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3145 Conroy Road

Transportation Impact Assessment (TIA) Report

FINAL

November 2025

Certification Form for Transportation Impact Assessment (TIA) Study

TIA Reports

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 and 2023 amendments.

Please note that the Certification is only required for the submission of a TIA. The Screening can be undertaken by a non-certified individual for the purpose of identifying if a TIA is needed or not.

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[1] professional in good standing, whose field of expertise
  - ☑ is either transportation engineering
  - ☐ or transportation planning.

[1] License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

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Revision Date: December 2023

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Transportation Impact Assessment Report

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TRANSPORTATION IMPACT ASSESSMENT REPORT

Parsons has been retained by WO MW Realty Limited to prepare a Transportation Impact Assessment (TIA) in support of a Site Plan Application (SPA) for a proposed office and truck fleet maintenance facility located at the municipal address of 3145 Conroy Road, referred to as the Subject Site herein. This document follows the TIA process as outlined in the City of Ottawa Transportation Impact Assessment Guidelines (2017) and the 2023 revisions. The following TIA Report addresses latest City staff comments dated September 26, 2025.

1.0 SCREENING FORM

The screening form confirmed the need for a TIA Report based on the Trip Generation trigger, given that the proposed development consists of fleet and employee parking, a mechanic shop, office space, and a Compressed Natural Gas (CNG) refueling area, and is forecasted to produce more than 60 person trips during peak hours.

Screening also determined that the conditions for additional analysis due to Location Triggers were met. The development proposes to maintain an existing access location to a boundary street (Conroy Road) that is designated as part of the City's Transit Priority Network and Cross-Town Bikeway Network.

The Safety Trigger is also met as the proposed driveway is within the area of influence of the CN Rail at-grade crossing, which has railway traffic signal control, and the proposed driveway makes use of an existing median break along Conroy Road. The Screening Form and Site Plan have been provided in **Appendix A**.

2.0 SCOPING REPORT

2.1. Existing and Planned Conditions

2.1.1. Proposed Development

The proposed development is located at 3145 Conroy Road in the City of Ottawa. The site is approximately 4.86 hectares on a rectangular parcel, with a minimum depth of 457m. This site is located in Ward 10 (Gloucester-Southgate) between Walkley Road and Hunt Club Road and south-adjacent to a CN Rail Corridor. The site is currently vacant with remnants of a go-karting track and a mini-golf course. The site context is illustrated in **Figure 1.**

The proposed development includes an office space, a servicing garage with loading spaces, storage at the rear of the site for roll-off and front-end waste bins, and surface parking lots for 135 truck spaces and 267 employee parking spaces (including barrier-free spaces). Site modifications associated with the proposed development include site clearing and grading. The installation of a 1.8m sidewalk will provide pedestrian access to the main building from Conroy Road along with 10 bicycle parking spaces east of the building entrance. Site vehicular access will be provided through the existing driveway to Conroy Road, with full movements maintained.

Proposed surface parking consists of 259 standard vehicle spaces, 8 barrier-free parking spaces, and 12 motorcycle spaces. Landscaping buffers will surround the surface parking areas and around the edges of the site. The site plan is illustrated in **Figure 2**.

Zoning and planning provisions

The current Zoning By-law designates the development parcel as IG3 (General Industrial), which permits a 'wide range of low to moderate impact, light industrial uses in accordance with the Employment Area designation of the Official Plan'. As a **servicing and repair shop** and **office**, the development is subjected to provisions 199(3) to (5) of the Zoning By-law. Physical planning provisions, as per 199(3), are presented below in Table 1. 199(4) is not applicable, as there is no accessory display and sales area. It should be noted that a draft Zoning By-law is underway, with the only changed stipulation for the site applying to the minimum lot area, which is met under both the draft and current Zoning By-law. Additional provisions related to parking are discussed in **Section 4.2** of this report.

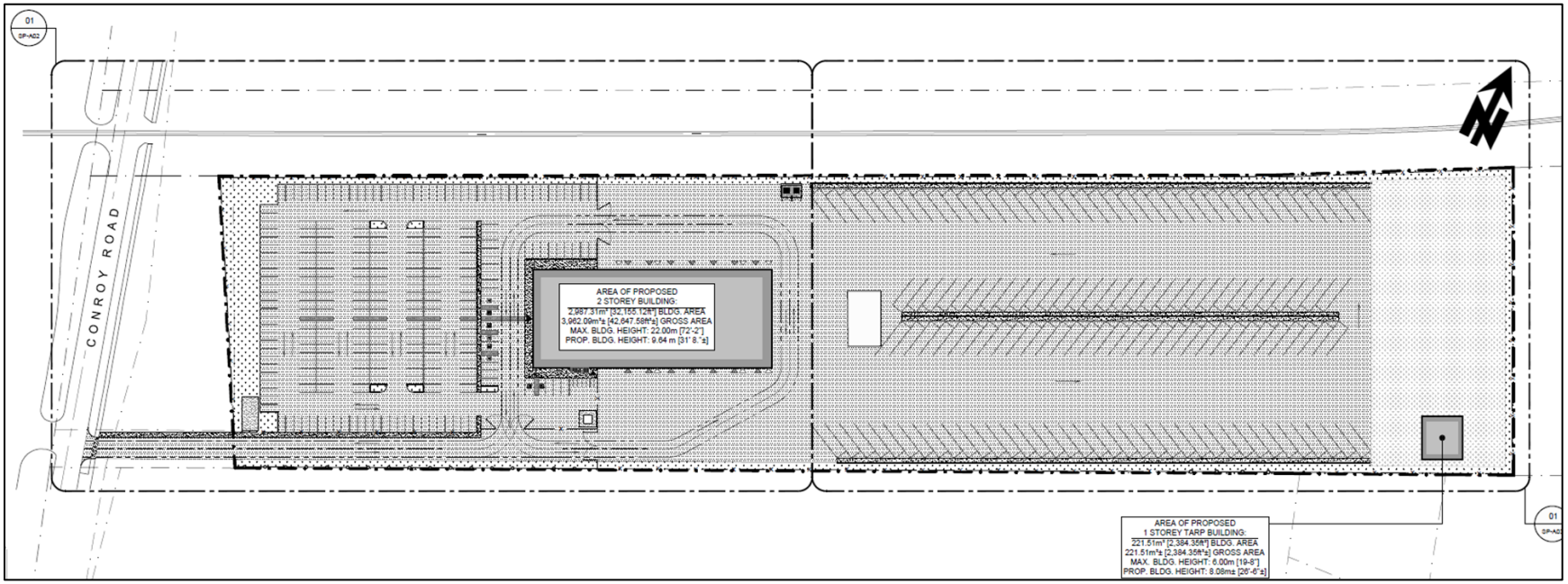
The 2025 Official Plan designates the development parcel as Industrial and Logistics in the Outer Urban Transect, which permits 'heavy equipment and vehicle sales and service' as well as 'offices that are accessory to a primary use'.

Table 1: Summary of Proposed Land Uses, Size and Location

Statistic	Value	General Industrial (IG3) (Table 199, 2023 ZBL)
Lot Area	48,611.80m²	Minimum 1,000 m²
Lot Width	110m	No minimum
Lot Depth	375.24m – 456.64m	-
Lot Coverage	6.6%	Maximum 65%
Gross Floor Area	3,962.09m²	-
Building Area	2,987.31m²	-
Building Height	9.64m	22m
Setback		
Front	108.21m	Minimum 3m
Corner	N/A	Minimum 3m
Interior	34.20m	Minimum 3m
Rear	264.01m	Minimum 3m
Vehicle Parking Spaces	267	Minimum 59
Bicycle Parking Spaces	10	Minimum 9
Motorcycle Spaces	12	Maximum 13
Fleet Parking Spaces	135	-

Figure 1: Local Context

Figure 2: Proposed Site Plan (August 2025)



Note: The proposed access will continue to be through the City of Ottawa property as a Right-of-Way (ROW) easement agreement.

2.1.2. Existing Conditions

Area Road Network

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

Thurston Road is classified as a local road which extends from Conroy Road in the west followed by a 90-degree bend directing to St Laurent Boulevard in the north. Within the study area, Thurston Road has a two-lane cross section consisting of one eastbound lane and one westbound lane. According to the Official Plan Schedule C16, the protected right-of-way is 18m. The posted speed limit is 50km/h.

Johnston Road is classified as collector road traveling east from the Conroy Road intersection and a Major Collector Road traveling west extending to Bank Street. According to Official Plan Schedule C16, the protected right-of-way is 26m. The posted speed limit is 50km/h.

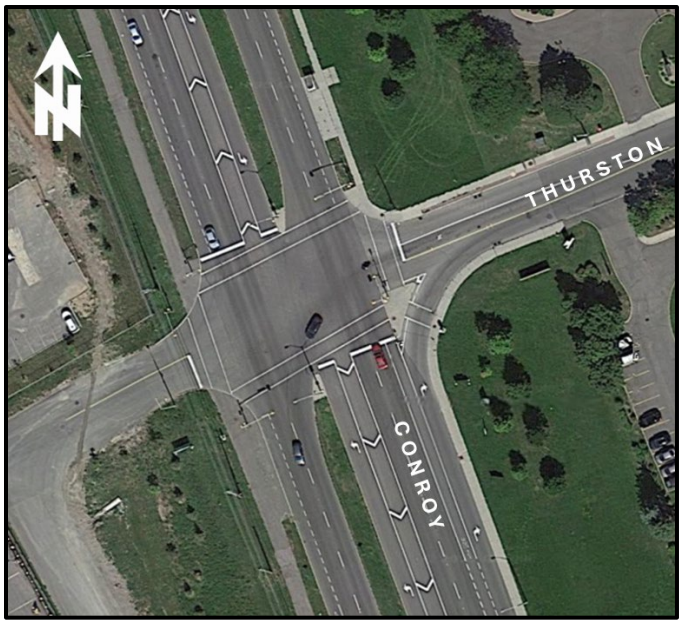
Conroy Road is classified as an arterial road which extends from Walkley Road in the north and merges into Bank Street in the south. Conroy Road has four lane cross section consisting of two northbound lanes, two southbound lanes, curbside bike lanes on either side, and a median break. According to the Official Plan Schedule C16, the protected right-of-way is 37.5m. The posted speed limit is 60km/h. Conroy Road is classified as a full-load truck route.

Existing Study Area Intersections

The following provides a description of study area intersections:

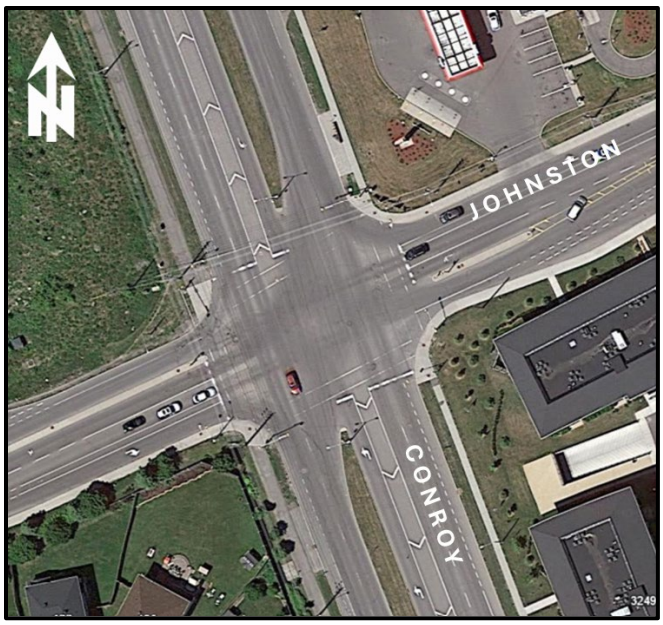
Thurston/Conroy Road

The Thurston/Conroy Road intersection is a four-legged signalized intersection. The northbound movements consist of a left-turn lane, two through lanes, and a channelized right-turn lane, with a pedestrian refuge island. The southbound approach consists of a left-turn lane, a through lane, and a shared through-right lane. A curbside bike lane and a pocket bike lane are provided on Conroy Road for the southbound and northbound directions, respectively. The northbound and southbound cross-section is separated by a median. The westbound movement consists of a left turn lane and a shared through-right lane. The eastbound approach consists of a shared left-turn, through-right lane. All movements are permitted at this location.



Johnston/Conroy Road

The Johnston/Conroy Road intersection is a four-legged intersection. The eastbound and westbound approach consists of a through lane, a right-turn lane, a pocket bike lane, and a left-turn lane. The northbound and southbound movements consist of a single through lane, a shared through-right lane and a left-turn lane separated by a painted buffer. A curbside bike lane is provided on Conroy Road. All movements are permitted at this location.



Existing Driveways to Adjacent Developments

Driveway accesses within 200m of the development access are indicated in red boxes for major accesses and yellow boxes for minor accesses in **Figure 3**. This includes:

- South of the Subject Site at:
  - 3225 Conroy Road (east side): single access to a place of worship and place of assembly, approximately 150m south of the site.
  - 3201 Conroy Road (east side): single access to a gas bar and car wash, approximately 200m south of the site with additional access to Johnston Street.
- North of the Subject site at:
  - 3138 Conroy Road (west side): single access to a train yard with restricted access, approximately 70m away across from the Subject Site on Conroy Road.
  - 3100 Conroy Road (west side): single access to light-industrial facility, approximately 350m north of the site that enters the four-legged intersection with Thurston Road.

Figure 3: Existing Driveways Adjacent to Development

Existing Area Traffic Management Measures

Below are the existing area traffic management measures within the study area:

- Railway crossing and barriers, including pavement markings warning of the train crossing
- No trucks allowed on Johnston Road
- A ”No U-turn” sign travelling northbound on Conroy at the intersection with the Subject Site’s driveway
- “This Lane” bike lane indicator signs on Conroy Road
- Centre flex poles on Johnston Rd

Existing Pedestrian/Cycling Network

A sidewalk facility approximately 1.6m wide is provided on the east side of Conroy Road, directly adjacent to the site. A multi-use pathway (MUP) facility approximately 3.5m wide is provided on the west side of Conroy Road. Both sides of Conroy Road have 2.1m wide painted curbside bike lanes. Johnston Road provides a 2m sidewalk on the south side only west of Conroy Road and on both sides of the road east of Conroy Road. Thurston Drive has sidewalk facilities approximately 2m wide on both sides of the road east of Conroy Road and no facilities west of Conroy Road. Throughout the study area, Conroy Road and Johnston Road (west of Conroy Road) are both part of the Crosstown Bikeway Network (March 1, 2023)[1] according to the new Transportation Master Plan (TMP) and as illustrated in **Figure 4**.

[1] Crosstown Bikeway Network, March 1, 2023

Figure 4: Crosstown Bikeway Network

Transit Network

The transit network for the study area is illustrated in **Figure 5** with **Figure 6** illustrating the bus stop locations near to the site.

Figure 5: Area Transit Network

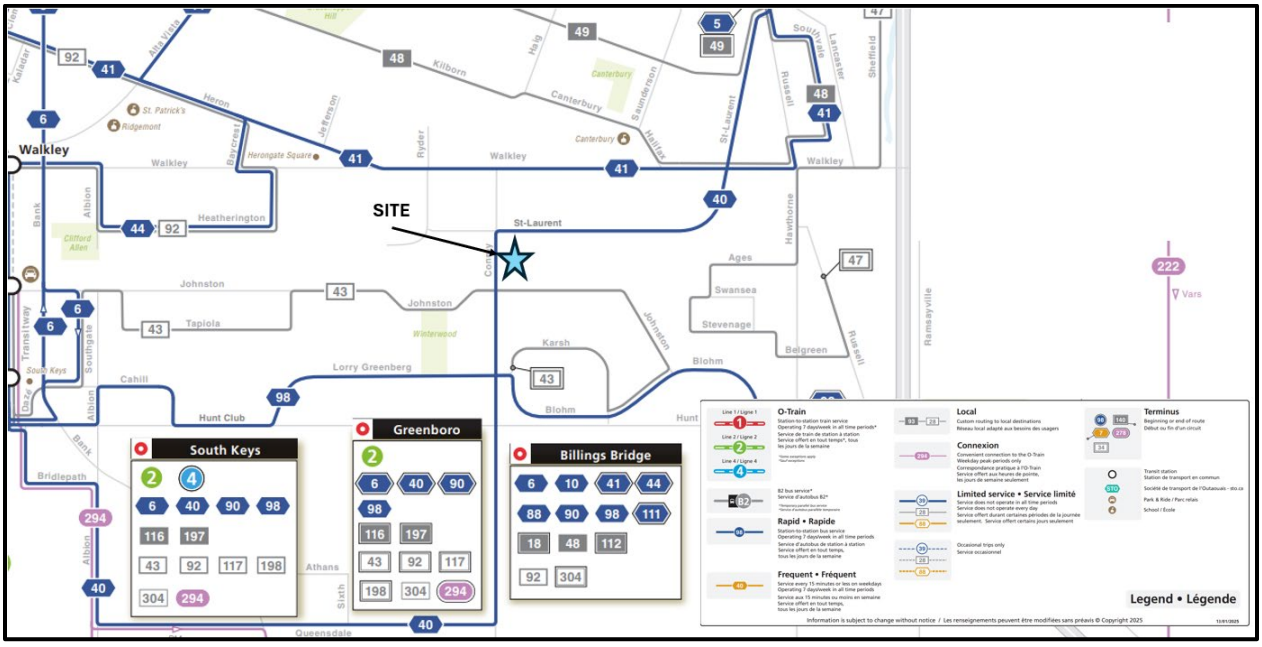
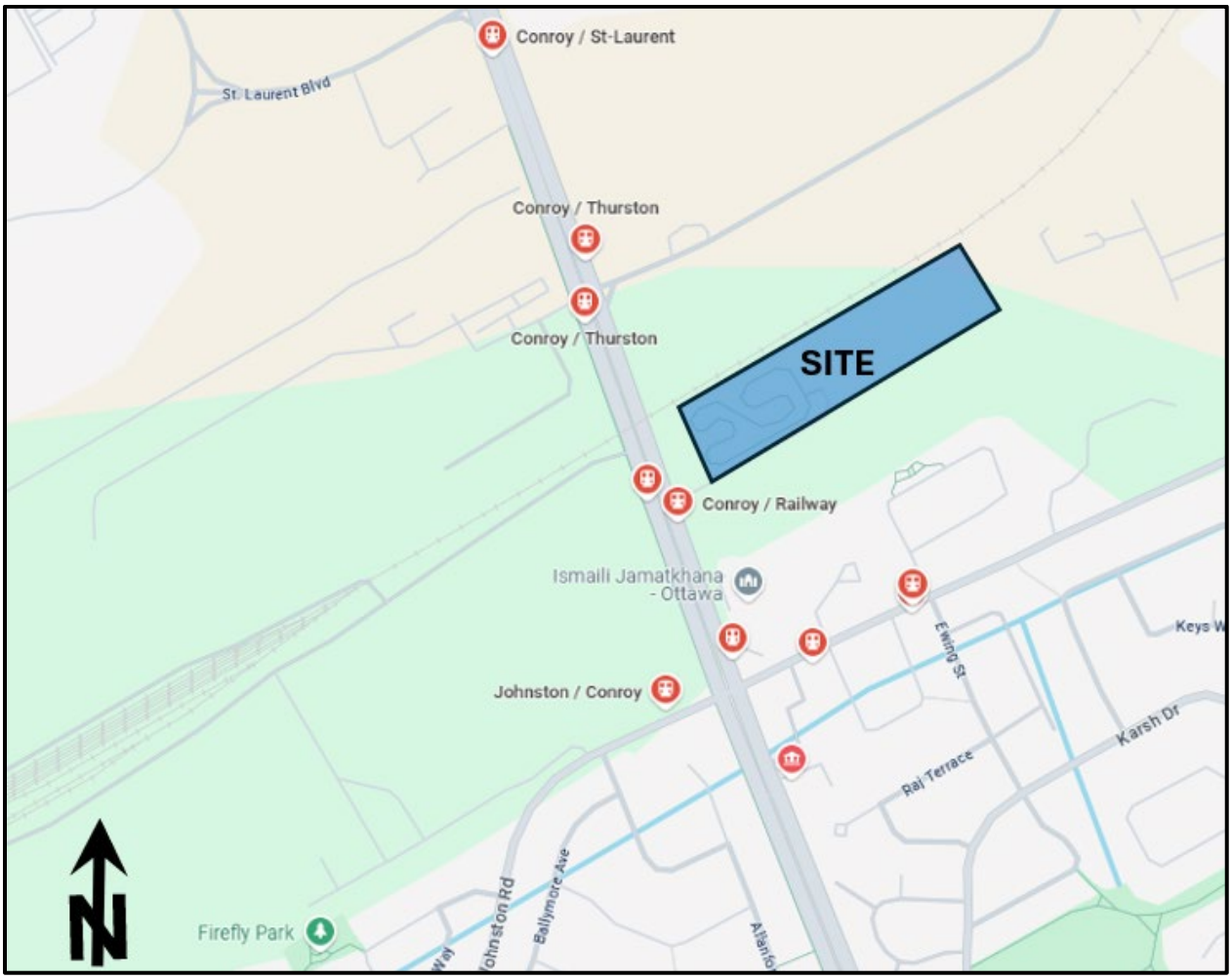


Figure 6: Bus Stop Locations



Figures for each OC Transpo transit route servicing the site are available in **Appendix B**. They are as follows:

Route #40 (St Laurent <-> Greenboro): Identified by OC Transpo as a "Frequent" service type, this route operates seven days a week in all time periods, with headways of approximately 30 minutes during the day. This route provides connectivity to the LRT Line 1 at St Laurent Mall and various destinations within Gloucester all the way to LRT Line 2 at South Keys and Greenboro. Stops for this route are available on both sides of Conroy Road. Stops #4334 and #4335 are immediately adjacent to the site, although there is no pedestrian crossing on Conroy Road from this location. Transit users riding from the north might instead stop at Stops #4333 or #0413, which are 300m from the site, but offer safe crossings at Thurston/Conroy and Johnston/Conroy, respectively.

Route #43 (Karsh <-> Greenboro): Identified by OC Transpo as a "Local" service type, this route operates on weekdays on an hourly basis. The route provides connectivity to LRT Line 2 at Greenboro and various destinations within the Greenboro and South Keys residential areas. Bus stops for this route are available on Johnston Road, located approximately 330m from the site (stops #8135 and #1305).

Route #644 (Canterbury H.S <-> Greenboro): Identified by OC Transpo as a customer service from home to school under the service type "School". This route operates two times a day in the morning during the week. This route provides connectivity to the LRT Line 2 at Greenboro station to Canterbury Highschool and Canterbury Recreation complex. The nearest bus stops serving this route are the site-adjacent Stops #4334 and #4335, although transit users from the north might instead stop further north at Stop #4333, where they can cross safely at Thurston/Conroy.

Route #649 (Hillcrest <-> Greenboro): identified by OC Transpo as a customer service from home to school under the service type "School". This route operates once daily on weekdays. This route provides connectivity between LRT Line 2 and Hillcrest Highschool, located close to the Ottawa Hospital. The nearest bus stops serving this route are the site-adjacent Stops #4334 and #4335, although transit users from the north might instead stop further north at Stop #4333, where they can cross safely at Thurston/Conroy.

CN Rail Corridor

The CN Rail corridor crosses Conroy Road at approximately 105m north of the proposed development access. Railroad crossing signs and gates are provided on Conroy Road. According to information provided on the OC Transpo website regarding coordination of the CN Freight Trains on LRT Line 2, the CN trains are infrequent, running twice on certain days. The timing of the two train is 8-9am and 4-5pm, both of which do not align with the peak hours of the development discussed in the following section.

Peak Hour Travel Demands

Traffic count data was obtained from the City of Ottawa. The vehicle traffic volumes at study area intersections are illustrated in **Figure 7** and active transportation volumes in **Figure 8**, with raw traffic count data provided in **Appendix C**. The City of Ottawa normally provides eight-hour counts, which includes the AM Peak Period (7:00-10:00 AM), the Mid-day Off-Peak Period (11:30 AM-1:30 PM) and the PM Peak Period (3:00-6:00 PM). However, it is noted that the morning peak hour of the generator (i.e. the proposed development) is estimated to be 6:00-7:00 AM.

For this analysis, the earliest available traffic data from the City from 7:00-8:00 AM will be used to represent the 6:00-7:00 AM period at the signalized intersections. Parsons conducted mid-block field counts on Thursday May 15th, 2025, to determine the proportion of traffic volumes from 6:00-7:00 AM versus 7:00-8:00 AM. The count determined that traffic volumes from 6:00-7:00 AM were approximately 50% lower than traffic volumes from 7:00-8:00 AM. Therefore, using the City's 7:00-8:00 AM data is very conservative.

During the PM, it is understood that trucks returning to the site and employees returning home subsequently will be staggered over a 3-hour window (between 4:00-7:00 PM). For the purpose of this assessment, the peak hour of the generator in the PM has been assumed to be 17:00-18:00 which is available within the data provided by the city and will be used as the PM peak hours.

A review of existing traffic volumes showed that there was a significant imbalance of vehicular volumes, particularly in the northbound direction. Additional counts were requested at adjacent intersections such as St. Laurent Boulevard (December 2023) and Lorry Greenburg Drive (April 2025). It was determined that Johnston Road (January 2024) was consistent with the other three counts while Thurston Drive (April 2019) was significantly higher, by about 700 to 900 additional vehicles during the morning peak hour. Since the Thurston Drive count was an outlier to the other three counts and is much older than the other three counts (pre-Covid count for Thurston Drive vs post-Covid counts for the other three), the volumes at Thurston Drive were balanced to the other intersections. A review of mid-block counts conducted by Parsons staff on May 15, 2025, confirmed that the reduced traffic volumes on Thurston Drive/balancing to the other three intersections was consistent with counts from the May 15, 2025. Active transportation volumes may be lower at the Johnston/Conroy intersection compared to other locations as that count was conducted during winter months where there is generally less walking and cycling activity.

Figure 7: Existing Peak Hour Vehicle Traffic Volumes

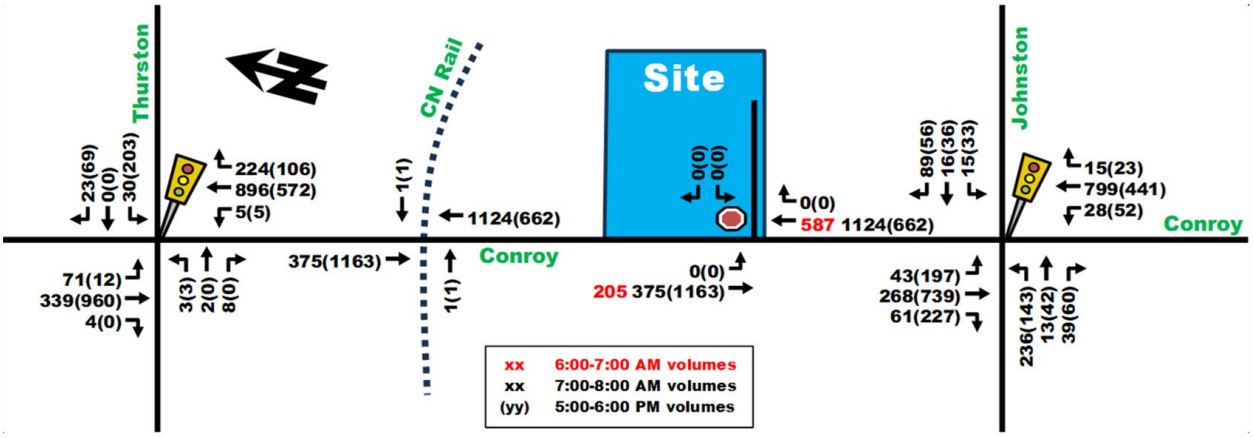
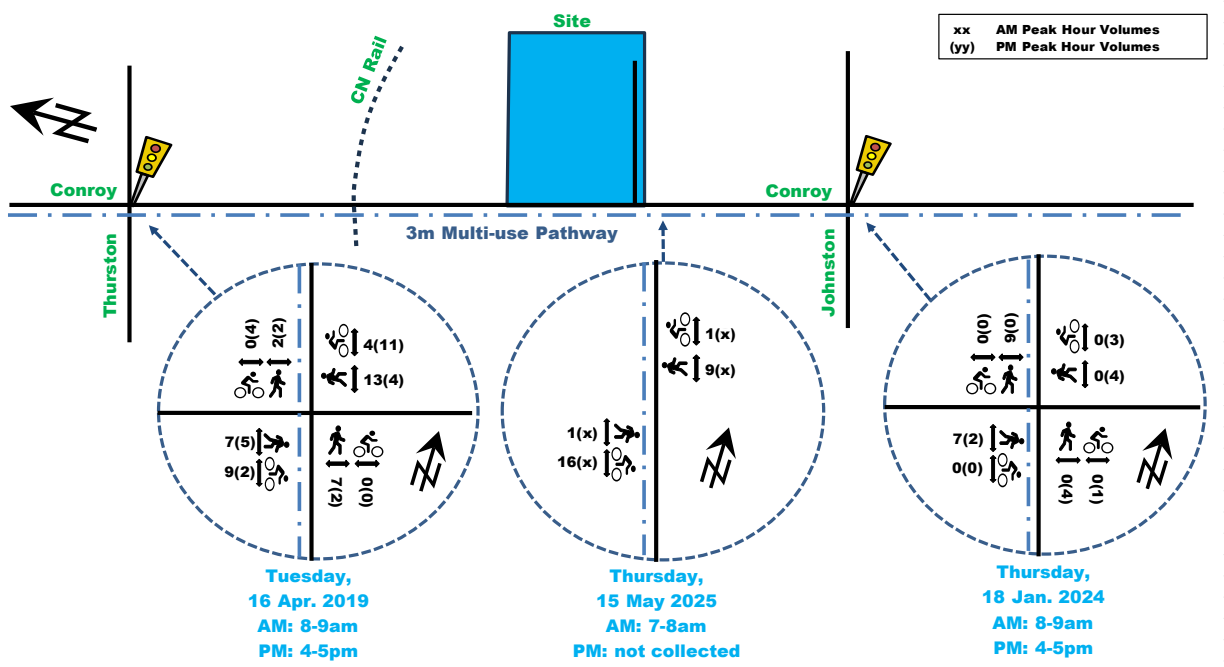


Figure 8: Existing Peak Hour Pedestrian and Cyclist Volumes



Existing Road Safety Conditions

A five-year collision history data (2018-2022, inclusive) was obtained from the City of Ottawa Open Data for the study area intersections and road segments. The data was analyzed as an initial screening. Detailed collision analysis has been provided in **Appendix D**.

The total number of collisions in the five-year study period was 34. Of the collisions, 25 of 34 (74%) resulted in property-damage-only (PDO), while the remaining incidents (nine, or 26%) resulted in non-fatal injury. There were no fatal collisions within the study area. **Table 2** provides a summary of collisions by type and summary.

Table 2: Collision Summary by Type and Severity

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV Other	SMV Unattended	Other	Total
Property-Damage-Only (PDO)	7	6	1	6	0	5	0	0	**25 (74%)**
Non-fatal injury	2	3	1	3	0	0	0	0	**9 (26%)**
Fatal Incidents	0	0	0	0	0	0	0	0	**0 (0%)**
Total	**9 (26%)**	**9 (26%)**	**2 (6%)**	**9 (26%)**	**0 (0%)**	**5 (15%)**	**0 (0%)**	**0 (0%)**	**34 (100%)**

The most common collision types are rear end, turning movement and angle collisions, all with nine collisions each and making up nearly four fifths of all recorded collisions. Additionally, there were five single-motor-vehicle accidents (15%) and two sideswipes (6%). The study area contains many long, straight road segments with few driveways, which may lead to high speeds and sudden stops as traffic lights turn red, contributing to a high number of rear end collisions. Turning and angle type collisions may be a result of the faster operating speeds and vehicles turning at intersections where left or right-turns are permissive and misjudging the available vehicle gap to safely perform a turn maneuver or merging into traffic.

Table 3 summarizes the collision history by intersection, including the total number of collisions, percent causing injury, number of collisions with vulnerable road users, and the most frequent collision type. Similarly, the mid-block collisions are summarized in **Table 4**.

Table 3: Collision Summary at Study Area Intersections, Vulnerable Road Users

Intersection Location	# Collisions in 5 Years	% Causing Injury	# Collisions with Peds	# Collisions with Bikes	Most frequent type of collision and % of total collision at that location
Conroy/Thurston	11	36%	0	0	Turning movement (45%)
Conroy/Johnston	20	20%	0	2	Angle (35%)

Table 4: Collision Summary at Study Area Mid-Block Locations

Midblock Location on Conroy Between	# Collisions in 5 Years	Length of Segment	% Causing Injury	# Collisions with AT	Most frequent type of collision and % of total collision at that location
St. Laurent & Thurston	0	390m	0%	0	N/A
Thurston & Johnston	2	530m	0%	0	Rear end (100%)
Johnston & Lorry Greenberg	1	460m	0%	0	Rear end (100%)

The intersection of Conroy/Thurston recorded 11 total collisions. This intersection had an injury rate of 36% (4 of 11), but no vulnerable road user collisions were recorded. The most common collision type was turning movement (5 of 11, or 45%), followed by rear end (27%), and angle (18%). The relatively high injury rate (above 30%) may be reflective of the road design which is conducive of speeding given its long straight stretches of road, coupled with high impact turning movement collisions which tend to have a higher frequency of injury compared to other classifications of collisions. Albeit the frequency of collisions recorded at this intersection was considered low for an intersection between a collector road and an arterial road.

The intersection of Conroy/Johnston recorded 20 collisions within the five-year data, which is also considered generally low frequency of collision given that it is an intersection between an arterial road and a collector/major collector road. This intersection recorded two angled collisions with cyclists, only one of which resulted in injury. This intersection connects two segments of the Crosstown Bikeway Network but does not currently provide protected treatments or protected turning movements/time separated crossings. A more contemporary intersection design following the Protected Intersection Design Guide could be considered to mitigate these collisions with vulnerable users.

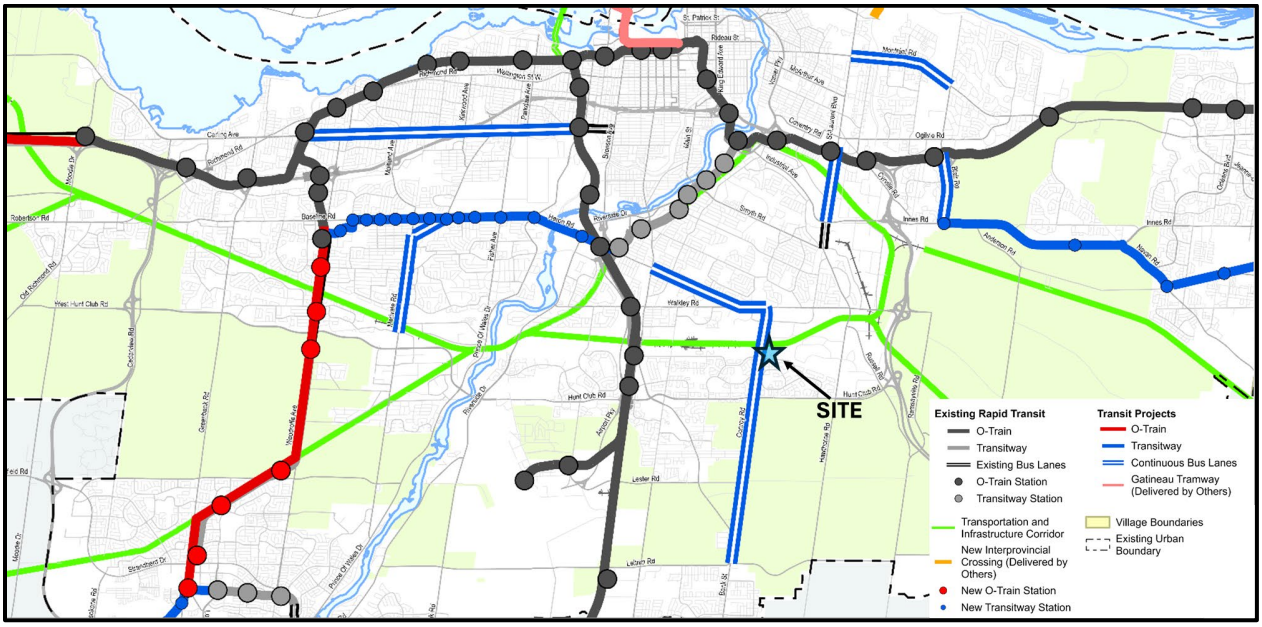
The midblock segment analysis showed that very few collisions occurred, and all resulted in property damage only. It is noteworthy that the Ontario Traffic Manual Book 18 Figure 5.5 suggests that the bike facilities on Conroy Road should be provided as physically separated; however, a 3.5m wide MUP facility is currently provided on the west side of Conroy Road, lessening the priority to upgrade the existing curbside bike lanes into cycle-tracks. There were no mid-block collisions with active users.

2.1.3. Planned Conditions

Future Transportation Network Changes

Within the Official Plan, Conroy Road is identified in an *Industrial and Logistics* designation. Based on the most recent update in the TMP as of March 31st, 2025, Conroy Road is identified within the Needs-Based Transit Network, and the Priority Transit Network, with continuous bus lanes from Findlay Creek to Walkley Road via Bank Street and Conroy Road as illustrated in **Figure 9**. The TMP update estimates the project to cost $122 million for dedicated bus lanes on Heron Road between Conroy Road and Bank Street (including the Conroy Road segment fronting the site). This transit priority project rated second within the continuous bus lanes category. The Needs-Based Transit Network further includes transit priority measures on Hunt Club Road and Bank Street. At the time of submission, no design plans were available online for the section extending south of Walkley Road, on Conroy Road or on Bank Street. It should be noted that the 2025 TMP update has not yet been finalized and is still undergoing public consultation.

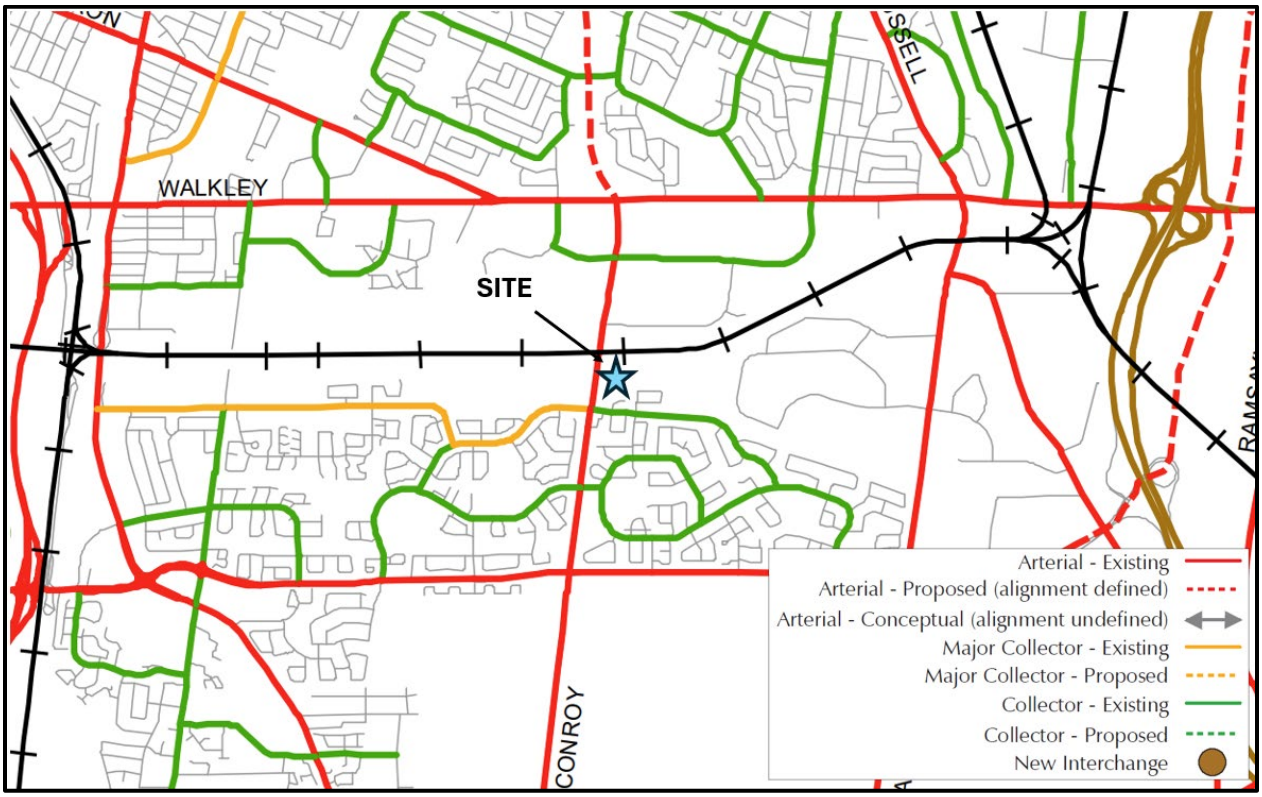
Figure 9: TMP Priority Transit Network – March 2025



Similarly, the road network classifications map and future network has recently been released as of March 31st, 2025 for the TMP. The TMP illustrates a northern extension of Conroy Road from Walkley Road to the Hospital Link Road within the Needs-Based Road Network and is consistent with Schedule C4 of the Official Plan as shown in **Figure 10**. However, the Priority Road Network within the new TMP update does not illustrate this link, meaning that it will likely not be built within the study horizon years.

The latest Crosstown Bikeway Network from the 2023 TMP (as shown previously in **Figure 4**) classifies Conroy Road and Johnston Road west of Conroy Road as part of the Crosstown Bikeway Route. The latest TMP Cycling Priority Map (March 2025) highlights Johnston Road as a "later priority" from Conroy Road to the Airport Parkway, likely to occur beyond 10 years from now.

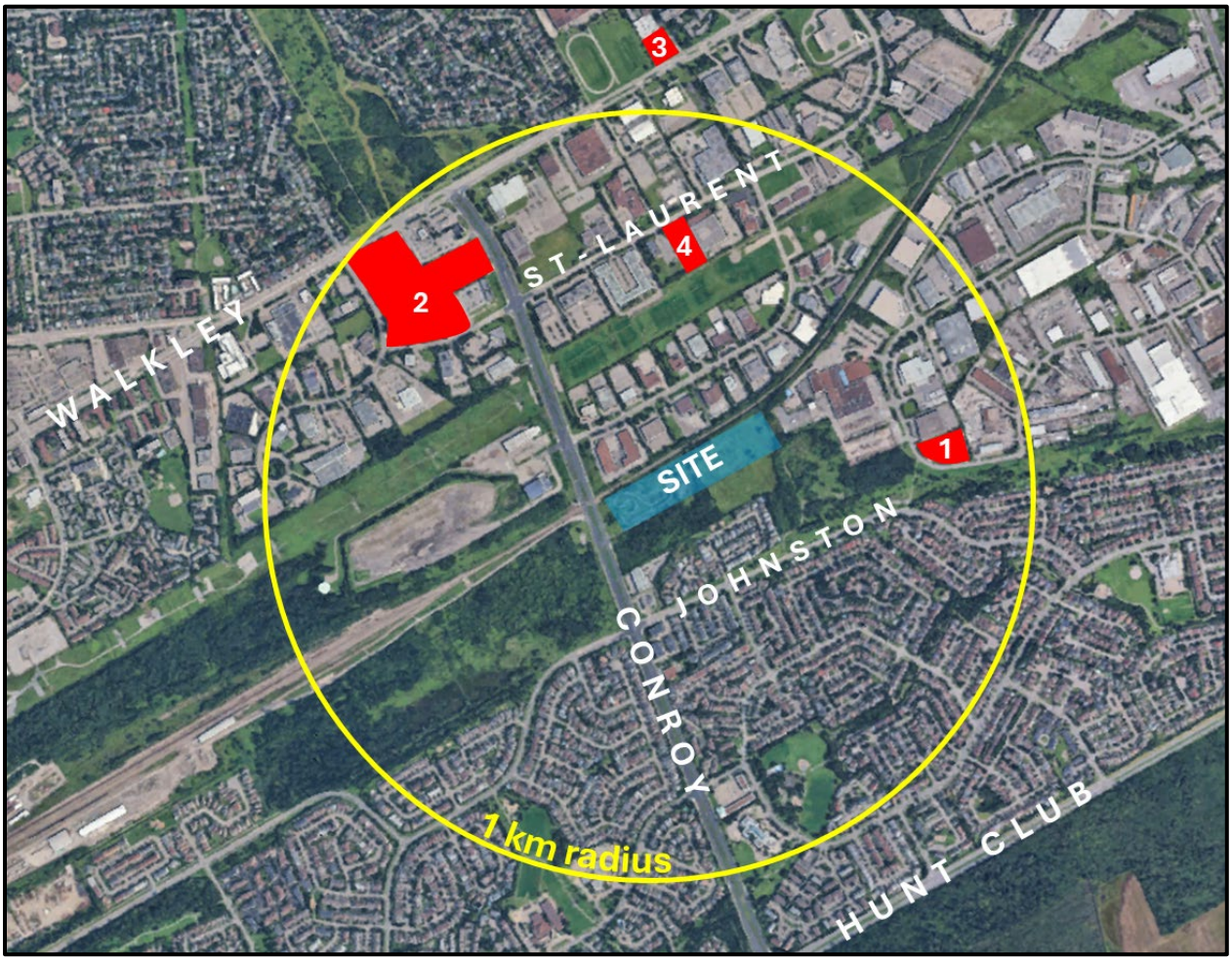
Figure 10: Official Plan – Schedule C4 Urban Road Network



Other Area Developments

The following section outlines adjacent developments in the general area that were considered in the TIA. The criteria for inclusion of other area developments are for developments that have an active planning application and are generally within a one-kilometre radius of the subject site. **Figure 11** illustrates the location and relative size of relevant developments in other areas.

Figure 11: Other Area Developments



1) 2700 Swansea Crescent

Proposal to construct additions to the existing two-storey medium manufacturing facility, approximately 1,540m^2 large and will be constructed above the parking lot as an addition to the south side of the second story of the existing facility. The site is comprised of Light Industrial and Heavy Industrial uses and is bounded by a corridor zoned Parks and Open Space to the south, followed by an established low-rise residential neighbourhood. The purpose of this addition is to provide more research and office space and to expand current operations. The status of this Site Plan Control is post-approval as of January 7, 2025. No TIA Report was submitted with the application for this site and site generated trips will not be accounted for in the background volumes.

2) 2510 St-Laurent Boulevard

The site is currently vacant with remnants of past development, fronting Don Reid Drive and St. Laurent Boulevard. The City of Ottawa received a Zoning By-law Amendment and Site Plan Control application to construct a planned unit development that consists of 192 back-to-back townhomes and 36 townhomes on private streets with a section dedicated as a public park. The file is currently pending as of April 12, 2024. Based on the TIA submitted with the application, the development is expected to generate 170 person trips (67 vehicle trips) and 193 person trips (79 vehicle trips) in the AM and PM peak hours, respectively.

3) 2145 Walkley Road

A proposal was submitted to the city to develop an 18-storey high-rise with 260 residential units, at the corner of Walkley Road and Halifax Drive. This site is situated in the Elmvale Acres community, directly to the east of Canterbury Highschool. The 4.36ha site is used for residential purposes and currently contains two 12-storey apartment buildings and 51 townhouse dwellings. The proposal retains all existing buildings on the site but will modify the existing parking structure. The file is currently active as of January 8, 2025. Based on the TIA prepared by Dillon Consulting on March 2025, the development is expected to generate 26 and 31 person trips in the AM and PM peak hours, respectively.

4) 2375 St-Laurent Boulevard

This is a Site Plan Application approval for a 930m^2 one-storey warehouse building. The site is currently vacant. If developed, the site will contain eight parking spaces and side-façade loading facilities. The TIA screening form completed by D.J. Halpenny & Associates, Ltd. found that the development did not trigger the need for a TIA report.

Conroy Road Environmental Assessment Study

Based on City of Ottawa feedback comments during the pre-consultation, an EA study was completed in 1997 for Conroy Road widening. No new information regarding the study was found on City website. However, according to the City comment, the EA investigated grade-separating the rail corridor and recommended a below-grade crossing of Conroy Road as a preferred solution. However, there is currently no confirmation on when this modification may take place or whether it will be pursued.

2.2. Study Area and Time Periods

For the purposes of this report, occupancy of the proposed development is expected to be in 2028. The date of occupancy scenario (2028) and five-years post-occupancy scenario (2033) will be analyzed. The future horizon years analyzed will use the weekday morning and afternoon peak hour traffic volumes. Based on data provided by the developer's operations team, it is understood that the peak hours of the generator where collection trucks and employee vehicles enter and exit the facility are 6:00-7:00 AM and 5:00-6:00 PM. As discussed in **Section 2.1.2: Peak Hour Travel Demands**, the 7:00-8:00 AM period will be used conservatively for the AM peak hour analysis. The PM peak will use the 5:00-6:00 PM counts which generally coincide with the peak hour of the adjacent road network. Proposed study area intersections are listed below and illustrated in **Figure 12**.

- Thurston/Conroy
- CN Rail/Conroy
- Site Access/Conroy
- Johnston/Conroy
- Along the site frontage

Figure 12: Study Area and Intersections to be Analyzed

2.3. Exemption Review

The following modules/elements of the TIA process provided in **Table 5** are recommended to be exempt in the subsequent steps of the TIA process, based on the City's TIA guidelines and the subject site:

Table 5: Exemptions Review Summary

Module	Element	Exemption Consideration
4.1 Development Design	4.1.3 New Street Network	Only required for plans of subdivision.
4.6 Neighbourhood Traffic Calming	4.6.1 Adjacent Neighbourhoods	The site is accessed by an arterial road.
4.7 Transit	4.7.1 Transit Route Capacity	Less than 75 transit trips per hour anticipated.
4.8 Review of Network Concept	All	Site use consistent with existent zoning (IG3).

3.0 FORECASTING

3.1. Development Generated Travel Demand

3.1.1. Trip Generation Sources

Travel demand and trip distribution by the proposed development was summarized in a schedule provided to Parsons by the developer, accounting for employee travel to and from the site before and after the workday, as well as the trip distribution of collection vehicle movements to and from the site.

The site operations schedule was created for each day of the week. The highest trip generation occurs Monday through Friday. As such, peak trip generation analysis will focus on the Monday-Friday period. For weeks experiencing a statutory holiday during the year, the work week may be shifted by a single day and truck will operate on Saturday using the same schedule as the rest of the week. The Saturday schedule is considered less critical compared to weekday peak hours and will not be assessed in this report.

Collection vehicles returning to the site in the afternoon are anticipated to primarily use Highway 417' Hunt Club ramp and arrive from the south of Conroy Road, turning right into the site. Colelction vehicles leaving the site in the morning are expected to have two different travel patterns that were identified based on the operations schedule:

- Wednesdays: collection vehicles travel south from the site.
- Rest of the week: collection vehicles travel north from the site.

Employee commuting patterns using personal vehicles to and from the site are assumed to be consistent throughout the week with the majority travelling to/from the north.

The schedules differentiated between types of 'truck' traffic. For the purposes of this analysis, the ¾ ton pick-up trucks and Miller pick-up trucks were not considered trucks or heavy vehicles, and their use was categorized under typical passenger car traffic along with staff traffic.

Employee (Passenger Vehicle) Traffic

Of the 204 workers, 180 are scheduled to arrive between 6:00-7:00 AM, which is the AM peak hour for the site. During the afternoon, the total number of employees leaving the site is approximately 187, which is expected to occur mostly over a 3-hour (4:00-7:00 PM) window. For the purpose of analysis, the highest number of employee outbound trips is assumed to occur between the 5:00-6:00 PM time period, where 60% (or 112 trips) of employees are expected to leave the site.

Outside of these AM and PM peak hours of the development, trips generated by the site are very low (≤10 trips per hour), which would be trips from administrative and office staff. The PM peak hour of the development generally coincides with the PM peak hours of the adjacent road network and will be carried forward for PM peak analysis. However, the AM peak hour of the development occurs before the AM peak hour of the adjacent road network. During the first hour of the AM peak period (7:00 to 8:00 AM) of the adjacent road network, the 10 trips generated by the site will result in negligible impacts to the study area performance (approximately 1 new vehicle every 5 minutes). For this reason, the AM peak hour of the development will be considered for trip generation purposes (i.e. 6:00-7:00 AM), along with the PM peak hour of both the generator and adjacent road network (i.e. 5:00-6:00 PM). Employee peak hour person trip generation is summarized below in **Table 6**.

Table 6: Employee Peak Hour Person Trip Generation

Land Use	AM Peak Hour Person Trips	PM Peak Hour Person Trips
Collection Fleet & Drivers	173	101
Operational Support Staff	2	11
Equipment Staff	5	0
Total Employee Trips	**180**	**112**

The 2020 TRANS Manual for the "Hunt Club" District was used as a basis for employee mode shares for staff arriving to work before they clock in and departing the worksite once their workday is complete. Overall, the TRANS mode shares, which suggest a high driver mode share of approximately 83%, were deemed reasonable for this site given that the start hour of the site is earlier than the traditional AM peak hour, potentially resulting in fewer public transit frequencies and less cycling/walking activity. **Table 7** provides the forecasted staff trip generation by mode shares assuming the TRANS mode shares for Hunt Club.

In addition, the proposed development is located across the street from a multi-use pathway that runs the length of Conroy Road from Walkley Road south to Hunt Club Road. The east side of the street also has a sidewalk. However, facilities for active transportation are otherwise lacking; crossings in intersections are unprotected and at-grade with a long distance between the site and the nearest traffic signal, there are few shade-providing trees for shelter, and surrounding land uses are not supportive of active transportation. The low-mode shares for active transportation (1% each for cycling and for pedestrians) are thus reasonable.

Table 7: Peak Hour Trips Mode Share Breakdown

Travel Mode	Mode Share	AM Peak Hour Person Trip[1]	Mode Share	PM Peak Hour Person Trips[2]
Auto Driver	83%	149	83%	93
Auto Passenger	5%	9	5%	6
Transit	10%	18	10%	11
Cycling	1%	2	1%	1
Walking	1%	2	1%	1
Total Person Trips	**100%**	**180**	**100%**	**112**
1. All AM trips are inbound. 2. All PM trips are outbound.				

Truck (Collection Vehicle) Traffic

The developer schedules also include a detailed schedule of collection vehicle traffic generated by the site, including volumes and directions. The truck traffic follow the same egress and return routing throughout most of the week, with a different egress route for only Wednesday. The quantity of trucks is the same, however the direction from the site differs (mostly left-turns vs. right-turns at the access).

Table 8 provides a summary of the commercial vehicle activity occurring to and from the site. Based on the schedule of operations, peak hours for truck traffic have been assumed to coincide with the peak hours for employee traffic (i.e. During the AM peak hour of the generator, employees enter the facility via passenger vehicle and exit via collection vehicle in the same hour, an vice versa for the PM peak hour). As stated previously, collection vehicles (90 vehicles) are expected to return over a 3-hour window. For the purpose of analysis, 60% (or 54 trips) are assumed to occur between 5:00-5:00 PM.

Table 8: Site Collection Vehicle Peak Hour Trip Generation by Travel Mode

Travel Mode	AM Peak Hour Trips[1]	PM Peak Hour Trips[1]
Heavy Vehicles	90	54
Light Vehicles	3	11
All Other Mode Shares	0	0
Total Commercial Vehicles	**93**	**65**
1. All AM trips are outbound. 2. All PM trips are inbound.		

Combined Site Generated Trips

The combined site generated trip includes staff arriving in the morning and departing in the afternoon, plus all truck-related trips that depart from the site in the morning and return to their parking areas in the afternoon. The combined site generated trips have been summarized in **Table 9**.

Table 9: Combined Site Generated Peak Hour Trips

Travel Mode	AM Peak Hour (Trips/Hr)			PM Peak Hour (Trips/Hr)		
	In	Out	Total	In	Out	Total
Heavy Vehicle Driver	0	90	90	54	0	54
Light Vehicle Driver	149	3	152	11	93	104
Auto Passenger	9	0	9	0	6	6
Transit	18	0	18	0	11	11
Cycling	2	0	2	0	1	1
Walking	2	0	2	0	1	1
Total Person Trips	**180**	**93**	**273**	**65**	**112**	**177**

3.1.2. Trip Distribution and Assignment

Based on the TRANS 2011 O-D Survey for the "Hunt Club" district, the trip assignment distribution for traffic is estimated as follows:

- 65% to/from the north;
- 5% to/from the east;
- 15% to/from the south; and,
- 15% to/from the west.

For inbound traffic to/from the east and west, routing favoured travel via Hunt Club Road, which is readily accessible from western districts and from the Highway 417 to the east. Therefore, the majority of east and west traffic were assigned to/from the south on Conroy Road, resulting in an assumed north/southbound split of 70/30. For a schematic, see **Figure 13.**

Based on the Mode Shares from the O-D Survey, the developer-provided schedule, and the location of adjacent arterial roadways and neighbourhoods, the distribution of site-generated traffic volumes for staff-generated traffic and for truck traffic on Wednesdays (W) and for the resto of the week (R) are illustrated in **Figure 13**.

Figure 13: Peak Hour Site-Generated Traffic Distribution, for Staff and Trucks

The trip assignments from **Figure 13** was used with the trips forecasted from **Table 9** to produce the site generated trips as illustrated for staff, the Wednesday truck distribution and the rest of the week truck distribution in **Figure 14, Figure 15, and Figure 16** respectively. It should be noted that the peak hour trips occur from 6:00-7:00 AM and 5:00-6:00 PM, which are the site's peak morning and afternoon hours.

Figure 14: Peak Hour Site Generated Traffic Volumes for Employee Traffic (All Week)

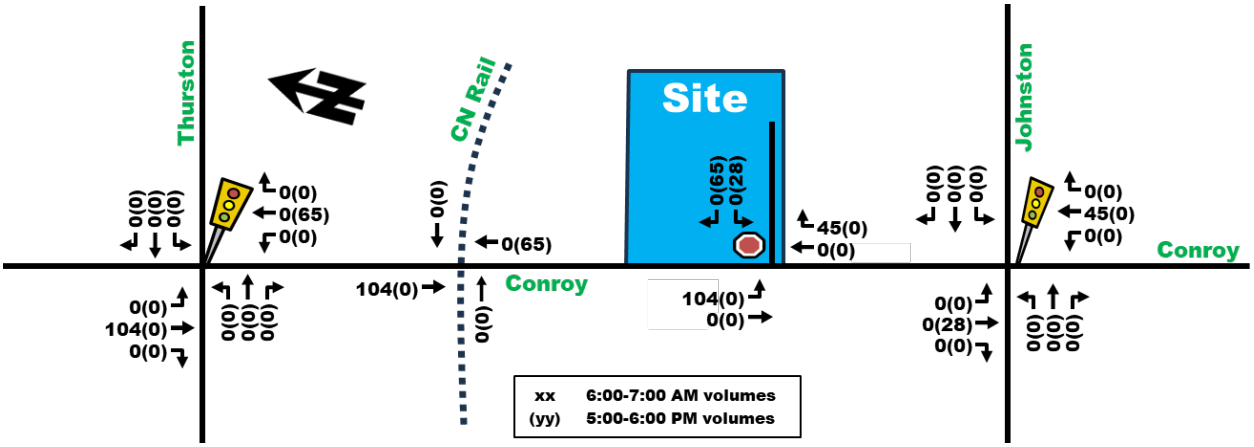


Figure 15: Peak Hour Site Generated Collection Vehicle Traffic Volumes (Wednesday)

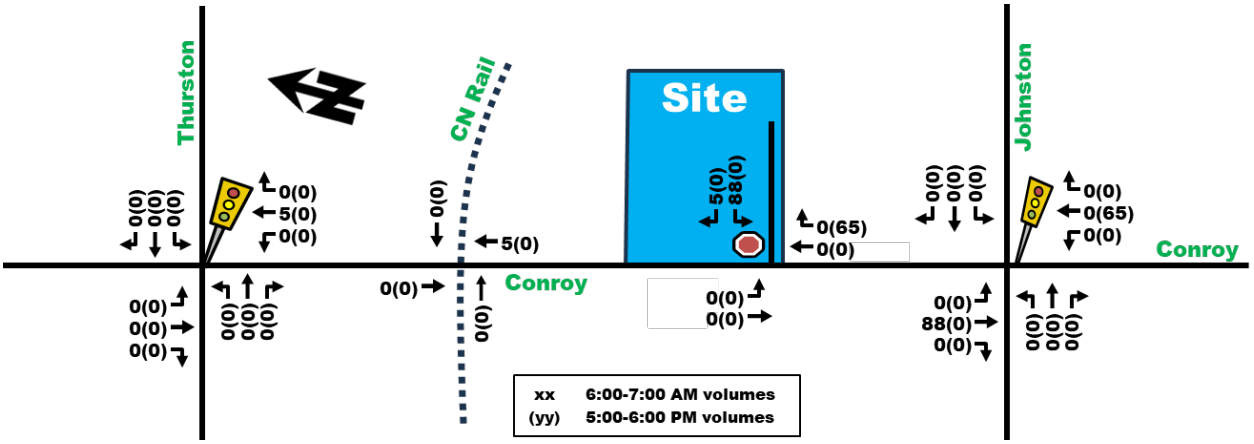
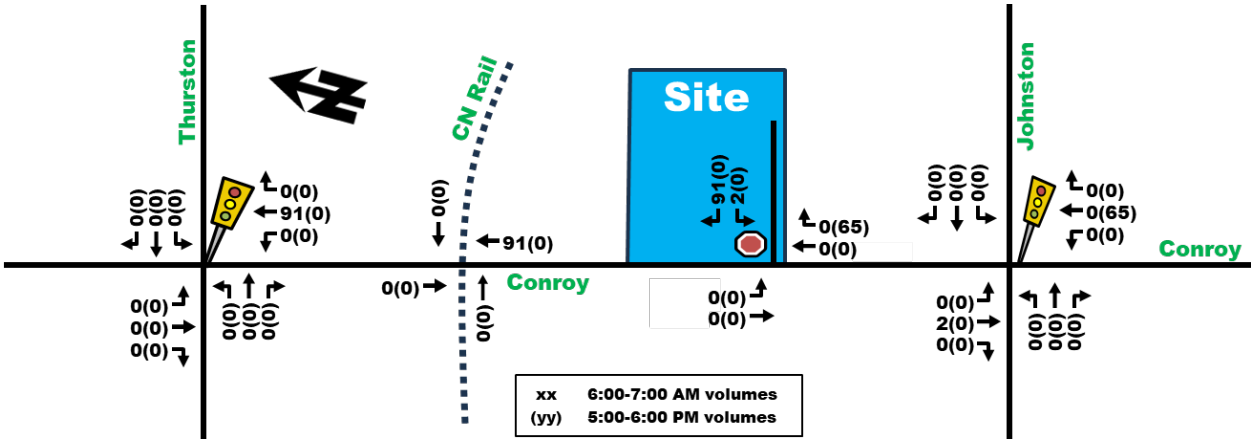


Figure 16: Peak Hour Site Generated Collection Vehicle Traffic Volumes (Rest of the Week)



The total traffic generation for Wednesday and rest of the week schedules are summarized in **Figure 17** and **Figure 18**, respectively. As above, the site's peak hour trips occur from 6:00-7:00 AM and 5:00-6:00 PM.

Figure 17: Total Site Generated Peak Hour Traffic Volumes (Wednesday)

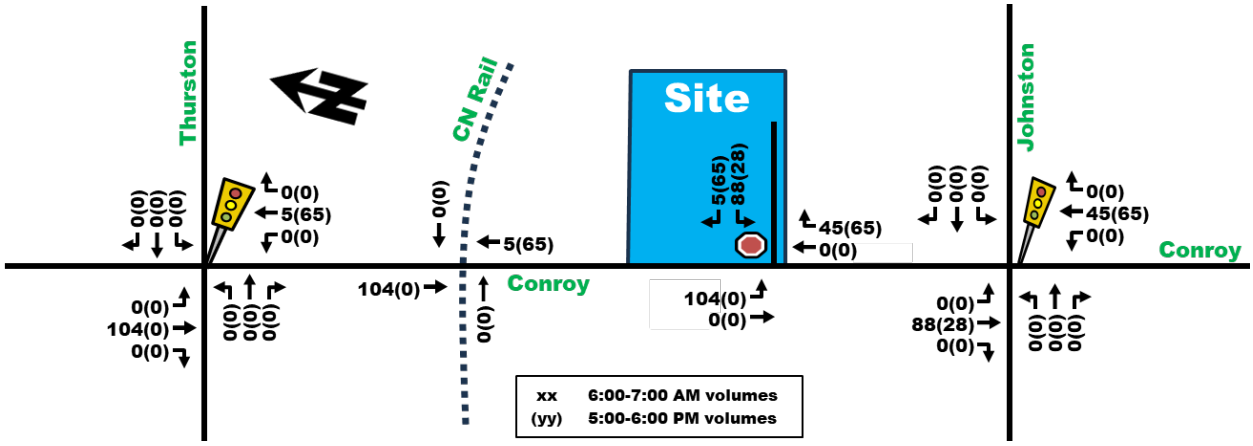
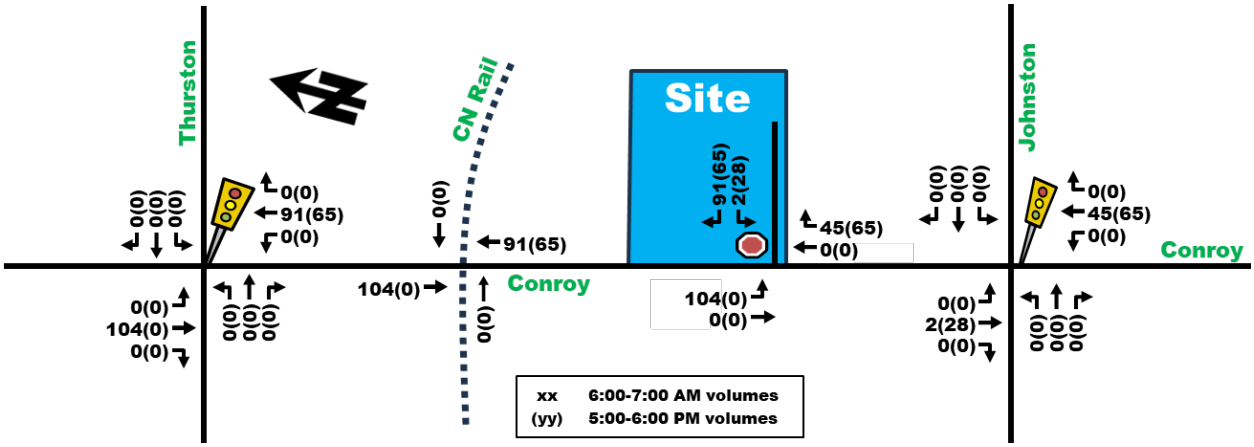


Figure 18: Total Site Generated Peak Hour Traffic Volumes (Rest of the Week)



3.2. Background Network Traffic

3.2.1. Transportation Network Plans

Refer to Section 2.1.3: Planned Conditions.

3.2.2. Background Growth and Other Area Developments

Review of the City's *Strategic Long-Range Model* and *Intersection Traffic Growth Rates (2000-2016)* found that background traffic is projected to decline or remain constant along Conroy Road between St. Laurent Boulevard and Walkley Road. Detailed background traffic growth analysis is included as **Appendix E.** For a conservative projection, the annual background traffic growth rate will be 0%.

3.2.3. Future Background Volumes

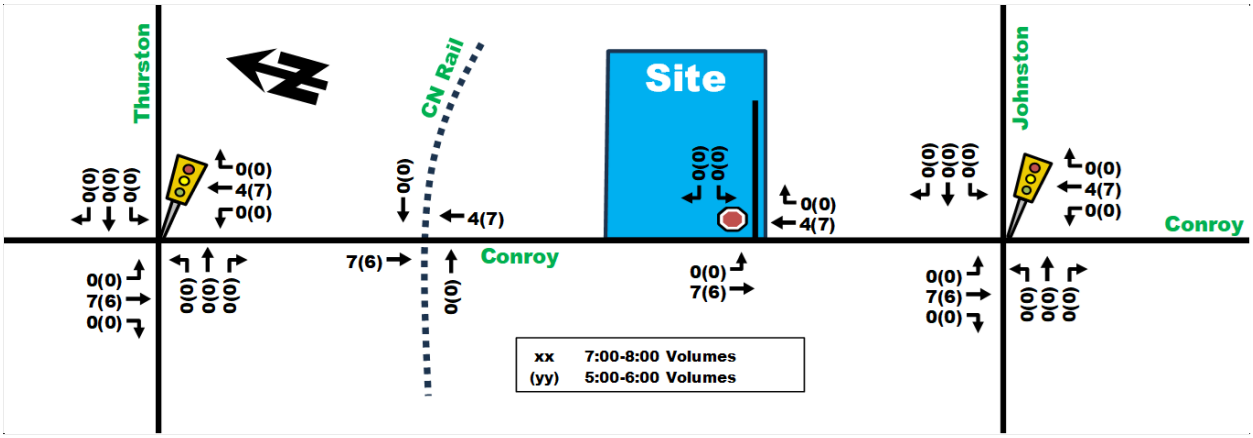
As described in **Section 2.1.3**, there are various new developments proposed within or near to the study area. Vehicle trips resulting from other area developments are discussed and summarized below.

Other Area Developments

Four developments in the application process were flagged for potential traffic impacts near the site, three of which are sited within a one-kilometer radius of the development and one beyond. These are: 2700 Swansea Crescent, for which no TIA Report was submitted and no future site generated trips were layered on to background traffic volumes; 2375 St. Laurent Boulevard, for which no TIA Report was submitted and no future site generated trips were layered on to background traffic volumes; 2510 St. Laurent Boulevard, for which a

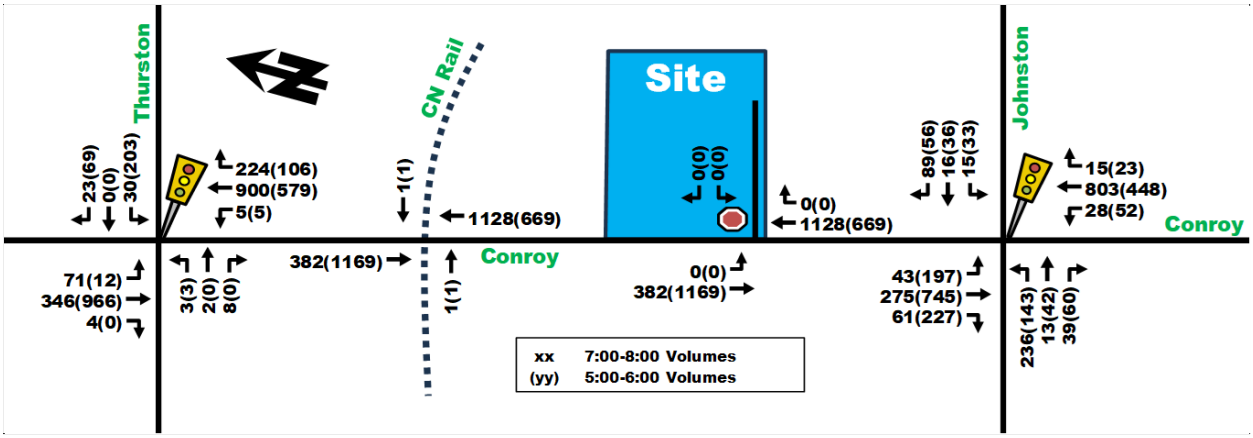
TIA Report was prepared by Novatech was used to derive future trip generated volumes to be added to background conditions; and 2145 Walkley Road, for which a TIA Report that was prepared by Dillon Consulting was used to derive future trip generated volumes to be added to background conditions. Traffic flows resulting from other area developments are summarized in **Figure 19**. Note that these trips, as per their associated TIAs, occur during the 'morning peak' of adjacent roadways, which is likely not concurrent with the site's morning peak of 6:00-7:00 AM. Thus, their inclusion in the model is conservative.

Figure 19: Peak Hour Traffic Volumes for Other Developments



As no background traffic growth is projected, the future background traffic volumes are the sum of existing peak hour traffic volumes and those resulting from other developments. Note that the existing 'peak hour' volumes are taken from the 7:00-8:00 AM and 5:00-6:00 PM periods to coincide with the site's peak hours. These volumes are summarized in **Figure 20**. The increase in traffic volumes in the study area due to future adjacent developments is considered minimal and will not result in any notable impacts to traffic operations.

Figure 20: Future Background Peak Hour Traffic Volumes



3.2.4. Future Projected Traffic Volumes

The background network traffic volumes developed in **Figure 20** were layered onto site generated traffic volumes from **Figure 17** for Wednesday and **Figure 18** for rest of the week to produce the combined total forecasted traffic volumes including the development, as shown in **Figure 21** for Wednesday and **Figure 22** for rest of the week. Considering the minimal change in background traffic volumes between existing conditions and the 2028 and 2033 horizon years, the 2033 total forecasted volumes have been shown below.

Figure 21: Future Projected Peak Hour Traffic Volumes Including the Development (2033 – Rest of the Week)

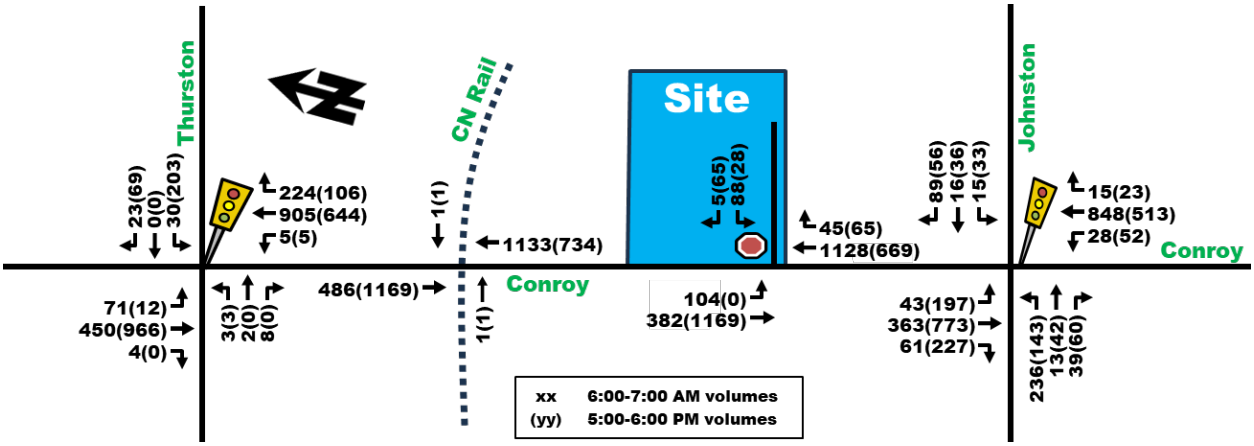
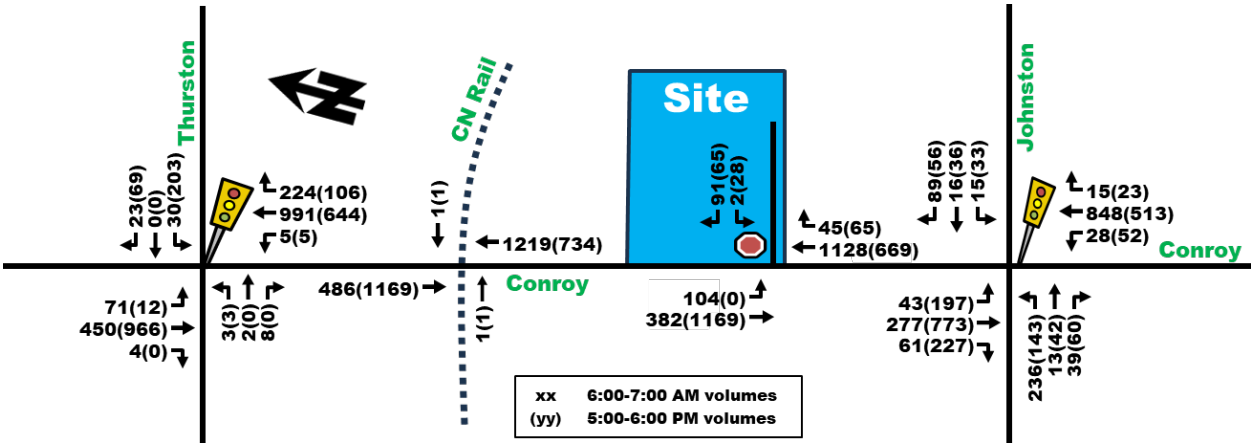


Figure 22: Future Projected Peak Hour Traffic Volumes Including the Development (2033 – Wednesday)



3.3. Demand Rationalization

The following section indicates factors that may be used to rationalize the future travel demands in the study area and determine if there are potential capacity limitations and how they may be addressed.

Site-Generated Traffic

The proposed development is anticipated to add approximately 273 and 177 total person trips to Conroy Road each morning and afternoon, respectively.

Site-generated AM trips would peak in the 6:00-7:00 AM hour, before Conroy Road's peak hour of 8:00-9:00 AM based on traffic counts. Nevertheless, the analysis from this TIA will conservatively use the traffic count data from the 7:00-8:00 AM period of the adjacent intersections with 6:00-7:00 AM site-generated values given available traffic turning data at study area intersections. This represents a sensitivity analysis of the site access as midblock traffic count data on Conroy Road indicates that traffic volumes during the 6:00-7:00 AM hour are approximately 50% lower than the 7:00-8:00 AM volumes.

It is also worth noting that the arrival rate of vehicles may potentially vary, particularly during the afternoon peak hours as vehicle activity of trucks returning and employees exiting the facility is expected to occur over a 3-hour window between 4:00-7:00 PM. Additionally, if internal traffic operations of the site experience excessive delays on the outbound movements during peak hours, the site's operations team can implement measures to limit the delays, such as further staggering employee hours to reduce pressure on the outbound

movement, as well as control the distribution of outbound traffic if needed to reduce additional delays from the outbound left-turn movement.

Background Traffic Volumes

Based on City historic traffic growth rates, traffic along Conroy Road is expected to decrease or to remain constant, even with additional development. This may be due to support from future road widening projects on parallel arterial roads such as Hawthorne Road or the Airport Parkway. Additional reductions may be caused by improved transit facilities such as the newly opened Trillium LRT Line 2. To maintain a conservative assumption, annual background traffic growth was assumed to be 0%.

Trip generation volumes were gathered from TIA Reports submitted for other area developments, though only two TIA Reports provided traffic volumes (2510 St. Laurent Blvd. and 2145 Walkley Road). Traffic volumes were added to the background traffic and modelled as part of the 7:00-8:00 AM and 5:00-6:00 PM peak hours. Increase in traffic due to adjacent future developments was found to be minimal with less than 10 vehicle trips in one direction during peak hours.

Future Transportation Network Modifications

Changes to the road network in the study area have been identified within the Needs-Based Road Network (long-term) of the City of Ottawa TMP update, but not in the Priority Road Network (short-term). The proposed Conroy Road extension north to Hospital Link Road within the Needs-Based Network would likely increase traffic volumes on the road but is not expected to occur within the horizon years since it is not included in the Priority Network.

There are active transportation improvements identified within the Official Plan and Transportation Master Plan that could potentially contribute to a mode shift from auto to cycling and transit use along Conroy Road. The TMP Cycling Projects Proposed Priority map indicates that cycling facilities may be improved along Johnston Road in a 'later phase', including separated cycling facilities from Bank Street to Southgate Road, and bike lanes from Southgate Road to Conroy Road. The proposed Priority Transit Network includes a continuous bus lane along Conroy Road from Leitrim Road to Walkley Road, which would connect the site to the O-Train Line 1 at Hurdman or St. Laurent.

Although these improvements could contribute to a modal shift, they are not anticipated to be completed within the horizon years of this study. This report thus only considers the more conservative scenario where the improvements to transit and cycling facilities are not completed, and a modal shift does not occur.

Transportation Demand Management Measures

Transportation Demand Management (TDM) comprises measures implemented by developers to encourage the use of alternative travel modes to personal vehicles, such as cycling, transit, or walking. For transit, TDM measures could include employee bus pass subsidies and high-quality connections from the development to transit stops. For walking and cycling, TDM measures might include the provision of active transportation facilities like walkable routes to the site and secure bicycle parking.

The proposed development contains four bicycle parking spaces and links the proposed site to the road with a 1.8m wide sidewalk. While the modal share for the 'Hunt Club' district heavily favours personal vehicle use (83% of trips) according to the 2020 TRANS Manual, the provision of active transportation connections to the site may help to encourage active transportation by employees given the adjacent multi-use pathway and curbside bike lanes on Conroy Road.

Road Capacity

Conroy Road currently has a four-lane cross-section and auxiliary turn lanes at major intersections. Based on the classification of Conroy Road as an arterial, it should have ample capacity to accommodate the existing traffic volumes, anticipated background growth and forecasted trip generation by this development. The latest traffic counts at study area intersections indicate the existing daily traffic volumes (AADT) of Conroy Road to be

less than 17,000 vehicles/day, which falls within the traffic volume range of 10,000 to 30,000 vehicles/day for arterial roads as indicated by TAC Guidelines.

4.0 ANALYSIS

4.1. Development Design

4.1.1. Design for Sustainable Modes

Pedestrian/Cycling Routes and Facilities

The Site Plan illustrates a 1.8m wide sidewalk that connects the proposed building to the existing sidewalk on Conroy Road, with five internal crosswalks across proposed site parking. There are 10 proposed bicycle parking spaces located near the proposed building's south entrance, meeting the number of spaces required by the Zoning By-law (further detail in **Section 4.2**). The east side of Conroy Road currently has a marked bike lane on the roadway, as well as a boulevard-separated pedestrian facility. A MUP on the other side of Conroy Road can be safely accessed from the signalized intersection at Conroy Road/Johnston Road to the south, or from the signalized intersection at Conroy Road/Thurston Drive to the north.

Given the industrial nature and location of the development which forecasts very few active transportation trips, the proposed internal pedestrian sidewalk and crossings and bike parking are considered sufficient as active transportation facilities.

Location of Transit Facilities

Transit facilities are located on Conroy Road just west of the site, as discussed in **Section 2.1.2.** While the northbound bus stop can be easily accessed from the site, the southbound stop is located on the other side with no nearby crossing of Conroy Road. Alternate stops for southbound travel can be reached 300m to the north or to the south at Thurston Drive or Johnston Road, respectively.

4.1.2. Circulation and Access

The site is currently accessed via a driveway on the east side of Conroy Road. The proposed design will add a sidewalk to the north side of the driveway and extend it into the site for a distance of approximately 140m.

Employee parking is located at the front of the proposed building, which can be accessed through site driveway and drive aisles and an internal road which loops around the building and connects to the site driveway. Larger collection vehicles are parked to the rear of the building and can also access the internal driveway. Access to both parking areas is restricted by gates. The fire route is anticipated to extend along the driveway into the site and around the proposed development building.

Truck turning templates have been provided in **Appendix F**. To be conservative, the truck turns reviewed simulate the movements of the NCHRP Report's "Rear-Loading Garbage Truck", which are larger in size than all trucks anticipated by the development. Based on the turning templates, no concerns are anticipated at the site access or within the site.

4.1.3. New Street Network

Exempt – refer to **Table 5**.

4.2. Parking

The following parking analysis reflects the minimum number of parking spaces required based on the City of Ottawa Zoning By-law for developments in Area C: Suburban**. Table 10** summarizes the minimum vehicle and bicycle parking rates for the site, as outlined in Tables 101, 102, and 111A of the Ottawa Zoning By-law.

It should be noted that the current draft of the Zoning By-law, Draft 2, has abolished parking minimums and significantly lowered parking maximums, while changing requirements for bicycle parking. However, these new parking rate requirements have not come into effect yet.

Table 10: Summary of Parking Requirements and Proposed Parking

Land Use	Area (m^2)	Vehicle Parking			Bicycles		
		Base Rate	Min. Spaces	Prop. Spaces	Base Rate	Min. Spaces	Prop. Spaces
Heavy Equipment and Vehicle Sales, Rental and Servicing	2,230	0.75/100m^2[1]	17	267	1/1500m^2[2]	9	10
Office	1,730	2.4/100m^2	42		1/250m^2		
Total			**59**	**267**	**Total**	**9**	**10**

1. The land use falls under the 'Heavy Equipment and Vehicle Sales, Rental and Servicing' category in Zoning By-law Section 101.
2. The land use falls under the 'all other non-residential uses' category in Zoning By-law Section 111.
3. Neither use requires visitor parking.

As shown above in **Table 10**, the site requires a minimum of 59 parking spaces and 9 bicycle parking spaces. The proposed development would contain 259 standard spaces and 8 barrier-free spaces (267 total), as well as 10 bicycle parking spaces. It should be noted that the high volume of proposed parking spaces (relative to the minimum value) is due to the nature of the development as an industrial site, the location and context of the site in a suburban region, and the lack of any nearby major transit stations. Additionally, as the development is not located within 600m of a rapid transit station, there is no maximum for parking spaces. The number of barrier-free parking spaces meets the minimum requirements set by the Accessibility for Ontarians with Disabilities Act (AODA).

The proponent intends to offer the minimum number of cycling parking spaces required (which is higher than the expected site-generated number of cyclists), as well as on-site facilities such as showers, tools and equipment for bicycle maintenance, which are shared with collection vehicle operators. This will help leverage the site's access to a MUP on the west side of Conroy Road. Also proposed to be provided are 12 motorcycle parking spaces.

4.3. Boundary Street Design

For the purpose of this analysis, the newly approved MMLOS Tool will be used. The boundary street to the proposed development is Conroy Road, which is designated as an arterial road.

- *The following facilities and geometric features are available on Conroy Road:*
  - Two vehicle travel lanes in each direction
  - Curbside bike lane on both sides along with MUP on the west side
  - OC Transpo stops in both travel directions
  - Approximately 1.5m wide sidewalk on east side of road with 3m wide boulevard separation
  - Approximately 3m wide MUP on west side of road with 3m wide boulevard separation
  - At-grade railway crossing approximately 105m north of site driveway
  - Approximately 12m wide median boulevard, narrowing to 9m for the 3.5m wide southbound left-turn lane into site driveway
  - Approximately 21,000 veh/day (two-way)
  - Posted speed limit of 60km/h
  - More than 3,000 vehicles per day on curb lane

Multi-modal Level of Service analysis for the Conroy Road segment adjacent to the site is summarized in **Table 11** with detailed analysis provided in **Appendix G**. Note that the truck level of service is no longer calculated as

part of the new MMLOS Tool, but rather confirmed as part of the geometrics checks and truck turning templates in other sections of the report.

Table 11: MMLOS – Boundary Street Segments Existing and Future Conditions

Road Segment	Level of Service					
	Pedestrian		Bicycle		Transit	
	PLOS	Target	BLOS	Target	TLOS	Target
Existing and Future Conditions						
Conroy Road (west side)	B	C	B	B	B	D
Conroy Road (east side)	E	C	C	B	B/C*	D
Note: Asterisk (*) indicates different future condition.						

Pedestrian

Pedestrian conditions along Conroy Road meet the target pedestrian LOS on the west side. On the east side, the target is not met due to narrower sidewalk width. Notably, the west side marks higher due to the 3.0m wide MUP and a wide 2.5-3.0m grassy boulevard. The east side has a 1.5m wide sidewalk and a 2.5-3.0m wide, grassy boulevard. No changes are anticipated as a result of the proposed development.

Bicycle

As Conroy Road forms part of the Crosstown Bikeway, target levels of service for cyclists are higher, at LOS 'B'. The west side of Conroy Road meets this target, in large part due to the well-buffered MUP. The east side of Conroy Road is graded at LOS 'C', with a 2.0-2.5m wide on-street bike lane. Notably, the west side of Conroy Road also has an on-street bike lane. No changes to cycling facilities are anticipated as a result of the proposed development.

Transit

Transit conditions are currently satisfactory and exceed the City's target level of service for a frequent transit route. Due to the addition of site-generated truck traffic to the east side Conroy Road, transit may be slightly impeded in the future given the location of the bus stop just south of the access, reducing the level of service to 'C'. However, TLOS for future conditions is still expected to meet the City's target.

4.4. Access Intersection Location

4.4.1. Location and Design of Access

Vehicle Access

The site plan proposes access via the existing driveway on the east side of Conroy Road, approximately 240 m north of the Johnston Road / Conroy Road intersection and about 105 m south of the at-grade railway crossing. The driveway currently permits full movements to/from Conroy Road via an existing median break for left turns.

The centre median at the access has an available storage width of approximately 12m, which can provide a refuge area sufficient to support a two-stage left turn for an outbound waste collection truck to wait clear of the northbound through traffic while awaiting a safe gap in the southbound through traffic stream. The median space is also large enough to sufficiently accommodate a single heavy vehicle without encroaching into the adjacent southbound left-turn lane. However, in practice, the auxiliary southbound left-turn lane's traffic has priority and outbound trucks would only stage in the median when the auxiliary lane is clear.

Based on TAC Geometric Design Guide for Canadian Roads (Chapter 9 – Intersections), the provision of a right-turn lane at an unsignalized intersection is suggested "when the volume of decelerating or accelerating vehicles compared with the through traffic volume causes undue hazard". Site-generated volumes indicate that the northbound right-turn traffic volume at the site access accounts for approximately 4% (45 vehicles) of

the total northbound approach volume during the morning peak hour and approximately 9% (65 vehicles) during the afternoon peak hour. The estimated number of right-turns is not considered significant enough to cause undue hazard to the through traffic volume of Conroy Road.

Throat Length

The Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads, Chapter 8 (Access) provides guidelines for clear throat length. Clear throat lengths are only recommended for arterial and collector roads. Per TAC Table 8.9.3, the suggested minimum clear throat length to an arterial road for light industrial developments under 10,000 m^2 is 15m, which is well under the proposed throat length of 140m.

Private Approach By-law

The proposed design was also reviewed for compliance with the City of Ottawa's Private Approach By-law, with the following noted:

- The existing site approach is approximately 15m wide at the curb line. While this exceeds the requirement of 9m maximum width in Section 25.1(c) of the By-law, the width is necessary given the required truck turning radii of the design vehicles. For truck turning templates, refer to discussion in Section 4.1.2.
- The site abuts Conroy Road, and as such is subject to the provisions of Section 25.1(m)(ii), which specifies a minimum distance of 60m between the approach and any intersecting street lines. The site's access is located more than 75m from Thurston Drive, Johnston Drive, and CN Rail's Walkley Corridor.
- As per requirement 25.1(p) of the Private Approach By-Law, the site access provides more than 3m separation from the nearest property line.
- It is anticipated that the proposed approach will slope towards the roadway at a grade not exceeding 2%, in compliance with Section 25.1(u).

Therefore, the access design is expected to be in conformance with the City of Ottawa Private Approach By-law 2003-447 or have been justified based on the intended purpose of the development.

4.5. Transportation Demand Management

4.5.1. Context for TDM

The site is expected to be owned and managed by WO MW Realty Limited, but operated by Miller Waste Systems. Approximately 88% of all commuters enter the site between 6:00-7:00 AM and 55% leave the site between 5:00-6:00 PM. Collection vehicles are expected to exit the site during the 6:00-7:00 AM time period as commuters arrive at the site and return to the site at staggered times between the 4:00-7:00 PM time period. As such, the morning peak of the proposed site occurs prior to the peak of the Conroy Road, while the afternoon peak of the proposed site may coincide with the peak for Conroy Road. Section 3.1 provides a detailed breakdown of the site-generated trips and their assignment to the surrounding road network.

OC Transpo bus route #40, which links to LRT Line #1 via St. Laurent Station and LRT Line #2 via South Keys Station and Greenboro Station, operates on Conroy Road with bus stops on both sides immediately adjacent to the site. Additionally, a sidewalk and bike lane are provided on Conroy Road on the east side, with a MUP on the west side.

4.5.2. Need and Opportunity

Given the type of development as a parking for waste collection vehicles, as well as the context of the site near the greenbelt region and away from major transit stations, the majority of trips are naturally anticipated to be vehicle trips. Nonetheless, TDM measures are proposed as summarized in Section 4.5.3 below.

4.5.3. TDM Program

The TDM-Supportive Development Design and Infrastructure Checklist and TDM Measures Checklists have been provided in **Appendix H**. Checklists reflecting non-residential developments were completed.

Regarding the TDM-Supportive Development Design and Infrastructure Checklist, the following are anticipated:

- All ten (10) "required" measures related to walking and cycling (facilities and bicycle parking) and vehicle parking are anticipated to be satisfied.
- Seven (7) of sixteen (16) "basic" measures related to walking and cycling, transit, ridesharing and parking are anticipated to be satisfied.
- One (1) of the of the ten (10) candidate "better" measures is proposed, where tools and pumps available in the truck maintenance shop are expected to be usable for bike repair purposes.

Regarding the TDM Measures Checklist, the following are anticipated:

- Four (4) out of ten (10) "basic" measures related to walking, cycling, transit, parking and TDM marketing are expected to be satisfied. One (1) of those, which has been designated by an asterisk (*), is considered by the TDM Measures to be some of the most dependably effective tools to encourage sustainable travel modes. This includes:
    - Display local area maps with walking/cycling access routes and key destinations at major entrances.
    - Display relevant transit schedules and route maps at entrances.
    - Provide online links to OC Transpo and STO information.
    - *Provide a multimodal travel option information package to new/relocating employees and students.
- None of the twenty-six (26) "better" measures related to walking, cycling, transit, parking and TDM marketing are expected to be provided.

4.6. Neighborhood Traffic Management

The site is directly accessible via an arterial road. This section is exempt as per **Table 5**.

4.7. Transit

4.7.1. Transit Route Capacity

Exempt – refer to **Table 5**.

4.7.2. Transit Priority Requirements

The development is expected to generate 21 and 20 transit trips in the morning and afternoon peak hours, respectively. Given the location of the existing northbound bus stop, truck trips may slightly impede northbound transit due to vehicles turns into the site. However, this will be limited to the site's peak hours of 6:00 AM – 7:00 AM and 5:00 PM – 6:00 PM, which may cause minor delays.

The draft TMP proposes a continuous transit lane from Leitrim Road to Walkley Road, which could improve transit operations. It is not anticipated that further improvements to the transit network will be necessary due to the development.

4.8. Review of Network Concept

Exempt – refer to **Table 5**.

4.9. Intersection Design

4.9.1. Intersection Control

A traffic signal warrant analysis was completed for the site access using the Ontario Traffic Manual's (OTM) Traffic Signal Justification methodology. The analysis sheets have been provided in **Appendix I**. which was based on the two future projected peak hour volumes scenarios in **Figure 21** and **Figure 22**. The warrant analysis typically uses 8-hour traffic volumes at an intersection to determine if a traffic signal is warranted. Since only AM and PM peak hour volumes are available for the site access, the AM peak hour volumes were very conservatively assumed during each hour for the first four hours and the PM peak hours were conservatively assumed during each of the remaining four hours. However, it should be noted that traffic movements at the site access are mainly anticipated to occur during peak hours of the development, with minimal or negligible volumes outside of the peak hours.

Less than 70% of the warrant threshold was met at the access during the 'W' schedule, with less than 40% of the threshold met during the 'R' schedule. Based on the analysis results and despite the conservative estimation using peak hour traffic volumes, a traffic signal is not expected to be warranted at the site access in the future. As such, the existing site access stop control is proposed to be maintained in the future.

4.9.2. Intersection Design

Multi-Modal Level of Service

For the purpose of this analysis, the newly approved MMLOS Tool will be used. Only signalized intersections are considered for the intersection Level of Service analysis in the MMLOS Guidelines. The MMLOS analysis is summarized in **Table 12**, with detailed analysis sheets provided in **Appendix G**.

Table 12: MMLOS – Existing and Future Intersection Conditions

Intersection	Level of Service					
	Pedestrian		Bicycle		Transit	
	PLOS	Target	BLOS	Target	TLOS	Target
Conroy/Thurston	C	C	D	B	A	D
Conroy/Johnston	C	C	F	B	A	D

Pedestrian

Pedestrian levels of service at Conroy/Thurston and Conroy/Johnston meet the targets for an Outer Urban or Suburban intersection. No changes to pedestrian facilities at these intersections are anticipated as part of this development.

Bicycle

Bicycle levels of service at Conroy/Thurston do not meet the targets for an intersection along the Crosstown Bikeway. This is in part due to the lane configurations along Conroy Road and the lack of bike lanes on Thurston Drive. Of particular concern are conditions along the east and west leg of Conroy Road (graded 'E' and 'C', respectively), which form the Crosstown Bikeway elements in this intersection. While the development is not expected to generate many cycling trips or to affect cycling facilities at this intersection, the following could help improve the levels of service:

- Installation of dedicated left-turn infrastructure for cyclists, particularly on the north and south leg of the intersection (on Conroy Road), which currently require left-turning cyclists to cross two or more lanes to reach the left-turn lane.
- Implementation of a protected intersection with dedicated cyclist infrastructure, to avoid right-lane crossovers over the bike lane (in this case, on the east leg), or the conversion of right-turn lanes into shared right-through lanes.

Conditions at Conroy/Johnston are well-below the targets for a Crosstown Bikeway intersection. To improve cycling conditions to approach the target grade, similar measures to the ones indicated for the Conroy/Thurston intersection could be implemented, with protected intersection adjustments needed to north and south legs to improve levels of service. However, it is noted that the listed measures for both intersections would potentially have operational impacts on the area's traffic flows and may affect other modes' levels of service.

Transit

Transit levels of service are satisfactory, achieving an 'A' or 'B' grade and meeting the target 'D' grade. Modelling conducted with Synchro determined that these levels of service will be maintained at Conroy/Thurston and Conroy/Johnston in the future.

4.9.3. Intersection Performance

Synchro 11 Trafficware was used to analyze intersection performance of intersections within the study area. Critical movements at each of the intersections were assessed based on either the movement with the highest volume-to-capacity ratio (for signalized intersections), or the movement experiencing the highest average delay (for unsignalized intersections). Signalized intersections' results reflect the Synchro analysis method, while HCM 6th Edition was used to reflect the analysis results of the unsignalized site access.

The HCM 6th Edition methodology incorporates updated critical gap and follow-up time parameters that are known to produce more conservative delay estimates for minor-street approaches at two-way stop-controlled (TWSC) intersections. As a result, the reported delays for the WB approach appear higher than those shown in previous submission using the HCM 2000 methodology; however, this reflects a methodological update rather than a change in expected operating performance. Notably, the City TIA Guideline do not prescribe a specific HCM edition for TWSC analysis, and the conclusions regarding available capacity and the feasibility of maintaining full movements at the site access remain unchanged.

It should also be noted that, as per the TIA Guidelines, the Peak Hour Factor (PHF) used for analysis was 0.90 in existing conditions and 1.0 in all future scenario conditions. A queueing analysis using Synchro and SimTraffic was also conducted at the site access to identify any potential future queuing concerns at the existing southbound left-turn lane. All Synchro and SimTraffic report outputs for existing and future conditions have been provided in **Appendix J**.

Existing Conditions

The following **Table 13** provides a summary of the existing traffic operations at the study area intersection based on peak hour volumes (7:00 – 8:00 AM and 5:00 – 6:00 PM) from **Figure 7** and Synchro (V11) traffic analysis software.

Table 13: Existing Conditions Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'as a whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Conroy/Thurston (S)	A(C)	0.51(0.71)	NBT(WBL)	14.6(13.9)	A(A)	0.47(0.53)
Conroy/Johnston (S)	C(B)	0.79(0.63)	EBL(EBL)	19.9(14.5)	A(A)	0.54(0.48)
Note: Analysis of signalized intersections assumes a PHF of 0.90 and a saturation flow rate of 1800 veh/h/lane. (S) – Signalized intersection.						

As shown in **Table 13**, the two adjacent signalized intersections within the study area operate 'as a whole' at LOS 'A' during both peak hours, with the critical movements operating at LOS 'C' or better.

Future Background Conditions (2033)

As discussed in **Section 3.2**, a 0% annual growth factor plus layering of other area developments was used to develop the background traffic volumes shown in **Figure 20**. Traffic volumes from the other area developments

are expected to be minimal, with less than 10 vehicles/hour anticipated at study area intersections during peak hours. Therefore, since there are no forecasted future network changes at study area intersections, and the increase in future background traffic volumes is expected to be minimal compared to existing conditions, an assessment of future background traffic volumes was not considered necessary for the purpose of this report.

Future Projected Conditions (2033)

The future projected conditions account for both the future background volumes and the site-generated traffic volumes. Since no background growth is anticipated between horizon years 2028 and 2033 for traffic volumes at study area intersections, only the 2033 horizon year needs to be assessed. The two schedule conditions for Wednesday and rest of the week shown in **Figure 21** and **Figure 22** are analyzed as shown below. Given that the site generates truck traffic, the heavy vehicle percentages were appropriately accounted for in the Synchro analysis.

Wednesday Schedule

The projected traffic volumes Synchro analysis based on the Wednesday schedule are summarized in **Table 14** below.

Table 14: Future Projected 2033 Conditions Intersection Performance (Wednesday Schedule)

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'as a whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Conroy/Thurston (S)	A(B)	0.47(0.61)	NBT(WBL)	13.4(13.8)	A(A)	0.44(0.52)
Conroy/Johnston (S)	C(A)	0.75(0.59)	EBL(EBL)	18.7(14.0)	A(A)	0.50(0.44)
Conroy/Site Access (U)	F(C)	918.3(20.2)	WB(WB)	49.5(0.9)	E(A)	-
Note: Analysis of signalized intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane. (S) – Signalized intersection, (U) – Unsignalized stop controlled intersection.						

As shown in **Table 14**, traffic operations of adjacent study area signals are expected to be similar to or slightly better compared to existing conditions for the intersections 'as a whole', with critical movements also showing a similar trend.

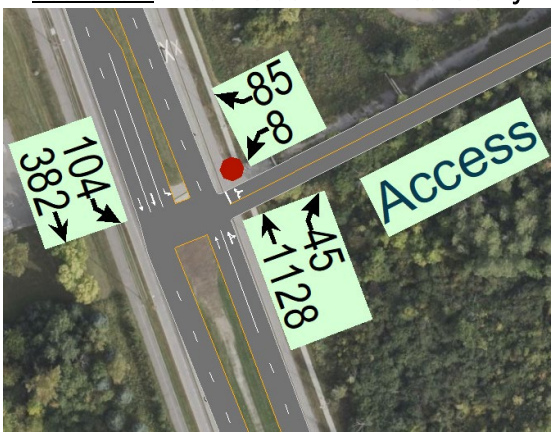
The unsignalized access is expected to operate at capacity for the critical WB movement during the AM peak hour and LOS 'C' during the PM peak hour. The WB movement's delay during the morning peak hour is notable and is the result of having most collection vehicles exiting the site via a WBL turn onto Conroy Road during the Wednesday schedule's travel routes.

However, as indicated previously, analysis of the AM peak hour is conservative as it overlays the morning site-generated traffic of the site, which are anticipated to occur between 6:00 and 7:00 AM, onto the 7:00 to 8:00 AM traffic volumes of Conroy Road, where volumes are approximately double the volumes in the preceding hour. Therefore, alternative AM peak hour scenarios that are considered to be realistic for traffic volumes at the site access are shown in **Figure 23**, which includes the following:

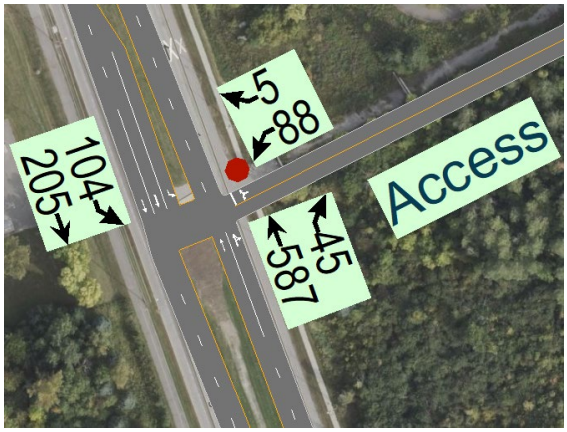
- Scenario 1: Since the directional splits of collection vehicles at the site access are based on an operations schedule indicated by the developer, it would be possible for the travel routes of the collection vehicles to be adjusted as needed to reduce pressure on the critical WBL movement. As shown in the traffic volumes below, a sensitivity analysis determined that the majority of the WBL collection vehicles would need to be shifted to the WBR to improve operations if the morning peak hour of the site were to occur between 7:00-8:00 AM.
- Scenario 2a and 2b: To align with the proposed schedule of the collection vehicles, the 6:00 to 7:00 AM traffic volumes of Conroy Road were assessed using the same outbound distribution as shown by the 2a scenario volumes below, as well as with a modified distribution as shown in the 2b scenario.

Figure 23: Site Access Alternate Analysis Scenarios

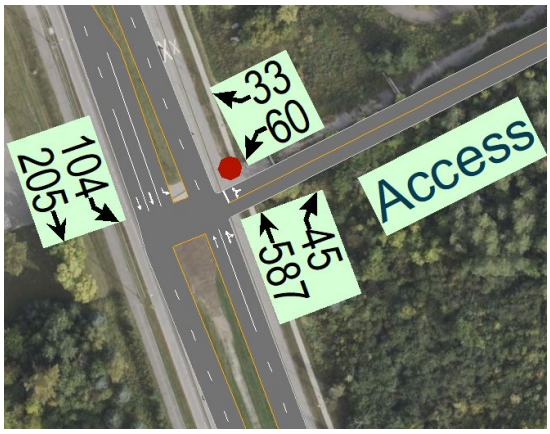
Scenario 1: 7:00 – 8:00 AM WBL Sensitivity



Scenario 2a: 6:00 – 7:00 AM Traffic Volumes



Scenario 2b: 6:00 – 7:00 AM Traffic Volumes Sensitivity



Based on the traffic volumes shown in **Figure 23** at the Conroy/Site Access intersection, Synchro analysis results of the two scenarios have been summarized in **Table 15** below.

Table 15: Site Access Alternate Scenarios Future Projected 2033 Conditions Intersection Performance (Wednesday Schedule)

Conroy/Site Access Analysis Scenario	Weekday AM Peak Alternate Scenario Analysis					
	Critical Movement			Intersection 'as a whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Scenario 1	E	47.7	WB	3.3	A	-
Scenario 2	F	78.8	WB	8	A	-
Scenario 3	E	48.2	WB	5.3	A	-
Note: Analysis of signalized intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane.						

Results in **Table 15** indicate the following:

- Scenario 1: The 7:00-8:00 AM peak hour was conservatively assessed in this report despite anticipating the site's morning peak to occur in the preceding hour. This scenario determined that that majority of the outbound site-generated truck volumes would need to be shifted from the WBL to the WBR movement to result in acceptable operations.
- Scenario 2a: This scenario assesses morning peak hour operations between 6:00-7:00 AM, assuming the same critical outbound distribution where most truck would exit via a WBL movement. Despite the LOS for the WB movement remaining critical, the results indicate a notably reduced delay during the actual hour of operations.

- Scenario 2b: the distribution of outbound traffic in Scenario 2a was shifted slightly to determine sensitivity, where approximately two-thirds of the outbound volumes were assumed for the WBL movement, resulting in acceptable traffic operations for the movement.

These results indicate that capacity is available at the intersection and any impacts are limited to the outbound movement of the site. Should delays for the WB movement be excessive in the future, shifting some of the collection vehicle travel routes from WBL to WBR would be a plausible scenario to improve operations and is considered to be adjustable by the developer's operations management team.

Rest of the Week Schedule

The projected traffic volumes Synchro analysis based on the rest of the week schedule are summarized in **Table 16** below.

Table 16: Future Projected 2033 Conditions Intersection Performance (Rest of the Week Schedule)

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'as a whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Conroy/Thurston (S)	A(B)	0.55(0.61)	NBT(WBL)	14.4(13.4)	A(A)	0.51(0.48)
Conroy/Johnston (S)	C(A)	0.75(0.59)	EBL(EBL)	18.9(14.2)	A(A)	0.50(0.44)
Conroy/Site Access (U)	D(C)	29.2(20.2)	WB(WB)	2.3(0.9)	A(A)	-
Note: Analysis of signalized intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane. (S) – Signalized intersection, (U) – Unsignalized stop controlled intersection. Red font indicates the respective metric is operating at capacity.						

As shown in **Table 16**, traffic operations of adjacent study area signals are expected to be similar to or slightly better compared to existing conditions for the intersections 'as a whole', with critical movements also showing a similar trend. The unsignalized access is expected to result in LOS 'D' or better for the WB movement during both peak hours.

4.9.4. Queueing Analysis

The following **Table 17** summarizes queuing results based on Synchro and SimTraffic analysis of different time periods and scenarios at the site access. The results are based on the future projected 2033 conditions analysis where traffic queues at both the southbound left-turn lane and the westbound movement of the intersection were reviewed.

Table 17: Queueing Analysis at Site Access – Future Projected 2033

Schedule	Time Period	Storage Length + Taper (SBL, WB)	Traffic Queues SBL, WB (m)		
			Synchro	SimTraffic	
			95th Percentile	Average	95th Percentile
Wednesday	7:00 – 8:00 AM	45 + 20m, 140m	5, 79	12, 38	22, 88
	5:00 – 6:00 PM		0, 8	0, 12	0, 21
	7:00 – 8:00 AM *(Scenario 1)*		5, 21	11, 25	21, 47
	6:00 – 7:00 AM *(Scenario 2a)*		3, 30	8, 24	18, 43
	6:00 – 7:00 AM *(Scenario 2b)*		3, 21	9, 24	17, 41
Rest of the Week	7:00 – 8:00 AM		5, 13	11, 24	22, 43
	5:00 – 6:00 PM		0, 8	0, 12	0, 22

As shown in **Table 17**, queues anticipated for the SBL and WB movements are within their storage capacity in all scenarios and time periods. Based on SimTraffic results, a slightly longer traffic queue may be expected at the WB approach of the access during the 7:00 to 8:00 AM time period of the Wednesday schedule. However,

the queue length, consisting primarily of collection vehicles, is expected to remain within the available 140m throat length of the proposed driveway.

5.0 FINDINGS AND RECOMMENDATIONS

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

Existing Conditions

- The site is currently vacant with remnants of a go-karting track and a mini-golf course.
- The site is currently accessed via an existing full movement access on Conroy Road, at the south end of the property. This includes a median break with an auxiliary left-turn lane.
- Sidewalks are provided on the east side of Conroy Road, along with MUP on the west side and bike lanes on both sides. Conroy Road is a designated Crosstown Bikeway in the TMP.
- Frequent bus route #40 currently operates along Conroy Road, with bus stops on both sides of the road, adjacent to the site.
- The CN Rail corridor is located approximately 105m north of the existing site access and is understood to operate twice a day between 8-9am and 4-5pm, which do not align with the expected peak hours of the proposed development.
- Two-way traffic volumes were found to be in the order of approximately 1,500 and 1,800 veh/h along Conroy Road, during the morning and afternoon peak hours, respectively. However, it is noted that the morning peak hour reflects a 7:00-8:00 AM time period, whereas the morning peak hour of the development is expected to be between 6:00-7:00 AM, when traffic volumes on Conroy Road are approximately 800 veh/h.
- Based on five-year historic collision data, there are no existing safety concerns along the proposed development frontage and study area intersections.
- Based on Synchro analysis, all study area intersections currently operate at LOS ‘A’ during peak hours, with critical movements operating at LOS ‘C’ or better.

Proposed Development

- The proposed development is located at 3145 Conroy Road and will consist of office space, a servicing garage with loading spaces, storage at the rear of the site for roll-off and front-end waste bins, and a new surface parking lot for 135 truck spaces, 267 employee parking spaces (including 8 accessible spaces), and 12 motorcycle spaces. The date of occupancy is expected to be June 2028.
- The development is expected to maintain the existing full-movement site access on Conroy Road. A 1.8m wide sidewalk is proposed along the north side of the site driveway to connect the site to Conroy Road. The driveway throat length is approximately 140m.
- Parking requirements of the Zoning By-Law are met for vehicle parking (259 spaces), accessible parking (8 spaces) and bicycle parking (10 spaces).
- Trucks are expected to operate on two different schedules, primarily a Wednesday schedule and a different schedule for the rest of the week. During the Wednesday schedule, trucks would travel south from the site via WBL. During the rest of the week’s schedule, trucks exit the site and primarily travel north via WBR at the access.

- Employees are expected to commute to the site between 6:00-7:00 AM and leave the site over a 3-hour period between 4:00-7:00 PM, where the peak hour was assumed to be 5:00-6:00 PM. The collection trucks will operate during the same hours, travelling opposite of the employee traffic.
- Total employee trips are estimated to be 180 and 112 veh/h during the respective morning and afternoon peak hours, while collection trucks are estimated at 93 and 65 veh/h during the same respective hours. Based on the TRANS 2011 O-D Survey, approximately 70% of employee traffic would travel to/from the north on Conroy Road, while 30% would travel to/from the south.
- Truck turns at the site access and internal to the site were reviewed using a conservative design vehicle. No concerns were raised for truck circulation.
- Requirements of the Private Approach By-Law and suggested TAC throat lengths are expected to be met by the site access.
- Traffic signal warrant analysis was completed for the site access, with highly conservative assumptions of 8-hour volumes at the site access. It was determined that a traffic signal is not warranted in the future.
- Proposed TDM Measures include the following, where an asterisk (*) is considered by the TDM Measures to be some of the most dependably effective tools to encourage sustainable travel modes:
    - Display local area maps with walking/cycling access routes and key destinations at major entrances.
    - Display relevant transit schedules and route maps at entrances.
    - Provide online links to OC Transpo and STO information.
    - *Provide a multimodal travel option information package to new/relocating employees and students.

Future Conditions

- In planned conditions, continuous bus lanes are proposed on Conroy Road as part of the Priority Transit Network of the new TMP. The TMP also illustrates a northern extension of Conroy Road from Walkley Road to the Hospital Link Road within the Needs-Based Road Network.
- Future adjacent developments were accounted for and anticipated to result in minimal increase of traffic volumes of less than 10 veh/h along Conroy Road within the study area in the future.
- MMLOS analysis for the Conroy Road segment at site frontage indicates that all travel modes meet their respective LOS targets on both side of the road, with the exception of the pedestrian LOS on the east side due to a narrower 1.5m wide sidewalk.
- MMLOS analysis for study area traffic signal intersections at Conroy/Thurston and Conroy/Johnston indicates that the pedestrian and transit LOS meet their respective targets, but the cycling does not. This is due to lack of dedicated infrastructure and protected cycling facilities at the intersections.
- Intersection analysis was conducted for the future projected 2033 conditions using Synchro. It was determined that no operational concerns are anticipated for most weekdays. For The Wednesday schedule, critically high delays may be experienced at the WB approach of the access due to majority of trucks attempting to travel south via WBL movement. The 7:00–8:00 AM assessment reflects a conservative condition, as it applies the site's expected 6:00–7:00 AM outbound traffic to a busier hour where Conroy Road volumes are nearly double. To reflect more realistic operating conditions, alternative AM peak hour scenarios were evaluated as summarized below:
    - Scenario 1: Under the conservative 7:00–8:00 AM hour, acceptable operations can be achieved by shifting the majority of outbound trucks from the WBL to the WBR movement.

This adjustment is operationally feasible given the developer's ability to modify collection vehicle routing as needed.

- Scenario 2a: Using the actual 6:00–7:00 AM Conroy Road volumes and maintaining the original outbound distribution where most trucks turn WBL, delays at the WB approach remain critical but are considerably reduced relative to the conservative scenario.
- Scenario 2b: A slight modification to the Scenario 2a outbound distribution—where approximately two-thirds of trucks use the WBL movement—results in acceptable operations for the WB approach during the 6:00–7:00 AM peak.

- Overall, these scenarios demonstrate that sufficient capacity exists at the intersection, with operational impacts primarily limited to outbound movements from the site. Should delays at the WB approach become excessive in the future, minor adjustments to outbound truck routing (e.g., additional shifts from WBL to WBR) can be implemented by the operator to maintain acceptable performance.
- Queueing analysis from both Synchro and SimTraffic indicates no major queueing concerns for any movements at the site access for all time periods and scenarios.

Based on the preceding report, the proposed development located at 3145 Conroy Road is recommended to proceed from a transportation perspective.

Prepared By:

Basel Ansari, P.Eng.
Transportation Engineer

Reviewed By:

Austin Shih, MASc, P.Eng.
Senior Transportation Engineer

Appendix A:

TIA Screening Form and Site Plan

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

City of Ottawa 2017 TIA Guidelines

TIA Screening Form

Date	June 6th, 2025
Project	3145 Conroy Rd
Project Number	479371 - 01000

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

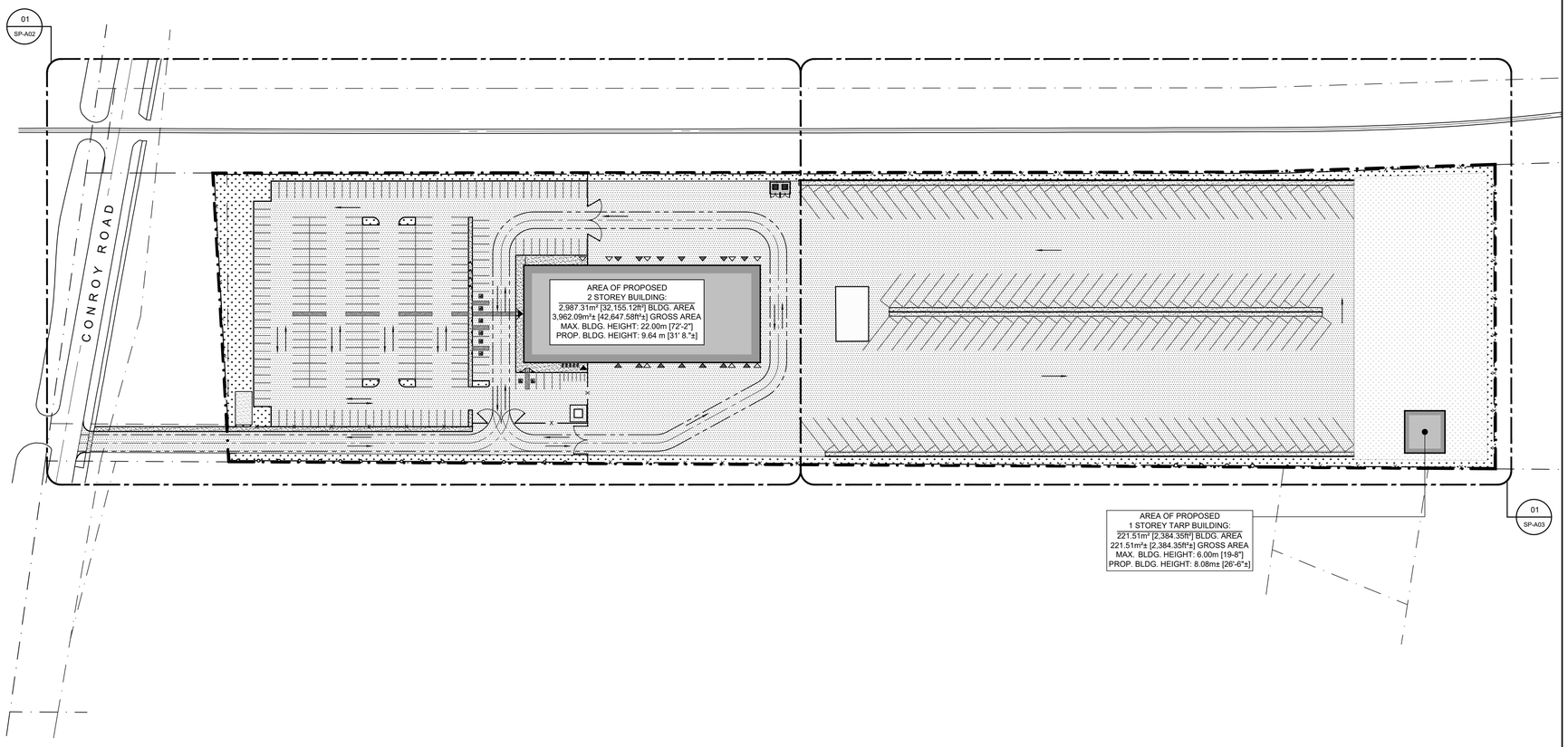
Module 1.1 - Description of Proposed Development	
Municipal Address	3145 Conroy Rd
Description of location	Currently occupied by a go-kart track and open grass.
Land Use	General Industrial (IG3). Proposed as a truck storage facility.
Development Size	~260 staff parking spaces and 135 truck fleet parking spaces, plus minor ancillary office space.
Number of Accesses and Locations	1: located on the southwest quadrant of the site.
Development Phasing	Single phase
Buildout Year	2025
Sketch Plan / Site Plan	See attached

Module 1.2 - Trip Generation Trigger		
Land Use Type	Other	
Development Size	100	People Trips
Trip Generation Trigger Met?	Yes	

Module 1.3 - Location Triggers		
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?	Yes	Conroy Rd is part of a transit priority corridor and is part of the Cross-Town Bikeway Network.
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?	No	
Location Trigger Met?	Yes	

Module 1.4 - Safety Triggers		
Posted Speed Limit on any boundary road	<80	km/h
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	No	
A proposed driveway is within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions) or within auxiliary lanes of an intersection?	Yes	The access is within 100m of the CN Rail at-grade crossing which has railway traffic signal control.
Does the proposed driveway make use of an existing median break that serves an existing site?	Yes	Conroy Rd is generally median separated and provides a break.
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	No	
Does the development include a drive-thru facility?	No	
Safety Trigger Met?	Yes	

NOTE:
THIS SITE PLAN HAS BEEN BASED ON THE SURVEYOR'S *REAL PROPERTY REPORT* PREPARED BY J.D. BARNES LTD., DATED SEPTEMBER 04, 2024.



01 SP-A01 PROPOSED SITE PLAN
SCALE: 1:400

ZONING INFORMATION

1. GENERAL INFORMATION:

1.1. LEGAL DESCRIPTION:
PT LT 2, CON 5RF, PTS 1,2,3, 5R5712, EXCEPT PT 1, 4R11804; T/W IN N742746, OTTAWA/GLOUCESTER

1.2. TOTAL BUILDING AREA (B.A.):
2,987.31m²

1.3. TOTAL GROSS FLOOR AREA (G.F.A.):
3,962.09m²
GROUND FLOOR:
GROUP D (BUSINESS & PERSONAL SERVICES):
790.73m² [8,511.34ft²]
GROUP F, DIV. 2 (MEDIUM HAZARD INDUSTRIAL):
2230.04m² [24,003.95ft²
SECOND FLOOR:
GROUP D (BUSINESS & PERSONAL SERVICES):
941.32m² [10,132.28ft²]

1.4. PROPOSED USE:
HEAVY EQUIPMENT & VEHICLE SALES, RENTAL & SERVICING

2. ZONING PROVISIONS:

2.1. DESIGNATION:
GENERAL INDUSTRIAL ZONE (IG3)

2.2. LOT AREA:
REQUIRED: 1,000.00m² [10,763.90ft²] (MIN.)
PROPOSED: 48,611.80m² [523,253.62ft²]

2.3. LOT FRONTAGE:
REQUIRED: 0.00m (MIN.)
PROPOSED: 103.30m [338.91ft]

2.4. SETBACKS:
FRONT YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: 108.21m [355.02ft]
CORNER SIDE YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: N/A
INTERIOR SIDE YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: 34.20m [112.21ft] (MIN.)
REAR YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: 264.01m [866.18ft]

2.5. LOT COVERAGE:
REQUIRED: 65% (MAX.)
PROPOSED: 6.6%

2.6. FLOOR SPACE INDEX (FSI):
FSI = (3,962.09m² / 48,611.80m²) ≈ 0.08

2.7. BUILDING HEIGHT:
REQUIRED: 22.00m [72.17ft] (MAX.)
PROPOSED: 9.64m [31.64ft]

2.8. ACCESSORY BUILDING HEIGHT:
REQUIRED: 6.00m [19'–8"] (MAX.)
PROPOSED: 8.08m [26'-6"]

3. PARKING (PER SECTIONS 3.30 & 3.41):

3.1. PARKING SPACES:

STANDARD SPACES
HEAVY EQUIPMENT & VEHICLE SALES, RENTAL & SERVICING
PROVISION: 0.75 SPACES PER 100m² G.F.A.
REQUIRED: (≥2,230.04m² / 100m²) x 0.75)
16.72 SPACES = 17.00 SPACES

OFFICE
PROVISION: 2.40 SPACES PER 100m² G.F.A.
REQUIRED: (≥1,732.05m² / 100m²) x 2.40)
41.57 SPACES = 42 SPACES

STORAGE (ACCESSORY BUILDING)
PROVISION: 0.80 SPACES PER 100m² G.F.A.
REQUIRED: (≥221.51m² / 100m²) x 0.80)
1.77 SPACES = 2.00 SPACES
REQUIRED: 62 SPACES

BARRIER-FREE (B.F.) SPACES:
PROVISION: 251-300 STANDARD SPACES = 8
REQUIRED: 8 SPACES (4 - TYPE A, 4 - TYPE B)

TOTAL REQUIRED: 8 B.F. + 62 STANDARD
70 PARKING SPACES

TOTAL PROVIDED: 8 B.F. + 259 STANDARD
267 PARKING SPACES

3.2. LOADING SPACES:
PROVISION: 2,000m²-4,999m² G.F.A. = 2 SPACES
REQUIRED: 2 SPACES
PROVIDED: 2 SPACES

3.3. BICYCLE SPACES:
PROVISION: ALL NON-RESIDENTIAL USES
1 PER 1500m² G.F.A. = 2 SPACES
OFFICE:
1 PER 250m² G.F.A. = 7 SPACE
REQUIRED: 9 SPACES
PROVIDED: 10 SPACES

3.4. MOTORCYCLE SPACES:
PROVISION: 5% OF PARKING SPACES MAX.
REQUIRED: 5% = 12 SPACES MAX.
PROVIDED: 12 SPACES

3.5. FLEET PARKING SPACES:
REQUIRED: N/A
PROVIDED: 135 SPACES

SYMBOL LEGEND

- SITE PROPERTY LINE
- ADJACENT PROPERTY LINE
- SETBACK LINE
- ROAD CENTRELINE
- FIRE ROUTE LINE
- NEW CHAIN LINK FENCE
- NEW NOISE DAMPENING FENCE
- MUNICIPAL ROAD BOUNDARY
- SNOW STORAGE AREA BOUNDARY
- DIRECTION OF TRAVEL
- PROPOSED BUILDING
- PROPOSED HEAVY DUTY ASPHALT
- EXISTING GRAVEL
- PROPOSED CONCRETE SIDEWALK
- LANDSCAPED AREA
- OR B.F. — PRIMARY BUILDING ENTRANCE OR BARRIER-FREE ENTRANCE
- OR B.F. — SECONDARY ENTRANCES / EXITS OR BARRIER-FREE ENTRANCE / EXITS
- O.H. — OVERHEAD DOOR
- OR F.R. — FIRE ROUTE/NO PARKING SIGNAGE INSTALLED 25m MAX. ALONG ROUTE
- AND B.F. — BARRIER-FREE PARKING SIGN
- FH — FIRE HYDRANT (EXISTING)
- WH/MH — EXIST. WATER HYDRANT OR MANHOLE
- HP-(E/N) — HYDRO POLE, EXISTING OR NEW
- LS-(E/N) — LIGHT STANDARD, EXISTING OR NEW
- UP-(E/N) — UTILITY POLE, EXISTING OR NEW

DEIMLING
ARCHITECTURE & INTERIOR DESIGN

North

Revisions

No.	By	Description	Date
10	W.P.	ISSUED FOR SITE PLAN CONTROL	13 NOV 2025
09	W.P.	ISSUED FOR COORDINATION	16 OCT 2025
08	W.P.	ISSUED FOR SITE PLAN CONTROL	27 AUG 2025
07	T.D.	ISSUED FOR COORDINATION	17 JUN 2025
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05	T.D.	ISSUED FOR COORDINATION	09 MAY 2025
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03	W.P.	ISSUED FOR CLIENT REVIEW	25 MAR 2025
02	W.P.	ISSUED FOR CLIENT REVIEW	05 MAR 2025
01	T.D.	ISSUED FOR COORDINATION	10 JAN 2025

Project

WO MW REALTY LIMITED OFFICE GROUP
SITE PLAN APPLICATION
NEW MILLER WASTE FACILITY

3145 CONROY ROAD, OTTAWA, ON

Drawing

PROPOSED SITE PLAN

Scale: 1:500
Drawn: W.P.
Checked: C.D.

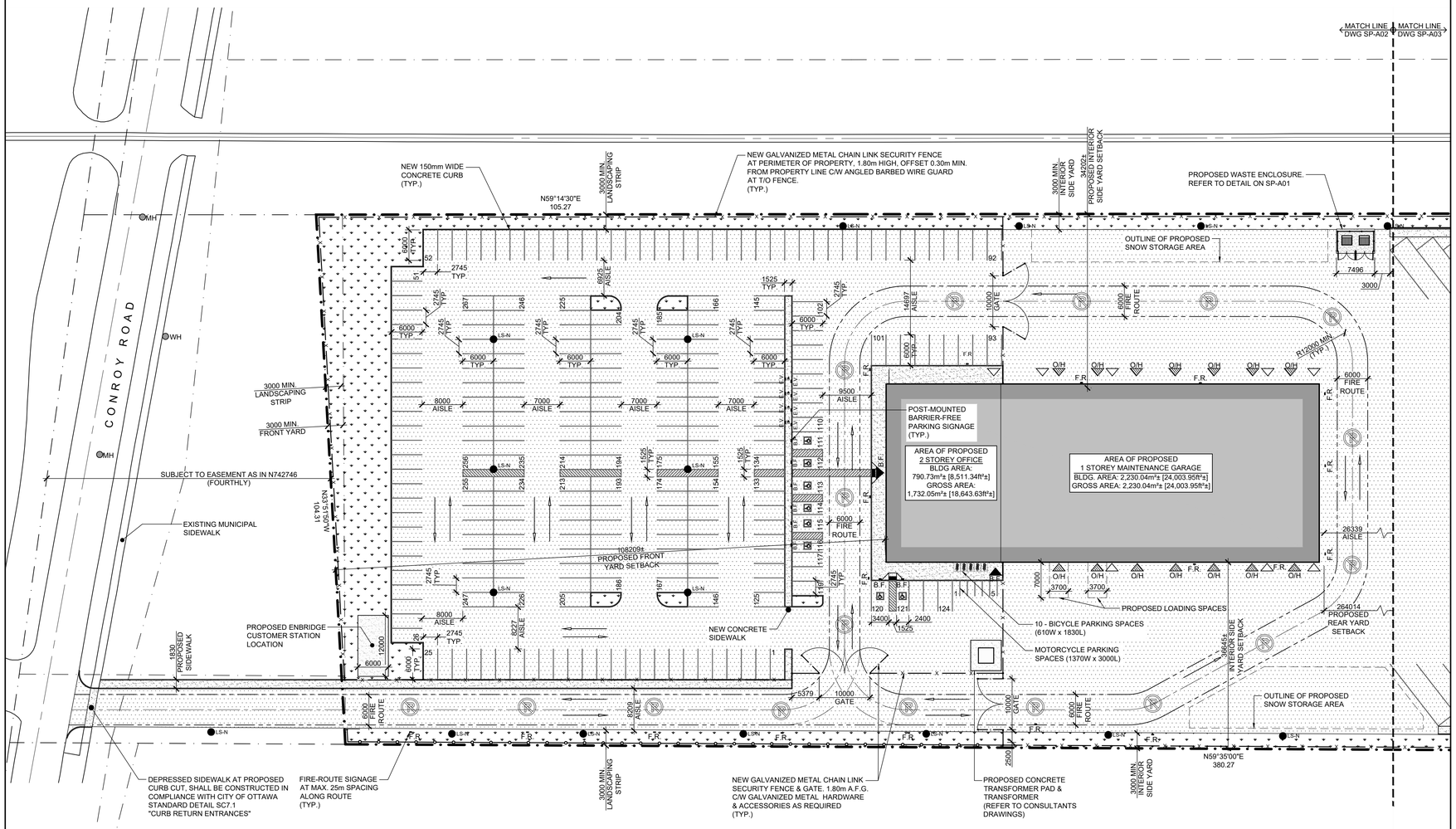
Stamp: ONTARIO ASSOCIATION OF ARCHITECTS — CHRISTOPHER LEE DEIMLING LICENCE 6238

Project No.: 24-151
Date: DECEMBER, 2024

Drawing No.: SP-A01

D07-12-25-0107
15862

NOTE:
THIS SITE PLAN HAS BEEN BASED ON THE SURVEYOR'S *REAL PROPERTY REPORT* PREPARED BY J.D. BARNES LTD., DATED SEPTEMBER 04, 2024.



01 SP-A02 PROPOSED ENLARGED PARTIAL SITE PLAN
SCALE: 1:500

ZONING INFORMATION

1. GENERAL INFORMATION:

1.1. LEGAL DESCRIPTION:
PT LT 2, CON 5RF, PTS 1,2,3, 5R5712, EXCEPT PT 1, 4R11804; T/W IN N742746. OTTAWA/GLOUCESTER

1.2. TOTAL BUILDING AREA (B.A.):
2,987.31m²

1.3. TOTAL GROSS FLOOR AREA (G.F.A.):
3,962.09m²
GROUND FLOOR:
GROUP D (BUSINESS & PERSONAL SERVICES): 790.73m² [8,511.34ft²]
GROUP F, DIV. 2 (MEDIUM HAZARD INDUSTRIAL): 2230.04m² [24,003.95ft²]
SECOND FLOOR:
GROUP D (BUSINESS & PERSONAL SERVICES): 941.32m² [10,132.28ft²]

1.4. PROPOSED USE:
HEAVY EQUIPMENT & VEHICLE SALES, RENTAL & SERVICING

2. ZONING PROVISIONS:

2.1. DESIGNATION:
GENERAL INDUSTRIAL ZONE (IG3)

2.2. LOT AREA:
REQUIRED: 1,000.00m² [10,763.90ft²] (MIN.)
PROPOSED: 48,611.80m² [523,253.62ft²]

2.3. LOT FRONTAGE:
REQUIRED: 0.00m (MIN.)
PROPOSED: 103.30m [338.91ft]

2.4. SETBACKS:
FRONT YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: 108.21m [355.02ft]
CORNER SIDE YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: N/A
INTERIOR SIDE YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: 34.20m [112.21ft] (MIN.)
REAR YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: 264.01m [866.18ft]

2.5. LOT COVERAGE:
REQUIRED: 65% (MAX.)
PROPOSED: 6.6%

2.6. FLOOR SPACE INDEX (FSI):
FSI = (3,962.09m² / 48,611.80m²) = 0.08

2.7. BUILDING HEIGHT:
REQUIRED: 22.00m [72.17ft] (MAX.)
PROPOSED: 9.64m [31.64ft]

2.8. ACCESSORY BUILDING HEIGHT:
REQUIRED: 6.00m [19'-8"] (MAX.)
PROPOSED: 8.08m [26'-6"]

3. PARKING (PER SECTIONS 3.30 & 3.41):

3.1. PARKING SPACES:

STANDARD SPACES
HEAVY EQUIPMENT & VEHICLE SALES, RENTAL & SERVICING
PROVISION: 0.75 SPACES PER 100m² G.F.A.
REQUIRED: (±2,230.04m² / 100m²) x 0.75) 16.72 SPACES = 17.00 SPACES

OFFICE
PROVISION: 2.40 SPACES PER 100m² G.F.A.
REQUIRED: (±1,732.05m² / 100m²) x 2.40) 41.57 SPACES = 42 SPACES

STORAGE (ACCESSORY BUILDING)
PROVISION: 0.80 SPACES PER 100m² G.F.A.
REQUIRED: (±221.51m² / 100m²) x 0.80) 1.77 SPACES = 2.00 SPACES

REQUIRED: 62 SPACES

BARRIER-FREE (B.F.) SPACES:
PROVISION: 251-300 STANDARD SPACES = 8
REQUIRED: 8 SPACES (4 - TYPE A, 4 - TYPE B)

TOTAL REQUIRED: 8 B.F. + 62 STANDARD
70 PARKING SPACES

TOTAL PROVIDED: 8 B.F. + 259 STANDARD
267 PARKING SPACES

3.2. LOADING SPACES:
PROVISION: 2,000m²-4,999m² G.F.A. = 2 SPACES
REQUIRED: 2 SPACES
PROVIDED: 2 SPACES

3.3. BICYCLE SPACES:
PROVISION: ALL NON-RESIDENTIAL USES
1 PER 1500m² G.F.A. = 2 SPACES
OFFICE:
1 PER 250m² G.F.A. = 7 SPACE
REQUIRED: 9 SPACES
PROVIDED: 10 SPACES

3.4. MOTORCYCLE SPACES:
PROVISION: 5% OF PARKING SPACES MAX.
REQUIRED: 5% = 12 SPACES MAX.
PROVIDED: 12 SPACES

3.5. FLEET PARKING SPACES:
REQUIRED: N/A
PROVIDED: 135 SPACES

SYMBOL LEGEND

- SITE PROPERTY LINE
- ADJACENT PROPERTY LINE
- SETBACK LINE
- ROAD CENTRELINE
- FIRE ROUTE LINE
- NEW CHAIN LINK FENCE
- NEW NOISE DAMPENING FENCE
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- SNOW STORAGE AREA BOUNDARY
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- PROPOSED HEAVY DUTY ASPHALT
- EXISTING GRAVEL
- PROPOSED CONCRETE SIDEWALK
- LANDSCAPED AREA
- PRIMARY BUILDING ENTRANCE OR BARRIER-FREE ENTRANCE
- SECONDARY ENTRANCES / EXITS OR BARRIER-FREE ENTRANCE / EXITS
- OVERHEAD DOOR
- FIRE ROUTE/NO PARKING SIGNAGE INSTALLED 25m MAX. ALONG ROUTE
- BARRIER-FREE PARKING SIGN
- FIRE HYDRANT (EXISTING)
- EXIST. WATER HYDRANT OR MANHOLE
- HYDRO POLE, EXISTING OR NEW
- LIGHT STANDARD, EXISTING OR NEW
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DEIMLING
ARCHITECTURE & INTERIOR DESIGN

North

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Project

WO MW REALTY LIMITED OFFICE GROUP
SITE PLAN APPLICATION
NEW MILLER WASTE FACILITY

3145 CONROY ROAD, OTTAWA, ON

Drawing

PROPOSED SITE PLAN

Scale 1:500
Drawn W.P.
Checked C.D.

Stamp
ONTARIO ASSOCIATION OF ARCHITECTS
CHRISTOPHER LEE DEIMLING
LICENCE 6238

Project No. 24-151
Date DECEMBER, 2024

Drawing No. SP-A02

D07-12-25-0107
15862

NOTE:
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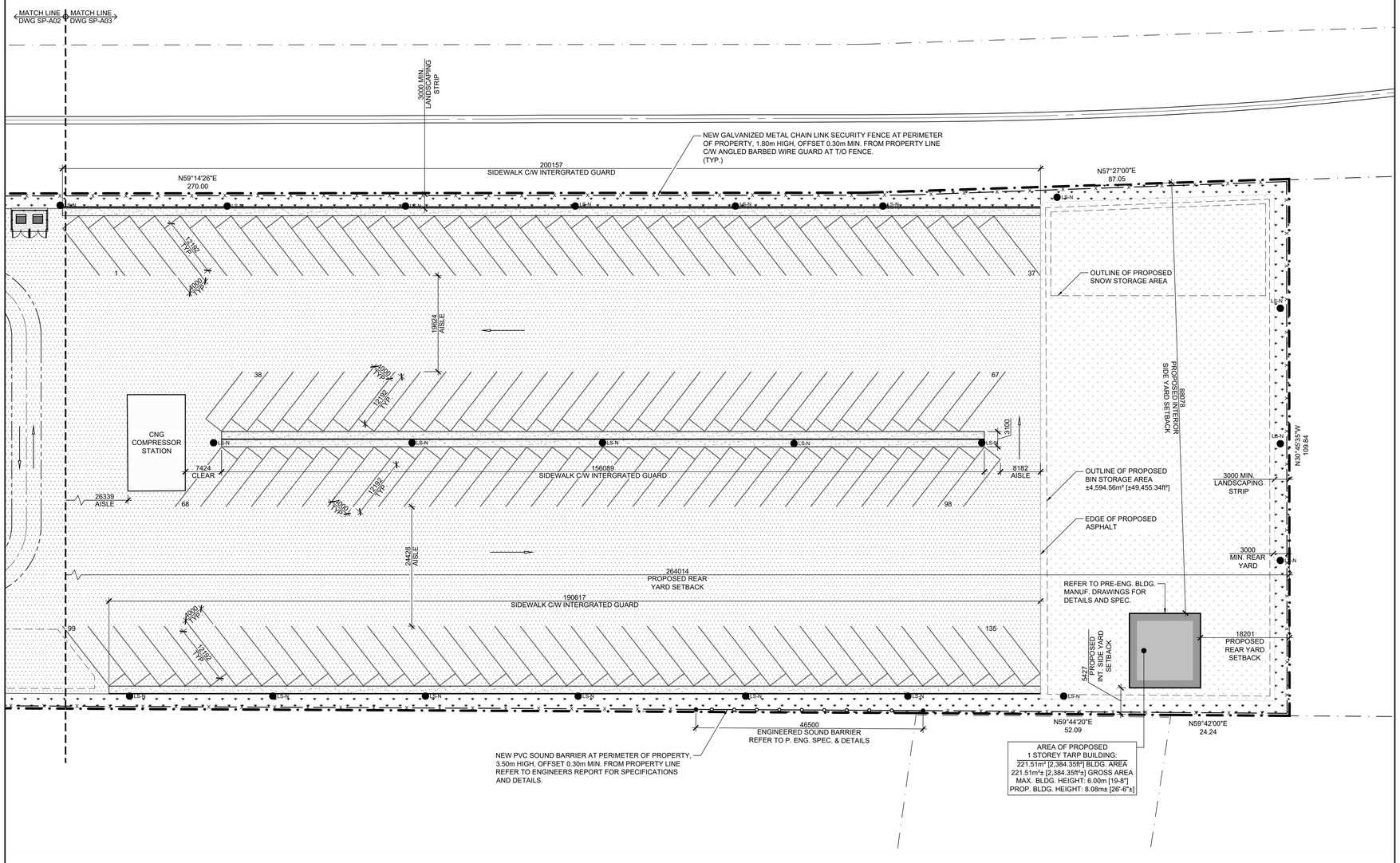

01 SP-A03 PROPOSED ENLARGED PARTIAL SITE PLAN
SCALE: 1:500

ZONING INFORMATION

1. GENERAL INFORMATION:

1.1. LEGAL DESCRIPTION:
PT LT 2, CON 5RF, PTS 1,2,3, 5R5712, EXCEPT PT 1, 4R11804; T/W IN N742746, OTTAWA/GLOUCESTER

1.2. TOTAL BUILDING AREA (B.A.):
2,987.31m²

1.3. TOTAL GROSS FLOOR AREA (G.F.A.):
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GROUND FLOOR:
GROUP D (BUSINESS & PERSONAL SERVICES):
790.73m² [8,511.34ft²]
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2230.04m² [24,003.95ft²
SECOND FLOOR:
GROUP D (BUSINESS & PERSONAL SERVICES):
941.32m² [10,132.28ft²]

1.4. PROPOSED USE:
HEAVY EQUIPMENT & VEHICLE SALES, RENTAL & SERVICING

2. ZONING PROVISIONS:

2.1. DESIGNATION:
GENERAL INDUSTRIAL ZONE (IG3)

2.2. LOT AREA:
REQUIRED: 1,000.00m² [10,763.90ft²] (MIN.)
PROPOSED: 48,611.80m² [523,253.62ft²]

2.3. LOT FRONTAGE:
REQUIRED: 0.00m (MIN.)
PROPOSED: 103.30m [338.91ft]

2.4. SETBACKS:
FRONT YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: 108.21m [355.02ft]

CORNER SIDE YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: N/A

INTERIOR SIDE YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: 34.20m [112.21ft] (MIN.)

REAR YARD:
REQUIRED: 3.00m [9.84ft] (MIN.)
PROPOSED: 264.01m [866.18ft]

2.5. LOT COVERAGE:
REQUIRED: 65% (MAX.)
PROPOSED: 6.6%

2.6. FLOOR SPACE INDEX (FSI):
FSI = (3,962.09m² / 48,611.80m²) = 0.08

2.7. BUILDING HEIGHT:
REQUIRED: 22.00m [72.17ft] (MAX.)
PROPOSED: 9.64m [31.64ft]

2.8. ACCESSORY BUILDING HEIGHT:
REQUIRED: 8.00m [19'-8"] (MAX.)
PROPOSED: 8.08m [26'-6"]

3. PARKING (PER SECTIONS 3.30 & 3.41):

3.1. PARKING SPACES:

STANDARD SPACES
HEAVY EQUIPMENT & VEHICLE SALES, RENTAL & SERVICING
PROVISION: 0.75 SPACES PER 100m² G.F.A.
REQUIRED: (±2,230.04m² / 100m²) x 0.75)
16.72 SPACES = 17.00 SPACES

OFFICE
PROVISION: 2.40 SPACES PER 100m² G.F.A.
REQUIRED: (±1,732.05m² / 100m²) x 2.40)
41.57 SPACES = 42 SPACES

STORAGE (ACCESSORY BUILDING)
PROVISION: 0.80 SPACES PER 100m² G.F.A.
REQUIRED: (±221.51m² / 100m²) x 0.80)
1.77 SPACES = 2.00 SPACES

REQUIRED: 62 SPACES

BARRIER-FREE (B.F.) SPACES:
PROVISION: 251-300 STANDARD SPACES = 8
REQUIRED: 8 SPACES (4 - TYPE A, 4 - TYPE B)

TOTAL REQUIRED: 8 B.F. + 62 STANDARD
70 PARKING SPACES

TOTAL PROVIDED: 8 B.F. + 259 STANDARD
267 PARKING SPACES

3.2. LOADING SPACES:
PROVISION: 2,000m²-4,999m² G.F.A. = 2 SPACES
REQUIRED: 2 SPACES
PROVIDED: 2 SPACES

3.3. BICYCLE SPACES:
PROVISION: ALL NON-RESIDENTIAL USES
1 PER 1500m² G.F.A. = 2 SPACES
OFFICE:
1 PER 250m² G.F.A. = 7 SPACE
REQUIRED: 9 SPACES
PROVIDED: 10 SPACES

3.4. MOTORCYCLE SPACES:
PROVISION: 5% OF PARKING SPACES MAX.
REQUIRED: 5% = 12 SPACES MAX.
PROVIDED: 12 SPACES

3.5. FLEET PARKING SPACES:
REQUIRED: N/A
PROVIDED: 135 SPACES

SYMBOL LEGEND

- SITE PROPERTY LINE
- ADJACENT PROPERTY LINE
- SETBACK LINE
- ROAD CENTRELINE
- FIRE ROUTE LINE
- NEW CHAIN LINK FENCE
- NEW NOISE DAMPENING FENCE
- MUNICIPAL ROAD BOUNDARY
- SNOW STORAGE AREA BOUNDARY
- DIRECTION OF TRAVEL
- PROPOSED BUILDING
- PROPOSED HEAVY DUTY ASPHALT
- EXISTING GRAVEL
- PROPOSED CONCRETE SIDEWALK
- LANDSCAPED AREA
- PRIMARY BUILDING ENTRANCE OR BARRIER-FREE ENTRANCE
- SECONDARY ENTRANCES / EXITS OR BARRIER-FREE ENTRANCE / EXITS
- OVERHEAD DOOR
- FIRE ROUTE/NO PARKING SIGNAGE INSTALLED 25m MAX. ALONG ROUTE
- BARRIER-FREE PARKING SIGN
- FIRE HYDRANT (EXISTING)
- EXIST. WATER HYDRANT OR MANHOLE
- HYDRO POLE, EXISTING OR NEW
- LIGHT STANDARD, EXISTING OR NEW
- UTILITY POLE, EXISTING OR NEW

DEIMLING
ARCHITECTURE & INTERIOR DESIGN

North

Revisions

No.	By	Description	Date
13	W.P.	ISSUED FOR SITE PLAN CONTROL	13 NOV 2025
09	W.P.	ISSUED FOR COORDINATION	16 OCT 2025
08	W.P.	ISSUED FOR SITE PLAN CONTROL	27 AUG 2025
07	T.D.	ISSUED FOR COORDINATION	17 JUN 2025
06	T.D.	ISSUED FOR COORDINATION	28 MAY 2025
05	T.D.	ISSUED FOR COORDINATION	09 MAY 2025
04	W.P.	ISSUED FOR COORDINATION	10 APR 2025
03	W.P.	ISSUED FOR CLIENT REVIEW	25 MAR 2025
02	W.P.	ISSUED FOR CLIENT REVIEW	05 MAR 2025
01	T.D.	ISSUED FOR COORDINATION	10 JAN 2025

Project

WO MW REALTY LIMITED OFFICE GROUP
SITE PLAN APPLICATION
NEW MILLER WASTE FACILITY

3145 CONROY ROAD, OTTAWA, ON

Drawing

PROPOSED SITE PLAN

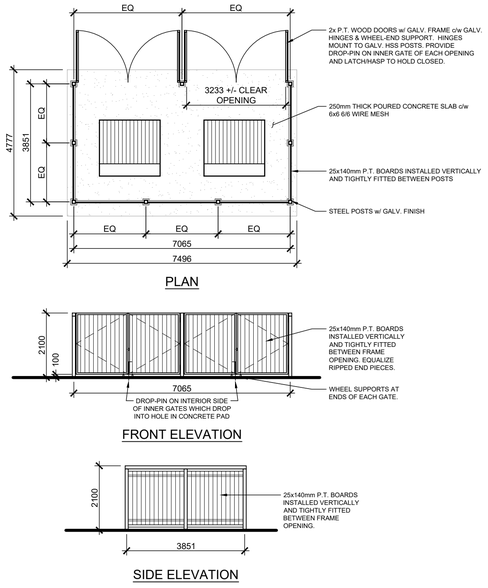
Scale 1:500
Drawn W.P.
Checked C.D.

Stamp
ONTARIO ASSOCIATION OF ARCHITECTS
CHRISTOPHER LEE DEIMLING
LICENCE 6238

Project No. 24-151
Date DECEMBER, 2024

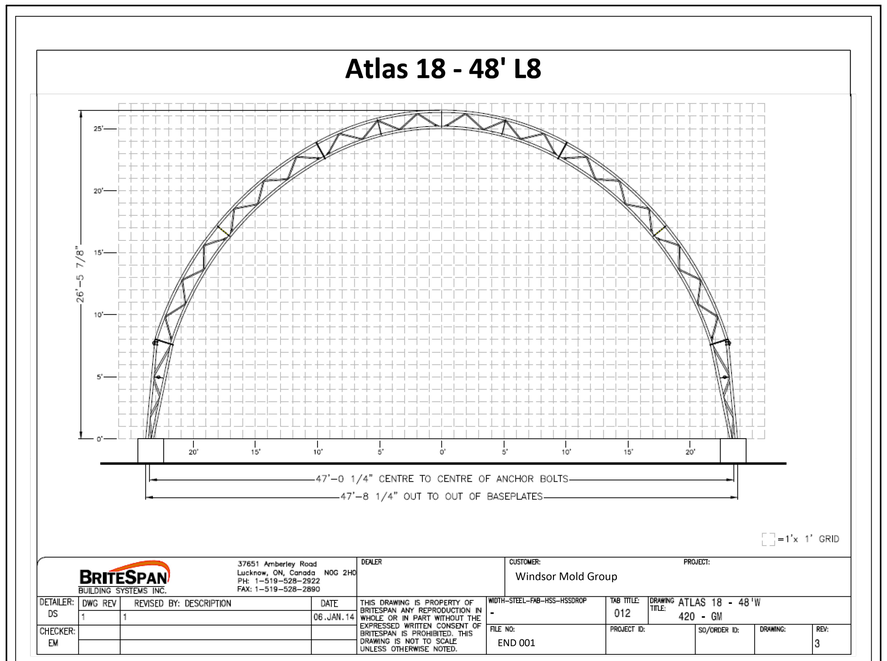
Drawing No. SP-A03

D07-12-25-0107
15862



06 SP-A04 SHOP DRAWING DETAIL - WASTE ENCLOSURE

SCALE: 1:100



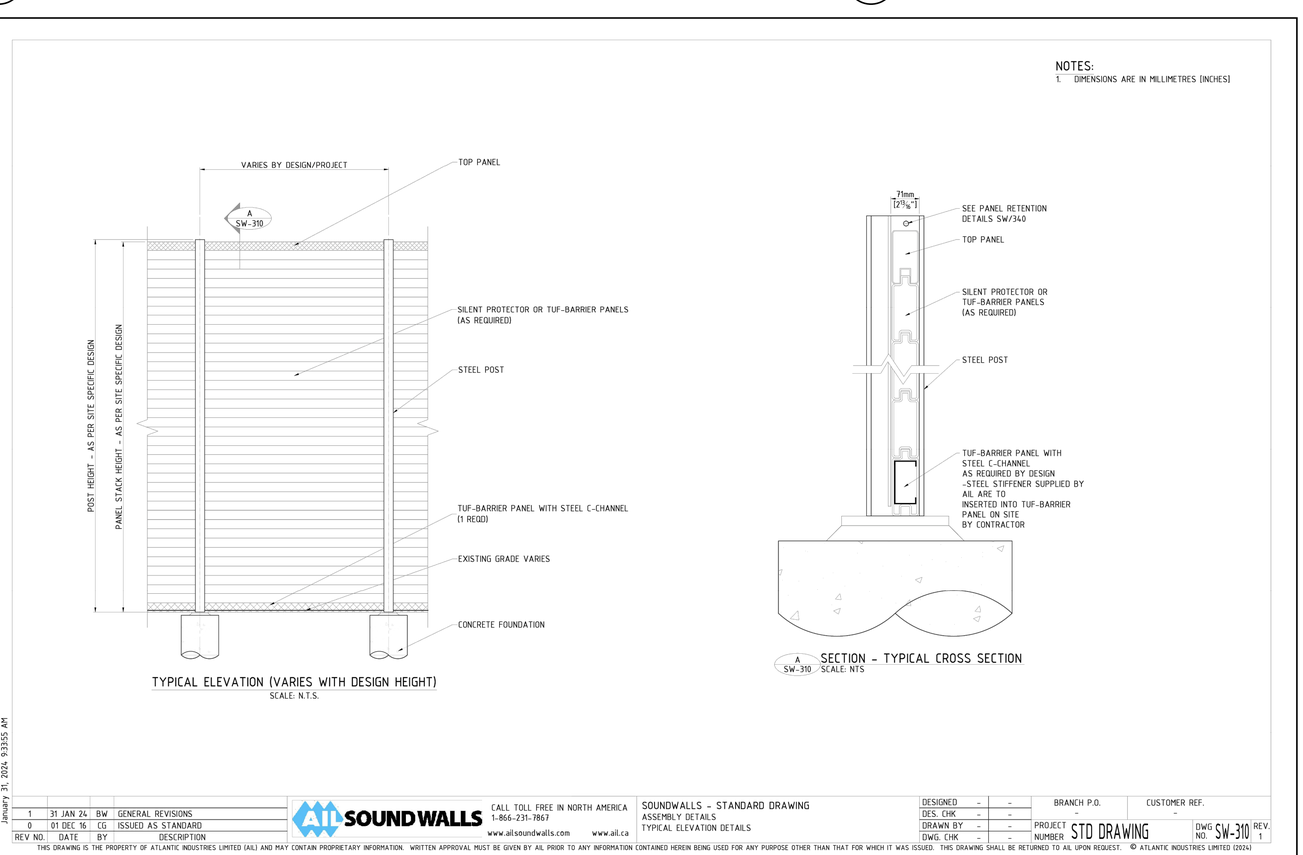
05 SP-A04 SHOP DRAWING DETAIL - FABRIC STORAGE BUILDING

SCALE: N.T.S.

1. ALL PRE-FABRICATED STRUCTURES SHALL BE DESIGNED AND SUPPLIED BY THE MANUFACTURER AND/OR CONTRACTOR. DESIGNS SHALL BE SUBJECT TO REVIEW BY THE MUNICIPALITY UNDER A SEPARATE APPLICATION AT A LATER DATE.
2. ALL SITE FURNITURE AND FIXTURES SHALL BE SELECTED BY OWNER AND COORDINATED WITH THE LANDSCAPE ARCHITECT AND/OR CIVIL ENGINEER AS REQUIRED.
3. ALL FENCING SHALL BE DESIGNED AND SUPPLIED BY MANUFACTURER AND/OR CONTRACTOR. DESIGN SUBJECT TO MUNICIPAL BY-LAWS AND REGULATIONS.
4. REVIEW CONDITIONS AND VERIFY ALL INFORMATION, DETAILS, AND DIMENSIONS. REPORT ANY ERRORS, OMISSIONS AND DISCREPANCIES TO THE PROJECT MANAGER PRIOR TO COMMENCEMENT OF THE WORK.
5. COORDINATE ALL NEW CIVIL, STRUCTURAL MECHANICAL, AND ELECTRICAL ITEMS WITH RESPECTIVE ENGINEER'S DRAWINGS, WHERE PROVIDED.

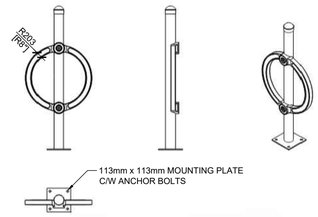
04 SP-A04 GENERAL NOTES

SCALE: N.T.S.



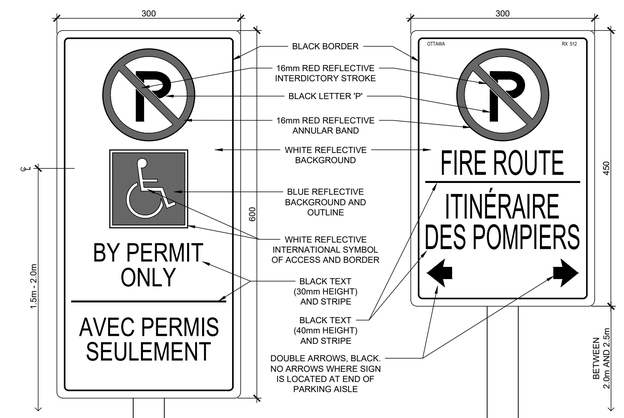
03 SP-A04 SHOP DRAWING DETAIL - SOUND WALL FENCE

SCALE: N.T.S.



02 SP-A04 SHOP DRAWING DETAIL - BIKE RACK

SCALE: N.T.S.



01 SP-A04 VERTICAL PARKING LOT SIGNAGE (POST OR WALL MOUNTED)

SCALE: N.T.S.

DEIMLING
ARCHITECTURE & INTERIOR DESIGN

North

Revisions

No.	By	Description	Date
01	W.P.	ISSUED FOR SITE PLAN CONTROL	13 NOV 2025

Project

WO MW REALTY LIMITED
OFFICE GROUP
SITE PLAN APPLICATION
NEW MILLER WASTE FACILITY

3145 CONROY ROAD, OTTAWA, ON

Drawing

SITE DETAILS

Scale: AS NOTED

Drawn: W.P.

Checked: C.D.

Stamp: ONTARIO ASSOCIATION OF ARCHITECTS — CHRISTOPHER LEE DEIMLING LICENCE 6238

Project No.: 24-151

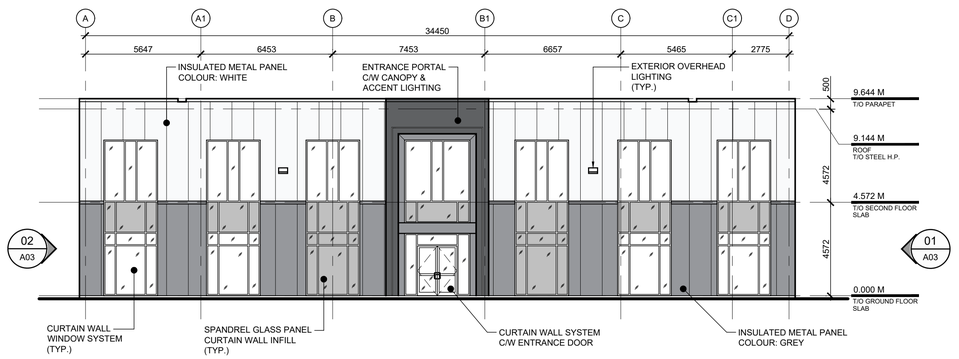
Drawing No.: SP-A04

Date: DECEMBER, 2024

D07-12-25-0107

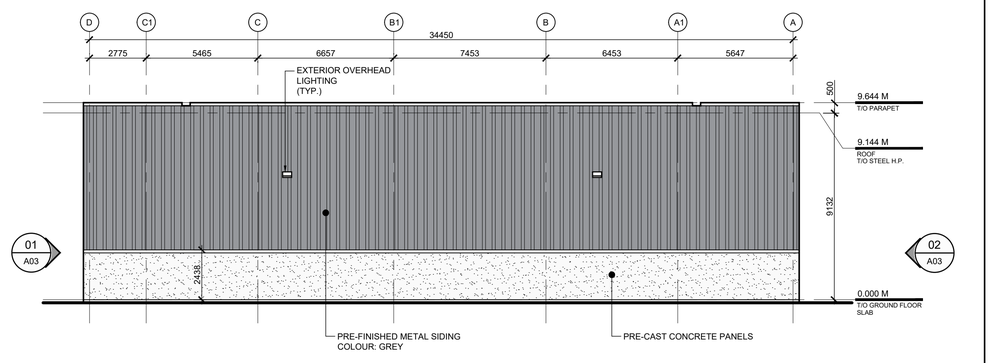
15862

NOTES:
1. ENSURE LARGE GLAZED AREAS (DOORS, WINDOWS, SPANDRELS, ETC.) ARE PROTECTED FROM BIRD IMPACTS AS OUTLINED IN ENVIRONMENTAL IMPACT STATEMENT.



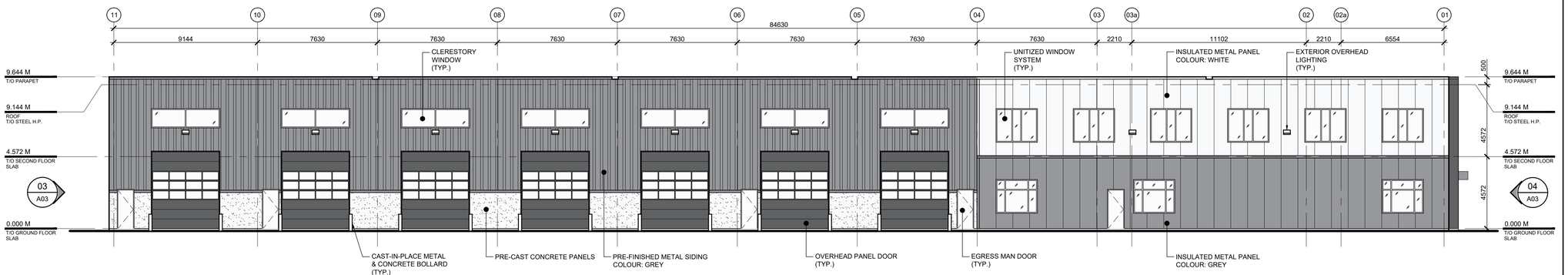
04 A03 EAST ELEVATION
SCALE: 1:150

NOTES:
1. ENSURE LARGE GLAZED AREAS (DOORS, WINDOWS, SPANDRELS, ETC.) ARE PROTECTED FROM BIRD IMPACTS AS OUTLINED IN ENVIRONMENTAL IMPACT STATEMENT.



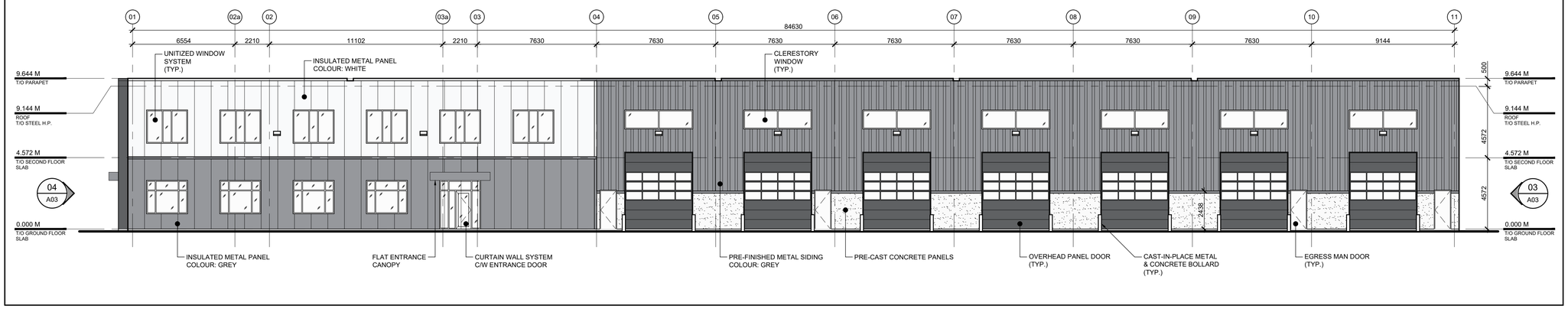
03 A03 WEST ELEVATION
SCALE: 1:150

NOTES:
1. ENSURE LARGE GLAZED AREAS (DOORS, WINDOWS, SPANDRELS, ETC.) ARE PROTECTED FROM BIRD IMPACTS AS OUTLINED IN ENVIRONMENTAL IMPACT STATEMENT.



02 A03 NORTH ELEVATION
SCALE: 1:150

NOTES:
1. ENSURE LARGE GLAZED AREAS (DOORS, WINDOWS, SPANDRELS, ETC.) ARE PROTECTED FROM BIRD IMPACTS AS OUTLINED IN ENVIRONMENTAL IMPACT STATEMENT.



01 A03 SOUTH ELEVATION
SCALE: 1:150

DEIMLING
ARCHITECTURE & INTERIOR DESIGN

North

Revisions

No.	By	Description	Date
04	W.P.	ISSUED FOR SITE PLAN CONTROL	13 NOV 2025
03	W.P.	ISSUED FOR SITE PLAN CONTROL	27 AUG 2025
02	A.P.	ISSUED FOR CLIENT REVIEW	15 AUG 2025
01	W.P.	ISSUED FOR CLIENT REVIEW	24 JUL 2025

Project

WO MW REALTY LIMITED OFFICE GROUP
SITE PLAN APPLICATION
NEW MILLER WASTE FACILITY

3145 CONROY ROAD, OTTAWA, ON

Drawing

PROPOSED EXTERIOR ELEVATIONS

Scale: AS NOTED

Drawn: J.M.

Checked: W.P.

Stamp: ONTARIO ASSOCIATION OF ARCHITECTS — CHRISTOPHER LEE DEIMLING LICENCE 6238

Project No.: 24-151

Date: DECEMBER, 2024

Drawing No.: A03

Appendix B:

OC Transpo Transit Routes

Figure 1: Map of OC Transpo Route #40.

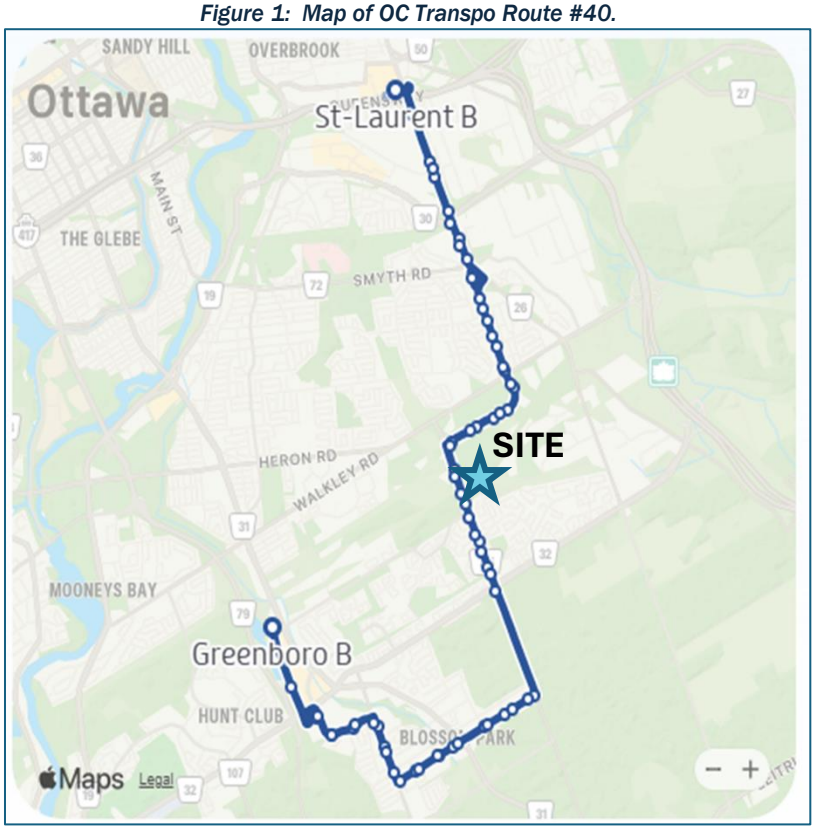


Figure 2: Map of OC Transpo Route #43.

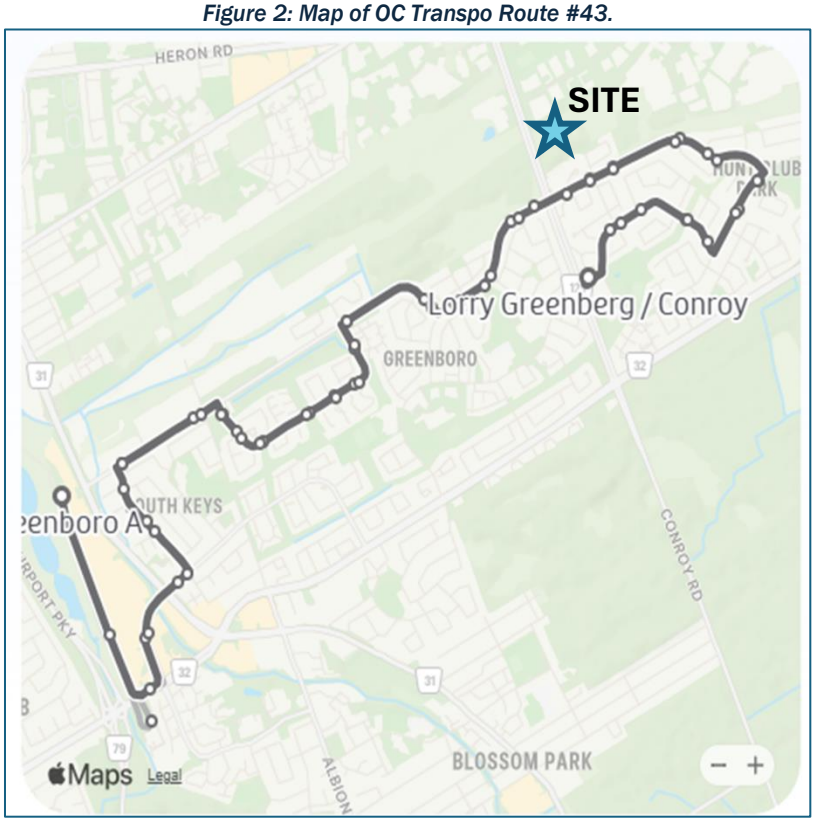


Figure 3: Map of OC Transpo Route #644.

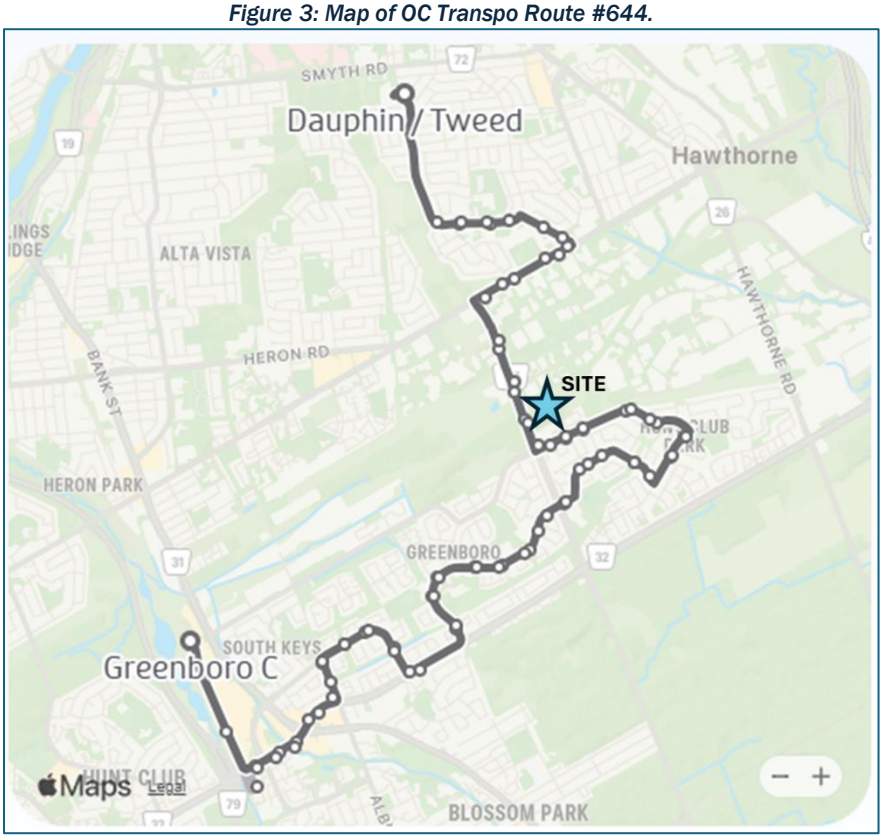
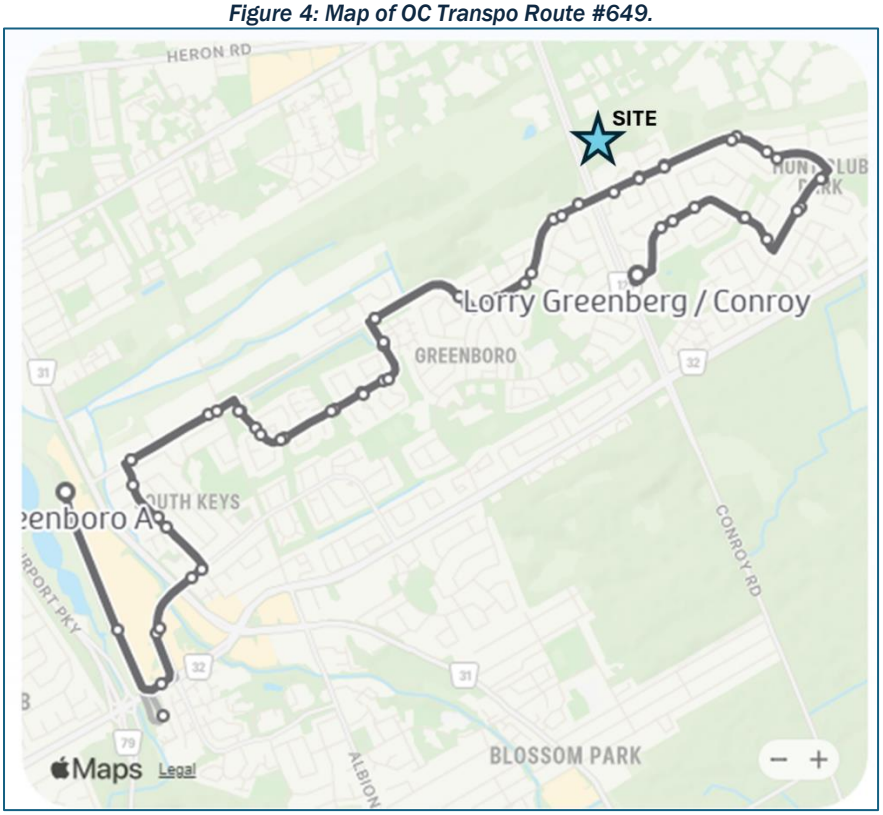


Figure 4: Map of OC Transpo Route #649.



Appendix C:

Existing Peak Hour Volumes

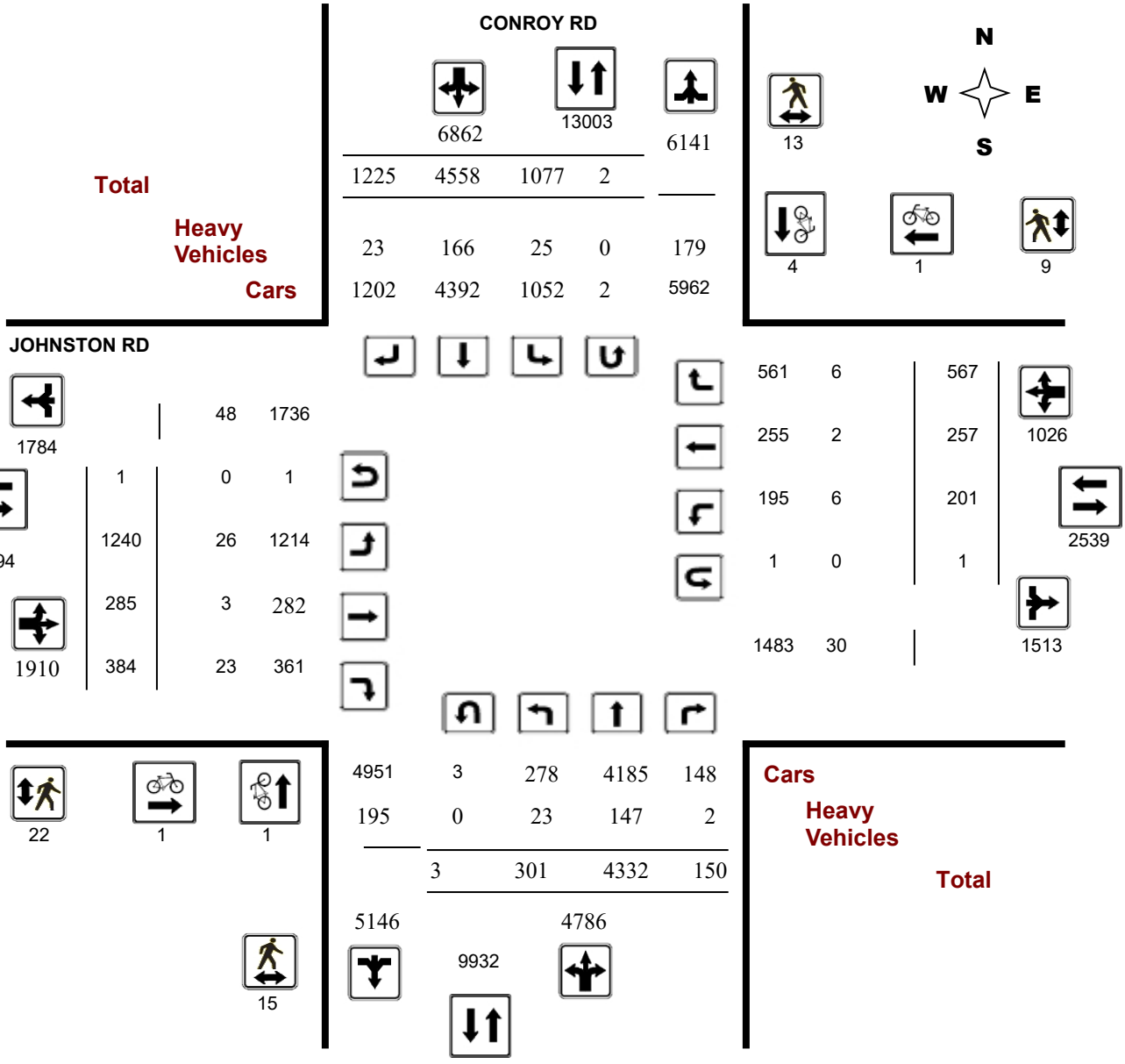
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024
Start Time: 07:00
WO No: 41533
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

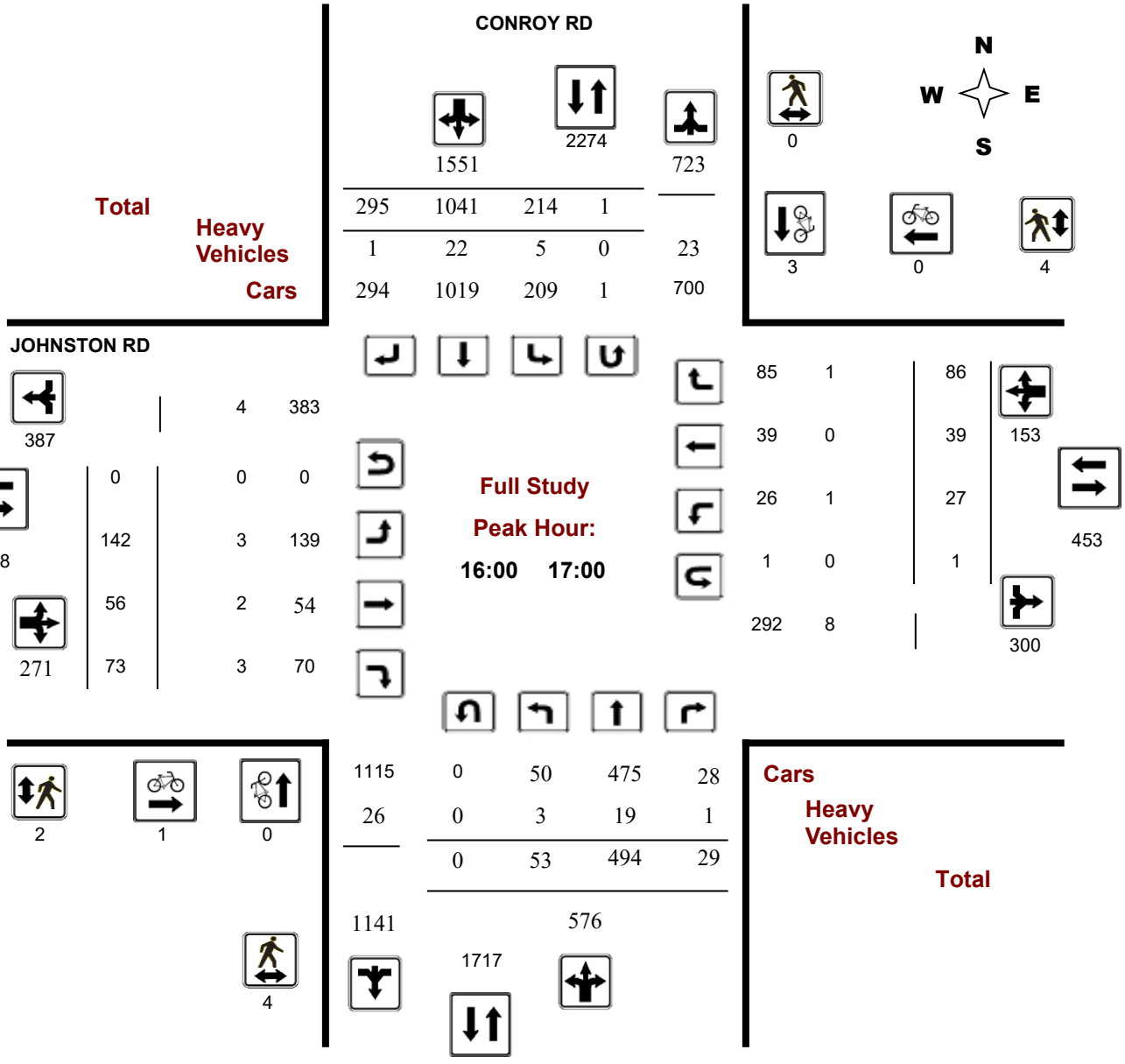
Turning Movement Count - Study Results

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024 **WO No:** 41533

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

Full Study Peak Hour Diagram



Transportation Services - Traffic Services

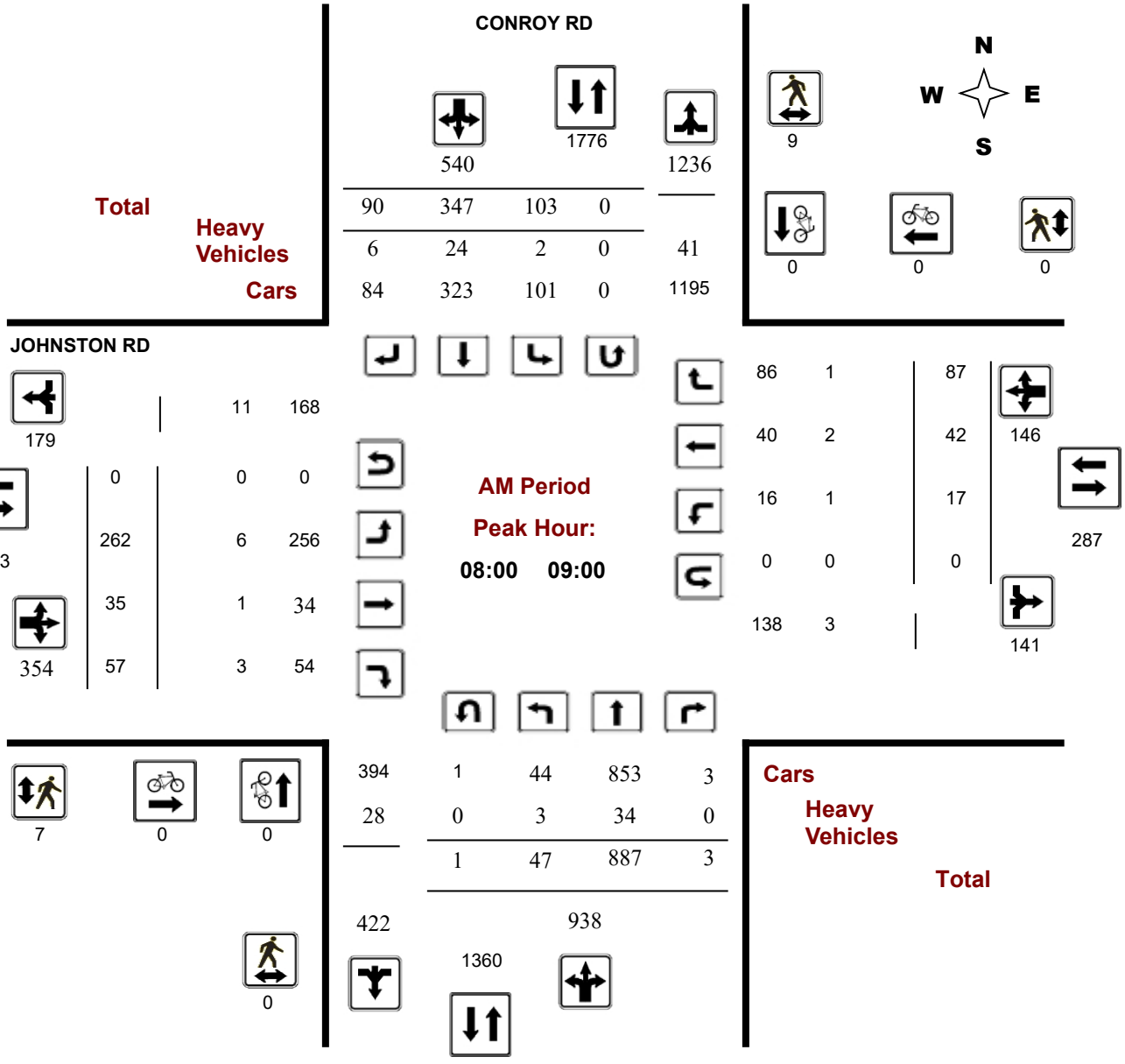
Turning Movement Count - Study Results

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024 **WO No:** 41533

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

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

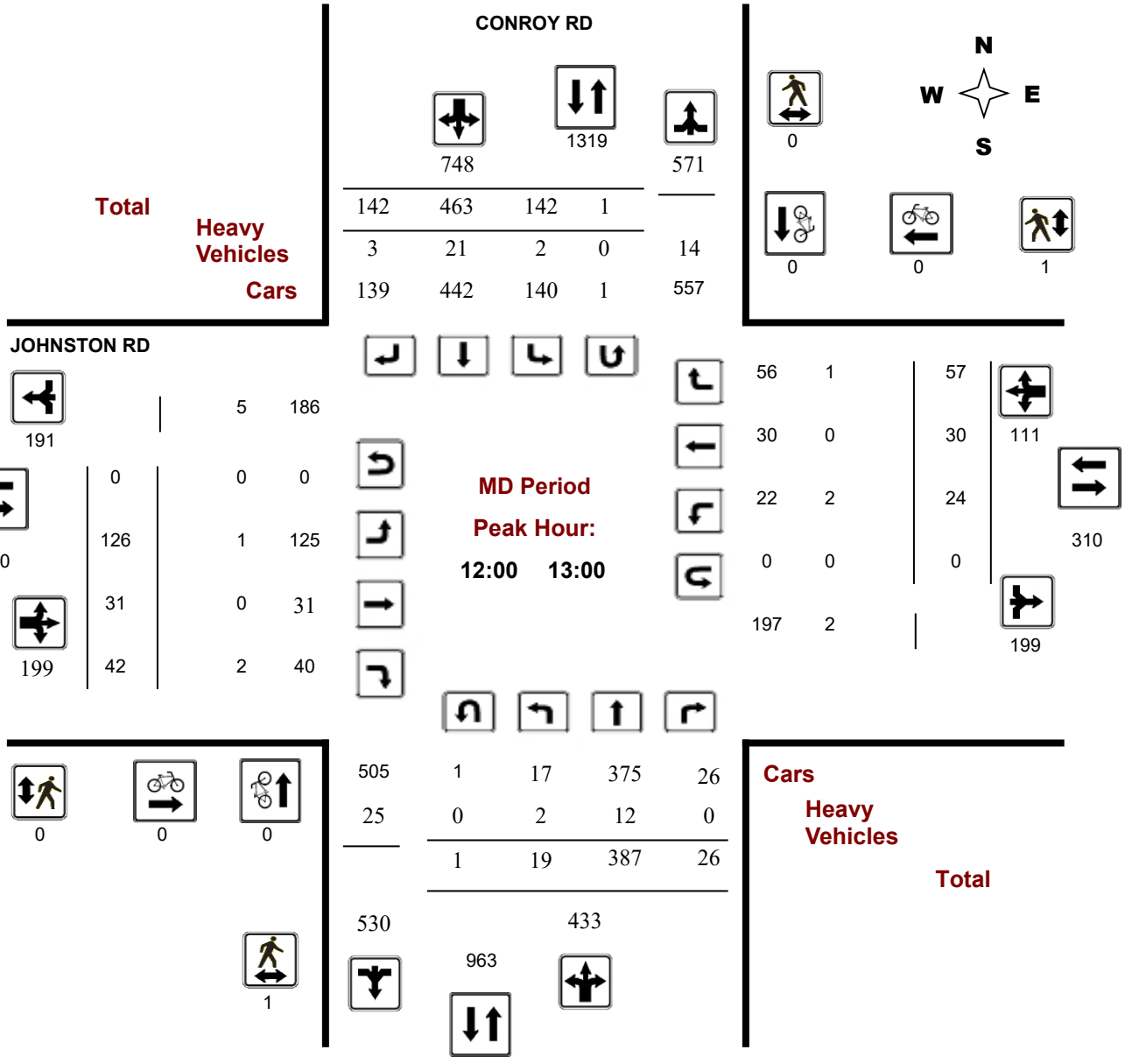
Turning Movement Count - Study Results

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024 **WO No:** 41533

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

MD Period Peak Hour Diagram



Transportation Services - Traffic Services

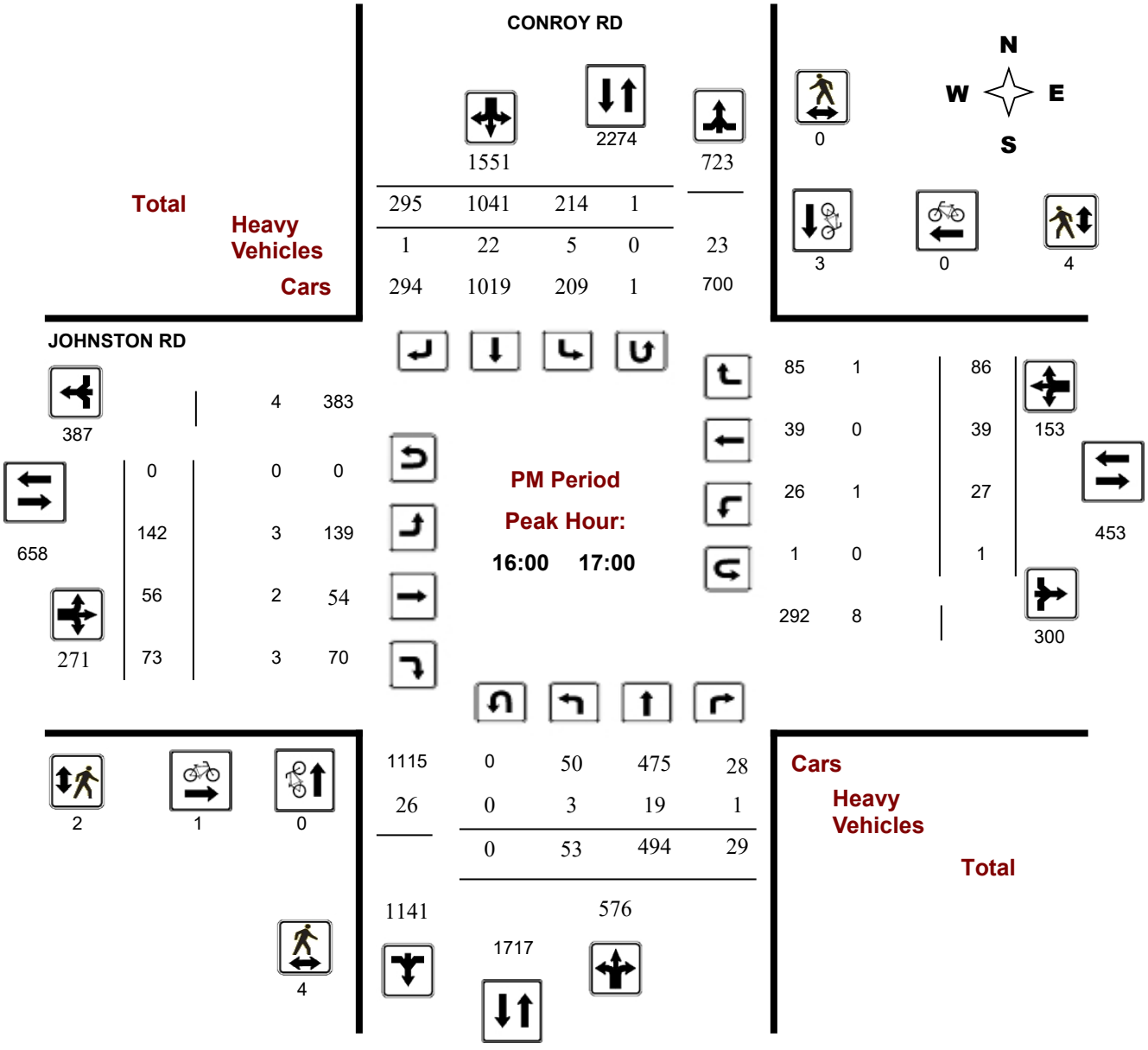
Turning Movement Count - Study Results

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024 **WO No:** 41533

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

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024 **WO No:** 41533

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, January 18, 2024

Total Observed U-Turns

Northbound: 3 Southbound: 2

Eastbound: 1 Westbound: 1

AADT Factor

1.00

	CONROY RD									JOHNSTON RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	28	671	15	**714**	43	268	61	**372**	**1086**	198	13	39	**250**	15	16	75	**106**	**356**	**1442**
08:00 09:00	47	887	3	**937**	103	347	90	**540**	**1477**	262	35	57	**354**	17	42	87	**146**	**500**	**1977**
09:00 10:00	21	620	7	**648**	92	360	120	**572**	**1220**	143	18	35	**196**	27	35	123	**185**	**381**	**1601**
11:30 12:30	27	374	23	**424**	129	463	113	**705**	**1129**	114	34	43	**191**	26	26	50	**102**	**293**	**1422**
12:30 13:30	26	362	28	**416**	123	451	128	**702**	**1118**	118	33	30	**181**	27	28	69	**124**	**305**	**1423**
15:00 16:00	47	483	22	**552**	176	889	191	**1256**	**1808**	120	54	47	**221**	29	35	21	**85**	**306**	**2114**
16:00 17:00	53	494	29	**576**	214	1041	295	**1550**	**2126**	142	56	73	**271**	27	39	86	**152**	**423**	**2549**
17:00 18:00	52	441	23	**516**	197	739	227	**1163**	**1679**	143	42	60	**245**	33	36	56	**125**	**370**	**2049**
Sub Total	301	4332	150	**4783**	1077	4558	1225	**6860**	**11643**	1240	285	384	**1909**	201	257	567	**1025**	**2934**	**14577**
U Turns				**3**				**2**	**5**				**1**				**1**	**2**	**7**
Total	301	4332	150	**4786**	1077	4558	1225	**6862**	**11648**	1240	285	384	**1910**	201	257	567	**1026**	**2936**	**14584**
EQ 12Hr	418	6021	208	**6653**	1497	6336	1703	**9538**	**16191**	1724	396	534	**2655**	279	357	788	**1426**	**4081**	**20272**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	418	6021	208	**6653**	1497	8300	2231	**9538**	**16191**	1724	396	534	**2655**	279	357	788	**1426**	**4081**	**20272**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	548	7888	272	**8715**	1961	10873	2923	**12495**	**21210**	2258	519	700	**3478**	365	468	1032	**1868**	**5346**	**26556**
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

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024 **WO No:** 41533

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

Full Study 15 Minute Increments

		CONROY RD									JOHNSTON RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	6	120	2	128	9	56	7	72	200	39	1	8	48	4	1	12	17	65	265
07:15	07:30	9	161	2	172	6	60	13	79	251	37	2	16	55	2	1	16	19	74	325
07:30	07:45	7	183	4	194	16	63	21	100	294	60	6	5	71	4	8	27	39	110	404
17:45	18:00	15	112	5	132	37	152	45	234	366	29	8	8	45	9	7	18	34	79	445
07:45	08:00	6	207	7	220	12	89	20	121	341	62	4	10	76	5	6	20	31	107	448
08:00	08:15	11	225	1	237	24	85	24	133	370	61	8	13	82	4	6	26	36	118	488
08:15	08:30	11	199	1	212	33	54	27	114	326	58	9	15	82	8	19	29	56	138	464
08:30	08:45	11	230	1	242	29	108	16	153	395	75	7	13	95	3	11	19	33	128	523
08:45	09:00	14	233	0	247	17	100	23	140	387	68	11	16	95	2	6	13	21	116	503
09:00	09:15	4	196	1	201	25	98	30	153	354	45	5	13	63	8	14	47	69	132	486
09:15	09:30	7	142	1	150	31	98	40	169	319	29	6	8	43	4	7	29	40	83	402
09:30	09:45	4	128	0	132	17	82	34	133	265	37	5	7	50	8	7	26	41	91	356
09:45	10:00	6	154	5	165	19	82	16	117	282	32	2	7	41	7	7	21	35	76	358
11:30	11:45	6	83	3	92	26	95	20	141	233	34	15	8	57	5	5	15	25	82	315
11:45	12:00	9	96	6	111	33	126	23	182	293	25	5	11	41	7	8	14	29	70	363
12:00	12:15	7	97	7	111	38	126	33	197	308	36	6	7	49	10	6	11	27	76	384
12:15	12:30	5	98	7	111	32	116	37	186	297	19	8	17	44	4	7	10	21	65	362
12:30	12:45	4	101	6	111	46	106	32	184	295	23	8	7	38	5	12	17	34	72	367
12:45	13:00	3	91	6	100	26	115	40	181	281	48	9	11	68	5	5	19	29	97	378
13:00	13:15	9	87	9	105	25	114	35	174	279	23	9	3	35	8	4	13	25	60	339
13:15	13:30	10	83	7	100	26	116	21	163	263	24	7	9	40	9	7	20	36	76	339
15:00	15:15	6	121	8	135	33	191	49	273	408	21	14	12	47	10	9	1	20	67	475
15:15	15:30	15	146	4	165	41	206	46	293	458	39	7	9	55	6	3	6	15	70	528
15:45	16:00	13	110	4	127	57	252	53	362	489	25	16	10	51	7	12	7	26	77	566
16:00	16:15	19	105	6	130	65	294	77	436	566	35	10	22	67	6	12	19	37	104	670
16:15	16:30	11	123	8	142	56	272	67	395	537	42	13	16	71	10	11	21	42	113	650
16:30	16:45	13	133	8	154	48	237	73	358	512	33	18	20	71	6	7	21	35	106	618
16:45	17:00	10	133	7	150	45	238	78	362	512	32	15	15	62	5	9	25	39	101	613
17:00	17:15	11	93	7	111	49	205	64	318	429	50	12	16	78	9	9	17	35	113	542
17:15	17:30	13	128	4	145	53	193	50	296	441	31	15	14	60	6	9	8	23	83	524
17:30	17:45	13	108	7	128	58	189	68	315	443	33	7	22	62	9	11	13	33	95	538
15:30	15:45	13	106	6	126	45	240	43	328	454	35	17	16	68	6	11	7	24	92	546
Total:		301	4332	150	4786	1077	4558	1225	6862	11648	1240	285	384	1910	201	257	567	1026	2936	14,584

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024 **WO No:** 41533

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

Full Study Cyclist Volume

Time Period		CONROY RD			JOHNSTON RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	1	0	1	0	0	0	1
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	0	1	1	1
17:45	18:00	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0
08:30	08:45	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0
09:30	09:45	0	0	0	0	0	0	0
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0
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
15:15	15:30	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	1	1	1	0	1	2
16:15	16:30	0	1	1	0	0	0	1
16:30	16:45	0	0	0	0	0	0	0
16:45	17:00	0	1	1	0	0	0	1
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	0	1	1	0	0	0	1
17:30	17:45	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
Total		1	4	**5**	1	1	2	7

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024 **WO No:** 41533

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

Full Study Pedestrian Volume

	CONROY RD			JOHNSTON RD			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	1	0	**1**	0	0	**0**	**1**
07:15 07:30	1	0	**1**	1	0	**1**	**2**
07:30 07:45	1	1	**2**	1	1	**2**	**4**
17:45 18:00	1	0	**1**	3	0	**3**	**4**
07:45 08:00	0	2	**2**	4	0	**4**	**6**
08:00 08:15	0	0	**0**	0	0	**0**	**0**
08:15 08:30	0	5	**5**	5	0	**5**	**10**
08:30 08:45	0	3	**3**	2	0	**2**	**5**
08:45 09:00	0	1	**1**	0	0	**0**	**1**
09:00 09:15	0	0	**0**	0	0	**0**	**0**
09:15 09:30	1	0	**1**	0	0	**0**	**1**
09:30 09:45	0	0	**0**	1	0	**1**	**1**
09:45 10:00	1	0	**1**	0	0	**0**	**1**
11:30 11:45	0	0	**0**	1	1	**2**	**2**
11:45 12:00	1	0	**1**	0	1	**1**	**2**
12:00 12:15	0	0	**0**	0	0	**0**	**0**
12:15 12:30	1	0	**1**	0	1	**1**	**2**
12:30 12:45	0	0	**0**	0	0	**0**	**0**
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**
15:15 15:30	0	0	**0**	0	1	**1**	**1**
15:45 16:00	0	1	**1**	0	0	**0**	**1**
16:00 16:15	1	0	**1**	0	2	**2**	**3**
16:15 16:30	1	0	**1**	2	1	**3**	**4**
16:30 16:45	2	0	**2**	0	0	**0**	**2**
16:45 17:00	0	0	**0**	0	1	**1**	**1**
17:00 17:15	0	0	**0**	2	0	**2**	**2**
17:15 17:30	2	0	**2**	0	0	**0**	**2**
17:30 17:45	1	0	**1**	0	0	**0**	**1**
15:30 15:45	0	0	**0**	0	0	**0**	**0**
Total	15	13	**28**	22	9	**31**	**59**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024 **WO No:** 41533

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

Full Study Heavy Vehicles

		CONROY RD									JOHNSTON RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	**N TOT**	LT	ST	RT	**S TOT**	**STR TOT**	LT	ST	RT	**E TOT**	LT	ST	RT	**W TOT**	**STR TOT**	**Grand Total**
07:00	07:15	1	4	0	**5**	0	7	0	**7**	**12**	0	0	1	**1**	0	0	0	**0**	**1**	**13**
07:15	07:30	1	3	0	**4**	1	1	1	**3**	**7**	0	0	2	**2**	0	0	0	**0**	**2**	**9**
07:30	07:45	0	4	1	**5**	2	2	1	**5**	**10**	1	0	0	**1**	0	0	1	**1**	**2**	**12**
17:45	18:00	1	2	0	**3**	0	2	0	**2**	**5**	0	0	1	**1**	0	0	0	**0**	**1**	**6**
07:45	08:00	2	2	0	**4**	0	9	1	**10**	**14**	0	0	1	**1**	0	0	0	**0**	**1**	**15**
08:00	08:15	0	9	0	**9**	1	4	1	**6**	**15**	1	0	0	**1**	1	0	0	**1**	**2**	**17**
08:15	08:30	1	3	0	**4**	1	2	2	**5**	**9**	2	1	1	**4**	0	0	0	**0**	**4**	**13**
08:30	08:45	1	13	0	**14**	0	10	0	**10**	**24**	1	0	2	**3**	0	1	1	**2**	**5**	**29**
08:45	09:00	1	9	0	**10**	0	8	3	**11**	**21**	2	0	0	**2**	0	1	0	**1**	**3**	**24**
09:00	09:15	0	7	0	**7**	0	4	0	**4**	**11**	1	0	0	**1**	0	0	0	**0**	**1**	**12**
09:15	09:30	1	4	0	**5**	1	4	1	**6**	**11**	2	0	2	**4**	0	0	0	**0**	**4**	**15**
09:30	09:45	1	4	0	**5**	1	2	1	**4**	**9**	2	0	0	**2**	0	0	1	**1**	**3**	**12**
09:45	10:00	1	6	0	**7**	0	2	2	**4**	**11**	2	0	1	**3**	0	0	0	**0**	**3**	**14**
11:30	11:45	0	7	0	**7**	1	4	1	**6**	**13**	2	0	0	**2**	0	0	0	**0**	**2**	**15**
11:45	12:00	1	4	0	**5**	0	1	0	**1**	**6**	0	0	1	**1**	0	0	0	**0**	**1**	**7**
12:00	12:15	0	2	0	**2**	1	2	0	**3**	**5**	0	0	0	**0**	0	0	0	**0**	**0**	**5**
12:15	12:30	1	2	0	**3**	0	2	0	**2**	**5**	0	0	1	**1**	0	0	0	**0**	**1**	**6**
12:30	12:45	1	4	0	**5**	1	6	0	**7**	**12**	1	0	0	**1**	1	0	1	**2**	**3**	**15**
12:45	13:00	0	4	0	**4**	0	11	3	**14**	**18**	0	0	1	**1**	1	0	0	**1**	**2**	**20**
13:00	13:15	1	4	0	**5**	1	5	0	**6**	**11**	1	0	0	**1**	0	0	0	**0**	**1**	**12**
13:15	13:30	1	4	0	**5**	0	8	1	**9**	**14**	2	0	1	**3**	0	0	1	**1**	**4**	**18**
15:00	15:15	0	3	0	**3**	0	8	0	**8**	**11**	0	0	0	**0**	0	0	0	**0**	**0**	**11**
15:15	15:30	2	9	0	**11**	2	14	0	**16**	**27**	1	0	0	**1**	2	0	0	**2**	**3**	**30**
15:45	16:00	1	4	0	**5**	3	12	3	**18**	**23**	0	0	0	**0**	0	0	0	**0**	**0**	**23**
16:00	16:15	1	5	1	**7**	1	14	0	**15**	**22**	1	2	1	**4**	0	0	1	**1**	**5**	**27**
16:15	16:30	0	4	0	**4**	3	2	1	**6**	**10**	1	0	1	**2**	0	0	0	**0**	**2**	**12**
16:30	16:45	1	4	0	**5**	1	1	0	**2**	**7**	1	0	1	**2**	1	0	0	**1**	**3**	**10**
16:45	17:00	1	6	0	**7**	0	5	0	**5**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
17:00	17:15	0	2	0	**2**	0	1	0	**1**	**3**	0	0	2	**2**	0	0	0	**0**	**2**	**5**
17:15	17:30	1	2	0	**3**	1	1	0	**2**	**5**	1	0	2	**3**	0	0	0	**0**	**3**	**8**
17:30	17:45	0	3	0	**3**	1	4	0	**5**	**8**	0	0	1	**1**	0	0	0	**0**	**1**	**9**
15:30	15:45	0	4	0	**4**	2	8	1	**11**	**15**	1	0	0	**1**	0	0	0	**0**	**1**	**16**
Total:	None	23	147	2	**172**	25	166	23	**214**	**386**	26	3	23	**52**	6	2	6	**14**	**66**	**452**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ JOHNSTON RD

Survey Date: Thursday, January 18, 2024 **WO No:** 41533

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

Full Study 15 Minute U-Turn Total

Time Period		CONROY RD Northbound U-Turn Total	CONROY RD Southbound U-Turn Total	JOHNSTON RD Eastbound U-Turn Total	JOHNSTON RD Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	1	0	0	0	1
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	1	0	1
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	1	1	0	0	2
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	1	1
16:45	17:00	0	1	0	0	1
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
15:30	15:45	1	0	0	0	1
Total		3	2	1	1	7

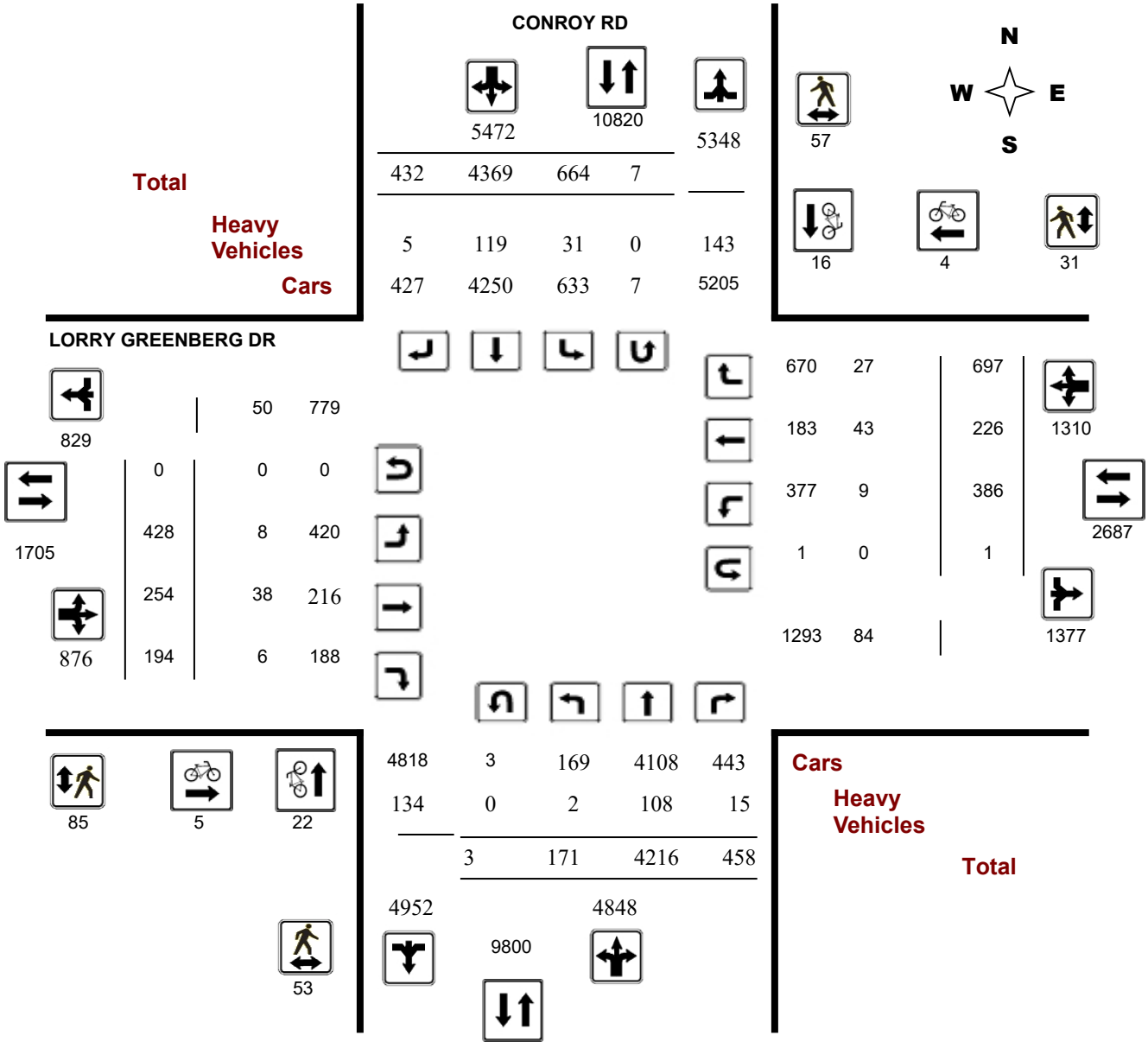
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025
Start Time: 07:00
WO No: 42645
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

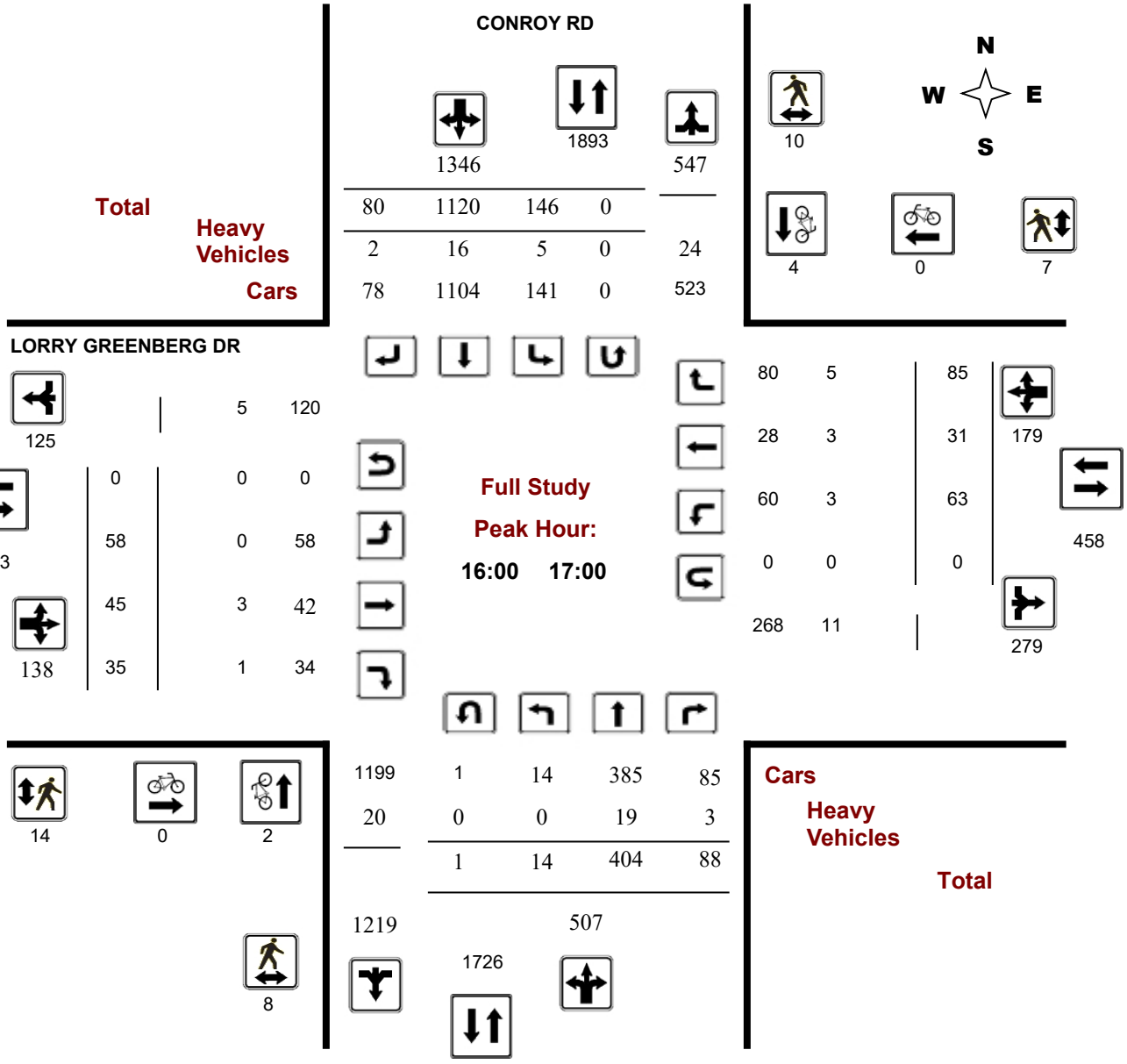
Turning Movement Count - Study Results

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025 **WO No:** 42645

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

Full Study Peak Hour Diagram



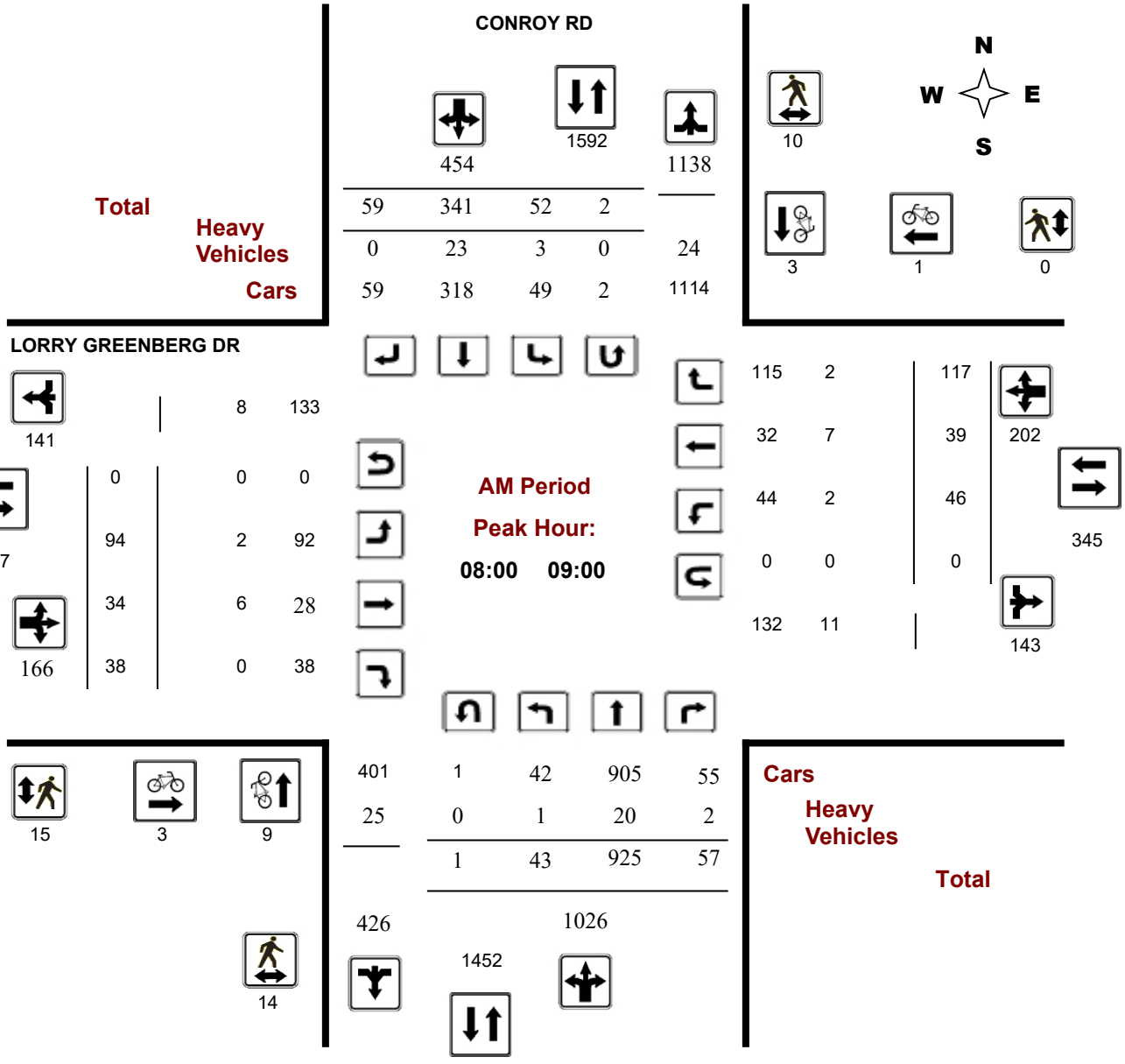
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025
Start Time: 07:00
WO No: 42645
Device: Miovision

AM Period Peak Hour Diagram



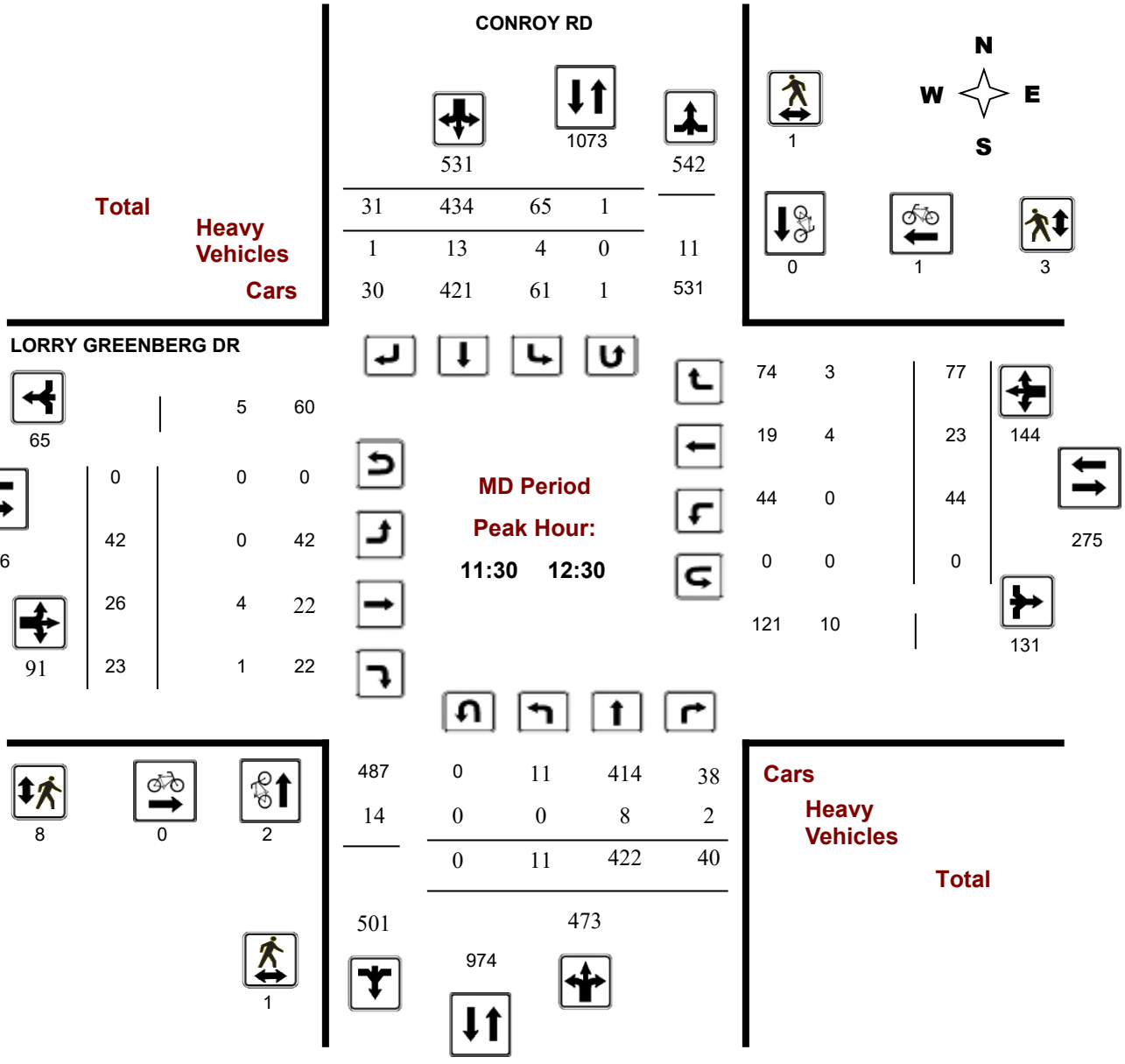
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025
Start Time: 07:00
WO No: 42645
Device: Miovision

MD Period Peak Hour Diagram



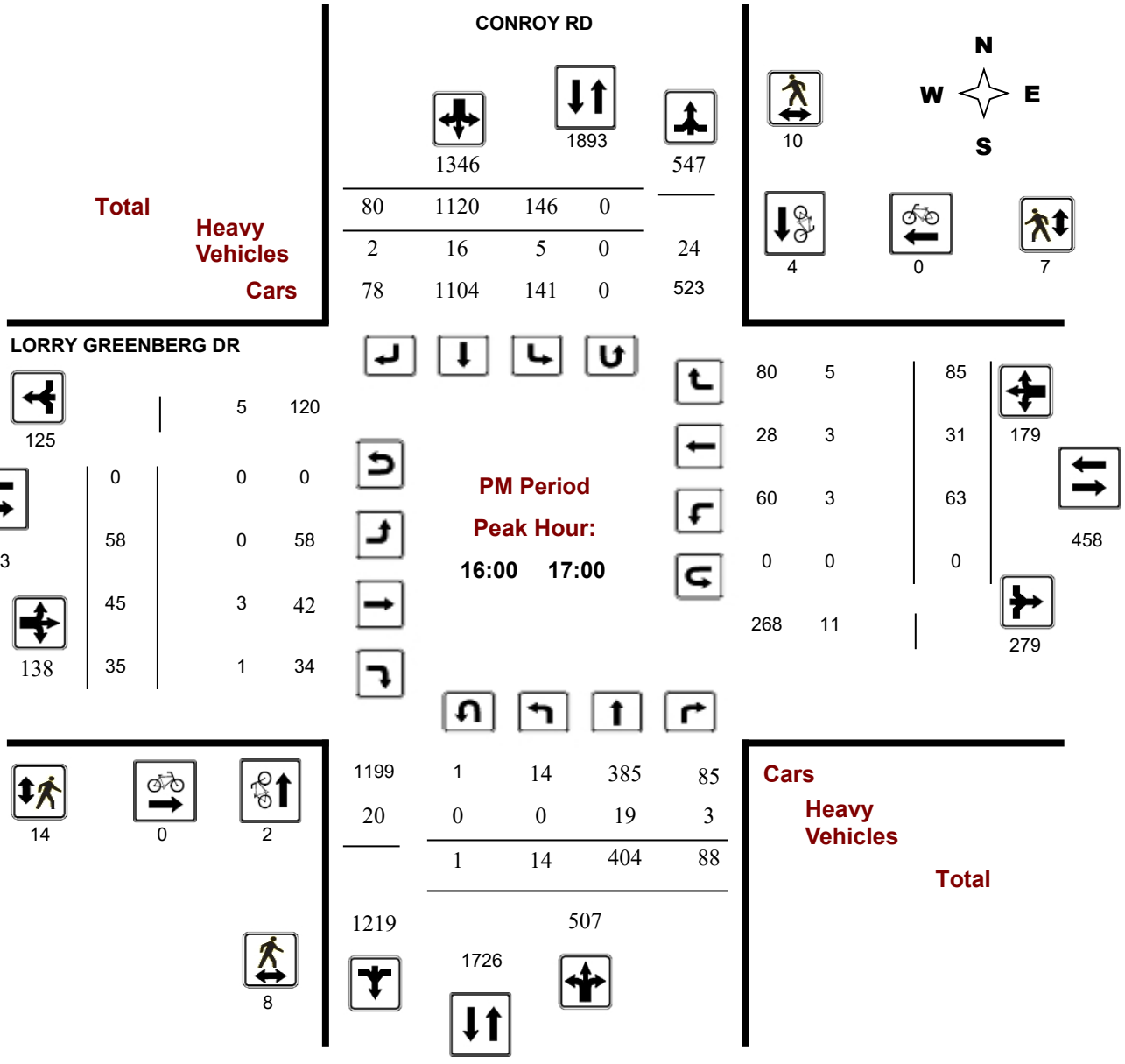
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025
Start Time: 07:00
WO No: 42645
Device: Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025 **WO No:** 42645

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, April 15, 2025

Total Observed U-Turns

Northbound: 3 Southbound: 7

Eastbound: 0 Westbound: 1

AADT Factor

.90

	CONROY RD									LORRY GREENBERG DR									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	25	749	25	**799**	25	279	26	**330**	**1129**	58	18	13	**89**	31	16	88	**135**	**224**	**1353**
08:00 09:00	43	925	57	**1025**	52	341	59	**452**	**1477**	94	34	38	**166**	46	39	117	**202**	**368**	**1845**
09:00 10:00	22	533	42	**597**	46	344	42	**432**	**1029**	62	29	13	**104**	34	27	50	**111**	**215**	**1244**
11:30 12:30	11	422	40	**473**	65	434	31	**530**	**1003**	42	26	23	**91**	44	23	77	**144**	**235**	**1238**
12:30 13:30	11	374	52	**437**	62	374	40	**476**	**913**	29	22	22	**73**	38	13	76	**127**	**200**	**1113**
15:00 16:00	24	405	49	**478**	114	799	77	**990**	**1468**	44	51	33	**128**	55	51	107	**213**	**341**	**1809**
16:00 17:00	14	404	88	**506**	146	1120	80	**1346**	**1852**	58	45	35	**138**	63	31	85	**179**	**317**	**2169**
17:00 18:00	21	404	105	**530**	154	678	77	**909**	**1439**	41	29	17	**87**	75	26	97	**198**	**285**	**1724**
Sub Total	171	4216	458	**4845**	664	4369	432	**5465**	**10310**	428	254	194	**876**	386	226	697	**1309**	**2185**	**12495**
U Turns				**3**				**7**	**10**				**0**				**1**	**1**	**11**
Total	171	4216	458	**4848**	664	4369	432	**5472**	**10320**	428	254	194	**876**	386	226	697	**1310**	**2186**	**12506**
EQ 12Hr	238	5860	637	**6739**	923	6073	600	**7606**	**14345**	595	353	270	**1218**	537	314	969	**1821**	**3039**	**17383**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	214	5274	573	**6065**	831	7160	708	**6845**	**12910**	536	318	243	**1096**	483	283	872	**1639**	**2735**	**15645**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**.90**					
AVG 24Hr	280	6909	751	**7945**	1089	9380	927	**8967**	**16912**	702	417	318	**1436**	633	371	1142	**2147**	**3583**	**20495**
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

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025 **WO No:** 42645

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

Full Study 15 Minute Increments

		CONROY RD									LORRY GREENBERG DR									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	5	116	3	124	5	62	3	70	194	11	3	1	15	7	3	18	28	43	237
07:15	07:30	5	167	5	177	6	63	3	72	249	16	5	4	25	6	5	18	29	54	303
07:30	07:45	4	219	9	232	3	74	10	87	319	18	4	3	25	7	3	23	33	58	377
07:45	08:00	11	247	8	266	11	80	10	101	367	13	6	5	24	11	5	29	45	69	436
08:00	08:15	11	212	15	238	10	87	14	112	350	18	9	12	39	11	10	34	55	94	444
08:15	08:30	18	257	15	290	22	91	26	139	429	26	8	15	49	12	8	23	43	92	521
08:30	08:45	4	208	14	227	11	78	11	100	327	25	8	5	38	11	7	29	47	85	412
08:45	09:00	10	248	13	271	9	85	8	103	374	25	9	6	40	12	14	31	57	97	471
09:00	09:15	11	168	13	192	10	93	21	124	316	30	13	7	50	11	10	11	32	82	398
09:15	09:30	5	141	8	154	11	91	10	112	266	11	6	1	18	11	8	13	32	50	316
09:30	09:45	4	131	9	144	10	84	5	99	243	14	6	2	22	7	1	10	18	40	283
09:45	10:00	2	93	12	107	15	76	6	97	204	7	4	3	14	5	8	16	29	43	247
11:30	11:45	1	95	7	103	13	93	9	115	218	13	5	5	23	14	6	20	40	63	281
11:45	12:00	2	101	10	113	23	104	7	135	248	6	6	7	19	6	1	21	28	47	295
12:00	12:15	8	123	13	144	14	122	8	144	288	18	12	3	33	14	8	19	41	74	362
12:15	12:30	0	103	10	113	15	115	7	137	250	5	3	8	16	10	8	17	35	51	301
12:30	12:45	1	84	11	96	23	80	8	112	208	4	6	5	15	11	1	11	23	38	246
12:45	13:00	6	109	15	130	13	93	11	118	248	8	4	4	16	11	7	22	40	56	304
13:00	13:15	2	91	11	104	14	97	16	127	231	8	7	8	23	9	2	27	39	62	293
13:15	13:30	2	90	15	107	12	104	5	121	228	9	5	5	19	7	3	16	26	45	273
15:00	15:15	7	105	11	123	24	173	22	219	342	12	10	8	30	17	9	27	53	83	425
17:30	17:45	3	87	22	113	39	165	24	228	341	10	8	4	22	29	10	25	64	86	427
15:15	15:30	4	107	11	122	29	193	19	241	363	15	13	9	37	4	14	29	47	84	447
15:30	15:45	4	101	14	119	27	221	17	265	384	4	7	9	20	14	9	26	49	69	453
16:00	16:15	5	102	20	127	47	281	18	346	473	14	13	11	38	12	13	14	39	77	550
16:15	16:30	4	114	19	137	32	256	17	305	442	14	10	11	35	17	4	28	49	84	526
16:30	16:45	2	98	26	126	34	308	23	365	491	19	5	10	34	17	5	16	38	72	563
16:45	17:00	3	90	23	117	33	275	22	330	447	11	17	3	31	17	9	27	53	84	531
17:00	17:15	4	102	18	124	40	220	24	285	409	15	5	3	23	16	7	26	49	72	481
17:15	17:30	11	102	45	158	41	182	20	244	402	6	10	7	23	16	6	14	36	59	461
15:45	16:00	9	92	13	114	34	212	19	265	379	13	21	7	41	20	19	25	64	105	484
17:45	18:00	3	113	20	136	34	111	9	154	290	10	6	3	19	14	3	32	49	68	358
Total:		171	4216	458	4848	664	4369	432	5472	10320	428	254	194	876	386	226	697	1310	2186	12,506

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

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025 **WO No:** 42645

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

Full Study Cyclist Volume

Time Period		CONROY RD			LORRY GREENBERG DR			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	2	0	2	1	0	1	3
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	1	0	1	0	0	0	1
07:45	08:00	2	0	2	0	0	0	2
08:00	08:15	2	1	3	1	0	1	4
08:15	08:30	3	2	5	1	1	2	7
08:30	08:45	2	0	2	0	0	0	2
08:45	09:00	2	0	2	1	0	1	3
09:00	09:15	0	1	1	0	1	1	2
09:15	09:30	1	0	1	0	0	0	1
09:30	09:45	0	0	0	0	0	0	0
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	2	0	2	0	1	1	3
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0
13:00	13:15	1	2	3	0	0	0	3
13:15	13:30	0	2	2	0	0	0	2
15:00	15:15	0	0	0	0	0	0	0
17:30	17:45	1	1	2	0	0	0	2
15:15	15:30	0	0	0	1	1	2	2
15:30	15:45	0	0	0	0	0	0	0
16:00	16:15	0	2	2	0	0	0	2
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	1	1	0	0	0	1
16:45	17:00	2	1	3	0	0	0	3
17:00	17:15	0	3	3	0	0	0	3
17:15	17:30	0	0	0	0	0	0	0
15:45	16:00	1	0	1	0	0	0	1
17:45	18:00	0	0	0	0	0	0	0
Total		22	16	**38**	5	4	9	47

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025 **WO No:** 42645

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

Full Study Pedestrian Volume

	CONROY RD			LORRY GREENBERG DR			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	3	0	**3**	2	1	**3**	**6**
07:15 07:30	1	1	**2**	5	0	**5**	**7**
07:30 07:45	0	4	**4**	5	1	**6**	**10**
07:45 08:00	0	1	**1**	4	0	**4**	**5**
08:00 08:15	3	1	**4**	5	0	**5**	**9**
08:15 08:30	7	0	**7**	6	0	**6**	**13**
08:30 08:45	4	5	**9**	3	0	**3**	**12**
08:45 09:00	0	4	**4**	1	0	**1**	**5**
09:00 09:15	1	7	**8**	1	1	**2**	**10**
09:15 09:30	0	6	**6**	5	1	**6**	**12**
09:30 09:45	1	0	**1**	0	1	**1**	**2**
09:45 10:00	0	0	**0**	3	0	**3**	**3**
11:30 11:45	0	1	**1**	0	1	**1**	**2**
11:45 12:00	0	0	**0**	1	0	**1**	**1**
12:00 12:15	0	0	**0**	2	0	**2**	**2**
12:15 12:30	1	0	**1**	5	2	**7**	**8**
12:30 12:45	3	2	**5**	1	5	**6**	**11**
12:45 13:00	1	1	**2**	6	2	**8**	**10**
13:00 13:15	0	0	**0**	0	2	**2**	**2**
13:15 13:30	0	0	**0**	0	0	**0**	**0**
15:00 15:15	7	2	**9**	1	1	**2**	**11**
17:30 17:45	0	1	**1**	1	2	**3**	**4**
15:15 15:30	3	0	**3**	3	1	**4**	**7**
15:30 15:45	4	0	**4**	5	0	**5**	**9**
16:00 16:15	2	4	**6**	5	2	**7**	**13**
16:15 16:30	2	1	**3**	3	3	**6**	**9**
16:30 16:45	2	5	**7**	3	2	**5**	**12**
16:45 17:00	2	0	**2**	3	0	**3**	**5**
17:00 17:15	1	0	**1**	0	0	**0**	**1**
17:15 17:30	0	0	**0**	2	0	**2**	**2**
15:45 16:00	5	11	**16**	4	2	**6**	**22**
17:45 18:00	0	0	**0**	0	1	**1**	**1**
Total	53	57	**110**	85	31	**116**	**226**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025 **WO No:** 42645

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

Full Study Heavy Vehicles

		CONROY RD									LORRY GREENBERG DR									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	3	0	**3**	3	6	0	**9**	**12**	0	1	0	**1**	0	2	1	**3**	**4**	**16**
07:15	07:30	0	6	0	**6**	1	2	0	**3**	**9**	0	1	0	**1**	0	3	2	**5**	**6**	**15**
07:30	07:45	0	3	0	**3**	0	0	1	**1**	**4**	0	0	0	**0**	0	3	0	**3**	**3**	**7**
07:45	08:00	0	2	0	**2**	1	4	0	**5**	**7**	0	1	1	**2**	0	2	1	**3**	**5**	**12**
08:00	08:15	0	4	1	**5**	0	8	0	**8**	**13**	0	0	0	**0**	1	2	0	**3**	**3**	**16**
08:15	08:30	0	6	0	**6**	2	6	0	**8**	**14**	0	3	0	**3**	0	2	0	**2**	**5**	**19**
08:30	08:45	0	6	1	**7**	1	3	0	**4**	**11**	1	2	0	**3**	1	1	2	**4**	**7**	**18**
08:45	09:00	1	4	0	**5**	0	6	0	**6**	**11**	1	1	0	**2**	0	2	0	**2**	**4**	**15**
09:00	09:15	0	7	1	**8**	0	7	0	**7**	**15**	0	1	1	**2**	0	1	2	**3**	**5**	**20**
09:15	09:30	1	2	0	**3**	2	6	0	**8**	**11**	0	1	0	**1**	0	0	0	**0**	**1**	**12**
09:30	09:45	0	8	0	**8**	0	6	0	**6**	**14**	0	0	0	**0**	0	1	0	**1**	**1**	**15**
09:45	10:00	0	5	2	**7**	1	2	0	**3**	**10**	2	1	0	**3**	1	3	1	**5**	**8**	**18**
11:30	11:45	0	3	1	**4**	1	4	1	**6**	**10**	0	1	0	**1**	0	1	0	**1**	**2**	**12**
11:45	12:00	0	2	1	**3**	1	7	0	**8**	**11**	0	1	1	**2**	0	0	2	**2**	**4**	**15**
12:00	12:15	0	1	0	**1**	0	2	0	**2**	**3**	0	1	0	**1**	0	1	0	**1**	**2**	**5**
12:15	12:30	0	2	0	**2**	2	0	0	**2**	**4**	0	1	0	**1**	0	2	1	**3**	**4**	**8**
12:30	12:45	0	2	1	**3**	1	0	0	**1**	**4**	0	1	0	**1**	1	0	1	**2**	**3**	**7**
12:45	13:00	0	3	1	**4**	1	2	0	**3**	**7**	0	0	0	**0**	1	2	1	**4**	**4**	**11**
13:00	13:15	0	2	0	**2**	0	5	1	**6**	**8**	1	1	2	**4**	0	0	0	**0**	**4**	**12**
13:15	13:30	0	3	0	**3**	1	4	0	**5**	**8**	0	2	0	**2**	0	1	1	**2**	**4**	**12**
15:00	15:15	0	3	0	**3**	0	6	0	**6**	**9**	0	2	0	**2**	0	1	1	**2**	**4**	**13**
17:30	17:45	0	2	0	**2**	1	3	0	**4**	**6**	0	1	0	**1**	0	1	0	**1**	**2**	**8**
15:15	15:30	0	5	0	**5**	1	5	0	**6**	**11**	2	5	0	**7**	0	3	0	**3**	**10**	**21**
15:30	15:45	0	1	2	**3**	1	2	0	**3**	**6**	1	2	0	**3**	0	2	3	**5**	**8**	**14**
16:00	16:15	0	3	0	**3**	2	7	2	**11**	**14**	0	0	0	**0**	0	1	1	**2**	**2**	**16**
16:15	16:30	0	5	3	**8**	2	5	0	**7**	**15**	0	1	0	**1**	1	1	1	**3**	**4**	**19**
16:30	16:45	0	2	0	**2**	1	3	0	**4**	**6**	0	1	1	**2**	2	0	2	**4**	**6**	**12**
16:45	17:00	0	9	0	**9**	0	1	0	**1**	**10**	0	1	0	**1**	0	1	1	**2**	**3**	**13**
17:00	17:15	0	0	1	**1**	2	1	0	**3**	**4**	0	0	0	**0**	0	1	0	**1**	**1**	**5**
17:15	17:30	0	2	0	**2**	2	2	0	**4**	**6**	0	1	0	**1**	0	0	2	**2**	**3**	**9**
15:45	16:00	0	1	0	**1**	0	2	0	**2**	**3**	0	2	0	**2**	1	3	0	**4**	**6**	**9**
17:45	18:00	0	1	0	**1**	1	2	0	**3**	**4**	0	2	0	**2**	0	0	1	**1**	**3**	**7**
Total:	None	2	108	15	**125**	31	119	5	**155**	**280**	8	38	6	**52**	9	43	27	**79**	**131**	**411**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ LORRY GREENBERG DR

Survey Date: Tuesday, April 15, 2025 **WO No:** 42645

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

Full Study 15 Minute U-Turn Total

Time Period		CONROY RD Northbound U-Turn Total	CONROY RD Southbound U-Turn Total	LORRY GREENBERG DR Eastbound U-Turn Total	LORRY GREENBERG DR Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	1	0	0	1
08:15	08:30	0	0	0	0	0
08:30	08:45	1	0	0	0	1
08:45	09:00	0	1	0	0	1
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	1	0	0	1
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	1	0	0	1
12:45	13:00	0	1	0	0	1
13:00	13:15	0	0	0	1	1
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
17:30	17:45	1	0	0	0	1
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	1	0	0	0	1
17:00	17:15	0	1	0	0	1
17:15	17:30	0	1	0	0	1
15:45	16:00	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		3	7	0	1	11

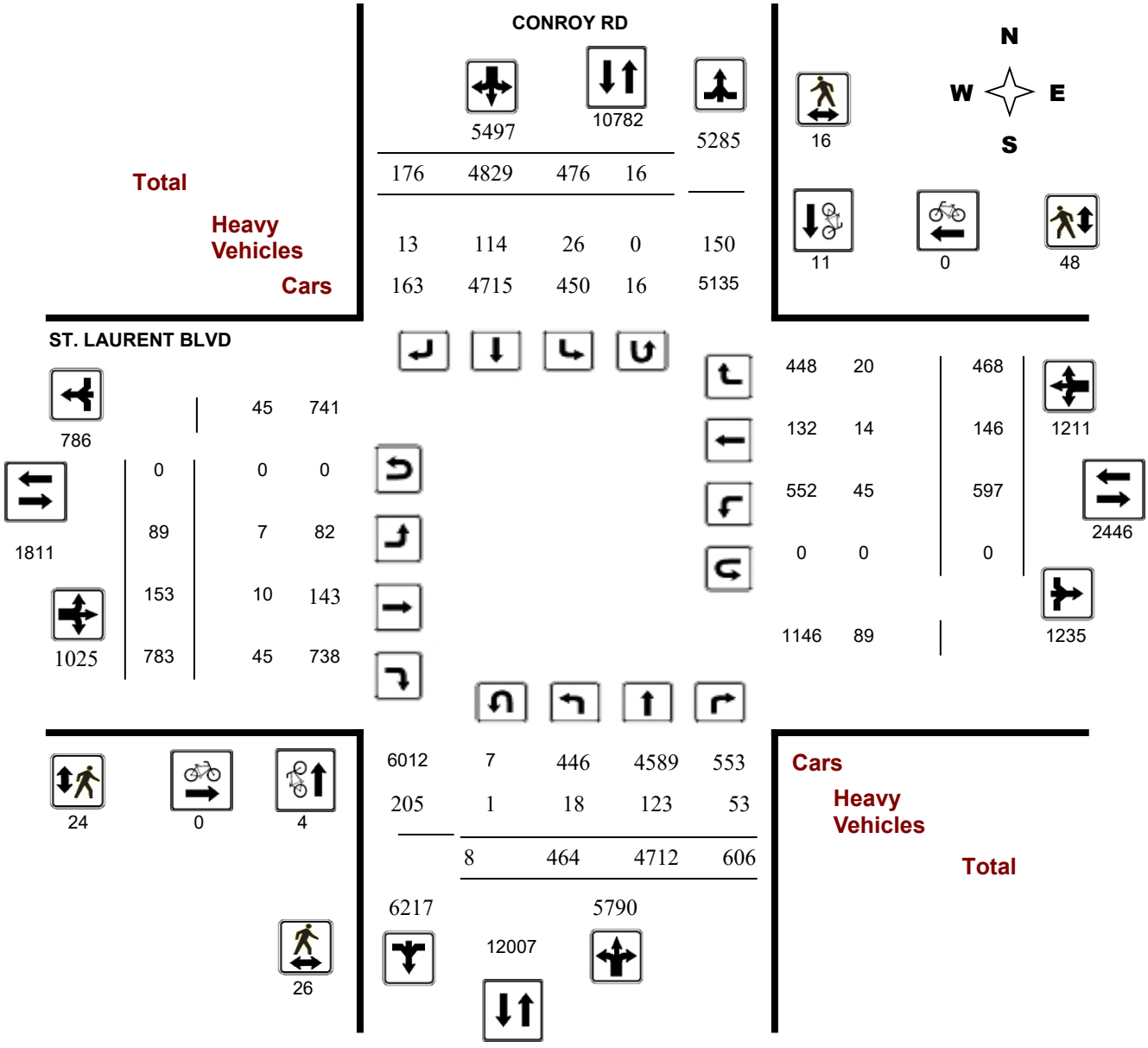
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023
Start Time: 07:00
WO No: 41374
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

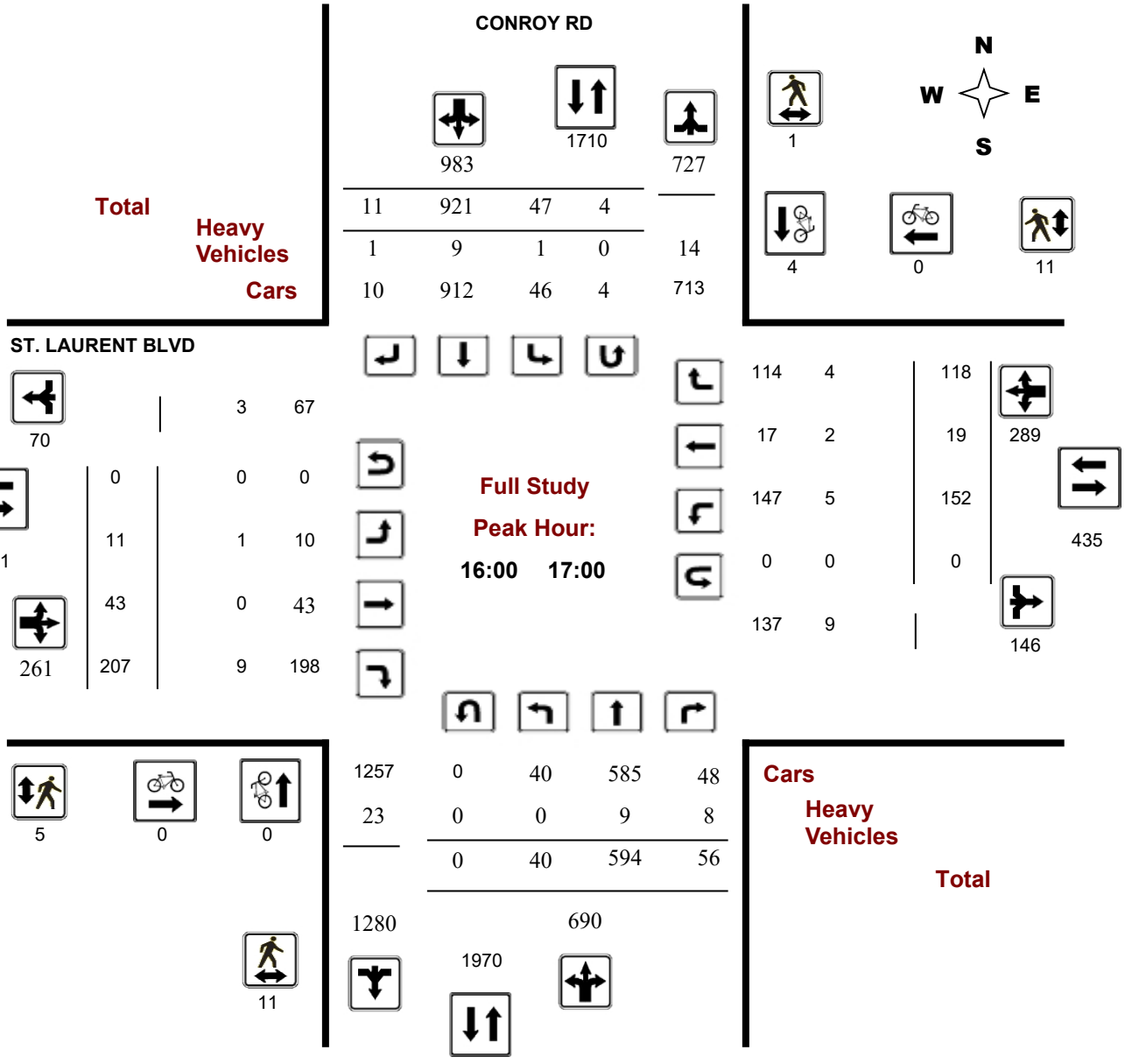
Turning Movement Count - Study Results

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023 **WO No:** 41374

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

Full Study Peak Hour Diagram



Transportation Services - Traffic Services

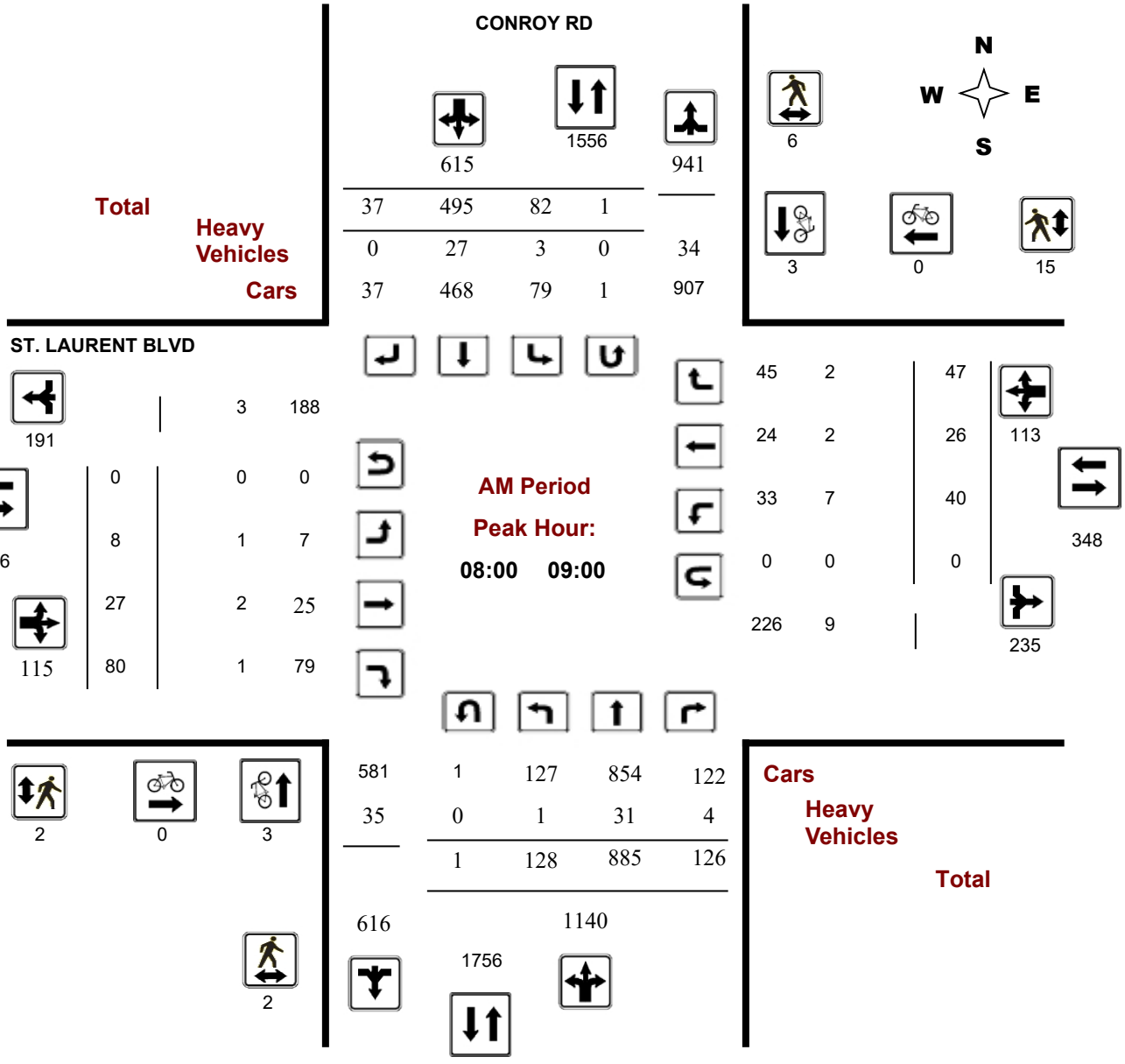
Turning Movement Count - Study Results

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023 **WO No:** 41374

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

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

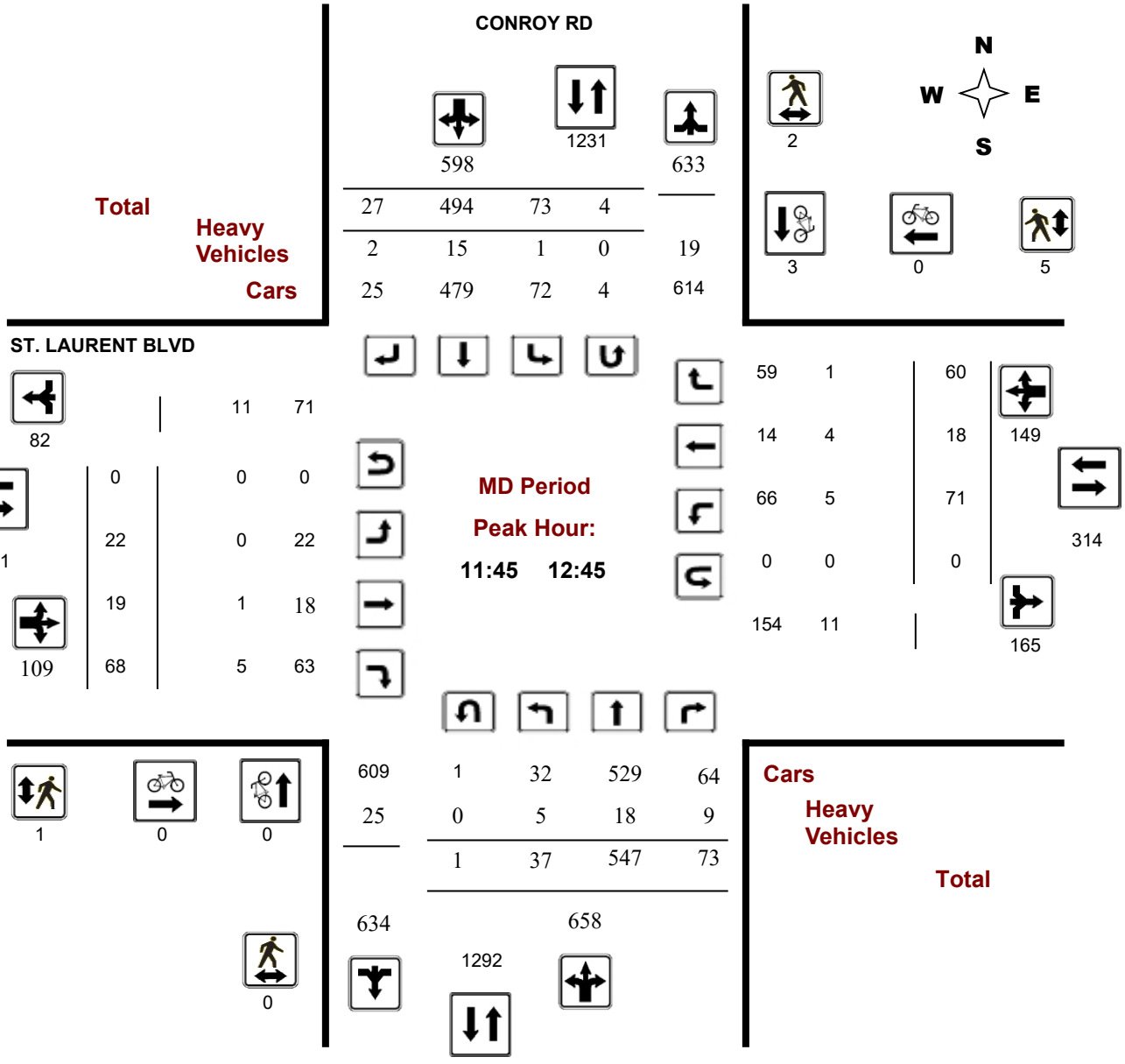
Turning Movement Count - Study Results

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023 **WO No:** 41374

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

MD Period Peak Hour Diagram



Transportation Services - Traffic Services

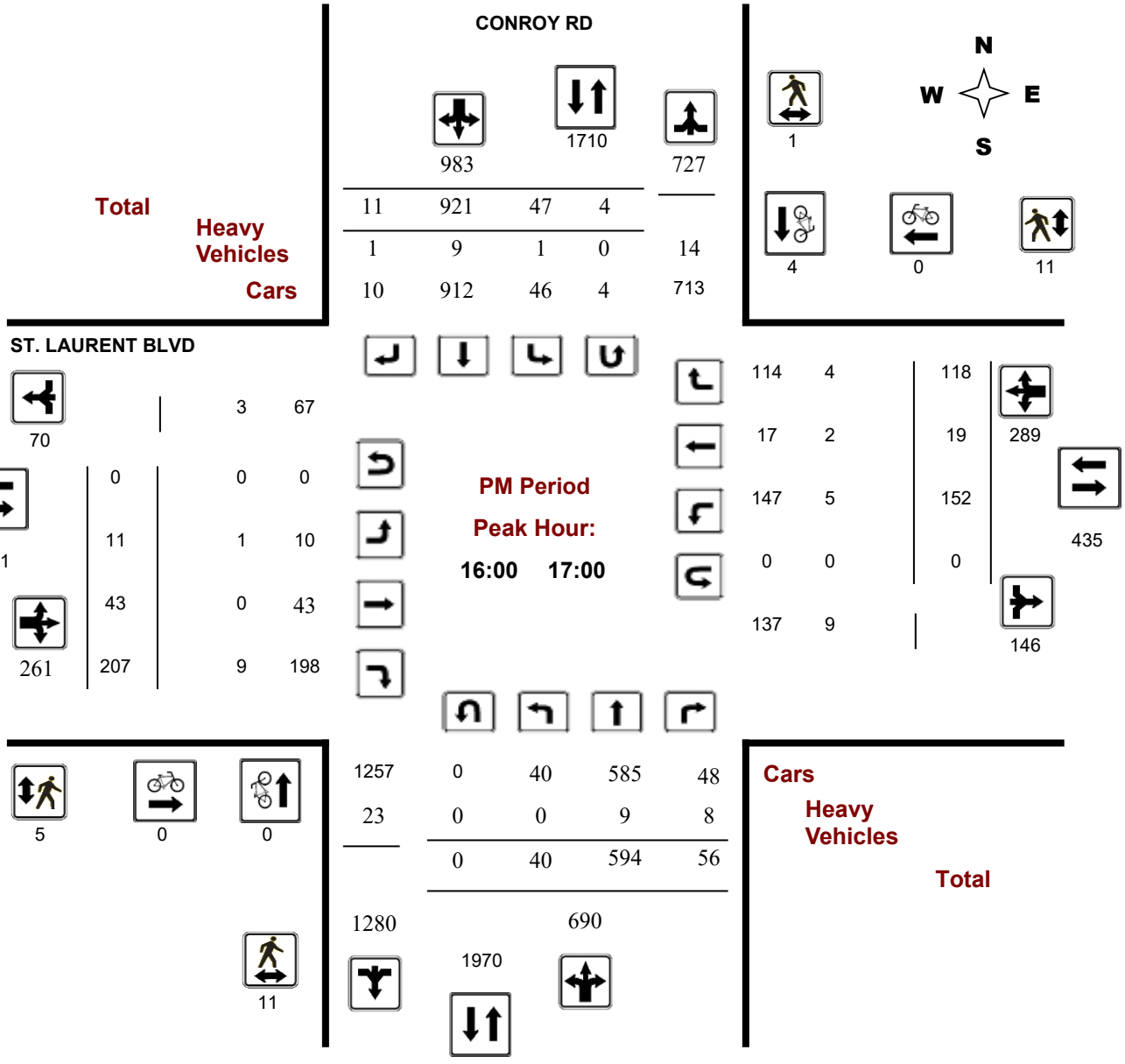
Turning Movement Count - Study Results

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023 **WO No:** 41374

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

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023 **WO No:** 41374

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, December 06, 2023

Total Observed U-Turns

Northbound: 8 Southbound: 16

Eastbound: 0 Westbound: 0

AADT Factor

1.00

	CONROY RD									ST. LAURENT BLVD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	84	619	101	**804**	64	316	25	**405**	**1209**	6	7	34	**47**	34	9	20	**63**	**110**	**1319**
08:00 09:00	128	885	126	**1139**	82	495	37	**614**	**1753**	8	27	80	**115**	40	26	47	**113**	**228**	**1981**
09:00 10:00	69	548	94	**711**	77	458	31	**566**	**1277**	10	20	30	**60**	33	18	47	**98**	**158**	**1435**
11:30 12:30	34	529	67	**630**	64	494	25	**583**	**1213**	19	19	73	**111**	71	27	70	**168**	**279**	**1492**
12:30 13:30	40	439	58	**537**	61	481	25	**567**	**1104**	17	9	72	**98**	67	17	65	**149**	**247**	**1351**
15:00 16:00	37	584	66	**687**	57	859	14	**930**	**1617**	15	28	154	**197**	124	23	39	**186**	**383**	**2000**
16:00 17:00	40	594	56	**690**	47	921	11	**979**	**1669**	11	43	207	**261**	152	19	118	**289**	**550**	**2219**
17:00 18:00	32	514	38	**584**	24	805	8	**837**	**1421**	3	0	133	**136**	76	7	62	**145**	**281**	**1702**
Sub Total	464	4712	606	**5782**	476	4829	176	**5481**	**11263**	89	153	783	**1025**	597	146	468	**1211**	**2236**	**13499**
U Turns				**8**				**16**	**24**				**0**				**0**	**0**	**24**
Total	464	4712	606	**5790**	476	4829	176	**5497**	**11287**	89	153	783	**1025**	597	146	468	**1211**	**2236**	**13523**
EQ 12Hr	645	6550	842	**8048**	662	6712	245	**7641**	**15689**	124	213	1088	**1425**	830	203	651	**1683**	**3108**	**18797**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	645	6550	842	**8048**	662	8793	320	**7641**	**15689**	124	213	1088	**1425**	830	203	651	**1683**	**3108**	**18797**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	845	8580	1103	**10543**	867	11519	419	**10010**	**20553**	162	279	1425	**1867**	1087	266	853	**2205**	**4071**	**24624**
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

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023 **WO No:** 41374

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

Full Study 15 Minute Increments

		CONROY RD									ST. LAURENT BLVD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	16	113	15	144	12	58	4	74	218	3	0	3	6	11	2	4	17	23	241
07:15	07:30	19	135	24	179	13	59	7	79	258	2	4	8	14	3	2	10	15	29	287
07:30	07:45	22	171	29	222	13	81	4	98	320	1	2	9	12	8	3	3	14	26	346
17:30	17:45	9	145	13	167	5	194	3	203	370	0	0	33	33	16	2	11	29	62	432
09:00	09:15	17	153	23	193	28	130	7	165	358	1	2	5	8	4	4	13	21	29	387
07:45	08:00	27	200	33	260	26	118	10	154	414	0	1	14	15	12	2	3	17	32	446
08:00	08:15	32	221	35	288	10	117	5	132	420	0	4	18	22	9	8	11	28	50	470
08:45	09:00	26	236	27	290	29	107	10	146	436	2	11	19	32	12	5	14	31	63	499
11:30	11:45	8	112	15	135	10	115	5	130	265	5	5	19	29	13	11	20	44	73	338
12:15	12:30	12	124	17	153	26	133	9	168	321	6	5	21	32	13	4	18	35	67	388
16:15	16:30	12	146	24	182	18	245	3	268	450	1	11	64	76	39	3	31	73	149	599
16:45	17:00	6	164	9	179	9	221	0	231	410	3	9	46	58	36	4	28	68	126	536
17:15	17:30	9	139	8	156	7	219	1	228	384	1	0	35	36	21	4	16	41	77	461
17:00	17:15	8	115	7	130	6	184	1	192	322	1	0	42	43	26	1	26	53	96	418
08:15	08:30	35	206	36	277	23	118	12	154	431	4	6	28	38	6	7	15	28	66	497
08:30	08:45	35	222	28	285	20	153	10	183	468	2	6	15	23	13	6	7	26	49	517
15:15	15:30	13	160	13	187	17	217	3	238	425	4	10	39	53	31	5	11	47	100	525
09:15	09:30	23	145	26	194	26	124	9	159	353	2	4	4	10	10	4	9	23	33	386
09:30	09:45	18	128	24	170	13	103	8	124	294	5	5	8	18	7	3	15	25	43	337
09:45	10:00	11	122	21	154	10	101	7	118	272	2	9	13	24	12	7	10	29	53	325
11:45	12:00	7	152	20	179	12	113	8	133	312	4	4	16	24	23	9	18	50	74	386
12:00	12:15	7	141	15	163	16	133	3	152	315	4	5	17	26	22	3	14	39	65	380
12:30	12:45	11	130	21	163	19	115	7	145	308	8	5	14	27	13	2	10	25	52	360
12:45	13:00	13	113	17	143	19	120	11	151	294	1	1	22	24	18	8	5	31	55	349
13:00	13:15	9	97	9	115	9	134	2	145	260	3	2	22	27	16	1	31	48	75	335
13:15	13:30	7	99	11	118	14	112	5	131	249	5	1	14	20	20	6	19	45	65	314
15:00	15:15	10	149	14	176	14	172	4	190	366	4	8	33	45	27	7	7	41	86	452
17:45	18:00	6	115	10	131	6	208	3	218	349	1	0	23	24	13	0	9	22	46	395
15:30	15:45	8	137	21	166	13	232	2	248	414	5	6	33	44	37	5	8	50	94	508
15:45	16:00	6	138	18	162	13	238	5	256	418	2	4	49	55	29	6	13	48	103	521
16:00	16:15	8	132	10	150	11	228	6	245	395	3	10	56	69	38	6	22	66	135	530
16:30	16:45	14	152	13	179	9	227	2	239	418	4	13	41	58	39	6	37	82	140	558
Total:		464	4712	606	5790	476	4829	176	5497	11287	89	153	783	1025	597	146	468	1211	2236	13,523

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

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023 **WO No:** 41374

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

Full Study Cyclist Volume

Time Period		CONROY RD			ST. LAURENT BLVD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	0	0	0	0
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0
07:45	08:00	0	1	1	0	0	0	1
08:00	08:15	2	1	3	0	0	0	3
08:45	09:00	0	1	1	0	0	0	1
11:30	11:45	0	0	0	0	0	0	0
12:15	12:30	0	1	1	0	0	0	1
16:15	16:30	0	1	1	0	0	0	1
16:45	17:00	0	1	1	0	0	0	1
17:15	17:30	1	0	1	0	0	0	1
17:00	17:15	0	0	0	0	0	0	0
08:15	08:30	0	1	1	0	0	0	1
08:30	08:45	1	0	1	0	0	0	1
15:15	15:30	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0
09:30	09:45	0	0	0	0	0	0	0
09:45	10:00	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:30	12:45	0	2	2	0	0	0	2
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
17:45	18:00	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	1	1	0	0	0	1
16:30	16:45	0	1	1	0	0	0	1
Total		4	11	**15**	0	0	0	15

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023 **WO No:** 41374

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

Full Study Pedestrian Volume

	CONROY RD			ST. LAURENT BLVD			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	0	0	**0**	0	0	**0**	**0**
07:15 07:30	0	1	**1**	0	0	**0**	**1**
07:30 07:45	0	1	**1**	0	1	**1**	**2**
17:30 17:45	0	0	**0**	1	0	**1**	**1**
09:00 09:15	1	1	**2**	0	0	**0**	**2**
07:45 08:00	1	0	**1**	1	0	**1**	**2**
08:00 08:15	0	1	**1**	0	0	**0**	**1**
08:45 09:00	0	1	**1**	0	9	**9**	**10**
11:30 11:45	0	0	**0**	0	5	**5**	**5**
12:15 12:30	0	0	**0**	1	1	**2**	**2**
16:15 16:30	1	0	**1**	0	2	**2**	**3**
16:45 17:00	5	0	**5**	4	2	**6**	**11**
17:15 17:30	0	0	**0**	0	0	**0**	**0**
17:00 17:15	0	0	**0**	0	0	**0**	**0**
08:15 08:30	0	3	**3**	1	1	**2**	**5**
08:30 08:45	2	1	**3**	1	5	**6**	**9**
15:15 15:30	0	1	**1**	1	0	**1**	**2**
09:15 09:30	0	1	**1**	0	0	**0**	**1**
09:30 09:45	2	1	**3**	1	6	**7**	**10**
09:45 10:00	0	0	**0**	0	0	**0**	**0**
11:45 12:00	0	1	**1**	0	2	**2**	**3**
12:00 12:15	0	0	**0**	0	1	**1**	**1**
12:30 12:45	0	1	**1**	0	1	**1**	**2**
12:45 13:00	1	0	**1**	2	0	**2**	**3**
13:00 13:15	5	0	**5**	1	2	**3**	**8**
13:15 13:30	1	0	**1**	1	0	**1**	**2**
15:00 15:15	2	1	**3**	7	1	**8**	**11**
17:45 18:00	0	0	**0**	0	0	**0**	**0**
15:30 15:45	0	0	**0**	0	2	**2**	**2**
15:45 16:00	0	0	**0**	1	0	**1**	**1**
16:00 16:15	4	1	**5**	1	5	**6**	**11**
16:30 16:45	1	0	**1**	0	2	**2**	**3**
Total	26	16	**42**	24	48	**72**	**114**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023 **WO No:** 41374

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

Full Study Heavy Vehicles

		CONROY RD									ST. LAURENT BLVD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	2	**2**	0	2	0	**2**	**4**	0	0	0	**0**	4	0	0	**4**	**4**	**8**
07:15	07:30	0	3	2	**5**	1	0	0	**1**	**6**	0	0	1	**1**	1	0	1	**2**	**3**	**9**
07:30	07:45	0	3	1	**4**	1	1	0	**2**	**6**	1	0	1	**2**	2	1	0	**3**	**5**	**11**
17:30	17:45	1	2	2	**5**	1	1	0	**2**	**7**	0	0	0	**0**	0	0	1	**1**	**1**	**8**
09:00	09:15	0	5	2	**7**	0	4	0	**4**	**11**	0	0	1	**1**	1	0	0	**1**	**2**	**13**
07:45	08:00	1	6	3	**10**	1	4	1	**6**	**16**	0	0	1	**1**	1	0	1	**2**	**3**	**19**
08:00	08:15	0	9	1	**10**	0	14	0	**14**	**24**	0	0	0	**0**	2	1	0	**3**	**3**	**27**
08:45	09:00	0	9	1	**10**	1	3	0	**4**	**14**	0	2	0	**2**	1	0	2	**3**	**5**	**19**
11:30	11:45	0	3	2	**5**	1	2	0	**3**	**8**	0	1	0	**1**	2	0	0	**2**	**3**	**11**
12:15	12:30	1	5	1	**7**	0	5	0	**5**	**12**	0	0	1	**1**	1	0	1	**2**	**3**	**15**
16:15	16:30	0	2	3	**5**	0	4	0	**4**	**9**	1	0	6	**7**	2	0	1	**3**	**10**	**19**
16:45	17:00	0	2	3	**5**	0	1	0	**1**	**6**	0	0	1	**1**	0	0	0	**0**	**1**	**7**
17:15	17:30	2	3	1	**6**	1	1	0	**2**	**8**	1	0	1	**2**	0	0	0	**0**	**2**	**10**
17:00	17:15	1	1	1	**3**	1	4	1	**6**	**9**	0	0	1	**1**	1	0	3	**4**	**5**	**14**
08:15	08:30	0	5	1	**6**	2	3	0	**5**	**11**	1	0	1	**2**	1	0	0	**1**	**3**	**14**
08:30	08:45	1	8	1	**10**	0	7	0	**7**	**17**	0	0	0	**0**	3	1	0	**4**	**4**	**21**
15:15	15:30	1	6	1	**8**	3	5	0	**8**	**16**	0	3	4	**7**	4	0	0	**4**	**11**	**27**
09:15	09:30	0	5	0	**5**	3	2	2	**7**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
09:30	09:45	0	3	2	**5**	1	3	1	**5**	**10**	0	0	1	**1**	2	0	1	**3**	**4**	**14**
09:45	10:00	0	1	0	**1**	0	2	0	**2**	**3**	0	1	4	**5**	1	1	0	**2**	**7**	**10**
11:45	12:00	3	3	3	**9**	0	4	0	**4**	**13**	0	0	1	**1**	2	2	0	**4**	**5**	**18**
12:00	12:15	0	4	2	**6**	1	3	1	**5**	**11**	0	1	3	**4**	1	2	0	**3**	**7**	**18**
12:30	12:45	1	6	3	**10**	0	3	1	**4**	**14**	0	0	0	**0**	1	0	0	**1**	**1**	**15**
12:45	13:00	0	4	1	**5**	0	6	0	**6**	**11**	0	0	1	**1**	2	0	0	**2**	**3**	**14**
13:00	13:15	1	3	1	**5**	1	4	0	**5**	**10**	1	0	5	**6**	2	0	2	**4**	**10**	**20**
13:15	13:30	0	3	0	**3**	1	6	3	**10**	**13**	2	0	1	**3**	0	1	3	**4**	**7**	**20**
15:00	15:15	3	4	3	**11**	2	6	0	**8**	**19**	0	1	2	**3**	2	2	1	**5**	**8**	**27**
17:45	18:00	1	1	2	**4**	1	1	0	**2**	**6**	0	0	0	**0**	0	0	0	**0**	**0**	**6**
15:30	15:45	1	5	4	**10**	1	5	0	**6**	**16**	0	1	2	**3**	2	0	0	**2**	**5**	**21**
15:45	16:00	0	4	2	**6**	1	4	2	**7**	**13**	0	0	4	**4**	1	1	0	**2**	**6**	**19**
16:00	16:15	0	4	1	**5**	0	2	1	**3**	**8**	0	0	2	**2**	1	1	0	**2**	**4**	**12**
16:30	16:45	0	1	1	**2**	1	2	0	**3**	**5**	0	0	0	**0**	2	1	3	**6**	**6**	**11**
Total:	None	18	123	53	**195**	26	114	13	**153**	**348**	7	10	45	**62**	45	14	20	**79**	**141**	**489**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 06, 2023 **WO No:** 41374

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

Full Study 15 Minute U-Turn Total

Time Period		CONROY RD Northbound U-Turn Total	CONROY RD Southbound U-Turn Total	ST. LAURENT BLVD Eastbound U-Turn Total	ST. LAURENT BLVD Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	1	0	0	0	1
07:30	07:45	0	0	0	0	0
17:30	17:45	0	1	0	0	1
09:00	09:15	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:45	09:00	1	0	0	0	1
11:30	11:45	0	0	0	0	0
12:15	12:30	0	0	0	0	0
16:15	16:30	0	2	0	0	2
16:45	17:00	0	1	0	0	1
17:15	17:30	0	1	0	0	1
17:00	17:15	0	1	0	0	1
08:15	08:30	0	1	0	0	1
08:30	08:45	0	0	0	0	0
15:15	15:30	1	1	0	0	2
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:30	12:45	1	4	0	0	5
12:45	13:00	0	1	0	0	1
13:00	13:15	0	0	0	0	0
13:15	13:30	1	0	0	0	1
15:00	15:15	3	0	0	0	3
17:45	18:00	0	1	0	0	1
15:30	15:45	0	1	0	0	1
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:30	16:45	0	1	0	0	1
Total		8	16	0	0	24

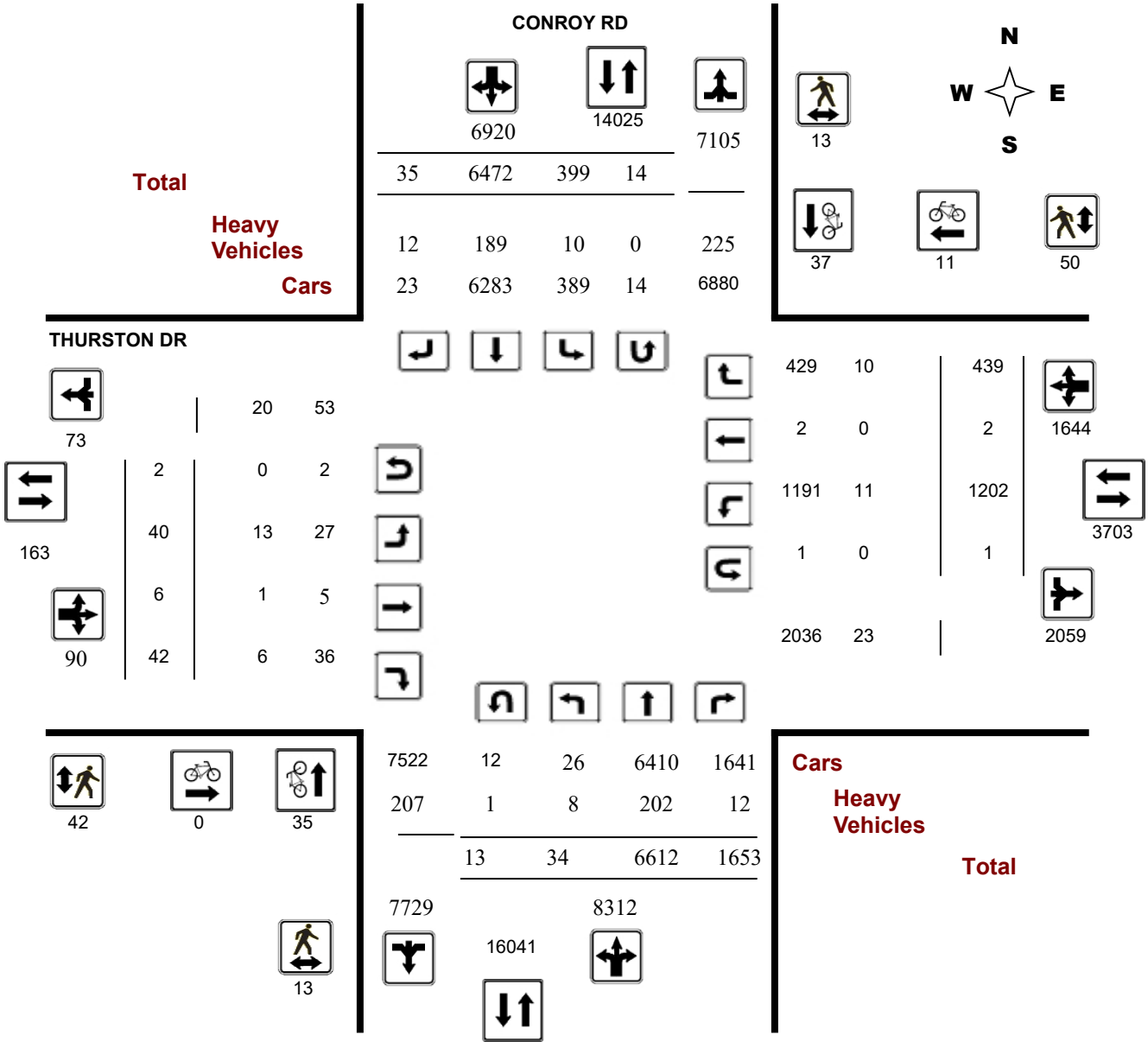
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019
Start Time: 07:00
WO No: 38547
Device: Miovision

Full Study Diagram



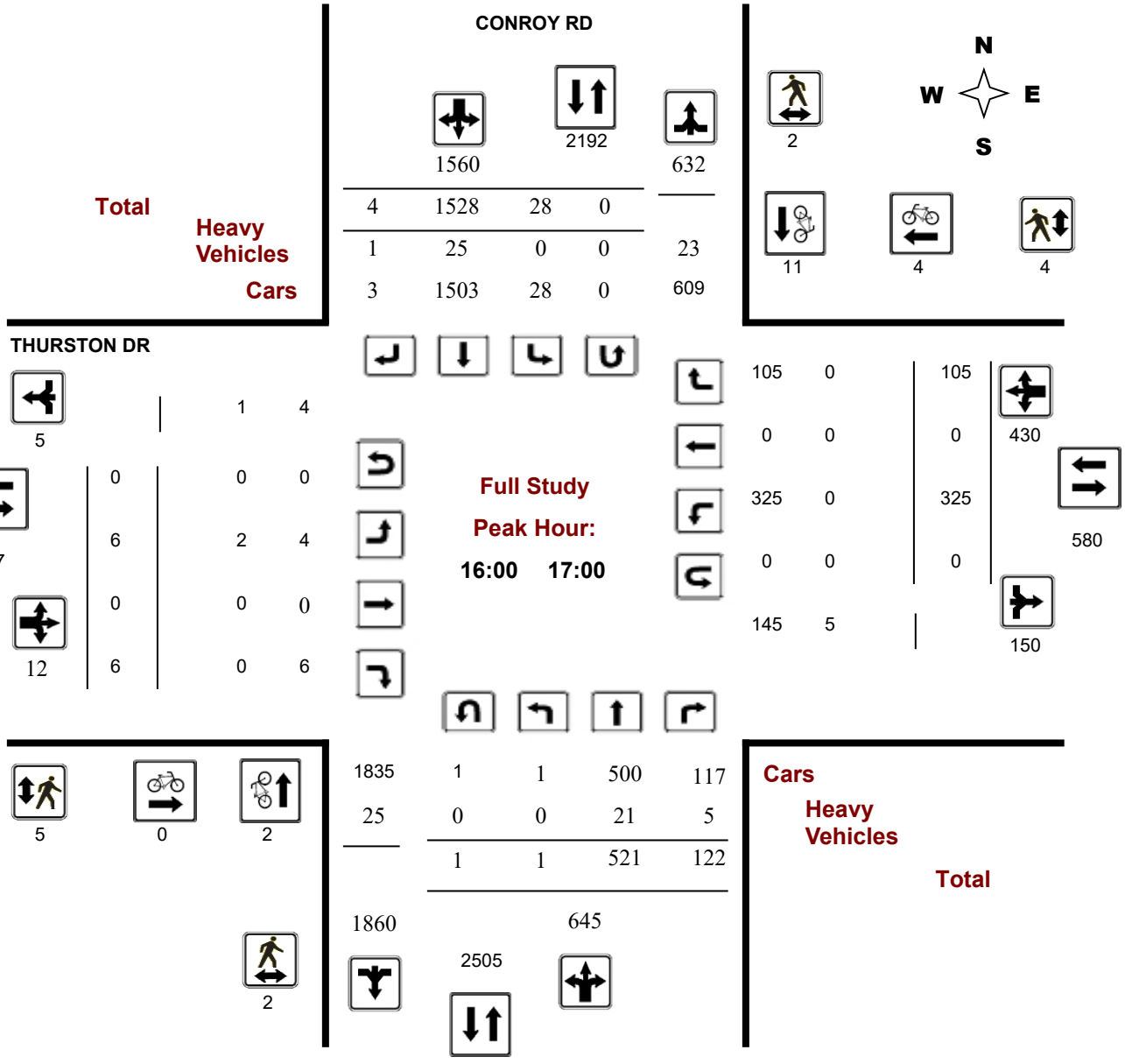
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019
Start Time: 07:00
WO No: 38547
Device: Miovision

Full Study Peak Hour Diagram



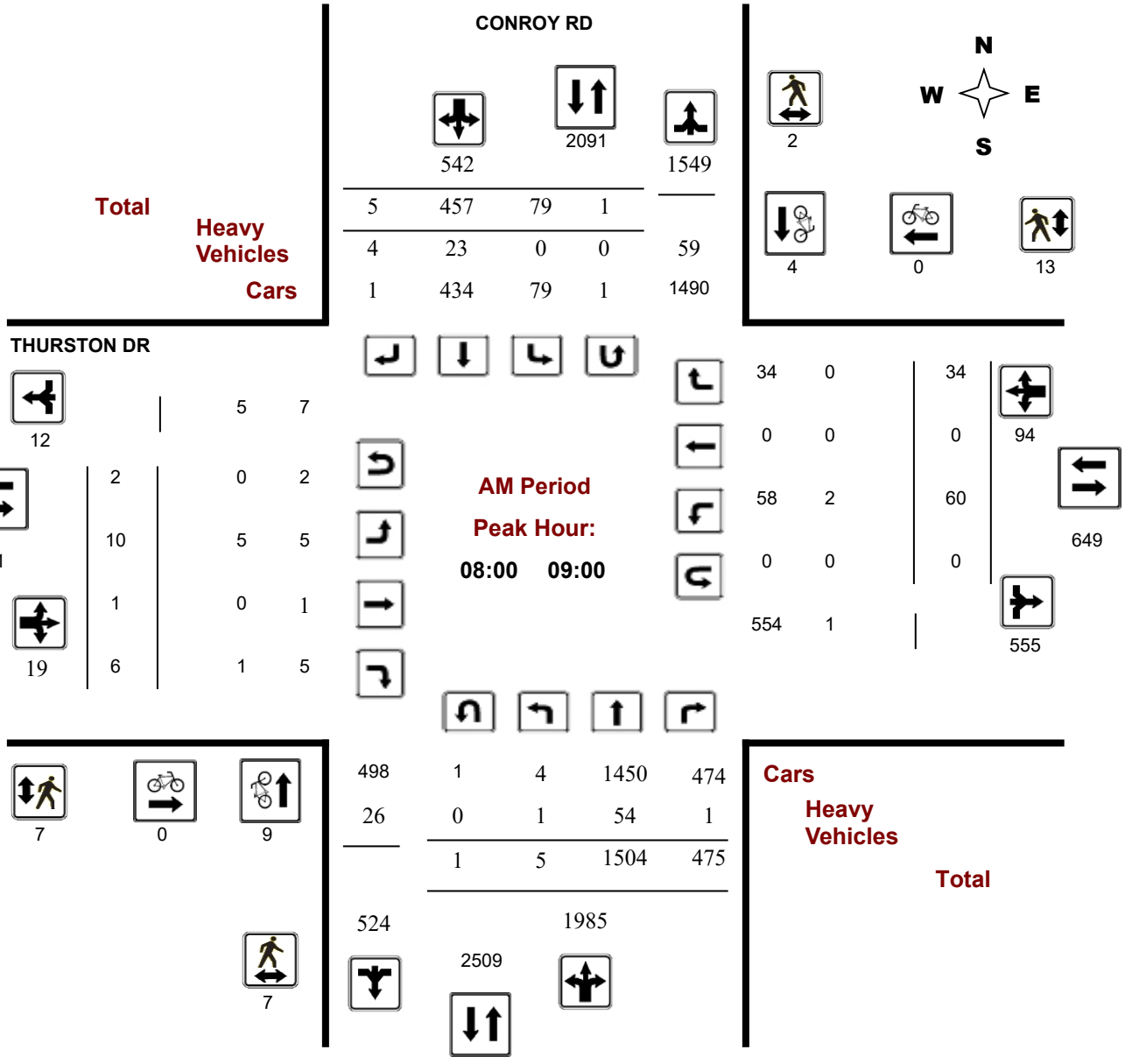
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019
Start Time: 07:00
WO No: 38547
Device: Miovision

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

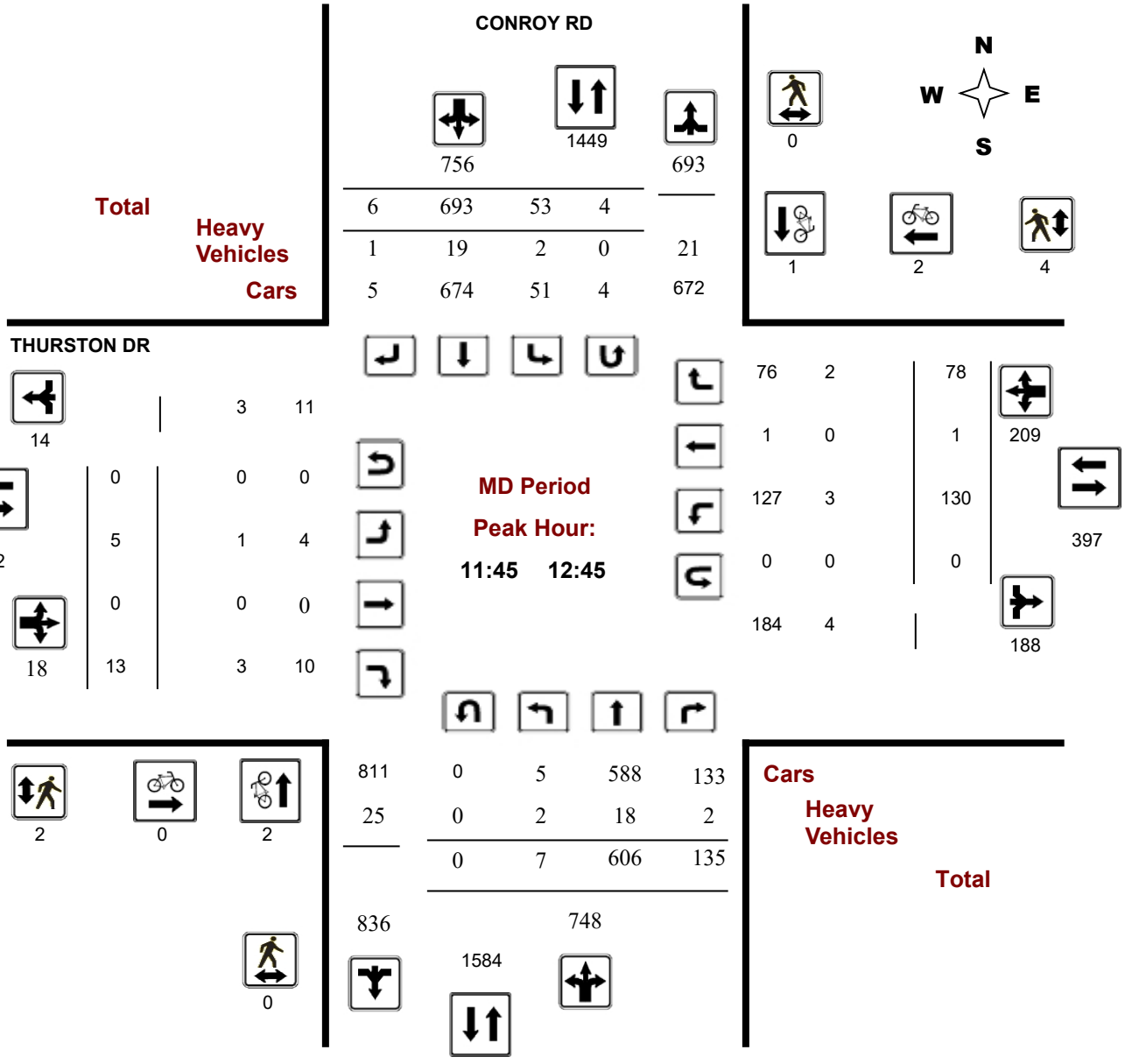
Turning Movement Count - Study Results

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019 **WO No:** 38547

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

MD Period Peak Hour Diagram



Transportation Services - Traffic Services

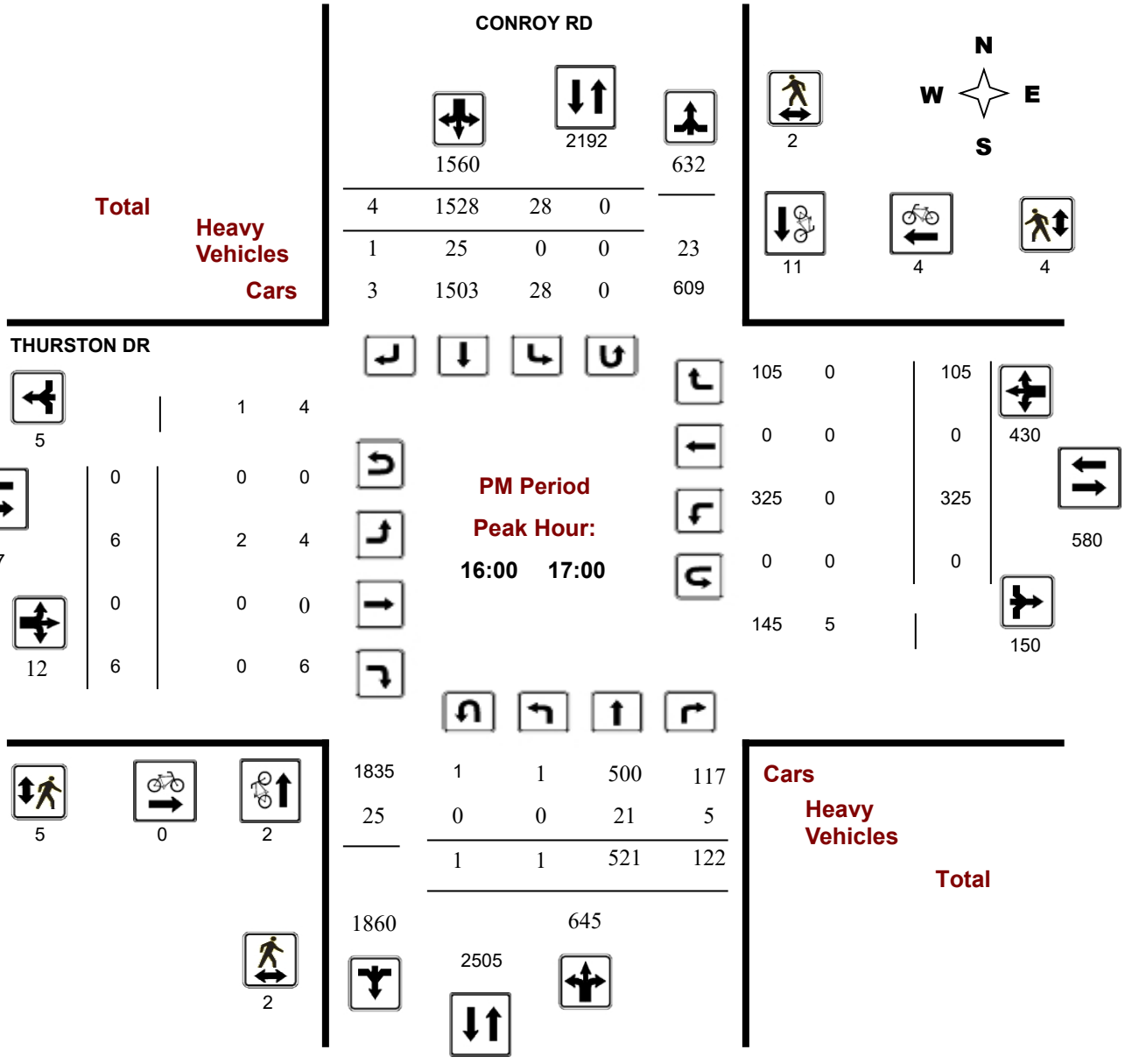
Turning Movement Count - Study Results

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019 **WO No:** 38547

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

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019 **WO No:** 38547

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, April 16, 2019

Total Observed U-Turns

Northbound: 13 Southbound: 14

Eastbound: 2 Westbound: 1

AADT Factor

.90

	CONROY RD								THURSTON DR									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	7	1366	341	**1714**	71	339	4	**414**	**2128**	3	2	8	**13**	30	0	23	**53**	**66**	**2194**
08:00 09:00	5	1504	475	**1984**	79	457	5	**541**	**2525**	10	1	6	**17**	60	0	34	**94**	**111**	**2636**
09:00 10:00	2	813	220	**1035**	64	460	5	**529**	**1564**	3	0	2	**5**	75	0	30	**105**	**110**	**1674**
11:30 12:30	10	575	125	**710**	45	691	8	**744**	**1454**	6	0	11	**17**	130	2	72	**204**	**221**	**1675**
12:30 13:30	3	631	144	**778**	68	571	2	**641**	**1419**	3	0	8	**11**	116	0	57	**173**	**184**	**1603**
15:00 16:00	1	630	120	**751**	32	1205	7	**1244**	**1995**	6	3	1	**10**	208	0	49	**257**	**267**	**2262**
16:00 17:00	1	521	122	**644**	28	1528	4	**1560**	**2204**	6	0	6	**12**	325	0	105	**430**	**442**	**2646**
17:00 18:00	5	572	106	**683**	12	1221	0	**1233**	**1916**	3	0	0	**3**	258	0	69	**327**	**330**	**2246**
Sub Total	34	6612	1653	**8299**	399	6472	35	**6906**	**15205**	40	6	42	**88**	1202	2	439	**1643**	**1731**	**16936**
U Turns				**13**				**14**	**27**				**2**				**1**	**3**	**30**
Total	34	6612	1653	**8312**	399	6472	35	**6920**	**15232**	40	6	42	**90**	1202	2	439	**1644**	**1734**	**16966**
EQ 12Hr	47	9191	2298	**11554**	555	8996	49	**9619**	**21172**	56	8	58	**125**	1671	3	610	**2285**	**2410**	**23583**

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

AVG 12Hr	42	8272	2068	**10399**	500	10606	57	**8657**	**19055**	50	7	52	**112**	1504	3	549	**2056**	**2169**	**21225**

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **.90**

AVG 24Hr	55	10836	2709	**13623**	655	13894	75	**11341**	**24962**	66	9	68	**147**	1970	4	719	**2693**	**2841**	**27805**

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

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019 **WO No:** 38547

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

Full Study 15 Minute Increments

		CONROY RD									THURSTON DR									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	3	249	47	299	13	64	1	78	377	3	0	1	4	11	0	6	17	21	398
07:15	07:30	3	309	99	411	19	92	3	114	525	0	1	0	1	8	0	4	12	13	538
07:30	07:45	1	414	96	511	15	96	0	111	622	0	1	3	4	4	0	6	10	14	636
17:45	18:00	1	143	25	169	4	240	0	245	414	1	0	0	1	65	0	15	80	81	495
07:45	08:00	0	394	99	493	24	87	0	111	604	0	0	4	4	7	0	7	14	18	622
08:00	08:15	1	394	100	495	17	113	2	132	627	3	0	2	7	17	0	5	22	29	656
08:15	08:30	1	375	137	513	14	119	0	133	646	1	0	1	2	11	0	8	19	21	667
08:30	08:45	2	374	110	487	19	114	3	136	623	5	1	2	8	19	0	6	25	33	656
08:45	09:00	1	361	128	490	29	111	0	141	631	1	0	1	2	13	0	15	28	30	661
09:00	09:15	0	288	72	361	28	135	3	166	527	1	0	2	3	16	0	14	30	33	560
09:15	09:30	0	198	63	263	12	119	0	132	395	0	0	0	0	18	0	5	23	23	418
09:30	09:45	0	161	49	210	14	110	2	126	336	0	0	0	0	24	0	5	29	29	365
09:45	10:00	2	166	36	204	10	96	0	108	312	2	0	0	2	17	0	6	23	25	337
11:30	11:45	4	137	33	174	9	152	3	164	338	3	0	2	5	31	1	10	42	47	385
11:45	12:00	1	157	26	184	15	171	1	189	373	0	0	1	1	32	1	20	53	54	427
12:00	12:15	2	122	24	148	13	216	3	233	381	2	0	4	6	42	0	26	68	74	455
12:15	12:30	3	159	42	204	8	152	1	161	365	1	0	4	5	25	0	16	41	46	411
12:30	12:45	1	168	43	212	17	154	1	173	385	2	0	4	6	31	0	16	47	53	438
12:45	13:00	1	161	36	200	21	142	0	163	363	1	0	2	3	29	0	18	48	51	414
13:00	13:15	0	138	34	173	14	137	0	152	325	0	0	2	2	37	0	12	49	51	376
13:15	13:30	1	164	31	196	16	138	1	155	351	0	0	0	0	19	0	11	30	30	381
15:00	15:15	0	172	21	194	12	259	0	272	466	0	0	0	0	59	0	13	72	72	538
15:15	15:30	0	156	34	190	9	252	1	263	453	6	3	1	10	56	0	6	62	72	525
15:30	15:45	0	163	31	195	4	358	0	363	558	0	0	0	0	45	0	16	61	61	619
15:45	16:00	1	139	34	176	7	336	6	349	525	0	0	0	0	48	0	14	62	62	587
16:00	16:15	1	124	29	154	12	411	1	424	578	3	0	5	8	115	0	38	153	161	739
16:15	16:30	0	131	35	167	4	328	0	332	499	0	0	0	0	74	0	26	100	100	599
16:30	16:45	0	144	22	166	9	426	1	436	602	0	0	0	0	75	0	21	96	96	698
16:45	17:00	0	122	36	158	3	363	2	368	526	3	0	1	4	61	0	20	81	85	611
17:00	17:15	1	129	32	162	2	334	0	337	499	0	0	0	0	78	0	19	97	97	596
17:15	17:30	2	149	18	169	3	343	0	346	515	2	0	0	2	63	0	19	82	84	599
17:30	17:45	1	151	31	184	3	304	0	307	491	0	0	0	0	52	0	16	68	68	559
Total:		34	6612	1653	8312	399	6472	35	6920	15232	40	6	42	90	1202	2	439	1644	1734	16,966

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019 **WO No:** 38547

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

Full Study Cyclist Volume

Time Period		CONROY RD			THURSTON DR			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	0	0	0	0
07:15	07:30	2	0	2	0	0	0	2
07:30	07:45	4	1	5	0	1	1	6
17:45	18:00	0	1	1	0	1	1	2
07:45	08:00	4	1	5	0	0	0	5
08:00	08:15	2	2	4	0	0	0	4
08:15	08:30	5	1	6	0	0	0	6
08:30	08:45	0	0	0	0	0	0	0
08:45	09:00	2	1	3	0	0	0	3
09:00	09:15	3	0	3	0	0	0	3
09:15	09:30	0	1	1	0	0	0	1
09:30	09:45	0	0	0	0	0	0	0
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	1	1	0	1	1	2
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	2	1	3	0	2	2	5
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	0	1	1	0	0	0	1
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	1	0	1	0	0	0	1
15:00	15:15	1	0	1	0	1	1	2
15:15	15:30	1	2	3	0	0	0	3
15:30	15:45	1	2	3	0	0	0	3
15:45	16:00	2	1	3	0	0	0	3
16:00	16:15	1	2	3	0	2	2	5
16:15	16:30	0	2	2	0	0	0	2
16:30	16:45	0	3	3	0	2	2	5
16:45	17:00	1	4	5	0	0	0	5
17:00	17:15	2	5	7	0	0	0	7
17:15	17:30	0	3	3	0	0	0	3
17:30	17:45	1	2	3	0	1	1	4
Total		35	37	**72**	0	11	11	83

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019 **WO No:** 38547

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

Full Study Pedestrian Volume

	CONROY RD			THURSTON DR			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	0	0	**0**	5	0	**5**	**5**
07:15 07:30	0	0	**0**	1	3	**4**	**4**
07:30 07:45	0	2	**2**	2	1	**3**	**5**
17:45 18:00	0	0	**0**	1	2	**3**	**3**
07:45 08:00	2	1	**3**	3	1	**4**	**7**
08:00 08:15	2	0	**2**	1	3	**4**	**6**
08:15 08:30	1	0	**1**	2	3	**5**	**6**
08:30 08:45	0	0	**0**	1	1	**2**	**2**
08:45 09:00	4	2	**6**	3	6	**9**	**15**
09:00 09:15	0	0	**0**	2	3	**5**	**5**
09:15 09:30	0	0	**0**	1	4	**5**	**5**
09:30 09:45	0	0	**0**	1	0	**1**	**1**
09:45 10:00	0	1	**1**	0	1	**1**	**2**
11:30 11:45	0	0	**0**	0	3	**3**	**3**
11:45 12:00	0	0	**0**	1	0	**1**	**1**
12:00 12:15	0	0	**0**	0	3	**3**	**3**
12:15 12:30	0	0	**0**	1	1	**2**	**2**
12:30 12:45	0	0	**0**	0	0	**0**	**0**
12:45 13:00	1	0	**1**	1	0	**1**	**2**
13:00 13:15	0	0	**0**	0	0	**0**	**0**
13:15 13:30	1	0	**1**	1	1	**2**	**3**
15:00 15:15	0	1	**1**	2	0	**2**	**3**
15:15 15:30	0	1	**1**	0	4	**4**	**5**
15:30 15:45	0	0	**0**	1	0	**1**	**1**
15:45 16:00	0	1	**1**	2	1	**3**	**4**
16:00 16:15	1	0	**1**	0	1	**1**	**2**
16:15 16:30	0	0	**0**	2	0	**2**	**2**
16:30 16:45	0	0	**0**	2	0	**2**	**2**
16:45 17:00	1	2	**3**	1	3	**4**	**7**
17:00 17:15	0	0	**0**	3	3	**6**	**6**
17:15 17:30	0	1	**1**	1	1	**2**	**3**
17:30 17:45	0	1	**1**	1	1	**2**	**3**
Total	13	13	**26**	42	50	**92**	**118**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019 **WO No:** 38547

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

Full Study Heavy Vehicles

		CONROY RD									THURSTON DR									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	8	0	**8**	0	5	0	**5**	**13**	1	0	0	**1**	0	0	0	**0**	**1**	**14**
07:15	07:30	0	5	0	**5**	0	12	0	**12**	**17**	0	1	0	**1**	0	0	0	**0**	**1**	**18**
07:30	07:45	0	9	2	**11**	0	6	0	**6**	**17**	0	0	0	**0**	0	0	1	**1**	**1**	**18**
17:45	18:00	1	2	0	**3**	0	0	0	**0**	**3**	1	0	0	**1**	0	0	0	**0**	**1**	**4**
07:45	08:00	0	7	0	**7**	0	6	0	**6**	**13**	0	0	0	**0**	1	0	0	**1**	**1**	**14**
08:00	08:15	1	6	0	**7**	0	2	2	**4**	**11**	3	0	1	**4**	0	0	0	**0**	**4**	**15**
08:15	08:30	0	16	0	**16**	0	6	0	**6**	**22**	0	0	0	**0**	0	0	0	**0**	**0**	**22**
08:30	08:45	0	16	1	**17**	0	7	2	**9**	**26**	2	0	0	**2**	2	0	0	**2**	**4**	**30**
08:45	09:00	0	16	0	**16**	0	8	0	**8**	**24**	0	0	0	**0**	0	0	0	**0**	**0**	**24**
09:00	09:15	0	10	1	**11**	0	9	1	**10**	**21**	0	0	1	**1**	1	0	1	**2**	**3**	**24**
09:15	09:30	0	8	0	**8**	1	9	0	**10**	**18**	0	0	0	**0**	1	0	1	**2**	**2**	**20**
09:30	09:45	0	3	0	**3**	2	5	1	**8**	**11**	0	0	0	**0**	1	0	2	**3**	**3**	**14**
09:45	10:00	2	1	1	**4**	0	5	0	**5**	**9**	0	0	0	**0**	0	0	1	**1**	**1**	**10**
11:30	11:45	0	4	0	**4**	0	4	2	**6**	**10**	0	0	1	**1**	0	0	0	**0**	**1**	**11**
11:45	12:00	0	5	0	**5**	0	6	0	**6**	**11**	0	0	1	**1**	0	0	0	**0**	**1**	**12**
12:00	12:15	0	2	1	**3**	1	8	0	**9**	**12**	1	0	1	**2**	0	0	1	**1**	**3**	**15**
12:15	12:30	1	5	0	**6**	1	1	1	**3**	**9**	0	0	1	**1**	1	0	1	**2**	**3**	**12**
12:30	12:45	1	6	1	**8**	0	4	0	**4**	**12**	0	0	0	**0**	2	0	0	**2**	**2**	**14**
12:45	13:00	0	5	0	**5**	1	6	0	**7**	**12**	1	0	0	**1**	0	0	1	**1**	**2**	**14**
13:00	13:15	0	6	0	**6**	1	5	0	**6**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
13:15	13:30	0	4	0	**4**	0	4	0	**4**	**8**	0	0	0	**0**	1	0	0	**1**	**1**	**9**
15:00	15:15	0	11	0	**12**	1	5	0	**6**	**18**	0	0	0	**0**	0	0	0	**0**	**0**	**18**
15:15	15:30	0	7	0	**7**	1	7	0	**8**	**15**	0	0	0	**0**	0	0	0	**0**	**0**	**15**
15:30	15:45	0	6	0	**6**	0	15	0	**15**	**21**	0	0	0	**0**	0	0	0	**0**	**0**	**21**
15:45	16:00	0	8	0	**8**	0	9	2	**11**	**19**	0	0	0	**0**	0	0	1	**1**	**1**	**20**
16:00	16:15	0	5	2	**7**	0	10	0	**10**	**17**	0	0	0	**0**	0	0	0	**0**	**0**	**17**
16:15	16:30	0	6	0	**6**	0	2	0	**2**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
16:30	16:45	0	8	2	**10**	0	7	0	**7**	**17**	0	0	0	**0**	0	0	0	**0**	**0**	**17**
16:45	17:00	0	2	1	**3**	0	6	1	**7**	**10**	2	0	0	**2**	0	0	0	**0**	**2**	**12**
17:00	17:15	1	1	0	**2**	1	4	0	**5**	**7**	0	0	0	**0**	0	0	0	**0**	**0**	**7**
17:15	17:30	1	2	0	**3**	0	2	0	**2**	**5**	2	0	0	**2**	1	0	0	**1**	**3**	**8**
17:30	17:45	0	2	0	**2**	0	4	0	**4**	**6**	0	0	0	**0**	0	0	0	**0**	**0**	**6**
Total:	None	8	202	12	**223**	10	189	12	**211**	**434**	13	1	6	**20**	11	0	10	**21**	**41**	**475**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CONROY RD @ THURSTON DR

Survey Date: Tuesday, April 16, 2019 **WO No:** 38547

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

Full Study 15 Minute U-Turn Total

		CONROY RD		THURSTON DR		
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
17:45	18:00	0	1	0	0	1
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	2	0	2
08:15	08:30	0	0	0	0	0
08:30	08:45	1	0	0	0	1
08:45	09:00	0	1	0	0	1
09:00	09:15	1	0	0	0	1
09:15	09:30	2	1	0	0	3
09:30	09:45	0	0	0	0	0
09:45	10:00	0	2	0	0	2
11:30	11:45	0	0	0	0	0
11:45	12:00	0	2	0	0	2
12:00	12:15	0	1	0	0	1
12:15	12:30	0	0	0	0	0
12:30	12:45	0	1	0	0	1
12:45	13:00	2	0	0	1	3
13:00	13:15	1	1	0	0	2
13:15	13:30	0	0	0	0	0
15:00	15:15	1	1	0	0	2
15:15	15:30	0	1	0	0	1
15:30	15:45	1	1	0	0	2
15:45	16:00	2	0	0	0	2
16:00	16:15	0	0	0	0	0
16:15	16:30	1	0	0	0	1
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	1	0	0	1
17:15	17:30	0	0	0	0	0
17:30	17:45	1	0	0	0	1
Total		13	14	2	1	30

	Northbound								Southbound								Totals	
	Passenger Vehicles	Heavy Vehicles	Total (North)	Cyclists		Pedestrians		Total (North)	Passenger Vehicles	Heavy Vehicles	Total (South)	Cyclists		Pedestrians		Total (South)	Total Traffic	Total AT
				West Side	East Side	West Side	East Side					West Side	East Side	West Side	East Side			
6:00-6:15	105	3	108	1	1	0	2	4	51	3	54	0	1	0	1	2	162	6
6:16-6:30	109	2	111	1	2	0	0	3	39	6	45	0	2	0	0	2	156	5
6:31-6:45	154	10	164	2	1	0	1	4	38	5	43	1	0	1	0	2	207	6
6:46-7:00	193	11	204	3	1	1	1	6	52	11	63	2	0	0	0	2	267	8
7:01-7:15	181	11	192	2	3	0	0	5	72	10	82	3	0	0	0	3	274	8
7:16-7:30	234	15	249	0	1	0	0	1	80	11	91	0	0	0	0	0	340	1
7:31-7:45	338	12	350	5	2	0	1	8	95	14	109	1	0	0	0	1	459	9
7:46-8:00	364	12	376	3	3	0	0	6	123	12	135	2	0	1	0	3	511	9
peak hr	1117	50	1167	10	9	1	4	20	370	47	417	6	3	1	1	9	1584	27
				10	9	0	1					6	0	1	0			

6:00:00 AM - 7:00 **587** **205**

West Side		East Side	
Cyclists	Pedestrians	Cyclists	Pedestrians
16	1	9	1

Appendix D:

Historic Collision Data

Total Area 1

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	7	6	1	6	0	5	0	0	25	74%
Non-fatal injury	2	3	1	3	0	0	0	0	9	26%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**9**	**9**	**2**	**9**	**0**	**5**	**0**	**0**	**34**	100%
	#1 or 26%	#1 or 26%	#5 or 6%	#1 or 26%	#6 or 0%	#4 or 15%	#6 or 0%	#6 or 0%		

INTERSECTION COLLISIONS

CONROY RD/THURSTON DR

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	11	28,200	1825	**0.21**

Peds	Cyclists
0	**0**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	2	3	0	1	0	1	0	0	7	64%
Non-fatal injury	1	2	0	1	0	0	0	0	4	36%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**3**	**5**	**0**	**2**	**0**	**1**	**0**	**0**	**11**	100%
	27%	45%	0%	18%	0%	9%	0%	0%		

CONROY RD/JOHNSTON RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	20	28,200	1825	**0.39**

Peds	Cyclists
0	**2**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	3	3	1	5	0	4	0	0	16	80%
Non-fatal injury	0	1	1	2	0	0	0	0	4	20%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**3**	**4**	**2**	**7**	**0**	**4**	**0**	**0**	**20**	100%
	15%	20%	10%	35%	0%	20%	0%	0%		

MIDBLOCK COLLISIONS

CONROY RD, JOHNSTON RD to LORRY GREENBERG DR

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	1	28,200	1825	**0.02**

Peds	Cyclists
0	**0**

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

CONROY RD, THURSTON DR to JOHNSTON RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	2	28,200	1825	**0.04**

Peds	Cyclists
0	**0**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	1	0	0	0	0	0	0	0	1	50%
Non-fatal injury	1	0	0	0	0	0	0	0	1	50%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	100%
	100%	0%	0%	0%	0%	0%	0%	0%		

Appendix E:

TRANS Forecasted Growth Conroy

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Walkley/Conroy area

2011 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: June, 2022
EMME Scenario: 21713

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

200 400 600 800 1000

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Walkley/Conroy Area

2031 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: June, 2022
EMME Scenario: 21715

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

200 400 600 800 1000

Appendix F:

Truck Turning Templates

Page Setup: ----

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Last Saved: Friday, June 13, 2025 5:01:25 PM

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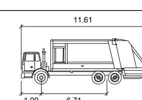
NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

N

Legend



Rear-Load Garbage Truck

	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 27.4

Not to Scale

Drawing Description: Site Access Collection Vehicle - Inbound

Client:

Date: June 13, 2025

Figure Number: 001

Project Number: 479371

Project Description: 3145 Conroy Road

Page Setup: ----

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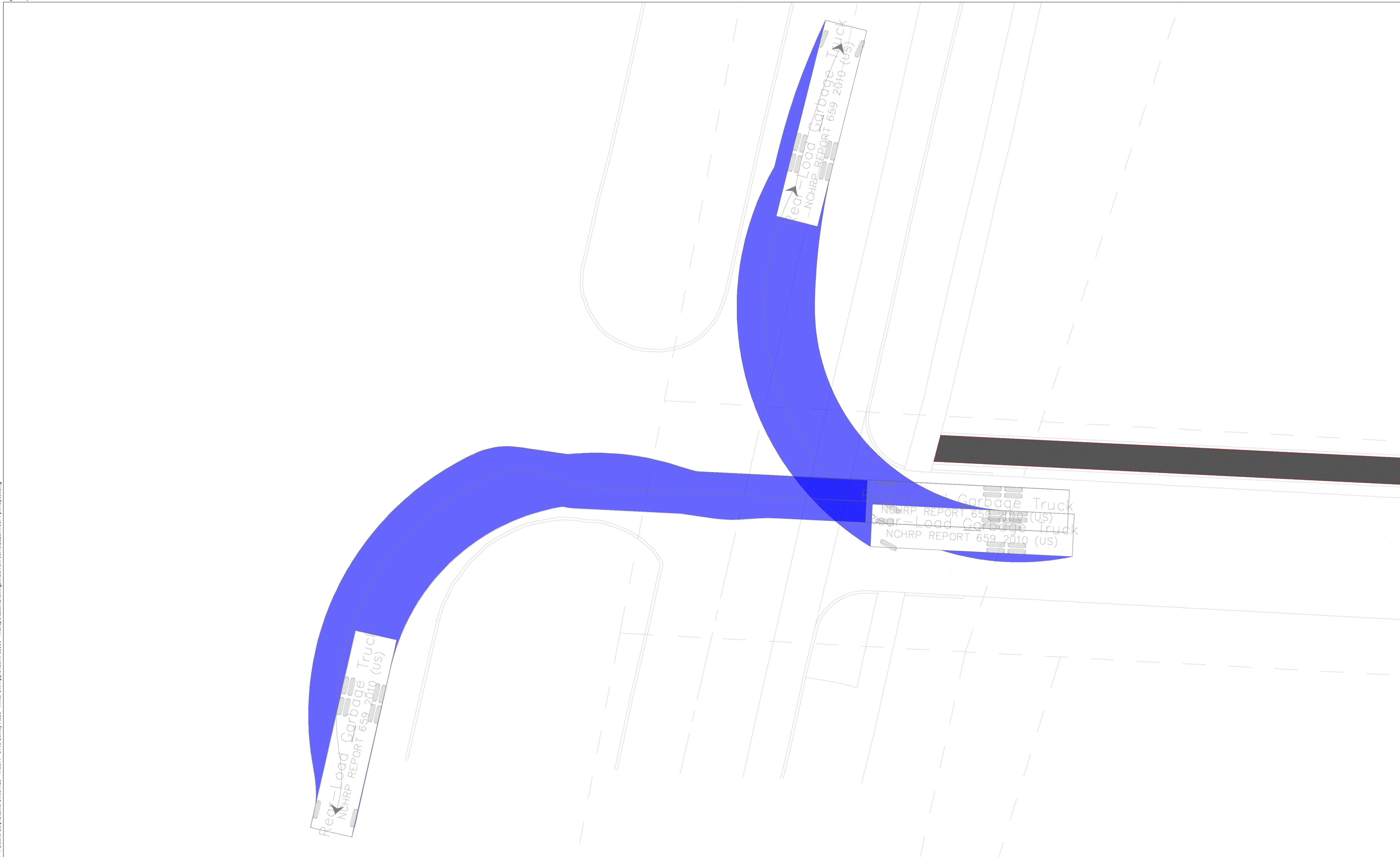

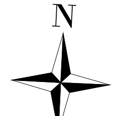

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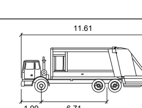


Rear-Load Garbage Truck

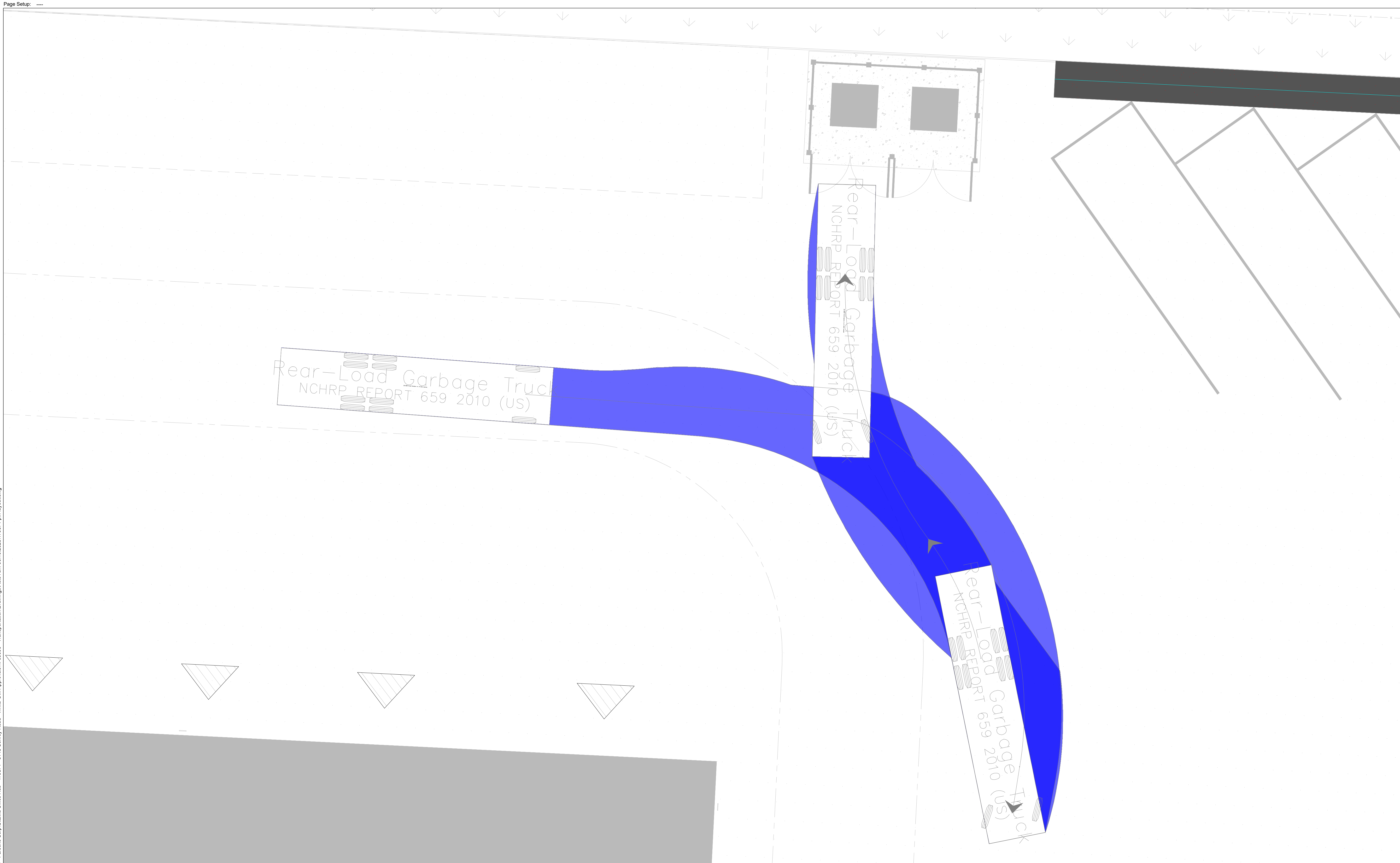
	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 27.4

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

Not to Scale

Drawing Description	Site Access Collection Vehicle - Outbound		
Client		Date: June 13, 2025	Figure Number: 002
Project Number: 479371		Project Description: 3145 Conroy Road	

Page Setup: ----



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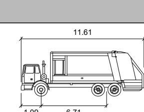

Rear-Load Garbage Truck

	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 27.4

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

Not to Scale

Drawing Description: Garbage Enclosure Collection Vehicle		
Client	Date: June 13, 2025	Figure Number: 003
Project Number: 479371	Project Description: 3145 Conroy Road	

Plot Date: Thursday, June 19, 2025 11:07:55 AM

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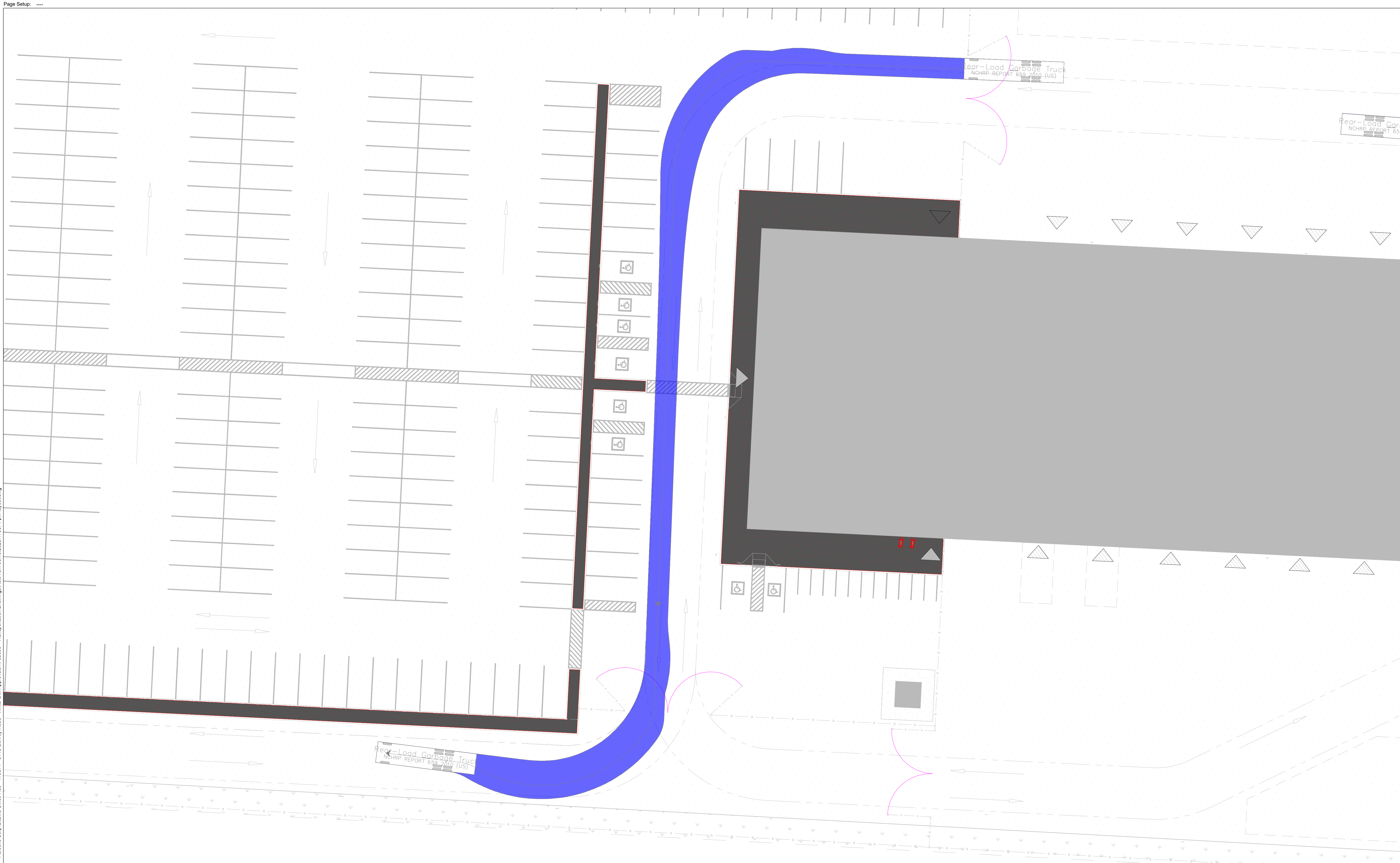

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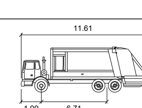
NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

N

Legend



Rear-Load Garbage Truck

	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 27.4

Not to Scale

Drawing Description	Collection Vehicle Internal 1		
Client		Date: June 13, 2025	Figure Number: 004
Project Number: 479371		Project Description: 3145 Conroy Road	

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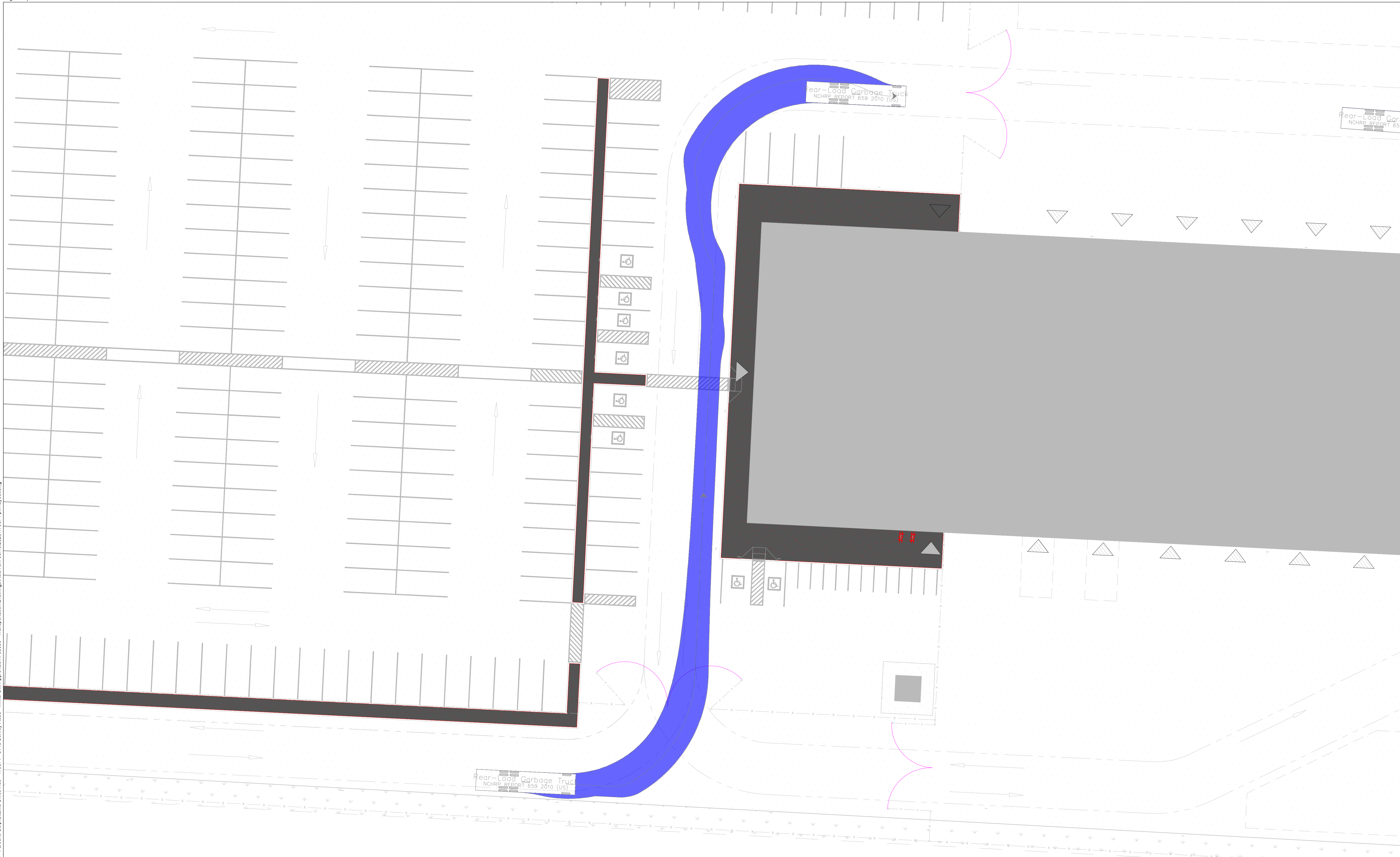
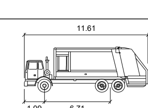


Plot Date: Thursday, June 19, 2025 11:08:38 AM

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

N

Legend



Rear-Load Garbage Truck

	meters
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 27.4

Not to Scale

Drawing Description: Collection Vehicle Internal 2

Client:

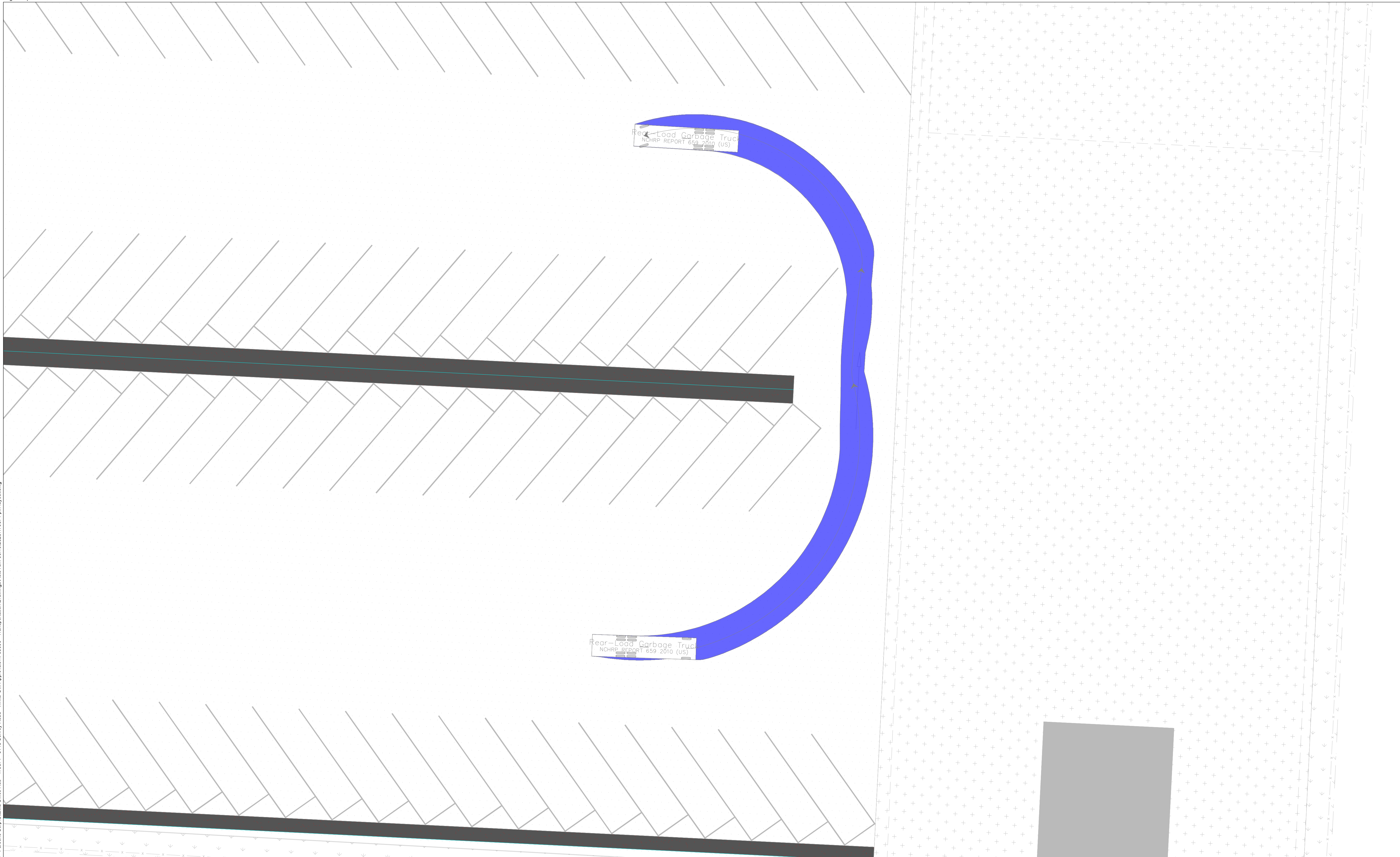
Date: June 13, 2025

Figure Number: 005

Project Number: 479371

Project Description: 3145 Conroy Road

Page Setup: ----



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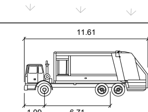


Rear-Load Garbage Truck

		meters
Width	:	2.44
Track	:	2.44
Lock to Lock Time	:	6.0
Steering Angle	:	27.4

Not to Scale

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

Drawing Description	Collection Vehicle Internal 3		
Client		Date: June 13, 2025	Figure Number: 006
Project Number: 479371		Project Description: 3145 Conroy Road	

Appendix G:

MMLOS Analysis Sheets

Multi-Modal Level of Service - Intersections Form

Project: 3145 Conroy Road
Consultant: Parsons
Date: Jun 20, 2025
Scenario:

	Intersection Name	CONROY RD./THURSTON DR.				CONROY RD./JOHNSTON RD.			
	OP Transect / Policy Area	**Outer Urban or Suburban**				**Outer Urban or Suburban**			
Pedestrian	**PLOS Inputs**								
	Pedestrians Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Number of Travel Lanes Crossed	5	6	4	1-3	5	5	4	4
	Median Refuge (≥2.7m)	No	No	No	No	No	No	No	No
	Crosswalk Treatment	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings
	Signal Cycle Length (sec)	100.0				100.0			
	Effective Walk Time (sec)	37.9	37.9	31.0	31.0	41.0	41.0	37.3	37.3
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	**WBR**	**EBR**	**NBR**	**SBR**	**WBR**	**EBR**	**NBR**	**SBR**
	Right-Turn Geometry	Right-Turn With No Channel	Right-Turn With No Channel	Conventional Right-Turn Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel
	Right-Turn Signal Phasing	Permissive	Permissive	-	Permissive	Permissive	Permissive	Permissive	Permissive
	Right-Turn Volume	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	> 150 to 300 veh/h
	Right-Turn Effective Corner Radius	> 8m	> 8m	-	> 8m	> 8m	> 8m	> 8m	> 8m
	Cross-street Posted Speed (km/h)	60 km/h		50 km/h		60 km/h		50 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	**EBL**	**WBL**	**SBL**	**NBL**	**EBL**	**WBL**	**SBL**	**NBL**
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm
	Left-Turn Volume	≤ 50 veh/h	> 100 veh/h	≤ 50 veh/h	≤ 50 veh/h	> 100 veh/h	≤ 50 veh/h	> 100 veh/h	> 50 to 100 veh/h
	Left-Turn Opposing Lanes	-	-	-	-	-	-	-	≥ 2
	Score	**3.25**	**2.45**	**3.40**	**4.45**	**3.05**	**3.25**	**3.80**	**3.35**
	PLOS	**C**	**D**	**C**	**B**	**C**	**C**	**B**	**C**
		C				**C**			
	Target PLOS	**C**				**C**			
Bicycle	**BLOS Inputs**								
	Cycling Route Classification	**Cross-Town Bikeway**				**Cross-Town Bikeway**			
	Cyclists Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Type of Cycling Facility Across Leg	Mixed Traffic	Mixed Traffic	Bike Lane Through Intersection	Bike Lane Through Intersection	Bike Lane Through Intersection	Bike Lane Through Intersection	Bike Lane Through Intersection	Bike Lane Through Intersection
	Two-Way ADT (in Cyclist Travel Direction)	2,841		24,962		5,346		21,210	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	Yes	No	Yes	Yes	No	No
	Crossride Operation	-	-	-	-	-	-	-	-
	Target Crossride Setback Met?	-	-	-	-	-	-	-	-
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-	-	-	-	-
	Cyclist Left-Turn Operation	**WBL**	**EBL**	**NBL**	**SBL**	**WBL**	**EBL**	**NBL**	**SBL**
	Cyclist Left-Turn Treatment Type	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane
	Vehicle Lanes Crossed by Cyclists	One Lane Crossed	No Lane Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	One Lane Crossed	One Lane Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed
	Score	**40**	**10**	**25**	**65**	**-5**	**35**	**25**	**-5**
	BLOS	**D**	**F**	**E**	**C**	**F**	**D**	**E**	**F**
		D				**F**			
	Target BLOS	**B**				**B**			
Transit	**TLOS Inputs**								
	Transit Facility	**Mixed Traffic**				**Mixed Traffic**			
	Vehicles Travelling	**Southbound**	**Northbound**	**Westbound**	**Eastbound**	**Southbound**	**Northbound**	**Westbound**	**Eastbound**
	Average Transit Delay (if available)	≤ 10 sec	11-20 sec			≤ 10 sec	11-20 sec		
	Example Transit Priority Treatment	-	-			-	-		
	TLOS	**A**	**B**	**-**	**-**	**A**	**B**	**-**	**-**
		A				**A**			
	Target TLOS	**E (D for frequent transit routes)**				**E (D for frequent transit routes)**			
Auto	**AutoLOS Inputs**								
	Overall Intersection Volume to Capacity Ratio	0 to 0.60				0 to 0.60			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table				See Separate Traffic Operations Table			
	AutoLOS	**A**				**A**			
	Target AutoLOS	**E**				**E**			

Multi-Modal Level of Service - Segments Form

Project: 3145 Conroy Road
Consultant: Parsons
Date: May 22, 2025
Scenario:

	Segment Name	**CONROY RD. (THURSTON DR. TO JOHNSTON RD.)**			
	OP Transect / Policy Area	**Outer Urban or Suburban**			
	Segment Component	**Majority (>50%)**		**Critical**	
	Side of Street	**W**	**E**	**W**	**E**
Pedestrian	**PLOS Inputs**				
	Posted Speed (km/h)	60 km/h		60 km/h	
	Two-Way ADT	21,210		21,210	
	Pedestrian Facility	Multi-Use Pathway	Sidewalk	Multi-Use Pathway	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
	Facility Width (m)	3.00m	1.50m	3.00m	1.50m
	Offset from Motor Vehicle Travel Lanes (m)	≥ 3.0m	-	1.5-2.99m	-
	Presence of Adjacent Parking?	No	-	-	-
	General Purpose Curb Lane ADT	-	-	> 3000	-
	Max. Distance between Controlled Crossings (m)	-	> 400m	> 400m	> 400m
	Score	**3.75**	**0.75**	**3.00**	**0.75**
	PLOS	**B**	**E**	**C**	**E**
	Target PLOS	**C**			
Bicycle	**BLOS Inputs**				
	Cycling Route Classification	**Cross-Town Bikeway**			
	Cycling Facility	Multi-Use Pathway	Painted or Physically Separated Bike Lanes	Multi-Use Pathway	Painted or Physically Separated Bike Lanes
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-
	Facility Operation	-	Unidirectional	-	Unidirectional
	Pedestrian/Cyclist Volume	Low to Moderate Volume MUP (≤ 100 users per hour)	-	Low to Moderate Volume MUP (≤ 100 users per hour)	-
	Facility Width	3.0-3.49m	2.0-2.5m	3.0-3.49m	2.0-2.5m
	Boulevard/Buffer Width (excluding curb)	≥ 1.5m or any boulevard width with continuous traffic barrier	< 1.0m and no vertical measure or < 0.6m with adjacent parking	≥ 1.5m or any boulevard width with continuous traffic barrier	< 1.0m and no vertical measure or < 0.6m with adjacent parking
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	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
	Score	**4.00**	**2.88**	**4.00**	**2.88**
	BLOS	**B**	**C**	**B**	**C**
	Target BLOS	**B**			
Transit	**TLOS Inputs**				
	Transit Facility	**Mixed Traffic**			
	Facility Type	Mixed Traffic	Mixed Traffic		
	Expected Transit Running Time	Unimpeded	Slightly Impeded		
	Transit Travel Speed (if available)	Enter Speed (if available)	Enter Speed (if available)		
	TLOS	**B**	**C**		
	Target TLOS	**E (D for frequent transit routes)**			
Public Realm	**PRLOS Inputs**				
	Context	Other Streets	Other Streets		
	Inner Boulevard Width	≤ 0.6m	≤ 0.6m		
	Middle Boulevard Width	≥ 3.0m	≥ 3.0m		
	Outer Boulevard (Frontage) Width	≥ 3.0m	≥ 3.0m		
	Transit Route on Segment?	Yes	Yes		
	Bus Stop Elements	Curbside landing zone with no shelter	Curbside landing zone with no shelter		
	Number of Midblock Traffic Lanes (both travel directions)	5			
	Score	**18.60**	**14.10**		
	PRLOS	**C**	**D**		
		C			

Appendix H:

TDM Checklists

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

Legend

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

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

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

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☑
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	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐ Fewer than 50 bicycle parking spaces on-site are required.
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☑ Shared with drivers of collection vehicles.
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☑ Tools and pumps used in vehicle maintenance shop available for use by cyclists.

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	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)	☐
	7.	**OTHER**	
	7.1	**On-site amenities to minimize off-site trips**	
BETTER	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐

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

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

* — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

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

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

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

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

Appendix I:

Traffic Signal Warrant Sheets

Conroy/Site Access - Existing (8 hr signal warrant) Wednesday Schedule

Signal Warrant			Description	Hour Ending 1	AM Peak	3	4	5	6	7	PM Peak			Sectional Total % Fulfilled/8	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	1752	1752	1752	1752	1996	1996	1996	1996	Total Across	Min Requirement for Two-Lane Roadways	100%	37%	**69% No**
			100% Fullfilled	X	X	X	X	X	X	X	X	800	900			
			80% Fullfilled									0	720			
			Actual % if below 80% value									0				
											Total % Fulfilled	800				
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	93	93	93	93	93	93	93	93	Total Across	Min Requirement for Two-Lane Roadways	37%		
			100% Fullfilled									0	255			
			80% Fullfilled									0	200			
			Actual % if below 80% value	36%	36%	36%	36%	36%	36%	36%	36%	292				
											Total % Fulfilled	292				
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	1659	1659	1659	1659	1903	1903	1903	1903	Total Across	Min Requirement for Two-Lane Roadways	100%	69%	
			100% Fullfilled	X	X	X	X	X	X	X	X	800	900			
			80% Fullfilled									0	720			
			Actual % if below 80% value									0				
											Total % Fulfilled	800				
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	88	88	88	88	28	28	28	28	Total Across	Min Requirement for Two-Lane Roadways	69%		
			100% Fullfilled	X	X	X	X					400	75			
			80% Fullfilled									0	60			
			Actual % if below 80% value					37%	37%	37%	37%	149				
											Total % Fulfilled	549				

Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* **Yes**

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* **Yes**

5 *Restricted Flow - Operating Speed Less Than 70 km/h* **Yes**

Conroy/Site Access - Future (8 hr signal warrant) Rest of the Week Schedule

Signal Warrant			Description	Hour Ending 1	AM Peak	3	4	5	6	7	PM Peak			Sectional Total % Fulfilled/8	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	1752	1752	1752	1752	1996	1996	1996	1996	Total Across	Min Requirement for Two-Lane Roadways	100%	37%	**37% No**
			100% Fullfilled	X	X	X	X	X	X	X	X	800	900			
			80% Fullfilled									0	720			
			Actual % if below 80% value									0				
											Total % Fulfilled	800				
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	93	93	93	93	93	93	93	93	Total Across	Min Requirement for Two-Lane Roadways	37%		
			100% Fullfilled									0	255			
			80% Fullfilled									0	200			
			Actual % if below 80% value	36%	36%	36%	36%	36%	36%	36%	36%	292				
											Total % Fulfilled	292				
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	1659	1659	1659	1659	1903	1903	1903	1903	Total Across	Min Requirement for Two-Lane Roadways	100%	20%	
			100% Fullfilled	X	X	X	X	X	X	X	X	800	900			
			80% Fullfilled									0	720			
			Actual % if below 80% value									0				
											Total % Fulfilled	800				
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	2	2	2	2	28	28	28	28	Total Across	Min Requirement for Two-Lane Roadways	20%		
			100% Fullfilled									0	75			
			80% Fullfilled									0	60			
			Actual % if below 80% value	3%	3%	3%	3%	37%	37%	37%	37%	160				
											Total % Fulfilled	160				

Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* **Yes**

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* **Yes**

5 *Restricted Flow - Operating Speed Less Than 70 km/h* **Yes**

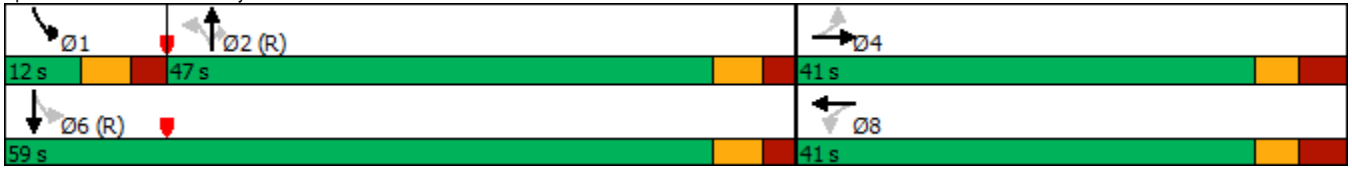
Appendix J:

Synchro and SimTraffic Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	2	8	30	0	23	5	896	224	71	339	4
Future Volume (vph)	3	2	8	30	0	23	5	896	224	71	339	4
Satd. Flow (prot)	1300	1441	0	1679	1467	0	1729	3390	1532	1729	3168	0
Flt Permitted	0.740			0.750			0.526			0.196		
Satd. Flow (perm)	1011	1441	0	1316	1467	0	949	3390	1457	356	3168	0
Satd. Flow (RTOR)		9			166				249		2	
Lane Group Flow (vph)	3	11	0	33	26	0	6	996	249	79	381	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	38.0	38.0		38.0	38.0		31.3	31.3	31.3	11.3	31.3	
Total Split (s)	41.0	41.0		41.0	41.0		47.0	47.0	47.0	12.0	59.0	
Total Split (%)	41.0%	41.0%		41.0%	41.0%		47.0%	47.0%	47.0%	12.0%	59.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.7	3.7		3.7	3.7		2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		6.3	6.3	6.3	6.3	6.3	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)	22.6	22.6		22.6	22.6		57.5	57.5	57.5	67.5	68.8	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.58	0.58	0.58	0.68	0.69	
v/c Ratio	0.01	0.03		0.11	0.06		0.01	0.51	0.26	0.23	0.17	
Control Delay	24.3	14.7		27.0	0.2		17.8	19.9	3.3	10.8	8.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	24.3	14.7		27.0	0.2		17.8	19.9	3.3	10.8	8.8	
LOS	C	B		C	A		B	B	A	B	A	
Approach Delay		16.8			15.2			16.6			9.1	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	0.4	0.3		4.5	0.0		0.7	81.8	0.0	6.7	18.3	
Queue Length 95th (m)	2.5	4.2		11.5	0.0		3.1	106.6	14.2	13.3	26.2	
Internal Link Dist (m)		205.4			328.9			150.7			350.8	
Turn Bay Length (m)	30.0			40.0			105.0		95.0	100.0		
Base Capacity (vph)	343	495		447	608		546	1950	944	340	2179	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.01	0.02		0.07	0.04		0.01	0.51	0.26	0.23	0.17	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 69 (69%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 14.6	Intersection LOS: B
Intersection Capacity Utilization 58.6%	ICU Level of Service B
Analysis Period (min) 15	

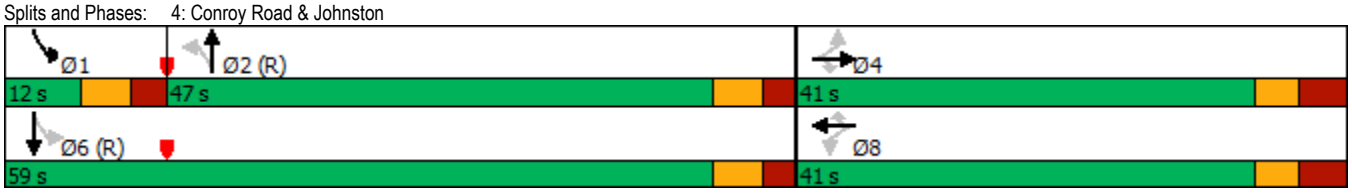
Splits and Phases: 1: Conroy Road & Thurston



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	236	13	39	15	16	89	28	799	15	43	268	61
Future Volume (vph)	236	13	39	15	16	89	28	799	15	43	268	61
Satd. Flow (prot)	1712	1820	1406	1729	1820	1532	1517	3377	0	1616	3134	0
Flt Permitted	0.746			0.748			0.534			0.220		
Satd. Flow (perm)	1334	1820	1406	1361	1820	1501	847	3377	0	374	3134	0
Satd. Flow (RTOR)			105			105		2			41	
Lane Group Flow (vph)	262	14	43	17	18	99	31	905	0	48	366	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	37.3	37.3		11.3	37.3	
Total Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	47.0	47.0		12.0	59.0	
Total Split (%)	41.0%	41.0%	41.0%	41.0%	41.0%	41.0%	47.0%	47.0%		12.0%	59.0%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.3	6.3		6.3	6.3	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		None	C-Max	
Act Effct Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	54.0	54.0		61.7	61.7	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.54	0.54		0.62	0.62	
v/c Ratio	0.79	0.03	0.10	0.05	0.04	0.22	0.07	0.50		0.16	0.19	
Control Delay	51.0	24.6	0.5	25.2	25.0	5.7	16.7	18.2		10.8	8.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	51.0	24.6	0.5	25.2	25.0	5.7	16.7	18.2		10.8	8.6	
LOS	D	C	A	C	C	A	B	B		B	A	
Approach Delay		43.0			10.8			18.2			8.8	
Approach LOS		D			B			B			A	
Queue Length 50th (m)	47.4	2.1	0.0	2.5	2.7	0.0	3.1	62.1		3.4	13.1	
Queue Length 95th (m)	67.3	6.0	0.0	6.9	7.1	9.6	9.5	94.2		9.7	24.7	
Internal Link Dist (m)		440.9			426.7			419.6			215.3	
Turn Bay Length (m)	95.0		50.0	30.0		70.0	140.0			110.0		
Base Capacity (vph)	453	618	547	462	618	579	457	1824		308	1950	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.58	0.02	0.08	0.04	0.03	0.17	0.07	0.50		0.16	0.19	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 69 (69%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 19.9	Intersection LOS: B
Intersection Capacity Utilization 69.3%	ICU Level of Service C
Analysis Period (min) 15	

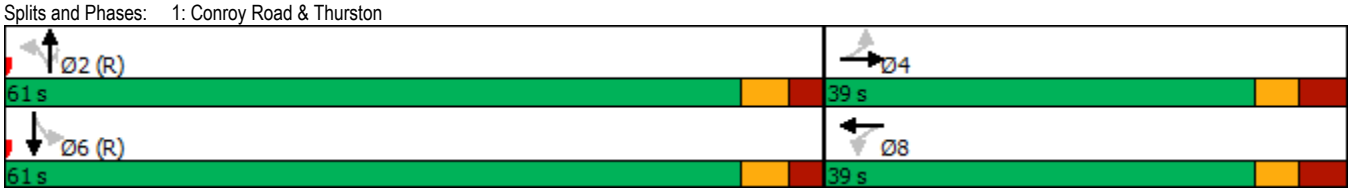
Splits and Phases: 4: Conroy Road & Johnston



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	0	203	0	69	5	572	106	12	960	0
Future Volume (vph)	3	0	0	203	0	69	5	572	106	12	960	0
Satd. Flow (prot)	864	1820	0	1729	1521	0	1631	3390	1547	1601	3424	0
Flt Permitted	0.707			0.757			0.225			0.397		
Satd. Flow (perm)	642	1820	0	1375	1521	0	386	3390	1493	667	3424	0
Satd. Flow (RTOR)					235				118			
Lane Group Flow (vph)	3	0	0	226	77	0	6	636	118	13	1067	0
Turn Type	Perm			Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	38.0	38.0		38.0	38.0		31.3	31.3	31.3	31.3	31.3	
Total Split (s)	39.0	39.0		39.0	39.0		61.0	61.0	61.0	61.0	61.0	
Total Split (%)	39.0%	39.0%		39.0%	39.0%		61.0%	61.0%	61.0%	61.0%	61.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.7	3.7		3.7	3.7		2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		6.3	6.3	6.3	6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	23.1			23.1	23.1		63.6	63.6	63.6	63.6	63.6	
Actuated g/C Ratio	0.23			0.23	0.23		0.64	0.64	0.64	0.64	0.64	
v/c Ratio	0.02			0.71	0.14		0.02	0.30	0.12	0.03	0.49	
Control Delay	25.3			46.8	0.6		10.0	9.7	2.3	9.7	11.8	
Queue Delay	0.0			0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	25.3			46.8	0.6		10.0	9.7	2.3	9.7	11.8	
LOS	C			D	A		A	A	A	A	B	
Approach Delay		25.3			35.1			8.5			11.7	
Approach LOS		C			D			A			B	
Queue Length 50th (m)	0.5			41.2	0.0		0.4	25.3	0.0	0.8	50.1	
Queue Length 95th (m)	2.5			59.5	0.0		2.4	44.4	7.3	3.8	83.8	
Internal Link Dist (m)		205.4			328.9			150.7			350.8	
Turn Bay Length (m)	30.0			40.0			105.0		95.0	100.0		
Base Capacity (vph)	205			440	646		245	2155	992	423	2177	
Starvation Cap Reductn	0			0	0		0	0	0	0	0	
Spillback Cap Reductn	0			0	0		0	0	0	0	0	
Storage Cap Reductn	0			0	0		0	0	0	0	0	
Reduced v/c Ratio	0.01			0.51	0.12		0.02	0.30	0.12	0.03	0.49	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

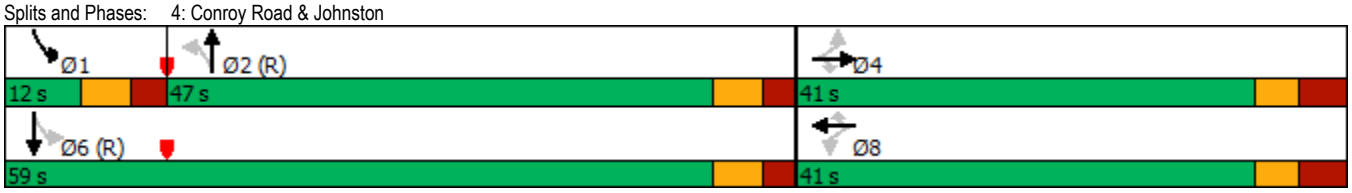
Splits and Phases: 1: Conroy Road & Thurston



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	42	60	33	36	56	52	441	23	197	739	227
Future Volume (vph)	143	42	60	33	36	56	52	441	23	197	739	227
Satd. Flow (prot)	1712	1820	1406	1729	1820	1547	1662	3361	0	1712	3294	0
Flt Permitted	0.731			0.726			0.267			0.395		
Satd. Flow (perm)	1317	1820	1384	1317	1820	1547	467	3361	0	710	3294	0
Satd. Flow (RTOR)			105			105		6			61	
Lane Group Flow (vph)	159	47	67	37	40	62	58	516	0	219	1073	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	37.3	37.3		11.3	37.3	
Total Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	47.0	47.0		12.0	59.0	
Total Split (%)	41.0%	41.0%	41.0%	41.0%	41.0%	41.0%	47.0%	47.0%		12.0%	59.0%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.3	6.3		6.3	6.3	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		None	C-Max	
Act Effct Green (s)	19.3	19.3	19.3	19.3	19.3	19.3	52.5	52.5		67.4	67.4	
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.52	0.52		0.67	0.67	
v/c Ratio	0.63	0.13	0.19	0.15	0.11	0.16	0.24	0.29		0.39	0.48	
Control Delay	46.3	30.4	2.9	30.7	29.9	2.2	19.9	15.3		10.5	9.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	46.3	30.4	2.9	30.7	29.9	2.2	19.9	15.3		10.5	9.6	
LOS	D	C	A	C	C	A	B	B		B	A	
Approach Delay		32.9			17.8			15.7			9.7	
Approach LOS		C			B			B			A	
Queue Length 50th (m)	29.2	7.8	0.0	6.2	6.6	0.0	5.7	27.4		13.2	40.8	
Queue Length 95th (m)	40.1	14.0	3.6	11.8	12.3	2.7	18.2	48.6		35.5	88.1	
Internal Link Dist (m)		440.9			426.7			419.6			215.3	
Turn Bay Length (m)	95.0		50.0	30.0		70.0	140.0			110.0		
Base Capacity (vph)	447	618	539	447	618	595	245	1768		564	2240	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.36	0.08	0.12	0.08	0.06	0.10	0.24	0.29		0.39	0.48	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 69 (69%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 70.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Conroy Road & Johnston



Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	65	669	65	0	1169
Future Vol, veh/h	28	65	669	65	0	1169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	45	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	5	98	2	5
Mvmt Flow	28	65	669	65	0	1169

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1287	367	0	0	734	0
Stage 1	702	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	156	630	-	-	867	-
Stage 1	453	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	156	630	-	-	867	-
Mov Cap-2 Maneuver	156	-	-	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	520	-	-	-	-	-

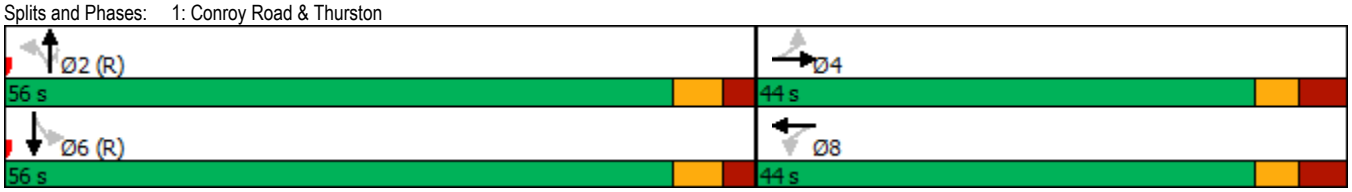
Approach	WB	NB	SB
HCM Control Delay, s	20.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	329	867	-
HCM Lane V/C Ratio	-	-	0.283	-	-
HCM Control Delay (s)	-	-	20.2	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0	-

Lane Group	EBL	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	3	203	0	5	644	106	12	966
Future Volume (vph)	3	203	0	5	644	106	12	966
Lane Group Flow (vph)	3	203	69	5	644	106	12	966
Turn Type	Perm	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases			8		2			6
Permitted Phases	4	8		2		2	6	
Detector Phase	4	8	8	2	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	38.0	38.0	38.0	31.3	31.3	31.3	31.3	31.3
Total Split (s)	44.0	44.0	44.0	56.0	56.0	56.0	56.0	56.0
Total Split (%)	44.0%	44.0%	44.0%	56.0%	56.0%	56.0%	56.0%	56.0%
Yellow Time (s)	3.3	3.3	3.3	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.7	3.7	3.7	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	6.3	6.3	6.3	6.3	6.3
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	24.4	24.4	24.4	62.3	62.3	62.3	62.3	62.3
Actuated g/C Ratio	0.24	0.24	0.24	0.62	0.62	0.62	0.62	0.62
v/c Ratio	0.02	0.61	0.13	0.02	0.30	0.11	0.03	0.45
Control Delay	24.3	39.9	0.5	10.4	10.4	2.4	10.3	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	39.9	0.5	10.4	10.4	2.4	10.3	12.0
LOS	C	D	A	B	B	A	B	B
Approach Delay			29.9		9.3			12.0
Approach LOS			C		A			B
Queue Length 50th (m)	0.4	31.7	0.0	0.4	33.7	0.0	1.0	57.3
Queue Length 95th (m)	2.5	53.2	0.0	2.1	44.8	6.9	3.5	73.2
Internal Link Dist (m)			328.9		150.7			350.8
Turn Bay Length (m)	30.0	40.0		105.0		95.0	100.0	
Base Capacity (vph)	239	508	686	273	2133	968	409	2133
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.40	0.10	0.02	0.30	0.11	0.03	0.45

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

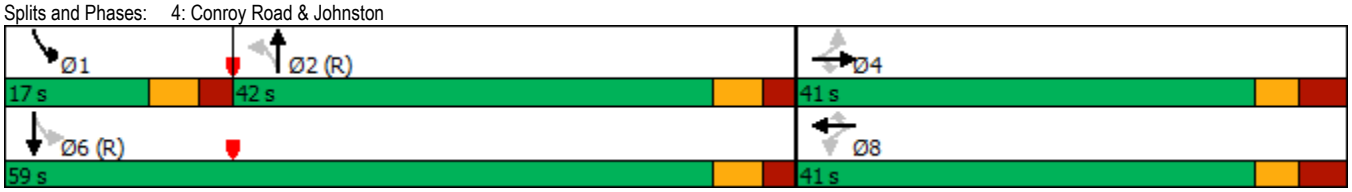
Splits and Phases: 1: Conroy Road & Thurston



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	143	42	60	33	36	56	52	513	197	773
Future Volume (vph)	143	42	60	33	36	56	52	513	197	773
Lane Group Flow (vph)	143	42	60	33	36	56	52	536	197	1000
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4			8			2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	4	4	4	8	8	8	2	2	1	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	37.3	37.3	11.3	37.3
Total Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	42.0	42.0	17.0	59.0
Total Split (%)	41.0%	41.0%	41.0%	41.0%	41.0%	41.0%	42.0%	42.0%	17.0%	59.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.3	6.3	6.3	6.3
Lead/Lag							Lag	Lag	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	18.5	18.5	18.5	18.5	18.5	18.5	52.8	52.8	68.2	68.2
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.18	0.53	0.53	0.68	0.68
v/c Ratio	0.59	0.12	0.18	0.13	0.11	0.15	0.20	0.35	0.35	0.44
Control Delay	45.0	30.8	2.2	31.1	30.4	1.6	19.7	16.6	9.2	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	30.8	2.2	31.1	30.4	1.6	19.7	16.6	9.2	8.9
LOS	D	C	A	C	C	A	B	B	A	A
Approach Delay		32.1			17.7			16.8		8.9
Approach LOS		C			B			B		A
Queue Length 50th (m)	26.3	7.1	0.0	5.6	6.0	0.0	4.8	28.3	11.1	34.6
Queue Length 95th (m)	36.2	12.7	2.2	10.9	11.4	1.5	17.6	58.1	32.0	79.8
Internal Link Dist (m)		440.9			426.7			419.6		215.3
Turn Bay Length (m)	95.0		50.0	30.0		70.0	140.0		110.0	
Base Capacity (vph)	449	618	539	450	618	595	264	1522	581	2266
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.07	0.11	0.07	0.06	0.09	0.20	0.35	0.34	0.44

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 48 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 71.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Conroy Road & Johnston



Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	65	669	65	0	1169
Future Vol, veh/h	28	65	669	65	0	1169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	45	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	5	2	98	5
Mvmt Flow	28	65	669	65	0	1169

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1287	367	0	0	734	0
Stage 1	702	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	6.06	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	3.18	-
Pot Cap-1 Maneuver	156	630	-	-	447	-
Stage 1	453	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	156	630	-	-	447	-
Mov Cap-2 Maneuver	156	-	-	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	520	-	-	-	-	-

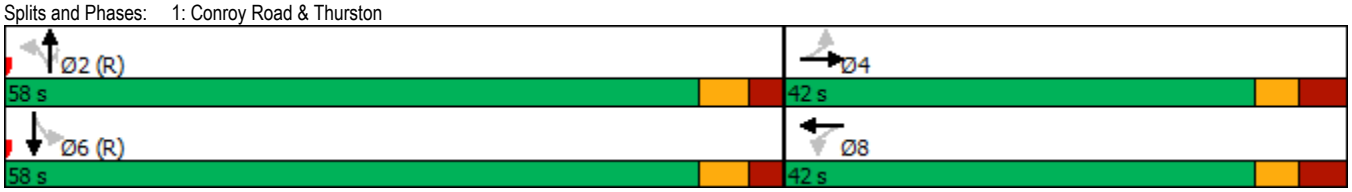
Approach	WB	NB	SB
HCM Control Delay, s	20.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	329	447	-
HCM Lane V/C Ratio	-	-	0.283	-	-
HCM Control Delay (s)	-	-	20.2	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0	-

Lane Group	EBL	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	3	203	0	5	644	106	12	966
Future Volume (vph)	3	203	0	5	644	106	12	966
Lane Group Flow (vph)	3	203	69	5	644	106	12	966
Turn Type	Perm	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases			8		2			6
Permitted Phases	4	8		2		2	6	
Detector Phase	4	8	8	2	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	38.0	38.0	38.0	31.3	31.3	31.3	31.3	31.3
Total Split (s)	42.0	42.0	42.0	58.0	58.0	58.0	58.0	58.0
Total Split (%)	42.0%	42.0%	42.0%	58.0%	58.0%	58.0%	58.0%	58.0%
Yellow Time (s)	3.3	3.3	3.3	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.7	3.7	3.7	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	6.3	6.3	6.3	6.3	6.3
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	24.4	24.4	24.4	62.3	62.3	62.3	62.3	62.3
Actuated g/C Ratio	0.24	0.24	0.24	0.62	0.62	0.62	0.62	0.62
v/c Ratio	0.02	0.61	0.13	0.02	0.31	0.11	0.03	0.50
Control Delay	24.3	39.9	0.5	10.4	10.5	2.4	10.3	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	39.9	0.5	10.4	10.5	2.4	10.3	12.8
LOS	C	D	A	B	B	A	B	B
Approach Delay			29.9		9.4			12.8
Approach LOS			C		A			B
Queue Length 50th (m)	0.4	31.7	0.0	0.4	33.9	0.0	1.0	59.6
Queue Length 95th (m)	2.5	53.2	0.0	2.1	45.0	6.9	3.5	77.1
Internal Link Dist (m)			328.9		150.7			350.8
Turn Bay Length (m)	30.0	40.0		105.0		95.0	100.0	
Base Capacity (vph)	226	481	668	273	2091	969	409	1940
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.42	0.10	0.02	0.31	0.11	0.03	0.50

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 13.8	Intersection LOS: B
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

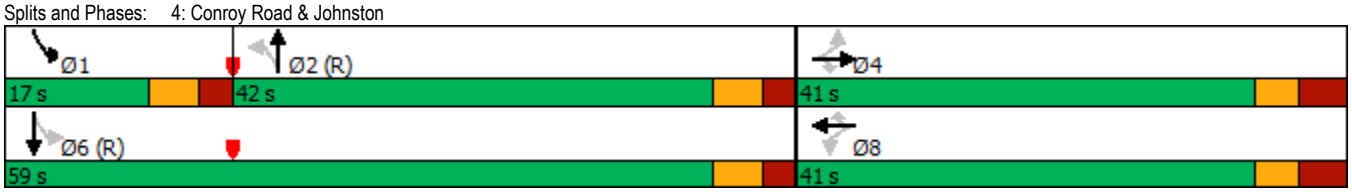
Splits and Phases: 1: Conroy Road & Thurston



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	143	42	60	33	36	56	52	513	197	773
Future Volume (vph)	143	42	60	33	36	56	52	513	197	773
Lane Group Flow (vph)	143	42	60	33	36	56	52	536	197	1000
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4			8			2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	4	4	4	8	8	8	2	2	1	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	37.3	37.3	11.3	37.3
Total Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	42.0	42.0	17.0	59.0
Total Split (%)	41.0%	41.0%	41.0%	41.0%	41.0%	41.0%	42.0%	42.0%	17.0%	59.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.3	6.3	6.3	6.3
Lead/Lag							Lag	Lag	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	18.5	18.5	18.5	18.5	18.5	18.5	52.8	52.8	68.2	68.2
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.18	0.53	0.53	0.68	0.68
v/c Ratio	0.59	0.12	0.18	0.13	0.11	0.15	0.20	0.30	0.35	0.44
Control Delay	45.0	30.8	2.2	31.1	30.4	1.6	19.7	15.7	9.2	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	30.8	2.2	31.1	30.4	1.6	19.7	15.7	9.2	8.9
LOS	D	C	A	C	C	A	B	B	A	A
Approach Delay		32.1			17.7			16.1		8.9
Approach LOS		C			B			B		A
Queue Length 50th (m)	26.3	7.1	0.0	5.6	6.0	0.0	4.8	27.4	11.1	34.6
Queue Length 95th (m)	36.2	12.7	2.2	10.9	11.4	1.5	17.6	55.7	32.0	79.8
Internal Link Dist (m)		440.9			426.7			419.6		215.3
Turn Bay Length (m)	95.0		50.0	30.0		70.0	140.0		110.0	
Base Capacity (vph)	449	618	539	450	618	595	264	1779	581	2266
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.07	0.11	0.07	0.06	0.09	0.20	0.30	0.34	0.44

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 48 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 71.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Conroy Road & Johnston



Intersection	
Int Delay, s/veh	8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	5	587	45	104	205
Future Vol, veh/h	88	5	587	45	104	205
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	45	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	98	98	5	2	2	5
Mvmt Flow	88	5	587	45	104	205

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	921	316	0	0	632	0
Stage 1	610	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	8.76	8.86	-	-	4.14	-
Critical Hdwy Stg 1	7.76	-	-	-	-	-
Critical Hdwy Stg 2	7.76	-	-	-	-	-
Follow-up Hdwy	4.48	4.28	-	-	2.22	-
Pot Cap-1 Maneuver	144	464	-	-	947	-
Stage 1	308	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	128	464	-	-	947	-
Mov Cap-2 Maneuver	128	-	-	-	-	-
Stage 1	308	-	-	-	-	-
Stage 2	441	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	78.8	0	3.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	133	947	-
HCM Lane V/C Ratio	-	-	0.699	0.11	-
HCM Control Delay (s)	-	-	78.8	9.3	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	3.9	0.4	-

Intersection	
Int Delay, s/veh	5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	33	587	45	104	205
Future Vol, veh/h	60	33	587	45	104	205
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	45	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	98	98	5	2	2	5
Mvmt Flow	60	33	587	45	104	205

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	921	316	0	0	632	0
Stage 1	610	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	8.76	8.86	-	-	4.14	-
Critical Hdwy Stg 1	7.76	-	-	-	-	-
Critical Hdwy Stg 2	7.76	-	-	-	-	-
Follow-up Hdwy	4.48	4.28	-	-	2.22	-
Pot Cap-1 Maneuver	144	464	-	-	947	-
Stage 1	308	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	128	464	-	-	947	-
Mov Cap-2 Maneuver	128	-	-	-	-	-
Stage 1	308	-	-	-	-	-
Stage 2	441	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	48.2	0	3.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	172	947	-
HCM Lane V/C Ratio	-	-	0.541	0.11	-
HCM Control Delay (s)	-	-	48.2	9.3	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	2.8	0.4	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	91	1128	45	104	382
Future Vol, veh/h	2	91	1128	45	104	382
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	45	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	98	98	5	2	2	5
Mvmt Flow	2	91	1128	45	104	382

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1550	587	0	0	1173	0
Stage 1	1151	-	-	-	-	-
Stage 2	399	-	-	-	-	-
Critical Hdwy	8.76	8.86	-	-	4.14	-
Critical Hdwy Stg 1	7.76	-	-	-	-	-
Critical Hdwy Stg 2	7.76	-	-	-	-	-
Follow-up Hdwy	4.48	4.28	-	-	2.22	-
Pot Cap-1 Maneuver	42	276	-	-	591	-
Stage 1	126	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	35	276	-	-	591	-
Mov Cap-2 Maneuver	35	-	-	-	-	-
Stage 1	126	-	-	-	-	-
Stage 2	355	-	-	-	-	-

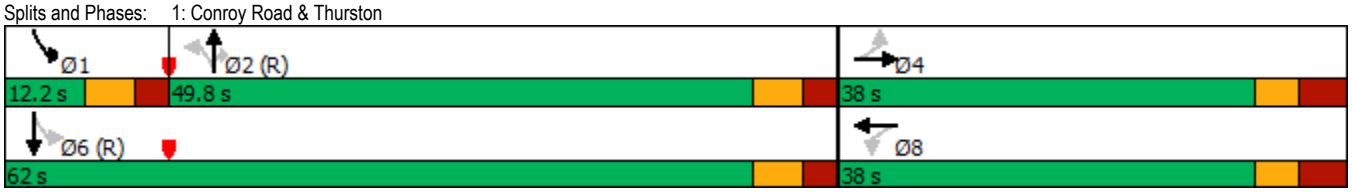
Approach	WB	NB	SB
HCM Control Delay, s	29.2	0	2.7
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	240	591	-
HCM Lane V/C Ratio	-	-	0.388	0.176	-
HCM Control Delay (s)	-	-	29.2	12.4	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	1.7	0.6	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	3	2	30	0	5	991	224	71	450
Future Volume (vph)	3	2	30	0	5	991	224	71	450
Lane Group Flow (vph)	3	10	30	23	5	991	224	71	454
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		4		8		2		1	6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	8	8	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	38.0	38.0	38.0	38.0	31.3	31.3	31.3	11.3	31.3
Total Split (s)	38.0	38.0	38.0	38.0	49.8	49.8	49.8	12.2	62.0
Total Split (%)	38.0%	38.0%	38.0%	38.0%	49.8%	49.8%	49.8%	12.2%	62.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.7	3.7	3.7	3.7	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	6.3	6.3	6.3	6.3	6.3
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max
Act Effct Green (s)	22.6	22.6	22.6	22.6	59.0	59.0	59.0	67.5	68.8
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.59	0.59	0.59	0.68	0.69
v/c Ratio	0.01	0.03	0.10	0.05	0.01	0.55	0.24	0.22	0.20
Control Delay	24.3	15.3	26.8	0.2	16.2	19.6	3.1	10.8	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	15.3	26.8	0.2	16.2	19.6	3.1	10.8	9.0
LOS	C	B	C	A	B	B	A	B	A
Approach Delay		17.4		15.3		16.6			9.2
Approach LOS		B		B		B			A
Queue Length 50th (m)	0.4	0.3	4.1	0.0	0.6	82.3	0.0	6.0	22.3
Queue Length 95th (m)	2.5	4.0	10.7	0.0	2.6	106.5	12.8	12.2	31.1
Internal Link Dist (m)		205.4		328.9		150.7			350.8
Turn Bay Length (m)	30.0		40.0		105.0		95.0	100.0	
Base Capacity (vph)	314	450	408	573	521	1804	951	329	2241
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.07	0.04	0.01	0.55	0.24	0.22	0.20

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 61.4%	ICU Level of Service B
Analysis Period (min) 15	

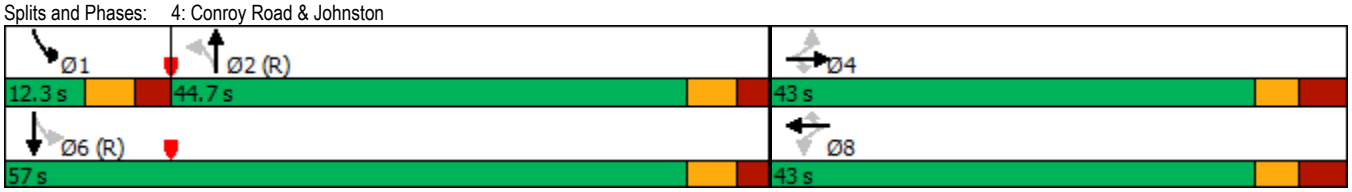
Splits and Phases: 1: Conroy Road & Thurston



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	236	13	39	15	16	89	28	848	43	277
Future Volume (vph)	236	13	39	15	16	89	28	848	43	277
Lane Group Flow (vph)	236	13	39	15	16	89	28	863	43	338
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4			8			2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	4	4	4	8	8	8	2	2	1	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	37.3	37.3	11.3	37.3
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	44.7	44.7	12.3	57.0
Total Split (%)	43.0%	43.0%	43.0%	43.0%	43.0%	43.0%	44.7%	44.7%	12.3%	57.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.3	6.3	6.3	6.3
Lead/Lag							Lag	Lag	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	23.4	23.4	23.4	23.4	23.4	23.4	55.2	55.2	63.3	63.3
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.55	0.55	0.63	0.63
v/c Ratio	0.75	0.03	0.10	0.05	0.04	0.21	0.06	0.46	0.13	0.17
Control Delay	49.3	25.4	0.5	25.9	25.6	4.8	16.6	17.4	10.0	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	25.4	0.5	25.9	25.6	4.8	16.6	17.4	10.0	8.0
LOS	D	C	A	C	C	A	B	B	A	A
Approach Delay		41.6			10.2			17.4		8.2
Approach LOS		D			B			B		A
Queue Length 50th (m)	42.9	2.0	0.0	2.3	2.4	0.0	2.6	55.2	2.8	11.2
Queue Length 95th (m)	59.7	5.7	0.0	6.3	6.5	7.8	9.2	92.4	9.0	22.8
Internal Link Dist (m)		440.9			426.7			419.6		215.3
Turn Bay Length (m)	95.0		50.0	30.0		70.0	140.0		110.0	
Base Capacity (vph)	485	655	573	490	655	607	479	1865	338	1984
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.02	0.07	0.03	0.02	0.15	0.06	0.46	0.13	0.17

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 69 (69%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Conroy Road & Johnston



Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	85	1128	45	104	382
Future Vol, veh/h	8	85	1128	45	104	382
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	45	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	98	98	5	2	2	5
Mvmt Flow	8	85	1128	45	104	382

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1550	587	0	0	1173	0
Stage 1	1151	-	-	-	-	-
Stage 2	399	-	-	-	-	-
Critical Hdwy	8.76	8.86	-	-	4.14	-
Critical Hdwy Stg 1	7.76	-	-	-	-	-
Critical Hdwy Stg 2	7.76	-	-	-	-	-
Follow-up Hdwy	4.48	4.28	-	-	2.22	-
Pot Cap-1 Maneuver	42	276	-	-	591	-
Stage 1	126	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	35	276	-	-	591	-
Mov Cap-2 Maneuver	35	-	-	-	-	-
Stage 1	126	-	-	-	-	-
Stage 2	355	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	47.7	0	2.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	173	591	-
HCM Lane V/C Ratio	-	-	0.538	0.176	-
HCM Control Delay (s)	-	-	47.7	12.4	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	2.7	0.6	-

Intersection	
Int Delay, s/veh	49.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	5	1128	45	104	382
Future Vol, veh/h	88	5	1128	45	104	382
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	45	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	98	98	5	2	2	5
Mvmt Flow	88	5	1128	45	104	382

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1550	587	0	0	1173	0
Stage 1	1151	-	-	-	-	-
Stage 2	399	-	-	-	-	-
Critical Hdwy	8.76	8.86	-	-	4.14	-
Critical Hdwy Stg 1	7.76	-	-	-	-	-
Critical Hdwy Stg 2	7.76	-	-	-	-	-
Follow-up Hdwy	4.48	4.28	-	-	2.22	-
Pot Cap-1 Maneuver	~ 42	276	-	-	591	-
Stage 1	126	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 35	276	-	-	591	-
Mov Cap-2 Maneuver	~ 35	-	-	-	-	-
Stage 1	126	-	-	-	-	-
Stage 2	355	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 918.3	0	2.7
HCM LOS	F		

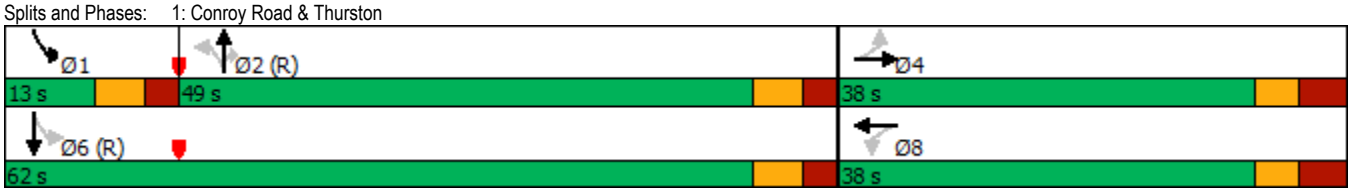
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	37	591	-
HCM Lane V/C Ratio	-	-	2.514	0.176	-
HCM Control Delay (s)	-	-	$ 918.3	12.4	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	10.4	0.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	3	2	30	0	5	905	224	71	450
Future Volume (vph)	3	2	30	0	5	905	224	71	450
Lane Group Flow (vph)	3	10	30	23	5	905	224	71	454
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		4		8		2		1	6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	8	8	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	38.0	38.0	38.0	38.0	31.3	31.3	31.3	11.3	31.3
Total Split (s)	38.0	38.0	38.0	38.0	49.0	49.0	49.0	13.0	62.0
Total Split (%)	38.0%	38.0%	38.0%	38.0%	49.0%	49.0%	49.0%	13.0%	62.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.7	3.7	3.7	3.7	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	6.3	6.3	6.3	6.3	6.3
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	None	C-Max
Act Effct Green (s)	22.6	22.6	22.6	22.6	58.5	58.5	58.5	67.5	68.8
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.58	0.58	0.58	0.68	0.69
v/c Ratio	0.01	0.03	0.10	0.05	0.01	0.47	0.24	0.20	0.20
Control Delay	24.3	15.3	26.8	0.2	16.8	18.3	3.2	10.5	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	15.3	26.8	0.2	16.8	18.3	3.2	10.5	9.0
LOS	C	B	C	A	B	B	A	B	A
Approach Delay		17.4		15.2		15.3			9.2
Approach LOS		B		B		B			A
Queue Length 50th (m)	0.4	0.3	4.1	0.0	0.6	70.9	0.0	6.0	22.3
Queue Length 95th (m)	2.5	4.0	10.7	0.0	2.7	91.4	13.0	12.2	31.1
Internal Link Dist (m)		205.4		328.9		150.7			350.8
Turn Bay Length (m)	30.0		40.0		105.0		95.0	100.0	
Base Capacity (vph)	314	450	408	592	517	1944	945	369	2241
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.07	0.04	0.01	0.47	0.24	0.19	0.20

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 69 (69%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

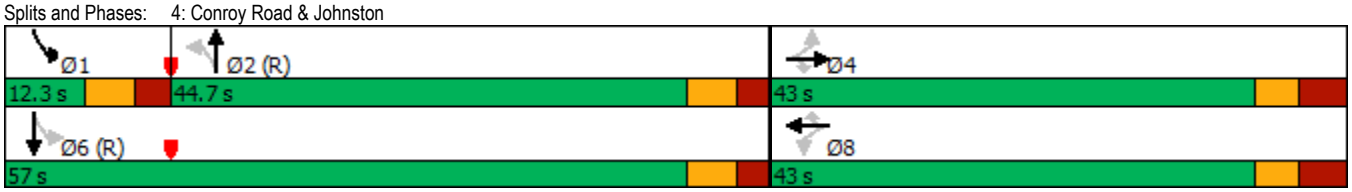
Splits and Phases: 1: Conroy Road & Thurston



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	236	13	39	15	16	89	28	848	43	363
Future Volume (vph)	236	13	39	15	16	89	28	848	43	363
Lane Group Flow (vph)	236	13	39	15	16	89	28	863	43	424
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4			8			2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	4	4	4	8	8	8	2	2	1	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	37.3	37.3	11.3	37.3
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	44.7	44.7	12.3	57.0
Total Split (%)	43.0%	43.0%	43.0%	43.0%	43.0%	43.0%	44.7%	44.7%	12.3%	57.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.3	6.3	6.3	6.3
Lead/Lag							Lag	Lag	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	23.4	23.4	23.4	23.4	23.4	23.4	55.2	55.2	63.3	63.3
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.55	0.55	0.63	0.63
v/c Ratio	0.75	0.03	0.10	0.05	0.04	0.21	0.06	0.46	0.13	0.25
Control Delay	49.3	25.4	0.5	25.9	25.6	4.8	16.7	17.4	10.0	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	25.4	0.5	25.9	25.6	4.8	16.7	17.4	10.0	9.1
LOS	D	C	A	C	C	A	B	B	A	A
Approach Delay		41.6			10.2			17.4		9.2
Approach LOS		D			B			B		A
Queue Length 50th (m)	42.9	2.0	0.0	2.3	2.4	0.0	2.6	55.2	2.8	15.7
Queue Length 95th (m)	59.7	5.7	0.0	6.3	6.5	7.8	9.3	92.4	9.0	31.2
Internal Link Dist (m)		440.9			426.7			419.6		215.3
Turn Bay Length (m)	95.0		50.0	30.0		70.0	140.0		110.0	
Base Capacity (vph)	485	655	573	490	655	607	442	1865	338	1672
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.02	0.07	0.03	0.02	0.15	0.06	0.46	0.13	0.25

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 48 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Conroy Road & Johnston



Intersection: 3: Conroy Road & Access

Movement	WB
Directions Served	LR
Maximum Queue (m)	27.6
Average Queue (m)	12.0
95th Queue (m)	21.7
Link Distance (m)	201.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Conroy Road & Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	50.4	0.6	8.1	26.6
Average Queue (m)	24.1	0.0	0.4	11.2
95th Queue (m)	42.7	0.6	3.6	21.8
Link Distance (m)	201.2	221.4	221.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				45.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Conroy Road & Access

Movement	WB	NB	SB
Directions Served	LR	T	T
Maximum Queue (m)	27.3	0.6	4.2
Average Queue (m)	11.6	0.0	0.1
95th Queue (m)	20.8	0.6	4.1
Link Distance (m)	201.2	221.4	91.0
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Conroy Road & Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	51.1	7.3	9.1	21.0
Average Queue (m)	23.5	0.3	0.6	8.5
95th Queue (m)	41.1	3.1	4.2	17.4
Link Distance (m)	201.2	221.4	221.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				45.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Conroy Road & Access

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	TR	L	T
Maximum Queue (m)	54.8	6.1	6.3	21.5	2.6
Average Queue (m)	24.0	0.4	0.4	8.2	0.1
95th Queue (m)	42.7	3.0	3.3	18.0	1.6
Link Distance (m)	201.2	221.4	221.4		91.0
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				45.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Conroy Road & Access

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	TR	L	T
Maximum Queue (m)	58.4	2.0	12.0	28.7	0.9
Average Queue (m)	25.2	0.1	0.7	11.2	0.0
95th Queue (m)	46.6	1.4	5.3	21.3	0.9
Link Distance (m)	201.2	221.4	221.4		91.0
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				45.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Conroy Road & Access

Movement	WB	NB	NB	SB	SB	SB
Directions Served	LR	T	TR	L	T	T
Maximum Queue (m)	93.4	6.1	11.9	25.2	4.6	1.9
Average Queue (m)	38.1	0.6	1.1	11.6	0.2	0.1
95th Queue (m)	88.4	4.0	6.7	21.6	2.5	1.4
Link Distance (m)	201.2	221.4	221.4		91.0	91.0
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)				45.0		
Storage Blk Time (%)						
Queuing Penalty (veh)						