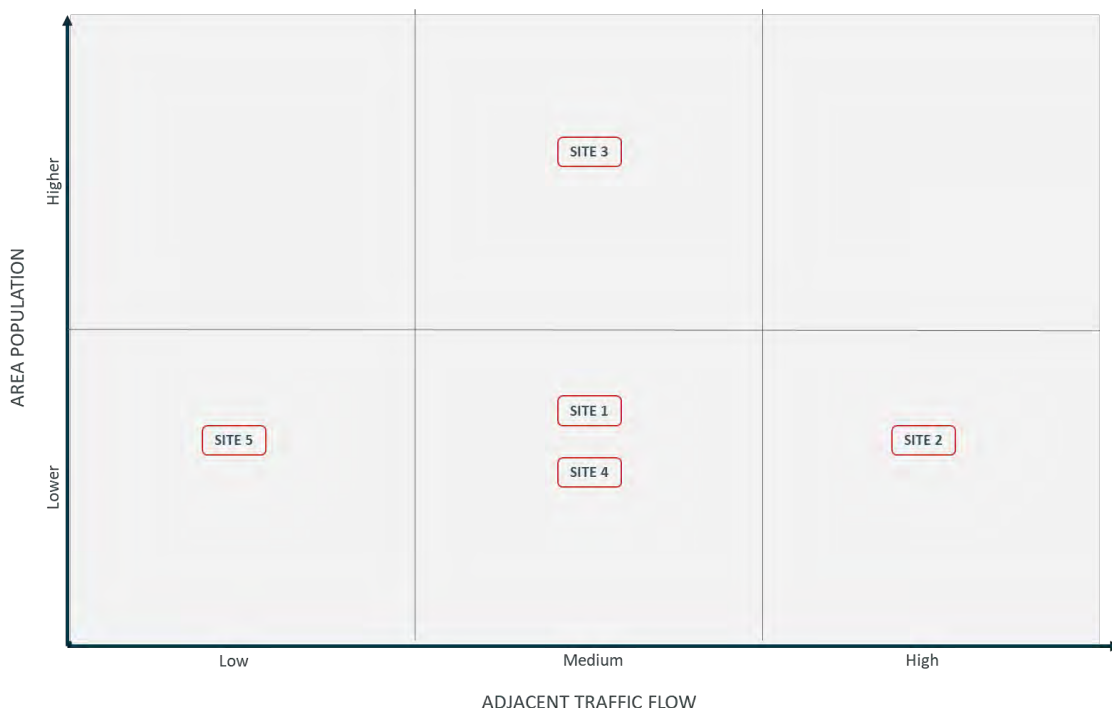
For the purposes of this study, Petro Canada had provided a list of 15 Petro Canada sites with an A&W drive through, car wash and convenience store facilities. These 15 sites are narrowed down to 5 sites based on their compatibility with queue review via cameras, a mix of municipalities within the GTA and sites with moderate or high adjacent street traffic activity to ensure busier gas bars are measured to obtain an upper bound of the operational metrics. These sites were further classified based on various locational characteristics including, the proximity to the nearest highway interchange and the number of pumps at the gas bar.

The magnitude of adjacent street traffic activity was determined based on a review of historical traffic volumes at nearby major intersections in the vicinity of the 15 Petro Canada sites. Typically, the closer the sites are to a 400-series highway interchange, the higher the adjacent street traffic which is associated with greater activity at the gas bar site.

Based on these considerations, five suburban sites with varying surrounding population along commuter routes across the GTA were chosen for this study as summarized in **Table 1**.

Table 1 Selected Site Summary

Site	Address	Municipality	# Gas Pump Stations	Zonal Population	Proximity to Interchange	Adjacent Traffic Flow
1	235 Steeles Ave E	Milton	10	15468	1150 m	Medium
2	3733 Highway 7	Woodbridge	16	15956	600 m	High
3	3700 Major Mackenzie Dr W	Vaughan	12	34833	700 m	Medium
4	8480 Highway 27	Vaughan	12	14108	850 m	Medium
5	3100 Ellesmere Ave	Scarborough	12	14238	1250 m	Low



Discussion with Petro Canada revealed that peak gas bar and drive-through activity typically occur on Fridays and Saturdays. As such, for each of these chosen sites, the 12-hour period from 7:00 to 19:00 was observed to establish typical demand, queuing and operation service times for the various facilities at these sites.

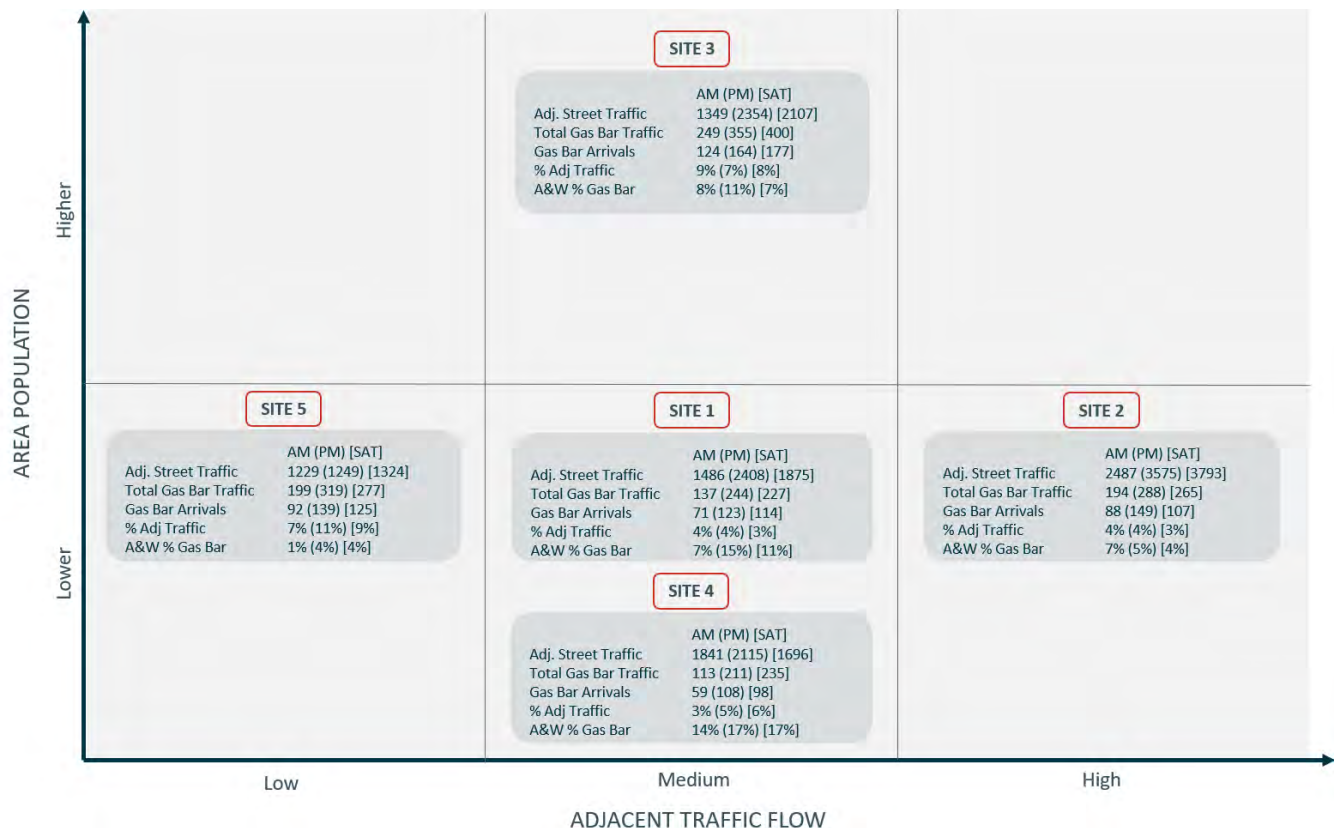
## 3.0 OVERALL SUMMARY

Section 3.0 examines the overall traffic within the gas bar sites with respect to the peak hours and the overall interaction with the services provided within site (i.e., A&W drive through). In addition, an overview of the dwell times and queues for each site will be examined. This high-level summary showcases how these results differ and coincide, demonstrating how the classification of the site may impacts results.

### 3.1 Total Gas Bar Demand & Arrivals

BA Group examined the total in and out volumes from each of the four gas bars study sites. The peak hour was identified, representing when the highest number of cars entered/exited the site during the weekday morning and afternoon and Saturday periods. Detailed summaries of traffic volumes related to the entire gas bar (two-way traffic and arrivals) and the A&W drive through arrivals at during peak hours for each site are provided in **Appendix A**. The resultant data for each site is plotted in **Figure 2** with respect to the area population and the level of adjacent traffic flow observed at each site.

Figure 2: A&W Gas Bar Traffic Demand Summary



Based on the resultant proportion of adjacent traffic captured by the observed gas bars relative to its surrounding area population, it was found that locations with higher surrounding area population capture a higher proportion of activity (i.e. ~10%) from the adjacent street traffic flow as opposed to lower population areas which capture a lower proportion of traffic (i.e. ~5%) from the adjacent street traffic to use the gas bar across all time periods at the same adjacent street traffic level. Locations with lower adjacent street traffic level capture a higher proportion of activity (i.e. ~10%) as compared to other locations with similar area population levels but with higher adjacent street traffic levels (i.e. ~5%).

### 3.2 A&W Drive-Through Demand

The proportion of A&W drive through traffic was expressed relative to the total gas bar traffic. It was found that for the A&W, its proportion of traffic is generally independent of the area and adjacent traffic flow level that the gas bar site is located in. The A&W proportion of total gas bar traffic is consistent and is generally in the 5% range weekday mornings and Saturdays and around 10% weekday afternoons.

A portion of A&W drive through demand will overlap with patrons that used the gas pumps before or after those other ancillary uses. This interaction between the ancillary uses and the gas pumps was observed for the sites and it was found that on average, the interaction percentage for the A&W is 7%, 5% and 11% for the weekday morning, afternoon and Saturday peak hours, respectively.

These proportions and rates can be used in conjunction with a proposed gas bar location's area overall population and the adjacent street traffic level to forecast the anticipated total gas bar activity and A&W drive through demand for the proposed gas bar.

### 3.3 A&W Drive-Through Operations

**Table 2** is an overview of the dwell times for the A&W drive through, examining two types of dwell times – order time and pay/pickup time. The order time measures how long users are waiting at the order station, while the pay/pickup time measures how long users are spending to pay and to receive their food at the drive through window.

The order time is generally within the control of drive-through customers in aggregate and is generally consistent with one another across all four sites averaging about 1 minute to 3.5 minutes to make an order. The range in dwell times to make an order is relatively small since drive through customers generally take similar time to decide what to order or would have decided beforehand from the menu. The average time ranges from 51 seconds to 74 seconds (i.e. range of 23 seconds) whereas the maximum time ranges from 3 minutes to 4.5 minutes (i.e. range of 90 seconds).

The pay and pickup service time is determined by the staff operations inside the A&W depending on the staffing levels, allocation between in store versus drive-through that could fluctuate from day to day or hour to hour. On average, the pay and pickup service time is 1.5 minutes to 4.5 minutes on Friday and 7 minutes on Saturday. As expected, the pay and pickup service time takes longer and varies more from store to store. The average time ranges from 64 seconds to 110 seconds (i.e. range of 46 seconds) whereas the maximum time ranges from 3 minutes to 10 minutes (i.e. range of 420 seconds).

Table 2 A&W Drive Through Service Times

	Friday					Saturday				
	Site 1	Site 2	Site 3	Site 4	Site 5	Site 1	Site 2	Site 3	Site 4	Site 5
Average Order Time	1:01	0:54	1:06	1:09	1:03	0:59	0:51	1:07	1:14	1:20
Max Order Time	3:36	3:54	4:24	3:33	3:26	3:29	2:49	4:03	3:57	3:40
Average Pay/Pickup Time	1:11	1:04	1:20	1:39	1:38	1:34	1:05	1:22	1:50	2:48
Max Pay/Pickup Time	4:15	3:11	4:25	6:25	5:30	7:37	8:18	4:53	9:23	10:06

Interaction between demand at the drive through and its service times result in queuing. **Table 3** is a summary the absolute the queues observed for each site, with average queues of 2 or less vehicles and **max queues of 5 or less vehicles**. The longer queues observed at Sites 3 and 4 are due to the generally having longer and more varied pay/pick-up times. With these typical service times, it is expected that the maximum A&W drive through queues will be 5 vehicles or less.

Table 3 A&W Drive Through Queue

	Friday					Saturday				
	Site 1	Site 2	Site 3	Site 4	Site 5	Site 1	Site 2	Site 3	Site 4	Site 5
Average Queue	0	0	1	1	1	0	1	2	2	1
Max Queue	2	2	2	3	1	3	2	4	5	1

### 3.4 Operations Classification Summary

The observed dwell and operation times for the A&W drive through and car wash across the five gas bar sites are classified in **Figure 3** based on the site location's area density and adjacent traffic flow.



Figure 3: A&W Drive Through and Car Wash Operations Summary



Queue storage for proposed gas bar ancillary facilities (i.e. A&W drive through) can be designed accommodate the max queues observed for the corresponding area population and adjacent traffic flow volume of the proposed location.

## 4.0 CONCLUSION

This study has examined the dwell times and queue lengths of services within gas bars that operate at higher volumes throughout the GTA. These five sites were typically in suburban locations along commuter routes and were in proximity to a major 400-series interchange. Additionally, the sites examined were located at intersections with high car volumes to assess the adjacent street volume capture rate based on the noted locational characteristics.

**Table 4** provides a summary of the key queuing results from the study. It was found that an A&W at a typical gas bar in a range of suburban conditions will have a maximum 5-vehicle queue waiting in front of the order station. As such, for a typical gas bar in such a location, the queue storage design for a typical suburban A&W drive-through should have accommodation for at least 5 vehicles.

Table 4 Queue Summary

	A&W Drive Through				
	Site 1 235 Steeles Ave E	Site 2 3733 Highway 7	Site 3 3700 Major Mackenzie Dr	Site 4 8480 Highway 27	Site 5 3100 Ellesmere Ave
Max Queue Observed	3	2	4	5	1
Maximum	5				

Should a proposed gas bar site not have sufficient footprint to adequately provide the above queuing storages for an A&W drive-through, a simulation can be formulated to assess the probability of various queuing level with site demand levels customized for the location context of the proposed site. Such a simulation would rely upon service time distributions derived from the set of observed dwell times at the various gas bar sites for ordering and payment/pick-up processes.

The dwell times for each service are generally not impacted by the type of site and are consistent regardless of the site's locational characteristics. The A&W drive-through tends to have slightly higher dwell times due to the nature of a drive-through where service is provided by one or more people at multiple steps and thus have a greater variance in operation (depending on the staffing level at the various A&W locations).

## **Sub-Appendix A**

### **Total Gas Bar and A&W Drive Through Demand Summary**

Table 5 Friday AM Peak Hour

Peak Hour	Site 1	Site 2	Site 3	Site 4	Site 5
	9:00 – 10:00 AM	7:15 – 8:15 AM	9:30 – 10:30 AM	8:30 – 9:30 AM	8:30 – 9:30 AM
<b>TOTAL SITE</b>					
Adjacent Street Traffic	1486	2487	1349	1841	1229
Gas Bar Total Traffic	137	194	249	113	199
Gas Bar Total Arrivals	71	88	124	59	92
Arrival % Adj. Traffic	4%	4%	9%	3%	7%
<b>A&amp;W</b>					
A&W Arrivals	5	6	10	8	2
Max A&W Arrivals <sup>1</sup>	8	6	10	13	6
% of Gas Bar Arrivals	7%	7%	8%	14%	1%
Interaction with Gas	7%				0%

Notes:

1. Max A&W Arrivals based on the A&W generator peak hour, rather than gas bar peak hour.

Table 6 Friday PM Peak Hour

Peak Hour	Site 1	Site 2	Site 3	Site 4	Site 5
	5:15 -6:15 PM	5:30 – 6:30 PM	4:45 – 5:45 PM	4:45 – 5:45 PM	4:45 – 5:45 PM
<b>TOTAL SITE</b>					
Adjacent Street Traffic	2408	3575	2345	2115	1249
Gas Bar Total Traffic	244	288	355	211	319
Gas Bar Total Arrivals	123	149	164	108	139
Arrival % Adj. Traffic	4%	4%	7%	5%	11%
<b>A&amp;W</b>					
A&W Arrivals	19	8	18	18	6
Max A&W Arrivals <sup>1</sup>	26	14	23	23	15
% of Gas Bar Arrivals	15%	5%	11%	17%	4%
Interaction with Gas	5%				1%

Notes:

1. Max A&W Arrivals based on the A&W generator peak hour, rather than gas bar peak hour.

Table 7      Saturday Midday Peak Hour

Peak Hour	Site 1	Site 2	Site 3	Site 4	Site 5
	1:15-2:15 PM	2:45 – 3:45 PM	12:45 – 1:45 PM	1:15 – 2:15 PM	2:45 – 3:45 PM
<b>TOTAL SITE</b>					
Adjacent Street Traffic	1875	3793	2107	1696	1324
Gas Bar Total Traffic	227	265	400	235	277
Gas Bar Total Arrivals	114	107	177	98	125
Arrival % Adj. Traffic	3%	3%	8%	6%	9%
<b>A&amp;W</b>					
A&W Arrivals	13	4	13	17	5
Max A&W Arrivals <sup>1</sup>	14	11	34	23	11
% of Gas Bar Arrivals	11%	4%	7%	17%	4%
Interaction with Gas	11%				1%

Notes:

1. Max A&W Arrivals based on the A&W generator peak hour, rather than gas bar peak hour.

## **Appendix I: Multi-Modal Level of Service**



Multi-Modal Level of Service - Segments Form

Project: 4000 Riverside Drive  
Consultant: BA Group  
Date: Nov 3, 2025  
Scenario: Existing / Future Conditions

Segment Name		Hunt Club Road				Riverside Drive			
OP Transect / Policy Area		Outer Urban or Suburban				Outer Urban or Suburban			
Segment Component		Majority (>50%)		Critical		Majority (>50%)		Critical	
Side of Street		W or N	E or S	W or N	E or S	W or N	E or S	W or N	E or S
Pedestrian	PLOS Inputs								
	Posted Speed (km/h)	80 km/h		80 km/h		60 km/h		60 km/h	
	Two-Way ADT	43,245		43,245		33,654		33,654	
	Pedestrian Facility	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Facility Width (m)	2.20m	2.00m	2.00m	1.80m	2.00m	2.00m	2.00m	1.80m
	Offset from Motor Vehicle Travel Lanes (m)	1.5-2.99m	1.5-2.99m	1.5-2.99m	1.5-2.99m	1.5-2.99m	1.5-2.99m	1.5-2.99m	< 0.5m
	Presence of Adjacent Parking?	-	-	-	-	-	-	-	-
	General Purpose Curb Lane ADT	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000
	Max. Distance between Controlled Crossings (m)	> 400m	> 400m	> 400m	> 400m	≤ 200m	≤ 200m	≤ 200m	≤ 200m
Score	2.25	2.25	2.25	1.50	4.25	4.25	4.25	2.00	
PLOS	D	D	D	D	B	B	B	D	
Target PLOS	C				C				
Bicycle	BLOS Inputs								
	Cycling Route Classification	Elsewhere				Elsewhere			
	Cycling Facility	Paved Shoulder without Buffer	Paved Shoulder without Buffer	Paved Shoulder without Buffer	Paved Shoulder without Buffer	Paved Shoulder without Buffer	Cycle Track	Paved Shoulder without Buffer	Cycle Track
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	No	No	No	No	No	-	No	-
	Facility Operation	-	-	-	-	-	Unidirectional	-	Unidirectional
	Pedestrian/Cyclist Volume	-	-	-	-	-	-	-	-
	Facility Width	≥ 2.0m	≥ 2.0m	< 1.2m	< 1.2m	1.5-1.99m	1.8m-2.09m	1.5-1.99m	1.8m-2.09m
	Boulevard/Buffer Width (excluding curb)	< 0.5m	-	-	-	-	≥ 1.5m	-	< 0.6m and no adjacent parking
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	None	None	None	None	None	None	None
	Number of Travel Lanes at Crossing	-	-	-	-	-	-	-	-
	Crossing includes Median Refuge (≥ 2.7m)	-	-	-	-	-	-	-	-
	Cross-street Posted Speed (km/h)	-	-	-	-	-	-	-	-
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	Rare	Rare	Rare	Rare	Rare	-	Rare	-
	Score	1.60	1.60	0.75	0.75	1.60	4.50	1.60	2.50
	BLOS	D	D	E	E	D	A	D	C
Target BLOS	C				C				
Transit	TLOS Inputs								
	Transit Facility	Mixed Traffic				Mixed Traffic			
	Facility Type	Mixed Traffic	Mixed Traffic			Mixed Traffic	Mixed Traffic		
	Expected Transit Running Time	Moderately Impeded	Moderately Impeded			Moderately Impeded	Moderately Impeded		
	Transit Travel Speed (if available)	80 km/h	80 km/h			60 km/h	60 km/h		
	TLOS	B	B			B	B		
Target TLOS	E (D for frequent transit routes)				E (D for frequent transit routes)				
	PRLOS Inputs								

Public Realm	<a href="#">Context</a>	Other Streets	Other Streets		Other Streets	Other Streets	
	<a href="#">Inner Boulevard Width</a>	≤ 0.6m	≤ 0.6m		≤ 0.6m	≤ 0.6m	
	<a href="#">Middle Boulevard Width</a>	≤ 0.5m	≤ 0.5m		≤ 0.5m	≤ 0.5m	
	<a href="#">Outer Boulevard (Frontage) Width</a>	≤ 0.5m	≤ 0.5m		≥ 3.0m	≥ 3.0m	
	<a href="#">Transit Route on Segment?</a>	No	No		Yes	Yes	
	<a href="#">Bus Stop Elements</a>	-	-		No platform, landing zone or shelter	No platform, landing zone or shelter	
	<a href="#">Number of Midblock Traffic Lanes (both travel directions)</a>	≤ 2			≤ 2		
	Score	15.00	15.00		23.40	23.40	
	PRLOS	D	D		B	B	
		D			B		