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Proposed Residential Development 1900-1920 Walkley Road, 2425 Don Reid Drive, 2510 St. Laurent Boulevard, and 2990-3000 Conroy Road, Ottawa

Transportation Impact Assessment



Proposed Residential Development 1900-1920 Walkley Road, 2425 Don Reid Drive, 2510 St. Laurent Boulevard, and 2990-3000 Conroy Road

Transportation Impact Assessment

Prepared By:

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

> Dated: October 2022 *Revised: September 2023*

Novatech File: 122040 Ref: R-2022-109



September 29, 2023

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

Attention: Mr. Mike Giampa Senior Engineer, Infrastructure Applications

Dear Mr. Giampa:

Reference: 1900-1920 Walkley Road, 2425 Don Reid Drive, 2510 St. Laurent Boulevard, and 2990-3000 Conroy Road Revised Transportation Impact Assessment Novatech File No. 122040

We are pleased to submit the following revised Transportation Impact Assessment (TIA), in support of Zoning By-Law Amendment, Site Plan Control, and Draft Plan of Condominium applications at 1900-1920 Walkley Road, 2425 Don Reid Drive, 2510 St. Laurent Boulevard, and 2990-3000 Conroy Road, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa's *Transportation Impact Assessment Guidelines* (June 2017).

The original TIA prepared in support of this development was submitted in October 2022. This revised TIA reflects changes in the Site Plan and addresses City comments.

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

Yours truly,

NOVATECH

Joshua Audia, P.Eng. Project Engineer | Transportation

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TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below.

CERTIFICATION

- 1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
- 2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
- 3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
- I am either a licensed¹ or registered² professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering or transportation planning □.

^{1,2} License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

City Of Ottawa Infrastructure Services and Community Sustainability Planning and Growth Management 110 Laurier Avenue West, 4th fl. Ottawa, ON K1P 1J1 Tel.: 613-580-2424 Fax: 613-560-6006 Ville d'Ottawa Services d'infrastructure et Viabilité des collectivités Urbanisme et Gestion de la croissance 110, avenue Laurier Ouest Ottawa (Ontario) K1P 1J1 Tél. : 613-580-2424 Télécopieur: 613-560-6006

Dated at	<u>Ottawa</u>	this_	<u>29th</u>	_ day of _	September	, 2023.
	(City)			-	-	

Name:

Brad Byvelds, P.Eng. (Please Print)

Professional Title:

Project Manager, Transportation

B. Byvelds

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

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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-Law Amendment, Site Plan Control, and Draft Plan of Condominium applications for the property located at 1900-1920 Walkley Road, 2425 Don Reid Drive, 2510 St. Laurent Boulevard, and 2990-3000 Conroy Road (referred to as 2510 St. Laurent Boulevard in this TIA). The subject site is approximately 5.89 hectares in size and is currently vacant land. The subject site is surrounded by the following:

- Walkley Road, followed by parkland to the north,
- St. Laurent Boulevard, followed by commercial uses to the south,
- Conroy Road, followed by commercial uses to the east, and
- Don Reid Drive, followed by commercial uses to the west.

The proposed development will consist of 160 townhouse dwellings. Access to the townhouses will be provided via two driveways to St. Laurent Boulevard and one driveway to Don Reid Drive. The development will be constructed in a single phase, with a buildout year of 2024.

The proponent owns additional lands north of the proposed development which includes the subject site's entire frontage to Walkley Road. These lands are anticipated to include a retirement home with approximately 150 units and an apartment building with approximately 100 units. Access to the development block is anticipated to occur through a right-in/right-out (RIRO) access to Walkley Road and an all-movement access through the adjacent signalized commercial access to Walkley Road. In total, 410 dwellings are proposed for the entire subject site. The boundaries of the subject site currently include most of the westernmost commercial driveway to 1950 Walkley Road and the southernmost commercial driveway to 2980 Conroy Road. These driveways are intended to continue serving the adjacent commercial plaza and conveying the affected lands to the proper addresses will be resolved through this application process.

The boundaries of the subject site currently include most of the westernmost commercial driveway to 1950 Walkley Road and the southernmost commercial driveway to 2980 Conroy Road. These driveways are intended to continue serving the adjacent commercial plaza and conveying the affected lands to the proper addresses will be resolved through this application process.

The subject site is located within the 'Evolving Neighbourhood' overlay, and is designated as 'Corridor – Minor' (Walkley Road) and 'Neighbourhood' on Schedule B3 of the City of Ottawa's Official Plan (2021, Council Adopted). The current zoning for the property is 'General Mixed Use' (GM[1327]), and the site is not located within any Community Design Plan or Secondary Plan areas. A Zoning By-Law Amendment is required to remove the site and use-specific zone provisions of Exception 1327. The proposed residential uses are permitted by the parent GM zone. The retirement home and apartment building located at the northwest corner of the proponent's lands will be subject to a separate Site Plan Control application in the future, but is included in the current Zoning By-Law Amendment application. As such, this TIA will consider the traffic generated by the future retirement home/apartments, and the future Site Plan Control application for the proposed retirement home/apartments will include details on the on-site design aspects (such as access locations, development design, and parking provisions).

The study area for this report includes the boundary roadways Walkley Road, Conroy Road, St. Laurent Boulevard, and Don Reid Drive, as well as the following intersections:

- Walkley Road/Don Reid Drive/Ryder Street
- Walkley Road/160m West of Conroy Road
- Walkley Road/Conroy Road
- St. Laurent Boulevard/Conroy Road
- St. Laurent Boulevard/Don Reid Drive

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. Analysis will be completed for the 2024 build-out year and 2029 horizon year.

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

Forecasting

• The proposed development is estimated to generate 170 person trips (including 67 vehicle trips) during the AM peak hour, and 193 person trips (including 79 vehicle trips) during the PM peak hour.

Development Design and Parking

- In general, the proposed development includes a pavement width of 6.5m to 6.7m for onsite roadways with perpendicular parking spaces or no on-street parking. Parallel parking spaces are provided on the south side of Street 1 (adjacent to the public park), the east side of Street 1 (adjacent to 2500 St. Laurent Boulevard), and on the north side of Street 3 (adjacent to the commercial access serving 1950 Walkley Road and 2980 Conroy Road). These parallel parking spaces are provided as lay-bys, to maintain a narrower pavement width outside of these spaces and reduce the operating speed of vehicles on-site.
- On-site concrete sidewalks will be provided along the south side of Street 1 between Don Reid Drive and Street 3, the east side of Street 1, the south side of Street 3, and the east side of the additional lands to the north. Midblock pathways will also be provided between the proposed public park and Street 2, and between Street 2 and Street 1 at Street 3. These sidewalks will connect the proposed development to the proposed parkland fronting Don Reid Drive, and to the existing sidewalks along Conroy Road, St. Laurent Boulevard, and Don Reid Drive.
- Any required TDM-supportive design and infrastructure measures in the TDM checklist that are relevant to townhouse developments have been met.
- Garbage collection will take place curbside in front of the proposed dwellings. The on-site fire route will include all private roadways within the subject site.
- The minimum parking requirements will be met. As every proposed dwelling will include their own garage, the ZBL does not identify any minimum bicycle parking requirements.

Boundary Streets

- The results of the segment multi-modal level of service (MMLOS) analysis can be summarized as follows:
 - No boundary street meets the target pedestrian level of service (PLOS);
 - No boundary street meets the target bicycle level of service (BLOS);
 - Conroy Road meets the target transit level of service (TLOS), while Walkley Road does not;
 - All boundary streets meet the target truck level of service (TkLOS).
- Both sides of Walkley Road and Conroy Road do not meet the target PLOS C. Walkley Road can achieve the target PLOS C and Conroy Road can achieve a PLOS D by implementing sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m. This is identified for the City's consideration.
- The south side of St. Laurent Boulevard and west side of Don Reid Drive do not meet the target PLOS C, as sidewalks are only provided on one side of each roadway. Implementing curbside sidewalks with a minimum width of 1.8m are sufficient to achieve the target PLOS. This is identified for the City's consideration. The existing sidewalks on St. Laurent Boulevard and Don Reid Drive meet the target PLOS C, and therefore no recommendations for these sidewalks are identified. Any sidewalks that need to be reconstructed as a result of the proposed development will be reinstated to a width of 1.8m.
- Walkley Road does not meet the target BLOS B. The target BLOS B can only be achieved through the implementation of physically separated bikeways along Walkley Road. This is identified for the City's consideration.
- St. Laurent Boulevard and Don Reid Drive do not meet the target BLOS B. The target BLOS B can be achieved by providing curbside bike lanes with a minimum width of 1.5m, and reducing the operating speed to 50 km/h.
- Walkley Road does not meet the target TLOS B, which is achieved by providing bus lanes with no or limited parking/driveway friction. It is anticipated that this target will be met upon completion of the Baseline/Heron/Walkley/St. Laurent BRT project, which is anticipated to occur beyond 2031.

Access Intersections

- The proposed development includes two full-movement accesses to St. Laurent Boulevard and one full-movement access to Don Reid Drive. Depressed curbs and continuous sidewalks are proposed along the entirety of each access, in accordance with City standards. The design of each access meets the relevant provisions of the City's *Private Approach By-Law*.
- The proposed access to Don Reid Drive will have clear sightlines to Walkley Road to the north and St. Laurent Boulevard to the south. The proposed accesses to St. Laurent Boulevard are located on the inside of a slight curve, but will still achieve the sightlines recommended by the Transportation Association of Canada (TAC), provided that any vegetation within the ROW of St. Laurent Boulevard is trimmed and maintained. Therefore, no sightline concerns are anticipated.

• The proposed accesses to St. Laurent Boulevard and Don Reid Drive are anticipated to operate with an acceptable vehicular level of service for the buildout year 2024 and horizon year 2029.

Transportation Demand Management

- A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has committed to providing the following TDM measures at the sales centre:
 - Provide local area maps with walking/cycling access routes and key destinations;
 - Provide relevant transit schedules and route maps;
 - Provide a multimodal travel option information package.

Neighbourhood Traffic Management

• The peak hour and daily NTM thresholds for both St. Laurent Boulevard and Don Reid Drive are exceeded by the existing traffic volumes. Since St. Laurent Boulevard and Don Reid Drive primarily serve industrial, commercial, or office uses, no neighbourhood traffic management measures have been recommended as part of this proposed development.

<u>Transit</u>

• The proposed development is anticipated to generate 52 AM peak hour transit trips, (including 35 boarding and 17 alighting), and 55 PM peak hour transit trips (including 25 boarding and 30 alighting). These additional transit trips are not anticipated to require more frequent service at any stops within the study area.

Intersection MMLOS

- The results of the intersection MMLOS analysis can be summarized as follows:
 - No signalized intersections meet the target PLOS;
 - No signalized intersections meet the target BLOS;
 - Walkley Road/160m West of Conroy Road and St. Laurent Boulevard/Conroy Road meets the target TLOS, while Walkley Road/Don Reid Drive/Ryder Street and Walkley Road/Conroy Road do not;
 - Walkley Road/Conroy Road meets the target TkLOS, while Walkley Road/Don Reid Drive/Ryder Street, Walkley Road/160m West of Conroy Road, and St. Laurent Boulevard/Conroy Road do not.
- All approaches at the study area intersections do not meet the target PLOS C. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or removing right turn channels where applicable. The south and east approaches at Walkley Road/Conroy Road meet the City's vehicle/pedestrian conflict threshold to consider zebra-striped crosswalks.
- For approaches with failing BLOS based on left turn characteristics, the target BLOS can be achieved by implementing two-stage, left-turn cycling facilities. Implementing bike boxes would also require restricting right turns on red (RTOR). This is identified for the City's consideration.

- The south approach of Walkley Road/160m West of Conroy Road, the south and west approaches of Walkley Road/Conroy Road, and the east and west approaches of St. Laurent Boulevard/Conroy Road do not meet the target BLOS based on right turn characteristics. The provision of separated cycling facilities on Walkley Road and the east side of Conroy Road, and bike lanes on St. Laurent Boulevard is identified for the City's consideration.
- The north and west approaches of Walkley Road/Don Reid Drive/Ryder Street and all approaches of Walkley Road/Conroy Road do not meet the target TLOS B. It is anticipated that the target TLOS will be met on Walkley Road upon completion of the Baseline/Heron/ Walkley/St. Laurent BRT project, and on Conroy Road with the implementation of isolated transit priority measures. No recommendations are identified for Ryder Street (i.e. a local roadway with no transit priority designation).
- Any approaches that do not meet the target TkLOS represent right turns into private approaches or onto local/collector roadways with no truck route designation, and therefore no recommendations are identified.

Existing Traffic Operations

- The eastbound through and westbound left turn movements at Walkley Road/Conroy Road operate at an Auto LOS E during the PM peak hour.
- During the AM peak hour, the Synchro analysis identifies that the maximum (95th-percentile) queue lengths of the westbound through movements at Walkley Road/Don Reid Drive/Ryder Street and Walkley Road/160m West of Conroy Road extend into the upstream intersections on Walkley Road.
- During the PM peak hour, the Synchro analysis identified that the maximum queue length of the northbound left turn movement at Walkley Road/Don Reid Drive/Ryder Street exceeds the storage length of the auxiliary northbound left turn, but is contained within the taper. The maximum queue length of the eastbound through movement at Walkley Road/Conroy Road extends into the upstream intersection on Walkley Road.

Background Traffic Operations

- Compared to the existing conditions, improvements in some movements is due to differences in the Peak Hour Factor parameter (0.9 in existing conditions and 1.0 in future conditions, per the *2017 TIA Guidelines*).
- The eastbound through movement at Walkley Road/Conroy Road operates at an Auto LOS E during the PM peak hour. Increasing the green time for the eastbound-westbound phases has been reviewed, and the analysis indicates that this mitigation allows the eastbound through movement to operate at the target Auto LOS D.

Total Traffic Operations

- Compared to the future background traffic conditions, site-generated traffic is anticipated to have marginal impacts on traffic operations within the study area.
- Based on the foregoing, the proposed development is recommended from a transportation perspective.

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-Law Amendment, Site Plan Control, and Draft Plan of Condominium applications for the property located at 1900-1920 Walkley Road, 2425 Don Reid Drive, 2510 St. Laurent Boulevard, and 2990-3000 Conroy Road (referred to as 2510 St. Laurent Boulevard in this TIA). The subject site is approximately 5.89 hectares in size and is currently vacant land.

The subject site is surrounded by the following:

- Walkley Road, followed by parkland to the north,
- St. Laurent Boulevard, followed by commercial uses to the south,
- Conroy Road, followed by commercial uses to the east, and
- Don Reid Drive, followed by commercial uses to the west.

An aerial of the vicinity around the subject site is provided in Figure 1.

Figure 1: View of the Subject Site



1.2 Proposed Development

The proposed development will consist of 160 townhouse dwellings. Access to the townhouses will be provided via two driveways to St. Laurent Boulevard and one driveway to Don Reid Drive. The development will be constructed in a single phase, with a buildout year of 2024.

The proponent owns additional lands north of the proposed development which includes the subject site's entire frontage to Walkley Road. These lands are anticipated to include a retirement home with approximately 150 units and an apartment building with approximately 100 units. Access to the development block is anticipated to occur through a right-in/right-out (RIRO) access to Walkley Road and an all-movement access through the adjacent signalized commercial access to Walkley Road. In total, 410 dwellings are proposed for the entire subject site. The boundaries of the subject site currently include most of the westernmost commercial driveway to 1950 Walkley Road and the southernmost commercial driveway to 2980 Conroy Road. These driveways are intended to continue serving the adjacent commercial plaza and conveying the affected lands to the proper addresses will be resolved through this application process.

The subject site is located within the 'Evolving Neighbourhood' overlay, and is designated as 'Corridor – Minor' (Walkley Road) and 'Neighbourhood' on Schedule B3 of the City of Ottawa's Official Plan. The current zoning for the property is 'General Mixed Use' (GM[1327]), and the site is not located within any Community Design Plan or Secondary Plan areas. A Zoning By-Law Amendment is required to remove the site and use-specific zone provisions of Exception 1327. The proposed residential uses are permitted by the parent GM zone. The retirement home and apartment building located at the northwest corner of the proponent's lands will be subject to a separate Site Plan Control application in the future, but is included in the current Zoning By-Law Amendment application. As such, this TIA will consider the traffic generated by the future retirement home/apartments, and the future Site Plan Control application for the proposed retirement home/apartments will include details on the on-site design aspects (such as access locations, development design, and parking provisions).

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

1.3 Screening Form

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

- Trip Generation Trigger The development is anticipated to generate over 60 peak hour person trips; further assessment is **required** based on this trigger.
- Location Triggers The development does not propose a new connection to a boundary street designated in the City's Transit Priority, Rapid Transit, or Spine Bicycle Networks, and the development is not located in a Design Priority Area or Transit-Oriented Development zone; further assessment is **not required** based on this trigger.
- Safety Triggers The proposed development will include a driveway within the area of influence of a signalized intersection, and will be located within the auxiliary lane of an intersection; further assessment is **required** based on this trigger.

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

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

Walkley Road is an arterial roadway that generally runs on an east-west alignment between Riverside Drive and Ramsayville Road. Within the study area, Walkley Road has a four-lane divided urban cross-section, concrete sidewalks on both sides of the roadway, and a posted speed limit of 50 km/h. The roadway is classified as a truck route, allowing full loads. On-street parking is not permitted. The City's Official Plan identifies a right-of-way (ROW) protection of 44.5m for Walkley Road between Heron Road and the Greenbelt boundary. A ROW widening may be required.

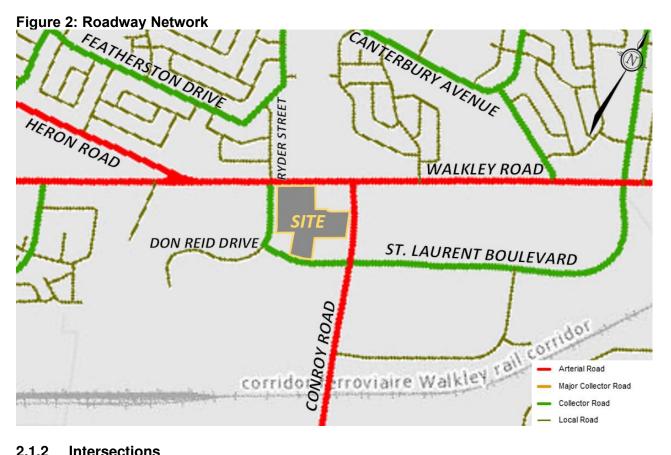
Conroy Road is an arterial roadway that generally runs on a north-south alignment between Walkley Road and Bank Street. Within the study area, Conroy Road has a five-lane divided urban cross-section, a concrete sidewalk on the east side of the roadway, an asphalt multi-use pathway on the west side of the roadway, and a posted speed limit of 60 km/h. The roadway is classified as a truck route, allowing full loads. On-street parking is not permitted. The City's Official Plan identifies a ROW protection of 44.5m for Conroy Road between Walkley Road and the Greenbelt boundary. A ROW widening is not required.

St. Laurent Boulevard is a curvilinear collector roadway that runs between Don Reid Drive and Russell Road. Within the study area, St. Laurent Boulevard has a two-lane undivided urban crosssection, a concrete sidewalk on the north side of the roadway, and a posted speed limit of 50 km/h. The roadway is not classified as a truck route. On-street parking is not permitted. The City's Official Plan does not identify a ROW protection for this section of St. Laurent Boulevard, and therefore no ROW widening is required.

Don Reid Drive is a curvilinear roadway that starts at Walkley Road and terminates approximately 830m southwest of the intersection of Walkley Road/Don Reid Drive/Ryder Street. Don Reid Drive is classified as a collector roadway between Walkley Road and St. Laurent Boulevard, and as a local roadway south of St. Laurent Boulevard. Within the study area, Don Reid Drive has a two-lane undivided urban cross-section, a concrete sidewalk on the east side of the roadway, and an unposted speed limit of 50 km/h. The roadway is not classified as a truck route. On-street parking is not permitted. The City's Official Plan does not identify a ROW protection for Don Reid Drive, and therefore no ROW widening is required.

Ryder Street is a local roadway that generally runs on a north-south alignment between Walkley Road and Featherston Drive. Within the study area, Ryder Street has a two-lane undivided urban cross-section, a concrete sidewalk on the east side of the roadway, and an unposted speed limit of 50 km/h. The roadway is not classified as a truck route. On-street parking is permitted in select areas on the west side of the roadway from April 1 to November 30.

The roadways of the greater area surrounding the subject site is illustrated in Figure 2.



2.1.2 Intersections

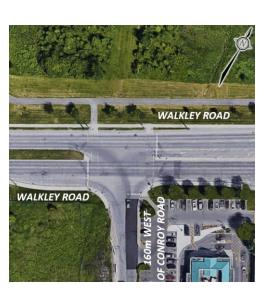
Walkley Road/Don Reid Drive/Ryder Street

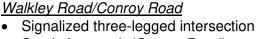
- Signalized four-legged intersection •
- North Approach (Ryder Street): one left turn lane and one shared through/right turn lane
- South Approach (Don Reid Drive): one left turn lane and one right turn lane (northbound through movement is restricted, except for authorized vehicles and cyclists)
- East/West Approaches (Walkley Road): one left turn lane, one through lane, and one shared through/right turn lane
- Standard crosswalks are provided on all approaches



Walkley Road/160m West of Conroy Road

- Signalized three-legged intersection
- South Approach (Access to 1950 Walkley Road): one left turn lane and one right turn lane
- East Approach (Walkley Road): one left turn lane and two through lanes
- West Approach (Walkley Road): two through lanes and one right turn lane
- Standard crosswalks are provided on all approaches
- Pocket bike lane is provided on west approach





- South Approach (Conroy Road): two left turn lanes and one channelized right turn lane
- East Approach (Walkley Road): two left turn lanes and two through lanes
- West Approach (Walkley Road): two through lanes and one channelized right turn lane
- Standard crosswalks are provided on all approaches
- Pocket bike lanes are provided on south and west approaches

St. Laurent Boulevard/Conroy Road

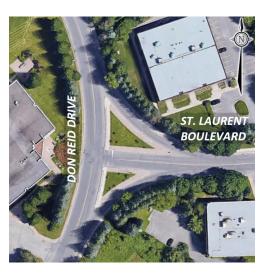
- Signalized four-legged intersection
- North Approach (Conroy Road): one slotted left turn lane, one through lane, and one shared through/right turn lane
- South Approach (Conroy Road): one left turn lane, two through lanes, and one shared through/right turn lane
- East Approach (St. Laurent Boulevard): one left turn lane, one through lane, and one right turn lane
- West Approach (St. Laurent Boulevard): one left turn lane, one through lanes, and one channelized right turn lane
- Standard crosswalks are provided on all approaches
- Bike lanes are provided on north and south approaches





St. Laurent Boulevard/Don Reid Drive

- Unsignalized three-legged intersection
- Stop-controlled on St. Laurent Boulevard
- North Approach (Don Reid Drive): one shared left turn/through lane
- South Approach (Don Reid Drive): one through lane and one channelized right turn lane
- East Approach (St. Laurent Boulevard): one left turn lane and one channelized right turn lane
- Standard crosswalk is provided on east approach



2.1.3 Driveways

A review of the existing adjacent driveways (i.e. accesses within 200m of the subject site, per the *2017 TIA Guidelines*) along the boundary roads are provided below.

Walkley Road, North Side

11 driveway to residences at 1845, 1847, 1849, 1853, 1855, 1857, 1859, 1863, 1865, 1867, 1869, 1871, 1873, 1875, 1877, 1883, 1885, 1897, & 1899 Walkley Road

Conroy Road, East Side

One driveway to commercial uses at 2020
 Walkley Road

St. Laurent Boulevard, North Side

- One driveway to commercial uses at 2490
 and 2500 St. Laurent Boulevard
- One driveway to commercial uses at 2520
 St. Laurent Boulevard

Don Reid Drive, East Side

 One driveway to commercial/industrial uses at 2455 Don Reid Drive

Walkley Road, South Side

• Three driveways to commercial uses and a gas station at 1950 and 1970 Walkley Road

Conroy Road, West Side

- Two driveways to commercial uses and a gas station at 1970 Walkley Road and 2980 Conroy Road
- One driveway to commercial uses at 2490 and 2500 St. Laurent Boulevard

St. Laurent Boulevard, South Side

 Four driveways to commercial/industrial uses or government offices at 2505, 2507, 2515, & 2525 St. Laurent Boulevard and 3030 Conroy Road

Don Reid Drive, West Side

- One driveway to an early years centre at 2330
 Don Reid Drive
- Two driveways to commercial/industrial uses at 2410 and 2420 Don Reid Drive

2.1.4 Pedestrian and Cycling Facilities

Sidewalks are provided on both sides of Walkley Road, on the north side of St. Laurent Boulevard, and on the east side of Conroy Road, Don Reid Drive, and Ryder Street. A National Capital Commission (NCC) asphalt multi-use pathway (MUP) is provided on the north side of Walkley Road, which continues as a City of Ottawa MUP on the west side of Conroy Road. This pathway generally runs on a north-south alignment between Smyth Road at Roger Guindon Avenue (north of the study area) and Conroy Road at Hunt Club Road (south of the study area).

In the City's primary cycling network, Walkley Road and Conroy Road are classified as Spine Routes, while St. Laurent Boulevard, Ryder Street, and Don Reid Drive between Walkley Road and St. Laurent Boulevard are classified as Local Routes. The MUPs described above are shown in the cycling network as a Major Pathway. Bike lanes are provided along Conroy Road.

The NCC MUP connecting Smyth Road and Hunt Club, the entirety of the City's MUP along Conroy Road, and the section of Walkley Road between Heron Road and Conroy Road are all designated in the City's Crosstown Bikeway network.

The pedestrian and cycling network of the greater area surrounding the subject site is illustrated in **Figure 3**.

2.1.5 Area Traffic Management

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

Signage on Ryder Street indicates that the residential neighbourhood north of Walkley Road is a 'traffic calmed neighbourhood.' Flex posts and painted islands have been implemented in select curbside locations on Ryder Street. North of the study area, speed humps, bulbouts, and speed boards have been implemented on Featherston Drive north of Ryder Street.

2.1.6 Transit

A summary of the various OC Transpo routes which serve the study area is included in **Table 1**. The locations of bus stops in the vicinity of the subject site are described in **Table 2**, and are shown in **Figure 4**.

Detailed route information and an excerpt from the OC Transpo System Map are included in **Appendix C**.

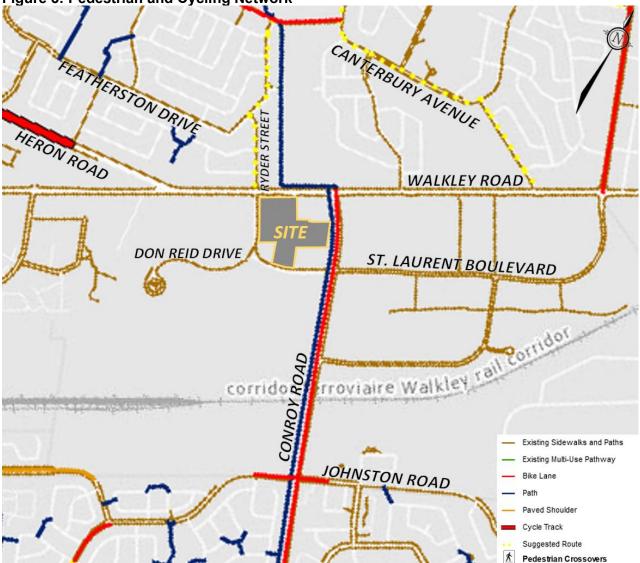


Figure 3: Pedestrian and Cycling Network

Table 1: OC Transpo Route Information

Route	From ↔ To	Frequency				
40	St. Laurent ↔	All day service, seven days a week;				
40	Greenboro	15- to 30-minute headways				
46	Hurdman ↔	All day service, seven days a week;				
46	Billings Bridge	30-minute headways				
140	Heron Park ↔	Limited service during the day, Monday to Saturday;				
140	Billings Bridge	30-minute headways				
291	Hurdman ↔	Peak period service, weekdays only;				
291	Herongate	30-minute headways in peak direction only				
644	Canterbury ↔	Service at select times on school days only				
044	Greenboro	Service at select times on school days only				
649	Hillcrest ↔	Sorvice at calent times on askeel days only				
049	Greenboro	Service at select times on school days only				
600	Omer-Deslauriers ↔	Convise at calest times an asheal days only				
689	Billings Bridge	Service at select times on school days only				

Stop	Location	Routes Serviced
#1321	East side of Conroy Road, south of St. Laurent Boulevard	40, 644, 649
#1899	South side of Walkley Road, east of Harding Road	46, 644, 649
#2344	West side of Conroy Road, south of St. Laurent Boulevard	40, 644, 649
#4307	North side of St. Laurent Boulevard, east of Conroy Road	40
#4311	South side of St. Laurent Boulevard, east of Conroy Road	40
#6927	South side of Walkley Road, midblock between Don Reid Drive and 160m West of Conroy Road	46, 689
#7200	South side of Walkley Road, west of Holly Lane	46, 689
#7202	North side of Walkley Road, west of Holly Lane	46, 140, 291, 689
#7281	North side of Walkley Road, midblock between Conroy Road and 160m West of Conroy Road	46, 689
#7282	South side of Walkley Road, east of Conroy Road	46, 644, 649
#7283	North side of Walkley Road, midblock between Heron Road and Ryder Street	46, 140, 291, 689
#8324	North side of Walkley Road, west of Harding Road	46, 644, 649
#8388	South side of Walkley Road, midblock between Heron Road and Don Reid Drive	46, 291, 689
#8391	North side of Walkley Road, west of Ryder Street	46, 140, 291, 689
#8398	East side of Ryder Street, north of Walkley Road	291

Table 2: OC Transpo Transit Stops

Figure 4: OC Transpo Bus Stop Locations



2.1.7 Existing Traffic Volumes

Weekday traffic counts completed by the City of Ottawa or coordinated by Novatech were used to determine the existing pedestrian, cyclist, and vehicular traffic volumes at the study area intersections. These counts were completed on the dates listed below:

•	Walkley Road/Don Reid Drive/Ryder Street	November 29, 2016	(City)
•	Walkley Road/160m West of Conroy Road	January 8, 2019	(City)
٠	Walkley Road/Conroy Road	February 22, 2018	(City)
•	St. Laurent Boulevard/Conroy Road	June 1, 2017	(City)
•	St. Laurent Boulevard/Don Reid Drive	June 8, 2022	(Nova)

It is noted that the City has traffic count data from January 2022 for Walkley Road/Don Reid Drive/ Ryder Street, which was collected at a time when restrictions related to the COVID-19 pandemic were in place. Comparing the 2022 data to the 2016 data, peak hour volumes at all approaches have decreased by approximately 20% to 40%, and are not consistent with the traffic volumes observed at the other study area intersections. Therefore, the 2016 count data at Walkley Road/Don Reid Drive/Ryder Street has been considered in this TIA.

All traffic count data previously discussed are included in **Appendix D**. Traffic volumes within the study area are shown in **Figure 5**.

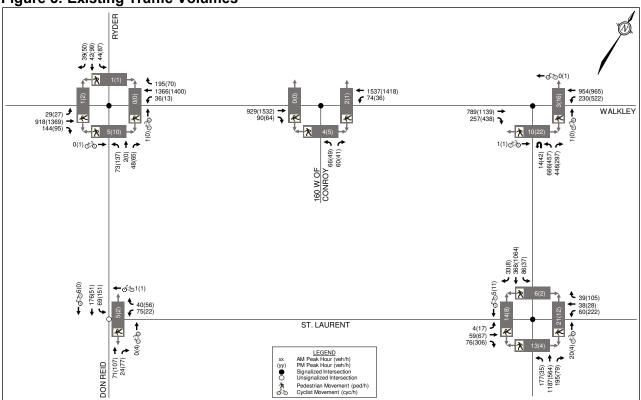


Figure 5: Existing Traffic Volumes

18,580 vpd;

3,930 vpd;

4,330 vpd.

Based on the traffic count data above, the approximate average annual daily traffic (AADT) volumes for the boundary streets can be summarized as follows:

- Walkley Road (Don Reid Drive/Ryder Street to Conroy Road): 38,710 vpd;
- Conroy Road (Walkley Road to St. Laurent Boulevard):
- St. Laurent Boulevard (Don Reid Drive to Conroy Road):
- Don Reid Drive (Walkley Road to St. Laurent Boulevard):

2.1.8 Collision Records

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

The collision data has been evaluated to determine if there are any identifiable collision patterns, which are defined in the *2017 TIA Guidelines* as 'more than six collisions in five years' for any one movement. The number of collisions at each intersection from January 1, 2016 to December 31, 2020 is summarized in **Table 3**.

Table 3: Reported Collisions

Intersection or	Impact Types						
Street Segment	Approach	Angle	Rear End	Sideswipe	Turning Mvmt	SMV ⁽¹⁾ / Other	Total
Walkley Road/ Don Reid Drive/Ryder Street	1	17	13	3	1	2	37
Walkley Road/ 160m West of Conroy Road	-	-	5	-	4	2	11
Walkley Road/ Conroy Road	-	4	51	11	4	4	74
St. Laurent Boulevard/ Conroy Road	-	7	10	3	2	-	22
St. Laurent Boulevard/ Don Reid Drive	-	1	-	-	-	-	1
Walkley Road btwn Don Reid Drive & 160m West of Conroy Road	-	-	4	1	-	-	5
Walkley Road btwn Conroy Road & 160m West of Conroy Road	-	2	4	-	1	-	7
Conroy Road btwn Walkley Road & St. Laurent Boulevard	-	-	1	1	-	1	3
St. Laurent Boulevard btwn Conroy Road & Don Reid Drive	-	1	-	-	1	-	2
Don Reid Drive btwn Walkley Road & St. Laurent Boulevard	-	-	-	-	-	-	0

1. SMV = Single Motor Vehicle

Walkley Road/Don Reid Drive/Ryder Street

A total of 37 collisions were reported at this intersection over the last five years, of which there were one approaching impact, 17 angle impacts, 13 rear-end impacts, three sideswipe impacts, one turning movement impact, and two single-vehicle/other impacts. Ten of the 37 collisions resulted in injuries, but none caused fatalities. Thirteen of the collisions occurred in poor driving conditions. Two collisions involved cyclists, and no collisions involved pedestrians.

Of the 17 angle impacts, two involved a northbound vehicle and a westbound cyclist, and 15 involved a southbound vehicle and a westbound vehicle. Four of the 17 collisions occurred in poor driving conditions. The 15 southbound-westbound angle impacts meet the threshold to be considered a collision pattern. The apparent driver action in 14 of the 15 impacts was the westbound driver disobeying the traffic control. While the intersection appears to have standard geometry and no appreciable changes in grade, it is possible that driver sightlines are obscured at the northeast corner of the intersection, where there is currently fencing and tall vegetation. It should be noted that daylight triangles are not provided at the northwest or northeast corners of the intersection.

Of the 13 rear-end impacts, one involved southbound vehicles, five involved eastbound vehicles, and seven involved westbound vehicles. Three of the 13 collisions occurred in poor driving conditions. The seven westbound rear-end impacts meet the collision pattern threshold. It is anticipated that the number of rear-end impacts at this intersection is a function of high volumes on Walkley Road.

The two collisions involving cyclists included a northbound right-turning vehicle and a westbound through cyclist, suggesting that these cyclists were riding on the south sidewalk of Walkley Road.

Walkley Road/160m West of Conroy Road

A total of 11 collisions were reported at this intersection over the last five years, of which there were five rear-end impacts, four turning movement impacts, and two single vehicle/other impacts. Seven of the 11 collisions resulted in injuries, but none caused fatalities. Three of the collisions occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Walkley Road/Conroy Road

A total of 74 collisions were reported at this intersection over the last five years, of which there were four angle impacts, 51 rear-end impacts, 11 sideswipe impacts, four turning movement impacts, and four single vehicle/other impacts. Eight of the 74 collisions resulted in injuries, but none caused fatalities. Twenty-nine of the collisions occurred in poor driving conditions. One collision involved a pedestrian, and no collisions involved cyclists.

Of the 51 rear-end impacts, 16 involved northbound vehicles, 20 involved eastbound vehicles, and 15 involved westbound vehicles. Fifteen of the 51 collisions occurred in poor driving conditions. Each approach of this intersection meets the collision pattern threshold. It is anticipated that the number of rear-end impacts at this intersection is a function of the high traffic volumes observed on both Walkley Road and Conroy Road.

Of the 11 sideswipe impacts, three involved northbound vehicles, two involved eastbound vehicles, and six involved westbound vehicles. Three of the 11 collisions occurred in poor driving conditions.

The collision involving a pedestrian occurred in dark driving conditions, and involved a westbound through vehicle. The collision records identify that the vehicle was being driven properly, suggesting that the pedestrian may not have crossed during the appropriate 'walk' phase.

St. Laurent Boulevard/Conroy Road

A total of 22 collisions were reported at this intersection over the last five years, of which there were seven angle impacts, ten rear-end impacts, three sideswipe impacts, and two single vehicle/other impacts. Five of the 22 collisions resulted in injuries, but none caused fatalities. Seven of the collisions occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Of the seven angle impacts, five involved a northbound vehicle and a westbound vehicle, and two involved a southbound vehicle and a westbound vehicle. Three of the seven collisions occurred in poor driving conditions.

Of the ten rear-end impacts, two involved northbound vehicles, three involved southbound vehicles, three involved eastbound vehicles, and two involved westbound vehicles. One of the ten collisions occurred in poor driving conditions.

St. Laurent Boulevard/Don Reid Drive

One collision has been reported at this intersection over the last five years, which was an angle impact in poor driving conditions. This collision did not result in injuries, and did not involve cyclists or pedestrians.

Walkley Road between Don Reid Drive and 160m West of Conroy Road

A total of five collisions were reported along this segment over the last five years, of which there were four rear-end impacts and one sideswipe impact. All impacts involved eastbound vehicles. Three of the five collisions occurred in poor driving conditions, and no collisions resulted in injuries. No collisions involved cyclists or pedestrians.

Walkley Road between Conroy Road and 160m West of Conroy Road

A total of seven collisions were reported along this segment over the last five years, of which there were two angle impacts, four rear-end impacts, and one turning movement impact. Four of the seven collisions occurred in poor driving conditions, and no collisions resulted in injuries. No collisions involved cyclists or pedestrians.

Conroy Road between Walkley Road and St. Laurent Boulevard

A total of three collisions were reported along this segment over the last five years, of which there was one rear-end impact, one sideswipe impact, and one single vehicle/other impact. Two of the three collisions occurred in poor driving conditions, and the single-vehicle impact resulted in injuries. No collisions involved cyclists or pedestrians.

St. Laurent Boulevard between Conroy Road and Don Reid Drive

A total of two collisions were reported along this segment over the last five years, of which there was one angle impact and one single vehicle/other impact. One of the two collisions occurred in poor driving conditions, and neither collision resulted in injuries. The collisions did not involve cyclists or pedestrians.

2.2 Planned Conditions

2.2.1 Planned Transportation Projects

The 2013 Ottawa Cycling Plan and 2013 Ottawa Pedestrian Plan do not identify any improvements within the study area.

The City's 2013 Transportation Master Plan (TMP) identifies a Rapid Transit and Transit Priority (RTTP) project within the study area. The Baseline/Heron/Walkley/St. Laurent Bus Rapid Transit (BRT) project will provide high-quality transit access to employment, commercial, and institutional land uses along the corridor. In the 2031 Affordable Network, at-grade BRT is planned to run from Baseline Station to Heron Station (i.e. west of the study area). In the 2031 Network Concept, at-grade BRT will connect from Bayshore Station to St. Laurent Station. The 2031 Network Concept will not be implemented prior to 2031.

Conroy Road is identified in the City's TMP for transit signal priority and queue jump lanes between Walkley Road and Hunt Club Road. This corridor is part of the City's 2031 RTTP Network Concept, but will not be implemented prior to 2031.

The Alta Vista Transportation Corridor is identified in the 2031 Roadway Network Concept, as a new four-lane roadway (including two peak-period bus lanes) between the Ottawa Health Services Centre and Walkley Road at Conroy Road. The roadway will also include transit signal priority and queue jump lanes, and will improve transit access to the Ottawa Hospital, CHEO, and the Canadian Forces Health Care Centre. The roadway is anticipated to address capacity deficiencies and the Environmental Assessment (EA) is complete. While this corridor is part of the City's 2031 Network Concept, it will not be implemented prior to 2031.

2.2.2 Other Area Developments

In proximity of the subject site, there are multiple other developments that are under construction, approved, or in the approval process. In the list below, only development applications significant enough to necessitate transportation studies are included.

Timbercreek Heron Gate

The proposed redevelopment is located at 2848, 2851, 2881, and 2898 Baycrest Drive, and 2820 and 2831 Cedarwood Drive. In seven blocks, the redevelopment will consist of 118 low-rise dwellings, 2,047 mid-rise dwellings, and 2,874 high-rise dwellings. A TIA was prepared in April 2021 by CGH, in support of Zoning By-Law Amendment and Official Plan Amendment applications, and notes that subsequent TIAs will be required as Site Plan Control applications for each block as the project moves forward. Per the 2021 TIA, the anticipated buildout year for this development is 2040, and therefore analysis was conducted for an interim year 2030 and ultimate buildout year 2040.

2020 Walkley Road and 2935 Conroy Road

The proposed redevelopment will consist of three single-storey warehouses with a total gross floor area (GFA) of approximately 262,715 ft². A TIA was prepared in August 2021 by Novatech, in support of Zoning By-Law Amendment and Site Plan Control applications. Per the 2021 TIA, the anticipated buildout year of the development is 2023, and analysis was conducted for the buildout year 2023 and horizon year 2028.

2500 St. Laurent Boulevard

The now-constructed development consists of two two-storey office buildings with a total GFA of approximately 68,134 ft². A Transportation Brief was prepared in October 2017 by Stantec. Per the brief, the anticipated buildout year was 2021 (i.e. after traffic count data was collected at all signalized study area intersections), and analysis was conducted for the buildout year 2021 and horizon year 2026.

2190 Halifax Drive

The proposed development will consist of 202 additional high-rise dwellings. A TIA was prepared in July 2019 by Dillon, in support of a Site Plan Control application. Per the 2019 TIA, the anticipated buildout year was 2021, and analysis was conducted for the buildout year 2021 and horizon year 2026. For the purposes of this TIA, buildout of this development is anticipated to occur by 2024 (i.e. the assumed buildout year for this application).

2.3 **Study Area and Time Periods**

The study area for this report includes the boundary roadways Walkley Road, Conroy Road, St. Laurent Boulevard, and Don Reid Drive, as well as the following intersections:

- Walkley Road/Don Reid Drive/Ryder Street
 St. Laurent Boulevard/Conroy Road
- Walkley Road/160m West of Conroy Road
 St. Laurent Boulevard/Don Reid Drive
- Walkley Road/Conroy Road

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. Analysis will be completed for the 2024 build-out year and 2029 horizon year.

2.4 **Exemptions Review**

This module reviews possible exemptions from the final Transportation Impact Assessment, as outlined in the 2017 TIA Guidelines. The applicable exemptions for this site are shown in Table 4.

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

Table 4: TIA Exemptions

Based on the foregoing, the following modules will be included in the TIA report:

Design Review Component

- Module 4.1: Development Design
- Module 4.2: Parking
- Module 4.3: Boundary Streets
- Module 4.4: Access Design

Network Impact Component

- Module 4.5: Transportation Demand Management
- Module 4.6: Neighbourhood Traffic Management
- Module 4.7: Transit
- Module 4.9: Intersection Design

3.0 FORECASTING

3.1 Development-Generated Travel Demand

3.1.1 Trip Generation

Trips generated by the proposed townhouse/apartment dwellings and proposed retirement dwellings have been estimated separately, as described below.

Proposed Townhouse/Apartment Dwellings

The number of person trips generated by the proposed townhouse and apartment dwellings have been estimated using the *TRANS Trip Generation Manual Summary Report*, which was prepared in October 2020 by WSP. The *TRANS Trip Generation Manual* presents peak period trip generation rates and mode shares for different types of housing for the AM and PM peak periods, including the Low-Rise (one to two storeys) and High-Rise (three or more storeys) Multifamily Housing land uses. The process of converting the trip generation estimates from peak period to peak hour is discussed below. Relevant excerpts of the *TRANS Trip Generation Manual* are included in **Appendix F**.

The *TRANS Trip Generation Manual* identifies the subject site as being located within the Alta Vista district, which has the following observed mode shares for low-rise and high-rise multifamily housing during the peak hours:

•	Mode	Low-Rise Multifamily Housing	High-Rise Multifamily Housing
٠	Auto Driver:	38% AM peak, 38% PM peak;	38% AM peak, 45% PM peak.
٠	Auto Passenger:	15% AM peak, 19% PM peak;	12% AM peak, 16% PM peak.
٠	Transit:	35% AM peak, 31% PM peak;	42% AM peak, 28% PM peak.
•	Cyclist:	1% AM peak, 2% PM peak;	2% AM peak, 2% PM peak.
•	Pedestrian:	10% AM peak, 10% PM peak;	7% AM peak, 9% PM peak.

One set of mode shares have been assumed for both peak hours and for both townhouse and apartment residents. These mode shares are generally based on the above mode shares (i.e. 40% driver, 15% passenger, 30% transit, 5% cyclist, 10% pedestrian).

For the Multifamily Housing land uses, the process of converting the trip generation estimates from peak period to peak hour is shown in the following tables. The estimated number of person trips generated by the proposed townhouse dwellings for the AM and PM peak periods are shown in **Table 5**. A breakdown of these trips by modal share is shown in **Table 6**.

Table 5: Proposed Townhouses and Apartments – Peak Period Trip Generation

Land Use	TRANS Rate	Units	AM Peak Period (ppp ⁽¹⁾)			PM Peak Period (ppp)		
Lanu USE		Units	IN	OUT	тот	IN	OUT	тот
Low-Rise Multifamily Housing	AM: 1.35 PM: 1.58	160	65	151	216	141	111	252
High-Rise Multifamily Housing	AM: 0.80 PM: 0.90	100	25	55	80	52	38	90
	90	206	296	193	149	342		

1. ppp: Person Trips per Peak Period

Travel Mode	Mode Share	A	I Peak Peri	od	PM Peak Period			
	Mode Share	IN	OUT	ТОТ	IN	OUT	тот	
Peak Period Person Trips		90	206	296	193	149	342	
Auto Driver	40%	36	82	118	77	59	136	
Auto Passenger	15%	13	31	44	29	23	52	
Transit	30%	27	62	89	58	44	102	
Cyclist	5%	5	10	15	10	8	18	
Pedestrian	10%	9	21	30	19	15	34	

Table 6: Proposed Townhouses and Apartments – Peak Period Trips by Mode Share

Table 4 of the *TRANS Trip Generation Manual* includes adjustment factors to convert the estimated number of trips generated for each mode from peak period to peak hour. A breakdown of the peak hour trips by mode is shown in **Table 7**.

Table 7: Proposed Townhouses and Apartments – Peak Hour Trips by Mode Share

Travel Mode	Adj. F	actor	Α	M Peak Ho	ur	P	ur	
	AM	PM	IN	OUT	тот	IN	OUT	тот
Auto Driver	0.48	0.44	17	40	57	34	26	60
Auto Passenger	0.48	0.44	6	15	21	13	10	23
Transit	0.55	0.47	15	34	49	27	21	48
Cyclist	0.58	0.48	3	6	9	5	4	9
Pedestrian	0.58	0.52	5	12	17	10	8	18
Peak Hour Person Trips			46	107	153	89	69	158

Proposed Retirement Dwellings

The number of person trips generated by the proposed retirement dwellings have been estimated using the trip generation rates outlined in the *ITE Trip Generation Manual*, 11th Edition, corresponding to the Congregate Care Facility land use (code 253). Trips estimated using the *ITE Trip Generation Manual* have been converted to person trips using an adjustment factor of 1.28, consistent with the City's 2017 TIA Guidelines.

Mode shares for the proposed retirement dwellings have been estimated using data outlined in the 2011 TRANS O-D Survey Report, based on all trips from/within the Alta Vista district during the AM peak hour and all trips to/within Alta Vista during the PM peak hour.

The estimated number of person trips generated by the proposed retirement dwellings for the AM and PM peak hours are shown in **Table 8**. A breakdown of these trips by modal share is shown in **Table 9**.

Table 8: Proposed Retirement – Peak Hour Trip Generation

Land Use	ITE Code	Units	AM Peak Hour (pph ⁽¹⁾)			PM Peak Hour (pph)		
	TIE Coue	Units	IN	OUT	тот	IN	OUT	тот
Congregate Care	253	150	10	7	17	17	18	35

1. pph: Person Trips per Hour

Travel Mode	Mode Share	A	M Peak Ho	ur	PM Peak Hour				
	Mode Share	IN	OUT	тот	IN	OUT	ТОТ		
Peak Hour Person Trips		10	7	17	17	18	35		
Auto Driver	55%	6	4	10	9	10	19		
Auto Passenger	15%	1	1	2	3	3	6		
Transit	20%	2	1	3	3	4	7		
Cyclist	0%	-	-	-	_	_	-		
Pedestrian	10%	1	1	2	2	1	3		

Table 9: Proposed Retirement – Peak Hour Trips by Mode Share

The peak hour trip generation estimates by mode share for the entire proposed development (shown in **Table 7** and **Table 9**) have been added together, and are shown in **Table 10**.

Table 10: Entire Proposed Development – Total Peak Hour Trips

Travel Mode		AM Peak Ho	ur	PM Peak Hour			
	IN	OUT	тот	IN	OUT	ТОТ	
Peak Hour Person Trip	os 56	114	170	106	87	193	
Auto Driv	er 23	44	67	43	36	79	
Auto Passeng	er 7	16	23	16	13	29	
Tran	sit 17	35	52	30	25	55	
Cycl	st 3	6	9	5	4	9	
Pedestria	an 6	13	19	12	9	21	

As shown in the previous table, the proposed development is estimated to generate 170 person trips (including 67 vehicle trips) during the AM peak hour, and 193 person trips (including 79 vehicle trips) during the PM peak hour.

3.1.2 Trip Distribution

The assumed distribution of trips generated by the proposed development have been derived from existing traffic patterns associated with the typical commute (i.e. outbound AM trips and inbound PM trips), and can be summarized as follows:

- 15% to/from the south via Conroy Road;
- 10% to/from the east via St. Laurent Boulevard;
- 35% to/from the east via Walkley Road;
- 40% to/from the west via Walkley Road.

3.1.3 Trip Assignment

For the purposes of this TIA, all trips to/from the retirement home and apartment building have been assigned to a future RIRO access on Walkley Road or to Walkley Road/160m West of Conroy Road. Trips arriving from the west and departing to the south or east have been assigned equally between both access locations, while all other trips have been assigned to the intersection at Walkley Road/160m West of Conroy Road.

Based on the layout of the proposed development, vehicle trips generated by the proposed townhouses have been assigned to the proposed accesses as follows:

Eastern Access to St. Laurent Boulevard

- 60% of trips to/from the south via Conroy Road;
- 60% of trips to/from the east via St. Laurent Boulevard;
- 45% of trips to/from the east via Walkley Road;
- 5% of trips to/from the west via Walkley Road.

Western Access to St. Laurent Boulevard

- 30% of trips to/from the south via Conroy Road;
- 30% of trips to/from the east via St. Laurent Boulevard;
- 15% of trips to/from the east via Walkley Road;
- 5% of trips to/from the west via Walkley Road.

Access to Don Reid Drive

- 10% of trips to/from the south via Conroy Road;
- 10% of trips to/from the east via St. Laurent Boulevard;
- 40% of trips to/from the east via Walkley Road;
- 90% of trips to/from the west via Walkley Road.

3.2 Background Traffic

3.2.1 General Background Growth Rate

A review of snapshots of the City's *Strategic Long-Range Model* and *Intersection Traffic Growth Rates (2000-2016)* has been conducted. Both resources are included in **Appendix H**. Comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes, the *Strategic Long-Range Model* generally suggests positive growth between 0% and 1% per annum on Walkley Road and negative growth between 0% and -1% per annum on Conroy Road. The *Intersection Traffic Growth Rates* figures, which determine growth rates based on total vehicular volumes entering the intersection, identify growth rates for the following study area intersections.

- Walkley Road/Conroy Road
 - AM Peak Hour: negative growth (between -0.2% and -2.0% per annum);
 - PM Peak Hour: negative growth (between -0.2% and -2.0% per annum).
- St. Laurent Boulevard/Conroy Road
 - AM Peak Hour: positive growth (between +0.2% and +2.0% per annum);
 - PM Peak Hour: no growth (between -0.2% and +0.2% per annum).

In the interest of maintaining a conservative analysis, an annual background growth rate assumption of 1% has been applied to the arterial roadways Walkley Road and Conroy Road in this TIA.

3.2.2 Other Area Developments

As first discussed in Section 2.2.2, traffic generated by the following developments in proximity of the subject site have been considered in the 2024 and 2029 background volumes. Relevant excerpts of the traffic studies in support of these developments are included in **Appendix G**.

Timbercreek Heron Gate

The proposed redevelopment is located at 2848, 2851, 2881, and 2898 Baycrest Drive, and 2820 and 2831 Cedarwood Drive. The redevelopment will ultimately consist of seven blocks, with 118 low-rise dwellings, 2,047 mid-rise dwellings, and 2,874 high-rise dwellings. Per the 2021 TIA, the anticipated buildout year for this development is 2040, and therefore analysis was conducted for an interim year 2030 and ultimate buildout year 2040. For the purposes of this TIA, traffic generated by the interim year 2030 has been added to the 2029 background traffic volumes.

2020 Walkley Road and 2935 Conroy Road

The proposed redevelopment will consist of three single-storey warehouses with a total gross floor area (GFA) of approximately 262,715 ft². Per the 2021 TIA, the anticipated buildout year of the development is 2023, and analysis was conducted for the buildout year 2023 and horizon year 2028. For the purposes of this TIA, traffic generated by this development has been added to the 2024 and 2029 background traffic volumes.

2500 St. Laurent Boulevard

The now-constructed development consists of two two-storey office buildings with a total GFA of approximately 68,134 ft². A Transportation Brief was prepared in October 2017 by Stantec. Since traffic count data was collected at all signalized study area intersections prior to completion of the development, site-generated traffic has been added to the 2024 and 2029 background traffic volumes within the study area.

2190 Halifax Drive

The proposed development will consist of 202 additional high-rise dwellings. Per the 2019 TIA, the anticipated buildout year was 2021, and analysis was conducted for the buildout year 2021 and horizon year 2026. For the purposes of this TIA, traffic generated by this development has been added to the 2024 and 2029 background traffic volumes.

3.3 Future Traffic Conditions

The figures below present the following future traffic conditions:

- Proposed site-generated traffic volumes are shown in **Figure 6**;
- Other area development-generated traffic volumes in 2024 are shown in Figure 7;
- Other area development-generated traffic volumes in 2029 are shown in Figure 8;
- Background traffic volumes in 2024 are shown in Figure 9;
- Background traffic volumes in 2029 are shown in Figure 10;
- Total traffic volumes in 2024 are shown in Figure 11;
- Total traffic volumes in 2029 are shown in Figure 12.

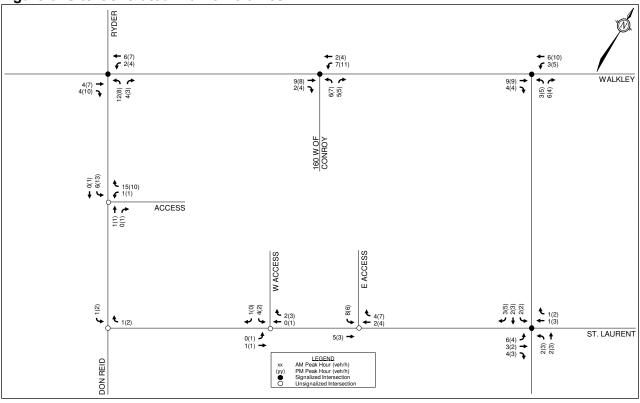
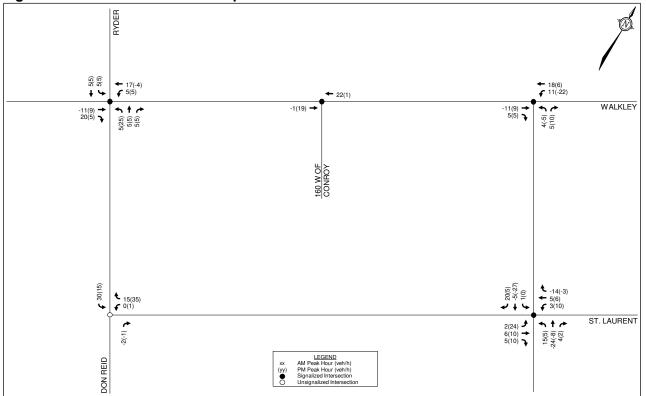


Figure 6: Site-Generated Traffic Volumes





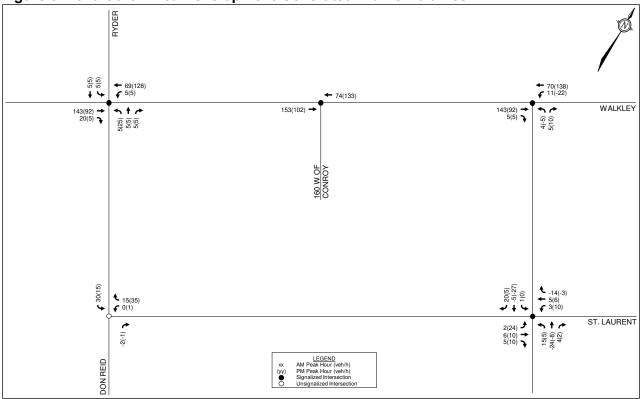
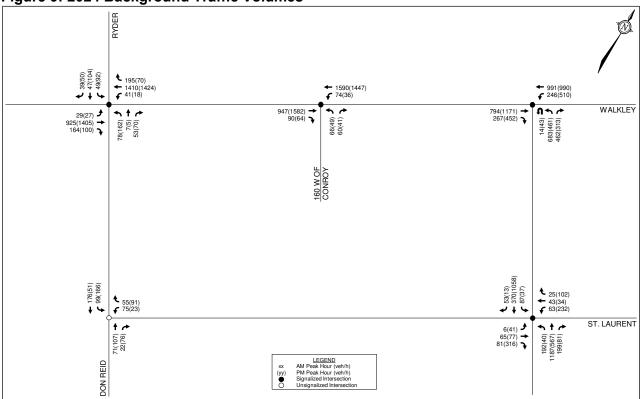


Figure 8: 2029 Other Area Development-Generated Traffic Volumes





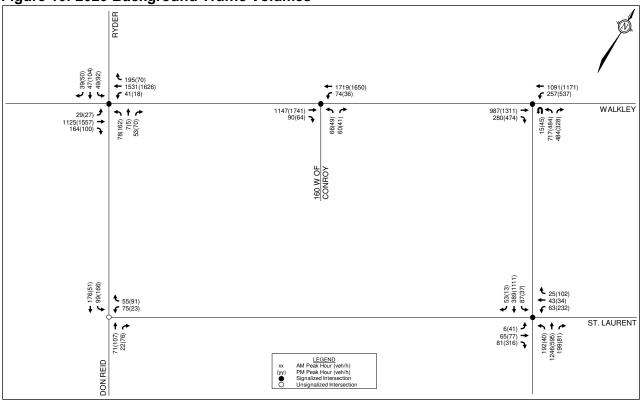
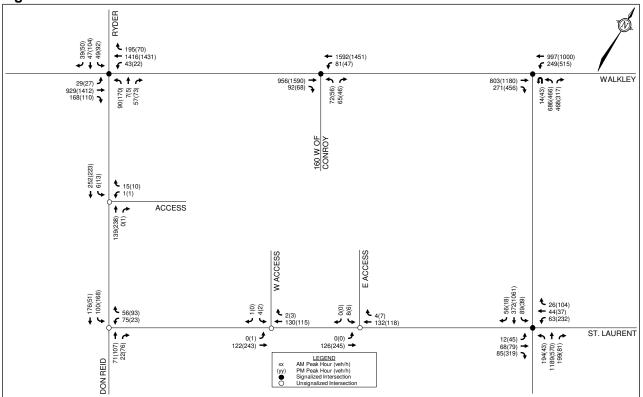


Figure 10: 2029 Background Traffic Volumes





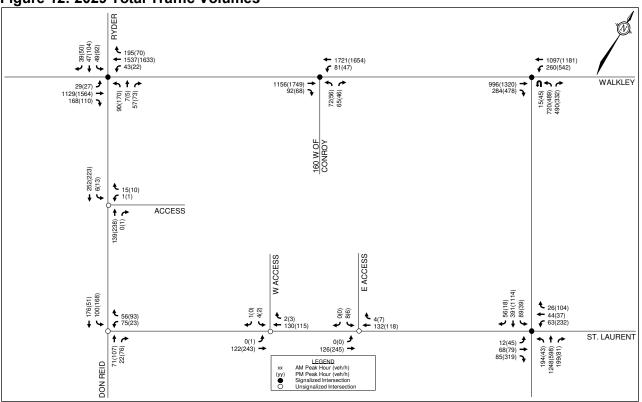


Figure 12: 2029 Total Traffic Volumes

3.4 Demand Rationalization

A review of the existing and background intersection operations has been conducted using Synchro 11, to determine if and when traffic volumes exceed capacity within the study area. The intersection parameters used in the analysis are consistent with the *2017 TIA Guidelines* (Saturated Flow Rate: 1,800 vphpl, Peak Hour Factor: 0.9 in existing conditions and 1.0 in future conditions).

Per Exhibit 22 of the *Multi-Modal Level of Service (MMLOS) Guidelines*, the target vehicular level of service (Auto LOS) at all study area intersections is an Auto LOS D, which equates to a vehicle-to-capacity (v/c) ratio of 0.90 at signalized intersections, and a maximum delay of 35 seconds at unsignalized intersections. Signal timing plans were obtained from the City, and are included in **Appendix I**.

3.4.1 Existing Intersection Operations

Intersection capacity analysis has been conducted for the existing traffic conditions. The results of the analysis are summarized in **Table 11** and **Table 12** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix J**.

Table 11: Existing Traffic Operations

		Critic	al Mov	ements	lr	ntersectio	n
Intersection	Period	Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
Walkley Road/	AM	0.71	С	WBT/R	0.67	9 sec	В
Don Reid Drive/Ryder Street ⁽¹⁾	PM	0.81	D	NBL	0.70	16 sec	В
Walkley Road/	AM	0.67	В	WBT	0.66	8 sec	В
160m West of Conroy Road ⁽¹⁾	PM	0.64	В	EBT	0.63	6 sec	В
	AM	0.88	D	NBL	0.73	29 sec	С
Walkley Road/ Conroy Road ⁽¹⁾	PM	0.94	E	EBT	0.91	21.000	Е
	FIVI	0.91	E	WBL	0.91	31 sec	E
St. Laurent Boulevard/	AM	0.57	Α	SBL	0.46	13 sec	А
Conroy Road ⁽¹⁾	PM	0.79	С	EBR	0.73	25 sec	С
St. Laurent Boulevard/	AM	12 sec	В	WBL			
Don Reid Drive ⁽²⁾	PM	11 sec	В	WBL		-	

1. Signalized intersection

2. Unsignalized intersection

Table 12: Existing Queues

		Storage/		AM Peak		PM Peak				
Intersection	Mvmt	Spacing ⁽¹⁾	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)		
Walkley Rd/Don	NBL	35m	0.46 [A]	14	22	0.81 [D]	29	46		
Reid Dr/Ryder St	WBT/R	140m	0.71 [C]	29	#193	0.71 [C]	58	51		
Walkley Rd/160m West of Conroy Rd	WBT	130m	0.67 [B]	60	140	0.58 [A]	72	130		
Walkley Rd/	EBT	130m	0.62 [B]	77	102	0.94 [E]	89	#169		
Conroy Rd	WBL	200m	0.66 [B]	28	39	0.91 [E]	58	#87		

1. Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection for through lanes #: volume for the 95th percentile cycle exceeds capacity

From the previous tables, the eastbound through and westbound left turn movements at Walkley Road/Conroy Road operate at an Auto LOS E during the PM peak hour. An alternate scenario where the cycle length is increased from 110 seconds to 120 seconds (with all additional green time allocated to the eastbound-westbound phases) has been reviewed, and indicate that this mitigation allows both movements to operate at the target Auto LOS D. Detailed reports of this alternate scenario are included in **Appendix J**.

During the AM peak hour, the Synchro analysis identifies that the maximum (95th-percentile) queue lengths of the westbound through movements at Walkley Road/Don Reid Drive/Ryder Street and Walkley Road/160m West of Conroy Road extend into the upstream intersections on Walkley Road.

During the PM peak hour, the Synchro analysis identified that the maximum queue length of the northbound left turn movement at Walkley Road/Don Reid Drive/Ryder Street exceeds the storage length of the auxiliary northbound left turn, but is contained within the taper. The maximum queue length of the eastbound through movement at Walkley Road/Conroy Road extends into the upstream intersection on Walkley Road.

3.4.2 2024 Background Intersection Operations

Intersection capacity analysis has been conducted for the 2024 background traffic conditions. The results of the analysis are summarized in **Table 13** and **Table 14** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix K**.

		Critica	al Mov	ements	Intersection			
Intersection	Period	Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS	
Walkley Road/	AM	0.66	В	WBT/R	0.63	8 sec	В	
Don Reid Drive/Ryder Street ⁽¹⁾	PM	0.81	D	NBL	0.65	16 sec	В	
Walkley Road/	AM	0.63	В	WBT	0.61	7 sec	В	
160m West of Conroy Road ⁽¹⁾	PM	0.60	А	EBT	0.58	5 sec	А	
Walkley Road/	AM	0.84	D	NBL	0.68	27 sec	В	
Conroy Road ⁽¹⁾	PM	0.84	D	WBL	0.82	27 sec	D	
St. Laurent Boulevard/	AM	0.43	А	SBL	0.41	12 sec	А	
Conroy Road ⁽¹⁾	PM	0.76	С	EBR	0.66	22 sec	В	
St. Laurent Boulevard/	AM	12 sec	В	WBL				
Don Reid Drive ⁽²⁾	PM	11 sec	В	WBL				

Table 13: 2024 Background Traffic Operations

1. Signalized intersection

2. Unsignalized intersection

Table 14: 2024 Background Queues

		Storage/		AM Peak		PM Peak				
Intersection	Mvmt	Spacing ⁽¹⁾	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)		
Walkley Rd/Don	NBL	35m	0.44 [A]	13	21	0.81 [D]	31	49		
Reid Dr/Ryder St	WBT/R	140m	0.66 [B]	27	30	0.65 [B]	55	51		
Walkley Rd/160m West of Conroy Rd	WBT	130m	0.63 [B]	52	120	0.53 [A]	60	111		
Walkley Rd/	EBT	130m	0.55 [A]	66	90	0.83 [D]	67	#134		
Conroy Rd	WBL	200m	0.65 [B]	27	37	0.84 [D]	49	#71		

1. Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection for through lanes

#: volume for the 95th percentile cycle exceeds capacity

From the previous tables, all intersections operate at the target Auto LOS D or better. Compared to the existing conditions, improvements in some movements is due to differences in the Peak Hour Factor parameter (0.9 in existing conditions and 1.0 in future conditions, per the *2017 TIA Guidelines*).

3.4.3 2029 Background Intersection Operations

Intersection capacity analysis has been conducted for the 2029 background traffic conditions. The results of the analysis are summarized in **Table 15** and **Table 16** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix K**.

Table 15: 2029 Background Traffic Operations

		Critic	al Mov	ements	Ir	tersectio	n
Intersection	Period	Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
Walkley Road/	AM	0.70	В	WBT/R	0.66	9 sec	В
Don Reid Drive/Ryder Street ⁽¹⁾	PM	0.81	D	NBL	0.72	16 sec	С
Walkley Road/	AM	0.68	В	WBT	0.66	7 sec	В
160m West of Conroy Road ⁽¹⁾	PM	0.66	В	EBT	0.64	6 sec	В
Walkley Road/	AM	0.87	D	NBL	0.75	29 sec	С
Conroy Road ⁽¹⁾	PM	0.95	Е	EBT	0.90	30 sec	D
St. Laurent Boulevard/	AM	0.46	А	SBL	0.43	12 sec	Α
Conroy Road ⁽¹⁾	PM	0.76	С	EBR	0.68	23 sec	В
St. Laurent Boulevard/	AM	12 sec	В	WBL			
Don Reid Drive ⁽²⁾	PM	11 sec	В	WBL		-	

1. Signalized intersection

2. Unsignalized intersection

Table 16: 2029 Background Queues

		Storage/		AM Peak		PM Peak				
Intersection	Mvmt	Spacing ⁽¹⁾	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)		
Walkley Rd/Don	NBL	35m	0.44 [A]	13	21	0.81 [D]	31	48		
Reid Dr/Ryder St	WBT/R	140m	0.70 [B]	28	#191	0.74 [C]	57	50		
Walkley Rd/160m West of Conroy Rd	WBT	130m	0.68 [B]	61	142	0.61 [B]	77	141		
Walkley Rd/	EBT	130m	0.69 [B]	91	120	0.95 [E]	~104	#179		
Conroy Rd	WBL	200m	0.67 [B]	28	39	0.87 [D]	53	#77		

1. Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection for through lanes

#: volume for the 95th percentile cycle exceeds capacity

 $\sim:$ approach is above capacity

From the previous tables, the eastbound through movement at Walkley Road/Conroy Road operates at an Auto LOS E during the PM peak hour. The alternate timing discussed in Section 3.4.1 (increasing the green time for the eastbound-westbound phases) has been reviewed, and the analysis indicates that this mitigation allows the eastbound through movement to operate at the target Auto LOS D. Detailed reports of this alternate scenario are included in **Appendix K**.

4.0 ANALYSIS

4.1 Development Design

Further review of the proposed retirement and apartment block will be conducted in a future Site Plan Control application. The Development Design, Parking, Access Intersections, and Transportation Demand Management modules below have only been conducted for the proposed townhouses. The preliminary site plan is included in **Appendix A**.

4.1.1 Design for Sustainable Modes

In general, the proposed development includes a pavement width of 6.5m to 6.7m for on-site roadways with perpendicular parking spaces or no on-street parking. Parallel parking spaces are provided on the south side of Street 1 (adjacent to the public park), the east side of Street 1 (adjacent to 2500 St. Laurent Boulevard), and on the north side of Street 3 (adjacent to the commercial access serving 1950 Walkley Road and 2980 Conroy Road). These parallel parking spaces are provided in the form of lay-bys, to maintain a narrower pavement width outside of these spaces and reduce the operating speed of vehicles on-site.

On-site concrete sidewalks with a width of 1.8m will be provided in the following locations:

- Along the south side of Street 1 between Don Reid Drive and Street 3 (providing a direct connection to the public park),
- Along the east side of Street 1 (providing a direct and generally straight connection through the site from St. Laurent Boulevard to the additional owned lands to the north),
- Along the south side of Street 3 (providing a direct and straight connection from Street 1 to Conroy Road), and
- Along the east side of the additional lands to the north (providing a direct and straight connection from Street 1 to Walkley Road).

Midblock pathways with a width of 2.0m will also be provided between the proposed public park and Street 2, and between Street 2 and Street 1 at Street 3. These sidewalks and pathways will connect the development to Conroy Road, St. Laurent Boulevard, Don Reid Drive, and the proposed parkland fronting Don Reid Drive. It is anticipated that the sidewalk will be extended along the eastern frontage of the future development and connect to Walkley Road as part of a future Site Plan Control application.

The nearest bus stops are discussed in Section 2.1.5. OC Transpo's service design guidelines for peak period service is to provide service within a five-minute (400m) walk of home, work, or school, for 95% of urban residents. Residents or visitors of any proposed dwelling will be within 400m of at least one bus stop shown in **Figure 4**.

A review of the City's *Transportation Demand Management (TDM)-Supportive Development Design* and Infrastructure Checklist has been conducted. Any required TDM-supportive design and infrastructure measures in the TDM checklist that are relevant to townhouse developments have been met. A copy of this checklist is included in **Appendix L**. In addition to the required measures, the proposed development also meets the following 'basic' or 'better' measures as defined in the *TDM-Supportive Development Design and Infrastructure Checklist*:

- Locate buildings close to the street, and do not locate parking areas between the street and building entrances;
- Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations;
- Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort;
- Provide safe, direct, and attractive walking routes from building entrances to nearby transit stops;
- Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h;

• Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists.

4.1.2 Circulation and Access

Garbage collection will take place curbside in front of the proposed dwellings. The on-site fire route will include all private roadways within the subject site.

4.2 Parking

The subject site is located in Area C of Schedule 1 and Schedule 1A of the City's ZBL. Minimum vehicle parking rates for the proposed townhouses are identified in Sections 101 and 102 of the ZBL, and are summarized in **Table 17**.

Land Use		Rate	Units	Required	Provided
Minimum Vehic	le Parking (Tow	nhouse Dwellings)			
Dwelling,	1.0 p	er dwelling unit (residents)	160 units	160	320
Townhouse	0.2	per dwelling unit (visitors)	160 units	32	320
		Additional p	arking on p	rivate streets	45
			Total	192	365

Based on the previous table, the minimum parking requirements will be met. As every proposed dwelling will include their own garage, the ZBL does not identify any minimum bicycle parking requirements. A review of the parking requirements for the future development block will be conducted as part of a future Site Plan Control application.

4.3 Boundary Streets

This section provides a review of the boundary streets Walkley Road, Conroy Road, St. Laurent Boulevard, and Don Reid Drive, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation on the boundary streets, based on existing conditions. Since each boundary street is located within both the General Urban Area and Urban Employment Area (per Schedule B of the City's previous Official Plan, which is referenced by the *MMLOS Guidelines*), whichever target is more stringent has been considered.

A detailed segment MMLOS review of the boundary streets is included in **Appendix M**. A summary of the segment MMLOS analysis is provided below in **Table 18**.

Segment	PL	PLOS		OS	TL	OS	TkLOS	
Segment	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Walkley Road	E	С	F	В	D	В	А	В
Conroy Road	E	С	E	В	D	D	Α	В
St. Laurent Boulevard	F	С	F	В	-	-	В	D
Don Reid Drive	F	С	F	В	-	-	В	D

Table 18: Segment MMLOS Summary

The results of the segment MMLOS analysis can be summarized as follows:

- No boundary street meets the target pedestrian level of service (PLOS);
- No boundary street meets the target bicycle level of service (BLOS);
- Conroy Road meets the target transit level of service (TLOS), while Walkley Road does not;
- All boundary streets meet the target truck level of service (TkLOS).

Pedestrian Level of Service

Both sides of Walkley Road and Conroy Road do not meet the target PLOS C. Per Exhibit 4 of the *MMLOS Guidelines*, Walkley Road can achieve the target PLOS C and Conroy Road can achieve a PLOS D by implementing sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m. This is identified for the City's consideration.

The south side of St. Laurent Boulevard and west side of Don Reid Drive do not meet the target PLOS C, as sidewalks are only provided on one side of each roadway. Per Exhibit 4 of the *MMLOS Guidelines*, implementing curbside sidewalks with a minimum width of 1.8m are sufficient to achieve the target PLOS. This is identified for the City's consideration. The existing sidewalks on St. Laurent Boulevard and Don Reid Drive meet the target PLOS C, and therefore no recommendations for these sidewalks are identified. Any sidewalks that need to be reconstructed as a result of the proposed development will be reinstated to a width of 1.8m.

Bicycle Level of Service

Walkley Road does not meet the target BLOS B. Per Exhibit 9 of the *MMLOS Guidelines*, the target BLOS B can only be achieved through the implementation of physically separated bikeways along Walkley Road. This is identified for the City's consideration.

A mixed-use pathway is provided on the west side of Conroy Road, which achieves the bestpossible BLOS A. For the purposes of this review, the existing curbside bike lanes on both sides of Conroy Road have also been evaluated, and these bike lanes achieve a BLOS E.

St. Laurent Boulevard and Don Reid Drive do not meet the target BLOS B. Per Exhibit 9 of the *MMLOS Guidelines*, the target BLOS B can be achieved by providing curbside bike lanes with a minimum width of 1.5m, and reducing the operating speed to 50 km/h (i.e. a posted speed limit of 40 km/h).

Transit Level of Service

Walkley Road does not meet the target TLOS B, which is achieved by providing bus lanes with no or limited parking/driveway friction. It is anticipated that this target will be met upon completion of the Baseline/Heron/Walkley/St. Laurent BRT project, which is anticipated to occur beyond 2031.

4.4 Access Intersections

4.4.1 Access Design

The proposed development includes two full-movement accesses to St. Laurent Boulevard and one full-movement access to Don Reid Drive. Depressed curbs and continuous sidewalks are proposed along the entirety of each access, in accordance with City standards. The design of each access has been evaluated using the relevant provisions of the City's *Private Approach By-Law* (PABL).

Section 25(a) of the PABL identifies that, for sites with 46m or more of frontage to a given roadway, two two-way private approaches to that roadway are permitted. Therefore, the two-way private approaches to St. Laurent Boulevard and Don Reid Drive meet this requirement.

Section 25(c) of the PABL identifies a maximum width requirement of 9.0m for any two-way private approach, as measured at the street line. Since each private approach is approximately 7.2m to 7.7m in width at the street line, this requirement is met.

Section 25(g) of the PABL identifies a minimum separation requirement of 9.0m between a twoway private approach and any other private approach to the same property, measuring nearest edge to nearest edge at the street line. Since the proposed accesses to St. Laurent Boulevard are approximately 55m apart, this requirement is met.

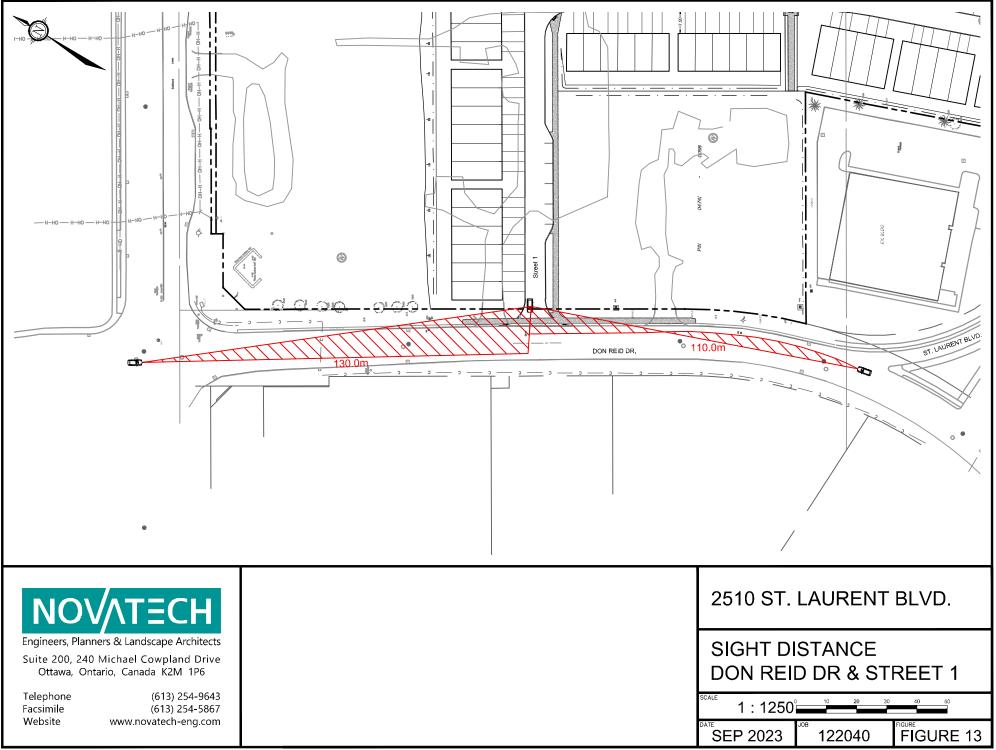
Section 25(m)(ii) of the PABL identifies that, for a property that abuts or is within 46m of an arterial roadway, there are minimum distance requirements between a private approach and the nearest intersecting street line, and between any two private approaches to the same property. The minimum distance is determined by the land use and number of parking spaces provided. For the purposes of this review, the proposed residences will be treated as apartment dwellings, as the section does not directly reference requirements for townhouse developments. Per Section 25(m)(ii) of the PABL, the minimum separation between accesses to the same property is 30m, when 100 to 199 parking spaces are accessed. Although the proposed development will include more than 200 parking spaces, this range of parking spaces was selected as the parking spaces are distributed throughout the entire subject site. The 30m requirement is met, as a distance of approximately 55m is proposed between the nearest edges of the accesses to St. Laurent Boulevard.

Section 25(p) of the PABL identifies a minimum separation requirement of 3.0m between the edge of any private approach and the nearest property line, as measured at the street line. This requirement is met by all proposed accesses.

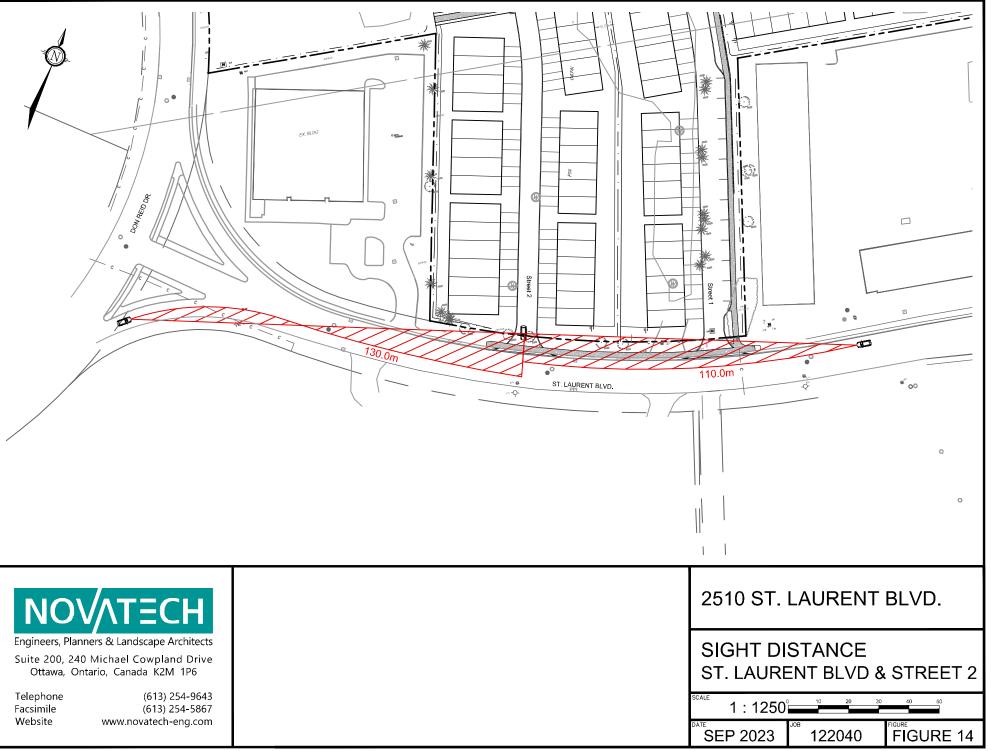
Section 25(u) of the PABL identifies a requirement that any private approach serving a parking area with more than 50 parking spaces shall not have a grade exceeding 2% for the first 9m inside the property line. This requirement is met by all proposed accesses.

The Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads* identifies minimum intersection sight distance (ISD) and stopping sight distance (SSD) requirements, based on the roadway grade and design speed (taken as the speed limit plus 10 km/h). Assuming level grade and a design speed of 60 km/h for St. Laurent Boulevard and Don Reid Drive, the ISD requirements are 130m for left-turning vehicles and 110m for right-turning vehicles, and the SSD requirement is 85m.

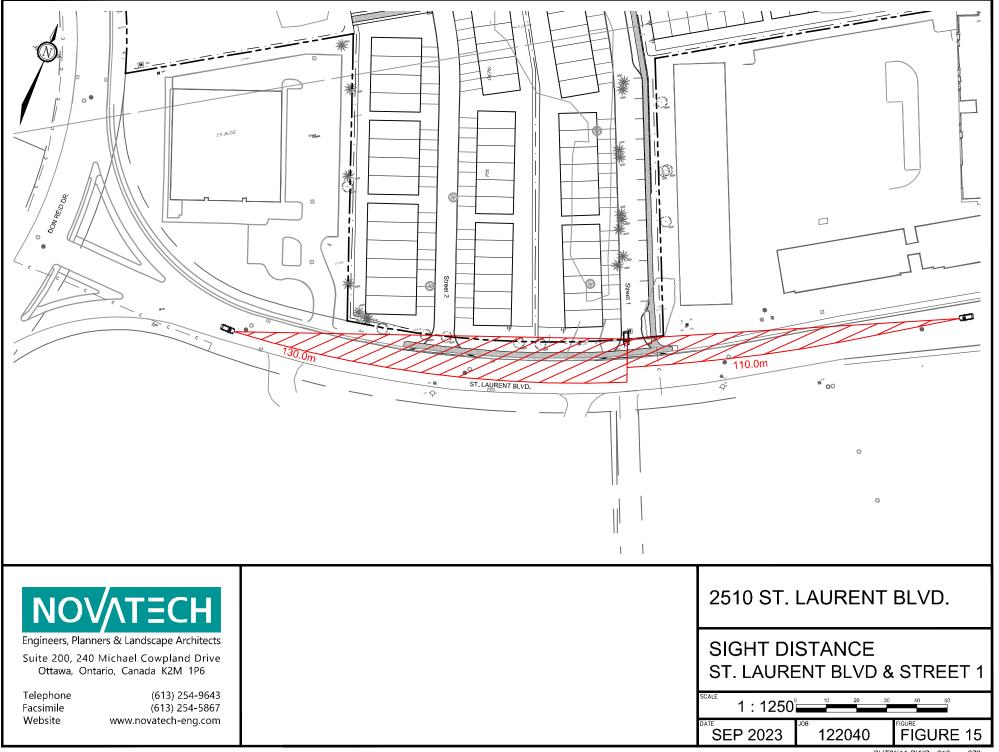
The proposed accesses to Don Reid Drive will have clear sightlines to Walkley Road to the north and St. Laurent Boulevard to the south. The proposed accesses to St. Laurent Boulevard are located on the inside of a slight curve, but will still achieve the TAC-recommended sightlines, provided that any vegetation within the ROW of St. Laurent Boulevard is trimmed and maintained. Therefore, no sightline concerns are anticipated. Intersection sight triangles for outbound drivers at each access are shown in **Figure 13** through **Figure 15**.



SHT8X11.DWG - 216mmx279mm



SHT8X11.DWG - 216mmx279mm



SHT8X11.DWG - 216mmx279mm

4.4.2 Access Operations

Analysis of the access intersection operations has been conducted in Synchro, with the results summarized in **Table 19**. The intersection parameters used in the analysis are consistent with the *2017 TIA Guidelines* (Saturated Flow Rate: 1,800 vphpl, Peak Hour Factor: 1.0 in future conditions).

A	Α	M Peak Ho	ur	P	M Peak Hour	
Access	Delay	LOS	Mvmt	Delay	LOS	Mvmt
St. Laurent Boulevard – East Access	10 sec	A	SBL/R	11 sec	В	SBL/R
St. Laurent Boulevard – West Access	10 sec	A	SBL/R	11 sec	В	SBL/R
Don Reid Drive – Access	9 sec	A	WBL/R	10 sec	Α	WBL/R

Table 19: 2024/2029 Access Intersection Operations

Based on the foregoing, the proposed accesses to St. Laurent Boulevard and Don Reid Drive are anticipated to operate with an acceptable vehicular level of service for the buildout year 2024 and horizon year 2029.

4.5 Transportation Demand Management

4.5.1 Context for TDM

The proposed development will consist of 160 townhouses. A detailed TDM review of the retirement/apartment block, which at this time is anticipated to include 150 retirement home units and 100 apartment units, will be conducted as part of a future Site Plan Control application.

4.5.2 Need and Opportunity

Per Schedule B, the subject site is located in the General Urban Area, and surrounded completely by General Urban Area or Major Open Space north of Walkley Road, and Urban Employment Area south of Walkley Road. As first discussed in Section 3.1.1, the mode share targets for the proposed development are assumed to be generally consistent with the observed multifamily housing mode shares for the Alta Vista region, as outlined in the *TRANS Trip Generation Manual*. These target shares include a 40% driver share.

Failure to meet the already observed driver shares for the Alta Vista region are not anticipated, due to the proximity of the subject site to places of employment to the south, east, and west, as well as commercial areas immediately north of the site and west of Heron Road. Regardless, failure to meet the proposed mode share targets are anticipated to marginally increase congestion within the study area.

4.5.3 TDM Program

A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has committed to providing the following TDM measures at the sales centre for this development. A copy of the checklist is included in **Appendix L.**

- Provide local area maps with walking/cycling access routes and key destinations;
- Provide relevant transit schedules and route maps;
- Provide a multimodal travel option information package.

4.6 Neighbourhood Traffic Management

The *2017 TIA Guidelines* identify two-way peak hour traffic volume thresholds for considering when a Neighbourhood Traffic Management (NTM) plan should be developed, whenever a site relies on local or collector roadways for access. The NTM two-way volume thresholds are as follows:

- Local Roadways: 120 vehicles during the peak hour, or 1,000 vehicles per day;
- Collector Roadways: 300 vehicles during the peak hour, or 2,500 vehicles per day;
- Major Collector Roadways: 600 vehicles during the peak hour, or 5,000 vehicles per day.

The proposed development will rely on the collector roadways St. Laurent Boulevard and Don Reid Drive for direct access. As shown in Section 2.1.7 and **Figure 5**, the peak hour and daily NTM thresholds for both St. Laurent Boulevard and Don Reid Drive are exceeded by the existing traffic volumes.

Since St. Laurent Boulevard and Don Reid Drive primarily serve industrial, commercial, or office uses, no neighbourhood traffic management measures have been recommended as part of this proposed development.

4.7 Transit

Based on the trip generation estimates presented in Section 3.1.1, the proposed development is anticipated to generate the following number of transit trips:

- AM Peak Hour: 52 transit trips, including 35 boarding and 17 alighting;
- PM Peak Hour: 55 transit trips, including 25 boarding and 30 alighting.

The distribution of transit trips to/from the development has been estimated using the same trip distribution assumptions outlined in Section 3.1.2, which are summarized as follows:

- 15% to/from the south via Conroy Road;
- 10% to/from the east via St. Laurent Boulevard;
- 35% to/from the east via Walkley Road;
- 40% to/from the west via Walkley Road.

Winter 2020 (January 5 to March 7) transit utilization data within the study area was obtained from OC Transpo, and is included in **Appendix C**. This period is considered the most recent 'normal' ridership period, before ridership was impacted by the ongoing COVID-19 pandemic. Average peak period (6:00am to 9:00am and 3:00pm to 6:00pm) boarding, alighting, and bus load at departure information was provided by City staff for stops #4307, #4311, #6927, #8391, and #8398.

Existing and projected boarding and alighting information is summarized in **Table 20**. Any zero (0) values in the table indicate a measured average boarding or alighting value of zero, rather than an absence of data. Peak period boarding and alighting data have been converted to peak hour boardings and alightings, using factors of 0.55 for the AM peak hour and 0.47 for the PM peak hour (per the *TRANS Trip Generation Manual*).

Stop	Location	Ro	ute	Воа	arding (tp	h) ⁽¹⁾	Aliç	ghting (tpl	n) ⁽¹⁾
Stop	LOCATION	(Dire	ction)	Existing	Site	Total	Existing	Site	Total
AM Pea	k Hour								
#4307	St. Laurent/Conroy	40	SB	1	5	6	31	1	32
#4311	St. Laurent/Conroy	40	NB	2	4	6	7	3	10
#6927	Walkley/Don Reid	46	EB	3	12	15	9	7	16
#8391	Walkley/Ryder	46	WB	2	7	9	2	6	8
#8398	Ryder/Walkley	291	IB	5	7	12	1	-	1
PM Pea	k Hour								
#4307	St. Laurent/Conroy	40	SB	5	4	9	9	3	12
#4311	St. Laurent/Conroy	40	NB	23	3	26	1	5	6
#6927	Walkley/Don Reid	46	EB	4	4	8	4	3	7
		46	WB	3	5	8	1	5	6
#8391	Walkloy/Pydor	140	EB	0	4	4	0	3	3
#0391	#8391 Walkley/Ryder	140	WB	0	5	5	0	5	5
		291	OB	0	-	0	1	6	7

Table 20: Existing and Projected Transit Utilization

A discussion of the site-generated impacts to each route during the weekday peak hours is included below.

Route 40 (to St. Laurent)

At stop #4311, the proposed development is estimated to generate a net addition of four AM boarding trips, three AM alighting trips, three PM boarding trips, and five PM alighting trips. As Route 40 runs on approximately 15-minute intervals during the peak hours, this equates to an addition of one AM boarding trip, AM alighting trip, PM boarding trip, and PM alighting trip per bus during the peak hours. Therefore, these additional transit trips are not anticipated to require more frequent service at these stops.

Route 40 (to Greenboro)

At stop #4307, the proposed development is estimated to generate a net addition of five AM boarding trips, one AM alighting trip, four PM boarding trips, and three PM alighting trips. As Route 40 runs on approximately 15-minute intervals during the peak hours, this equates to an addition of two AM boarding trips, one AM alighting trip, one PM boarding trip, and one PM alighting trip per bus during the peak hours. Therefore, these additional transit trips are not anticipated to require more frequent service at these stops.

Route 46 (to Hurdman)

At stop #6927, the proposed development is estimated to generate a net addition of 12 AM boarding trips, seven AM alighting trips, four PM boarding trips, and three PM alighting trips. As Route 46 runs on approximately 30-minute intervals during the peak hours, this equates to an addition of six AM boarding trips, four AM alighting trips, two PM boarding trips, and two PM alighting trips per bus during the peak hours. Therefore, these additional transit trips are not anticipated to require more frequent service at these stops.

Route 46 (to Billings Bridge)

At stop #8391, the proposed development is estimated to generate a net addition of seven AM boarding trips, six AM alighting trips, five PM boarding trips, and five PM alighting trips. As Route 46 runs on approximately 30-minute intervals during the peak hours, this equates to an addition of four AM boarding trips, three AM alighting trips, three PM boarding trips, and three PM alighting trips per bus during the peak hours. Therefore, these additional transit trips are not anticipated to require more frequent service at these stops.

Route 140 (to Heron Park)

At stop #8391, the proposed development is estimated to generate a net addition of four PM boarding trips and three PM alighting trips. As Route 140 runs on approximately 30-minute intervals during the peak hours, this equates to an addition of two PM boarding trips and two PM alighting trips per bus during the peak hours. Therefore, these additional transit trips are not anticipated to require more frequent service at these stops.

Route 140 (to Billings Bridge)

At stop #8391, the proposed development is estimated to generate a net addition of five PM boarding trips and five PM alighting trips. As Route 140 runs on approximately 30-minute intervals during the peak hours, this equates to an addition of three PM boarding trips and three PM alightings trip per bus during the peak hours. Therefore, these additional transit trips are not anticipated to require more frequent service at these stops.

Route 291 (to Hurdman)

At stop #8398, the proposed development is estimated to generate a net addition of seven AM boarding trips. As Route 291 runs on approximately 30-minute intervals during the peak hours, this equates to an addition of four boarding trips per bus during the AM peak hour. Therefore, these additional transit trips are not anticipated to require more frequent service at these stops.

Route 291 (to Herongate)

At stop #8391, the proposed development is estimated to generate a net addition of six PM alighting trips. As Route 291 runs on approximately 30-minute intervals during the peak hours, this equates to an addition of three alighting trips per bus during the PM peak hour. Therefore, these additional transit trips are not anticipated to require more frequent service at these stops.

4.8 Intersection Design

4.8.1 Intersection MMLOS Review

This section provides a review of the signalized study area intersections (Walkley Road/Don Reid Drive/Ryder Street, Walkley Road/160m West of Conroy Road, Walkley Road/Conroy Road, and St. Laurent Boulevard/Conroy Road) using complete streets principles. The signalized intersections within the study area have been evaluated for PLOS, BLOS, TLOS, and TkLOS, based on existing conditions. The MMLOS targets considered in this review are associated with those outlined in Exhibit 22 of the *MMLOS Guidelines* for the General Urban Area or Employment Area, whichever targets are stricter.

The full intersection MMLOS analysis is included in **Appendix M**. A summary of the results is shown in **Table 21**.

Table 21: Intersection MMLOS Summary

Intersection	PLOS		BLOS		TLOS		TkLOS	
Intersection	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Walkley Road/ Don Reid Drive/Ryder Street	F	С	F	В	Е	В	Е	В
Walkley Road/ 160m West of Conroy Road	F	С	F	В	В	В	E	В
Walkley Road/ Conroy Road	F	С	F	В	F	В	А	В
St. Laurent Boulevard/ Conroy Road	F	С	F	В	D	D	E	В

The results of the intersection MMLOS analysis can be summarized as follows:

- No signalized intersections meet the target PLOS;
- No signalized intersections meet the target BLOS;
- Walkley Road/160m West of Conroy Road and St. Laurent Boulevard/Conroy Road meets the target TLOS, while Walkley Road/Don Reid Drive/Ryder Street and Walkley Road/ Conroy Road do not;
- Walkley Road/Conroy Road meets the target TkLOS, while Walkley Road/Don Reid Drive/ Ryder Street, Walkley Road/160m West of Conroy Road, and St. Laurent Boulevard/Conroy Road do not.

Walkley Road/Don Reid Drive/Ryder Street

The intersection does not meet the target PLOS C, BLOS B, TLOS B, or TkLOS B.

All approaches do not meet the target PLOS C, and have cross-sections equivalent to five to nine lanes crossed. Per the *MMLOS Guidelines*, every 3.5m in crossing distance is equivalent to one lane crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks (greater than 400,000 vehicle/pedestrian conflicts over an eight-hour period).

All approaches do not meet the target BLOS B based on left turn characteristics. Per Exhibit 12 of the *MMLOS Guidelines*, the target BLOS can only be achieved by implementing two-stage, left-turn bike boxes. Implementing bike boxes would also require restricting right turns on red (RTOR) for each approach. This is identified for the City's consideration.

The north and west approaches do not meet the target TLOS B. No recommendations are identified for the north approach, which is Ryder Street (i.e. a local roadway with no transit priority designation). It is anticipated that the target TLOS B will be met at the west approach, upon completion of the Baseline/Heron/Walkley/St. Laurent BRT project.

The east and west approaches do not meet the target TkLOS B. The TkLOS at these approaches represent the level of accommodation for trucks turning right from Walkley Road onto Don Reid Drive or Ryder Street (i.e. roadways that are not designated as truck routes with limited heavy vehicle volumes), and therefore no recommendations are identified.

Walkley Road/160m West of Conroy Road

The intersection does not meet the target PLOS C, BLOS B, or TkLOS B.

All approaches do not meet the target PLOS C, and have cross-sections equivalent to six or seven lanes crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks.

The east approach does not meet the target BLOS B based on left turn characteristics, and the south approach does not meet the target BLOS B based on right turn characteristics. The south approach is a private approach to 1950 Walkley Road, and therefore no recommendations are identified. Per Exhibit 12 of the *MMLOS Guidelines*, the target BLOS can only be achieved at the east approach by implementing a jug-handle, crossride, and bicycle traffic signal for cyclists to enter the private approach to 1950 Walkley Road. This is identified for the City's consideration.

The west approach does not meet the target TkLOS B. The TkLOS at this approach represents the level of accommodation for trucks turning right into 1950 Walkley Road (i.e. an existing private approach to commercial/retail uses), and therefore no recommendations are identified.

Walkley Road/Conroy Road

The intersection does not meet the target PLOS C, BLOS B, or TLOS B.

The south and east approaches do not meet the target PLOS C, and have cross-sections equivalent to nine or ten lanes crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or removing the westbound and northbound right turn channels. Both approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. This is identified for the City's consideration. While this would improve the level of comfort for pedestrians, the provision of zebra-striped crosswalks alone will not improve the PLOS for either approach.

The south and east approaches do not meet the target BLOS B based on left turn characteristics, and the south and west approaches do not meet the target BLOS based on right turn characteristics. From a left-turn perspective and per Exhibit 12 of the *MMLOS Guidelines*, the target BLOS can only be achieved by implementing left-turn bike facilities. This would include a bike box for cyclists arriving from the south approach, and a jug-handle, crossride, and bicycle traffic signal for cyclists arriving from the east approach. This is identified for the City's consideration.

From a right-turn perspective, Exhibit 12 of the *MMLOS Guidelines* identifies that the target BLOS B can be achieved with pocket bike lanes, as long as the right turn lane is less than 50m in length, and is introduced to the right of the pocket bike lane. Based on the existing queue lengths of the northbound and eastbound right turn movements, this is not recommended. Therefore, the provision of separated cycling facilities (like the existing multi-use pathway on the west side of Conroy Road) is identified for the City's consideration.

All approaches do not meet the target TLOS. It is anticipated that the target TLOS B will be met at the east and west approaches, upon completion of the Baseline/Heron/Walkley/St. Laurent BRT project. As Conroy Road is designated as a Transit Priority Corridor with Isolated Measures (with a target TLOS D), it is anticipated that the implementation of measures such as queue jump lanes or transit priority signals would improve the TLOS of the south approach to a TLOS D.

St. Laurent Boulevard/Conroy Road

The intersection does not meet the target PLOS C, BLOS B, or TkLOS B.

All approaches do not meet the target PLOS C, and have cross-sections equivalent to six lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or removing the westbound right turn channel. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks.

All approaches do not meet the target BLOS B based on left turn characteristics, and the east and west approaches do not meet the target BLOS based on right turn characteristics. From a left-turn perspective and per Exhibit 12 of the *MMLOS Guidelines*, the target BLOS can only be achieved by implementing two-stage, left-turn bike boxes. Implementing bike boxes would also require RTOR restrictions for the north and south approaches. This is identified for the City's consideration.

From a right-turn perspective, Exhibit 12 of the *MMLOS Guidelines* identifies that the target BLOS B can be achieved by implementing a curbside bike lane for the east approach and a pocket bike lane for the west approach. This is identified for the City's consideration.

The north and south approaches do not meet the target TkLOS B. The TkLOS at these approaches represent the level of accommodation for trucks turning right from Conroy Road onto St. Laurent Boulevard (i.e. a roadway that is not designated as a truck route with limited heavy vehicle volumes), and therefore no recommendations are identified.

4.8.2 2024 Total Intersection Operations

Intersection capacity analysis has been conducted for the 2024 total traffic conditions. The analysis included below is based on an earlier concept plan with a higher number of townhouses, and is therefore conservative. The results of the analysis are summarized in **Table 22** and **Table 23** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix N**.

		Critica	al Move	ements	Intersection			
Intersection	Period	Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS	
Walkley Road/	AM	0.71	С	WBT/R	0.63	9 sec	В	
Don Reid Drive/Ryder Street ⁽¹⁾	PM	0.83	D	NBL	0.68	17 sec	В	
Walkley Road/	AM	0.62	В	WBT	0.53	7 sec	Α	
160m West of Conroy Road ⁽¹⁾	PM	0.59	Α	EBT	0.57	5 sec	Α	
Walkley Road/	AM	0.84	D	NBL	0.68	27 sec	В	
Conroy Road ⁽¹⁾	PM	0.85	D	WBL	0.83	27 sec	D	
St. Laurent Boulevard/	AM	0.43	Α	NBT/R	0.41	12 sec	Α	
Conroy Road ⁽¹⁾	PM	0.77	С	EBR	0.67	23 sec	В	
St. Laurent Boulevard/	AM	12 sec	В	WBL				
Don Reid Drive ⁽²⁾	PM	11 sec	В	WBL		-		

Table 22: 2024 Total Traffic Operations

1. Signalized intersection

2. Unsignalized intersection

Table 23: 2024 Total Queues

	Storage/			AM Peak			PM Peak			
Intersection	Mvmt	Spacing ⁽¹⁾	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)		
Walkley Rd/Don	NBL	35m	0.52 [A]	17	26	0.83 [D]	34	53		
Reid Dr/Ryder St	WBT/R	140m	0.66 [B]	27	30	0.66 [B]	122	50		
Walkley Rd/160m West of Conroy Rd	WBT	130m	0.63 [B]	50	121	0.53 [A]	59	112		
Walkley Rd/	EBT	130m	0.55 [A]	67	91	0.84 [D]	72	#149		
Conroy Rd	WBL	200m	0.66 [B]	27	38	0.85 [D]	50	#73		

1. Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection for through lanes

#: volume for the 95th percentile cycle exceeds capacity

Compared to the 2024 background traffic conditions, site-generated traffic is anticipated to have marginal impacts on traffic operations within the study area.

4.8.3 2029 Total Intersection Operations

Intersection capacity analysis has been conducted for the 2029 total traffic conditions. The results of the analysis are summarized in **Table 24** and **Table 25** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix N**.

		Critic	al Mov	ements	lr	n	
Intersection	Period	Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
Walkley Road/	AM	0.71	С	WBT/R	0.66	9 sec	В
Don Reid Drive/Ryder Street ⁽¹⁾	PM	0.83	D	NBL	0.73	18 sec	С
Walkley Road/	AM	0.67	В	WBT	0.58	8 sec	Α
160m West of Conroy Road ⁽¹⁾	PM	0.65	В	EBT	0.63	6 sec	В
Walkley Road/	AM	0.87	D	NBL	0.75	29 sec	С
Conroy Road ⁽¹⁾	PM	0.96	E	EBT	0.91	31 sec	E
St. Laurent Boulevard/	AM	0.46	А	SBL	0.43	12 sec	А
Conroy Road ⁽¹⁾	PM	0.77	С	EBR	0.69	23 sec	В
St. Laurent Boulevard/	AM	12 sec	В	WBL			
Don Reid Drive ⁽²⁾	PM	11 sec	В	WBL		-	

Table 24: 2029 Total Traffic Operations

1. Signalized intersection

2. Unsignalized intersection

Table 25: 2029 Total Queues

Intersection Mumt Storage/			AM Peak		PM Peak			
Intersection	Mvmt	Spacing ⁽¹⁾	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Walkley Rd/Don	NBL	35m	0.51 [A]	16	26	0.83 [D]	34	53
Reid Dr/Ryder St	WBT/R	140m	0.71 [C]	28	#191	0.75 [C]	145	51
Walkley Rd/160m West of Conroy Rd	WBT	130m	0.67 [B]	59	143	0.61 [B]	75	143
Walkley Rd/	EBT	130m	0.70 [B]	92	121	0.96 [E]	~112	#181
Conroy Rd	WBL	200m	0.67 [B]	28	40	0.88 [D]	54	#79

1. Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection for through lanes

#: volume for the 95th percentile cycle exceeds capacity

~: approach is above capacity

Compared to the 2029 background traffic conditions, site-generated traffic is anticipated to have marginal impacts on traffic operations within the study area. The alternate timing discussed in Sections 3.4.1 and 3.4.3 (increasing the green time for the eastbound-westbound phases) has been reviewed, and the analysis indicates that this mitigation allows the eastbound through movement to operate at the target Auto LOS D. Detailed reports of this alternate scenario are included in **Appendix N**.

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Forecasting

• The proposed development is estimated to generate 170 person trips (including 67 vehicle trips) during the AM peak hour, and 193 person trips (including 79 vehicle trips) during the PM peak hour.

Development Design and Parking

- In general, the proposed development includes a pavement width of 6.5m to 6.7m for onsite roadways with perpendicular parking spaces or no on-street parking. Parallel parking spaces are provided on the south side of Street 1 (adjacent to the public park), the east side of Street 1 (adjacent to 2500 St. Laurent Boulevard), and on the north side of Street 3 (adjacent to the commercial access serving 1950 Walkley Road and 2980 Conroy Road). These parallel parking spaces are provided as lay-bys, to maintain a narrower pavement width outside of these spaces and reduce the operating speed of vehicles on-site.
- On-site concrete sidewalks will be provided along the south side of Street 1 between Don Reid Drive and Street 3, the east side of Street 1, the south side of Street 3, and the east side of the additional lands to the north. Midblock pathways will also be provided between the proposed public park and Street 2, and between Street 2 and Street 1 at Street 3. These sidewalks will connect the proposed development to the proposed parkland fronting Don Reid Drive, and to the existing sidewalks along Conroy Road, St. Laurent Boulevard, and Don Reid Drive.
- Any required TDM-supportive design and infrastructure measures in the TDM checklist that are relevant to townhouse developments have been met.
- Garbage collection will take place curbside in front of the proposed dwellings. The on-site fire route will include all private roadways within the subject site.
- The minimum parking requirements will be met. As every proposed dwelling will include their own garage, the ZBL does not identify any minimum bicycle parking requirements.

Boundary Streets

- The results of the segment multi-modal level of service (MMLOS) analysis can be summarized as follows:
 - No boundary street meets the target pedestrian level of service (PLOS);
 - No boundary street meets the target bicycle level of service (BLOS);
 - Conroy Road meets the target transit level of service (TLOS), while Walkley Road does not;
 - All boundary streets meet the target truck level of service (TkLOS).

- Both sides of Walkley Road and Conroy Road do not meet the target PLOS C. Walkley Road can achieve the target PLOS C and Conroy Road can achieve a PLOS D by implementing sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m. This is identified for the City's consideration.
- The south side of St. Laurent Boulevard and west side of Don Reid Drive do not meet the target PLOS C, as sidewalks are only provided on one side of each roadway. Implementing curbside sidewalks with a minimum width of 1.8m are sufficient to achieve the target PLOS. This is identified for the City's consideration. The existing sidewalks on St. Laurent Boulevard and Don Reid Drive meet the target PLOS C, and therefore no recommendations for these sidewalks are identified. Any sidewalks that need to be reconstructed as a result of the proposed development will be reinstated to a width of 1.8m.
- Walkley Road does not meet the target BLOS B. The target BLOS B can only be achieved through the implementation of physically separated bikeways along Walkley Road. This is identified for the City's consideration.
- St. Laurent Boulevard and Don Reid Drive do not meet the target BLOS B. The target BLOS B can be achieved by providing curbside bike lanes with a minimum width of 1.5m, and reducing the operating speed to 50 km/h.
- Walkley Road does not meet the target TLOS B, which is achieved by providing bus lanes with no or limited parking/driveway friction. It is anticipated that this target will be met upon completion of the Baseline/Heron/Walkley/St. Laurent BRT project, which is anticipated to occur beyond 2031.

Access Intersections

- The proposed development includes two full-movement accesses to St. Laurent Boulevard and one full-movement access to Don Reid Drive. Depressed curbs and continuous sidewalks are proposed along the entirety of each access, in accordance with City standards. The design of each access meets the relevant provisions of the City's *Private Approach By-Law*.
- The proposed access to Don Reid Drive will have clear sightlines to Walkley Road to the north and St. Laurent Boulevard to the south. The proposed accesses to St. Laurent Boulevard are located on the inside of a slight curve, but will still achieve the sightlines recommended by the Transportation Association of Canada (TAC), provided that any vegetation within the ROW of St. Laurent Boulevard is trimmed and maintained. Therefore, no sightline concerns are anticipated.
- The proposed accesses to St. Laurent Boulevard and Don Reid Drive are anticipated to
 operate with an acceptable vehicular level of service for the buildout year 2024 and horizon
 year 2029.

Transportation Demand Management

- A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has committed to providing the following TDM measures at the sales centre:
 - Provide local area maps with walking/cycling access routes and key destinations;
 - Provide relevant transit schedules and route maps;
 - Provide a multimodal travel option information package.

Neighbourhood Traffic Management

• The peak hour and daily NTM thresholds for both St. Laurent Boulevard and Don Reid Drive are exceeded by the existing traffic volumes. Since St. Laurent Boulevard and Don Reid Drive primarily serve industrial, commercial, or office uses, no neighbourhood traffic management measures have been recommended as part of this proposed development.

<u>Transit</u>

• The proposed development is anticipated to generate 52 AM peak hour transit trips, (including 35 boarding and 17 alighting), and 55 PM peak hour transit trips (including 25 boarding and 30 alighting). These additional transit trips are not anticipated to require more frequent service at any stops within the study area.

Intersection MMLOS

- The results of the intersection MMLOS analysis can be summarized as follows:
 - No signalized intersections meet the target PLOS;
 - No signalized intersections meet the target BLOS;
 - Walkley Road/160m West of Conroy Road and St. Laurent Boulevard/Conroy Road meets the target TLOS, while Walkley Road/Don Reid Drive/Ryder Street and Walkley Road/Conroy Road do not;
 - Walkley Road/Conroy Road meets the target TkLOS, while Walkley Road/Don Reid Drive/Ryder Street, Walkley Road/160m West of Conroy Road, and St. Laurent Boulevard/Conroy Road do not.
- All approaches at the study area intersections do not meet the target PLOS C. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or removing right turn channels where applicable. The south and east approaches at Walkley Road/Conroy Road meet the City's vehicle/pedestrian conflict threshold to consider zebra-striped crosswalks.
- For approaches with failing BLOS based on left turn characteristics, the target BLOS can be achieved by implementing two-stage, left-turn cycling facilities. Implementing bike boxes would also require restricting right turns on red (RTOR). This is identified for the City's consideration.
- The south approach of Walkley Road/160m West of Conroy Road, the south and west approaches of Walkley Road/Conroy Road, and the east and west approaches of St. Laurent Boulevard/Conroy Road do not meet the target BLOS based on right turn characteristics. The provision of separated cycling facilities on Walkley Road and the east side of Conroy Road, and bike lanes on St. Laurent Boulevard is identified for the City's consideration.
- The north and west approaches of Walkley Road/Don Reid Drive/Ryder Street and all approaches of Walkley Road/Conroy Road do not meet the target TLOS B. It is anticipated that the target TLOS will be met on Walkley Road upon completion of the Baseline/Heron/ Walkley/St. Laurent BRT project, and on Conroy Road with the implementation of isolated transit priority measures. No recommendations are identified for Ryder Street (i.e. a local roadway with no transit priority designation).

• Any approaches that do not meet the target TkLOS represent right turns into private approaches or onto local/collector roadways with no truck route designation, and therefore no recommendations are identified.

Existing Traffic Operations

- The eastbound through and westbound left turn movements at Walkley Road/Conroy Road operate at an Auto LOS E during the PM peak hour.
- During the AM peak hour, the Synchro analysis identifies that the maximum (95th-percentile) queue lengths of the westbound through movements at Walkley Road/Don Reid Drive/Ryder Street and Walkley Road/160m West of Conroy Road extend into the upstream intersections on Walkley Road.
- During the PM peak hour, the Synchro analysis identified that the maximum queue length of the northbound left turn movement at Walkley Road/Don Reid Drive/Ryder Street exceeds the storage length of the auxiliary northbound left turn, but is contained within the taper. The maximum queue length of the eastbound through movement at Walkley Road/Conroy Road extends into the upstream intersection on Walkley Road.

Background Traffic Operations

- Compared to the existing conditions, improvements in some movements is due to differences in the Peak Hour Factor parameter (0.9 in existing conditions and 1.0 in future conditions, per the *2017 TIA Guidelines*).
- The eastbound through movement at Walkley Road/Conroy Road operates at an Auto LOS E during the PM peak hour. Increasing the green time for the eastbound-westbound phases has been reviewed, and the analysis indicates that this mitigation allows the eastbound through movement to operate at the target Auto LOS D.

Total Traffic Operations

• Compared to the future background traffic conditions, site-generated traffic is anticipated to have marginal impacts on traffic operations within the study area.

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

NOVATECH

Prepared by:



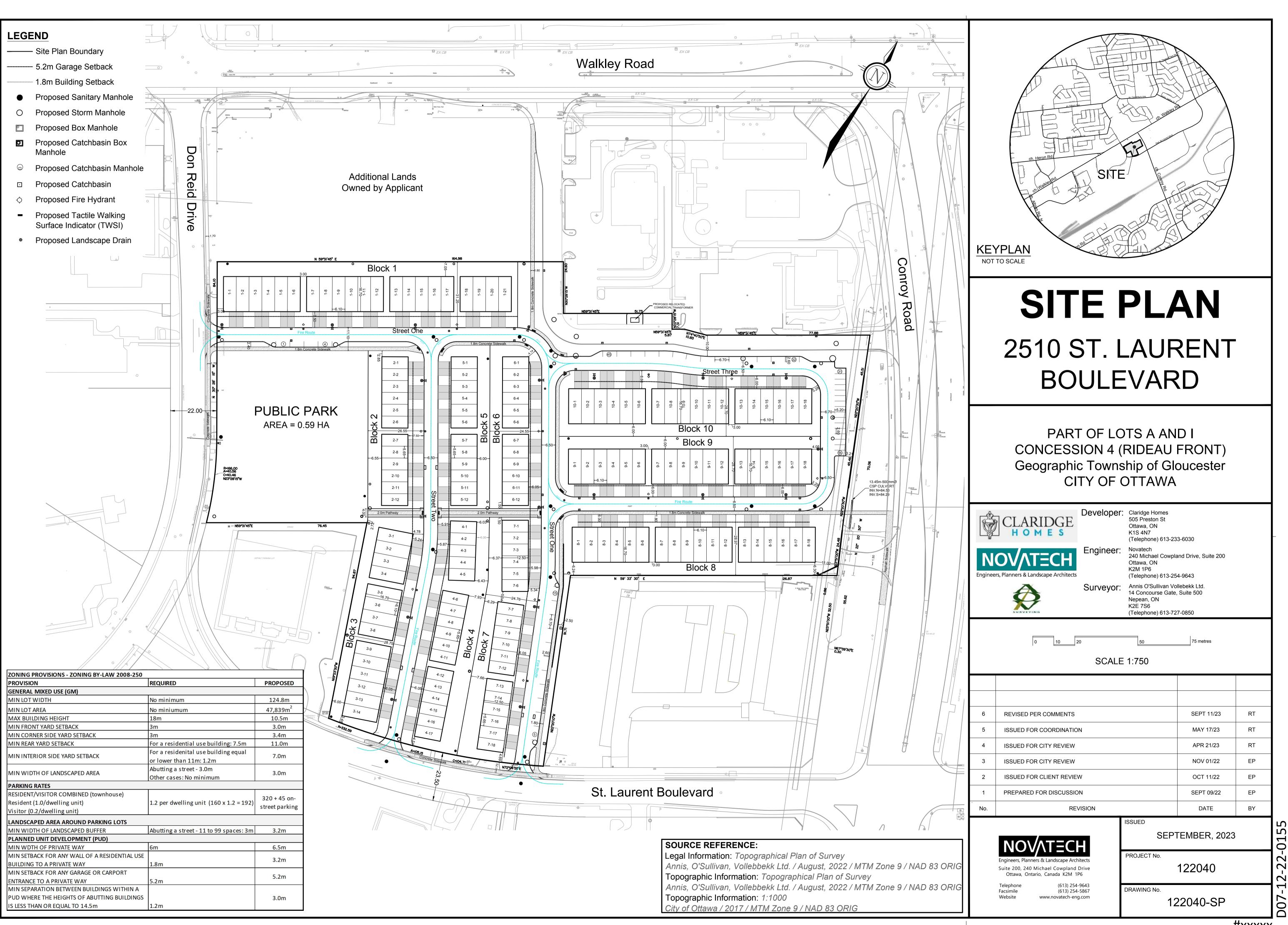
Joshua Audia, P.Eng. Project Engineer | Transportation Reviewed by:



Brad Byvelds, P.Eng. Project Manager | Transportation

APPENDIX A

Proposed Site Plan



#xxxxx

APPENDIX B

TIA Screening Form



City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	1900-1902 Walkley Road, 2425 Don Reid Drive, 2510 St. Laurent Boulevard, and 3000 Conroy Road
Description of Location	Located north of St. Laurent Boulevard, south of Walkley Road, east of Don Reid Drive, and west of Conroy Road
Land Use Classification	Townhouses
Development Size (units)	160 townhouse dwellings, 150 retirement dwellings, and 100 apartment dwellings
Development Size (m ²)	-
Number of Accesses and Locations	Two accesses to St. Laurent Boulevard and one access to Don Reid Drive
Phase of Development	1
Buildout Year	2024

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

2. Trip Generation Trigger

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

Land Use Type	Minimum Development Size
Single-family homes	40 units
Townhomes or apartments	90 units
Office	3,500 m ²
Industrial	5,000 m ²
Fast-food restaurant or coffee shop	100 m ²
Destination retail	1,000 m ²
Gas station or convenience market	75 m²

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

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



3. Location Triggers

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

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

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

4. Safety Triggers

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

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

5. Summary

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

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

APPENDIX C

OC Transpo Route Information



7 days a week / 7 jours par semaine

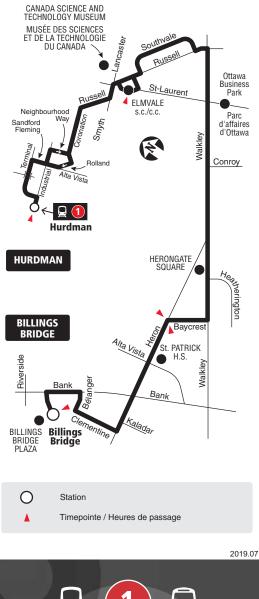
All day service Service toute la journée







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

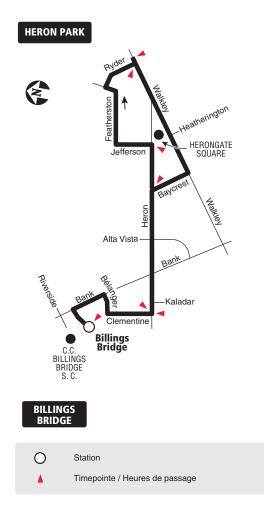






Monday to Saturday / Lundi au samedi

Limited service during the day Service limité pendant la journée



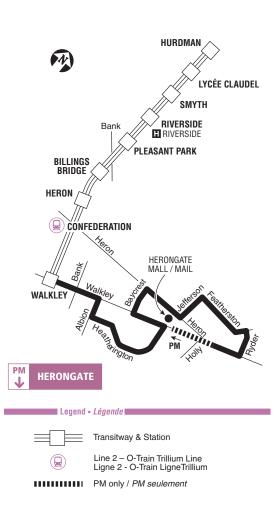
2019.07





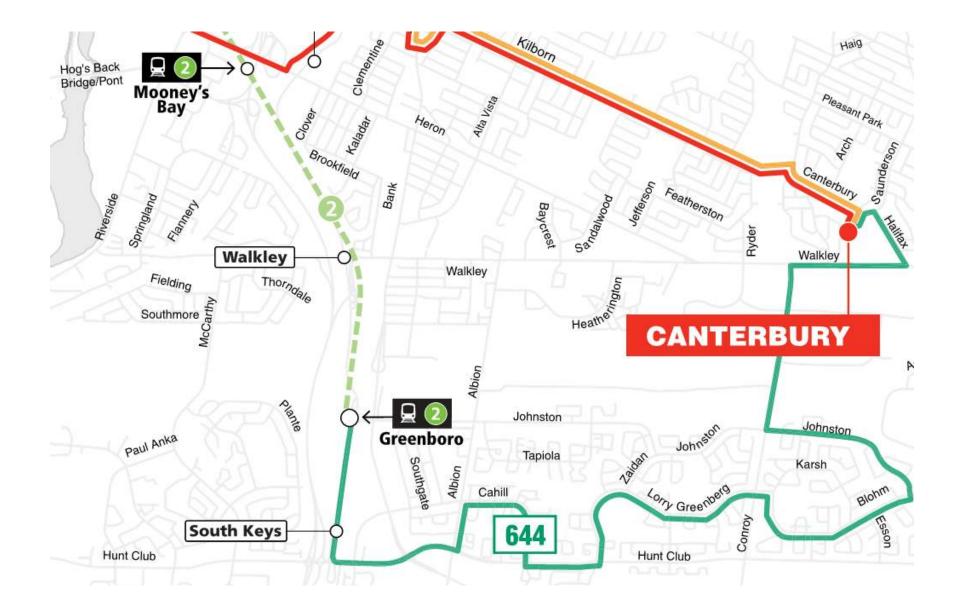
Peak periods only Périodes de pointe seulement

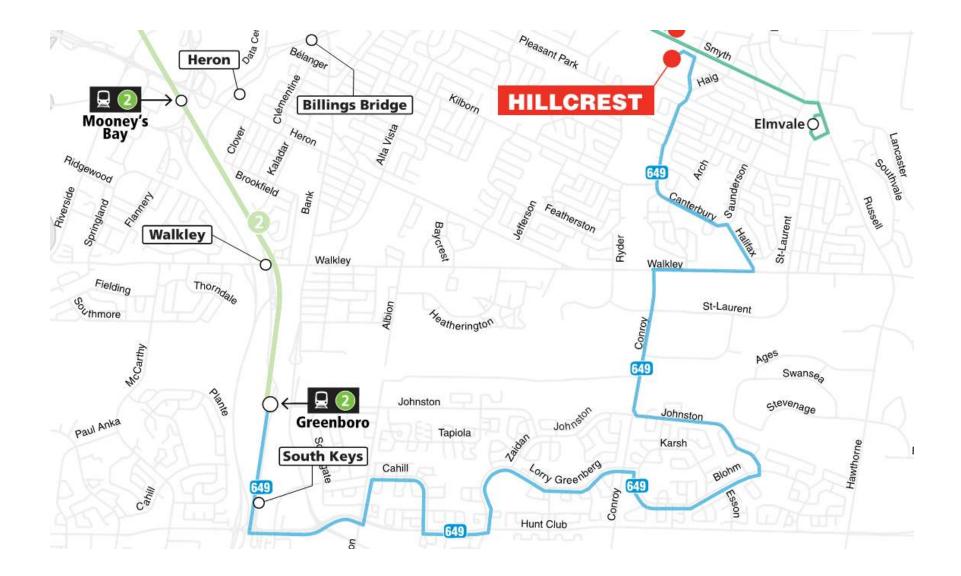


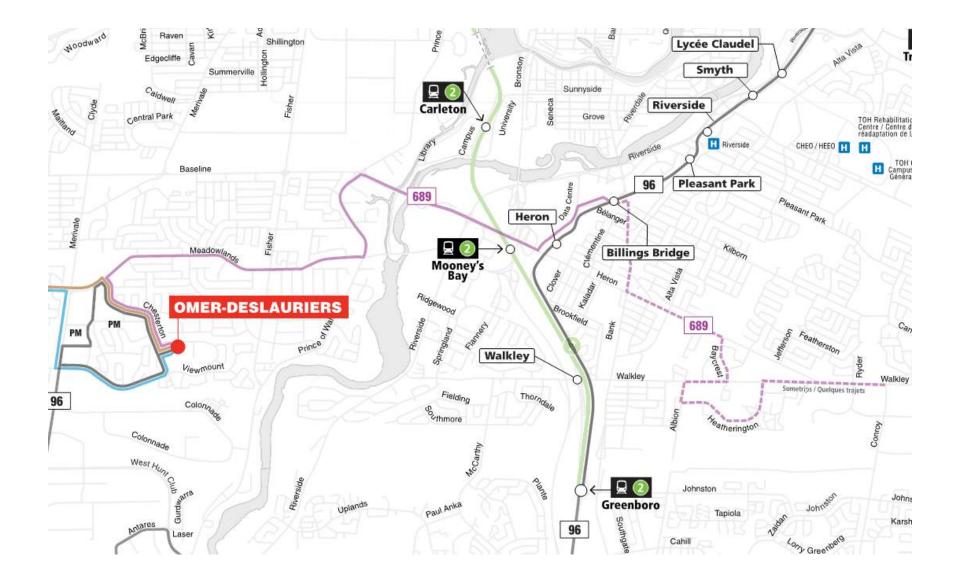


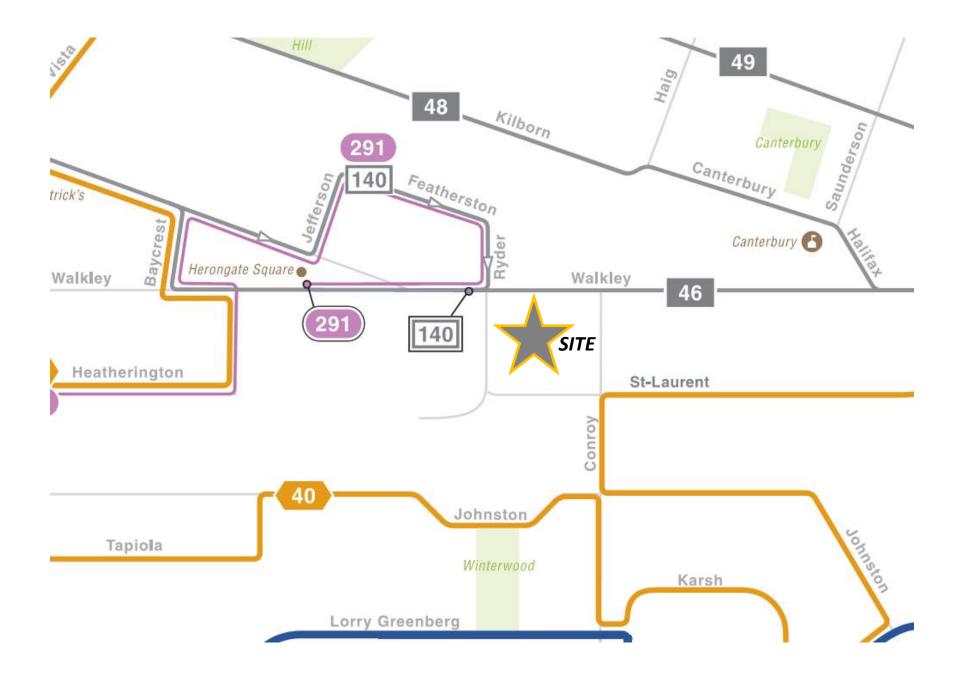
2017.06

Schedule / Horaire613-560-1000 Text / Texto
Customer Relations Service à la clientèle
Security / Sécurité 613-741-2478 Effective June 26, 2017
En vigueur 26 juin 2017 CC <i>Transpo</i> INFO 613-741-4390 octranspo.com









Joshua Audia

Subject:

FW: Transit Data Request - Walkley/Conroy area

Hi Josh,

The requested data is below. Note that I pared down the list of stops a bit: what's shown below should provide a suitable representative sample to cover the routes in the area. Please let me know if you need any other data.

Data was sampled from the period of January 5 to March 16 2020, which is the last normal ridership period before pandemic-related impacts began. Note that cells with a zero (0) value indicate a measured average value of zero, based on available APC data, rather than an absence of data. Cells with a dash (-) indicate that that route in question does not service the stop in the given time period.

				ŀ	AM (6:00 - 9:00)	PI	VI (15:00 - 18:0	0)		24-hr	
Stop	Location	Ro (Dired		Boardings	Alightings	Avg Load at Departure	Boardings	Alightings	Avg Load at Departure	Boardings	Alightings	Avg Load at Departure
4307	St-Laurent/ Conroy	40	SB	1	56	3	10	19	8	30	143	6
4311	St-Laurent/ Conroy	40	NB	3	12	7	48	2	6	121	27	7
6927	Walkley/ Don Reid	46	EB	5	16	13	7	9	15	15	40	12
		46	WB	4	3	16	6	2	17	20	10	12
8391	Walkley/	140	EB	-	-	-	0	0	0	0	7	0
0281	Ryder	140	WB	-	-	-	0	0	0	9	0	1
		291	OB	-	-	-	0	3	1	0	5	1
8398	Ryder/ Walkley	291	IB	8	1	1	-	-	-	8	1	1

Winter 2020 (Jan 5 - Mar 16)

Please let me know if there are any questions, or if any additional information is required.

Best,

Graham Rathwell

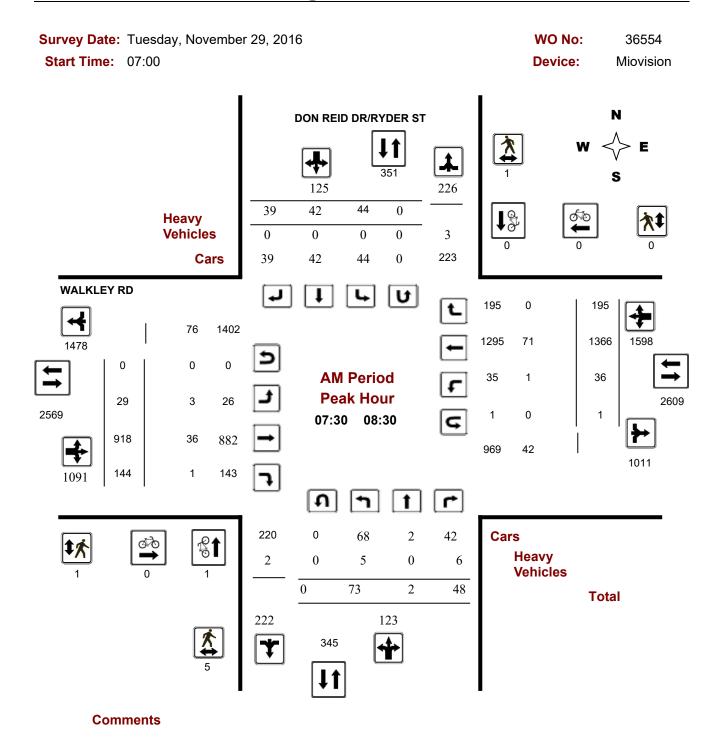
Transit Planner, Network Service Design Service Planning Branch Transit Services Department OC Transpo | City of Ottawa

APPENDIX D

Traffic Count Data

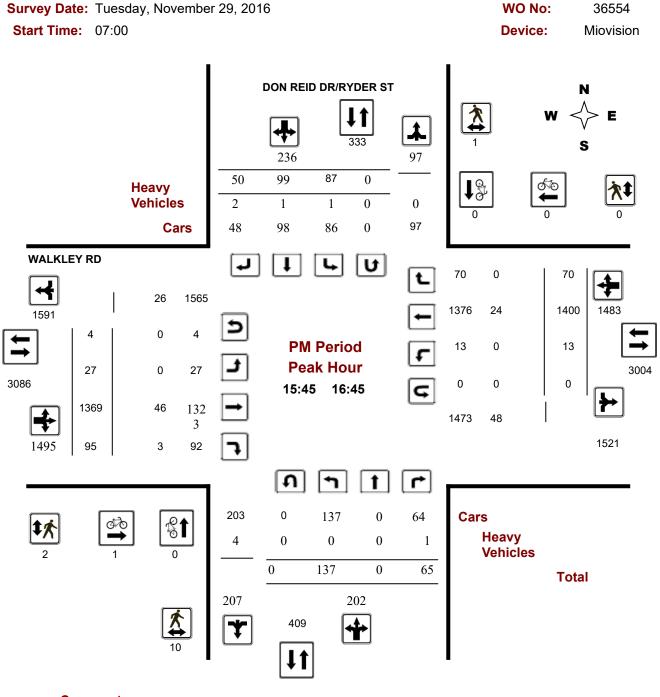


Turning Movement Count - Peak Hour Diagram WALKLEY RD @ DON REID DR/RYDER ST





Turning Movement Count - Peak Hour Diagram WALKLEY RD @ DON REID DR/RYDER ST



Comments



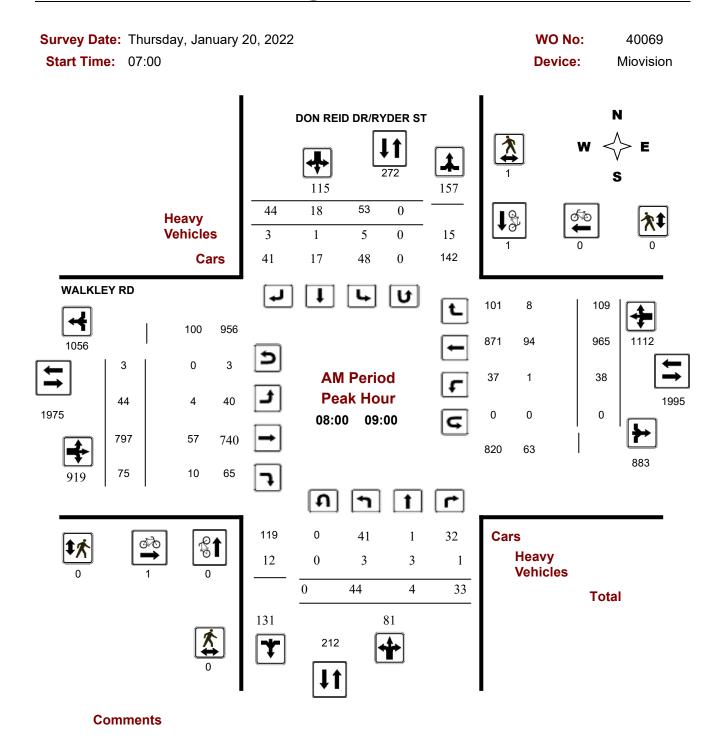
Turning Movement Count - Study Results WALKLEY RD @ DON REID DR/RYDER ST

Survey D	ate: Tu	uesda	y, No	vembe	r 29, 2	2016						wo	No:			36	554		
Start Tir	ne: 07	7:00										Devi	ice:			Mio	vision		
				F	iull S	Stud	v Si	umma	rv (8	3 HF	R Sta	nda	rd)						
Survey D	ate: T	uesda	av No	- ovembe			, .		•		ved U-		•					T Facto	~ r
		40040	.,		. 20,	2010	1	Northbound		0361		hbound:						TFacto	ונ
								Eastbound	0	L		tbound:	3				1.00		
		DON		D DR/R	YDER	R ST			1				LKLE	Y RD					
	Nor	thbou		5 5141		uthbou	ind				Eastbou				Vestbo	und			
D · · ·				NB				SB	STR				EB				WB	STR	Grand
Period	LT	ST	RT	TOT	LT	ST	RT	тот	TOT	LT	ST	RT	тот	LT	ST	RT	тот	TOT	Total
07:00 08:00	56	0	28	84	35	24	33	92	176	24	845	123	992	38	1159	155	1352	2344	2520
08:00 09:00	66	5	40	111	38	45	35	118	229	34	909	157	1100	30	1345	195	1570	2670	2899
00.00 00.00	00	Ū	-10		00	10	00		220	04	000	107	1100	00	1040	100	1010	2010	2000
09:00 10:00	51	1	35	87	41	22	33	96	183	19	710	78	807	23	855	60	938	1745	1928
11:30 12:30	78	1	80	159	33	21	30	84	243	30	792	69	891	25	873	56	954	1845	2088
12:30 13:30	58	0	59	117	37	22	37	96	213	18	864	91	973	28	886	48	962	1935	2148
15:00 16:00	87	0	55	142	85	74	47	206	348	27	1291	90	1408	18	1385	79	1482	2890	3238
16:00 17:00	142	1	72	215	76	101	51	228	443	33	1382	100	1515	10	1367	74	1451	2966	3409
17:00 18:00	95	5	34	134	62	62	45	169	303	26	1217	67	1310	6	1178	65	1249	2559	2862
Sub Total	633	13	403	1049	407	371	311	1089	2138	211	8010	775	8996	178	9048	732	9958	18954	21092
U Turns	0			0	0			0	0	0			0	0			0	0	0
Total	633	13	403	1049	407	371	311	1089	2138	211	8010	775	8996	178	9048	732	9958	18954	21092
EQ 12Hr	880	18	560	1458	567	516	432	1515	2973	313	11134	1077	12524	252	12577	1017	13846	26370	29343
Note: These	values ar	e calcul	lated by	y multiply	ying the	totals b	y the a	appropriate	expans	ion fac	tor.			1.39					
AVG 12Hr	880	18	560	1458	567	516	432	1515	2973	313	11134	1077	12524	252	12577	1017	13846	26370	29343
Note: These	volumes	are calc	culated	by multi	plying th	ne Equiv	alent 1	12 hr. totals	by the	AADT	factor.			1.00					
AVG 24Hr	1153	24	734	1911	743	676	566	1985	3896	410	14586	1411	16407	330	16476	1332	18138	34545	38441
Note: These	volumes	are calc	culated	by multi	plying th	ne Avera	age Da	ily 12 hr. to	tals by	12 to 2	4 expan	sion fac	tor.	1.31					

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

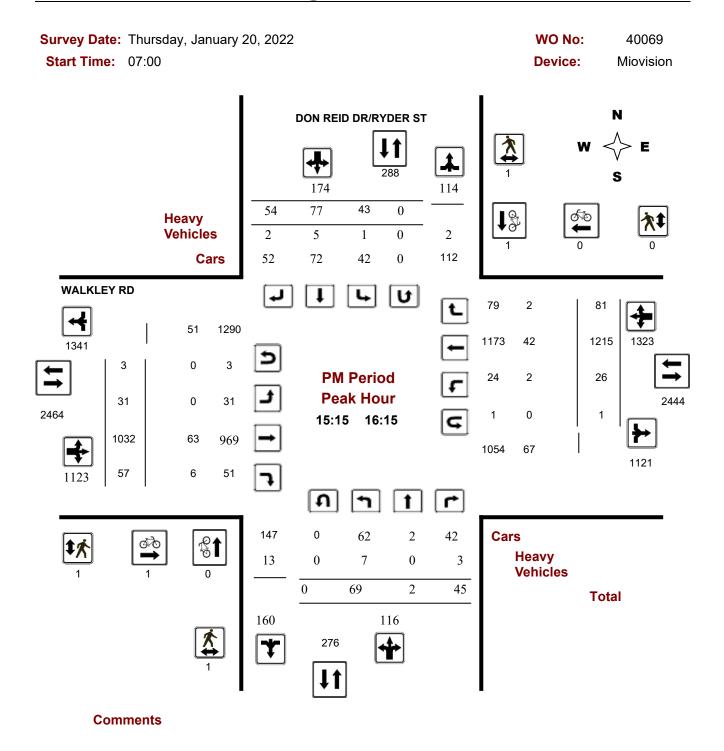


Turning Movement Count - Peak Hour Diagram WALKLEY RD @ DON REID DR/RYDER ST





Turning Movement Count - Peak Hour Diagram WALKLEY RD @ DON REID DR/RYDER ST





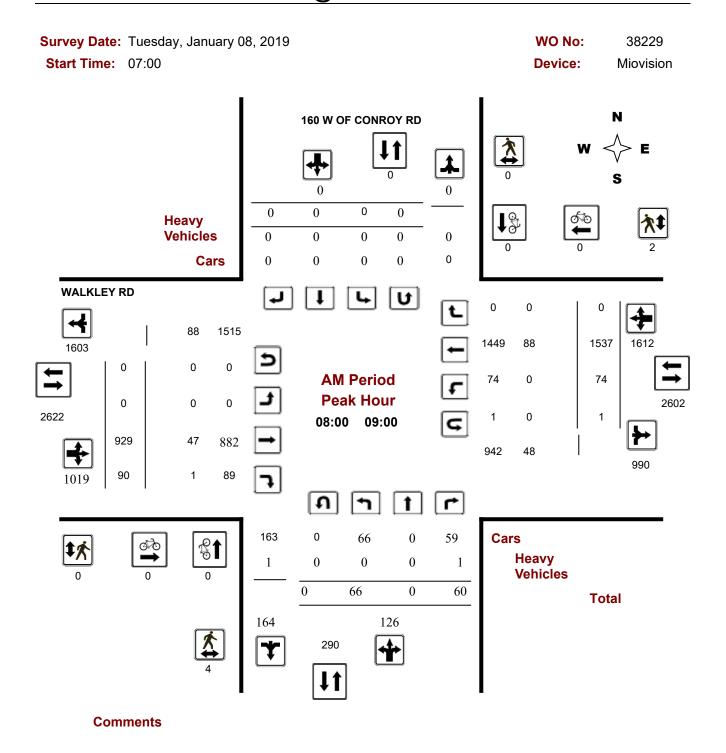
Turning Movement Count - Study Results WALKLEY RD @ DON REID DR/RYDER ST

Survey D Start Tir			ay, Ja	nuary 2	20, 20	22						WO Devi					069 vision		
•••••				F		Stud	v Si	umma	rv (8		2 Sta					NIIO	131011		
Survey Da	ato T	hursd	lav la	∎ anuary			y Ot		• •		ved U-		-					TEast	
Survey D	ate. i	nuisu	ay, 00	anuary	20, 20	522	r	Northbound		bser		i urns ibound:						T Facto	or
								Eastbound	1			bound:	6				1.00		
) DR/R		ST								V RD					
	Nor	thbou				uthbou	un d				astbou				Vestbo	und			
				NB				SB	STR				EB				WB	STR	Grand
Period	LT	ST	RT	TOT	LT	ST	RT	TOT	TOT	LT	ST	RT	тот	LT	ST	RT	тот	TOT	Total
07:00 08:00	31	0	22	53	31	17	19	67	120	31	604	83	718	54	704	73	831	1549	1669
08:00 09:00	44	4	33	81	53	18	44	115	196	44	797	75	916	38	965	109	1112	2028	2224
09:00 10:00	43	2	38	83	46	22	35	103	186	27	703	54	784	36	731	57	824	1608	1794
11:30 12:30	66	0	51	117	41	13	32	86	203	20	823	70	913	17	884	54	955	1868	2071
12:30 13:30	37	1	37	75	46	14	31	91	166	20	799	61	880	27	819	55	901	1781	1947
15:00 16:00	62	1	45	108	46	67	50	163	271	27	1026	55	1108	27	1135	84	1246	2354	2625
16:00 17:00	92	3	56	151	54	52	51	157	308	26	1035	64	1125	15	1169	47	1231	2356	2664
17:00 18:00	60	2	59	121	45	22	34	101	222	30	893	44	967	16	964	62	1042	2009	2231
Sub Total	435	13	341	789	362	225	296	883	1672	225	6680	506	7411	230	7371	541	8142	15553	17225
U Turns	1			1	0			0	1	15			15	6			6	21	22
Total	436	13	341	790	362	225	296	883	1673	240	6680	506	7426	236	7371	541	8148	15574	17247
EQ 12Hr	606	18	474	1098	503	313	411	1227	2325	334	9285	703	10322	328	10246	752	11326	21648	23973
Note: These	values ar	e calcul	lated by	y multiply	ying the	totals b	y the a	ppropriate	expans	ion fac	tor.			1.39					
AVG 12Hr	606	18	474	1098	503	313	411	1227	2325	334	9285	703	10322	328	10246	752	11326	21648	23973
Note: These	volumes	are calo	culated	by multi	plying th	ne Equiv	alent 1	2 hr. totals	s by the	AADT	factor.			1.00					
AVG 24Hr	794	24	621	1439	659	410	538	1607	3046	438	12163	921	13522	430	13422	985	14837	28359	31405
Note: These	volumes	are calo	culated	by multi	plying th	ne Avera	age Dai	ily 12 hr. to	otals by	12 to 2	4 expan	sion fac	tor.	1.31					

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

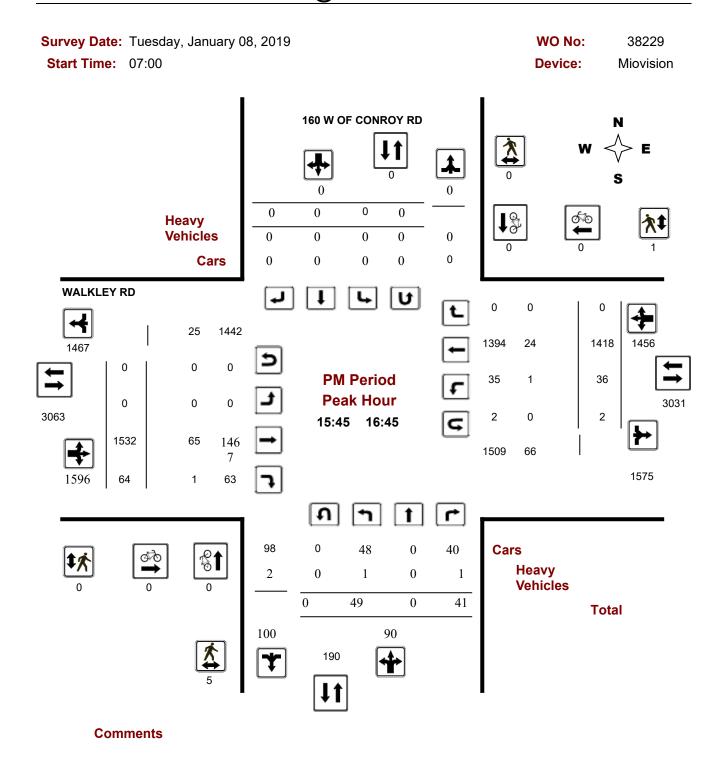


Turning Movement Count - Peak Hour Diagram WALKLEY RD @ 160 W OF CONROY RD





Turning Movement Count - Peak Hour Diagram WALKLEY RD @ 160 W OF CONROY RD





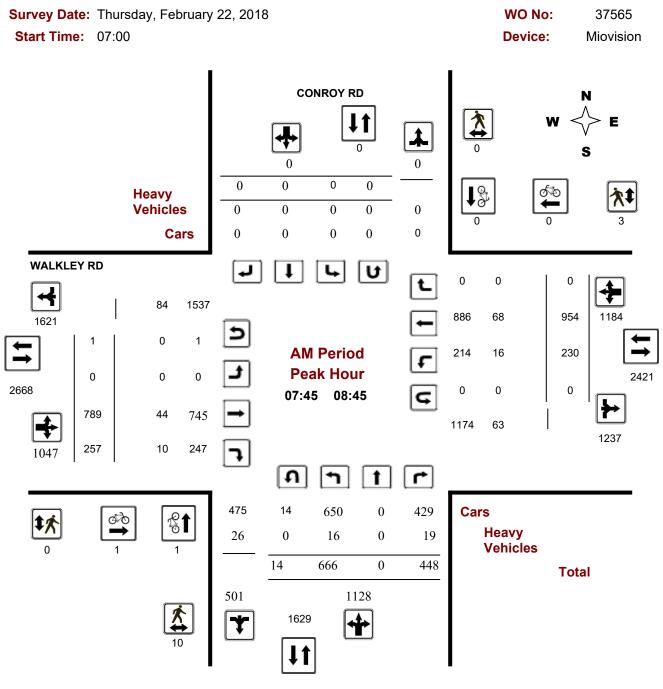
Turning Movement Count - Study Results WALKLEY RD @ 160 W OF CONROY RD

Survey D Start Tin			y, Jar	nuary 0	8, 201	9						WO Dev					229 vision		
				F	ull S	Stud	γ Sι	ımma	nry (8	B HF	R Sta	nda	rd)						
Survey Da	ate: T	uesda	ay, Ja	nuary (otal O				•				AAD	T Facto	or
							Ν	lorthboun	d: 0		Sout	hbound	: 0				1.10		-
							l	Eastboun	d: 0		Wes	tbound	12						
		160	w o	F CON	ROY F	RD						WA	LKLE	Y RD					
	Nor	thboui	nd		Sou	uthbou	Ind			E	astbou	und		V	Vestbo	und			
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	59	0	53	112	0	0	0	0	112	0	771	82	853	73	1285	0	1358	2211	2323
08:00 09:00	66	0	60	126	0	0	0	0	126	0	929	90	1019	74	1537	0	1611	2630	2756
09:00 10:00	51	0	43	94	0	0	0	0	94	0	800	67	867	71	988	0	1059	1926	2020
11:30 12:30	66	0	50	116	0	0	0	0	116	0	871	114	985	98	1033	0	1131	2116	2232
12:30 13:30	52	0	53	105	0	0	0	0	105	0	908	98	1006	53	923	0	976	1982	2087
15:00 16:00	52	0	47	99	0	0	0	0	99	0	1376	71	1447	56	1351	0	1407	2854	2953
16:00 17:00	49	0	47	96	0	0	0	0	96	0	1536	65	1601	32	1371	0	1403	3004	3100
17:00 18:00	59	0	35	94	0	0	0	0	94	0	1219	73	1292	54	1245	0	1299	2591	2685
Sub Total	454	0	388	842	0	0	0	0	842	0	8410	660	9070	511	9733	0	10244	19314	20156
U Turns	0			0	0			0	0	0			0	12			12	12	12
Total	454	0	388	842	0	0	0	0	842	0	8410	660	9070	523	9733	0	10256	19326	20168
EQ 12Hr Note: These v	631 values ar	0 e calcul	539 lated by	1170 y multiply	0 ving the	0 totals b	0 y the a	0 opropriate	1170 expansi	0 ion fac	11690 tor.	917	12607	727 1.39	13529	0	14256	26863	28033
AVG 12Hr	694	0	593	1287	0	0	0	0	1287	0	12859	1009	13868	800	14882	0	15682	29550	30837
Note: These		-			-	-	•	-		-				1.10		Ŭ			
AVG 24Hr	909	0	777	1686	0	0	0	0	1686	0	16845	1322	18167	1048	19495	0	20543	38710	40396
Note: These	volumes	are calc	culated	by multip	olying th	e Avera	age Dai	ly 12 hr. to	otals by	12 to 2	4 expan	sion fac	ctor.	1.31					

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



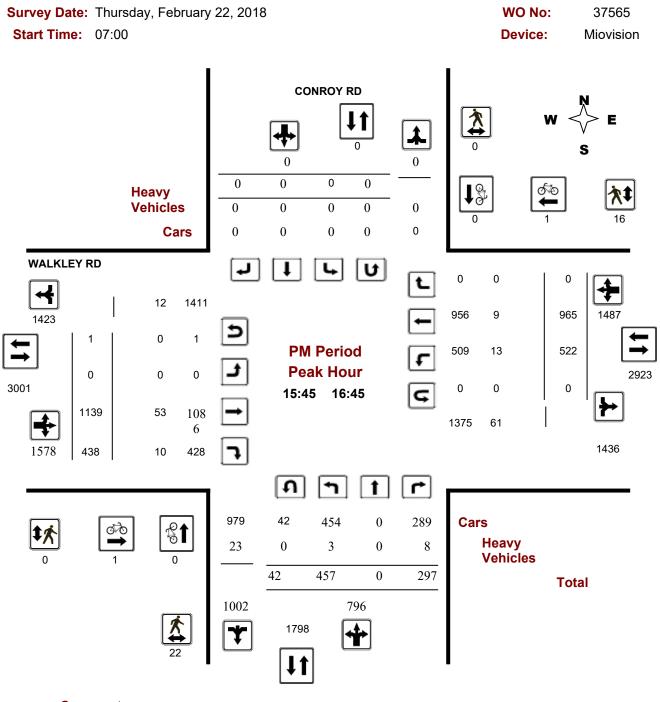
Turning Movement Count - Peak Hour Diagram CONROY RD @ WALKLEY RD



Comments



Turning Movement Count - Peak Hour Diagram CONROY RD @ WALKLEY RD



Comments



37565

Turning Movement Count - Full Study Summary Report

CONROY RD @ WALKLEY RD

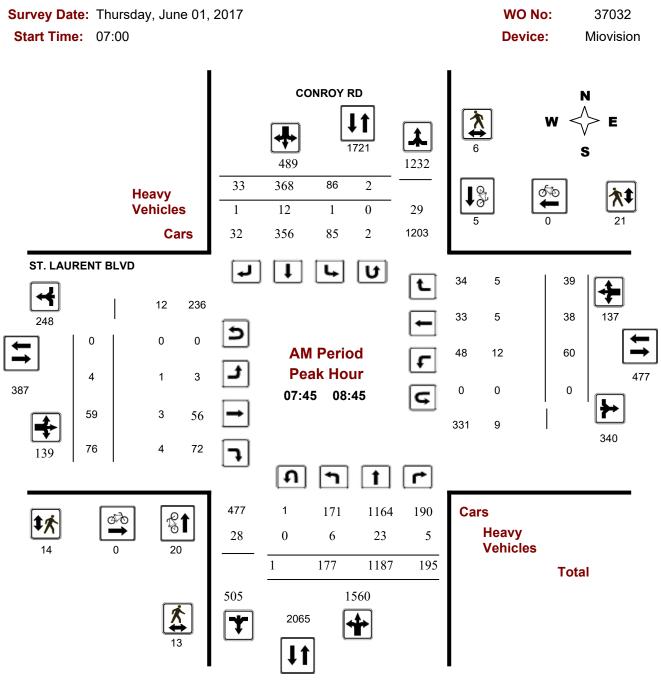
Survey D	ate: ⊺	hurso	day, F	ebruary	/ 22, 2	018			Total C)bser	ved U	-Turn	S				AAD	T Fact	or
							1	Northbou	ind: 18	37	Sout	hbound	d: 0				.90		
								Eastbou	nd: 4		Wes	stbound	: 3						
								F	ull Stu	ıdy									
			С	ONRO	Y RD							V	VALKL	EY RI	C				
-	N	orthb	ound		S	outhbo	ound				Eastb	ound			Westbo	ound			
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	Gran Tota
07:00 08:00	585	0	379	964	0	0	0	0	964	0	668	174	842	182	895	0	1077	1919	2883
08:00 09:00	641	0	476	1117	0	0	0	0	1117	0	791	257	1048	239	904	0	1143	2191	3308
09:00 10:00	378	0	317	695	0	0	0	0	695	0	671	209	880	227	736	0	963	1843	2538
11:30 12:30	400	0	243	643	0	0	0	0	643	0	798	252	1050	262	740	0	1002	2052	2695
12:30 13:30	342	0	259	601	0	0	0	0	601	0	793	302	1095	241	735	0	976	2071	2672
15:00 16:00	436	0	328	764	0	0	0	0	764	0	1028	360	1388	453	976	0	1429	2817	3581
16:00 17:00	443	0	292	735	0	0	0	0	735	0	1120	419	1539	504	986	0	1490	3029	3764
17:00 18:00	431	0	264	695	0	0	0	0	695	0	945	439	1384	416	824	0	1240	2624	3319
Sub Total	3656	0	2558	6214	0	0	0	0	6214	0	6814	2412	9226	2524	6796	0	9320	18546	24760
U Turns				187				0	187				4				3	7	194
Total	3656	0	2558	6401	0	0	0	0	6401	0	6814	2412	9230	2524	6796	0	9323	18553	24954
EQ 12Hr	5082	0	3556	8897	0	0	0	0	8897	0	9471	3353	12830	3508	9446	0	12959	25789	34686
Note: These	values ar	e calcu	lated b	y multiply	ing the	totals by	/ the ap	propriat	e expansi	ion fac	tor.			1.39					
AVG 12Hr	4574	0	3200	8008	0	0	0	0	8008	0	8524	3017	11547	3158	8502	0	11663	23210	31218
Note: These	volumes a	are cal	culated	by multip	lying th	e Equiva	alent 12	2 hr. tota	Is by the	AADT	factor.			.90					
AVG 24Hr	5991	0	4192	10490	0	0	0	0	10490	0	11167	3953	15126	4136	11137	0	15279	30405	40895
Note: These	volumes a	are cal	culated	by multip	lying th	e Avera	ge Dail	y 12 hr. i	totals by [•]	12 to 2	4 expan	ision fa	ctor.	1.31					

Comments:

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



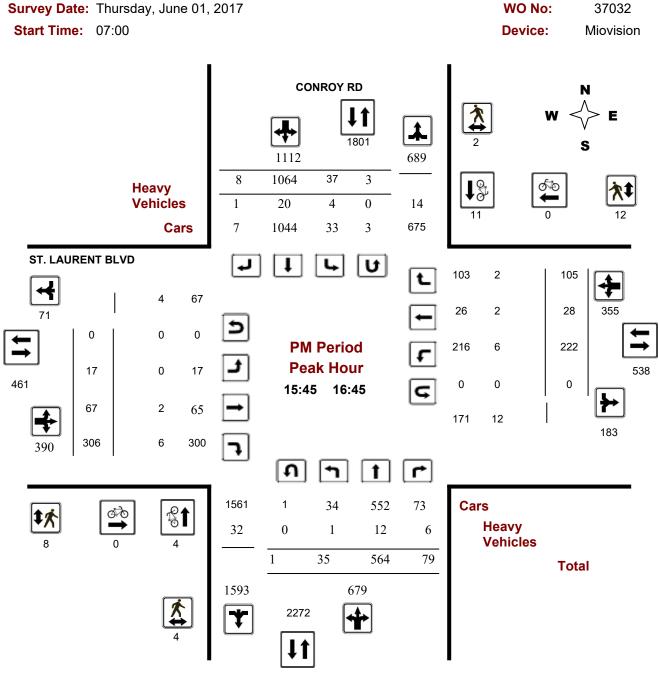
Turning Movement Count - Peak Hour Diagram CONROY RD @ ST. LAURENT BLVD



Comments



Turning Movement Count - Peak Hour Diagram CONROY RD @ ST. LAURENT BLVD



Comments



37032

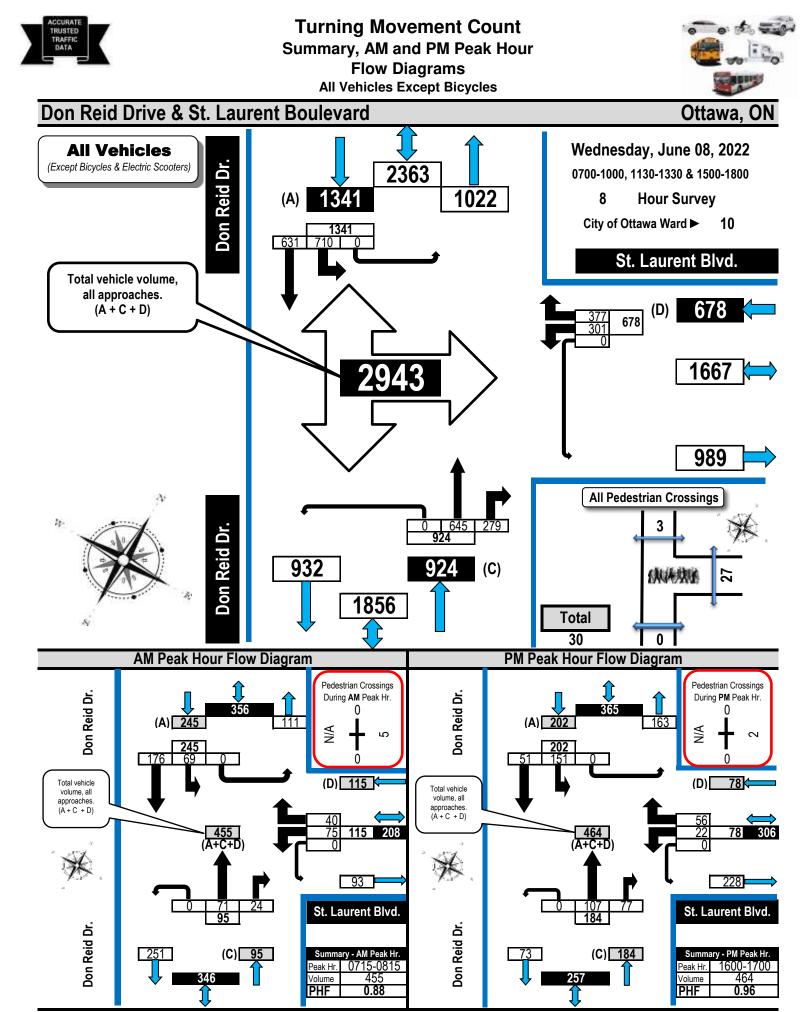
Turning Movement Count - Full Study Summary Report

CONROY RD @ ST. LAURENT BLVD

Survey Da	ate:	Thurso	day, Ji	une 01	, 2017	,			Total C	bser	ved U	-Turns	5				AAD	T Fact	or
								Northbo		2	Sout	hbound:	36				.90		
								Eastbou	ind: 0		Wes	tbound:	0						
								F	ull Stu	ıdy									
_			С	ONRO	Y RD							ST. L	AURE	ENT BL	VD				
	1	Northb	ound		5	Southb	ound				Eastb	ound			Westb	ound			
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	Gran Tota
07:00 08:00	146	949	149	1244	88	327	33	448	1692	3	28	52	83	44	33	19	96	179	1871
08:00 09:00	153	1186	194	1533	81	387	29	497	2030	4	59	73	136	53	29	46	128	264	2294
09:00 10:00	71	646	114	831	66	427	21	514	1345	10	25	72	107	56	23	47	126	233	1578
11:30 12:30	47	554	70	671	72	521	23	616	1287	13	24	75	112	115	32	128	275	387	1674
12:30 13:30	59	572	113	744	121	522	31	674	1418	8	36	78	122	88	25	99	212	334	1752
15:00 16:00	44	671	68	783	43	873	13	929	1712	13	29	196	238	167	36	109	312	550	2262
16:00 17:00	32	568	76	676	39	1007	9	1055	1731	17	65	314	396	229	23	106	358	754	2485
17:00 18:00	22	598	70	690	54	929	5	988	1678	7	37	207	251	122	16	70	208	459	2137
Sub Total	574	5744	854	7172	564	4993	164	5721	12893	75	303	1067	1445	874	217	624	1715	3160	16053
U Turns				12				36	48				0				0	0	48
Total	574	5744	854	7184	564	4993	164	5757	12941	75	303	1067	1445	874	217	624	1715	3160	16101
EQ 12Hr	798	7984	1187	9986	784	6940	228	8002	17988	104	421	1483	2009	1215	302	867	2384	4393	22381
Note: These v	/alues a	re calcu	lated by	y multiply	ying the	totals b	y the ap	opropriat	te expans	ion fact	or.			1.39					
AVG 12Hr	718	7186	1068	8987	706	6246	205	7202	16189	94	379	1335	1808	1093	271	781	2145	3953	20142
Note: These v	olumes/	are cal	culated	by multi	plying t	he Equiv	alent 1	2 hr. tota	als by the	AADT f	actor.			.90					
AVG 24Hr	941	9413	1400	11773	924	8183	269	9435	21208	123	497	1749	2368	1432	356	1023	2811	5179	26387
Note: These v	/olumes	are cal	culated	by multi	plying tl	he Avera	ige Dail	ly 12 hr.	totals by	12 to 24	4 expan	sion fac	tor.	1.31					

Comments:

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



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Prepared by: thetrafficspecialist@gmail.com

Flow Diagrams: AM PM Peak





Ottawa, ON

Don Reid Drive & St. Laurent Boulevard

Survey Da	te:	Wedr	iesda	ıy, Ju	ne 08	, 2022	2					Star	t Time):		0700			AAD	T Fa	ctor:		0.9
Weather AM	Λ:	Mostly	Clou	dy 16	°C	Su	rvey	Durat	tion:	8	Hrs.	Surv	ey Ho	ours:		0700-	·1000	, 1130)-133	0 & 1	500-1	800	
Weather PM	/ :	Mainly	Clou	dy 23	°C							Surv	veyor(s):		J. Mo	ussea	au					
			N/A			St	. Laı	iren	t Blv	/d.			Don	Rei	d Dr	•		Don	Rei	d Dı			
		Ea	stbou	Ind			We	stbou	Ind				No	rthboı	ind			Sou	ıthbo	und			
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800						75		29	0	104	104		57	19	0	76	55	157		0	212	288	392
0800-0900						47		66	0	113	113		50	14	0	64	91	94		0	185	249	362
0900-1000						28		57	0	85	85		27	14	0	41	81	69		0	150	191	276
1130-1230						36		39	0	75	75		121	32	0	153	77	89		0	166	319	394
1230-1330						43		49	0	92	92		76	33	0	109	63	75		0	138	247	339
1500-1600						31		42	0	73	73		101	41	0	142	106	44		0	150	292	365
1600-1700						22		56	0	78	78		107	77	0	184	151	51		0	202	386	464
1700-1800						19		39	0	58	58		106	49	0	155	86	52		0	138	293	351
Totals						301		377	0	678	678		645	279	0	924	710	631		0	1341	2265	2943

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard weekday 8-hour turning movement counts

conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equ. 12 Hr	е 0	quivaler 0	nt 12-h 0	our veh 0	icle v 0	olumes. 418	These 0		es are 0	calcula 942	ted by m 942	ultiply 0	ing the 897	8-hour 388		y the 8 1284		expansio 877	on facto 0	or of 1.39 0 18	-	3148	4091
		Avere	na dail	v 12 ha				These	aluma		alaulata	dhum	ultinki	na tha a		nt 12 k	our to	tala hv t		T factor	of. 0 (<u> </u>	
AADT 12-hr	0	Avera 0	ge dan 0	0 0	ur ver O	377	umes. 0		0	848	848	0 0 0	807	349	•	1156		789 7	0	_	_	2834	3682
	24-H	our AAI	DT. The	ese volu	imes	are calc	ulated	bv mul	tiplving	a the av	erage da	ailv 12-	hour ve	ehicle v	olumes	bv the	12 🔿	24 expar	nsion fa	ctor of 1	.31		
AADT 24 Hr	0	0	0	0	0	493	0	-		1111	1111	0	1057	457		1514		1034	0	-	98	3712	482

AADT and expansion factors provided by the City of Ottawa

AM Peak Ho	ur Fac	tor 🗖	•	0.	88									Hig	hest	Hourly	y Vehi	icle Vo	lume	Betv	veen ()700h 8	1000h
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
0715-0815	0	0	0	0	0	75	0	40	0	115	115	0	71	24	0	95	69	176	0	0	245	340	455
OFF Peak He	our Fa	ctor	•	0.	84									Hig	hest	Hourl	y Vehi	icle Vo	lume	Betv	veen 1	130h 8	1330h
OFF Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1200-1300	0	0	0	0	0	45	0	54	0	99	99	0	120	37	0	157	71	85	0	0	156	313	412
PM Peak Ho	ur Fac	tor 🖪		0.	96									Hig	hest	Hourl	y Vehi	icle Vo	lume	Betv	veen 1	500h 8	1800h
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1600-1700	0	0	0	0	0	22	0	56	0	78	78	0	107	77	0	184	151	51	0	0	202	386	464

Comments:

Buses and school buses comprise 7.94% of the heavy vehicle traffic. Ambulances comprise much of the heavy vehicle volume. The bicycle totals include 3 E-bikes.

Notes:

1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.

2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

APPENDIX E

Collision Records



Traffic Control: Tra	ffic signal						Total Collisions:	22	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2016-Jun-20, Mon,09:52	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jul-18, Mon,18:21	Clear	Rear end	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Aug-12, Fri,21:35	Rain	Rear end	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Oct-21, Fri,13:22	Rain	Angle	Non-fatal injury	Wet	West	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-11, Fri,18:04	Clear	Turning movement	P.D. only	Dry	North	Turning left	Unknown	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2016-Nov-11, Fri,18:45	Clear	Angle	P.D. only	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-18, Fri,14:35	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-17, Tue,15:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2017-Feb-05, Sun,21:15	Snow	Sideswipe	P.D. only	Loose snow	South	Slowing or stopping	g Pick-up truck	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2017-May-03, Wed,19:07	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-18, Sun,11:10	Clear	Sideswipe	Non-fatal injury	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jul-26, Wed,13:14	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	



Traffic Control: Trai	fic signal						Total Collisions:	22	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2017-Jul-26, Wed,14:49	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-11, Fri,13:18	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
2017-Nov-21, Tue,13:45	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	School van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-08, Mon,10:34	Snow	Angle	P.D. only	Loose snow	South	Going ahead	Police vehicle	Skidding/sliding	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-May-03, Thu,07:24	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-09, Tue,07:06	Fog, mist, smoke, dust	Turning movement	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-29, Fri,15:30	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jun-11, Tue,10:44	Clear	Rear end	P.D. only	Dry	North	Going ahead	Delivery van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-06, Fri,14:40	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Nov-11, Wed,13:16	Clear	Rear end	P.D. only	Dry	East	Turning right	Unknown	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
Location: CONRO	OY RD @ WAL	KLEY RD							
Traffic Control: Trat	ffic signal						Total Collisions:	74	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped



Location: CONR	OY RD @ WA	LKLEY RD						
Traffic Control: Tra	ffic signal					Total Collisio	ons: 74	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver Vehicle type	First Event	No. Ped
2016-Jan-17, Sun,16:20	Snow	Rear end	P.D. only	Loose snow	North	Turning right Pick-up truck	Other motor vehicle	0
					North	Turning right Pick-up truck	Other motor vehicle	
2016-Feb-09, Tue,10:45	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping Automobile, station wa	gon Other motor vehicle	
2016-Feb-16, Tue,13:00	Snow	Rear end	P.D. only	Packed snow	West	Slowing or stopping Pick-up truck	Other motor vehicle	0
					West	Stopped Passenger van	Other motor vehicle	
2016-Feb-19, Fri,08:40	Clear	Rear end	P.D. only	lce	West	Slowing or stopping Automobile, station wa	gon Other motor vehicle	0
					West	Stopped Pick-up truck	Other motor vehicle	
2016-Feb-23, Tue,12:31	Clear	Rear end	P.D. only	Dry	East	Turning right Automobile, station wa	gon Other motor vehicle	0
					East	Turning right Automobile, station wa	gon Other motor vehicle	
2016-Mar-10, Thu,15:54	Clear	Rear end	Non-fatal injury	Wet	West	Going ahead Truck - tank	Other motor vehicle	0
					West	Slowing or stopping Automobile, station wa	gon Other motor vehicle	
2016-Mar-29, Tue,18:15	Clear	Sideswipe	P.D. only	Dry	North	Turning left Unknown	Other motor vehicle	0
					North	Turning left Pick-up truck	Other motor vehicle	
2016-Apr-02, Sat,13:38	Clear	Rear end	P.D. only	Wet	North	Turning right Automobile, station wa	gon Other motor vehicle	0
					North	Turning right Pick-up truck	Other motor vehicle	
2016-Apr-19, Tue,16:43	Clear	Rear end	P.D. only	Dry	West	Going ahead Passenger van	Other motor vehicle	0
					West	Slowing or stopping Automobile, station wa	gon Other motor vehicle	
					West	Going ahead Automobile, station wa	gon Other motor vehicle	
2016-Jun-02, Thu,18:38	Clear	Turning movement	P.D. only	Dry	West	Turning left Automobile, station wa	gon Other motor vehicle	0
					East	Going ahead Automobile, station wa	gon Other motor vehicle	
2016-Jul-18, Mon,15:58	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left Police vehicle	Other motor vehicle	0
					East	Going ahead Automobile, station wa	gon Other motor vehicle	



Traffic Control: Tra	ffic signal						Total Collisions:	74	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2016-Jul-22, Fri,08:50	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Sep-26, Mon,15:48	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Oct-11, Tue,01:58	Clear	Sideswipe	P.D. only	Dry	North	Overtaking	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2016-Oct-27, Thu,17:45	Snow	Rear end	P.D. only	Wet	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-04, Fri,17:07	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-06, Tue,10:30	Clear	Sideswipe	P.D. only	Wet	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Turning left	Tow truck	Other motor vehicle	
2016-Dec-07, Wed,07:35	Snow	Rear end	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-19, Mon,06:27	Clear	Angle	P.D. only	Packed snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Jan-26, Thu,10:41	Snow	Rear end	P.D. only	Wet	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Apr-25, Tue,08:16	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2017-May-11, Thu,16:15	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Passenger van	Other motor vehicle	



Traffic Control: Trat	ffic signal						Total Collisions:	74	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2017-Jun-04, Sun,19:14	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jun-12, Mon,19:30	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jun-15, Thu,18:43	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jun-22, Thu,17:14	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Passenger van	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Jul-06, Thu,16:25	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Sep-05, Tue,08:21	Clear	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-26, Tue,13:25	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Oct-11, Wed,16:09	Clear	Rear end	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Nov-08, Wed,15:15	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2017-Dec-23, Sat,14:25	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-09, Tue,17:40	Clear	Rear end	P.D. only	Slush	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
2018-Jan-26, Fri,12:20	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



Traffic Control: Tra	ffic signal						Total Collisions:	74	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2018-Feb-11, Sun,14:18	Rain	Turning movement	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Feb-14, Wed,09:31	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-23, Mon,16:31	Clear	Rear end	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-15, Tue,08:56	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-17, Thu,15:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-29, Tue,08:48	Clear	Other	P.D. only	Dry	West	Reversing	School bus	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-25, Mon,15:50	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Oct-03, Wed,07:44	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-11, Sun,07:45	Clear	Angle	P.D. only	Dry	North	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-22, Thu,11:15	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jan-16, Wed,14:25	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jan-21, Mon,09:19	Freezing Rain	Rear end	P.D. only	Ice	East	Going ahead	Unknown	Other motor vehicle	0
					East	Slowing or stopping	g Pick-up truck	Other motor vehicle	



	OY RD @ WA						Tetel O - III-1	74	
Traffic Control: Tra	•						Total Collisions:		
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2019-Feb-02, Sat,16:30	Snow	Rear end	P.D. only	Packed snow	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Feb-11, Mon,20:02	Clear	Other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Curb	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-07, Thu,16:30	Clear	Rear end	P.D. only	lce	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Unknown	Unknown	Other motor vehicle	
2019-Mar-20, Wed, 16:49	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-03, Wed,01:21	Clear	SMV other	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Curb	0
2019-May-19, Sun,15:00	Rain	Angle	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-May-21, Tue,14:55	Clear	Rear end	P.D. only	Dry	East	Stopped	Pick-up truck	Other motor vehicle	0
					East	Slowing or stoppin	g Pick-up truck	Other motor vehicle	
2019-Jun-03, Mon,14:47	Clear	Rear end	P.D. only	Dry	East	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	
2019-Aug-13, Tue,16:25	Clear	Rear end	P.D. only	Dry	East	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-18, Wed,16:36	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Oct-02, Wed,08:30	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	



Location: CONRO	DY RD @ WA	LKLEY RD							
Traffic Control: Tra	ffic signal						Total Collisions:	74	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2019-Oct-07, Mon,09:00	Clear	Rear end	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Nov-05, Tue,06:22	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Pedestrian	1
2019-Nov-18, Mon,10:05	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Nov-22, Fri,07:59	Clear	Rear end	P.D. only	Wet	North	Going ahead	Construction equipment	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-04, Wed,09:33	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-13, Fri,15:49	Clear	Sideswipe	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Dec-16, Mon,14:29	Clear	Rear end	P.D. only	lce	North	Slowing or stoppin	g Automobile, station wagon	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-16, Mon,16:23	Clear	Rear end	P.D. only	Dry	West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2019-Dec-27, Fri,11:30	Clear	Rear end	P.D. only	lce	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-03, Mon,15:35	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Mar-19, Thu,21:45	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Unknown	Automobile, station wagon	Other motor vehicle	
2020-May-12, Tue,11:56	Clear	Sideswipe	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					North	Turning left	Passenger van	Other motor vehicle	



	ffic signal						Total Collisions:	74	
		· · · · ·							
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2020-Jun-22, Mon,16:39	Rain	Angle	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Jul-27, Mon,13:55	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
					East	Stopped	Passenger van	Other motor vehicle	
2020-Jul-28, Tue, 15:56	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Oct-20, Tue,20:55	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Unknown	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Oct-31, Sat,15:48	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
Location: CONR	OY RD btwn S	T. LAURENT BL	VD & WALKLEY RD)					
Traffic Control: No	control						Total Collisions:	3	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2				Conum					
	Snow	Sideswipe	P.D. only	Loose snow	North	Changing lanes	Unknown	Other motor vehicle	0
	Snow	Sideswipe	P.D. only		North North	Changing lanes Going ahead	Unknown Pick-up truck	Other motor vehicle Other motor vehicle	0
2016-Jan-16, Sat,12:02	Snow	Sideswipe SMV other	P.D. only Non-fatal injury			0.0			0
2016-Jan-16, Sat,12:02 2017-Sep-23, Sat,18:45 2019-Jan-14, Mon,14:54				Loose snow	North	Going ahead	Pick-up truck	Other motor vehicle	
2016-Jan-16, Sat,12:02 2017-Sep-23, Sat,18:45	Clear	SMV other	Non-fatal injury	Loose snow Dry	North North	Going ahead Turning right Unknown	Pick-up truck Automobile, station wagon	Other motor vehicle Ran off road	0
2016-Jan-16, Sat,12:02 2017-Sep-23, Sat,18:45 2019-Jan-14, Mon,14:54	Clear Clear	SMV other	Non-fatal injury P.D. only	Loose snow Dry	North North South	Going ahead Turning right Unknown	Pick-up truck Automobile, station wagon Unknown	Other motor vehicle Ran off road Other motor vehicle	0
2016-Jan-16, Sat,12:02 2017-Sep-23, Sat,18:45 2019-Jan-14, Mon,14:54	Clear Clear REID DR @ ST	SMV other Rear end	Non-fatal injury P.D. only	Loose snow Dry	North North South	Going ahead Turning right Unknown	Pick-up truck Automobile, station wagon Unknown	Other motor vehicle Ran off road Other motor vehicle Other motor vehicle	0



Location: DON R	EID DR @ ST	. LAURENT BL\	/D						
Traffic Control: Sto	p sign						Total Collisions:	: 1	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2016-Feb-28, Sun,09:00	Snow	Angle	P.D. only	Loose snow	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
Location: ST. LA	URENT BLVD	btwn CONROY	RD & DON REID D	R					
Fraffic Control: No	control						Total Collisions:	2	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2019-Jan-15, Tue,13:02	Clear	SMV other	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Skidding/sliding	0
2020-Feb-12, Wed, 16:22	Snow	Angle	P.D. only	Wet	North	Turning right	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
Location: WALKL	EY RD @ DO	N REID DR/RYI	DER ST						
Traffic Control: Tra	ffic signal						Total Collisions:	37	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2016-Apr-10, Sun,13:12	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jun-19, Sun,07:07	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jul-15, Fri,11:05	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Bicycle	Other motor vehicle	0
					North	Turning right	Pick-up truck	Cyclist	
2016-Sep-19, Mon,15:35	Clear	Angle	Non-fatal injury	Dry	North	Turning right	Unknown	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2016-Dec-12, Mon,15:21	Snow	Angle	Non-fatal injury	Loose snow	West	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2017-Mar-14, Tue,18:18	Snow	SMV other	P.D. only	Loose snow	East	Slowing or stoppin	g Pick-up truck	Ran off road	0
				Wet	South	Slowing or stoppin			0



Traffic Control: Tra	ffic signal						Total Collisions:	37	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	r Vehicle type	First Event	No. Ped
2017-May-29, Mon,10:40	Rain	Angle	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2017-Jun-04, Sun,12:37	Clear	Angle	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-28, Wed,15:34	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-28, Wed,15:51	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	g Passenger van	Other motor vehicle	
					East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
2017-Aug-08, Tue,07:30	Clear	Rear end	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	g Pick-up truck	Other motor vehicle	
2017-Sep-02, Sat,16:25	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Sep-26, Tue,23:04	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-20, Fri,17:15	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-15, Thu,08:51	Freezing Rain	Rear end	P.D. only	Ice	West	Slowing or stopping	g Automobile, station wagon	Skidding/sliding	0
					West	Turning left	Delivery van	Other motor vehicle	
2018-Mar-11, Sun,18:03	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-16, Fri,17:52	Clear	Angle	P.D. only	Dry	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



Traffic Control: Tra	ffic signal						Total Collisions:	37	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2018-Sep-23, Sun,15:20	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-13, Tue,15:20	Freezing Rain	Rear end	P.D. only	Wet	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-20, Sun,19:26	Snow	Approaching	Non-fatal injury	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Ambulance	Other motor vehicle	
2019-Feb-02, Sat,17:30	Snow	Angle	P.D. only	Wet	West	Going ahead	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-03, Sun,06:57	Snow	Turning movement	P.D. only	Slush	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2019-Feb-15, Fri,16:15	Clear	Rear end	Non-fatal injury	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-12, Wed,18:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-17, Mon,06:45	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2019-Jun-23, Sun,15:09	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Sep-05, Thu,09:44	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Fire vehicle	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-17, Tue,16:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Nov-01, Fri,13:59	Clear	Angle	P.D. only	Dry	West	Turning left	School bus	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



Traffic Control: Tra	offic signal						Total Collisions:	37	
ate/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2019-Dec-19, Thu,16:18	Clear	Angle	P.D. only	Wet	West	Going ahead	Fire vehicle	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-24, Tue,12:55	Clear	Rear end	P.D. only	Dry	West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-04, Tue,15:55	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	
					West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	
					West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	
2020-Feb-06, Thu,16:40	Clear	Rear end	P.D. only	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					West	Slowing or stoppin	g Delivery van	Other motor vehicle	
2020-Apr-10, Fri,20:00	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2020-May-02, Sat,16:17	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2020-May-29, Fri,09:20	Clear	Rear end	P.D. only	Dry	West	Going ahead	Construction equipment	Other motor vehicle	0
					West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	
Location: WALK	LEY RD btwn '	160 W OF CONF	ROY RD & CONRO	Y RD					
Traffic Control: No	control						Total Collisions:	7	
ate/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2017-Oct-26, Thu,15:41	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2017-Nov-24, Fri,16:41	Clear	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	



Traffic Control: No	control						Total Collisions:	1	
ate/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Peo
2018-Oct-10, Wed,14:20	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-02, Sat,15:00	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Passenger van	Other motor vehicle	
2019-May-08, Wed,05:01	Clear	Angle	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-24, Fri,13:04	Clear	Angle	P.D. only	Dry	North	Turning right	Unknown	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2020-Sep-25, Fri,19:26	Clear	Rear end	P.D. only	Dry	West	Changing lanes	Motorcycle	Other motor vehicle	0
2020-Sep-25, FII, 19.20	Clear		F.D. Only	Diy	WESI	Changing lanes	MOUCYCIE		0
2020-366-23, FII, 19.20	Cleal		P.D. Only	Diy	West	0.0	g Automobile, station wagon	Other motor vehicle	0
		160 W OF CONRO			West	0.0	•		
-ocation: WALKL	EY RD btwn 1				West	0.0	•	Other motor vehicle	
Location: WALKL	EY RD btwn 1				West	0.0	g Automobile, station wagon Total Collisions:	Other motor vehicle	
Location: WALKL Traffic Control: No Date/Day/Time	EY RD btwn 1	160 W OF CONRO	Y RD & DON RE	ID DR/RYDER	West ST	Slowing or stopping Vehicle Manoeuve	g Automobile, station wagon Total Collisions:	Other motor vehicle	
	EY RD btwn 1 control Environment	I60 W OF CONRO	Y RD & DON RE	ID DR/RYDER Surface Cond'n	West ST Veh. Dir	Slowing or stopping Vehicle Manoeuve	g Automobile, station wagon Total Collisions: r Vehicle type g Automobile, station wagon	Other motor vehicle 5 First Event	No. Peo
Location: WALKL Traffic Control: No Date/Day/Time	EY RD btwn 1 control Environment	I60 W OF CONRO	Y RD & DON RE	ID DR/RYDER Surface Cond'n	West ST Veh. Dir East	Slowing or stopping Vehicle Manoeuve Slowing or stopping	g Automobile, station wagon Total Collisions: r Vehicle type g Automobile, station wagon	Other motor vehicle 5 First Event Other motor vehicle	No. Peo
Location: WALKL Traffic Control: No Date/Day/Time 2017-May-13, Sat,12:47	EY RD btwn 1 control Environment	I60 W OF CONRO	Y RD & DON RE	ID DR/RYDER Surface Cond'n	West ST Veh. Dir East East	Slowing or stopping Vehicle Manoeuve Slowing or stopping Slowing or stopping Stopped	g Automobile, station wagon Total Collisions: r Vehicle type g Automobile, station wagon g Passenger van	Other motor vehicle 5 First Event Other motor vehicle Other motor vehicle	No. Peo
Location: WALKL Traffic Control: No Date/Day/Time	EY RD btwn 1 control Environment Rain	I60 W OF CONRO Impact Type Rear end	Y RD & DON RE Classification P.D. only	EID DR/RYDER Surface Cond'n Wet	West ST Veh. Dir East East East	Slowing or stopping Vehicle Manoeuve Slowing or stopping Slowing or stopping Stopped Slowing or stopping	g Automobile, station wagon Total Collisions: r Vehicle type g Automobile, station wagon g Passenger van Automobile, station wagon	Other motor vehicle 5 First Event Other motor vehicle Other motor vehicle Other motor vehicle	No. Pee
Location: WALKL Traffic Control: No Pate/Day/Time 2017-May-13, Sat,12:47	EY RD btwn 1 control Environment Rain	I60 W OF CONRO Impact Type Rear end	Y RD & DON RE Classification P.D. only	EID DR/RYDER Surface Cond'n Wet	West ST Veh. Dir East East East East	Slowing or stopping Vehicle Manoeuve Slowing or stopping Slowing or stopping Stopped Slowing or stopping Slowing or stopping	g Automobile, station wagon Total Collisions: r Vehicle type g Automobile, station wagon g Passenger van Automobile, station wagon g Automobile, station wagon	Other motor vehicle 5 First Event Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle	No. Peo 0
Location: WALKL Traffic Control: No Date/Day/Time 2017-May-13, Sat, 12:47 2018-Jan-30, Tue, 17:29	EY RD btwn 1 control Environment Rain	I60 W OF CONRO Impact Type Rear end	Y RD & DON RE Classification P.D. only	EID DR/RYDER Surface Cond'n Wet	West ST Veh. Dir East East East East East	Slowing or stopping Vehicle Manoeuve Slowing or stopping Slowing or stopping Stopped Slowing or stopping Slowing or stopping	g Automobile, station wagon Total Collisions: r Vehicle type g Automobile, station wagon g Passenger van Automobile, station wagon g Automobile, station wagon g Automobile, station wagon	Other motor vehicle 5 First Event Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle	No. Peo 0
Location: WALKL Traffic Control: No Date/Day/Time 2017-May-13, Sat, 12:47 2018-Jan-30, Tue, 17:29	EY RD btwn 1 control Environment Rain Clear	I60 W OF CONRO Impact Type Rear end Rear end	Y RD & DON RE Classification P.D. only P.D. only	EID DR/RYDER Surface Cond'n Wet Dry	West ST Veh. Dir East East East East East East	Slowing or stopping Vehicle Manoeuve Slowing or stopping Slowing or stopping Stopped Slowing or stopping Slowing or stopping Slowing or stopping	g Automobile, station wagon Total Collisions: r Vehicle type g Automobile, station wagon g Passenger van Automobile, station wagon g Automobile, station wagon g Automobile, station wagon g Automobile, station wagon g Automobile, station wagon	Other motor vehicle 5 First Event Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle	No. Peo 0 0
Location: WALKL Traffic Control: No Date/Day/Time 2017-May-13, Sat,12:47	EY RD btwn 1 control Environment Rain Clear	I60 W OF CONRO Impact Type Rear end Rear end	Y RD & DON RE Classification P.D. only P.D. only	EID DR/RYDER Surface Cond'n Wet Dry	West ST Veh. Dir East East East East East East	Slowing or stopping Vehicle Manoeuve Slowing or stopping Slowing or stopping Stopped Slowing or stopping Slowing or stopping Slowing or stopping Slowing or stopping	g Automobile, station wagon Total Collisions: r Vehicle type g Automobile, station wagon g Passenger van Automobile, station wagon g Automobile, station wagon g Automobile, station wagon g Automobile, station wagon g Automobile, station wagon Unknown Truck - closed	Other motor vehicle 5 First Event Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle	No. Pee 0 0



Transportation Services - Traffic Services Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: WALKLEY RD btwn 160 W OF CONROY RD & DON REID DR/RYDER ST									
Traffic Control: No control Total Collisions: 5									
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2020-Aug-05, Wed, 12:41	Clear	Rear end	P.D. only	Dry	East	Going ahead	Truck - tank	Other motor vehicle	0
					East	Stopped	Municipal transit bus	Other motor vehicle	

No.	Location	Date	Time	Environment	Road_Surface	Traffic_Control	Collision_Location	Light	Collision_Classification	Impact_Type
1	WALKLEY RD @ 160 W OF CONROY RD	5/11/2017	5:42	01 - Clear	01 - Dry	01 - Traffic signal	02 - Intersection related	03 - Dawn	02 - Non-fatal injury	07 - SMV other
2	WALKLEY RD @ 160 W OF CONROY RD (0011391)	6/11/2018	15:36	01 - Clear	01 - Dry	01 - Traffic signal	02 - Intersection related	01 - Daylight	02 - Non-fatal injury	03 - Rear end
3	WALKLEY RD @ 160 W OF CONROY RD (0011391)	6/12/2018	14:02	01 - Clear	01 - Dry	01 - Traffic signal	03 - At intersection	01 - Daylight	02 - Non-fatal injury	05 - Turning movement
4	WALKLEY RD @ 160 W OF CONROY RD (0011391)	1/25/2019	15:46	01 - Clear	01 - Dry	01 - Traffic signal	02 - Intersection related	01 - Daylight	03 - P.D. only	03 - Rear end
5	WALKLEY RD @ 160 W OF CONROY RD (0011391)	1/26/2019	16:37	01 - Clear	01 - Dry	01 - Traffic signal	02 - Intersection related	01 - Daylight	02 - Non-fatal injury	03 - Rear end
6	WALKLEY RD @ 160 W OF CONROY RD (0011391)	3/29/2019	17:13	01 - Clear	01 - Dry	01 - Traffic signal	03 - At intersection	01 - Daylight	02 - Non-fatal injury	05 - Turning movement
7	WALKLEY RD @ 160 W OF CONROY RD (0011391)	4/30/2019	9:06	01 - Clear	01 - Dry	01 - Traffic signal	02 - Intersection related	01 - Daylight	03 - P.D. only	03 - Rear end
8	WALKLEY RD @ 160 W OF CONROY RD (0011391)	12/4/2019	14:35	01 - Clear	01 - Dry	01 - Traffic signal	02 - Intersection related	01 - Daylight	03 - P.D. only	99 - Other
9	WALKLEY RD @ 160 W OF CONROY RD (0011391)	10/16/2020	10:26	01 - Clear	02 - Wet	01 - Traffic signal	02 - Intersection related	01 - Daylight	03 - P.D. only	03 - Rear end
10	WALKLEY RD @ 160 W OF CONROY RD (0011391)	10/24/2020	6:08	02 - Rain	02 - Wet	01 - Traffic signal	03 - At intersection	07 - Dark	02 - Non-fatal injury	05 - Turning movement
11	WALKLEY RD @ 160 W OF CONROY RD (0011391)	12/30/2020	11:40	05 - Drifting Snow	03 - Loose snow	01 - Traffic signal	03 - At intersection	01 - Daylight	02 - Non-fatal injury	05 - Turning movement

APPENDIX F

Relevant Excerpts of TRANS Trip Generation Manual (WSP, 2020)

3.2 Recommended Residential Trip Generation Rates

A blended trip rate was developed from the three data sources through application of a rank-sum weighting process, considering the strengths and weaknesses of each dataset for the dwelling type in question. The recommended blended **residential person-trip rates** are presented in **Table 3**. All rates represent person-trips per dwelling unit and are to be applied to the **AM or PM peak period**.

ITE Land Use Code	Dwelling Unit Type	Period	Person-Trip Rate
210	Single detected	AM	2.05
210	Single-detached	PM	2.48
220	Multi I Ipit (Low Pico)	AM	1.35
220	Multi-Unit (Low-Rise)	PM	1.58
221 & 222	Multi-Unit (High-Rise)	AM	0.80
		PM	0.90

Table 3: Recommended Residential Person-trip Rates

3.3 Adjustment Factors – Peak Period to Peak Hour

The various trip generation data sources require some adjustment to standardize the data for developing robust blended trip rates. The peak period conversion factor in **Table 4** may be used where applicable to develop trip generation rate estimates in the desired format.

Table 4: Adjustment Factors for Residential Trip Generation Rates

Factor	Application	Apply To	Period	Value
		Person-trip rates per peak	AM	0.50
	Pack paried to pack hour	period	PM	0.44
	Peak period to peak hour conversion. Because the 2020	Vehicle trip	AM	0.48
	TRANS Trip Generation Study	rates per peak period	PM	0.44
Peak Period Conversion Factor	reports trip generation rates by peak period, factors must be	Transit trip	AM	0.55
	applied if the practitioner requires peak hour rates. In practice, the conversion to peak hour trip rates should occur after the application of modal shares.		PM	0.47
		AM	0.58	
		• •	PM	0.48
		Walking trip	AM	0.58
		rates per peak period	PM	0.52

Table 7: Residential Mode Share for Low-Rise Multifamily Housing

				Mode		
District	Period	Auto	Auto		Cyceline	
		Driver	Pass.	Transit	Cycling	Walking
	AM	27%	9%	25%	9%	30%
Ottawa Centre	PM	31%	10%	20%	9%	30%
	AM	27%	8%	26%	9%	30%
Ottawa Inner Area	PM	31%	9%	20%	9%	31%
Île de Hull	AM	27%	9%	25%	9%	30%
	PM	34%	22%	16%	5%	22%
Ottawa East	AM	36%	11%	38%	7%	8%
Ollawa Easi	PM	39%	16%	29%	5%	11%
Passan Hill	AM	45%	9%	35%	1%	10%
Beacon Hill	PM	48%	16%	24%	1%	11%
Alta Vista	AM	38%	15%	35%	1%	10%
Alla VISIa	PM	38%	19%	31%	2%	10%
Hunt Club	AM	44%	11%	38%	1%	6%
Hunt Club	PM	47%	15%	29%	1%	8%
Maringla	AM	44%	11%	32%	6%	7%
Merivale	PM	44%	12%	29%	4%	11%
Ottowe West	AM	36%	12%	24%	10%	19%
Ottawa West	PM	35%	12%	16%	10%	27%
Develore /Cademiau	AM	43%	11%	31%	1%	13%
Bayshore/Cedarview	PM	44%	14%	25%	1%	15%
Uull Dárinhária	AM	46%	22%	22%	4%	6%
Hull Périphérie	PM	46%	17%	22%	3%	11%
Orlaana	AM	47%	15%	29%	1%	9%
Orleans	PM	51%	19%	24%	1%	6%
South Gloucester /	AM	59%	20%	16%	1%	4%
Leitrim	PM	62%	18%	17%	1%	3%
South Nepean	AM	49%	13%	26%	2%	9%
South Nepean	PM	49%	13%	24%	2%	12%
Kanata - Stittsville	AM	52%	14%	22%	0%	11%
	PM	58%	17%	17%	0%	8%
Plateau	AM	44%	18%	28%	4%	6%
Flateau	PM	47%	17%	26%	2%	8%
Aylmer	AM	52%	18%	23%	0%	7%
Ayimei	PM	52%	16%	20%	1%	12%
Pointe Gatineau	AM	46%	17%	23%	0%	14%
Fome Gauneau	PM	52%	16%	19%	1%	12%
Gatineau Est	AM	54%	17%	20%	1%	8%
	PM	56%	21%	16%	0%	7%
Masson-Angers	AM	60%	15%	21%	4%	1%
wasson-Angers	PM	63%	15%	17%	3%	1%
Other Rural Districts	AM	66%	13%	21%	1%	0%
	PM	62%	19%	16%	3%	0%

Table 8: Residential Mode Share for High-Rise Multifamily Housing

				Mode		
District	Dariad	A	A	Midde		
District	Period	Auto Driver	Auto Pass.	Transit	Cycling	Walking
	AM	18%	2%	26%	1%	52%
Ottawa Centre	PM	17%	9%	21%	1%	52%
Ottown Inner Area	AM	26%	6%	28%	5%	34%
Ottawa Inner Area	PM	25%	8%	21%	6%	39%
Île de Hull	AM	27%	3%	37%	12%	21%
	PM	26%	8%	27%	11%	28%
Ottowe Feet	AM	39%	7%	38%	2%	13%
Ottawa East	PM	40%	14%	28%	3%	15%
	AM	48%	9%	30%	3%	10%
Beacon Hill	PM	52%	16%	28%	0%	4%
	AM	38%	12%	42%	2%	7%
Alta Vista	PM	45%	16%	28%	2%	9%
	AM	39%	6%	44%	1%	9%
Hunt Club	PM	44%	11%	35%	2%	9%
	AM	41%	6%	42%	2%	8%
Merivale	PM	41%	11%	33%	2%	13%
	AM	28%	11%	41%	3%	16%
Ottawa West	PM	33%	11%	26%	7%	23%
	AM	40%	12%	38%	2%	8%
Bayshore/Cedarview	PM	40%	15%	33%	1%	11%
	AM	48%	11%	30%	1%	10%
Hull Périphérie	PM	47%	15%	23%	3%	13%
	AM	54%	7%	29%	0%	10%
Orleans	PM	61%	13%	21%	0%	6%
South Gloucester /	AM	50%	15%	25%	1%	9%
Leitrim	PM	53%	17%	21%	1%	9%
	AM	58%	6%	30%	2%	4%
South Nepean	PM	54%	15%	25%	0%	7%
	AM	43%	26%	28%	0%	4%
Kanata - Stittsville	PM	55%	19%	21%	0%	5%
	AM	53%	9%	35%	3%	1%
Plateau	PM	65%	7%	25%	2%	1%
	AM	45%	17%	25%	0%	13%
Aylmer	PM	31%	21%	23%	4%	20%
	AM	44%	15%	24%	3%	14%
Pointe Gatineau	PM	52%	15%	20%	2%	11%
	AM	53%	10%	25%	0%	12%
Gatineau Est	PM	61%	10%	25%	0%	4%
	AM	63%	15%	19%	0%	3%
Masson-Angers	PM	64%	18%	16%	0%	1%
	AM	63%	15%	19%	0%	3%
Other Rural Districts	PM	64%	18%	16%	0%	1%

5 RESIDENTIAL DIRECTIONAL SPLITS

After calculating the total person trips generated by the development and applying the appropriate modal shares, directional factors can be applied to estimate the number of inbound and outbound trips by vehicle. The vehicle trip directional splits were developed for both the AM and PM peak periods². The vehicle trip directional splits, as shown in **Table 9**, have been developed for the NCR based on a review of the local trip generator surveys as well as the latest published data in the ITE *Trip Generation Manual* (10th Edition).

ITE Land Use Code	Dwelling Unit Type	Period	Inbound	Outbound
210	Single-detached	AM	30%	70%
210	Single-detached	PM	62%	38%
220	Multi-Unit (Low-Rise)	AM	30%	70%
220		PM	56%	44%
221 & 222	Multi I Init (High Disc)	AM	31%	69%
221 & 222	Multi-Unit (High-Rise)	PM	58%	42%

Table 9: Recommended Vehicle Trip Directional Splits (Peak Period)

6 NON-RESIDENTIAL MODE SHARE

Mode shares were developed for three types of non-residential development: schools (elementary and high school); employment generators; and commercial (retail) generators. These mode shares were developed through data provided by the Ville de Gatineau from local school surveys as well as the TRANS Origin-Destination Survey. The non-residential mode shares presented below are limited and do not capture all development types. For data on the travel characteristics associated with colleges and universities, transportation terminals, and sports and entertainment venues in the National Capital Region, practitioners should refer to the various reports for the TRANS *Special Generators Survey* (2013), which are posted on the TRANS website. For other development types, practitioners may need to carry out their own local generator data collection where necessary.

² A directional split for active transportation was calculated based on the local generator surveys for low-rise and mid-rise land uses. The splits are mostly in-line with the vehicle directional splits, which could be used as a rough assumption for areas with lower vehicle mode share.

APPENDIX G

Other Area Developments

Timbercreek Heron Gate Official Plan Amendment Transportation Impact Assessment

Step 1 Screening Report Step 2 Scoping Report Step 3 Forecasting Report Step 4 Strategy Report (revision #3)

Prepared for: Timbercreek Asset Management 25 Price Street Toronto, ON M4W 1Z1

Prepared by:



13 Markham Avenue Ottawa, ON K2G 3Z1

April 2021

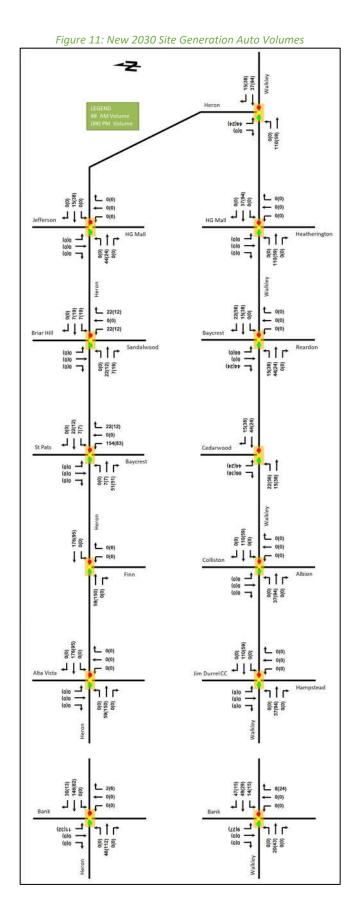
PN: 2018-49



Figure 1: Area Context Plan

Source: http://maps.ottawa.ca/geoOttawa/ Accessed: October 27, 2020







2020 Walkley Road & 2935 Conroy Road

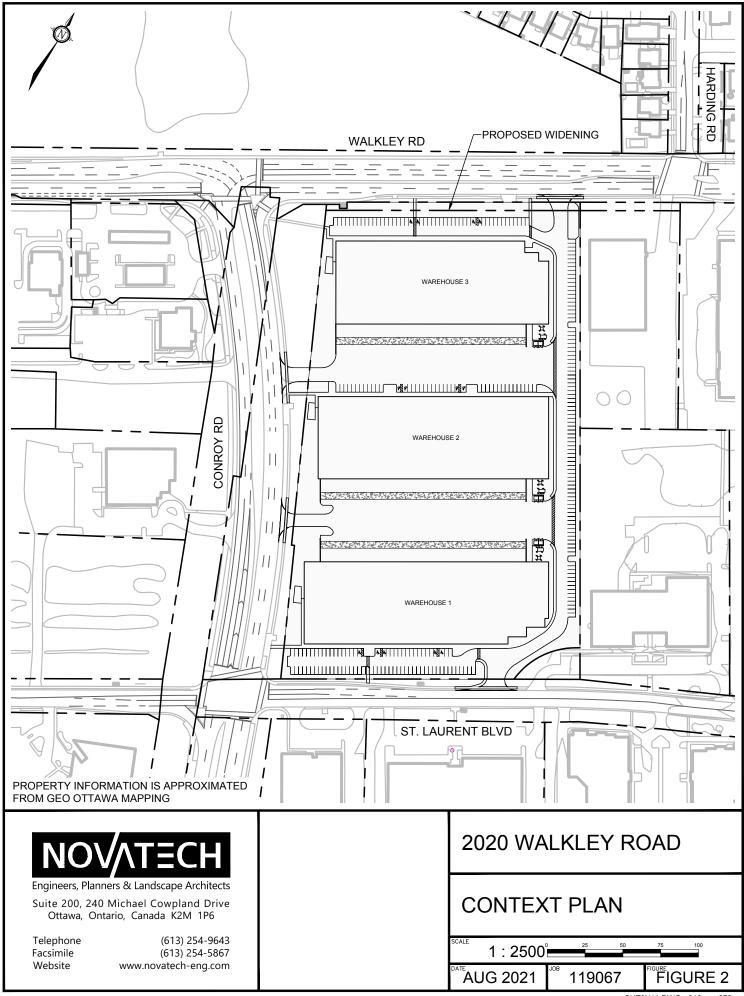
Transportation Impact Assessment

Prepared By:

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

> March 2021 Rev: August 2021

Novatech File: 119067 Ref: R-2020-124



SHT8X11.DWG - 216mmx279mm

The net assignment of trips with site redevelopment (Proposed Site Generated Trips, **Figure 5** less Existing Site Generated Trips, **Figure 6**) is shown in **Figure 7**.

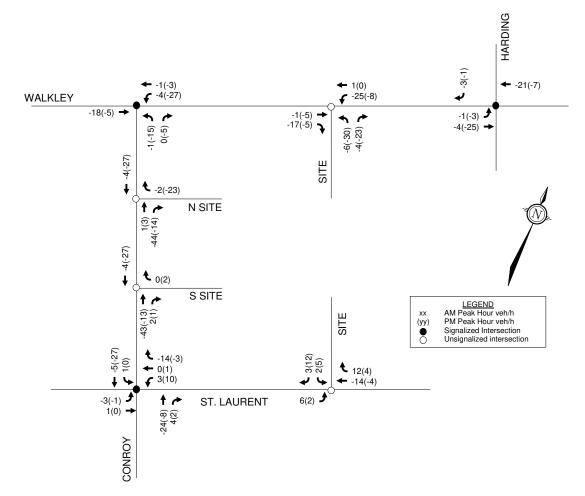


Figure 7: Net Trip Assignment for Site Redevelopment

Truck access is primarily expected to be from / to the east on Walkley and Highway 417. Trucks are expected to travel via Walkley Road, Conroy Road, and St. Laurent Boulevard. Truck departures are expected to primarily be from the Conroy Road driveways due to the connections from the truck courts.

5.2 Background Traffic

5.2.1 Future Background Growth

For the 'Inner Suburbs' area of Ottawa, Exhibit 2.10 of the 2013 TMP projects population and employment growth rates of approximately 0.3% and 1.2% per annum, respectively. A 1% background growth rate has been applied to non-site traffic in this area.

This 1% background growth rate is in line with the annual historical (2000 to 2016) growth rate for this area (-2% to 2%) identified by the City of Ottawa (See **Figure 8**).



September 7, 2017 File: 163601146

Attention: Simon Nehme Conroy Business Park Inc. 1890 Broadmoor Ave Ottawa, Ontario K1H 5B4

Dear Mr. Nehme,

Reference: 2500 St Laurent Blvd Transportation Brief

1.0 INTRODUCTION

Conroy Business Park Inc. is seeking site plan approval for a proposed office development located at 2500 St Laurent Boulevard in the Alta Vista area of the City of Ottawa. Stantec Consulting Ltd. was retained to undertake a Transportation Brief to determine the potential transportation implications of the proposed office development.

This Transportation Brief includes:

- A description of the proposed office development;
- A review of the site plan to confirm site access location;
- An overview of the existing surrounding transportation environment, including an operational assessment of the study area intersections under 2017 existing conditions;
- The volume of site traffic the proposed office development is anticipated to generate during the AM and PM roadway peak hours;
- An operational assessment of the study area intersections under 2021 total future conditions (site build-out); and
- An operational assessment of the study area intersections under 2026 ultimate future conditions (5-years beyond build-out).



Reference: 2500 St Laurent Blvd Transportation Brief

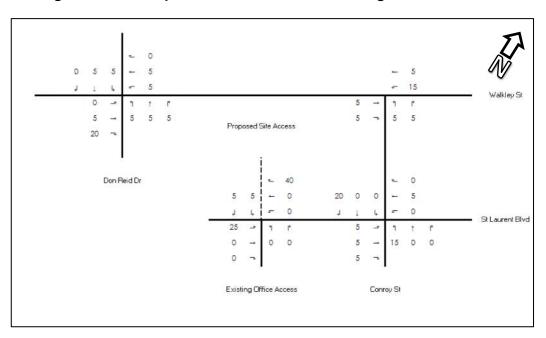
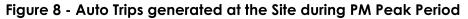
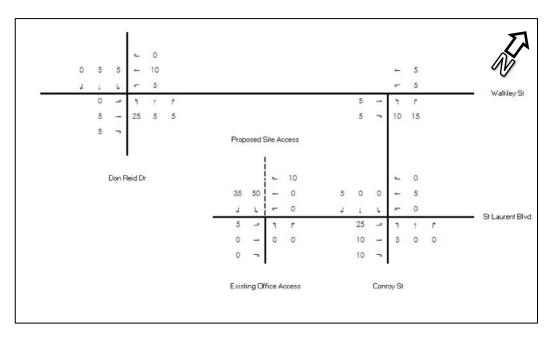
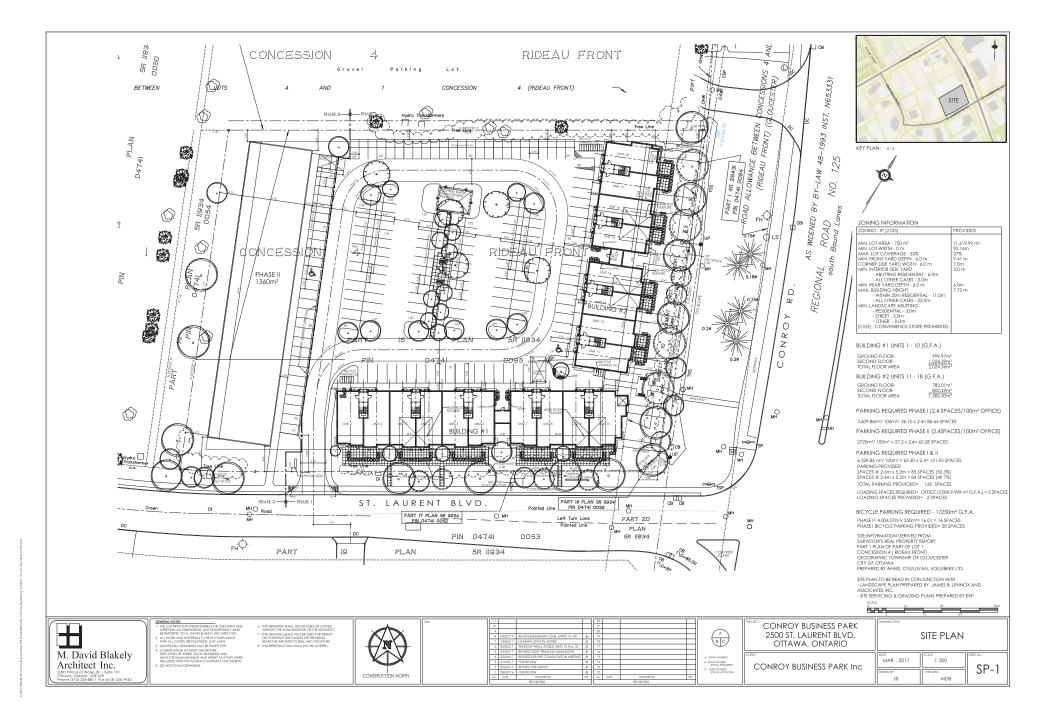


Figure 7 - Auto Trips Generated at the Site during AM Peak Period









LS GP INC. Walkley Road Apartments 2190 Halifax Drive

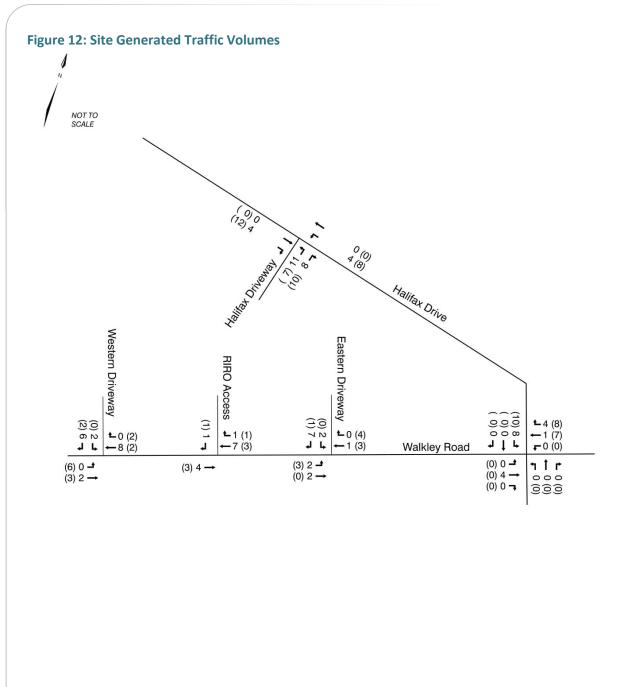
Transportation Impact Assessment

7



Source: Site plan, July 11, 2019 by LS GP INC.





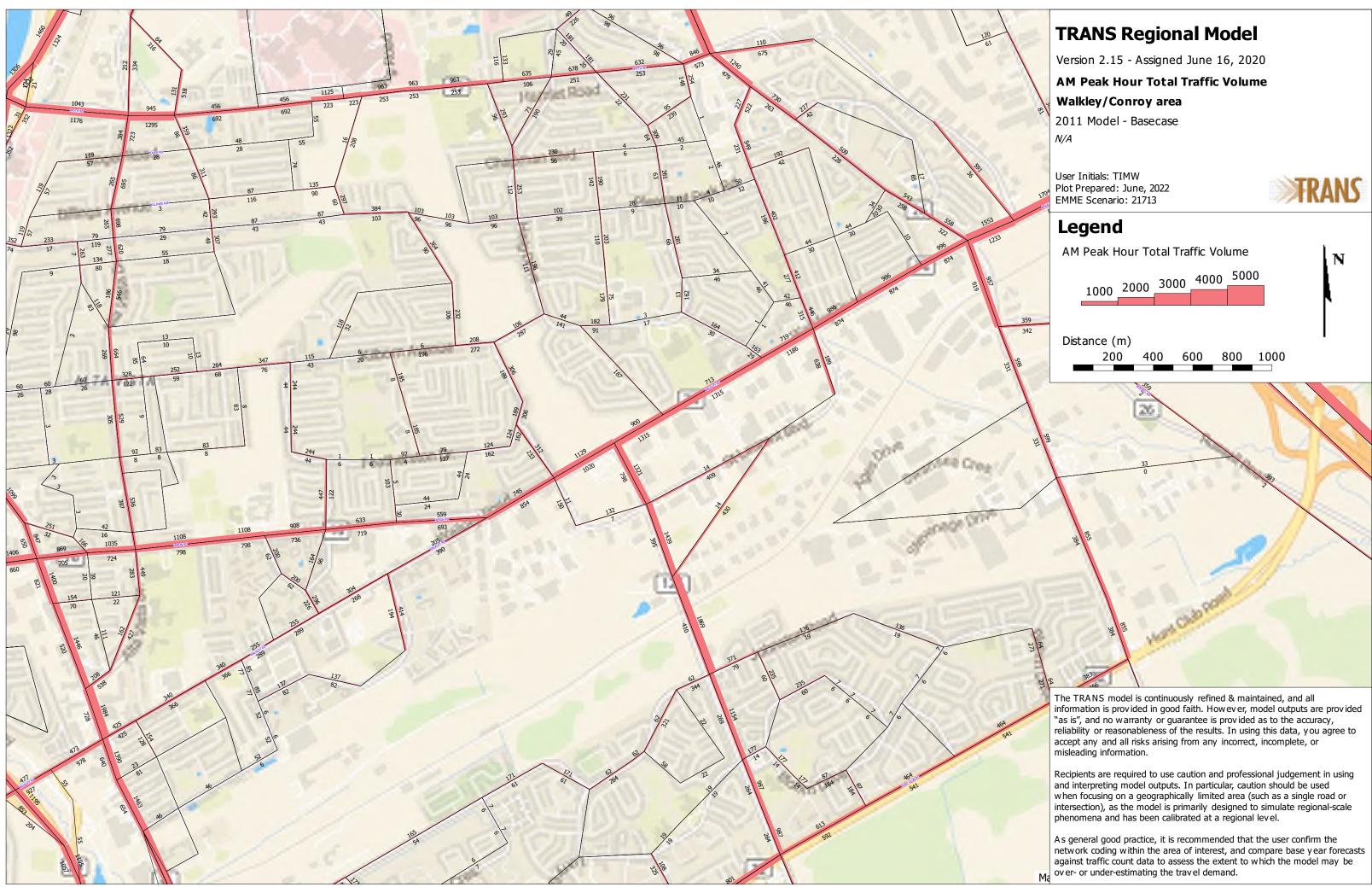
Legend:

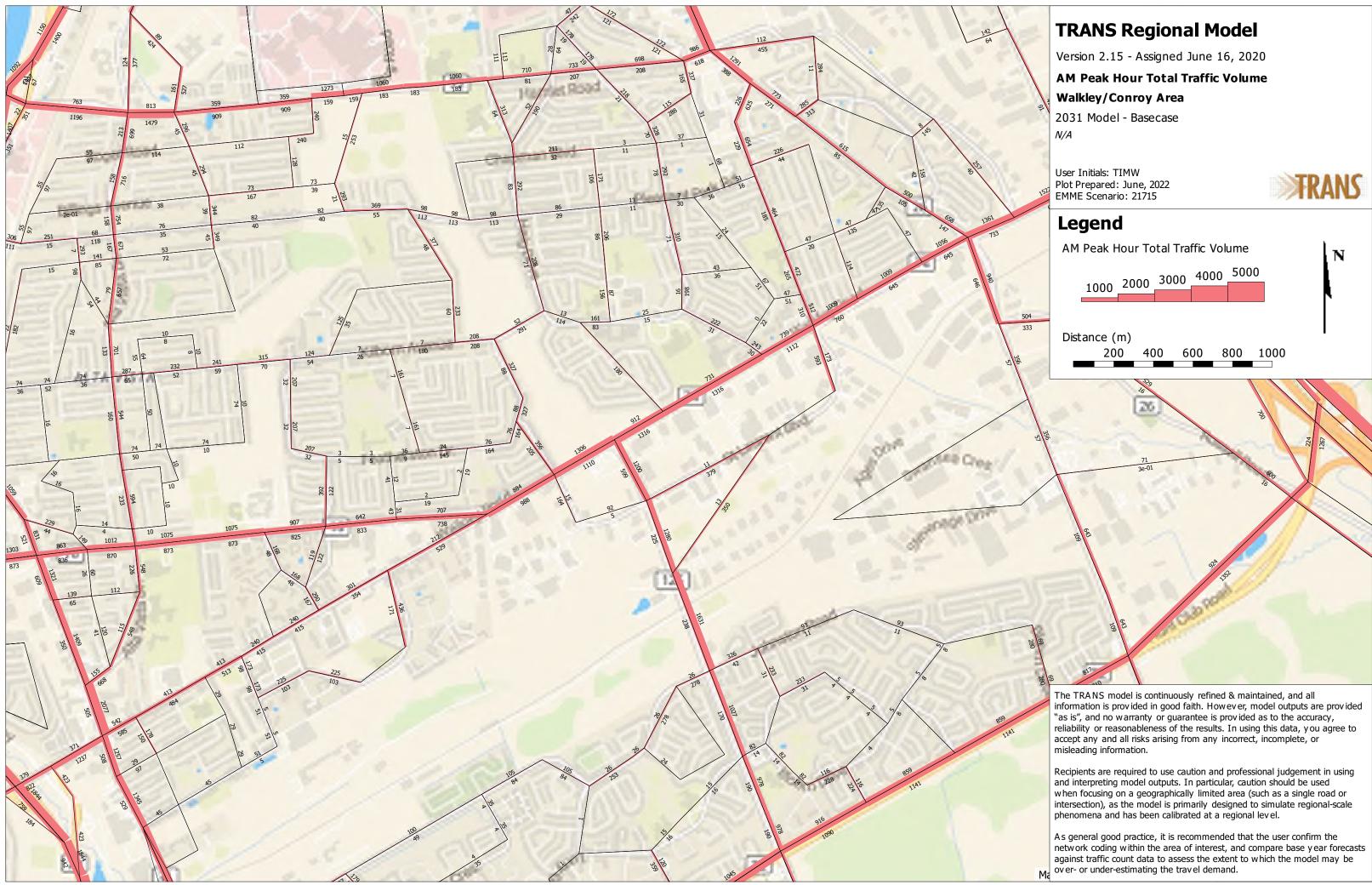
- 🖿 AM (PM)
- peak hour turning
- ✓ movement volumes



APPENDIX H

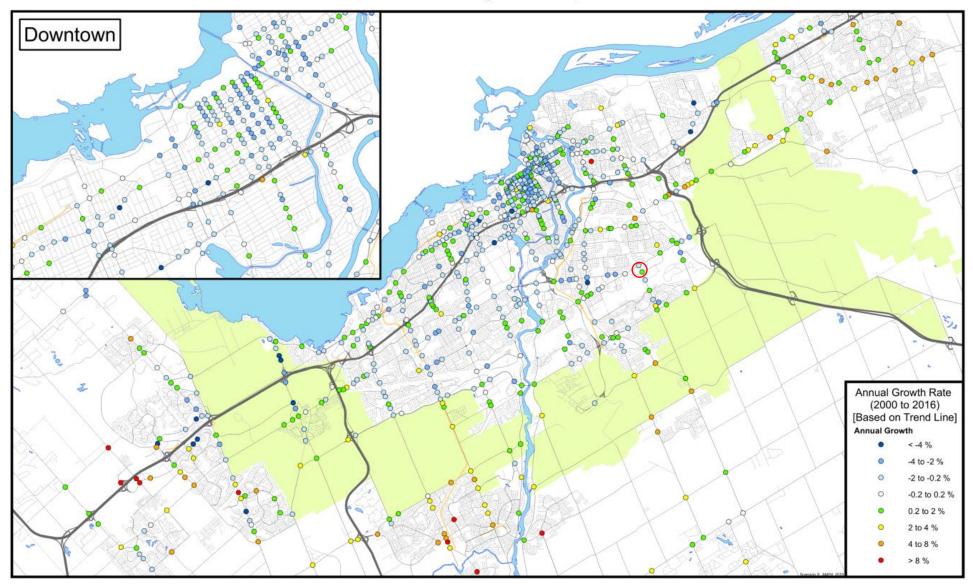
Strategic Long-Range Model and Intersection Growth Rate Figures





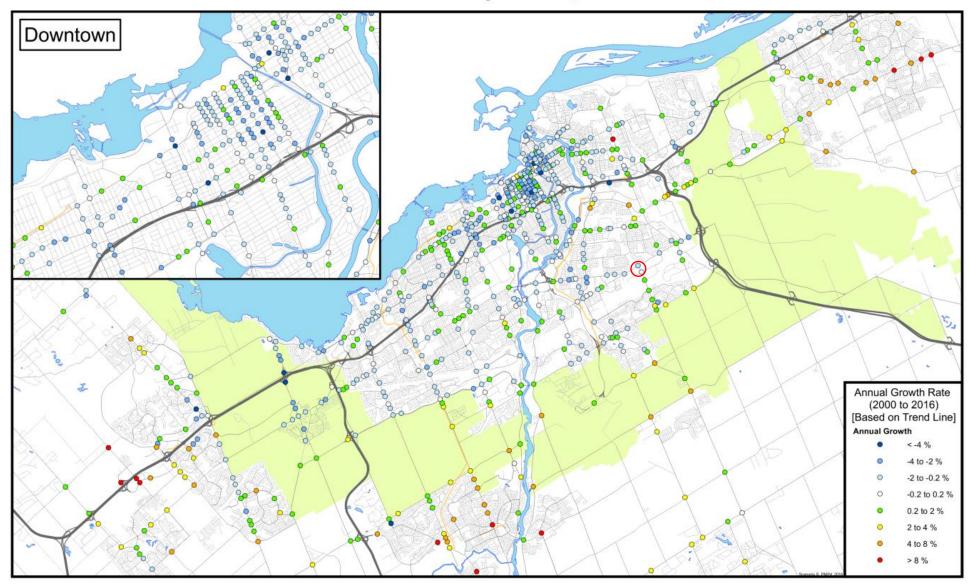
INTERSECTION TRAFFIC GROWTH RATE, AM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



INTERSECTION TRAFFIC GROWTH RATE, PM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



APPENDIX I

Signal Timing Plans

City of Ottawa, Public Works Department

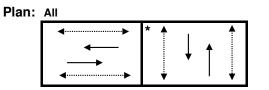
Traffic Signal Operations Unit

Intersection:	Main: Walkley	<i>side:</i> Don Reid / Ryder
Controller:	MS 3200	TSD: <u>5424</u>
Author:	Matthew Anderson	Date: 01-Jun-2022

Existing Timing Plans[†]

	Plan			Ped Minimum Time					
	AM Peak	Off Peak	PM Peak	Night	Weekend	Walk	DW	A+R	
	1	2	3	4	5				
Cycle	100	100	110	80	100				
Offset	94	20	20	30	38				
EB Thru	64	64	74	44	64	15	15	3.3+2.6	
WB Thru	64	64	74	44	64	15	15	3.3+2.6	
NB Thru	36	36	36	36	36	10	20	3.3+2.9	
SB Thru	36	36	36	36	36	10	20	3.3+2.9	

Phasing Sequence[‡]



Schedule

Weekday						
Plan						
4						
1						
2						
3						
2						
4						

Saturday						
Time	Plan					
0:15	4					
6:30	2					
11:00	5					
19:30	2					
22:00	4					

Sunday						
Time	Plan					
0:15	4					
6:30	2					
21:00	4					

Notes

†: Time for each direction includes amber and all red intervals

 $\ddagger:$ Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

Pedestrian signal

City of Ottawa, Public Works Department

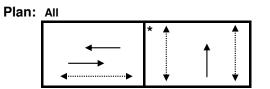
Traffic Signal Operations Unit

Intersection:	Main: Walkley	Side:	160m W of Conroy
Controller:	MS 3200	TSD:	6486
Author:	Matthew Anderson	Date:	01-Jun-2022

Existing Timing Plans[†]

	Plan					Ped Min	imum T	ime
	AM Peak	Off Peak	PM Peak	Night	Weekend	Walk	DW	A+R
	1	2	3	4	5			
Cycle	100	100	110	80	100			
Offset	88	20	25	х	16			
EB Thru	71	71	81	51	71	18	13	3.3+2.7
WB Thru	71	71	81	51	71	-	-	3.3+2.7
NB Thru	29	29	29	29	29	7	16	3.3+2.7

Phasing Sequence[‡]



Schedule

Time Plan 0:15 4 6:30 1 9:30 2 15:00 3 18:30 2 21:30 4	Weekday							
6:30 1 9:30 2 15:00 3 18:30 2	Time	Plan						
9:30 2 15:00 3 18:30 2	0:15	4						
15:00 3 18:30 2	6:30	1						
18:30 2	9:30	2						
	15:00	3						
21:30 4	18:30	2						
	21:30	4						

Saturday							
Time	Plan						
0:15	4						
6:30	2						
11:00	5						
19:30	2						
22:00	4						

Sunday	
Time	Plan
0:15	4
6:30	2
21:00	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄····· Pedestrian signal

City of Ottawa, Public Works Department

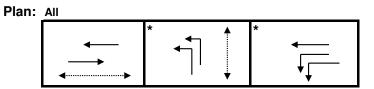
Traffic Signal Operations Unit

Intersection:	Main: Walkley	Side:	Conroy	
Controller:	MS 3200	TSD:	5612	
Author:	Matthew Anderson	Date:	01-Jun-2022	

Existing Timing Plans[†]

	Plan				Ped Mir	nimum T	ime		
	Early AM	Off Peak	PM Peak	Night	Weekend	AM Peak	Walk	DW	A+R
	1	2	3	4	5	10			
Cycle	100	100	110	85	100	120			
Offset	90	47	20	Х	18	43			
EB Thru	44	45	51	36	45	55	10	20	3.7+2.7
WB Thru	65	69	79	54	69	80	-	-	3.7+2.7
NB Left (fp)	35	31	31	31	31	40	7	17	3.7+2.7
WB Left (fp)	21	24	28	18	24	25	-	-	3.3+2.9

Phasing Sequence[‡]



Schedule

Weekday							
Time	Plan						
0:15	4						
6:30	1						
7:00	10						
9:30	2						
15:00	3						
18:30	2						
21:30	4						

Saturday							
Time	Plan						
0:15	4						
6:30	2						
11:00	5						
19:30	2						
22:00	4						

Sunday							
Time	Plan						
0:15	4						
6:30	2						
21:00	4						

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

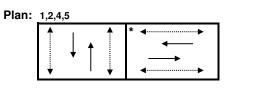
◄······ Pedestrian signal

City of Ottawa, Public Works Department							
Traffic Signal Operations Unit							
Intersection:	<i>Main:</i> Conroy	Side:	St. Laurent				
Controller:	ATC 3 TSD: 5612						
Author:	Matthew Anderson	Date:	01-Jun-2022				

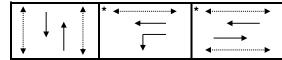
Existing Timing Plans[†]

	Ped Minimum Time							
	AM Peak	Off Peak	PM Peak	Night	Weekend	Walk	DW	A+R
	1	2	3	4	5			
Cycle	100	90	95	90	90			
Offset	23	50	2	х	50			
NB Thru	56	46	36	46	46	7	17	3.7+2.6
SB Thru	56	46	36	46	46	7	17	3.7+2.6
WB Left	-	-	15	-	-	-	-	3.3+2.4
EB Thru	44	44	44	44	44	7	30	3.3+3.6
WB Thru	44	44	59	44	44	7	30	3.3+3.6

Phasing Sequence[‡]



Plan: 3



Schedule

Weekday	
Time	Plan
0:15	4
6:30	1
9:30	2
15:00	3
18:30	2
21:30	4

Saturday Time Plan 0:15 4 6:30 2 11:00 5 19:30 2 22:00 4

Sunday	
Time	Plan
0:15	4
6:30	2
21:00	4

Notes

t: Time for each direction includes amber and all red intervals ‡: Start of first phase should be used as reference point for offset Asterisk (*) Indicates actuated phase (fp): Fully Protected Left Turn ••••• Pedestrian signal •

APPENDIX J

Existing Synchro Analysis

1: Don Reid/Ryder & Walkley AM Peak Hour

AMTEARTIOU	٠				-					1		<u>,</u>
		-	•	•				T	~	*	ŧ	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	≜ ⊅		<u> </u>	≜ ⊅		ሻ	4		<u> </u>	ef 👘	
Traffic Volume (vph)	29	918	144	36	1366	195	73	2	48	44	42	39
Future Volume (vph)	29	918	144	36	1366	195	73	2	48	44	42	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	50.0		0.0	35.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00		1.00	0.99			0.99	
Frt		0.980			0.981			0.855			0.928	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	3187	0	1642	3166	0	1580	1347	0	1674	1625	0
Flt Permitted	0.099	0101	Ŭ	0.215	0100	Ŭ	0.699	1011	Ŭ	0.721	1020	Ű
Satd. Flow (perm)	160	3187	0	371	3166	0	1162	1347	0	1271	1625	0
Right Turn on Red	100	5107	Yes	5/1	5100	Yes	1102	10-11	Yes	1211	1025	Yes
Satd. Flow (RTOR)		30	163		27	163		53	103		32	163
Link Speed (k/h)		50			50			50			50	
		402.0			171.1			100.3			281.0	
Link Distance (m)												
Travel Time (s)	4	28.9	~	~	12.3	1	4	7.2			20.2	4
Confl. Peds. (#/hr)	1		5	5		1	1		4			1
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	10%	4%	1%	3%	5%	1%	7%	1%	12%	1%	1%	1%
Adj. Flow (vph)	32	1020	160	40	1518	217	81	2	53	49	47	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	1180	0	40	1735	0	81	55	0	49	90	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		5.0			5.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		Cl+Ex	Cl+Ex		CI+Ex	CI+Ex	
Detector 1 Channel				OI · LA								
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
Detector 2 Size(m)		20.7 1.8			1.8			20.7 1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	-	0.0		P	0.0		-	0.0		-	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	_
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

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Synchro 10 Report

1: Don Reid/Ryder & Walkley AM Peak Hour

	٦	-	\mathbf{r}	1	-	*	1	1	1	1	.↓	-
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Switch Phase												
/inimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
/inimum Split (s)	35.9	35.9		35.9	35.9		36.2	36.2		36.2	36.2	
otal Split (s)	64.0	64.0		64.0	64.0		36.0	36.0		36.0	36.0	
Total Split (%)	64.0%	64.0%		64.0%	64.0%		36.0%	36.0%		36.0%	36.0%	
faximum Green (s)	58.1	58.1		58.1	58.1		29.8	29.8		29.8	29.8	
ellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6		2.6	2.6		2.9	2.9		2.9	2.9	
ost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.9	5.9		5.9	5.9		6.2	6.2		6.2	6.2	
ead/Lag	0.0	0.0		0.0	0.0		0.2	0.2		0.2	0.2	
ead-Lag Optimize?												
enicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Valk Time (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	5	5		5	5		20.0	20.0		20.0	20.0	
Act Effct Green (s)	77.0	77.0		77.0	77.0		15.4	15.4		15.4	15.4	
. ,		0.77		0.77	0.77			0.15		0.15		
ctuated g/C Ratio	0.77 0.26	0.77		0.14	0.77		0.15 0.46	0.15		0.15	0.15 0.33	
/c Ratio												
Control Delay	14.9	7.3		5.6	6.9		44.5	11.1		37.4	26.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
otal Delay	14.9	7.3		5.6	6.9		44.5	11.1		37.4	26.1	
.OS	В	A		A	A		D	B		D	C	
pproach Delay		7.5			6.9			31.0			30.1	
pproach LOS		A		1.0	A		40.0	С		0.4	С	
Queue Length 50th (m)	1.4	34.1		1.0	29.1		13.8	0.3		8.1	9.6	
Queue Length 95th (m)	10.9	85.7		m2.6	#193.0		22.0	8.1		14.4	18.2	
nternal Link Dist (m)	10.0	378.0			147.1		0-0	76.3		<u> </u>	257.0	
furn Bay Length (m)	40.0			50.0			35.0			30.0		
ase Capacity (vph)	123	2459		285	2442		346	438		378	506	
tarvation Cap Reductn	0	0		0	14		0	0		0	0	
pillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
educed v/c Ratio	0.26	0.48		0.14	0.71		0.23	0.13		0.13	0.18	
ntersection Summary	0.4											
Area Type:	Other											
Cycle Length: 100												
ctuated Cycle Length: 100												
Offset: 94 (94%), Referenced	to phase 2:E	BIL and 6:	WBTL, Sta	art of Gree	n							
latural Cycle: 90												
control Type: Actuated-Coord	dinated											
laximum v/c Ratio: 0.71												
ntersection Signal Delay: 9.1					tersection I							
ntersection Capacity Utilization	on 67.4%			IC	CU Level of	Service C						
nalysis Period (min) 15												
95th percentile volume ex			nay be lon	ger.								
Queue shown is maximum	after two cvc	les										

Splits and Phases: 1: Don Reid/Ryder & Walkley

J → Ø2 (R)	↓ Ø4
64 s	36 s
🗸 🖉 Ø6 (R)	⊲ † _{Ø8}
64s	36 s

2: 160m W of Conroy & Walkley AM Peak Hour

	-	\mathbf{r}	1	-	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	††	7	74	1 527	1	
Traffic Volume (vph)	929	90	74	1537	66 66	60 60
Future Volume (vph)	929	90	74	1537	66	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		20.0	65.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			25.0		30.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97	1.00			0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3221	1498	1674	3191	1674	1483
Flt Permitted			0.264		0.950	
Satd. Flow (perm)	3221	1459	465	3191	1674	1462
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		73				67
Link Speed (k/h)	50			50	50	
Link Distance (m)	171.1			169.1	128.6	
Travel Time (s)	12.3			12.2	9.3	
Confl. Peds. (#/hr)	12.0	4	4	12.2	0.0	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	1%	6%	1%	2%
Adj. Flow (vph)	1032	100	82	1708	73	67
Shared Lane Traffic (%)	1032	100	02	1700	13	07
	1032	100	82	1708	73	67
Lane Group Flow (vph)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	L NA	Left	L NA	R NA
Median Width(m)	3.5			5.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase	-	_	Ŭ	Ű.	Ű	v

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2: 160m W of Conroy & Walkley AM Peak Hour

	-	\mathbf{i}	4	+	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0
Total Split (s)	71.0	71.0	71.0	71.0	29.0	29.0
Total Split (%)	71.0%	71.0%	71.0%	71.0%	29.0%	29.0%
Maximum Green (s)	65.0	65.0	65.0	65.0	23.0	23.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	0.0	010			0.0	010
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	18.0	18.0	C mun	C mux	7.0	7.0
Flash Dont Walk (s)	13.0	13.0			16.0	16.0
Pedestrian Calls (#/hr)	5	5			5	5
Act Effct Green (s)	80.0	80.0	80.0	80.0	11.6	11.6
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.12	0.12
v/c Ratio	0.00	0.00	0.00	0.67	0.12	0.12
Control Delay	3.0	0.08	6.6	8.5	44.1	12.2
Queue Delay	0.0	0.9	0.0	0.5	0.0	0.0
Total Delay	3.0	0.0	0.0 6.6	9.1	44.1	12.2
LOS	3.0 A	0.9 A	0.0 A	9.1 A	44.1 D	12.2 B
Approach Delay	2.8	A	A	8.9	28.8	D
Approach LOS	2.8 A			8.9 A	28.8 C	
Queue Length 50th (m)	16.6	0.3	3.0	59.1	12.5	0.0
Queue Length 95th (m)	22.2	1.1	13.0	140.2	21.3	0.0 9.6
Internal Link Dist (m)	147.1	1.1	13.0	140.2	104.6	9.0
	147.1	20.0	65.0	140.1	30.0	
Turn Bay Length (m)	2576	20.0 1181	65.0 372	2552	30.0 385	387
Base Capacity (vph)	2576	0	372	2552 405	385	387
Starvation Cap Reductn	0	0	0	405 73	0	0
Spillback Cap Reductn						
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.08	0.22	0.80	0.19	0.17
Intersection Summary						
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 88 (88%), Referenced	to phase 2:E	BT and 6:\	NBTL. Sta	rt of Greer	ı	
Natural Cycle: 80	(o p		,		•	
Control Type: Actuated-Coord	inated					
Maximum v/c Ratio: 0.67	inatoa					
Intersection Signal Delay: 7.6				In	Itersection	
Intersection Capacity Utilizatio	n 60.0%				CU Level of	
Analysis Period (min) 15	11 00.070					
Splits and Phases: 2: 160m	W of Conroy	& Walkley				
	VV OI COIIICy	a Walkie	y			
🐨 Ø2 (R)						
71 s						
-						
🖉 Ø6 (R)						

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71 s

29 s

	-	\mathbf{r}	•	-	₹I	•	1
Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	^	1	<u>ካካ</u>	***	RDU	ኘካ	
Traffic Volume (vph)	TT 789	257	230	9 54	14	666	4 48
Future Volume (vph)	789	257	230	954	14	666	448
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		1	2			2	1
Taper Length (m)			50.0			10.0	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor		0.98	0.99				0.98
Frt		0.850					0.850
Flt Protected			0.950			0.950	
Satd. Flow (prot)	3161	1455	3066	3161	0	3186	1455
Flt Permitted			0.950			0.950	
Satd. Flow (perm)	3161	1419	3048	3161	0	3186	1430
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		286					345
Link Speed (k/h)	50			50		60	
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2			19.6		20.9	
Confl. Peds. (#/hr)		10	10				3
Confl. Bikes (#/hr)		1					1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	4%	7%	7%	2%	3%	4%
Adj. Flow (vph)	877	286	256	1060	16	740	498
Shared Lane Traffic (%)							
Lane Group Flow (vph)	877	286	256	1060	0	756	498
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	L NA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	0.0	0.0	28.7	0.0	0.0	0.0
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases	L	2		U	8	0	8
Detector Phase	2	2	1	6	8	8	8
	2	2		0	0	0	0

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	-	\mathbf{r}	-	-	₽	1	1
Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	55.0	55.0	25.0	80.0	40.0	40.0	40.0
Total Split (%)	45.8%	45.8%	20.8%	66.7%	33.3%	33.3%	33.3%
Maximum Green (s)	48.6	48.6	18.8	73.6	33.6	33.6	33.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	2.1	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	0.4		0.4	0.4
Lead-Lag Optimize?	Yes	Yes	Yes				
				2.0	2.0	2.0	2.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0			7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	10	10	45.4	75.0	5	5	5
Act Effct Green (s)	53.7	53.7	15.1	75.0		32.2	32.2
Actuated g/C Ratio	0.45	0.45	0.13	0.62		0.27	0.27
v/c Ratio	0.62	0.36	0.66	0.54		0.88	0.78
Control Delay	28.7	4.0	58.3	14.2		55.1	21.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	28.7	4.0	58.3	14.2		55.1	21.6
LOS	С	А	E	В		E	С
Approach Delay	22.6			22.8		41.8	
Approach LOS	С			С		D	
Queue Length 50th (m)	76.8	0.0	27.6	66.0		79.8	30.5
Queue Length 95th (m)	102.3	14.9	38.9	81.9		#103.7	72.2
Internal Link Dist (m)	145.1			247.7		324.5	
Turn Bay Length (m)		75.0	200.0				
Base Capacity (vph)	1413	792	480	1974		892	648
Starvation Cap Reductn	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.62	0.36	0.53	0.54		0.85	0.77
Intersection Summary	0.1						
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 43 (36%), Referenced	I to phase 2:E	BT and 6:V	VBT, Start	of Green			
Natural Cycle: 85							
Control Type: Actuated-Coord	dinated						
Maximum v/c Ratio: 0.88							
Intersection Signal Delay: 29.	.1			In	tersection	LOS: C	
Intersection Capacity Utilizati				IC	U Level o	f Service C	;
Analysis Period (min) 15							
# 95th percentile volume ex	ceeds capaci	ty, queue r	nay be lon	ger.			
Queue shown is maximum			•	-			
Splits and Phases: 3: Conr	oy & Walkley						



4: Conroy & St. Laurent AM Peak Hour

Lane Group Lane Configurations Traffic Volume (vph) Future Volume (vph) Ideal Flow (vphpl)	EBL	EBT										
Traffic Volume (vph) Future Volume (vph) Ideal Flow (vphpl)	μ.		EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph) Ideal Flow (vphpl)		•	1	1	•	1	<u>م</u>	*††		5	∱1 ≽	
Future Volume (vph) Ideal Flow (vphpl)	4	59	76	60	38	39	177	1187	195	86	368	33
Ideal Flow (vphpl)	4	59	76	60	38	39	177	1187	195	86	368	33
	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0		50.0	55.0		55.0	0.0		0.0	110.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			10.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	0.99		0.98	0.98	0.99		1.00	0.99	
Frt			0.850			0.850		0.979			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1353	1695	1427	1409	1589	1351	1642	4623	0	1674	3198	0
Flt Permitted	0.730			0.714			0.494			0.137		
Satd. Flow (perm)	1035	1695	1395	1049	1589	1328	841	4623	0	241	3198	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			84			36		45			13	
Link Speed (k/h)		50	•.		50			60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)		14.2			19.6			22.4			20.9	
Confl. Peds. (#/hr)	6	11.4	13	13	10.0	6	14	<i>LL</i> . 1	21	21	20.0	14
Confl. Bikes (#/hr)	Ū		10	10		v			21	21		25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	5%	6%	20%	12%	12%	3%	2%	2%	1%	4%	3%
Adj. Flow (vph)	4	66	84	67	42	43	197	1319	217	96	409	37
Shared Lane Traffic (%)	т	00	07	07	72	-10	157	1010	211	50	705	51
Lane Group Flow (vph)	4	66	84	67	42	43	197	1536	0	96	446	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	LNA	Left	RNA	LNA	Left	RNA	Left	Left	Right	LNA	Left	R NA
Median Width(m)	LINA	3.5		LINA	3.5	R NA	Leit	7.0	Right	LINA	6.0	IN INA
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			0.0 5.0			5.0			5.0	
		5.0			5.0			5.0			5.0	
Two way Left Turn Lane	1.00	1.00	1 00	1 00	1 00	1 00	1 00	1 00	1.00	1.00	1 00	1.00
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	0	14	24	0	14	24	0	14	24	0	14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	

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AM Peak Hour										2	022 Existing Traffic		
	٦	-	\mathbf{r}	4	-	•	1	1	1	1	Ŧ	-	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SE	
Switch Phase													
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0		
Vinimum Split (s)	43.9	43.9	43.9	43.9	43.9	43.9	30.3	30.3		30.3	30.3		
Fotal Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	56.0	56.0		56.0	56.0		
Total Split (%)	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	56.0%	56.0%		56.0%	56.0%		
Maximum Green (s)	37.1	37.1	37.1	37.1	37.1	37.1	49.7	49.7		49.7	49.7		
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)	3.6	3.6	3.6	3.6	3.6	3.6	2.6	2.6		2.6	2.6		
ost 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)	6.9	6.9	6.9	6.9	6.9	6.9	6.3	6.3		6.3	6.3		
.ead/Lag													
ead-Lag Optimize?													
/ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max		
Valk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		
Flash Dont Walk (s)	30.0	30.0	30.0	30.0	30.0	30.0	17.0	17.0		17.0	17.0		
Pedestrian Calls (#/hr)	15	15	15	10	10	10	20	20		15	15		
Act Effct Green (s)	21.2	21.2	21.2	21.2	21.2	21.2	70.3	70.3		70.3	70.3		
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.70	0.70		0.70	0.70		
/c Ratio	0.02	0.18	0.23	0.30	0.13	0.14	0.33	0.47		0.57	0.20		
Control Delay	22.2	28.6	6.9	32.3	27.3	10.1	13.3	11.0		34.4	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	22.2	28.6	6.9	32.3	27.3	10.1	13.3	11.0		34.4	8.9		
LOS	C	20.0 C	0.0 A	02.0 C	C	B	B	B		۲.+0 C	0.5 A		
Approach Delay	Ū	16.6	1	U	24.6	U	U	11.2		U	13.4		
Approach LOS		В			24.0 C			B			B		
Queue Length 50th (m)	0.6	11.0	1.2	11.5	6.9	1.1	9.5	30.0		5.9	9.7		
Queue Length 95th (m)	m2.2	16.4	9.5	16.9	11.2	7.1	40.6	84.6		#42.6	31.8		
nternal Link Dist (m)	1112.2	173.7	5.5	10.5	247.8	1.1	- 0.0	348.7		π -1 2.0	324.5		
Furn Bay Length (m)	45.0	110.1	50.0	55.0	247.0	55.0		J - U.1		110.0	524.5		
Base Capacity (vph)	383	628	570	389	589	515	590	3262		169	2251		
Starvation Cap Reductn	0	020	0	0	0	0	0	0202		0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0		
Storage Cap Reductin	0	0	0	0	0	0	0	0		0	0		
Reduced v/c Ratio	0.01	0.11	0.15	0.17	0.07	0.08	0.33	0.47		0.57	0.20		
ntersection Summary													
Area Type:	Other												
Cycle Length: 100	-												
Actuated Cycle Length: 100)												
Offset: 23 (23%), Reference		IBTL and 6	SSBTL. Sta	art of Gree	n								
latural Cycle: 100			,										
Control Type: Actuated-Coc	ordinated												
laximum v/c Ratio: 0.57													
ntersection Signal Delay: 1	2.8			Ir	ntersection	LOS: B							
ntersection Capacity Utiliza					CU Level o)						

Analysis Period (min) 15 # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Conroy & St. Laurent

Ø2 (R)	₩04	
56 s	44 s	
Ø6 (R)	₩ Ø8	
56 s	44 s	

5: Don Reid & St. Laurent AM Peak Hour

	4	•	t	1	1	Ŧ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		el el			ŧ
Traffic Volume (vph)	75	40	71	24	69	176
Future Volume (vph)	75	40	71	24	69	176
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.953		0.966			
Flt Protected	0.968					0.986
Satd. Flow (prot)	1563	0	1495	0	0	1678
Flt Permitted	0.968					0.986
Satd. Flow (perm)	1563	0	1495	0	0	1678
Link Speed (k/h)	50		50			50
Link Distance (m)	137.6		234.0			146.3
Travel Time (s)	9.9		16.8			10.5
Confl. Peds. (#/hr)				5	5	
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	7%	15%	15%	6%	4%
Adj. Flow (vph)	83	44	79	27	77	196
Shared Lane Traffic (%)						
Lane Group Flow (vph)	127	0	106	0	0	273
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5	Ŭ	0.0	Ŭ		0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		10.0			10.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 34.1%			IC	U Level of	Service A
Analysis Pariod (min) 15						

Analysis Period (min) 15

1: Don Reid/Ryder & Walkley PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	5	A		ሻ	A		5	¢Î,		5	f,	
Traffic Volume (vph)	27	1369	95	13	1400	70	137	0	65	87	99	50
Future Volume (vph)	27	1369	95	13	1400	70	137	0	65	87	99	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	0.0	50.0	1000	0.0	35.0	1000	0.0	30.0	1000	0.0
Storage Lanes	10.0		0.0	1		0.0	1		0.0	1		0.0
Taper Length (m)	25.0		Ŭ	30.0		Ŭ	25.0		Ŭ	30.0		Ū
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.993		1.00	0.850			0.949	
Flt Protected	0.950	0.000		0.950	0.000		0.950	0.000		0.950	0.040	
Satd. Flow (prot)	1674	3242	0	1674	3291	0	1674	1483	0	1674	1648	0
Flt Permitted	0.104	JZHZ	0	0.105	5231	U	0.562	1405	0	0.710	1040	U
Satd. Flow (perm)	183	3242	0	185	3291	0	989	1483	0	1251	1648	0
Right Turn on Red	105	JZ4Z	Yes	105	5291	Yes	909	1405	Yes	1201	1040	Yes
Satd. Flow (RTOR)		12	165		9	165		38	165		23	165
		50			9 50			50			23 50	
Link Speed (k/h)		402.0			171.1			100.3			281.0	
Link Distance (m)		402.0			12.3							
Travel Time (s)	1	28.9	10	10	12.3	1	2	7.2			20.2	2
Confl. Peds. (#/hr)	1			10		I	2					2
Confl. Bikes (#/hr)	0.00	0.00	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	3%	1%	2%	1%	1%	1%	2%	1%	1%	4%
Adj. Flow (vph)	30	1521	106	14	1556	78	152	0	72	97	110	56
Shared Lane Traffic (%)	20	4007	0		4004	^	450	70	0	07	400	0
Lane Group Flow (vph)	30	1627	0	14	1634	0	152	72	0	97	166	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		5.0			5.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

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1: Don Reid/Ryder & Walkley PM Peak Hour

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_ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Switch Phase												
Vinimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Vinimum Split (s)	35.9	35.9		35.9	35.9		36.2	36.2		36.2	36.2	
Total Split (s)	74.0	74.0		74.0	74.0		36.0	36.0		36.0	36.0	
Fotal Split (%)	67.3%	67.3%	6	7.3%	67.3%		32.7%	32.7%		32.7%	32.7%	
Maximum Green (s)	68.1	68.1		68.1	68.1		29.8	29.8		29.8	29.8	
fellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6		2.6	2.6		2.9	2.9		2.9	2.9	
ost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.9	5.9		5.9	5.9		6.2	6.2		6.2	6.2	
.ead/Lag												
ead-Lag Optimize?												
ehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	С	-Max	C-Max		None	None		None	None	
Valk Time (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
lash Dont Walk (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	10	10		5	5		5	5		5	5	
Act Effct Green (s)	77.1	77.1		77.1	77.1		20.8	20.8		20.8	20.8	
ctuated g/C Ratio	0.70	0.70		0.70	0.70		0.19	0.19		0.19	0.19	
/c Ratio	0.23	0.72		0.11	0.71		0.81	0.23		0.41	0.50	
Control Delay	13.7	13.4		7.8	10.6		72.5	20.2		42.5	38.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
otal Delay	13.7	13.4		7.8	10.6		72.5	20.2		42.5	38.1	
.OS	В	В		А	В		E	С		D	D	
Approach Delay		13.4			10.6			55.7			39.7	
Approach LOS		В			В			E			D	
Queue Length 50th (m)	1.9	89.5		0.8	58.0		29.0	5.6		17.0	25.4	
Queue Length 95th (m)	8.7	148.7		m1.3	51.4		46.0	15.3		28.6	39.9	
nternal Link Dist (m)		378.0			147.1			76.3			257.0	
urn Bay Length (m)	40.0			50.0			35.0			30.0		
Base Capacity (vph)	128	2275		129	2308		267	429		338	463	
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	0.23	0.72		0.11	0.71		0.57	0.17		0.29	0.36	
ntersection Summary	0.1											
Area Type:	Other											
Cycle Length: 110												
ctuated Cycle Length: 110												
Offset: 20 (18%), Referenced	to phase 2:E	BIL and 6:	WBTL, Start o	of Gree	n							
latural Cycle: 90	P 1 1											
Control Type: Actuated-Coord	dinated											
1aximum v/c Ratio: 0.81	_											
tersection Signal Delay: 16.					tersection LC							
ntersection Capacity Utilization	on 76.6%			IC	U Level of Se	ervice D						

Splits and Phases: 1: Don Reid/Ryder & Walkley



2: 160m W of Conroy & Walkley PM Peak Hour

	-	\mathbf{r}	1	-	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<u>+</u>			••••		
Traffic Volume (vph)	TT 1532	64	1 36	TT 1418	1 49	r 41
Future Volume (vph)	1532	64	36	1418	49	41
Ideal Flow (vphpl)	1552	1800	1800	1410	49	1800
Storage Length (m)	1000	20.0	65.0	1000	30.0	0.0
Storage Lanes		20.0	05.0		30.0 1	0.0
		l.	25.0		30.0	1
Taper Length (m)	0.05	1 00		0.05		1.00
Lane Util. Factor Ped Bike Factor	0.95	1.00 0.97	1.00 1.00	0.95	1.00	0.99
Frt			1.00			0.99
		0.850	0.050		0.050	0.650
Flt Protected	0050	4.400	0.950	0040	0.950	4.400
Satd. Flow (prot)	3252	1483	1642	3316	1658	1483
Flt Permitted	~~		0.116	0010	0.950	4 1 0 0
Satd. Flow (perm)	3252	1441	200	3316	1658	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		31				37
Link Speed (k/h)	50			50	50	
Link Distance (m)	171.1			169.1	128.6	
Travel Time (s)	12.3			12.2	9.3	
Confl. Peds. (#/hr)		5	5			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	3%	2%	2%	2%
Adj. Flow (vph)	1702	71	40	1576	54	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1702	71	40	1576	54	46
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	L NA	Left	L NA	R NA
Median Width(m)	3.5			5.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane	0.0			0.0	0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	1.03	1.09	24	1.03	24	14
Number of Detectors	2	14	24	2	24 1	14
Detector Template	Z Thru	-	Left	∠ Thru	Left	
•		Right				Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases	-	2	6	Ű.	Ŭ	8
Detector Phase	2	2	6	6	8	8
Switch Phase	2	2	U	U	U	U
Switch Fliase						

2: 160m W of Conroy & Walkley PM Peak Hour

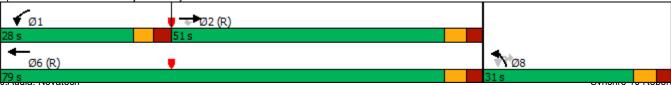
Lane Group EBT EBR WBL WBT NBL NBR Minimum Initial (s) 10.0 10.0 10.0 5.0 5.0 Minimum Split (s) 37.0 37.0 37.0 37.0 29.0 29.0 Total Split (s) 73.6% 73.6% 73.6% 73.6% 26.4% 26.4% Maximum Green (s) 75.0 75.0 75.0 75.0 23.0 23.0 23.0 Vellow Time (s) 2.7 <t< th=""><th></th><th>-</th><th>\mathbf{r}</th><th>4</th><th>-</th><th>1</th><th>۲</th><th></th></t<>		-	\mathbf{r}	4	-	1	۲	
Minimum Initial (s) 10.0 10.0 10.0 10.0 5.0 5.0 Minimum Split (s) 37.0 37.0 37.0 37.0 29.0 29.0 Total Split (s) 81.0 81.0 81.0 29.0 29.0 Total Split (s) 73.6% 73.6% 73.6% 26.4% 26.4% Maximum Green (s) 75.0 75.0 75.0 75.0 27.0 2.7 Lead Time (s) 2.7 2.7 2.7 2.7 2.7 2.7 Lead Lag Optimize?	Lane Group	FBT	FBR	WRL	WRT	NBL	NBR	
Minimum Split (s) 37.0 37.0 37.0 37.0 29.0 29.0 Total Split (s) 81.0 81.0 81.0 81.0 29.0 29.0 Total Split (%) 73.6% 73.6% 73.6% 26.4% 26.4% Maximum Green (s) 75.0 75.0 75.0 23.0 23.0 Yellow Time (s) 3.3 3.3 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 0.0 0.0 0.0 0.0 0.0 0.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Lead-Lag Optimize? Vehicle Extension (s) 3.0								
Total Split (s) 81.0 81.0 81.0 81.0 73.6% 70.6% 70.6% 70.6%								
Total Split (%) 73.6% 73.6% 73.6% 73.6% 73.6% 73.6% 73.6% 26.4% 26.4% Maximum Green (s) 75.0 75.0 75.0 75.0 23.0 23.0 Yellow Time (s) 3.3 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 2.7 2.7 2.7 2.7 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 6.0 6.0 6.0 6.0 6.0 6.0 Lead/Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Vehicle Extension (s) 18.0 18.0 7.0 7.0 7.0 7.0 Flash Dont Walk (s) 13.0 13.0 13.0 16.0 16.0 16.0 0.10 0.0 0.1 0.1 1.1 11.1 11.1 11.1 11.1 11.1 11.1 11.1 11.1 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
Maximum Green (s) 75.0 75.0 75.0 75.0 23.0 23.0 Yellow Time (s) 3.3 3.3 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 2.7 2.7 2.7 2.7 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 6.0 6.0 6.0 6.0 6.0 Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Walk Time (s) 18.0 18.0 7.0 7.0 7.0 7.0 Flash Dont Walk (s) 13.0 13.0 16.0 16.0 16.0 Pedestrian Calls (#/nr) 5 5 5 5 5 Act Ledg (C Ratio 0.82 0.82 0.82 0.10 0.10 10.1 v/c Ratio 0.64 0.06 0.24 0.58 0.33 0.26 Control Delay 2.3 0.8 10.1 7.7 48.5 19.9 Queue Delay 0.1 0.0								
Yellow Time (s) 3.3 3.3 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 2.7 2.7 2.7 2.7 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Lost Time (s) 6.0 6.0 6.0 6.0 6.0 6.0 Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Wehicle Extension (s) 18.0 18.0 7.0 7.0 7.0 Flash Dont Walk (s) 13.0 13.0 16.0 16.0 16.0 Pedestrian Calls (#hr) 5 5 5 5 5 Act Effect Green (s) 90.4 90.4 90.4 11.1 11.1 Actated g/C Ratio 0.82 0.82 0.82 0.82 0.82 0.82 0.82 0.92 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0								
All-Red Time (s) 2.7 2.7 2.7 2.7 2.7 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 6.0 6.0 6.0 6.0 6.0 6.0 Lead/Lag Lead/Lag Lead/Lag Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Wehk Time (s) 18.0 18.0 C-Max C-Max C-Max None None Walk Time (s) 18.0 18.0 18.0 16.0 16.0 16.0 Pedestrian Calls (#/hr) 5 5 5 5 5 5 Act EffG Tereen (s) 90.4 90.4 90.4 1.1 11.1 11.1 Actauda g/C Ratio 0.82 0.82 0.82 0.81 0.33 0.26 Control Delay 2.2 0.8 10.1 7.5 48.5 19.9 Loss A A B A D D Queue Delay 2.3 7.7 35.3 <								
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Total Lost Time (s) 6.0 6.0 6.0 6.0 6.0 6.0 Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode C-Max C-Max C-Max C-Max C-Max None None Walk Time (s) 18.0 18.0 7.0 7.0 7.0 Flash Dorit Walk (s) 13.0 13.0 16.0 16.0 16.0 Pedestrian Calls (#/hr) 5 5 5 5 5 Act Effct Green (s) 90.4 90.4 90.4 0.82 0.82 0.10 0.10 v/c Ratio 0.64 0.06 0.24 0.58 0.33 0.26 Control Delay 2.2 0.8 10.1 7.7 48.5 19.9 Queue Delay 0.1 0.0								
Lead/Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode C-Max C-Max C-Max None None Walk Time (s) 18.0 18.0 18.0 16.0 16.0 Pedestrian Calls (#/hr) 5 5 5 5 Act Effc Green (s) 90.4 90.4 90.4 11.1 11.1 Actated g/C Ratio 0.82 0.82 0.82 0.10 0.10 v/c Ratio 0.64 0.06 0.24 0.58 0.33 0.26 Control Delay 2.2 0.8 10.1 7.5 48.5 19.9 Queue Delay 0.1 0.0 0.0 0.1 0.0 0.0 0.0 Total Delay 2.3 0.8 10.1 7.7 48.5 19.9 LOS A A B A D Queue Length 50th (m) 16.4 0.3 0.8 7.0.3 10.3								
Lead-Lag Optimize? Vehicle Extension (s) 3.0 <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>6.0</td> <td></td>		0.0	0.0	0.0	0.0	0.0	6.0	
Vehicle Extension (s) 3.0								
Recall Mode C-Max C-Max C-Max C-Max C-Max None None Walk Time (s) 18.0 18.0 18.0 7.0 7.0 Flash Dont Walk (s) 13.0 13.0 16.0 16.0 Pedestrian Calls (#/hr) 5 5 5 5 Act Effct Green (s) 90.4 90.4 90.4 11.1 11.1 Actuated g/C Ratio 0.82 0.82 0.82 0.82 0.10 0.10 v/c Ratio 0.64 0.06 0.24 0.58 0.33 0.26 Control Delay 2.2 0.8 10.1 7.7 48.5 19.9 Queue Delay 0.1 0.0 0.0 0.1 0.0 0.0 Cost A A B A D B Approach LOS A A D Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 50th (m) 20.8 m0.8 m9.0		2.0	2.0	2.0	2.0	2.0	2.0	
Walk Time (s) 18.0 18.0 7.0 7.0 Flash Dont Walk (s) 13.0 13.0 16.0 16.0 Pedestrian Calls (#/hr) 5 5 5 5 Act Effct Green (s) 90.4 90.4 90.4 11.1 11.1 Actuated g/C Ratio 0.82 0.82 0.82 0.82 0.10 0.10 v/c Ratio 0.64 0.06 0.24 0.58 0.33 0.26 Control Delay 2.2 0.8 10.1 7.7 48.5 19.9 Queue Delay 0.1 0.0 0.0 0.1 0.0 0.0 Total Delay 2.3 0.8 10.1 7.7 48.5 19.9 LOS A A B A D B Approach LOS A A D Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 50th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 1								
Flash Dont Walk (s) 13.0 13.0 16.0 16.0 Pedestrian Calls (#/hr) 5 5 5 5 Act Effct Green (s) 90.4 90.4 90.4 90.4 11.1 11.1 Actuated g/C Ratio 0.82 0.82 0.82 0.82 0.10 0.10 V/c Ratio 0.64 0.06 0.24 0.58 0.33 0.26 Control Delay 2.2 0.8 10.1 7.5 48.5 19.9 Queue Delay 0.1 0.0 0.0 0.1 0.0 0.0 Total Delay 2.3 0.8 10.1 7.7 48.5 19.9 LOS A A B A D B Approach LOS A A D D Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 Turn Bay Length (m) 2673 1190 164				C-IVIAX	C-IVIAX			
Pedestrian Calls (#hr) 5 5 5 Act Effct Green (s) 90.4 90.4 90.4 90.4 11.1 11.1 Actuated g/C Ratio 0.82 0.82 0.82 0.82 0.10 0.10 v/c Ratio 0.64 0.06 0.24 0.58 0.33 0.26 Control Delay 2.2 0.8 10.1 7.5 48.5 19.9 Queue Delay 0.1 0.0 0.0 10.1 0.0 0.0 Total Delay 2.3 0.8 10.1 7.7 48.5 19.9 LOS A A B A D B Approach LOS A A B A D B Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Interset (vph) 2673 1190 164 2725 346								
Act Effct Green (s) 90.4 90.4 90.4 90.4 11.1 11.1 Actuated g/C Ratio 0.82 0.82 0.82 0.82 0.10 0.10 v/c Ratio 0.64 0.06 0.24 0.58 0.33 0.26 Control Delay 2.2 0.8 10.1 7.5 48.5 19.9 Queue Delay 0.1 0.0 0.1 0.0 0.0 0.0 Total Delay 2.3 0.8 10.1 7.7 48.5 19.9 LOS A A B A D B Approach LOS A A B A D B Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 102 104.6 102 Starvation Cap Reductn 125 0 0 0 0 0 0 SpliBoak Cap Reductn								
Actuated g/C Ratio 0.82 0.82 0.82 0.82 0.10 0.10 v/c Ratio 0.64 0.06 0.24 0.58 0.33 0.26 Control Delay 2.2 0.8 10.1 7.5 48.5 19.9 Queue Delay 0.1 0.0 0.0 0.1 0.0 0.0 Total Delay 2.3 0.8 10.1 7.7 48.5 19.9 LOS A A B A D B Approach Delay 2.3 7.7 35.3 Approach LOS A A D Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 104.6 104.6 104.6 Turn Bay Length (m) 20.0 65.0 30.0 335 Starvation Cap Reductn 85 0 0 0 0 0 Starvation Cap Reductn 125 0 0<				00.4	00.4			
v/c Ratio 0.64 0.06 0.24 0.58 0.33 0.26 Control Delay 2.2 0.8 10.1 7.5 48.5 19.9 Queue Delay 0.1 0.0 0.1 1.0 0.0 0.1 Total Delay 2.3 0.8 10.1 7.7 48.5 19.9 LOS A A B A D B Approach Delay 2.3 7.7 35.3 Approach LOS A A D D Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 104.6 104.6 104.6 102.0 105.0 30.0 103.1 18.8 10.2 115.3 104.6 104.6 104.6 104.6 105.0 0 0 0 0 105.0 105.0 105.0 105.0 105.0 105.0 105.0 105.0 10								
Control Delay 2.2 0.8 10.1 7.5 48.5 19.9 Queue Delay 0.1 0.0 0.0 0.1 0.0 0.0 Total Delay 2.3 0.8 10.1 7.7 48.5 19.9 LOS A A B A D B Approach Delay 2.3 7.7 35.3 Approach LOS A A D B Approach LOS A M B A D Cource Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 Turn Bay Length (m) 20.0 65.0 30.0 Base Capacity (vph) 2673 1190 164 2725 346 335 Starvation Cap Reductn 85 0 0 0 0 0 Spillback Cap Reductn <td>.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	.							
Queue Delay 0.1 0.0 0.1 0.0 0.0 Total Delay 2.3 0.8 10.1 7.7 48.5 19.9 LOS A A B A D B Approach Delay 2.3 7.7 35.3 3 Approach LOS A A D D Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 102 110 164 2725 346 335 Starvation Cap Reductn 85 0 0 283 0								
Total Delay 2.3 0.8 10.1 7.7 48.5 19.9 LOS A A B A D B Approach Delay 2.3 7.7 35.3 Approach LOS A A D Queue Length Delay 2.3 7.7 35.3 Approach LOS A A D Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 102 Internal Link Dist (m) 20.0 65.0 30.0 Base Capacity (vph) 2673 1190 164 2725 346 335 Starvation Cap Reductn 85 0 0 283 0 0 1 Storage Cap Reductn 0 0 0 0 0 0 0 0 1 Storage Cap Reductn 0.67 0.06 0								
LOS A A B A D B Approach Delay 2.3 7.7 35.3								
Approach Delay 2.3 7.7 35.3 Approach LOS A A D Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 104.6 Turn Bay Length (m) 20.0 65.0 30.0 Base Capacity (vph) 2673 1190 164 2725 346 335 Starvation Cap Reductn 85 0 0 283 0 0 Spillback Cap Reductn 125 0 0 0 1 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.67 0.06 0.24 0.65 0.16 0.14 Intersection Summary								
Approach LOS A A D Queue Length 50th (m) 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 104.6 Turn Bay Length (m) 20.0 65.0 30.0 Base Capacity (vph) 2673 1190 164 2725 346 335 Starvation Cap Reductn 85 0 0 283 0 0 Spillback Cap Reductn 125 0 0 0 0 1 Storage Cap Reductn 0.67 0.06 0.24 0.65 0.16 0.14 Intersection Summary			A	В			В	
Decision 16.4 0.3 0.8 70.3 10.3 1.7 Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 104.6 104.6 Turn Bay Length (m) 20.0 65.0 30.0								
Queue Length 95th (m) 22.8 m0.8 m9.0 130.1 18.8 10.2 Internal Link Dist (m) 147.1 145.1 104.6 Turn Bay Length (m) 20.0 65.0 30.0 Base Capacity (vph) 2673 1190 164 2725 346 335 Starvation Cap Reductn 85 0 0 283 0 0 Spillback Cap Reductn 125 0 0 0 0 14 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.67 0.06 0.24 0.65 0.16 0.14 Intersection Summary								
Internal Link Dist (m) 147.1 145.1 104.6 Turn Bay Length (m) 20.0 65.0 30.0 Base Capacity (vph) 2673 1190 164 2725 346 335 Starvation Cap Reductn 85 0 0 283 0 0 Spillback Cap Reductn 125 0 0 0 1 Storage Cap Reductn 0 0 0 0 145.1 104.6 Storage Cap Reductn 125 0 0 0 0 1 Storage Cap Reductn 0 14 145.1 104.6 14 145.1 104.6 14 145.1 104.6 14 145.1 104.6 14 14								
Turn Bay Length (m) 20.0 65.0 30.0 Base Capacity (vph) 2673 1190 164 2725 346 335 Starvation Cap Reductn 85 0 0 283 0 0 Spillback Cap Reductn 125 0 0 0 1 1 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.67 0.06 0.24 0.65 0.16 0.14 Intersection Summary			m0.8	m9.0			10.2	
Base Capacity (vph) 2673 1190 164 2725 346 335 Starvation Cap Reductn 85 0 0 283 0 0 Spillback Cap Reductn 125 0 0 0 1 346 335 Starvation Cap Reductn 125 0 0 0 0 1 Storage Cap Reductn 0 0 0 0 0 0 0 Reduced v/c Ratio 0.67 0.06 0.24 0.65 0.16 0.14 Intersection Summary	Internal Link Dist (m)	147.1			145.1	104.6		
Starvation Cap Reductn 85 0 0 283 0 0 Spillback Cap Reductn 125 0 0 0 0 1 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.67 0.06 0.24 0.65 0.16 0.14 Intersection Summary	Turn Bay Length (m)		20.0	65.0		30.0		
Spillback Cap Reductn 125 0 0 0 1 Storage Cap Reductn 0	Base Capacity (vph)	2673	1190	164	2725	346	335	
Storage Cap Reductn 0 0 0 0 0 0 0 Reduced v/c Ratio 0.67 0.06 0.24 0.65 0.16 0.14 Intersection Summary Intersection Summary Intersection Summary Intersection Summary Intersection Summary Area Type: Other Other Cycle Length: 110 Intersection Capacity Cycle Summary Intersection Green Intersection Capacity Utilization 59.4% Intersection LOS: A Intersection Signal Delay: 5.7 Intersection LOS: A Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15 Intersection Signal Capacity Utilization Signal Capacity Utilizati	Starvation Cap Reductn	85	0	0	283	0	0	
Reduced v/c Ratio 0.67 0.06 0.24 0.65 0.16 0.14 Intersection Summary Area Type: Other Cycle Length: 110 Actuated Cycle Length: 110 Offset: 25 (23%), Referenced to phase 2:EBT and 6:WBTL, Start of Green Natural Cycle: 80 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.64 Intersection Signal Delay: 5.7 Intersection LOS: A Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15 Intersection Capacity Division	Spillback Cap Reductn	125	0	0	0	0	1	
Intersection Summary Area Type: Other Cycle Length: 110 Offset: 25 (23%), Referenced to phase 2:EBT and 6:WBTL, Start of Green Natural Cycle: 80 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.64 Intersection LOS: A Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15 Intersection Capacity Utilization 59.4%	Storage Cap Reductn	0	0	0	0	0	0	
Area Type: Other Cycle Length: 110 Actuated Cycle Length: 110 Offset: 25 (23%), Referenced to phase 2:EBT and 6:WBTL, Start of Green Natural Cycle: 80 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.64 Intersection Signal Delay: 5.7 Intersection LOS: A Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15		0.67	0.06	0.24	0.65	0.16	0.14	
Area Type: Other Cycle Length: 110 Actuated Cycle Length: 110 Actuated Cycle Length: 110 Offset: 25 (23%), Referenced to phase 2:EBT and 6:WBTL, Start of Green Natural Cycle: 80 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.64 Intersection Signal Delay: 5.7 Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15 Actuated Coordinated								
Cycle Length: 110 Actuated Cycle Length: 110 Offset: 25 (23%), Referenced to phase 2:EBT and 6:WBTL, Start of Green Natural Cycle: 80 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.64 Intersection Signal Delay: 5.7 Intersection LOS: A Intersection Capacity Utilization 59.4% Analysis Period (min) 15		Other						
Actuated Cycle Length: 110 Offset: 25 (23%), Referenced to phase 2:EBT and 6:WBTL, Start of Green Natural Cycle: 80 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.64 Intersection Signal Delay: 5.7 Intersection LOS: A Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15								
Offset: 25 (23%), Referenced to phase 2:EBT and 6:WBTL, Start of Green Natural Cycle: 80 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.64 Intersection Signal Delay: 5.7 Intersection Capacity Utilization 59.4% Analysis Period (min) 15								
Natural Cycle: 80 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.64 Intersection Signal Delay: 5.7 Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15	, ,	to phase 2.⊏I	BT and 6-1	NRTI Sta	rt of Green	1		
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.64 Intersection Signal Delay: 5.7 Intersection LOS: A Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15 Intersection LOS: A		to phase 2.El		NDTL, Sta		1		
Maximum v/c Ratio: 0.64 Intersection Signal Delay: 5.7 Intersection LOS: A Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15 IS		lingtod						
Intersection Signal Delay: 5.7 Intersection LOS: A Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15 ICU Level of Service B		maleu						
Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15						toroo atia		
Analysis Period (min) 15								
		00 59.4%				U Level of	Service B	
m Volume for 95th percentile queue is metered by upstream signal.	m Volume for 95th percentil	e queue is me	etered by ι	ipstream s	ignal.			
Splits and Phases: 2: 160m W of Conroy & Walkley	Splits and Phases: 2: 160m	W of Conroy	« Walkley	/				
1 ➡ Ø2 (R) 81 s	• • • • 02 (K) 81 e							



	-	\mathbf{i}	1	-	₹I	•	1
Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	<u></u>	1	<u>ነት</u>	***	RDU	ኘካ	1001
Traffic Volume (vph)	1139	438	522	965	42	457	297
Future Volume (vph)	1139	438	522	905 965	42	457	297
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
		75.0					0.0
Storage Lanes			2			2	I
Taper Length (m)	0.05	1.00	50.0	0.05	0.05	10.0	1.00
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor		0.96	0.99				0.97
Frt Fit Desta stard		0.850	0.050			0.050	0.850
Flt Protected	0004	4 400	0.950	00.40	^	0.950	4 400
Satd. Flow (prot)	3221	1483	3185	3349	0	3248	1469
Flt Permitted			0.950			0.950	
Satd. Flow (perm)	3221	1430	3163	3349	0	3248	1418
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		452					330
Link Speed (k/h)	50			50		60	
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2			19.6		20.9	
Confl. Peds. (#/hr)		22	22				16
Confl. Bikes (#/hr)		1					1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	3%	1%	1%	1%	3%
Adj. Flow (vph)	1266	487	580	1072	47	508	330
Shared Lane Traffic (%)	1200	101	000	1012		000	000
Lane Group Flow (vph)	1266	487	580	1072	0	555	330
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	LNA	R NA
	7.0	IN INA	Leit	9.0	NINA	10.5	N NA
Median Width(m)	7.0 0.0			9.0 0.0		0.0	
Link Offset(m)							
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane	1.00	4.00	4.00	4.00	4.00	4.00	4 00
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	_	14	24	_	14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	0.0	0.0	28.7	0.0	0.0	0.0
Detector 2 Size(m)	1.8 CL/Ex			1.8			
Detector 2 Type	CI+Ex			CI+Ex			
Detector 2 Channel	• •						
Detector 2 Extend (s)	0.0	-	_	0.0	-	_	-
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases		2			8		8
Detector Phase	2	2	1	6	8	8	8

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	51.0	51.0	28.0	79.0	31.0	31.0	31.0
Total Split (%)	46.4%	46.4%	25.5%	71.8%	28.2%	28.2%	28.2%
Maximum Green (s)	44.6	44.6	21.8	72.6	24.6	24.6	24.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	••••		••••	••••
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0	NULLE		7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	20.0	20.0			17.0	17.0	17.0
Act Effct Green (s)	46.1	46.1	22.0	74.3	10	22.9	22.9
Actuated g/C Ratio	0.42	0.42	0.20	0.68		0.21	0.21
v/c Ratio	0.42	0.42	0.20	0.08		0.21	0.21
Control Delay	40.6	7.6	62.9	9.6		52.5	8.8
Queue Delay	40.0	0.2	02.9	9.0		0.0	0.0
Total Delay	40.6	7.8	62.9	9.6		52.5	8.8
LOS	40.6 D	7.0 A	62.9 E	9.0 A		52.5 D	0.0 A
Approach Delay	31.5	A	Ē	28.3		36.2	A
Approach LOS	31.5 C			20.3 C		30.2 D	
Queue Length 50th (m)	89.4	0.0	58.4	50.7		53.3	0.0
	89.4 #169.0	39.9	58.4 #87.2	50.7 63.4		53.3 70.9	21.8
Queue Length 95th (m)		29.9	#01.Z			70.9 324.5	Z1.Ŏ
Internal Link Dist (m)	145.1	75 0	200.0	247.7		324.5	
Turn Bay Length (m)	1010	75.0		0060		706	ETO
Base Capacity (vph)	1349	861	644	2263		726	573
Starvation Cap Reductn	0	57	0	0		0	0
Spillback Cap Reductn	0	0	0	42		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.94	0.61	0.90	0.48		0.76	0.58
Intersection Summary	0.11						
Area Type:	Other						
Cycle Length: 110							
Actuated Cycle Length: 110							
Offset: 20 (18%), Referenced	I to phase 2:E	BT and 6:V	VBT, Start	of Green			
Natural Cycle: 95							
Control Type: Actuated-Coord	dinated						
Maximum v/c Ratio: 0.94							
Intersection Signal Delay: 31.	.2			In	tersection	LOS: C	
Intersection Capacity Utilizati				IC	U Level of	Service D)
Analysis Period (min) 15							
# 95th percentile volume ex	ceeds capaci	ty, queue r	nay be lon	ger.			
Queue shown is maximum			•	-			
Splits and Phases: 2: Carr	ov & Malkley						
Splits and Phases: 3: Conr	roy & Walkley						



4: Conroy & St. Laurent PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	↑	1	<u>۲</u>	•	1	ሻ	<u>ተተ</u> ኑ		ሻ	≜ î≽	
Traffic Volume (vph)	17	67	306	222	28	105	35	564	79	37	1064	8
Future Volume (vph)	17	67	306	222	28	105	35	564	79	37	1064	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0		50.0	55.0		55.0	0.0		0.0	110.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			10.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.99		0.99		0.99	1.00	
Frt			0.850			0.850		0.982			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1728	1483	1642	1618	1483	1642	4617	0	1537	3309	0
Flt Permitted	0.737			0.565			0.127			0.349		
Satd. Flow (perm)	1297	1728	1461	974	1618	1463	219	4617	0	560	3309	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			115			68		28			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)		14.2			19.6			22.4			20.9	
Confl. Peds. (#/hr)	2		4	4		2	8		12	12		8
Confl. Bikes (#/hr)	_		-	-		_	-		4			11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	2%	3%	10%	2%	3%	2%	8%	10%	2%	12%
Adj. Flow (vph)	19	74	340	247	31	117	39	627	88	41	1182	9
Shared Lane Traffic (%)	10	,,	010	211	01		00	021	00		1102	U
Lane Group Flow (vph)	19	74	340	247	31	117	39	715	0	41	1191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	LNA	Left	R NA	L NA	Left	R NA	Left	Left	Right	LNA	Left	R NA
Median Width(m)		3.5			3.5		Leit	7.0	Tight		6.0	N INA
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane		0.0			0.0			5.0			0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	1.03	14	24	1.03	14	24	1.03	1.03	24	1.03	14
Number of Detectors	1	2	14	1	2	14	1	2	14	24	2	14
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.1	0.0	0.1	0.1	0.0	0.1	0.1	30.5 0.0			0.0	
										0.0		
Detector 1 Position(m)	0.0 6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0 1.8		0.0	0.0	
Detector 1 Size(m)		1.8 CL Ex	6.1	6.1	1.8	6.1	6.1			6.1	1.8	
Detector 1 Type	Cl+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel		0.0										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
	Perm		1 Cilli	pinipi								
Protected Phases		1NA 4	T CIIII	3	8			2			6	
Protected Phases Permitted Phases Detector Phase	Perm 4 4		4			8 8	2	2		6 6	6 6	

J.Audia, Novatech

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ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	S
witch Phase												
linimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
linimum Split (s)	43.9	43.9	43.9	11.3	43.9	43.9	30.3	30.3		30.3	30.3	
otal Split (s)	44.0	44.0	44.0	15.0	59.0	59.0	36.0	36.0		36.0	36.0	
otal Split (%)	46.3%	46.3%	46.3%	15.8%	62.1%	62.1%	37.9%	37.9%		37.9%	37.9%	
aximum Green (s)	37.1	37.1	37.1	9.3	52.1	52.1	29.7	29.7		29.7	29.7	
ellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
I-Red Time (s)	3.6	3.6	3.6	2.4	3.6	3.6	2.6	2.6		2.6	2.6	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Lost Time (s)	6.9	6.9	6.9	5.7	6.9	6.9	6.3	6.3		6.3	6.3	
ad/Lag	Lag	Lag	Lag	Lead								
ead-Lag Optimize?	Yes	Yes	Yes	Yes								
ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
ecall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
alk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
ash Dont Walk (s)	30.0	30.0	30.0		30.0	30.0	17.0	17.0		17.0	17.0	
edestrian Calls (#/hr)	5	5	5		5	5	10	10		10	10	
t Effct Green (s)	22.3	22.3	22.3	38.5	37.3	37.3	44.5	44.5		44.5	44.5	
ctuated g/C Ratio	0.23	0.23	0.23	0.41	0.39	0.39	0.47	0.47		0.47	0.47	
c Ratio	0.06	0.18	0.79	0.54	0.05	0.19	0.38	0.33		0.16	0.77	
ontrol Delay	23.4	26.4	34.3	22.8	14.4	7.6	37.3	17.5		21.4	27.8	
Jeue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Delay	23.4	26.4	34.3	22.8	14.4	7.6	37.3	17.5		21.4	27.8	
DS	20.4 C	20.4 C	04.0 C	22.0 C	B	7.0 A	57.5 D	В		21. 4 C	27.0 C	
oproach Delay	0	32.5	0	0	17.6	Л	U	18.6		U	27.6	
oproach LOS		02.0 C			B			B			C	
ueue Length 50th (m)	2.6	10.2	37.0	29.3	3.3	5.2	4.0	24.9		3.7	82.4	
ueue Length 95th (m)	6.0	16.0	51.8	32.7	5.9	10.8	#20.4	44.7		13.2	#162.8	
ternal Link Dist (m)	0.0	173.7	51.0	JZ.1	247.8	10.0	#20.4	348.7		10.2	324.5	
urn Bay Length (m)	45.0	173.7	50.0	55.0	247.0	55.0		340.7		110.0	524.5	
	45.0	674	640		887	833	102	2177		262	1550	
ase Capacity (vph)				460								
arvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
billback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
orage Cap Reductn educed v/c Ratio	0 0.04	0 0.11	0 0.53	0 0.54	0 0.03	0 0.14	0 0.38	0 0.33		0 0.16	0 0.77	
ersection Summary	0.04	0.11	0.00	0.04	0.00	0.14	0.00	0.00		0.10	0.77	
ea Type:	Other											
/cle Length: 95	Guioi											
ctuated Cycle Length: 95												
ffset: 2 (2%), Referenced to	nhase 2.NRT	I and 6.SI	RTI Start	of Green								
atural Cycle: 90	p11000 2.110 1		STE, Otart									
ontrol Type: Actuated-Coord	linated											
aximum v/c Ratio: 0.79												
tersection Signal Delay: 24.	5			In	tersection	1 OS: C						
tersection Capacity Utilization					CU Level of)					
nalysis Period (min) 15	01.07.070			I. I.								
95th percentile volume ex	reeds canaci	ty anone a	nav he lon	ner								
	after two cyc			901.								

Splits and Phases: 4: Conroy & St. Laurent

Ø2 (R)	Ø 3	₩ Ø4
36 s	15 s	44 s
₩ Ø6 (R)	¢ Ø8	
36 s.	59 s	

5: Don Reid & St. Laurent PM Peak Hour

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	M.		eî 👘			र्स
Traffic Volume (vph)	22	56	107	77	151	51
Future Volume (vph)	22	56	107	77	151	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.903		0.943			
Flt Protected	0.986					0.964
Satd. Flow (prot)	1479	0	1639	0	0	1588
Flt Permitted	0.986	<u> </u>		-	5	0.964
Satd. Flow (perm)	1479	0	1639	0	0	1588
Link Speed (k/h)	50	2	50	-	5	50
Link Distance (m)	137.6		234.0			146.3
Travel Time (s)	9.9		16.8			10.5
Confl. Peds. (#/hr)	0.0			2	2	
Confl. Bikes (#/hr)		1		4		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	8%	2%	3%	4%	20%
Adj. Flow (vph)	24	62	119	86	168	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	0	205	0	0	225
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5	J -	0.0	J -		0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		10.0			10.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 37.7%			IC	U Level of	Service A
Analysis Daried (min) 15						00111007

Analysis Period (min) 15

1: Don Reid/Ryder & Walkley PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	≜ ⊅		<u> </u>	≜1 ≱		ሻ	ef 👘		ሻ	eî 👘	
Traffic Volume (vph)	27	1369	95	13	1400	70	137	0	65	87	99	50
Future Volume (vph)	27	1369	95	13	1400	70	137	0	65	87	99	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	50.0		0.0	35.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00				1.00	
Frt		0.990			0.993			0.850			0.949	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3242	0	1674	3291	0	1674	1483	0	1674	1648	0
Flt Permitted	0.104			0.105	0201	Ŭ	0.562			0.710		
Satd. Flow (perm)	183	3242	0	185	3291	0	989	1483	0	1251	1648	0
Right Turn on Red	100	02.12	Yes	100	0201	Yes	000	1100	Yes	1201	1010	Yes
Satd. Flow (RTOR)		12			9			38			23	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		402.0			171.1			100.3			281.0	
Travel Time (s)		28.9			12.3			7.2			20.2	
Confl. Peds. (#/hr)	1	20.5	10	10	12.0	1	2	1.2			20.2	2
Confl. Bikes (#/hr)	•		1	10		•	2					<u> </u>
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	3%	1%	2%	1%	1%	1%	2%	1%	1%	4%
Adj. Flow (vph)	30	1521	106	14	1556	78	152	0	72	97	110	4 /0 56
Shared Lane Traffic (%)	50	1521	100	14	1000	10	١J٢	0	12	51	110	50
Lane Group Flow (vph)	30	1627	0	14	1634	0	152	72	0	97	166	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	RNA	Left	Left	Right	LNA	Left	R NA	LNA	Left	R NA
Median Width(m)		5.0	11111	Lon	5.0	rugitu		3.5	11111		3.5	11101
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane		0.0			0.0			0.0			0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	1.00	1.05	24	1.05	1.05	24	1.05	1.05	24	1.05	14
Number of Detectors	1	2	14	1	2	14	1	2	14	1	2	14
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.1	0.0		0.1	0.0		0.1	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		CI+Ex			CI+Ex			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel	CI+Ex	CI+EX		CI+Ex	CI+EX		CI+Ex	CI+EX		CI+EX	CI+EX	
	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel								• •			• • •	
Detector 2 Extend (s)	-	0.0		_	0.0		-	0.0		_	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

J.Audia, Novatech

1: Don Reid/Ryder & Walkley PM Peak Hour

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ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	S
Switch Phase												
Vinimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Vinimum Split (s)	35.9	35.9		35.9	35.9		36.2	36.2		36.2	36.2	
Total Split (s)	74.0	74.0		74.0	74.0		36.0	36.0		36.0	36.0	
Fotal Split (%)	67.3%	67.3%		67.3%	67.3%		32.7%	32.7%		32.7%	32.7%	
Maximum Green (s)	68.1	68.1		68.1	68.1		29.8	29.8		29.8	29.8	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6		2.6	2.6		2.9	2.9		2.9	2.9	
ost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Fotal Lost Time (s)	5.9	5.9		5.9	5.9		6.2	6.2		6.2	6.2	
_ead/Lag												
_ead-Lag Optimize?												
/ehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Nalk Time (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	10	10		5	5		5	5		5	5	
Act Effct Green (s)	77.1	77.1		77.1	77.1		20.8	20.8		20.8	20.8	
Actuated g/C Ratio	0.70	0.70		0.70	0.70		0.19	0.19		0.19	0.19	
//c Ratio	0.23	0.72		0.11	0.71		0.81	0.23		0.41	0.50	
Control Delay	13.7	13.4		7.8	8.5		72.5	20.2		42.5	38.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Fotal Delay	13.7	13.4		7.8	8.5		72.5	20.2		42.5	38.1	
LOS	В	В		А	А		E	С		D	D	
Approach Delay		13.4			8.5			55.7			39.7	
Approach LOS		В			А			E			D	
Queue Length 50th (m)	1.9	89.5		0.6	45.3		29.0	5.6		17.0	25.4	
Queue Length 95th (m)	8.7	148.7		m1.2	50.2		46.0	15.3		28.6	39.9	
nternal Link Dist (m)		378.0			147.1			76.3			257.0	
Furn Bay Length (m)	40.0			50.0			35.0			30.0		
Base Capacity (vph)	128	2275		129	2308		267	429		338	463	
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	0.23	0.72		0.11	0.71		0.57	0.17		0.29	0.36	
ntersection Summary												
Area Type:	Other											
Cycle Length: 110												
Actuated Cycle Length: 110												
Offset: 20 (18%), Referenced	to phase 2:E	BTL and 6:	WBTL, Sta	art of Gree	n							
Natural Cycle: 90												
Control Type: Actuated-Coord	linated											
/laximum v/c Ratio: 0.81												
ntersection Signal Delay: 15.0					tersection LC							
ntersection Capacity Utilization	on 76.6%			IC	CU Level of S	ervice D						
Analysis Period (min) 15												

Splits and Phases: 1: Don Reid/Ryder & Walkley



2: 160m W of Conroy & Walkley PM Peak Hour

Fit Permitted 0.116 0.950 Satd. Flow (perm) 3252 1441 200 3316 1658 1463 Right Turn on Red Yes Yes Yes Yes Satd. Flow (RTOR) 31 37 37 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Heavy Vehicles (%) 4% 2% 3% 2% 2% 2% Adj. Flow (vph) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No No No Lane Alignment Left Right LNA Left LNA RNA Median Width(m) 5.0 5.0 3.5 109 1.09 1.09 1.09 Traing Speed (k/h) 1.4 24 24 1			\mathbf{i}	1	-	1	1
Lane Configurations Image: Configuration (vph) 1532 64 36 1418 49 41 Ideal Flow (vphp) 1532 64 36 1418 49 41 Ideal Flow (vphp) 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 100 0.0 Storage Length (m) 25.0 30.0 0.0 Lane Ulti, Factor 0.95 1.00 1.00 9.950 0.950 0.950 0.950 0.950 0.950 Std.Flow (prot) 3252 1443 1642 3316 1658 1463 Right Turn on Red Yes Yes Yes Yes Yes Std.Flow (prot) 311 313 132 131 Tarvel Time (s) 12.3 12.2 9.3 Confi. Peds. (#hr) 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Lane Group	ERT	ERD	W/RL	W/RT	NRL	NRD
Traffic Volume (vph) 1532 64 36 1418 49 41 Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 1800 Storage Lanes 1 1 1 1 1 1 1 Taper Length (m) 25.0 30.0 0.09 1.00 1.00 0.95 1.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Future Volume (vph) 1532 64 36 1418 49 41 Ideal Flow (vphpl) 1800 1418 49 41 1418 49 41 1 1 1 1 1 1 1 1 1 1 1 1 1 <			-				
Ideal Flow (vphp) 1800 1000 100							
Storage Length (m) 20.0 65.0 30.0 0.0 Storage Lanes 1 1 1 1 1 Taper Length (m) 25.0 30.0 .00 Lane Util. Factor 0.95 1.00 1.00 0.95 Ped Bike Factor 0.97 1.00 0.95 0.850 Fit Protected 0.950 0.950 0.850 Satd. Flow (port) 3252 1443 1642 3316 1658 1463 Right Tum on Red Yes Yes Yes Yes Yes Yes Satd. Flow (perm) 31 37 37 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#hr) 5 5 1 Peak Hour Factor 0.90 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Storage Lanes 1 1 1 1 1 Taper Length (m) 25.0 30.0 1.00 1.00 1.00 Ped Bike Factor 0.95 1.00 1.00 0.95 1.00 1.00 Ped Bike Factor 0.971 1.00 0.950 Storage Lanes 0.850 0.850 Fit Protected 0.952 1443 1642 3316 1658 1463 Stor Flow (port) 3252 1441 200 3316 1658 1463 Stor Flow (port) 312 37 11nk Distance (m) 171.1 169.1 128.6 172.4 9.3 Conf. Peds. (#hr) 5 5 1		1800			1800		
Taper Length (m) 25.0 30.0 Lane Util, Factor 0.95 1.00 1.00 0.95 1.00 0.099 Ped Bike Factor 0.97 1.00 0.950 0.950 0.950 Satd. Flow (prot) 3252 1483 1642 3316 1658 1483 Riph Turn on Red Yes Yes Yes Yes Yes Satd. Flow (perm) 3252 1441 200 3316 1658 1463 Right Turn on Red Yes Yes Yes Yes Yes Satd. Flow (ROR) 31 37 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. eds. (#hr) 5 5 1 Peak Hour Factor 0.90							
Lane Util, Factor 0.95 1.00 1.00 0.95 1.00 1.00 Ped Bike Factor 0.97 1.00 0.99 0.850 0.850 Fit Protected 0.950 0.950 0.950 0.850 Satd. Flow (prot) 3252 1441 200 3316 1658 1463 Satd. Flow (perm) 3252 1441 200 3316 1658 1463 Satd. Flow (perm) 3252 1441 200 3316 1658 1463 Turn on Red Yes Yes Yes Yes Yes Satd. Flow (RTOR) 31 37 Link Distance (m) 171.1 169.1 12.8 12.2 9.3 10 Confl. Peds. (#/hr) 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 % 3% 2% 2% 2% 2% 2% 1			1			-	1
Ped Bike Factor 0.97 1.00 0.999 Frt 0.850 0.950 0.850 Fit Protected 0.950 0.950 0.850 Satd. Flow (port) 3252 1443 1642 3316 1658 1443 Satd. Flow (perm) 3252 1441 200 3316 1658 1463 Sight Turn on Red Yes Yes Yes Yes Yes Satd. Flow (RTOR) 31 37 Jink Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 9.90 0.90 0.90 0.90 0.90 1.90 1.09 1.09 1.09 1.09 2.8 2% 2% 2% 3/d 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			1.00		^ - -		4.00
Frt 0.850 0.850 FIP Protected 0.950 0.950 Satd. Flow (prot) 3252 1483 1642 3316 1658 1483 FIP Permitted 0.116 0.950 0.950 0.950 0.950 Satd. Flow (perm) 3252 1441 200 3316 1658 1463 Right Turn on Red Yes Yes Yes 37 1ink Speed (k/h) 50 50 51 Link Distance (m) 171.1 169.1 128.6 122.2 9.3 122.8 122.8 12.8 12.8 12.2 9.3 12.8 12.8 12.8 12.2 9.3 12.8 12.8 12.8 12.8 1463 1463 131 12.8 1463 1463 1464 144 2.8 14 140 1576 54 46 146 Shared Lane Traffic (%) 140 1576 54 46 146 144 14 14 140 1576 54 46		0.95			0.95	1.00	
Fit Protected 0.950 0.950 Satd. Flow (prot) 3252 1483 1642 3316 1658 1483 Fit Permitted 0.116 0.950 0.950 0.950 Satd. Flow (perm) 3252 1441 200 3316 1658 1463 Right Turn on Red Yes Yes Yes Yes Yes Satd. Flow (RTOR) 31 37 31 37 Link Distance (m) 171.1 169.1 122.6 12.2 9.3 Confl. Peds. (#hr) 5 5 1 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (vph) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No No No Lane Group Flow (vph) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No <				1.00			
Satd. Flow (prot) 3252 1483 1642 3316 1658 1483 FI Permitted 0.116 0.950 Satd. Flow (perm) 3252 1441 200 3316 1658 1463 Right Turn on Red Yes Yes Yes Yes Satd. Flow (RTOR) 31 37 Jink Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 1.09 1.076 54 46 Shared Lane Traffic (%) 1483 Stared Lane Alignment Left Right L NA Left NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 0.0 0.0 0.0			0.850				0.850
Fit Permitted 0.116 0.950 Satd. Flow (perm) 3252 1441 200 3316 1658 1463 Right Turn on Red Yes Satd. Flow (RTOR) 31 37 Link Speed (k/h) 50 50 50 50 Confl. Peds. (#hr) 5 5 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 Confl. Peds. (#hr) 5 5 1 1 128.6 1 28.6 2%							
Satd. Flow (perm) 3252 1441 200 3316 1658 1463 Right Turn on Red Yes 31 37 37 Dirk Speed (k/h) 50 50 50 50 Link Distance (m) 171.1 169.1 122.6 9.3 Confl. Peds. (#/hr) 5 5 1 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (vph) 1702 71 40 1576 54 46 Shared Lane Traffic (%) 1 1 1 1 46 Enter Blocked Intersection No No <td< td=""><td>Satd. Flow (prot)</td><td>3252</td><td>1483</td><td></td><td>3316</td><td></td><td>1483</td></td<>	Satd. Flow (prot)	3252	1483		3316		1483
Right Turn on Red Yes Yes Yes Satd. Flow (RTOR) 31 37 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 0.90 0.90 0.90 0.90 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (vph) 1702 71 40 1576 54 46 Shared Lane Traffic (%) Lane Group Flow (vph) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No No No Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1	Flt Permitted						
Satd. Flow (RTOR) 31 37 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (vph) 1702 71 40 1576 54 46 Shared Lane Traffic (%) 1 <	Satd. Flow (perm)	3252	1441	200	3316	1658	
Satd. Flow (RTOR) 31 37 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (vph) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No No No No Adiation Traffic (%) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No No No Link Offset(m) 0.0 0.0 0.0 0.0 0.0 0.0 Link Offset(m) 0.0 1.09 1.09 1.09 1.09 1.09 Link Offset(m) 0.0	Right Turn on Red		Yes				Yes
Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Heavy Vehicles (%) 4% 2% 3% 2% 2% 2% Adj. Flow (vph) 1702 71 40 1576 54 46 Shared Lane Traffic (%) 1	Satd. Flow (RTOR)		31				37
Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Heavy Vehicles (%) 4% 2% 3% 2% 2% 2% Adj. Flow (vph) 1702 71 40 1576 54 46 Shared Lane Traffic (%) Lane Group Flow (vph) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No No No Lane Alignment Left Right L NA Left LNA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Tom way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Trailing Detec		50			50	50	
Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 Heavy Vehicles (%) 4% 2% 3% 2% 2% 2% Adj. Flow (vph) 1702 71 40 1576 54 46 Shared Lane Traffic (%) 1 1 2 1 40 1576 54 46 Enter Blocked Intersection No No No No No No No Lane Group Flow (vph) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No No No No Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 5.0 5.0 5.0 5.0 Two way Left Tum Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 Trailing Detector (m) 30.5 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 0.90 D.90 1.57 5.5 5.5 1 0.00 0.0 0.00							
Peak Hour Factor 0.90 2% 14 6 16 1576 5.0		12.0	5	5	12.2	5.5	1
Heavy Vehicles (%) 4% 2% 3% 2% 2% 2% Adj. Flow (vph) 1702 71 40 1576 54 46 Shared Lane Traffic (%) 54 46 Eane Group Flow (vph) 1702 71 40 1576 54 46 Enter Blocked Intersection No So 5.0 5.0 5.0 5.0 Trains graph (Mith(m) 5.0 5.0 5.0 Trains graph (Mith(m) 1.09 1.09 1.09 1.09 1.09 1.09 <td< td=""><td></td><td>0.00</td><td></td><td>-</td><td>0.00</td><td>0.00</td><td></td></td<>		0.00		-	0.00	0.00	
Adj. Flow (vph) 1702 71 40 1576 54 46 Shared Lane Traffic (%) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No No No No Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 1.00 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0							
Shared Lane Traffic (%) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No No No No Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 Tomo way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0							
Lane Group Flow (vph) 1702 71 40 1576 54 46 Enter Blocked Intersection No No No No No No No Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1		1702	71	40	15/6	54	46
Enter Blocked Intersection No Indition for for for for for for for fo		4=00					
Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane							
Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane							
Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type Cl+Ex Cl+Ex <td></td> <td></td> <td>Right</td> <td>L NA</td> <td></td> <td></td> <td>R NA</td>			Right	L NA			R NA
Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Size(m) 1.8 6.1 6.1 6.1 6.1 6.1 Detector 1 Channel Detector 1 Channel Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 Detector 2 Position(m) <td< td=""><td>Median Width(m)</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Median Width(m)						
Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel Detector 1 Channel	Link Offset(m)				0.0		
Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel Detector 1 Channel Use CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Channel U	Crosswalk Width(m)	5.0			5.0	5.0	
Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel Detector 1 Channel Use CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Channel U	Two way Left Turn Lane						
Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel		1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type Cl+Ex Detector 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector Detector 1 Delay (s) 0.0 0.0 0.0 0.0 0.0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0	••••	2			2		
Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type CI+Ex Detector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Delay (s) 0.0 0.0 0.0 0.0 0.0 Detector 2 Size(m) 1.8 1.8 Detector 2 Cl+Ex Detector 2 Cl+Ex Detector 2 Channel Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
Trailing Detector (m) 0.0							
Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Delay (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Position(m) 28.7							
Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0							
Detector 1 Type CI+Ex O.0 0.0							
Detector 1 Channel Detector 1 Extend (s) 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Delay (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Position(m) 28.7 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Detector 1 Extend (s) 0.0		CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Queue (s) 0.0	Detector 1 Channel						
Detector 1 Delay (s) 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 20.0	Detector 1 Extend (s)						
Detector 1 Delay (s) 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 20.0	Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m) 28.7 28.7 Detector 2 Size(m) 1.8 1.8 Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type NA Perm NA Prot Perm Protected Phases 2 6 8 8 Detector Phase 2 6 6 8	Detector 1 Delay (s)						
Detector 2 Size(m)1.81.8Detector 2 TypeCI+ExCI+ExDetector 2 Channel0.00.0Detector 2 Extend (s)0.00.0Turn TypeNAPermPermProtected Phases268Permitted Phases268Detector Phase2268	Detector 2 Position(m)						
Detector 2 TypeCI+ExCI+ExDetector 2 Channel0.00.0Detector 2 Extend (s)0.00.0Turn TypeNAPermPermProtected Phases268Permitted Phases268Detector Phase2268							
Detector 2 ChannelDetector 2 Extend (s)0.00.0Turn TypeNAPermNAProtProtected Phases268Permitted Phases268Detector Phase2268	()						
Detector 2 Extend (s)0.00.0Turn TypeNAPermPermNAProtPermProtected Phases268Permitted Phases268Detector Phase2268							
Turn TypeNAPermPermNAProtPermProtected Phases268Permitted Phases268Detector Phase2268		0.0			0.0		
Protected Phases268Permitted Phases268Detector Phase2268			Dorm	Dorm		Drot	Dorm
Permitted Phases268Detector Phase22668			Peilli	Peilli			Feilli
Detector Phase 2 2 6 6 8 8		2	•	^	б	ŏ	•
						_	
Switch Phase		2	2	6	6	8	8
	Switch Phase						

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2: 160m W of Conroy & Walkley PM Peak Hour

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0
Total Split (s)	81.0	81.0	81.0	81.0	29.0	29.0
Total Split (%)	73.6%	73.6%	73.6%	73.6%	26.4%	26.4%
Maximum Green (s)	75.0	75.0	75.0	75.0	23.0	23.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	0.0	0.0	0.0	0.0	0.0	0.0
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	18.0	18.0			7.0	7.0
Flash Dont Walk (s)	13.0	13.0			16.0	16.0
()	13.0					16.0
Pedestrian Calls (#/hr)		5	00.4	00.4	5 11 1	с 11.1
Act Effct Green (s)	90.4	90.4	90.4	90.4	11.1	
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.10	0.10
v/c Ratio	0.64	0.06	0.24	0.58	0.33	0.26
Control Delay	2.2	0.8	9.2	6.3	48.5	19.9
Queue Delay	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	2.3	0.8	9.2	6.7	48.5	19.9
LOS	A	А	А	A	D	В
Approach Delay	2.2			6.8	35.3	
Approach LOS	А			А	D	
Queue Length 50th (m)	16.4	0.3	1.5	46.2	10.3	1.7
Queue Length 95th (m)	22.8	m0.8	9.3	110.7	18.8	10.2
Internal Link Dist (m)	147.1			145.1	104.6	
Turn Bay Length (m)		20.0	65.0		30.0	
Base Capacity (vph)	2673	1190	164	2725	346	335
Starvation Cap Reductn	85	0	0	619	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.06	0.24	0.75	0.16	0.14
Internetion Or						
Intersection Summary	0.1					
Area Type:	Other					
Cycle Length: 110						
Actuated Cycle Length: 110						
Offset: 25 (23%), Referenced	to phase 2:E	BT and 6:V	VBTL, Sta	rt of Greer	ו	
Natural Cycle: 80						
Control Type: Actuated-Coord	inated					
Maximum v/c Ratio: 0.64						
Intersection Signal Delay: 5.3				In	itersection	LOS: A
Intersection Capacity Utilizatio	n 59.4%			IC	CU Level o	f Service E
Analysis Period (min) 15						
m Volume for 95th percentile	e queue is me	etered by u	ipstream s	ignal.		
Splits and Phases: 2: 160m	W of Conroy	& Walkley	/			
81 e						

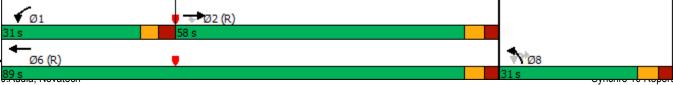


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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	<u> </u>	1	<u>ካካ</u>	***	ND0	ሻሻ	
Traffic Volume (vph)	TT 1139	438	522	77 965	42	457	297
Future Volume (vph)	1139	438	522	905 965	42	457	297
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		1	200.0			0.0	0.0
Taper Length (m)		1	2 50.0			10.0	I
	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Lane Util. Factor	0.95			0.95	0.95	0.97	0.96
Ped Bike Factor		0.96	0.99				
Frt Fit Desta stard		0.850	0.050			0.050	0.850
Flt Protected	0004	4.400	0.950	00.40	•	0.950	4.400
Satd. Flow (prot)	3221	1483	3185	3349	0	3248	1469
Flt Permitted	0001	1100	0.950	00.10	•	0.950	
Satd. Flow (perm)	3221	1426	3161	3349	0	3248	1415
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		418					330
Link Speed (k/h)	50			50		60	
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2			19.6		20.9	
Confl. Peds. (#/hr)		22	22				16
Confl. Bikes (#/hr)		1					1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	3%	1%	1%	1%	3%
Adj. Flow (vph)	1266	487	580	1072	47	508	330
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1266	487	580	1072	0	555	330
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	L NA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane	0.0			0.0		0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	1.00	14	24	1.00	14	24	14
Number of Detectors	2	1	1	2	1	1	14
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
	30.5 0.0	0.1	0.1	0.0	0.1	0.1	0.1
Trailing Detector (m)							
Detector 1 Position(m)	0.0 1.8	0.0	0.0	0.0	0.0	0.0 6.1	0.0
Detector 1 Size(m)		6.1	6.1	1.8 Clu Fu	6.1		6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel	• •						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7			
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases	-	2		-	8	-	8
Detector Phase	2	2	1	6	8	8	8
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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR	
Switch Phase								
linimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0	
linimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4	
otal Split (s)	58.0	58.0	31.0	89.0	31.0	31.0	31.0	
otal Split (%)	48.3%	48.3%	25.8%	74.2%	25.8%	25.8%	25.8%	
aximum Green (s)	51.6	51.6	24.8	82.6	24.6	24.6	24.6	
ellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7	
II-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7	
ost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	
otal Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4	
ead/Lag	Lag	Lag	Lead	•••		•••	••••	
ead-Lag Optimize?	Yes	Yes	Yes					
chicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
ecall Mode	C-Max	C-Max	None	C-Max	None	None	None	
alk Time (s)	10.0	10.0	110110	O Max	7.0	7.0	7.0	
ash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0	
edestrian Calls (#/hr)	20.0	20.0			17.0	17.0	15	
t Effct Green (s)	53.1	53.1	24.2	83.5	10	23.7	23.7	
ctuated g/C Ratio	0.44	0.44	0.20	0.70		0.20	0.20	
c Ratio	0.89	0.56	0.20	0.46		0.20	0.61	
ontrol Delay	40.2	6.8	65.3	9.1		61.5	9.6	
Jeue Delay	4.3	0.0	0.0	0.0		0.0	0.0	
ital Delay	44.5	6.8	65.3	9.1		61.5	9.6	
)S	-+5 D	0.0 A	60.5 E	А		E	3.0 A	
oproach Delay	34.0	Л	L	28.8		42.2	Л	
oproach LOS	0.+0 C			20.0 C		42.2 D		
ueue Length 50th (m)	133.2	8.8	63.4	50.7		60.0	0.0	
ueue Length 95th (m)	#174.6	34.1	#90.2	62.5		#83.0	23.6	
ternal Link Dist (m)	145.1	54.1	#30.2	247.7		324.5	20.0	
urn Bay Length (m)	145.1	75.0	200.0	241.1		524.5		
ase Capacity (vph)	1426	864	659	2331		665	552	
arvation Cap Reductn	1420	8	0.09	2331		005	0	
pillback Cap Reductn	0	0	0	0		0	0	
torage Cap Reductn	0	0	0	0		0	0	
educed v/c Ratio	0.96	0.57	0.88	0.46		0.83	0.60	
	0.90	0.57	0.00	0.40		0.05	0.00	
tersection Summary								
ea Type:	Other							
cle Length: 120								
ctuated Cycle Length: 120								
ffset: 20 (17%), Referenced	to phase 2:E	BT and 6:W	VBT, Start	of Green				
atural Cycle: 95	•							
ontrol Type: Actuated-Coord	dinated							
aximum v/c Ratio: 0.90								
ersection Signal Delay: 33.	7			In	tersection	LOS: C		
ersection Capacity Utilization					U Level of)	
nalysis Period (min) 15								
95th percentile volume ex	ceeds capaci	ty, queue r	nay be lon	ger.				
95th percentile volume ex Queue shown is maximum								
olits and Phases: 3: Conr	oy & Walkley							
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4: Conroy & St. Laurent PM Peak Hour

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	EBL	EBT	EBR	▼ WBL	WBT	WBR	NDI	∎ NBT	r NBR	SBL	▼ SBT	SBR
Lane Group	<u></u>						NBL		NDK			SDK
Lane Configurations	1 17	† 67	6 306	ר 222	† 28	105	1 35	***	79	1 37	1 064	0
Traffic Volume (vph)	17	67	306	222	20	105	35 35	564 564	79 79	37	1064 1064	8 8
Future Volume (vph)	1800	1800	1800	1800	20 1800			1800		1800	1800	o 1800
Ideal Flow (vphpl)	45.0	1800		55.0	1800	1800	1800	1800	1800		1800	
Storage Length (m)			50.0			55.0	0.0		0.0	110.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	40.0	4 00	4 00	40.0	4.00	4.00	10.0	0.04	0.04	25.0	0.05	0.05
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.99		0.99		0.99	1.00	
Frt	0.050		0.850	0.050		0.850	0.050	0.982		0.050	0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1728	1483	1642	1618	1483	1642	4617	0	1537	3309	0
Flt Permitted	0.737			0.565			0.127			0.349		
Satd. Flow (perm)	1297	1728	1461	974	1618	1463	219	4617	0	560	3309	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			115			68		28			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)		14.2			19.6			22.4			20.9	
Confl. Peds. (#/hr)	2		4	4		2	8		12	12		8
Confl. Bikes (#/hr)									4			11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	2%	3%	10%	2%	3%	2%	8%	10%	2%	12%
Adj. Flow (vph)	19	74	340	247	31	117	39	627	88	41	1182	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	74	340	247	31	117	39	715	0	41	1191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		3.5			3.5			7.0	0		6.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	••
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel		OILX	OFEX	OFFEX								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7	0.0	0.0	28.7	0.0	0.0	28.7		0.0	28.7	
		20.7 1.8			20.7 1.8			20.7			20.7	
Detector 2 Size(m)					CI+Ex							
Detector 2 Type		CI+Ex			CI+EX			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	C	0.0	D		0.0	D	D	0.0		D	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		3	8		_	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	3	8	8	2	2		6	6	

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4: Conroy & St. Laurent PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	43.9	43.9	43.9	11.3	43.9	43.9	30.3	30.3		30.3	30.3	
Total Split (s)	44.0	44.0	44.0	15.0	59.0	59.0	36.0	36.0		36.0	36.0	
Total Split (%)	46.3%	46.3%	46.3%	15.8%	62.1%	62.1%	37.9%	37.9%		37.9%	37.9%	
Maximum Green (s)	37.1	37.1	37.1	9.3	52.1	52.1	29.7	29.7		29.7	29.7	
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)	3.6	3.6	3.6	2.4	3.6	3.6	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	0.0	
Total Lost Time (s)	6.9	6.9	6.9	5.7	6.9	6.9	6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	30.0	30.0	30.0		30.0	30.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)	5	5	5		5	5	10	10		10	10	
Act Effct Green (s)	22.3	22.3	22.3	38.5	37.3	37.3	44.5	44.5		44.5	44.5	
Actuated g/C Ratio	0.23	0.23	0.23	0.41	0.39	0.39	0.47	0.47		0.47	0.47	
v/c Ratio	0.06	0.18	0.79	0.54	0.05	0.19	0.38	0.33		0.16	0.77	
Control Delay	23.4	26.4	34.3	22.8	14.4	7.6	37.3	17.5		21.4	27.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	23.4	26.4	34.3	22.8	14.4	7.6	37.3	17.5		21.4	27.8	
LOS	20.4 C	20.4 C	04.0 C	C	B	A	07.0 D	В		C	C	
Approach Delay	0	32.5	U	0	17.6	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	U	18.6		U	27.6	
Approach LOS		02.0 C			В			B			27.0 C	
Queue Length 50th (m)	2.6	10.2	37.0	29.3	3.3	5.2	4.0	24.9		3.7	82.4	
Queue Length 95th (m)	6.0	16.0	51.8	32.7	5.9	10.8	#20.4	44.7		13.2	#162.8	
Internal Link Dist (m)	0.0	173.7	51.0	52.1	247.8	10.0	π20.4	348.7		10.2	324.5	
Turn Bay Length (m)	45.0	170.7	50.0	55.0	247.0	55.0		J - U.1		110.0	024.0	
Base Capacity (vph)	506	674	640	460	887	833	102	2177		262	1550	
Starvation Cap Reductn	0	0/4	0+0	400 0	0	000	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	0.04	0.11	0.53	0.54	0.03	0.14	0.38	0.33		0.16	0.77	
Intersection Summary												
Area Type:	Other											
Cycle Length: 95												
Actuated Cycle Length: 95												
Offset: 2 (2%), Referenced to	phase 2:NBT	L and 6:SI	BTL, Start	of Green								
Natural Cycle: 90	•											
Control Type: Actuated-Coord	dinated											
Maximum v/c Ratio: 0.79												
Intersection Signal Delay: 24.	5			In	tersection	LOS: C						
Intersection Capacity Utilization				IC	CU Level o	f Service D)					
Analysis Period (min) 15												
# 95th percentile volume ex	ceeds capaci	ty, queue r	may be lon	ger.								
Queue shown is maximum				-								
Splits and Phases: 4: Conro	oy & St. Laure	ant										
	by a St. Laure	5111										

Ø2 (R)	√ Ø3	Ø4
36 s	15 s	44 s
Ø6 (R)	₩ Ø8	
36 s	59 s	
0.7 tudia, 1 to valoon		

5: Don Reid & St. Laurent PM Peak Hour

	✓	•	1	1	1	Ŧ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Υ		4			र्स
Traffic Volume (vph)	22	56	107	77	151	51
Future Volume (vph)	22	56	107	77	151	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.903		0.943			
Flt Protected	0.986					0.964
Satd. Flow (prot)	1479	0	1639	0	0	1588
Flt Permitted	0.986					0.964
Satd. Flow (perm)	1479	0	1639	0	0	1588
Link Speed (k/h)	50		50			50
Link Distance (m)	137.6		234.0			146.3
Travel Time (s)	9.9		16.8			10.5
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)		1		4		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	8%	2%	3%	4%	20%
Adj. Flow (vph)	24	62	119	86	168	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	0	205	0	0	225
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		10.0			10.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 37.7%			IC	U Level of	Service A
Analysia Daviad (min) 45						

Analysis Period (min) 15

APPENDIX K

Background Synchro Analysis

1: Don Reid/Ryder & Walkley AM Peak Hour

ANTEAKTIOU	•					•		•				
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	A⊅		<u>۲</u>	- † 12		<u>۲</u>	_î,		ሻ	- îs	
Traffic Volume (vph)	29	925	164	41	1410	195	78	7	53	49	47	39
Future Volume (vph)	29	925	164	41	1410	195	78	7	53	49	47	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	50.0		0.0	35.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00		1.00	0.99			0.99	
Frt		0.977			0.982			0.867			0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	3177	0	1642	3169	0	1580	1378	0	1674	1633	0
Flt Permitted	0.121			0.241			0.701			0.718		
Satd. Flow (perm)	196	3177	0	416	3169	0	1165	1378	0	1265	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			26			53			39	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		402.0			171.1			100.3			281.0	
Travel Time (s)		28.9			12.3			7.2			20.2	
Confl. Peds. (#/hr)	1	_0.0	5	5		1	1					1
Confl. Bikes (#/hr)	•		· ·			•	•		1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	4%	1%	3%	5%	1%	7%	1%	12%	1%	1%	1%
Adj. Flow (vph)	29	925	164	41	1410	195	78	7	53	49	47	39
Shared Lane Traffic (%)	20	020	101		1110	100	10	•	00	10		00
Lane Group Flow (vph)	29	1089	0	41	1605	0	78	60	0	49	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	LNA	Left	RNA	Left	Left	Right	LNA	Left	RNA	LNA	Left	R NA
Median Width(m)	2101	5.0		Lon	5.0	rugin	2.00	3.5		2.0.0	3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane		0.0			0.0			0.0			0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	1.00	1.00	24	1.00	1.00	24	1.00	1.00	24	1.00	1.00
Number of Detectors	1	2	7	1	2	17	1	2	17	1	2	17
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel				OFLX	OILX		OILX					
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
()												
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	D	0.0		Derm	0.0		Demo	0.0		Demo	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	_	2			6		-	8			4	
Permitted Phases	2	•		6	•		8	•		4		
Detector Phase	2	2		6	6		8	8		4	4	

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1: Don Reid/Ryder & Walkley AM Peak Hour

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0	-					1 NDI		/			-
ane Group	EBL	EBT	EBR WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	S
witch Phase linimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
finimum Split (s)	35.9	35.9	35.9	35.9		36.2	36.2		36.2	36.2	
otal Split (s)	64.0	64.0	64.0	64.0		36.0	36.0		36.0	36.0	
otal Split (%)	64.0%	64.0%	64.0%	64.0%		36.0%	36.0%		36.0%	36.0%	
Maximum Green (s)	58.1	58.1	58.1	58.1		29.8	29.8		29.8	29.8	
fellow Time (s)	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6		2.9	2.9		2.9	2.9	
ost Time Adjust (s)	0.0	0.0	0.0	0.0		2.9	0.0		0.0	0.0	
	0.0 5.9	5.9	5.9	0.0 5.9		6.2	6.2		6.2	6.2	
otal Lost Time (s)	5.9	5.9	5.9	5.9		0.2	0.2		0.2	0.2	
ead/Lag											
ead-Lag Optimize?	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
ehicle Extension (s)											
Recall Mode	C-Max 15.0	C-Max	C-Max 15.0	C-Max		None 10.0	None 10.0		None 10.0	None 10.0	
Valk Time (s)	15.0	15.0 15.0	15.0	15.0 15.0			20.0				
lash Dont Walk (s)						20.0			20.0	20.0	
Pedestrian Calls (#/hr)	5	5	5	5		5	5		5	5	
ct Effct Green (s)	77.1	77.1	77.1	77.1		15.2	15.2		15.2	15.2	
ctuated g/C Ratio	0.77	0.77	0.77	0.77		0.15	0.15		0.15	0.15	
c Ratio	0.19	0.44	0.13	0.66		0.44	0.24		0.26	0.30	
Control Delay	11.1	6.8	4.5	5.0		44.0	12.8		37.6	23.0	
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
otal Delay	11.1	6.8	4.5	5.1		44.0	12.8		37.6	23.0	
OS	В	A	A	A		D	B		D	C	
pproach Delay		6.9		5.0			30.4			28.3	
pproach LOS	1.0	A	1.0	A		40.0	C		0.4	C	
Queue Length 50th (m)	1.2	29.4	1.0	26.6		13.3	1.1		8.1	7.7	
Queue Length 95th (m)	8.3	75.7	m2.2	29.6		21.3	9.1		14.5	16.3	
nternal Link Dist (m)	10.0	378.0	50.0	147.1		05.0	76.3		00.0	257.0	
urn Bay Length (m)	40.0	0.150	50.0	0440		35.0	4.47		30.0	- 4 4	
ase Capacity (vph)	151	2456	320	2448		347	447		376	514	
tarvation Cap Reductn	0	0	0	18		0	0		0	0	
pillback Cap Reductn	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0		0	0		0	0	
educed v/c Ratio	0.19	0.44	0.13	0.66		0.22	0.13		0.13	0.17	
ntersection Summary											
rea Type:	Other										
Cycle Length: 100											
ctuated Cycle Length: 100											
Offset: 94 (94%), Referenced	to phase 2:E	BTL and 6:	WBTL, Start of Gre	en							
latural Cycle: 90											
Control Type: Actuated-Coord	linated										
laximum v/c Ratio: 0.66											
ntersection Signal Delay: 7.9				ntersection							
ntersection Capacity Utilization	on 69.0%			CU Level of	Service C						
nalysis Period (min) 15											

Splits and Phases: 1: Don Reid/Ryder & Walkley



2: 160m W of Conroy & Walkley AM Peak Hour

	-	\mathbf{r}	1	-	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
· · · · · · · · · · · · · · · · · · ·						
Lane Configurations	*†			1500		
Traffic Volume (vph)	947	90	74	1590	66 66	60
Future Volume (vph)	947	90	74	1590	66	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		20.0	65.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			25.0		30.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97	1.00			0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3221	1498	1674	3191	1674	1483
Flt Permitted			0.292		0.950	
Satd. Flow (perm)	3221	1459	514	3191	1674	1462
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		72				60
Link Speed (k/h)	50			50	50	
Link Distance (m)	171.1			169.1	128.6	
Travel Time (s)	12.3			12.2	9.3	
Confl. Peds. (#/hr)	12.0	4	4	12.2	0.0	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	1%	1.00	6%	1%	2%
	5% 947	90	74	1590	66	2% 60
Adj. Flow (vph)	947	90	/4	1090	00	00
Shared Lane Traffic (%)	947	90	74	1590	66	60
Lane Group Flow (vph)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	L NA	Left	L NA	R NA
Median Width(m)	3.5			5.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel		OFEX				
	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase	2	2	U	0	U	0
Switch I hase						

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2: 160m W of Conroy & Walkley AM Peak Hour

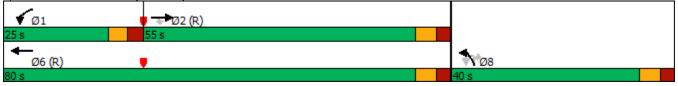
	-	$\mathbf{\hat{z}}$	4	+	•	۲
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0
• • • •	57.0 71.0	57.0 71.0	57.0 71.0	37.0 71.0	29.0	29.0
Total Split (s) Total Split (%)	71.0%	71.0%	71.0%	71.0%	29.0%	29.0%
	71.0% 65.0	71.0% 65.0	65.0	65.0	29.0%	29.0%
Maximum Green (s)	65.0 3.3	65.0 3.3	3.3	65.0 3.3	23.0	23.0
Yellow Time (s)						3.3 2.7
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	18.0	18.0			7.0	7.0
Flash Dont Walk (s)	13.0	13.0			16.0	16.0
Pedestrian Calls (#/hr)	5	5			5	5
Act Effct Green (s)	80.2	80.2	80.2	80.2	11.3	11.3
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.11	0.11
v/c Ratio	0.37	0.08	0.18	0.62	0.35	0.28
Control Delay	3.0	0.00	5.8	7.5	43.6	12.5
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	3.0	0.0	5.8	8.0	43.6	12.5
LOS	3.0 A	0.0 A	5.8 A	8.0 A	43.0 D	12.5 B
	2.8	A	A	7.9	28.8	D
Approach Delay						
Approach LOS	A	0.0	0.0	A	C	0.0
Queue Length 50th (m)	14.5	0.2	2.6	49.7	11.3	0.0
Queue Length 95th (m)	21.4	0.9	11.2	120.3	19.6	8.9
Internal Link Dist (m)	147.1			145.1	104.6	
Turn Bay Length (m)		20.0	65.0		30.0	
Base Capacity (vph)	2583	1184	412	2560	385	382
Starvation Cap Reductn	0	0	0	444	0	0
Spillback Cap Reductn	0	0	0	26	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.08	0.18	0.75	0.17	0.16
Interpretion Commence						
Intersection Summary	0.11					
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 88 (88%), Referenced t	o phase 2:E	BT and 6:\	VBTL, Sta	rt of Green		
Natural Cycle: 75						
Control Type: Actuated-Coordi	nated					
Maximum v/c Ratio: 0.62						
Intersection Signal Delay: 6.9				In	tersection	LOS: A
Intersection Capacity Utilization	n 61.5%				U Level of	
Analysis Period (min) 15						
Splits and Phases: 2: 160m	W of Conroy	& Walkley	/			
			1			
▼Ø2 (R)						
71s						
/13						
Ø6 (R)						
71 e						
/15						

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	^	7	ኘካ	<u></u>	NBO	ካካ	7
Traffic Volume (vph)	79 4	267	246	991	14	683	462
Future Volume (vph)	794	267	240	991	14	683	462
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		1 1	200.0			2	1
Taper Length (m)		1	50.0			10.0	1
	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Lane Util. Factor Ped Bike Factor	0.95		0.97	0.95	0.95	0.97	0.98
Frt		0.98	0.99				
		0.850	0.050			0.050	0.850
Flt Protected	0404	4455	0.950	0404	•	0.950	4455
Satd. Flow (prot)	3161	1455	3066	3161	0	3186	1455
Flt Permitted	<u> </u>	4.1.10	0.950	0.10.1	•	0.950	4 400
Satd. Flow (perm)	3161	1419	3046	3161	0	3186	1430
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		267					358
Link Speed (k/h)	50			50		60	
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2			19.6		20.9	
Confl. Peds. (#/hr)		10	10				3
Confl. Bikes (#/hr)		1					1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	4%	7%	7%	2%	3%	4%
Adj. Flow (vph)	794	267	246	991	14	683	462
Shared Lane Traffic (%)							
Lane Group Flow (vph)	794	267	246	991	0	697	462
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	L NA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane	0.0			0.0		0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	1.00	14	24	1.00	14	24	14
Number of Detectors	2	14	1	2	14	1	14
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
• • • •		0.1			0.1	0.1	0.1
Trailing Detector (m)	0.0		0.0	0.0			
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8 Chi Fii	6.1	6.1	1.8 CL Ex	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7			
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases	_	2			8	-	8
		~					
Detector Phase	2	2	1	6	8	8	8

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	55.0	55.0	25.0	80.0	40.0	40.0	40.0
Total Split (%)	45.8%	45.8%	20.8%	66.7%	33.3%	33.3%	33.3%
Maximum Green (s)	48.6	48.6	18.8	73.6	33.6	33.6	33.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0			7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	10	10			5	5	5
Act Effct Green (s)	55.1	55.1	14.8	76.1	v	31.1	31.1
Actuated g/C Ratio	0.46	0.46	0.12	0.63		0.26	0.26
v/c Ratio	0.55	0.34	0.65	0.49		0.84	0.20
Control Delay	26.3	3.9	58.0	13.1		52.4	16.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	26.3	3.9	58.0	13.1		52.4	16.5
LOS	20.0 C	0.5 A	50.0 E	B		02.4 D	B
Approach Delay	20.7		L	22.0		38.1	U
Approach LOS	C			C		D	
Queue Length 50th (m)	65.7	0.0	26.5	58.3		72.6	18.2
Queue Length 95th (m)	90.0	14.6	37.4	74.5		92.2	54.7
Internal Link Dist (m)	145.1	0.71	- 1	247.7		324.5	04.1
Turn Bay Length (m)	1-0.1	75.0	200.0	271.1		027.0	
Base Capacity (vph)	1450	795	480	2004		892	658
Starvation Cap Reductn	0	0	00+	2004		0.02	0.00
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.55	0.34	0.51	0.49		0.78	0.70
Intersection Summary	0.00	0.07	0.01	0.40		0.10	0.10
Area Type:	Other						
Cycle Length: 120	Other						
Actuated Cycle Length: 120 Offset: 43 (36%), Referenced	to phase 2.E	PT and Gill		of Groop			
	to phase z:E		vor, stan	or Green			
Natural Cycle: 85 Control Type: Actuated-Coord	dinatad						
Maximum v/c Ratio: 0.84	linaleu						
	0				tersection		
Intersection Signal Delay: 27.					U Level of		`
Intersection Capacity Utilization	011 09.2%			IC	O Level Of	Service	,
Analysis Period (min) 15							
Calita and Dhasaas 2. Conr	av 9 Malldav						

Splits and Phases: 3: Conroy & Walkley



4: Conroy & St. Laurent AM Peak Hour

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Lane Group	EBL	EBT	EBR	• WBL	WBT	WBR	NBL	NBT	• NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	<u></u>	7	<u>אוטר</u>	1	7	<u>אוטר</u>	† †ĵ ₂	NUN	<u> </u>	≜1	
Traffic Volume (vph)	6	65	81	63	43	25	192	1187	199	87	370	53
Future Volume (vph)	6	65	81	63	43	25	192	1187	199	87	370	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0	1000	50.0	55.0	1000	55.0	0.0	1000	0.0	110.0	1000	0.0
Storage Lanes			1	1		1	0.0		0.0	1		0.0
Taper Length (m)	40.0		I	40.0		1	10.0		U	25.0		U
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00	0.98	0.99	1.00	0.98	0.98	0.99	0.31	1.00	0.99	0.55
Frt	1.00		0.850	0.55		0.850	0.30	0.978		1.00	0.981	
Flt Protected	0.950		0.000	0.950		0.000	0.950	0.370		0.950	0.301	
Satd. Flow (prot)	1353	1695	1427	1409	1589	1351	1642	4617	0	1674	3167	0
Flt Permitted	0.729	1095	1427	0.715	1009	1551	0.505	4017	0	0.166	5107	U
Satd. Flow (perm)	1033	1695	1395	1050	1589	1328	859	4617	0	291	3167	٥
	1035	1090		1050	1209		009	4017		291	3107	0
Right Turn on Red			Yes 81			Yes		16	Yes		22	Yes
Satd. Flow (RTOR)		50	Öl		50	36		46 60			22 60	
Link Speed (k/h)												
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)	0	14.2	40	40	19.6	0		22.4	04	04	20.9	4.4
Confl. Peds. (#/hr)	6		13	13		6	14		21	21		14
Confl. Bikes (#/hr)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	1.00	1.00	1.00	4.00	25
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	5%	6%	20%	12%	12%	3%	2%	2%	1%	4%	3%
Adj. Flow (vph) Shared Lane Traffic (%)	6	65	81	63	43	25	192	1187	199	87	370	53
Lane Group Flow (vph)	6	65	81	63	43	25	192	1386	0	87	423	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		3.5			3.5			7.0			6.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8	Ū	8	2	-		6	Ū	
Detector Phase	4	4	4	8	8	8	2	2		6	6	
	4	4	4	0	U	U	2	2		0	0	

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AM Peak Hour						-				2024	Backgroun	d Tran
	٨	-	\mathbf{r}	4	+	*	1	1	1	1	Ŧ	-
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SE
Switch Phase												
Vinimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
/linimum Split (s)	43.9	43.9	43.9	43.9	43.9	43.9	30.3	30.3		30.3	30.3	
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	56.0	56.0		56.0	56.0	
otal Split (%)	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	56.0%	56.0%		56.0%	56.0%	
Maximum Green (s)	37.1	37.1	37.1	37.1	37.1	37.1	49.7	49.7		49.7	49.7	
fellow 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)	3.6	3.6	3.6	3.6	3.6	3.6	2.6	2.6		2.6	2.6	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	6.3	6.3		6.3	6.3	
.ead/Lag												
ead-Lag Optimize?												
ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Valk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
lash Dont Walk (s)	30.0	30.0	30.0	30.0	30.0	30.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)	15	15	15	10	10	10	20	20		15	15	
Act Effct Green (s)	21.1	21.1	21.1	21.1	21.1	21.1	70.4	70.4		70.4	70.4	
ctuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.70	0.70		0.70	0.70	
/c Ratio	0.03	0.18	0.23	0.29	0.13	0.08	0.32	0.42		0.43	0.19	
Control Delay	23.2	28.5	7.1	31.8	27.4	5.2	13.0	10.4		23.6	8.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Delay	23.2	28.5	7.1	31.8	27.4	5.2	13.0	10.4		23.6	8.6	
.0S	C	С	A	С	С	A	В	В		С	A	
Approach Delay	-	16.9		-	25.3			10.7		-	11.2	
Approach LOS		В			С			В			В	
Queue Length 50th (m)	0.9	10.9	1.1	10.8	7.1	0.0	9.0	25.0		4.5	8.7	
Queue Length 95th (m)	m2.8	16.6	9.2	16.0	11.5	3.5	38.8	73.0		#33.1	29.6	
nternal Link Dist (m)		173.7	•		247.8			348.7			324.5	
furn Bay Length (m)	45.0		50.0	55.0		55.0		• • • •		110.0	02.110	
Base Capacity (vph)	383	628	568	389	589	515	604	3262		204	2235	
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	Ũ	0	Ŭ Û	0	0	0 0		0	0 0	
Reduced v/c Ratio	0.02	0.10	0.14	0.16	0.07	0.05	0.32	0.42		0.43	0.19	
ntersection Summary												
Area Type:	Other											
Cycle Length: 100	0 110											
Actuated Cycle Length: 100												
Offset: 23 (23%), Reference		BTL and 6	SBTL St	art of Gree	n							
latural Cycle: 90					••							
Control Type: Actuated-Coo	rdinated											
Actuated-000 Aaximum v/c Ratio: 0.43	anatod											
ntersection Signal Delay: 12	20			In	tersection	LOS' B						
ntersection Capacity Utiliza					CU Level o		<u>`</u>					
nalysis Period (min) 15	0.070			IC.			,					
95th percentile volume e	waaada aanaai		nav ho lon	aor								

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Conroy & St. Laurent

Ø2 (R)	₩ Ø4	
56 s	44 s	
Ø6 (R)	J Ø8	
56 s	44 s	

5: Don Reid & St. Laurent AM Peak Hour

		•	1	1	1	Ŧ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥.		¢Î,			ર્શ
Traffic Volume (vph)	75	40	71	22	69	176
Future Volume (vph)	75	40	71	22	69	176
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.953		0.968			
Flt Protected	0.968					0.986
Satd. Flow (prot)	1563	0	1498	0	0	1678
Flt Permitted	0.968					0.986
Satd. Flow (perm)	1563	0	1498	0	0	1678
Link Speed (k/h)	50		50			50
Link Distance (m)	137.6		234.0			146.3
Travel Time (s)	9.9		16.8			10.5
Confl. Peds. (#/hr)				5	5	
Confl. Bikes (#/hr)		1				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	15%	15%	6%	4%
Adj. Flow (vph)	75	40	71	22	69	176
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	0	93	0	0	245
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		10.0			10.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 34.1%			IC	U Level of	Service A
Apolygia Daried (min) 15						

Analysis Period (min) 15

1: Don Reid/Ryder & Walkley PM Peak Hour

FINI FEAK HOUI	•		_	_						١		,
	≯	-		-	-			Т			Ŧ	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	≜ ⊅		<u> </u>	≜1 ≱		ሻ	14		ሻ	4	
Traffic Volume (vph)	27	1405	100	18	1424	70	162	5	70	92	104	50
Future Volume (vph)	27	1405	100	18	1424	70	162	5	70	92	104	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	50.0		0.0	35.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00				1.00	
Frt		0.990			0.993			0.860			0.951	
Flt Protected	0.950			0.950			0.950	0.000		0.950		
Satd. Flow (prot)	1674	3242	0	1674	3291	0	1674	1502	0	1674	1652	0
Flt Permitted	0.129	0272	U	0.127	0201	U	0.594	1002	0	0.708	1002	Ū
Satd. Flow (perm)	227	3242	0	224	3291	0	1045	1502	0	1248	1652	0
Right Turn on Red	221	JZHZ	Yes	224	5231	Yes	1045	1002	Yes	1240	1052	Yes
		12	165		8	165		50	165		22	165
Satd. Flow (RTOR)		50			6 50			50 50				
Link Speed (k/h)											50	
Link Distance (m)		402.0			171.1			100.3			281.0	
Travel Time (s)		28.9	40	10	12.3		•	7.2			20.2	•
Confl. Peds. (#/hr)	1		10	10		1	2					2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	3%	1%	2%	1%	1%	1%	2%	1%	1%	4%
Adj. Flow (vph)	27	1405	100	18	1424	70	162	5	70	92	104	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	1505	0	18	1494	0	162	75	0	92	154	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		5.0			5.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		Cl+Ex	CI+Ex		CI+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s) Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
	0.0			0.0			0.0	28.7		0.0		
Detector 2 Position(m)		28.7			28.7						28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel					• •			• •				_
Detector 2 Extend (s)	_	0.0		_	0.0			0.0		_	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

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1: Don Reid/Ryder & Walkley PM Peak Hour

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0	-		•	▼.	MOT	-	1	I	/	-	▼ 0DT	
ane Group	EBL	EBT	EBR \	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	S
Switch Phase	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Ainimum Initial (s)	10.0	10.0 35.9		10.0	10.0		10.0	10.0		10.0	10.0 36.2	
/inimum Split (s)	35.9			35.9 74.0	35.9 74.0		36.2 36.0	36.2 36.0		36.2 36.0	36.2 36.0	
Total Split (s)	74.0 67.3%	74.0 67.3%		74.0 7.3%	67.3%		30.0	32.7%		32.7%	30.0	
Total Split (%)	68.1	68.1		68.1	68.1		29.8	29.8		29.8	29.8	
<i>l</i> aximum Green (s) ′ellow Time (s)	3.3	3.3			3.3		29.0	29.0		29.0	29.0	
	3.3 2.6	3.3 2.6		3.3 2.6	2.6		3.3 2.9	3.3 2.9		3.3 2.9	3.3 2.9	
All-Red Time (s)												
ost Time Adjust (s)	0.0 5.9	0.0		0.0 5.9	0.0 5.9		0.0 6.2	0.0 6.2		0.0 6.2	0.0 6.2	
otal Lost Time (s)	5.9	5.9		5.9	0.9		0.2	0.2		0.2	0.2	
ead/Lag												
ead-Lag Optimize?	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
/ehicle Extension (s)	3.0	3.0	^	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		-Max	C-Max		None	None		None	None	
Valk Time (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	10	10		5	5		5	5		5	5	
ct Effct Green (s)	76.7	76.7		76.7	76.7		21.2	21.2		21.2	21.2	
ctuated g/C Ratio	0.70	0.70		0.70	0.70		0.19	0.19		0.19	0.19	
/c Ratio	0.17	0.66		0.12	0.65		0.81	0.23		0.38	0.46	
Control Delay	11.0	12.3		8.3	10.6		69.5	16.0		41.4	36.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
otal Delay	11.0	12.3		8.3	10.6		69.5	16.0		41.4	36.4	
.OS	В	B		А	B		E	В		D	D	
Approach Delay		12.2			10.5			52.6			38.3	
Approach LOS		В			В			D		10.0	D	
Queue Length 50th (m)	1.6	78.3		1.1	55.1		30.8	4.1		16.0	23.1	
Queue Length 95th (m)	6.8	127.7	r	m2.0	50.3		48.4	13.8		27.3	37.3	
nternal Link Dist (m)		378.0			147.1			76.3			257.0	
urn Bay Length (m)	40.0			50.0			35.0			30.0		
Base Capacity (vph)	158	2264		156	2297		283	443		338	463	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
pillback 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	0.17	0.66		0.12	0.65		0.57	0.17		0.27	0.33	
ntersection Summary												
vrea Type:	Other											
Cycle Length: 110												
ctuated Cycle Length: 110												
Offset: 20 (18%), Referenced	to phase 2:E	BTL and 6:	WBTL, Start o	of Gree	n							
latural Cycle: 80												
Control Type: Actuated-Coord	inated											
/laximum v/c Ratio: 0.81												
ntersection Signal Delay: 16.0)				tersection LC							
ntersection Capacity Utilization	on 79.2%			IC	U Level of S	ervice D						
nalysis Period (min) 15												

Splits and Phases: 1: Don Reid/Ryder & Walkley



2: 160m W of Conroy & Walkley PM Peak Hour

	-	\mathbf{r}	1	-	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	*	1	`	**	10	7
Traffic Volume (vph)	1582	64 64	36	1447	49	41
Future Volume (vph)	1582	64	36	1447	49	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		20.0	65.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			25.0		30.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97	1.00			0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3252	1483	1642	3316	1658	1483
Flt Permitted			0.136		0.950	
Satd. Flow (perm)	3252	1441	235	3316	1658	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		30				41
Link Speed (k/h)	50			50	50	
Link Distance (m)	171.1			169.1	128.6	
Travel Time (s)	12.3			12.2	9.3	
Confl. Peds. (#/hr)	12.0	5	5	12.2	5.5	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
	4%	2%	3%	2%	2%	2%
Heavy Vehicles (%)						
Adj. Flow (vph)	1582	64	36	1447	49	41
Shared Lane Traffic (%)	1500	0.4	0.0		40	44
Lane Group Flow (vph)	1582	64	36	1447	49	41
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	L NA	Left	L NA	R NA
Median Width(m)	3.5			5.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.1	0.1	0.0	0.1	0.1
	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)						
Detector 1 Size(m)	1.8 Ch Ev	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2	- GIII	1 GIIII	6	8	- Chin
Permitted Phases	2	2	6	U	U	8
Permitted Phases				0	0	
	<u>^</u>					
Switch Phase	2	2	6	6	8	8

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2: 160m W of Conroy & Walkley PM Peak Hour

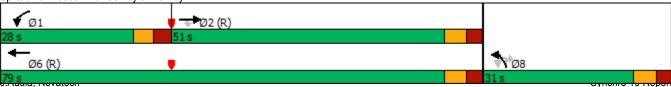
	-	\mathbf{r}	4	+	1	1	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0	
Total Split (s)	81.0	81.0	81.0	81.0	29.0	29.0	
Total Split (%)	73.6%	73.6%	73.6%	73.6%	26.4%	26.4%	
Maximum Green (s)	75.0	75.0	75.0	75.0	23.0	23.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	0.0	0.0	0.0		0.0	0.0	
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	
Walk Time (s)	18.0	18.0	C MON	C	7.0	7.0	
Flash Dont Walk (s)	13.0	13.0			16.0	16.0	
Pedestrian Calls (#/hr)	5	5			5	5	
Act Effct Green (s)	90.6	90.6	90.6	90.6	10.9	10.9	
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.10	0.10	
v/c Ratio	0.02	0.02	0.02	0.53	0.30	0.23	
Control Delay	2.1	0.03	7.7	6.6	48.0	15.0	
Queue Delay	0.0	0.0	0.0	0.0	40.0	0.0	
Total Delay	2.1	0.0	7.7	6.7	48.0	15.0	
LOS	2.1 A	0.7 A	7.7 A	0.7 A	40.0 D	15.0 B	
Approach Delay	2.1	~	~	6.7	32.9	D	
Approach LOS	2.1 A			0.7 A	52.9 C		
Queue Length 50th (m)	14.5	0.2	0.8	58.0	9.4	0.0	
Queue Length 95th (m)	21.3	m0.7	m8.1	111.0	9.4 17.5	8.2	
Internal Link Dist (m)	147.1	110.7	110.1	145.1	104.6	0.2	
	147.1	20.0	65.0	140.1	30.0		
Turn Bay Length (m)	2679	20.0 1192	65.0 193	2731	30.0 346	338	
Base Capacity (vph)							
Starvation Cap Reductn	86	0	0	333	0	0	
Spillback Cap Reductn	73	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.61	0.05	0.19	0.60	0.14	0.12	
Intersection Summary							
Area Type:	Other						
Cycle Length: 110							
Actuated Cycle Length: 110							
Offset: 25 (23%), Referenced	to phase 2.E	BT and 6.	VBTI Sta	rt of Greer	1		
Natural Cycle: 70			1012, 010		•		
Control Type: Actuated-Coord	linated						
Maximum v/c Ratio: 0.59							
Intersection Signal Delay: 5.1				In	tersection	LOS: A	
Intersection Capacity Utilization	n 60.8%				CU Level of		3
Analysis Period (min) 15	00.070						'
m Volume for 95th percentil	e allelle is m	atered by u	instream s	ional			
				igriai.			
Splits and Phases: 2: 160m	W of Conroy	& Walkley	/				
🗢 Ø2 (R)							
81 s							



	-	\mathbf{r}	1	-	₹I	•	1
Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	^	7	<u>ካ</u> ካ	<u>**</u>	100	ሻሻ	7
Traffic Volume (vph)	1171	452	510	990	42	461	313
Future Volume (vph)	1171	452	510	990	42	461	313
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		1	200.0			2	1
Taper Length (m)			50.0			10.0	•
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor	0.00	0.96	0.99	0.00	0.00	0.01	0.97
Frt		0.850	0.00				0.850
Flt Protected		0.000	0.950			0.950	0.000
Satd. Flow (prot)	3221	1483	3185	3349	0	3248	1469
Flt Permitted	JZZ I	1-00	0.950	00-10	U	0.950	1-03
Satd. Flow (perm)	3221	1430	3160	3349	0	3248	1418
Right Turn on Red	JZZI	Yes	5100	0049	0	5240	Yes
Satd. Flow (RTOR)		452					313
Link Speed (k/h)	50	402		50		60	515
Link Distance (m)	169.1			271.7		348.5	
	109.1			19.6		348.5 20.9	
Travel Time (s)	12.2	22	22	19.0		20.9	16
Confl. Peds. (#/hr) Confl. Bikes (#/hr)		1	22				10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
				1.00	1.00	1.00	
Heavy Vehicles (%)	5%	2%	3%				3%
Adj. Flow (vph)	1171	452	510	990	42	461	313
Shared Lane Traffic (%)	4474	450	F40	000	^	500	040
Lane Group Flow (vph)	1171	452 No	510	990	0	503	313
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	LNA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex	Cl+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7			
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			CI+Ex			
Detector 2 Channel	5/						
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases	<u></u>	2		0	8	0	8
Detector Phase	2	2	1	6	8	8	8

J.Audia, Novatech

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	51.0	51.0	28.0	79.0	31.0	31.0	31.0
Total Split (%)	46.4%	46.4%	25.5%	71.8%	28.2%	28.2%	28.2%
Maximum Green (s)	44.6	44.6	21.8	72.6	24.6	24.6	24.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	•••		•••	•
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0	110110	0 max	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	20.0	20.0			17.0	17.0	17.0
Act Effct Green (s)	48.3	48.3	20.9	75.5	10	21.7	21.7
Actuated g/C Ratio	0.44	0.44	0.19	0.69		0.20	0.20
v/c Ratio	0.44	0.44	0.19	0.09		0.20	0.20
Control Delay	30.7	6.2	56.4	8.7		50.9	9.0
Queue Delay	0.0	0.2	0.0	0.0		0.0	0.0
Total Delay	30.7	6.2	0.0 56.4	8.7		50.9	9.0
LOS	30.7 C	0.2 A	50.4 E	0.7 A		50.9 D	9.0 A
Approach Delay	23.9	A	Ē	25.0		34.9	A
Approach LOS	23.9 C			25.0 C		54.9 C	
Queue Length 50th (m)	66.8	0.2	49.4	42.6		48.4	0.0
Queue Length 95th (m)	#134.1	31.5	49.4 #71.2	42.0 56.8		40.4 63.7	21.0
Internal Link Dist (m)	#134.1 145.1	51.5	#11.Z	247.7		324.5	21.0
	145.1	75.0	200.0	241.1		524.5	
Turn Bay Length (m)	1 1 1 1	75.0 881		2007		706	560
Base Capacity (vph)	1414		637	2297		726	
Starvation Cap Reductn	2	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.83	0.51	0.80	0.43		0.69	0.56
Intersection Summary	0.41						
Area Type:	Other						
Cycle Length: 110							
Actuated Cycle Length: 110							
Offset: 20 (18%), Referenced	to phase 2:E	BT and 6:V	VBT, Start	of Green			
Natural Cycle: 85							
Control Type: Actuated-Coord	inated						
Maximum v/c Ratio: 0.84							
Intersection Signal Delay: 26.6	5			In	tersection	LOS: C	
Intersection Capacity Utilizatio	n 82.5%			IC	CU Level of	f Service E	
Analysis Period (min) 15							
# 95th percentile volume exc	ceeds capaci	ty, queue n	nay be lon	ger.			
Queue shown is maximum			•	-			
Splits and Phases: 3: Conro	w & Walklow						
Splits and Phases. 3: Conro	y & Walkley						



4: Conroy & St. Laurent PM Peak Hour

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Lane Group	EBL	EBT	EBR	• WBL	WBT	WBR	NBL	NBT	NBR	SBL	• SBT	SBR
Lane Configurations	<u> </u>	<u></u>	7	<u></u>		7	THE T	*††	NUN		1001 1001	
Traffic Volume (vph)	41	77	316	232	34	102	40	567	81	37	1058	13
Future Volume (vph)	41	77	316	232	34	102	40	567	81	37	1058	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0	1000	50.0	55.0	1000	55.0	0.0	1000	0.0	110.0	1000	0.0
Storage Lanes	-0.0		1	1		1	0.0		0.0	1		0.0
Taper Length (m)	40.0		1	40.0		1	10.0		U	25.0		U
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.99	0.31	0.99	1.00	0.55
Frt	1.00		0.850	1.00		0.850	1.00	0.981		0.33	0.998	
Flt Protected	0.950		0.000	0.950		0.000	0.950	0.301		0.950	0.330	
Satd. Flow (prot)	1674	1728	1483	1642	1618	1483	1642	4612	0	1537	3303	0
Flt Permitted	0.735	1720	1405	0.555	1010	1405	0.174	4012	0	0.385	5505	U
Satd. Flow (perm)	1293	1728	1461	957	1618	1463	300	4612	0	617	3303	٥
Right Turn on Red	1293	1720	Yes	907	1010	Yes	300	4012	Yes	017	3303	0 Yes
Satd. Flow (RTOR)			123			88		29	res		1	res
		50	123		50	00					-	
Link Speed (k/h)					50			60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)	0	14.2	4	4	19.6	0	0	22.4	40	40	20.9	0
Confl. Peds. (#/hr)	2		4	4		2	8		12	12		8
Confl. Bikes (#/hr)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4	4.00	4.00	11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	2%	3%	10%	2%	3%	2%	8%	10%	2%	12%
Adj. Flow (vph) Shared Lane Traffic (%)	41	77	316	232	34	102	40	567	81	37	1058	13
Lane Group Flow (vph)	41	77	316	232	34	102	40	648	0	37	1071	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		3.5			3.5			7.0			6.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4	т	4	8	- 0	8	2	2		6	0	
Detector Phase	4	4	4	3	8	8	2	2		6	6	
	4	4	4	- 0	0	0	2	2		0	0	

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ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SE
witch Phase												
finimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
linimum Split (s)	43.9	43.9	43.9	11.3	43.9	43.9	30.3	30.3		30.3	30.3	
otal Split (s)	44.0	44.0	44.0	15.0	59.0	59.0	36.0	36.0		36.0	36.0	
otal Split (%)	46.3%	46.3%	46.3%	15.8%	62.1%	62.1%	37.9%	37.9%		37.9%	37.9%	
laximum Green (s)	37.1	37.1	37.1	9.3	52.1	52.1	29.7	29.7		29.7	29.7	
ellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
II-Red Time (s)	3.6	3.6	3.6	2.4	3.6	3.6	2.6	2.6		2.6	2.6	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Lost Time (s)	6.9	6.9	6.9	5.7	6.9	6.9	6.3	6.3		6.3	6.3	
ead/Lag	Lag	Lag	Lag	Lead								
ead-Lag Optimize?	Yes	Yes	Yes	Yes								
ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
ecall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
/alk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
lash Dont Walk (s)	30.0	30.0	30.0		30.0	30.0	17.0	17.0		17.0	17.0	
edestrian Calls (#/hr)	5	5	5		5	5	10	10		10	10	
ct Effct Green (s)	20.8	20.8	20.8	37.0	35.8	35.8	46.0	46.0		46.0	46.0	
ctuated g/C Ratio	0.22	0.22	0.22	0.39	0.38	0.38	0.48	0.48		0.48	0.48	
c Ratio	0.22	0.20	0.22	0.53	0.06	0.17	0.28	0.40		0.40	0.40	
ontrol Delay	26.5	27.9	31.4	23.6	15.3	4.7	27.0	16.3		19.8	24.1	
ueue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Delay	26.5	27.9	31.4	23.6	15.3	4.7	27.0	16.3		19.8	24.1	
OS	20.5 C	27.9 C	51.4 C	23.0 C	15.5 B	4.7 A	27.0 C	10.3 B		19.0 B	24.1 C	
pproach Delay	U	30.3	U	U	17.6	A	U	16.9		D	24.0	
pproach LOS		50.5 C			В			10.9 B			24.0 C	
Queue Length 50th (m)	5.8	11.0	31.8	28.4	3.7	1.5	3.7	20.8		3.1	66.5	
Queue Length 95th (m)	10.4	16.5	45.0	30.7	6.4	7.4	15.8	40.0		12.0	#139.4	
iternal Link Dist (m)	10.4	173.7	45.0	30.7	247.8	1.4	15.0	348.7		12.0	#139.4 324.5	
	45.0	1/3./	50.0	55.0	247.0	55.0		340.7		110.0	324.3	
urn Bay Length (m)	45.0 504	674	50.0 645		887	55.0 842	145	2246		298	1598	
ase Capacity (vph)				440								
tarvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
pillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
torage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
educed v/c Ratio	0.08	0.11	0.49	0.53	0.04	0.12	0.28	0.29		0.12	0.67	
tersection Summary	0.11											
rea Type:	Other											
ycle Length: 95												
ctuated Cycle Length: 95				10								
offset: 2 (2%), Referenced to	phase 2:NBI	L and 6:S	BIL, Start	of Green								
atural Cycle: 90												
ontrol Type: Actuated-Coord	dinated											
laximum v/c Ratio: 0.76	•											
tersection Signal Delay: 22.					tersection							
tersection Capacity Utilization	on 82.9%			IC	CU Level of	Service E						
nalysis Period (min) 15												
95th percentile volume ex			may be lon	ger.								
Queue shown is maximum	a offer two eve											

Splits and Phases: 4: Conroy & St. Laurent

Ø2 (R)	√ Ø3	₩Ø4
36 s	15 s	44 s
₩ Ø6 (R)	Ø8	
36 s	59 s	

5: Don Reid & St. Laurent PM Peak Hour

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		ef -			ا
Traffic Volume (vph)	23	56	107	76	151	51
Future Volume (vph)	23	56	107	76	151	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904		0.944			
Flt Protected	0.986					0.964
Satd. Flow (prot)	1481	0	1641	0	0	1588
Flt Permitted	0.986					0.964
Satd. Flow (perm)	1481	0	1641	0	0	1588
Link Speed (k/h)	50		50			50
Link Distance (m)	137.6		234.0			146.3
Travel Time (s)	9.9		16.8			10.5
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)		1		4		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	8%	2%	3%	4%	20%
Adj. Flow (vph)	23	56	107	76	151	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	183	0	0	202
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		10.0			10.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 37.7%			IC	U Level of	Service A
Analysia Dariad (min) 15						

Analysis Period (min) 15

1: Don Reid/Ryder & Walkley AM Peak Hour

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	-	-+	*	•			7		7	-	*	-
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u></u>	<u>†</u> 1-	101	<u> </u>	<u></u>	405	<u></u>	- 1 -	-0	<u></u>	1 -	
Traffic Volume (vph)	29	1125	164	41	1531	195	78	7	53	49	47	39
Future Volume (vph)	29	1125	164	41	1531	195	78	7	53	49	47	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	50.0		0.0	35.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00		1.00	0.99			0.99	
Frt		0.981			0.983			0.867			0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	3190	0	1642	3172	0	1580	1378	0	1674	1633	0
Flt Permitted	0.101			0.188			0.701			0.718		
Satd. Flow (perm)	163	3190	0	325	3172	0	1165	1378	0	1265	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			23			53			31	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		402.0			171.1			100.3			281.0	
Travel Time (s)		28.9			12.3			7.2			20.2	
Confl. Peds. (#/hr)	1		5	5		1	1					1
Confl. Bikes (#/hr)									1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	4%	1%	3%	5%	1%	7%	1%	12%	1%	1%	1%
Adj. Flow (vph)	29	1125	164	41	1531	195	78	7	53	49	47	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	1289	0	41	1726	0	78	60	0	49	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		5.0			5.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane		0.0			0.0			0.0			0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	1.00	14	24	1.00	14	24	1.00	14	24	1.00	14
Number of Detectors	1	2	17	1	2	17	1	2	17	1	2	17
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel										OI+LX		
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
					1.8							
Detector 2 Size(m)		1.8 CLIEX						1.8 CLIEX			1.8 CLIEX	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		<u>^</u>			0.0			0.0			0.0	
Detector 2 Extend (s)	5	0.0		C	0.0		_	0.0		2	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	_
Protected Phases	_	2		_	6		_	8			4	
Dormittad Dhagoo	2			6			8			4		
Permitted Phases Detector Phase	2	2		6	6		8	8		4	4	_

J.Audia, Novatech

1: Don Reid/Ryder & Walkley AM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Vinimum Split (s)	35.9	35.9		35.9	35.9		36.2	36.2		36.2	36.2	
Fotal Split (s)	64.0	64.0		64.0	64.0		36.0	36.0		36.0	36.0	
Total Split (%)	64.0%	64.0%		64.0%	64.0%		36.0%	36.0%		36.0%	36.0%	
Maximum Green (s)	58.1	58.1		58.1	58.1		29.8	29.8		29.8	29.8	
ellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6		2.6	2.6		2.9	2.9		2.9	2.9	
.ost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.9	5.9		5.9	5.9		6.2	6.2		6.2	6.2	
.ead/Lag										•		
.ead-Lag Optimize?												
/ehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Valk Time (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	5	5		5	5		5	5		5	5	
Act Effct Green (s)	77.1	77.1		77.1	77.1		15.2	15.2		15.2	15.2	
Actuated g/C Ratio	0.77	0.77		0.77	0.77		0.15	0.15		0.15	0.15	
/c Ratio	0.23	0.52		0.16	0.70		0.44	0.24		0.26	0.31	
Control Delay	13.4	7.8		6.0	6.8		44.0	12.8		37.6	25.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.4	7.8		6.0	6.8		44.0	12.8		37.6	25.9	
.OS	B	A		A	A		D	12.0 B		D	20.0 C	
Approach Delay	<u> </u>	7.9		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	6.8		Ľ	30.4		U	30.2	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	1.3	39.0		1.1	28.4		13.3	1.1		8.1	9.1	
Queue Length 95th (m)	9.5	99.2		m2.6	#191.1		21.3	9.1		14.5	17.5	
nternal Link Dist (m)	0.0	378.0		1112.0	147.1		21.0	76.3		11.0	257.0	
Furn Bay Length (m)	40.0	010.0		50.0	177.1		35.0	10.0		30.0	201.0	
Base Capacity (vph)	125	2464		250	2450		347	447		376	508	
Starvation Cap Reductn	0	0		0	2400		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	0.23	0.52		0.16	0.71		0.22	0.13		0.13	0.17	
ntersection Summary												
Area Type:	Other											
Cycle Length: 100	Other											
Actuated Cycle Length: 100												
Offset: 94 (94%), Referenced	to phase 2.E	BTL and 6		art of Gree	n							
latural Cycle: 90		DIL anu U.	VDTL, 36		511							
Control Type: Actuated-Coor	dinated											
Actuated-Cool Aaximum v/c Ratio: 0.70												
ntersection Signal Delay: 9.2)			In	Itersection I	0S: V						
ntersection Capacity Utilizati					CU Level of							
nalysis Period (min) 15	01172.0%			IC	O Level Of	Service C						
	vooode oonooi	ty anone ~	av ho lon	aer								
95th percentile volume ex Queue shown is maximum			ay be ion	yeı.								
- UTHER STOWN IS MAXIMUN	n aller two cyc	162.										

Splits and Phases: 1: Don Reid/Ryder & Walkley

ø₂ (R)	Ø4
64 s	36 s
🗸 🖉 Ø6 (R)	▲ ¶ _{Ø8}
64 s	36 s

2: 160m W of Conroy & Walkley AM Peak Hour

Fit Protected 0.950 0.950 Satd. Flow (prot) 3221 1498 1674 3191 1674 1483 Fit Permitted 0.231 0.950 0.950 0.950 0.950 0.950 Satd. Flow (perm) 3221 1459 407 3191 1674 1462 Right Turn on Red Yes Yes 60 100		-	\mathbf{i}	1	-	1	1
Lane Configurations Image: Configurations <	Lane Group	EDT	EDD			NDI	NPD
Traffic Volume (vph) 1147 90 74 1719 66 60 Future Volume (vph) 1147 90 74 1719 66 60 Gleal Flow (vphpl) 1800 1801 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
Future Volume (vph) 1147 90 74 1719 66 60 Ideal Flow (vphpl) 1800 180				-			
Ideal Flow (vphp) 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 100 0.0							
Storage Length (m) 20.0 65.0 30.0 0.0 Storage Lanes 1 1 1 1 1 1 Taper Length (m) 25.0 30.0 .00 .00 .00 .00 Lane Util. Factor 0.95 1.00 1.00 0.95 1.00 1.00 Ped Bike Factor 0.97 1.00 0.950 .0850 .0950 Stot Flow (port) 3221 1498 1674 3191 1674 1462 Satd. Flow (perm) 3221 1459 407 3191 1674 1462 Right Tum on Red Yes Yes Yes .0050							
Storage Lanes 1 1 1 1 1 1 Taper Length (m) 25.0 30.0 1.00 1.00 1.00 1.00 Ped Bike Factor 0.95 1.00 0.95 1.00 0.995 Fit Protected 0.950 0.950 0.850 0.850 Statk Flow (port) 3221 1498 1674 3191 1674 1462 Right Turn on Red Yes Yes Yes Yes Yes Statk Flow (RTOR) 50 50 50 50 50 1.00 </td <td></td> <td>1800</td> <td></td> <td></td> <td>1800</td> <td></td> <td></td>		1800			1800		
Taper Length (m) 25.0 30.0 Lane Ulii, Factor 0.95 1.00 1.00 0.95 1.00 1.00 Ped Bike Factor 0.97 1.00 0.95 1.00 0.99 Fit Protected 0.950 0.950 0.950 0.850 Satd. Flow (port) 3221 1498 1674 3191 1674 1483 Fit Permitted 0.231 0.950 0.950 0.950 0.950 Satd. Flow (perm) 3221 1459 407 3191 1674 1462 Right Turn on Red Yes Yes Yes Yes Yes Yes Satd. Flow (perm) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#hn) 4 4 2% Adi, Flow (vph) 1147 90 74 1719 66 60 Shared Lane Traffic (%) 1147 90 74 1719 66 60 Charea Maignment Left Right LNA<							
Lane Util, Factor 0.95 1.00 1.00 0.95 1.00 1.00 Ped Bike Factor 0.97 1.00 0.99 0.850 0.850 Fit Protected 0.950 0.950 0.950 0.850 Satt. Flow (port) 3221 1498 1674 3191 1674 1483 Fit Permitted 0.231 0.950 Satt. Flow (port) 3221 1459 407 3191 1674 1483 Satt. Flow (perm) 3221 1459 407 3191 1674 1482 Right Turn on Red Yes Yes Yes Yes Satt. Flow (RTOR) 50 50 50 1ink Distance (m) 171.1 169.1 12.8.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#hr) 4 4 2 2% Adj. Flow (vph) 1147 90 74 1719 66 60 Enter Blocked Intersection No No No No No No No No			1			-	1
Ped Bike Factor 0.97 1.00 0.890 Frt 0.850 0.950 0.850 Fit Protected 0.950 0.950 0.850 Satd. Flow (port) 3221 1498 1674 3191 1674 1448 Satd. Flow (perm) 3221 1459 407 3191 1674 1462 Right Turn on Red Yes Yes Yes 60 1111 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 100 1.00					_		
Frt 0.850 0.850 0.850 FIP Protected 0.950 0.950 0.950 Satd. Flow (prot) 3221 1498 1674 3191 1674 1483 FIP Permitted 0.231 0.950 0.950 0.950 0.950 Satd. Flow (perm) 3221 1459 407 3191 1674 1462 Right Turn on Red Yes Yes Yes Yes 60 Link Speed (k/h) 50 50 50 50 50 Confl. Peds, (#/hr) 4 4 2 9.3 Confl. Peds, (#/hr) 4 4 2% Adi, Flow (vph) 1147 90 74 1719 66 60 Shared Lane Traffic (%) 1147 90 74 1719 66 60 Enter Blocked Intersection No No No No No No Lane Alignment Left Right LNA RNA NA Median Width(m) <td></td> <td>0.95</td> <td></td> <td></td> <td>0.95</td> <td>1.00</td> <td></td>		0.95			0.95	1.00	
Fit Protected 0.950 0.950 Satd. Flow (prot) 3221 1498 1674 3191 1674 1483 Fit Permitted 0.231 0.950 0.950 0.950 Satd. Flow (perm) 3221 1459 407 3191 1674 1462 Right Turn on Red Yes Yes Yes Yes Satd. Flow (RTOR) 50 50 50 Link Distance (m) 171.1 169.1 122.6 9.3 Confl. Peds. (#hr) 4 4 2 Peak Hour Factor 1.00				1.00			
Satd. Flow (prot) 3221 1498 1674 3191 1674 1483 FI Permitted 0.231 0.950 Satd. Flow (perm) 3221 1459 407 3191 1674 1483 Satd. Flow (RTOR) 59 60 Yes Yes Satd. Flow (RTOR) 50 50 50 160 Link Speed (k/h) 50 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 4 4 2 Peak Hour Factor 1.00	Frt		0.850				0.850
Fit Permitted 0.231 0.950 Satd. Flow (perm) 3221 1459 407 3191 1674 1462 Right Turn on Red Yes Satd. Flow (RTOR) 59 60 Link Speed (k/h) 50 50 50 50 Confl. Peds. (#hr) 4 4 2 Peak Hour Factor 1.00	Flt Protected						
Satd. Flow (perm) 3221 1459 407 3191 1674 1462 Right Turn on Red Yes 59 60 100 1147 90 74 1719 66 60	Satd. Flow (prot)	3221	1498		3191		1483
Right Turn on Red Yes Yes Yes Satd. Flow (RTOR) 59 60 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 4 4 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 66 60 Shared Lane Traffic (%) 1147 90 74 1719 66 60 Shared Lane Traffic (%) 1147 90 74 1719 66 60 Enter Blocked Intersection No No No No No No Lane Alignment Left Right L NA Left L NA NA Median Width(m) 3.5 5.0 3.5 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09	Flt Permitted						
Right Turn on Red Yes Yes Yes Satd. Flow (RTOR) 59 60 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 4 4 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 66 60 Shared Lane Traffic (%) Lane Group Flow (vph) 1147 90 74 1719 66 60 Enter Blocked Intersection No No No No No No Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 5.0 Twr way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14	Satd. Flow (perm)	3221	1459	407	3191	1674	
Satd. Flow (RTOR) 59 60 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 4 4 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 1147 90 74 1719 66 60 Enter Blocked Intersection No No No No No No No Link Offset(m) 0.0 0.0 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 3.5 110 1.09<	Right Turn on Red		Yes				Yes
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Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 4 4 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 1147 90 74 1719 66 60 Shared Lane Traffic (%) Lane Group Flow (vph) 1147 90 74 1719 66 60 Enter Blocked Intersection No No No No No No No No Lane Alignment Left Right L NA Left LNA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Conto		50			50	50	
Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 4 4 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 1147 90 74 1719 66 60 Shared Lane Traffic (%) No							
Confl. Peds. (#/hr) 4 4 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 1147 90 74 1719 66 60 Shared Lane Traffic (%) Lane Group Flow (vph) 1147 90 74 1719 66 60 Enter Blocked Intersection No Sizee (Mithighighighighighighighighighighighighigh							
Peak Hour Factor 1.00 <th1.00< th=""> 1.00 1.00</th1.00<>		12.5	1	1	12.2	3.0	2
Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 1147 90 74 1719 66 60 Shared Lane Traffic (%) 66 60 Eane Group Flow (vph) 1147 90 74 1719 66 60 Enter Blocked Intersection No So 5.0 5.0 5.0 5.0 5.0 Trains grading trainagrading		1 00			1 00	1.00	
Adj. Flow (vph) 1147 90 74 1719 66 60 Shared Lane Traffic (%) 1147 90 74 1719 66 60 Enter Blocked Intersection No Si Si<							
Shared Lane Traffic (%) 1147 90 74 1719 66 60 Enter Blocked Intersection No No No No No No No Lane Alignment Left Right L NA Left L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Tomo way Left Turn Lane Headway Factor 1.09							
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Enter Blocked Intersection No No No No No No No No Lane Alignment Left Right L NA Left L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 Two way Left Turn Lane							
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Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Size(m) 1.8 6.1 6.1 6.1 6.1 6.1 Detector 1 Channel	Median Width(m)						
Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 6.1 Trailing Detector (m) 0.0	Link Offset(m)						
Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel Detector 1 Channel	Crosswalk Width(m)	5.0			5.0	5.0	
Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel Detector 1 Channel Use CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 2 Position(m) 28.7 28.7 Detector 2 Position(m) 28.7 28.7 Detector 2 Cl+Ex Detector 2 Cl+Ex <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
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Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type CI+Ex Detector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Ci+Ex Detector 2 Detector 2 Size(m) 1.8 1.8							
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Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type CI+Ex Detector 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector Detector 2 Size(m) 1.8 1.8 1.8 Detector 2 Channel Detector 2 Channel							-
Trailing Detector (m) 0.0							
Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type CI+Ex							
Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1	3 ()						
Detector 1 Type CI+Ex O.0 0.0							
Detector 1 Channel Detector 1 Extend (s) 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Delay (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Position(m) 28.7							
Detector 1 Extend (s) 0.0		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Queue (s) 0.0							
Detector 1 Delay (s) 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 20 <th20< th=""> 20 <th20< th=""></th20<></th20<>	Detector 1 Extend (s)						
Detector 1 Delay (s) 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 20 <th20< th=""> 20 <th20< th=""></th20<></th20<>	Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m) 28.7 28.7 Detector 2 Size(m) 1.8 1.8 Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type NA Perm NA Prot Perm Protected Phases 2 6 8 8 Detector Phase 2 6 6 8	Detector 1 Delay (s)						
Detector 2 Size(m) 1.8 1.8 Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type NA Perm Perm Protected Phases 2 6 8 Permitted Phases 2 6 6 8							
Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type NA Perm NA Prot Perm Protected Phases 2 6 8 8 Detector Phase 2 6 6 8 8							
Detector 2 ChannelDetector 2 Extend (s)0.00.0Turn TypeNAPermNAProtProtected Phases268Permitted Phases268Detector Phase2268							
Detector 2 Extend (s)0.00.0Turn TypeNAPermPermNAProtPermProtected Phases268Permitted Phases268Detector Phase2268							
Turn TypeNAPermPermNAProtPermProtected Phases268Permitted Phases268Detector Phase2268		0.0			0.0		
Protected Phases268Permitted Phases268Detector Phase22668			Dorm	Dorm		Drot	Dorm
Permitted Phases268Detector Phase22668			Perm	Perm			Perm
Detector Phase 2 2 6 6 8 8		2	^	^	б	ŏ	•
						_	
Switch Phase		2	2	6	6	8	8
	Switch Phase						

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2: 160m W of Conroy & Walkley AM Peak Hour

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0
Total Split (s)	71.0	71.0	71.0	71.0	29.0	29.0
Total Split (%)	71.0%	71.0%	71.0%	71.0%	29.0%	29.0%
Maximum Green (s)	65.0	65.0	65.0	65.0	29.0%	29.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
	0.0 6.0	0.0 6.0	0.0 6.0	0.0 6.0	0.0 6.0	0.0 6.0
Total Lost Time (s) Lead/Lag	0.0	0.0	0.0	0.0	0.0	0.0
Lead-Lag Optimize?	2.0	2.0	2.0	2.0	2.0	2.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	18.0	18.0			7.0	7.0
Flash Dont Walk (s)	13.0	13.0			16.0	16.0
Pedestrian Calls (#/hr)	5	5			5	5
Act Effct Green (s)	80.2	80.2	80.2	80.2	11.3	11.3
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.11	0.11
v/c Ratio	0.44	0.08	0.23	0.67	0.35	0.28
Control Delay	3.0	1.0	6.9	8.5	43.6	12.5
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0
Total Delay	3.0	1.0	6.9	9.0	43.6	12.5
LOS	А	А	А	А	D	В
Approach Delay	2.9			8.9	28.8	
Approach LOS	A			A	C	
Queue Length 50th (m)	18.3	0.3	2.7	58.5	11.3	0.0
Queue Length 95th (m)	23.7	1.1	12.5	142.2	19.6	8.9
Internal Link Dist (m)	147.1	1.1	12.0	145.1	104.6	0.0
Turn Bay Length (m)	17/.1	20.0	65.0	170.1	30.0	
Base Capacity (vph)	2583	1182	326	2560	30.0	382
Starvation Cap Reductn	2503 0	0	326 0	406	365 0	302 0
Spillback Cap Reductn	0	0	0	70	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.08	0.23	0.80	0.17	0.16
Intersection Summary						
	Other					
Cycle Length: 100	Other					
Actuated Cycle Length: 100	o phose 0/E	DT and Cit		rt of Cross		
Offset: 88 (88%), Referenced t	o pnase 2:E	BI and 6:1	WBIL, Sta	n of Green		
Natural Cycle: 80						
Control Type: Actuated-Coordi	nated					
Maximum v/c Ratio: 0.67						
Intersection Signal Delay: 7.4					tersection	
Intersection Capacity Utilization	n 65.3%			IC	U Level of	Service C
Analysis Period (min) 15						
Splits and Phases: 2: 160m	W of Conroy	& Walkley	/			
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↓						
🕨 🔻 Ø6 (R)						
71s						

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	^	7	ኘካ	^		ኘካ	7
Traffic Volume (vph)	987	280	257	1091	14	717	484
Future Volume (vph)	987	280	257	1091	14	717	484
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		1	2			2	1
Taper Length (m)		•	50.0			10.0	•
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor	0.00	0.98	0.99	0.00	0.00	0.01	0.98
Frt		0.850	0.00				0.850
Flt Protected			0.950			0.950	
Satd. Flow (prot)	3161	1455	3066	3161	0	3186	1455
Flt Permitted	0101	1100	0.950	0101		0.950	1100
Satd. Flow (perm)	3161	1419	3050	3161	0	3186	1430
Right Turn on Red	0101	Yes	0000	0.01	U	0100	Yes
Satd. Flow (RTOR)		280					332
Link Speed (k/h)	50	200		50		60	002
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2			19.6		20.9	
Confl. Peds. (#/hr)	12.2	10	10	19.0		20.9	3
Confl. Bikes (#/hr)		10	10				3 1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	7%	4%	1.00 7%	1.00 7%	2%	3%	4%
Heavy Vehicles (%)					2% 14		
Adj. Flow (vph)	987	280	257	1091	14	717	484
Shared Lane Traffic (%)	987	280	257	1001	0	704	484
Lane Group Flow (vph)				1091	0	731	
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	L NA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7			
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			CI+Ex			
Detector 2 Channel	J. <u>_</u> ,						
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases	2	2		0	8	0	8
Detector Phase	2	2	1	6	8	8	8
	2	2		0	0	0	0

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	55.0	55.0	25.0	80.0	40.0	40.0	40.0
Total Split (%)	45.8%	45.8%	20.8%	66.7%	33.3%	33.3%	33.3%
Maximum Green (s)	48.6	48.6	18.8	73.6	33.6	33.6	33.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	2.1	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	- U.7		U.7	7.0
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0	NONE		7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	20.0	10			5	5	5
Act Effct Green (s)	54.1	54.1	15.1	75.4	5	31.8	31.8
Actuated g/C Ratio	0.45	0.45	0.13	0.63		0.26	0.26
v/c Ratio	0.45	0.45	0.13	0.65		0.26	0.26
Control Delay	30.5	3.9	58.4	14.3		53.7	21.7
Queue Delay	0.3	0.0	0.0	0.0		0.0	0.0
	0.3 30.9	0.0 3.9	0.0 58.4	14.3		0.0 53.7	21.7
Total Delay LOS		3.9 A					
	C 24.9	A	E	B 22.7		D 40.9	С
Approach Delay	24.9 C			22.7 C		40.9 D	
Approach LOS		0.0	07.7	68.9			30.1
Queue Length 50th (m)	90.9	0.0	27.7			76.4	
Queue Length 95th (m)	119.8	14.9	39.0	85.5		97.6	70.5
Internal Link Dist (m)	145.1	75.0	000.0	247.7		324.5	
Turn Bay Length (m)	1101	75.0	200.0	4000		000	000
Base Capacity (vph)	1424	793	480	1986		892	639
Starvation Cap Reductn	95	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.74	0.35	0.54	0.55		0.82	0.76
Intersection Summary Area Type:	Other						
	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 43 (36%), Referenced	a to phase 2:E	BI and 6:V	VBI, Star	of Green			
Natural Cycle: 85	dia ata d						
Control Type: Actuated-Coord	ainated						
Maximum v/c Ratio: 0.87	0						
Intersection Signal Delay: 29.					tersection		
Intersection Capacity Utilizati	on /4.4%			IC	CU Level of	Service D)
Analysis Period (min) 15							

Splits and Phases: 3: Conroy & Walkley



4: Conroy & St. Laurent AM Peak Hour

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Lane Group	EBL	EBT	EBR	• WBL	WBT	WBR	NBL	NBT	• NBR	SBL	• SBT	SBR
Lane Configurations	<u> </u>	<u> </u>	7	<u> </u>	<u> </u>	7	5	† †Ъ	NDIX	<u> </u>	†	ODIX
Traffic Volume (vph)	6	65	81	63	43	25	192	1246	199	87	389	53
Future Volume (vph)	6	65	81	63	43	25	192	1246	199	87	389	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0	1000	50.0	55.0	1000	55.0	0.0	1000	0.0	110.0	1000	0.0
Storage Lanes	-0.0		1	1		1	1		0.0	1		0.0
Taper Length (m)	40.0			40.0			10.0		U	25.0		0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00	0.98	0.99	1.00	0.98	0.98	0.99	0.01	1.00	0.99	0.00
Frt	1.00		0.850	0.00		0.850	0.00	0.979		1.00	0.982	
Flt Protected	0.950		0.000	0.950		0.000	0.950	0.010		0.950	0.002	
Satd. Flow (prot)	1353	1695	1427	1409	1589	1351	1642	4624	0	1674	3172	0
Flt Permitted	0.729	1000	1721	0.715	1000	1001	0.496	7027	U	0.154	0172	U
Satd. Flow (perm)	1033	1695	1395	1050	1589	1328	844	4624	0	270	3172	0
Right Turn on Red	1000	1035	Yes	1000	1009	Yes	044	4024	Yes	210	5172	Yes
Satd. Flow (RTOR)			81			36		43	103		21	163
Link Speed (k/h)		50	01		50	50		40 60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)		14.2			19.6			22.4			20.9	
Confl. Peds. (#/hr)	6	14.2	13	13	19.0	6	14	22.4	21	21	20.9	14
Confl. Bikes (#/hr)	0		13	13		0	14		21	21		25
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	25%	5%	6%	20%	1.00	1.00	3%	2%	2%	1.00	4%	3%
Heavy Vehicles (%)		5% 65	81	20% 63	43			1246		87		53
Adj. Flow (vph) Shared Lane Traffic (%)	6					25	192		199		389	
Lane Group Flow (vph)	6	65	81	63	43	25	192	1445	0	87	442	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		3.5			3.5			7.0			6.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8	Ū	8	2	-		6	Ū	
Detector Phase	4	4	4	8	8	8	2	2		6	6	
		т	T	0	0	0	2	2		0	0	

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	A Peak Hour 2029 Background													
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_ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	S		
Switch Phase														
linimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0			
linimum Split (s)	43.9	43.9	43.9	43.9	43.9	43.9	30.3	30.3		30.3	30.3			
otal Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	56.0	56.0		56.0	56.0			
otal Split (%)	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	56.0%	56.0%		56.0%	56.0%			
laximum Green (s)	37.1	37.1	37.1	37.1	37.1	37.1	49.7	49.7		49.7	49.7			
ellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7			
II-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.6	2.6		2.6	2.6			
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			
otal Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	6.3	6.3		6.3	6.3			
ead/Lag														
ead-Lag Optimize?														
ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0			
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max			
Valk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0			
lash Dont Walk (s)	30.0	30.0	30.0	30.0	30.0	30.0	17.0	17.0		17.0	17.0			
edestrian Calls (#/hr)	15	15	15	10	10	10	20	20		15	15			
ct Effct Green (s)	21.1	21.1	21.1	21.1	21.1	21.1	70.4	70.4		70.4	70.4			
ctuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.70	0.70		0.70	0.70			
/c Ratio	0.03	0.18	0.23	0.29	0.13	0.08	0.32	0.44		0.46	0.20			
Control Delay	23.2	28.4	6.8	31.8	27.4	5.2	13.1	10.6		26.2	8.7			
lueue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			
otal Delay	23.2	28.4	6.8	31.8	27.4	5.2	13.1	10.6		26.2	8.7			
OS	С	С	А	С	С	А	В	В		С	А			
pproach Delay		16.7			25.3			10.9			11.6			
pproach LOS		В			С			В			В			
Queue Length 50th (m)	0.9	10.9	1.1	10.8	7.1	0.0	9.0	26.7		4.6	9.2			
Queue Length 95th (m)	m2.5	m16.1	8.9	16.0	11.5	3.5	39.2	77.6		#35.0	31.1			
nternal Link Dist (m)		173.7			247.8			348.7			324.5			
urn Bay Length (m)	45.0		50.0	55.0		55.0				110.0				
ase Capacity (vph)	383	628	568	389	589	515	594	3266		190	2238			
starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0			
pillback 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			
educed v/c Ratio	0.02	0.10	0.14	0.16	0.07	0.05	0.32	0.44		0.46	0.20			
ntersection Summary														
rea Type:	Other													
Cycle Length: 100														
ctuated Cycle Length: 100														
Offset: 23 (23%), Reference	d to phase 2:N	BTL and 6	:SBTL, Sta	art of Gree	n									
latural Cycle: 90														
Control Type: Actuated-Coo	rdinated													
1aximum v/c Ratio: 0.46														
ntersection Signal Delay: 12	2.2			In	tersection	LOS: B								
ntersection Capacity Utilization	Itilization 71.2% ICU Level of Service C													
nalysis Period (min) 15														

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Conroy & St. Laurent

Ø2 (R)	<u>↓</u> Ø4	
56 s	44 s	
Ø6 (R)	₩ Ø8	
56 s	44 s	

5: Don Reid & St. Laurent AM Peak Hour

	✓	•	1	1	1	Ŧ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥.		eî 🗧			ર્શ
Traffic Volume (vph)	75	40	71	22	69	176
Future Volume (vph)	75	40	71	22	69	176
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.953		0.968			
Flt Protected	0.968					0.986
Satd. Flow (prot)	1563	0	1498	0	0	1678
Flt Permitted	0.968					0.986
Satd. Flow (perm)	1563	0	1498	0	0	1678
Link Speed (k/h)	50		50			50
Link Distance (m)	137.6		234.0			146.3
Travel Time (s)	9.9		16.8			10.5
Confl. Peds. (#/hr)				5	5	
Confl. Bikes (#/hr)		1				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	15%	15%	6%	4%
Adj. Flow (vph)	75	40	71	22	69	176
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	0	93	0	0	245
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		10.0			10.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 34.1%			IC	U Level of	Service A
Analysis Dariad (min) 15						

Analysis Period (min) 15

1: Don Reid/Ryder & Walkley PM Peak Hour

										2025	Dackyroun	
	≯	-	\mathbf{r}	•	-	*	1	1	1	1	Ŧ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲.	≜ ⊅		<u>۲</u>	A1⊅		ሻ	ef 👘		<u>۲</u>	eî 👘	
Traffic Volume (vph)	27	1557	100	18	1626	70	162	5	70	92	104	50
Future Volume (vph)	27	1557	100	18	1626	70	162	5	70	92	104	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	50.0		0.0	35.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00				1.00	
Frt		0.991			0.994			0.860			0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3246	0	1674	3294	0	1674	1502	0	1674	1652	0
Flt Permitted	0.092	02.0		0.099	0201	Ŭ	0.594		•	0.708		
Satd. Flow (perm)	162	3246	0	174	3294	0	1045	1502	0	1248	1652	0
Right Turn on Red	102	0210	Yes		0201	Yes	1010	1002	Yes	1210	1002	Yes
Satd. Flow (RTOR)		11	100		7	100		35	100		22	100
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		402.0			171.1			100.3			281.0	
Travel Time (s)		28.9			12.3			7.2			201.0	
Confl. Peds. (#/hr)	1	20.5	10	10	12.0	1	2	1.2			20.2	2
Confl. Bikes (#/hr)	I		1	10		1	2					2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1.00	3%	3%	1.00	2%	1%	1%	1%	2%	1%	1%	4%
Adj. Flow (vph)	27	1557	100	18	1626	70	162	5	70	92	104	4 /0
Shared Lane Traffic (%)	21	1557	100	10	1020	70	102	5	70	92	104	50
	27	1657	0	18	1696	0	162	75	0	92	154	0
Lane Group Flow (vph) Enter Blocked Intersection	No		No	No	No	No	No	75 No		92 No	No	No
	L NA	No Left	R NA	Left				Left	No R NA	L NA		-
Lane Alignment	LINA		RINA	Leit	Left	Right	L NA		RINA	LINA	Left	R NA
Median Width(m)		5.0 0.0			5.0 0.0			3.5 0.0			3.5 0.0	
Link Offset(m)					0.0 5.0							
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	1.00	4.00	4.00	4.00
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	0	14	24	0	14	24	0	14	24	0	14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		Cl+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

J.Audia, Novatech

1: Don Reid/Ryder & Walkley PM Peak Hour

PM Peak Hour										- 2023	Backgroun	u na
	≯	-	7 4		◄	•	1	†	1	•	Ŧ	-
ane Group	EBL	EBT	EBR W	3L	WBT	WBR	NBL	NBT	NBR	SBL	SBT	S
Switch Phase												
Ainimum Initial (s)	10.0	10.0	1(0.0	10.0		10.0	10.0		10.0	10.0	
/inimum Split (s)	35.9	35.9	35	5.9	35.9		36.2	36.2		36.2	36.2	
Total Split (s)	74.0	74.0	74	.0	74.0		36.0	36.0		36.0	36.0	
Fotal Split (%)	67.3%	67.3%	67.3	8% 6	67.3%		32.7%	32.7%		32.7%	32.7%	
Maximum Green (s)	68.1	68.1	68	3.1	68.1		29.8	29.8		29.8	29.8	
fellow Time (s)	3.3	3.3	3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	<i>.</i>	2.6	2.6		2.9	2.9		2.9	2.9	
ost Time Adjust (s)	0.0	0.0	(0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.9	5.9		5.9	5.9		6.2	6.2		6.2	6.2	
.ead/Lag												
ead-Lag Optimize?												
/ehicle Extension (s)	3.0	3.0	3	8.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-M		C-Max		None	None		None	None	
Valk Time (s)	15.0	15.0		5.0	15.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	15.0	15.0		5.0	15.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	10	10		5	5		5	5		5	5	
Act Effct Green (s)	76.7	76.7	76	6.7	76.7		21.2	21.2		21.2	21.2	
Actuated g/C Ratio	0.70	0.70		70	0.70		0.19	0.19		0.19	0.19	
/c Ratio	0.24	0.73		15	0.74		0.81	0.24		0.38	0.46	
Control Delay	14.9	14.0		3.4	10.8		69.5	21.9		41.4	36.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.9	14.0		3.4	10.8		69.5	21.9		41.4	36.4	
LOS	B	В		A	В		E	C		D	D	
Approach Delay	_	14.0			10.7		_	54.4		_	38.3	
Approach LOS		В			В			D			D	
Queue Length 50th (m)	1.7	94.6	,	.0	57.3		30.8	6.6		16.0	23.1	
Queue Length 95th (m)	8.2	154.2	m´		50.4		48.4	16.3		27.3	37.3	
nternal Link Dist (m)	0.2	378.0			147.1		10.1	76.3		21.0	257.0	
Furn Bay Length (m)	40.0	010.0	5(0.0			35.0	10.0		30.0	201.0	
Base Capacity (vph)	113	2266		21	2298		283	432		338	463	
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	Ũ		0	0 0	
Reduced v/c Ratio	0.24	0.73	0.	15	0.74		0.57	0.17		0.27	0.33	
ntersection Summary	•											
Area Type:	Other											
Cycle Length: 110												
Actuated Cycle Length: 110				_								
Offset: 20 (18%), Referenced	to phase 2:E	BTL and 6:	WBTL, Start of (Green								
Vatural Cycle: 90												
Control Type: Actuated-Coord	inated											
/laximum v/c Ratio: 0.81												
ntersection Signal Delay: 16.6					section L							
ntersection Capacity Utilizatio	n 84.6%			ICU	Level of S	Service E						
nalysis Period (min) 15												
		1 11	pstream signal.									

Splits and Phases: 1: Don Reid/Ryder & Walkley



2: 160m W of Conroy & Walkley PM Peak Hour

Fit Protected 0.950 0.950 Satd. Flow (prot) 3252 1483 1642 3316 1658 1483 Fit Permitted 0.110 0.950 0.950 0.950 0.950 Satd. Flow (perm) 3252 1441 190 3316 1658 1463 Right Turn on Red Yes Yes Yes Yes 34 Link Speed (k/h) 50 50 50 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 100 1.00		-	\mathbf{r}	1	-	1	1
Lane Configurations Image: Configurations <		EDT	EDD			NDI	NPD
Traffic Volume (vph) 1741 64 36 1650 49 41 Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 Storage Length (m) 20.0 65.0 30.0 0.0 Storage Lanes 1 1 1 1 1 Taper Length (m) 25.0 30.0 0.0 1.00 0.95 Ped Bike Factor 0.95 1.00 1.00 0.950 0.950 Stat. Flow (prot) 3252 1483 1642 3316 1658 1483 Right Turn on Red Yes Yes Yes 34 11 1.00							
Future Volume (vph) 1741 64 36 1650 49 41 Ideal Flow (vphpl) 1800 100 0.95 30.0 1.00							
Ideal Flow (vphp) 1800 100 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.00							
Storage Length (m) 20.0 65.0 30.0 0.0 Storage Lanes 1							
Storage Lanes 1 1 1 1 1 Taper Length (m) 25.0 30.0 Lane Util. Factor 0.95 1.00 0.95 1.00 1.00 Ped Bike Factor 0.97 1.00 0.990 51.00 0.990 Fit Protected 0.950 0.950 Satd. Flow (port) 3252 1443 1642 3316 1658 1463 Stor Flow (perm) 3252 1441 190 3316 1658 1463 Right Turn on Red Yes Yes Yes Satd. Flow (RTOR) 28 34 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 1 1.00		1800			1800		
Taper Length (m) 25.0 30.0 Lane Ulii, Factor 0.95 1.00 1.00 0.95 Ped Bike Factor 0.97 1.00 0.95 1.00 0.99 Fit Protected 0.950 0.950 0.850 0.850 Satd. Flow (prot) 3252 1441 190 3316 1658 1483 Right Turn on Red Yes Yes Yes Yes Yes Satd. Flow (perm) 121.3 122.2 9.3 Confl. Peds. (#hr) 5 5 1 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 How (ph) 174.1 64 36 1650 49 41 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Lane Group Flow (vph) 1741 64 36 1650 49 41 Enter Blocked Intersection No No No No No No							
Lane Util, Factor 0.95 1.00 1.00 0.95 1.00 1.00 Ped Bike Factor 0.97 1.00 0.99 0.850 0.850 Fit Protected 0.950 0.950 0.850 Fit Premitted 0.850 Satt. Flow (port) 3252 1483 1642 3316 1658 1483 Sith Veron Red Yes Yes Yes Yes Yes Yes Satt. Flow (perm) 3252 1441 190 3316 1658 1463 Link Distance (m) 171.1 169.1 128.6 Yes Yes Confl. Peds. (#hr) 5 5 1 1 Peak Hour Factor 1.00 1.00 1.00 1.00 Confl. Peds. (#hr) 1741 64 36 1650 49 411 Shared Lane Traffic (%) Lane Group Flow (vph) 1741 64 36 1650 49 411 Enter Blocked Intersection No No No No No <td></td> <td></td> <td>1</td> <td></td> <td></td> <td>-</td> <td>1</td>			1			-	1
Ped Bike Factor 0.97 1.00 0.999 Frt 0.850 0.950 0.850 Fit Protected 0.950 0.950 0.950 Satd. Flow (port) 3252 1443 1642 3316 1658 1443 Satd. Flow (perm) 3252 1441 190 3316 1658 1463 Right Turn on Red Yes Yes Yes 34 Link Speed (k/h) 50 50 50 1 Confl. Peds. (#/hr) 5 5 1 1 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (yph) 1741 64 36 1650 49 41 Shared Lane Traffic (%) 160 1.00 1.00 1.00 1.00 Lane Group Flow (yph) 1741 64 36 1650 49 41 Shared Lane Traffic (%) 1 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>							
Frt 0.850 0.850 FIP Protected 0.950 0.950 Satd. Flow (prot) 3252 1483 1642 3316 1658 1483 FIP Permitted 0.110 0.950 Satd. Flow (perm) 3252 1441 190 3316 1658 1463 Right Turn on Red Yes Yes Yes Yes Yes Satd. Flow (RDR) 28		0.95			0.95	1.00	
Fit Protected 0.950 0.950 Satd. Flow (prot) 3252 1483 1642 3316 1658 1483 Fit Permitted 0.110 0.950 0.950 0.950 0.950 Satd. Flow (perm) 3252 1441 190 3316 1658 1463 Right Turn on Red Yes Yes Yes Yes Yes Satd. Flow (RTOR) 28				1.00			
Satd. Flow (prot) 3252 1483 1642 3316 1658 1483 FI Permitted 0.110 0.950 Satd. Flow (perm) 3252 1441 190 3316 1658 1463 Right Turn on Red Yes Yes Yes Yes 34 Link Speed (k/h) 50 50 50 51 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 100 1.00 </td <td>Frt</td> <td></td> <td>0.850</td> <td></td> <td></td> <td></td> <td>0.850</td>	Frt		0.850				0.850
Fit Permitted 0.110 0.950 Satd. Flow (perm) 3252 1441 190 3316 1658 1463 Right Turn on Red Yes 34 1500 1658 1463 Right Turn on Red Yes 34 1500 1658 1463 Link Speed (k/h) 50 50 50 50 50 Confl. Peds. (#hr) 5 5 1 128.6 12.2 9.3 Confl. Peds. (#hr) 5 5 1 128.6 10.0 1.00<	Flt Protected			0.950		0.950	
Satd. Flow (perm) 3252 1441 190 3316 1658 1463 Right Turn on Red Yes 34 11658 34 34 Link Speed (k/h) 50 50 50 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 1 12.6 1 Peak Hour Factor 1.00 <	Satd. Flow (prot)	3252	1483		3316	1658	1483
Satd. Flow (perm) 3252 1441 190 3316 1658 1463 Right Turn on Red Yes 34 11658 1463 Right Turn on Red Yes 34 11658 1463 Link Speed (k/h) 50 50 50 12.3 Link Distance (m) 171.1 169.1 128.6 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 1 100 1.00 1	Flt Permitted					0.950	
Right Turn on Red Yes Yes Yes Satd. Flow (RTOR) 28 34 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (vph) 1741 64 36 1650 49 41 Shared Lane Traffic (%) Lane Group Flow (vph) 1741 64 36 1650 49 41 Enter Blocked Intersection No No No No No No Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 5.0 5.0 5.0 Trum oxy Left Turn Lane Headway Factor 1.09 1.09 1.09	Satd. Flow (perm)	3252	1441	190	3316	1658	1463
Satd. Flow (RTOR) 28 34 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (vph) 1741 64 36 1650 49 41 Shared Lane Traffic (%) No No No No No Lane Group Flow (vph) 1741 64 36 1650 49 41 Enter Blocked Intersection No No No No No Lane Alignment Left Right LNA Left LNA RNA Median Width(m) 5.0 5.0 5.0 5.0 5.0 To Tway Speed (k/h) 14 <td< td=""><td>Right Turn on Red</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Right Turn on Red						
Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (vph) 1741 64 36 1650 49 41 Shared Lane Traffic (%) Lane Group Flow (vph) 1741 64 36 1650 49 41 Enter Blocked Intersection No No No No No No Link Offset(m) 0.0 0.0 0.0 0.0 0.0 Corsswalk Width(m) 5.0 5.0 5.0 5.0 5.0 Tow Toway Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.							
Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (vph) 1741 64 36 1650 49 41 Shared Lane Traffic (%) Lane Group Flow (vph) 1741 64 36 1650 49 41 Enter Blocked Intersection No No No No No No Na Median Width(m) 3.5 5.0 3.5 1ink Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 5.0 5.0 Twing Speed (k/h) 14 24 24 14 14 14 24 14 14 14 14 14 14 14 14 14 14 </td <td></td> <td>50</td> <td></td> <td></td> <td>50</td> <td>50</td> <td></td>		50			50	50	
Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 4% 2% 3% 2% 2% Adj. Flow (vph) 1741 64 36 1650 49 41 Shared Lane Traffic (%) 1 1 64 36 1650 49 41 Enter Blocked Intersection No No No No No No No No Lane Group Flow (vph) 1741 64 36 1650 49 41 Enter Blocked Intersection No No No No No No No Lane Group Flow (vph) 3.5 5.0 3.5 10.0 10.0 0.0 0.0 0.0 Lane Group Flow (vph) 1.09 1.09 1.09 1.09 1.09 1.09 Lane Alignment Left Right Lane Alignment Left Right 1.00 1.00 1.00 0.0							
Confl. Peds. (#/hr) 5 5 1 Peak Hour Factor 1.00 0.0 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>							
Peak Hour Factor 1.00		12.3	5	5	12.2	9.5	1
Heavy Vehicles (%) 4% 2% 3% 2% 2% 2% Adj. Flow (vph) 1741 64 36 1650 49 41 Shared Lane Traffic (%) 49 41 Eane Group Flow (vph) 1741 64 36 1650 49 41 Enter Blocked Intersection No Sister		1 00			1 00	1 00	
Adj. Flow (vph) 1741 64 36 1650 49 41 Shared Lane Traffic (%) Lane Group Flow (vph) 1741 64 36 1650 49 41 Enter Blocked Intersection No Si 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Shared Lane Traffic (%) 1741 64 36 1650 49 41 Enter Blocked Intersection No No No No No No No Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 Corsswalk Width(m) 5.0 5.0 S.5 Two way Left Turn Lane Headway Factor 1.09							
Lane Group Flow (vph) 1741 64 36 1650 49 41 Enter Blocked Intersection No No No No No No No Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Cosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane 1.09 1.09 1.09 1.09 1.09 Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <		1/41	64	36	1650	49	41
Enter Blocked Intersection No No No No No No No Lane Alignment Left Right L NA Left L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Intersection 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 5.0 Tresson 1.09 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane							
Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane			No			No	
Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0	Lane Alignment		Right	L NA			R NA
Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel Detector 1 Channel Use CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <t< td=""><td>Median Width(m)</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Median Width(m)						
Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel Detector 1 Channel Undetector 1 Channel Undetector 1 Channel Undetector 1 Delay (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Link Offset(m)	0.0			0.0	0.0	
Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel Detector 1 Channel Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <td>Crosswalk Width(m)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Crosswalk Width(m)						
Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Detector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Size(m) 1.8							
Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel		1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type CI+Ex Detector 1 Detector 2 0.0 0.0 0.0 0.0 0.0 Dot		1.00					
Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Channel 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 Detector 2 Size(m) 1.8 1.8 1.8 2.5 2.6 8 Detector 2 Channel <td></td> <td>2</td> <td></td> <td></td> <td>2</td> <td></td> <td></td>		2			2		
Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type CI+Ex Detector 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector Detector 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28.7 <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>-</td>			-				-
Trailing Detector (m) 0.0							
Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Cueue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Delay (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 Detector 2 Size(m) 1.8 1.8 1.8 28.7							
Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type CI+Ex 0.0 CI+Ex Detector 2 Size(m) 1.8 0.1 8.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0							
Detector 1 Type CI+Ex O.0 0.0							
Detector 1 Channel Detector 1 Extend (s) 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Delay (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 Detector 2 Size(m) 1.8 1.8 1.8 28.7<							
Detector 1 Extend (s) 0.0		CI+Ex	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Queue (s) 0.0							
Detector 1 Delay (s) 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 28.7 20.0	Detector 1 Extend (s)						
Detector 1 Delay (s) 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 28.7 20.0	Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m) 28.7 28.7 Detector 2 Size(m) 1.8 1.8 Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type NA Perm NA Portected Phases 2 6 8 Detector Phase 2 6 6 8	Detector 1 Delay (s)			0.0		0.0	0.0
Detector 2 Size(m)1.81.8Detector 2 TypeCI+ExCI+ExDetector 2 Channel0.00.0Detector 2 Extend (s)0.00.0Turn TypeNAPermPermProtected Phases268Permitted Phases268Detector Phase2268	Detector 2 Position(m)						
Detector 2 TypeCI+ExCI+ExDetector 2 Channel0.00.0Detector 2 Extend (s)0.00.0Turn TypeNAPermPermProtected Phases268Permitted Phases268Detector Phase2268							
Detector 2 ChannelDetector 2 Extend (s)0.00.0Turn TypeNAPermPermProtected Phases268Permitted Phases268Detector Phase2268							
Detector 2 Extend (s)0.00.0Turn TypeNAPermPermNAProtPermProtected Phases268Permitted Phases268Detector Phase2268		51. EX			U . EA		
Turn TypeNAPermPermNAProtPermProtected Phases268Permitted Phases268Detector Phase2268		0.0			0.0		
Protected Phases268Permitted Phases268Detector Phase2268			Porm	Porm		Prot	Porm
Permitted Phases268Detector Phase22668			1 CIIII	1 CIIII			1 CIIII
Detector Phase 2 2 6 6 8 8		Z	0	6	0	0	0
		^			^	^	
Switch Phase		2	2	6	6	8	8
	Switch Phase						

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2: 160m W of Conroy & Walkley PM Peak Hour

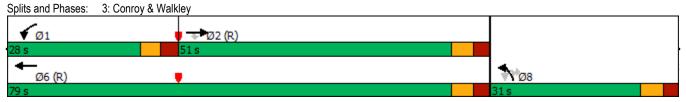
	-	\mathbf{r}	4	+	•	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0
Total Split (s)	81.0	81.0	81.0	81.0	29.0	29.0
Total Split (%)	73.6%	73.6%	73.6%	73.6%	26.4%	26.4%
Maximum Green (s)	75.0	75.0	75.0	75.0	23.0	23.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	0.0	0.0	0.0	0.0	0.0	0.0
Lead-Lag Optimize?						
	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s) Recall Mode		3.0 C-Max	3.0 C-Max	3.0 C-Max		
	C-Max		C-IVIAX	C-IVIAX	None	None
Walk Time (s)	18.0	18.0			7.0	7.0
Flash Dont Walk (s)	13.0	13.0			16.0	16.0
Pedestrian Calls (#/hr)	5	5	00.0	<u> </u>	5	5
Act Effct Green (s)	90.6	90.6	90.6	90.6	10.9	10.9
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.10	0.10
v/c Ratio	0.65	0.05	0.23	0.60	0.30	0.23
Control Delay	2.2	0.7	9.3	7.5	48.0	19.5
Queue Delay	0.1	0.0	0.0	0.1	0.0	0.0
Total Delay	2.3	0.7	9.3	7.7	48.0	19.5
LOS	А	А	А	А	D	В
Approach Delay	2.3			7.7	35.0	
Approach LOS	А			А	D	
Queue Length 50th (m)	16.1	0.1	0.6	74.6	9.4	1.3
Queue Length 95th (m)	22.3	m0.6	m7.6	141.3	17.5	9.4
Internal Link Dist (m)	147.1			145.1	104.6	
Turn Bay Length (m)		20.0	65.0		30.0	
Base Capacity (vph)	2679	1192	156	2731	346	332
Starvation Cap Reductn	74	0	0	265	0	0
Spillback Cap Reductn	187	0	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.05	0.23	0.67	0.14	0.12
		2.00		2.0.		
Intersection Summary	01					
Area Type:	Other					
Cycle Length: 110						
Actuated Cycle Length: 110						
Offset: 25 (23%), Referenced	to phase 2:E	BT and 6:\	VBTL, Sta	rt of Greer	1	
Natural Cycle: 80						
Control Type: Actuated-Coord	inated					
Maximum v/c Ratio: 0.65						
Intersection Signal Delay: 5.7					tersection	
Intersection Capacity Utilization	on 65.5%			IC	CU Level of	f Service C
Analysis Period (min) 15						
m Volume for 95th percentile	e queue is me	etered by ι	ipstream s	ignal.		
Splits and Phases: 2: 160m	W of Conroy	v & Walkley	1			
		a Waldo				
🗾 🐨 Ø2 (R)						
81s						



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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	^	1	ኘካ	^		ኘካ	1
Traffic Volume (vph)	1311	474	537	1171	42	484	328
Future Volume (vph)	1311	474	537	1171	42	484	328
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		75.0	200.0			0.0	0.0
Storage Lanes		1	2			2	1
Taper Length (m)			50.0			10.0	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor		0.96	0.99				0.97
Frt		0.850					0.850
Flt Protected			0.950			0.950	
Satd. Flow (prot)	3221	1483	3185	3349	0	3248	1469
Flt Permitted			0.950			0.950	
Satd. Flow (perm)	3221	1430	3164	3349	0	3248	1418
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		443					328
Link Speed (k/h)	50			50		60	
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2			19.6		20.9	
Confl. Peds. (#/hr)		22	22				16
Confl. Bikes (#/hr)		1					1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	3%	1%	1%	1%	3%
Adj. Flow (vph)	1311	474	537	1171	42	484	328
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1311	474	537	1171	0	526	328
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	L NA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	0.0	0.0	28.7	0.0	0.0	0.0
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases	L	2		U	8	0	8
Detector Phase	2	2	1	6	8	8	8
	<u>∠</u>	2		0	0	0	0

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	51.0	51.0	28.0	79.0	31.0	31.0	31.0
Total Split (%)	46.4%	46.4%	25.5%	71.8%	28.2%	28.2%	28.2%
Maximum Green (s)	44.6	44.6	21.8	72.6	24.6	24.6	24.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	••••		•••	••••
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0	110110	0 Max	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	20.0	20.0			15	17.0	17.0
Act Effct Green (s)	47.3	47.3	21.3	74.8	10	22.4	22.4
Actuated g/C Ratio	0.43	0.43	0.19	0.68		0.20	0.20
v/c Ratio	0.95	0.55	0.87	0.51		0.80	0.60
Control Delay	41.5	7.7	58.8	9.9		51.2	8.9
Queue Delay	0.0	0.2	0.0	0.0		0.0	0.0
Total Delay	41.5	7.9	58.8	10.0		51.2	8.9
LOS	-1.5 D	A	50.0 E	A		D	0.5 A
Approach Delay	32.6		L	25.3		35.0	
Approach LOS	02.0 C			20.0 C		00.0 C	
Queue Length 50th (m)	~104.1	0.3	52.6	56.2		50.4	0.0
Queue Length 95th (m)	#179.1	39.9	#77.4	72.2		67.0	21.5
Internal Link Dist (m)	145.1	00.0	#11. 4	247.7		324.5	21.0
Turn Bay Length (m)	J.I	75.0	200.0	271.1		027.0	
Base Capacity (vph)	1385	867	636	2278		726	571
Starvation Cap Reductn	0	57	0.00	0		0	0
Spillback Cap Reductin	0	0	0	101		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.95	0.59	0.84	0.54		0.72	0.57
	0.30	0.00	0.04	0.04		0.12	0.01
Intersection Summary	0.4						
Area Type:	Other						
Cycle Length: 110							
Actuated Cycle Length: 110							
Offset: 20 (18%), Referenced	I to phase 2:El	BT and 6:V	VBT, Start	of Green			
Natural Cycle: 95							
Control Type: Actuated-Coord	dinated						
Maximum v/c Ratio: 0.95							
Intersection Signal Delay: 30.					itersection		
Intersection Capacity Utilizati	on 87.8%			IC	CU Level of	f Service E	
Analysis Period (min) 15							
 Volume exceeds capacity 			nfinite.				
Queue shown is maximum							
# 95th percentile volume ex			nay be lon	ger.			
Queue shown is maximum	n after two cyc	les.					
olits and Phases: 3: Conr	ov & Walklev						



4: Conroy & St. Laurent PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	<u></u>	7	`	†	100	1	<u> </u>	04		†î	40
Traffic Volume (vph)	41	77	316	232	34	102	40	595	81	37	1111	13
Future Volume (vph)	41	77	316	232	34	102	40	595	81	37	1111	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0		50.0	55.0		55.0	0.0		0.0	110.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	40.0			40.0		(00	10.0		0.01	25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.99		0.99		0.99	1.00	
Frt			0.850			0.850		0.982			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1728	1483	1642	1618	1483	1642	4619	0	1537	3303	0
Flt Permitted	0.735			0.555			0.155			0.371		
Satd. Flow (perm)	1293	1728	1461	957	1618	1463	268	4619	0	595	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121			78		27			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)		14.2			19.6			22.4			20.9	
Confl. Peds. (#/hr)	2		4	4		2	8		12	12		8
Confl. Bikes (#/hr)									4			11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	2%	3%	10%	2%	3%	2%	8%	10%	2%	12%
Adj. Flow (vph)	41	77	316	232	34	102	40	595	81	37	1111	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	77	316	232	34	102	40	676	0	37	1124	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		3.5			3.5			7.0	0		6.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex		CI+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s) Detector 2 Position(m)	0.0	28.7	0.0	0.0	28.7	0.0	0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8			1.8 CL/Ex			1.8 CL/Ex			1.8 CL/Ex	
Detector 2 Type		CI+Ex			CI+Ex			Cl+Ex			CI+Ex	
Detector 2 Channel		• • •			~ ~			~ ~			~ ~	
Detector 2 Extend (s)	-	0.0	-		0.0	-	-	0.0		-	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	_
Protected Phases		4		3	8			2			6	
	4		4	8		8	2			6		
Permitted Phases Detector Phase	4	4	4	3	8	8	2	2		6	6	

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	≯	-	\mathbf{r}	4	+	•	•	1	1	1	Ŧ	-
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SE
witch Phase												
linimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
linimum Split (s)	43.9	43.9	43.9	11.3	43.9	43.9	30.3	30.3		30.3	30.3	
otal Split (s)	44.0	44.0	44.0	15.0	59.0	59.0	36.0	36.0		36.0	36.0	
otal Split (%)	46.3%	46.3%	46.3%	15.8%	62.1%	62.1%	37.9%	37.9%		37.9%	37.9%	
laximum Green (s)	37.1	37.1	37.1	9.3	52.1	52.1	29.7	29.7		29.7	29.7	
ellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
II-Red Time (s)	3.6	3.6	3.6	2.4	3.6	3.6	2.6	2.6		2.6	2.6	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Lost Time (s)	6.9	6.9	6.9	5.7	6.9	6.9	6.3	6.3		6.3	6.3	
ead/Lag	Lag	Lag	Lag	Lead								
ead-Lag Optimize?	Yes	Yes	Yes	Yes								
ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
ecall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
/alk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
lash Dont Walk (s)	30.0	30.0	30.0		30.0	30.0	17.0	17.0		17.0	17.0	
edestrian Calls (#/hr)	5	5	5		5	5	10	10		10	10	
ct Effct Green (s)	20.9	20.9	20.9	37.1	35.9	35.9	45.9	45.9		45.9	45.9	
ctuated g/C Ratio	0.22	0.22	0.22	0.39	0.38	0.38	0.48	0.48		0.48	0.48	
citated g/o realio	0.22	0.20	0.76	0.53	0.06	0.00	0.31	0.30		0.13	0.70	
ontrol Delay	26.5	27.8	31.6	23.5	15.3	5.6	29.7	16.5		20.1	25.0	
ueue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Delay	26.5	27.8	31.6	23.5	15.3	5.6	29.7	16.5		20.1	25.0	
OS	20.5 C	27.0 C	51.0 C	23.3 C	15.5 B	5.0 A	29.7 C	10.5 B		20.1 C	23.0 C	
pproach Delay	U	30.5	U	U	17.8	A	U	17.3		U	24.9	
pproach LOS		50.5 C			В			В			24.9 C	
Queue Length 50th (m)	5.8	11.0	32.2	28.4	3.7	2.6	3.8	22.1		3.2	71.5	
Queue Length 95th (m)	10.4	16.5	45.3	30.7	6.4	8.2	#18.4	42.1		12.1	#149.8	
nternal Link Dist (m)	10.4	173.7	40.0	30.7	247.8	0.2	#10.4	348.7		12.1	#149.8 324.5	
	45.0	1/3./	50.0	55.0	247.0	55.0		340.7		110.0	324.3	
urn Bay Length (m)	45.0 504	674	50.0 644		887	55.0 837	129	2244		287	1595	
ase Capacity (vph)				440								
tarvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
pillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
torage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
educed v/c Ratio	0.08	0.11	0.49	0.53	0.04	0.12	0.31	0.30		0.13	0.70	
tersection Summary	0.4											
rea Type:	Other											
cycle Length: 95												
ctuated Cycle Length: 95												
ffset: 2 (2%), Referenced to	phase 2:NBT	L and 6:S	BTL, Start	of Green								
atural Cycle: 90												
ontrol Type: Actuated-Coord	dinated											
laximum v/c Ratio: 0.76												
ntersection Signal Delay: 22.					itersection							
ntersection Capacity Utilization	on 84.5%			IC	CU Level of	f Service E						
nalysis Period (min) 15												
95th percentile volume ex			may be lon	ger.								
Queue shown is maximum	offer two over											

Splits and Phases: 4: Conroy & St. Laurent

✓ Ø2 (R)	√ Ø3	↓ Ø4
36 s	15 s	44 s
Ø6 (R)	₩ Ø8	
36 s.	59 s	

5: Don Reid & St. Laurent PM Peak Hour

	✓	•	1	1	1	Ŧ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		el el			र्च
Traffic Volume (vph)	23	56	107	76	151	51
Future Volume (vph)	23	56	107	76	151	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904		0.944			
Flt Protected	0.986					0.964
Satd. Flow (prot)	1481	0	1641	0	0	1588
Flt Permitted	0.986					0.964
Satd. Flow (perm)	1481	0	1641	0	0	1588
Link Speed (k/h)	50		50			50
Link Distance (m)	137.6		234.0			146.3
Travel Time (s)	9.9		16.8			10.5
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)		1		4		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	8%	2%	3%	4%	20%
Adj. Flow (vph)	23	56	107	76	151	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	183	0	0	202
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5	Ū	0.0	Ū		0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		10.0			10.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 37.7%			IC	U Level of	Service A
Analysis Dariad (min) 15						

Analysis Period (min) 15

1: Don Reid/Ryder & Walkley PM Peak Hour

T WT Car Hou	≯		~	~	+	۰.	•	+		1		
	_		*	*		-	7		7	-	*	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	† 12		ሻ	≜ ‡≱		<u></u>	- î÷		<u></u>	f)	-
Traffic Volume (vph)	27	1557	100	18	1626	70	162	5	70	92	104	50
Future Volume (vph)	27	1557	100	18	1626	70	162	5	70	92	104	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	50.0		0.0	35.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			30.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00				1.00	
Frt		0.991			0.994			0.860			0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3246	0	1674	3294	0	1674	1502	0	1674	1652	0
Flt Permitted	0.092		-	0.099		-	0.594		-	0.708		-
Satd. Flow (perm)	162	3246	0	174	3294	0	1045	1502	0	1248	1652	0
Right Turn on Red	102	0210	Yes	.,,,	0201	Yes	1010	1002	Yes	1210	1002	Yes
Satd. Flow (RTOR)		11	100		7	100		35	100		22	100
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		402.0			171.1			100.3			281.0	
Travel Time (s)	1	28.9	10	10	12.3	1	0	7.2			20.2	0
Confl. Peds. (#/hr)	1		10	10		1	2					2
Confl. Bikes (#/hr)	(00		1	(00								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	3%	1%	2%	1%	1%	1%	2%	1%	1%	4%
Adj. Flow (vph)	27	1557	100	18	1626	70	162	5	70	92	104	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	1657	0	18	1696	0	162	75	0	92	154	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		5.0			5.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		Cl+Ex	Cl+Ex		CI+Ex	CI+Ex	
Detector 1 Channel		OFLX		OFLX				OITEX				
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0			0.0	0.0		0.0	0.0		0.0	0.0	
	0.0	0.0			0.0		0.0	0.0		0.0		
Detector 1 Delay (s)	0.0	0.0		0.0			0.0			0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
							-					
Permitted Phases	2 2	2		6			8 8	8		4		

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1: Don Reid/Ryder & Walkley PM Peak Hour

PM Peak Hour							202	.9 Dackyrt		c (mitigate	
	٦	-	¥ 4	- +	•	1	1	1	1	Ļ	-
_ane Group	EBL	EBT	EBR WE	BL WBT	WBR	NBL	NBT	NBR	SBL	SBT	SE
Switch Phase											
Vinimum Initial (s)	10.0	10.0	10	.0 10.0		10.0	10.0		10.0	10.0	
Vinimum Split (s)	35.9	35.9	35	.9 35.9		36.2	36.2		36.2	36.2	
Total Split (s)	74.0	74.0	74	.0 74.0		36.0	36.0		36.0	36.0	
Total Split (%)	67.3%	67.3%	67.3	% 67.3%		32.7%	32.7%		32.7%	32.7%	
Maximum Green (s)	68.1	68.1	68	.1 68.1		29.8	29.8		29.8	29.8	
fellow Time (s)	3.3	3.3	3	.3 3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2	.6 2.6		2.9	2.9		2.9	2.9	
ost Time Adjust (s)	0.0	0.0	0	.0 0.0		0.0	0.0		0.0	0.0	
otal Lost Time (s)	5.9	5.9	5	.9 5.9		6.2	6.2		6.2	6.2	
ead/Lag											
ead-Lag Optimize?											
ehicle Extension (s)	3.0	3.0	3	.0 3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-M	ax C-Max		None	None		None	None	
Valk Time (s)	15.0	15.0	15			10.0	10.0		10.0	10.0	
lash Dont Walk (s)	15.0	15.0	15			20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	10	10		5 5		5	5		5	5	
ct Effct Green (s)	76.7	76.7	76			21.2	21.2		21.2	21.2	
ctuated g/C Ratio	0.70	0.70	0.			0.19	0.19		0.19	0.19	
/c Ratio	0.24	0.73	0.1			0.81	0.24		0.38	0.46	
Control Delay	14.9	14.0		.7 9.1		69.5	21.9		41.4	36.4	
Queue Delay	0.0	0.0		.0 0.0		0.0	0.0		0.0	0.0	
otal Delay	14.9	14.0		.7 9.1		69.5	21.9		41.4	36.4	
.OS	В	В		A A		E	C		D	D	
pproach Delay	_	14.0		9.1		_	54.4		_	38.3	
pproach LOS		В		A			D			D	
Queue Length 50th (m)	1.7	94.6	0	.8 46.4		30.8	6.6		16.0	23.1	
Queue Length 95th (m)	8.2	154.2	m1			48.4	16.3		27.3	37.3	
nternal Link Dist (m)	0.2	378.0		147.1			76.3			257.0	
urn Bay Length (m)	40.0		50			35.0			30.0		
ase Capacity (vph)	113	2266	1:			283	432		338	463	
Starvation Cap Reductn	0	0		0 0		0	0		0	0	
pillback 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	0.24	0.73	0.			0.57	0.17		0.27	0.33	
ntersection Summary											
rea Type:	Other										
Cycle Length: 110											
ctuated Cycle Length: 110											
offset: 20 (18%), Referenced latural Cycle: 90	to phase 2:E	BTL and 6:	WBTL, Start of C	Breen							
Control Type: Actuated-Coor	dinated										
Actualed-Cool Aaximum v/c Ratio: 0.81											
ntersection Signal Delay: 15	8			Intersectio	n I OS· R						
ntersection Capacity Utilizati					of Service E	:					
nalysis Period (min) 15	011 04.0 /0			ICO LEVEI		-					
Volume for 95th percent	ile queue is me	etered by u	pstream signal.								

Splits and Phases: 1: Don Reid/Ryder & Walkley



2: 160m W of Conroy & Walkley PM Peak Hour

	-	\mathbf{r}	•	-	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	**	1	`	1650	Š	
Traffic Volume (vph)	1741	64	36	1650	49	41
Future Volume (vph)	1741	64	36	1650	49	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		20.0	65.0		30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			25.0	-	30.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97	1.00			0.99
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3252	1483	1642	3316	1658	1483
Flt Permitted			0.110		0.950	
Satd. Flow (perm)	3252	1441	190	3316	1658	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		28				34
Link Speed (k/h)	50			50	50	• •
Link Distance (m)	171.1			169.1	128.6	
Travel Time (s)	12.3			12.2	9.3	
Confl. Peds. (#/hr)	12.0	5	5	12.2	5.5	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	2%	3%	2%	2%	2%
Adj. Flow (vph)	1741	64	36	1650	49	41
Shared Lane Traffic (%)	4744	04	20	1050	40	4.4
Lane Group Flow (vph)	1741	64	36	1650	49	41
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	L NA	Left	L NA	R NA
Median Width(m)	3.5			5.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Type Detector 1 Channel	UI+EX	OI+EX	CI+EX	OI+EX	OI+EX	UI+EX
	0.0		0.0	0.0	0.0	0.0
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6		-	8
Detector Phase	2	2	6	6	8	8
Switch Phase	2	2	U	U	U	U
SWILCH FIIdSE						

2: 160m W of Conroy & Walkley PM Peak Hour

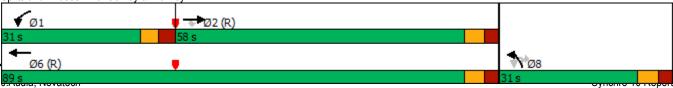
	-	$\mathbf{\hat{v}}$	4	+	1	۲
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0
Total Split (s)	81.0	81.0	81.0	81.0	29.0	29.0
Total Split (%)	73.6%	73.6%	73.6%	73.6%	26.4%	26.4%
Maximum Green (s)	75.0	75.0	75.0	75.0	20.4 %	20.4 /8
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
	2.7					2.7
All-Red Time (s) Lost Time Adjust (s)	0.0	2.7 0.0	2.7 0.0	2.7 0.0	2.7 0.0	2.7
, ()						
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?		• •	• •	• •	0.0	0.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	18.0	18.0			7.0	7.0
Flash Dont Walk (s)	13.0	13.0			16.0	16.0
Pedestrian Calls (#/hr)	5	5			5	5
Act Effct Green (s)	90.6	90.6	90.6	90.6	10.9	10.9
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.10	0.10
v/c Ratio	0.65	0.05	0.23	0.60	0.30	0.23
Control Delay	2.2	0.7	9.0	6.5	48.0	19.5
Queue Delay	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	2.3	0.7	9.0	7.1	48.0	19.5
LOS	2.3 A	0.7 A	3.0 A	7.1 A	40.0 D	19.5 B
Approach Delay	2.2		Π	7.1	35.0	U
Approach LOS	2.2 A			7.1 A	35.0 D	
Queue Length 50th (m)	16.1	0.1	1.3	49.2	9.4	1.3
Queue Length 95th (m)	22.3	m0.6	8.3	121.0	17.5	9.4
Internal Link Dist (m)	147.1		<u> </u>	145.1	104.6	
Turn Bay Length (m)		20.0	65.0	0=0.4	30.0	
Base Capacity (vph)	2679	1192	156	2731	346	332
Starvation Cap Reductn	74	0	0	595	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.05	0.23	0.77	0.14	0.12
Intersection Summary						
Area Type:	Other					
Cycle Length: 110	outor					
Actuated Cycle Length: 110						
Offset: 25 (23%), Referenced	to phase 2.E	BT and 6·1	NRTI Sta	rt of Green	1	
	to phase 2.E		NDTL, Sta		I	
Natural Cycle: 80	lingtod					
Control Type: Actuated-Coord	ainated					
Maximum v/c Ratio: 0.65						
Intersection Signal Delay: 5.4					tersection	
Intersection Capacity Utilization	on 65.5%			IC	CU Level of	Service C
Analysis Period (min) 15						
m Volume for 95th percentil	e queue is m	etered by u	upstream s	ignal.		
Splits and Phases: 2: 160m	W of Conroy	& Walkley	y			
🔍 🐨 Ø2 (R)						
81s						



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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	1	1	ካካ ካካ	<u>**</u>	1100	ኘካ	101
Traffic Volume (vph)	TT 1311	474	537	1171	42	484	328
Future Volume (vph)	1311	474	537	1171	42	484	328
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		10.0	200.0			2	0.0
Taper Length (m)			50.0			10.0	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor	0.55	0.96	0.99	0.55	0.00	0.51	0.96
Frt		0.850	0.33				0.850
Fit Protected		0.000	0.950			0.950	0.000
Satd. Flow (prot)	3221	1483	3185	3349	0	3248	1469
Flt Permitted	JZZT	1405	0.950	0049	U	5240 0.950	1409
	3221	1426	0.950 3162	3349	0	0.950 3248	1415
Satd. Flow (perm)	3221	1426 Yes	3102	5349	U	3Z40	Yes
Right Turn on Red							res 328
Satd. Flow (RTOR)	50	424		50		00	328
Link Speed (k/h)	50			50		60	
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2		~~~	19.6		20.9	40
Confl. Peds. (#/hr)		22	22				16
Confl. Bikes (#/hr)		1	1.00		1.00	1.00	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	3%	1%	1%	1%	3%
Adj. Flow (vph)	1311	474	537	1171	42	484	328
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1311	474	537	1171	0	526	328
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	L NA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex
Detector 1 Channel		U . • E A	J . L A	J. LA	U . EA	J . L A	J. LA
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	0.0	0.0	28.7	0.0	0.0	0.0
Detector 2 Size(m)	1.8			20.7 1.8			
Detector 2 Type							
	CI+Ex			CI+Ex			
Detector 2 Channel	0.0			0.0			
Detector 2 Extend (s)	0.0	Den	D. (0.0	Den	D. (Der
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases		2		_	8	_	8
Detector Phase	2	2	1	6	8	8	8

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	58.0	58.0	31.0	89.0	31.0	31.0	31.0
Total Split (%)	48.3%	48.3%	25.8%	74.2%	25.8%	25.8%	25.8%
Maximum Green (s)	51.6	51.6	24.8	82.6	24.6	24.6	24.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	2.1	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	0.1		0.1	0.1
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0	NONE		7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	20.0	20.0			17.0	17.0	17.0
Act Effct Green (s)	20 54.4	20 54.4	23.5	84.0	15	23.2	23.2
	0.45	0.45	23.5 0.20	84.0 0.70		23.2 0.19	23.2 0.19
Actuated g/C Ratio v/c Ratio	0.45	0.45	0.20	0.70		0.19	0.19
Control Delay	40.6	0.54 6.0	61.5	0.50 9.4		0.64 59.5	9.7
Queue Delay	40.6	0.0	01.5	9.4 0.0		59.5 0.0	9.7
Total Delay LOS	45.3	6.0	61.5	9.4		59.5	9.7
	D	А	E	A		E	А
Approach Delay	34.9			25.8		40.3	
Approach LOS	C	0.0		C		D	0.0
Queue Length 50th (m)	141.3	6.3	57.7	57.9		56.2	0.0
Queue Length 95th (m)	#185.3	29.1	#79.5	71.0		74.2	23.3
Internal Link Dist (m)	145.1	^	0000	247.7		324.5	
Turn Bay Length (m)		75.0	200.0	00.1-		<u></u>	
Base Capacity (vph)	1459	877	658	2345		665	550
Starvation Cap Reductn	105	7	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.97	0.54	0.82	0.50		0.79	0.60
Intersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
	to phase 2.5	PT and Giv		of Groop			
Offset: 20 (17%), Referenced	i to phase ZE		vor, start	or Green			
Natural Cycle: 95	dinated						
Control Type: Actuated-Coord	unated						
Maximum v/c Ratio: 0.90	4				1		
Intersection Signal Delay: 32.					tersection		
Intersection Capacity Utilizati	on 87.8%			IC	U Level of	Service E	:
Analysis Period (min) 15							
# 95th percentile volume ex			nay be lon	iger.			
Queue shown is maximum	n atter two cyc	les.					
Splits and Phases: 3: Conr	oy & Walkley						
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4: Conroy & St. Laurent PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	↑	1	<u> </u>	↑	1	ሻ	<u> ተተ</u> ኈ		<u>۲</u>	≜1 ≽	
Traffic Volume (vph)	41	77	316	232	34	102	40	595	81	37	1111	13
Future Volume (vph)	41	77	316	232	34	102	40	595	81	37	1111	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0		50.0	55.0		55.0	0.0		0.0	110.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			10.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.99		0.99		0.99	1.00	
Frt			0.850			0.850		0.982			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1728	1483	1642	1618	1483	1642	4619	0	1537	3303	0
Flt Permitted	0.735			0.555			0.155			0.371		
Satd. Flow (perm)	1293	1728	1461	957	1618	1463	268	4619	0	595	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121			78		27			1	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)		14.2			19.6			22.4			20.9	
Confl. Peds. (#/hr)	2		4	4		2	8		12	12		8
Confl. Bikes (#/hr)			-	-			-		4			11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	2%	3%	10%	2%	3%	2%	8%	10%	2%	12%
Adj. Flow (vph)	41	77	316	232	34	102	40	595	81	37	1111	13
Shared Lane Traffic (%)			010	202	01	102	10	000	01	01		10
Lane Group Flow (vph)	41	77	316	232	34	102	40	676	0	37	1124	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		3.5			3.5			7.0	•		6.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	CI+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel	OI' EX	OT EX	OI LA	OI LA	OI LA	OI LA	OI LA	OI - EX		OI LA	OI LA	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7	0.0	0.0	28.7	0.0	0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			Cl+Ex			CI+Ex	
Detector 2 Channel		OFLA			OFLA						OFLA	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	Feili	NA 4	Feiiii	рт+рі 3	NA 8	L GIIII	r enn	NA 2		L GIIII	NA 6	
Permitted Phases	Λ	4	Λ		0	0	0	2		6	0	
Detector Phase	4	4	4	8 3	8	8 8	2 2	2		6 6	6	

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4: Conroy & St. Laurent PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SE
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	43.9	43.9	43.9	11.3	43.9	43.9	30.3	30.3		30.3	30.3	
Total Split (s)	44.0	44.0	44.0	15.0	59.0	59.0	36.0	36.0		36.0	36.0	
Total Split (%)	46.3%	46.3%	46.3%	15.8%	62.1%	62.1%	37.9%	37.9%		37.9%	37.9%	
Maximum Green (s)	37.1	37.1	37.1	9.3	52.1	52.1	29.7	29.7		29.7	29.7	
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)	3.6	3.6	3.6	2.4	3.6	3.6	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	0.0	
Total Lost Time (s)	6.9	6.9	6.9	5.7	6.9	6.9	6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	30.0	30.0	30.0		30.0	30.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)	5	5	5		5	5	10	10		10	10	
Act Effct Green (s)	20.9	20.9	20.9	37.1	35.9	35.9	45.9	45.9		45.9	45.9	
Actuated g/C Ratio	0.22	0.22	0.22	0.39	0.38	0.38	0.48	0.48		0.48	0.48	
v/c Ratio	0.14	0.20	0.76	0.53	0.06	0.17	0.31	0.30		0.13	0.70	
Control Delay	26.5	27.8	31.6	23.5	15.3	5.6	29.7	16.5		20.1	25.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	26.5	27.8	31.6	23.5	15.3	5.6	29.7	16.5		20.1	25.0	
LOS	С	С	С	С	В	А	С	В		С	С	
Approach Delay		30.5			17.8			17.3			24.9	
Approach LOS		С			В			В			С	
Queue Length 50th (m)	5.8	11.0	32.2	28.4	3.7	2.6	3.8	22.1		3.2	71.5	
Queue Length 95th (m)	10.4	16.5	45.3	30.7	6.4	8.2	#18.4	42.1		12.1	#149.8	
Internal Link Dist (m)		173.7			247.8			348.7			324.5	
Turn Bay Length (m)	45.0		50.0	55.0		55.0				110.0		
Base Capacity (vph)	504	674	644	440	887	837	129	2244		287	1595	
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	0.08	0.11	0.49	0.53	0.04	0.12	0.31	0.30		0.13	0.70	
Intersection Summary												
Area Type:	Other											
Cycle Length: 95												
Actuated Cycle Length: 95												
Offset: 2 (2%), Referenced to	phase 2:NBT	L and 6:S	BTL, Start	of Green								
Natural Cycle: 90												
Control Type: Actuated-Coorc	dinated											
Maximum v/c Ratio: 0.76	_											
Intersection Signal Delay: 22.					itersection							
Intersection Capacity Utilization	on 84.5%			IC	CU Level o	f Service E						
Analysis Period (min) 15												
# 95th percentile volume ex			may be lon	ger.								
Queue shown is maximum	after two cyc	eles.										
Splits and Phases: 4: Conro	oy & St. Laure	ant										
	oy a ol. Laure	JIIL										

 Ø2 (R)
 Ø3
 Ø4

 36 s
 15 s
 44 s

 Ø6 (R)
 Ø8

 36 s
 59 s

5: Don Reid & St. Laurent PM Peak Hour

	4	•	1	1	1	Ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		eî 👘			र्स
Traffic Volume (vph)	23	56	107	76	151	51
Future Volume (vph)	23	56	107	76	151	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904		0.944			
Flt Protected	0.986					0.964
Satd. Flow (prot)	1481	0	1641	0	0	1588
Flt Permitted	0.986					0.964
Satd. Flow (perm)	1481	0	1641	0	0	1588
Link Speed (k/h)	50		50			50
Link Distance (m)	137.6		234.0			146.3
Travel Time (s)	9.9		16.8			10.5
Confl. Peds. (#/hr)	0.0			2	2	
Confl. Bikes (#/hr)		1		4		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	8%	2%	3%	4%	20%
Adj. Flow (vph)	23	56	107	76	151	51
Shared Lane Traffic (%)	•					
Lane Group Flow (vph)	79	0	183	0	0	202
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5	, ngin	0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		10.0			10.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 37.7%					Service A
Analysis Period (min) 15	011 01 .1 /0					Gervice P

Analysis Period (min) 15

APPENDIX L

Transportation Demand Management

TDM-Supportive Development Design and Infrastructure Checklist:

Residential Developments (multi-family or condominium)

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

TDM-supportive design & infrastructure measures: Residential developments			Check if completed & add descriptions, explanations or plan/drawing references
	1.	WALKING & CYCLING: ROUTES	
	1.1	Building location & access points	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	
	1.2	Facilities for walking & cycling	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations <i>(see Official Plan policy 4.3.3)</i>	☐ - n/a
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 <i>(see Official</i> <i>Plan policy 4.3.12)</i>	

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

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

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

TDM Measures Checklist:

Residential Developments (multi-family, condominium or subdivision)

	Legend
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance
*	The measure is one of the most dependably effective tools to encourage the use of sustainable modes

	TDN	I measures: Residential developments	Check if proposed & add descriptions
	1.	TDM PROGRAM MANAGEMENT	
	1.1	Program coordinator	
BASIC	* 1.1.1	Designate an internal coordinator, or contract with an external coordinator	
	1.2	Travel surveys	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	
	2.	WALKING AND CYCLING	
	2.1	Information on walking/cycling routes & des	tinations
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances (multi-family, condominium)	
	2.2	Bicycle skills training	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	

	TDM	measures: Residential developments	Check if proposed & add descriptions
	3.	TRANSIT	
	3.1	Transit information	
BASIC	3.1.1	Display relevant transit schedules and route maps at entrances (multi-family, condominium)	
BETTER	3.1.2	Provide real-time arrival information display at entrances (multi-family, condominium)	
	3.2	Transit fare incentives	
BASIC *	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	
BETTER	3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	
	3.3	Enhanced public transit service	
BETTER ★	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels <i>(subdivision)</i>	
	3.4	Private transit service	
BETTER	3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	
	4.	CARSHARING & BIKESHARING	
	4.1	Bikeshare stations & memberships	
BETTER	4.1.1	Contract with provider to install on-site bikeshare station (<i>multi-family</i>)	
BETTER	Services until regular services are warrant occupancy levels (subdivision) 3.4 Private transit service 3.4.1 Provide shuttle service for seniors homes lifestyle communities (e.g. scheduled mall supermarket runs) 4. CARSHARING & BIKESHARING 4.1 Bikeshare stations & memberships TER 4.1.1 Contract with provider to install on-site bik station (multi-family) 4.1.2 Provide residents with bikeshare member either free or subsidized (multi-family) 4.2.1 Contract with provider to install on-site car vehicles and promote their use by resident		
	4.2	Carshare vehicles & memberships	
BETTER	4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	
BETTER	4.2.2		
	5.	PARKING	
	5.1	Priced parking	
BASIC ★	5.1.1	Unbundle parking cost from purchase price (condominium)	
BASIC ★	5.1.2	Unbundle parking cost from monthly rent (multi-family)	

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

APPENDIX M

MMLOS Analysis

Segment MMLOS Analysis

This section provides a review of the boundary streets Walkley Road, Conroy Road, St. Laurent Boulevard, and Don Reid Drive, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation on the boundary streets. As each boundary street is located within both the General Urban Area and Urban Employment Area, whichever target is more stringent has been considered.

Exhibit 4 of the *MMLOS Guidelines* has been used to evaluate the segment pedestrian level of service (PLOS) of the boundary streets. Exhibit 22 of the *MMLOS Guidelines* identifies a target PLOS C for all roadways in the General Urban Area or Employment Area. The results of the segment PLOS analysis are summarized in **Table 1**.

Exhibit 11 of the *MMLOS Guidelines* has been used to evaluate the segment bicycle level of service (BLOS) of the boundary streets. In the General Urban Area, Exhibit 22 of the *MMLOS Guidelines* identifies a target BLOS B for roadways with a Crosstown Bikeway designation (Walkley Road, Conroy Road) or Local Route designation (St. Laurent Boulevard, Don Reid Drive). The results of the segment BLOS analysis are summarized in **Table 2**.

Exhibit 15 of the *MMLOS Guidelines* has been used to evaluate the segment transit level of service (TLOS) of the boundary streets. Within the General Urban Area or Employment Area, Exhibit 22 of the *MMLOS Guidelines* identifies a target TLOS B for roadways with a Rapid Transit Corridor designation in the RTTP Network Concept (Walkley Road), and a target TLOS D for roadways with a Transit Priority with Isolated Measures designation (Conroy Road). St. Laurent Boulevard and Don Reid Drive have not been evaluated for segment TLOS. The results of the segment TLOS analysis are summarized in **Table 3**.

Exhibit 20 of the *MMLOS Guidelines* has been used to evaluate the segment truck level of service (TkLOS) of the boundary streets. Within the Employment Area, Exhibit 22 of the *MMLOS Guidelines* identifies a target TkLOS B for arterial roadways with a truck route designation (Walkley Road, Conroy Road), and a target TkLOS D for collector roadways without a truck route designation (St. Laurent Boulevard, Don Reid Drive). The results of the segment TkLOS analysis are summarized in **Table 4**.

Table 1: PLOS Segment Analysis											
Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On- Street Parking	Operating Speed ⁽¹⁾	PLOS						
Walkley Road (north side, Ryder Street to 160m West of Conroy Road)											
1.5m	> 2.0m	> 3,000 vpd	No	60 km/h	E						
Walkley Road (south side, Don Reid Drive to 160m West of Conroy Road)											
<u>></u> 2.0m	0m	> 3,000 vpd	No	60 km/h	E						
Conroy Road (east side, Walkley Road to St. Laurent Boulevard)											
1.5m	> 2.0m	> 3,000 vpd	No	70 km/h	E						
Conroy Road	(west side, W	alkley Road to St. Laure	ent Boulevard)								
<u>></u> 2.0m	> 2.0m	> 3,000 vpd	No	70 km/h	D						
St. Laurent B	oulevard (nort	th side, Don Reid Drive	to Conroy Road)								
1.5m	0.5 to 2.0m	<u>≤</u> 3,000 vpd	No	60 km/h	С						
St. Laurent B	oulevard (sou	th side, Don Reid Drive	to Conroy Road)								
No sic	dewalk	<u>≤</u> 3,000 vpd	No	60 km/h	F						
Don Reid Driv	ve (east side, V	Walkley Road to St. Lau	rent Boulevard)								
1.5m	0.5 to 2.0m	<u><</u> 3,000 vpd	No	60 km/h	С						
Don Reid Driv	ve (west side,	Walkley Road to St. Lau	Irent Boulevard)								
No sic	dewalk	<u>≤</u> 3,000 vpd	No	60 km/h	F						
1 Operating apod	And the second second second second	line it where do have the									

Table 1: PLOS Segment Analysis

1. Operating speed taken as the speed limit plus 10 km/h.

Table 2: BLOS Segment Analysis

Road Class	Route Type	Bikeway Type	Travel Lanes	Operating Speed	Bike Lane Width	Bike Lane Blockage	BLOS					
Walkley Road (Don Reid Drive/Ryder Street to 160m West of Conroy Road)												
Arterial	Crosstown Bikeway	Mixed Traffic	4	60 km/h	N/A	N/A	F					
Conroy Road	Conroy Road (Walkley Road to St. Laurent Boulevard)											
	Crosstown Bikeway	Curbside Bike Lane	4 to 5	70 km/h	<u>></u> 1.8m	Rare	Е					
Arterial		Mixed-Use Pathway	N/A	N/A	N/A	N/A	А					
St. Laurent E	Boulevard (Do	n Reid Drive	to Conroy	Road)								
Collector	Local Route	Mixed Traffic	2	60 km/h	N/A	N/A	F					
Don Reid Dri	ive (Walkley F	Road to St. La	urent Bou	levard)								
Collector	Local Route	Mixed Traffic	2	60 km/h	N/A	N/A	F					

Table 3: TLOS Segment Analysis

Fooility Type	Exposure to Cong	TLOS							
Facility Type	Congestion Friction		Incident Potential	ILU5					
Walkley Road (Don Reid Drive/Ryder Street to 160m West of Conroy Road)									
Mixed Traffic – Limited	Yes	Low	Medium	D					
Parking/Driveway Friction Conroy Road (Walkley Road	to St. Laurent Bou	llevard)							
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D					

Table 4. TKLOS Segment Analysis							
Number of Travel Lanes Per Direction	TkLOS						
Walkley Road (Don Reid Drive/Ryder Street to 160m West of Conroy Road)							
2	A						
Conroy Road (Walkley Road to St. Laurent Boulevard)							
2 to 3	А						
eid Drive to Conroy Road)							
1	В						
Don Reid Drive (Walkley Road to St. Laurent Boulevard)							
1	В						
	Number of Travel Lanes Per Direction /Ryder Street to 160m West of Conroy Road) 2 5 5 2 5 2 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 1						

Table 4: TkLOS Segment Analysis

Intersection MMLOS Analysis

The following is a review of the MMLOS of the signalized intersections within the study area (Walkley Road/Don Reid Drive/Ryder Street, Walkley Road/160m West of Conroy Road, Walkley Road/ Conroy Road, and St. Laurent Boulevard/Conroy Road), using complete streets principles. All of these intersections have been evaluated based on existing conditions, using the MMLOS targets for intersections within the General Urban Area or Employment Area, whichever are stricter.

Exhibit 5 of the *Addendum to the MMLOS Guidelines* has been used to evaluate the existing PLOS at the intersections listed above. Exhibit 22 of the *MMLOS Guidelines* identifies a target PLOS C for all roadways in the General Urban Area or Employment Area. The results of the intersection PLOS analysis are summarized in **Table 5** through **Table 8**.

Exhibit 12 of the *MMLOS Guidelines* has been used to evaluate the existing BLOS at the intersections listed above. In the General Urban Area, Exhibit 22 of the *MMLOS Guidelines* identifies a target BLOS B for Crosstown Bikeways (Conroy Road, Walkley Road), and a target BLOS B for Local Cycling Routes (Don Reid Drive, Ryder Street, St. Laurent Boulevard). The results of the intersection BLOS analysis are summarized in **Table 9**.

Exhibit 16 of the *MMLOS Guidelines* has been used to evaluate the existing TLOS at the intersections listed above. Exhibit 22 of the *MMLOS Guidelines* identifies a target TLOS B for Rapid Transit Corridors (Walkley Road) and a target TLOS D for Transit Priority Corridors with Isolated Measures (Conroy Road). The TLOS has been evaluated for every approach that is currently utilized by transit at the study area intersections. The results of the intersection TLOS analysis are summarized in **Table 10**.

Exhibit 21 of the *MMLOS Guidelines* has been used to evaluate the existing TkLOS at the intersections listed above. In the Employment Area, Exhibit 22 of the *MMLOS Guidelines* identifies a target TkLOS B for arterial truck routes (Walkley Road, Conroy Road), a target TkLOS D for collector roadways without a truck route designation (St. Laurent Boulevard, Don Reid Drive), and a target TkLOS E for local roadways without a truck route designation (Ryder Street). The results of the intersection TkLOS analysis are summarized in **Table 11**.

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE	•				
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	72	No	39	No	- 39	No	6
Lanes Crossed (3.5m Lane Width)	5	12	7	39	7	39	9	- °
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Permissive	-8	Permissive	-8	Permissive	-8	Permissive	-8
Right Turn Conflict	Permissive or Yield	-5						
Right Turn on Red	RTOR Allowed	-3						
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 10m to 15m	-6						
Parallel Right Turn Channel	No Right Turn Channel	-4						
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
•	PETSI SCORE	37		4		4		-29
	LOS	E		F		F		F
			DELAY SCOR	E				
Cycle Length		100		100		110		110
Pedestrian Walk Time		43.1		43.1		10.1		10.1
	DELAY SCORE	16.2		16.2		45.4		45.4
	LOS	В		В		E		E
	OVERALL	E		F		F		F

Table 5: PLOS Intersection Analysis – Walkley Road/Don Reid Drive/Ryder Street

Table 6: PLOS Intersection Analysis – Walkley Road/160m West of Conroy Road

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	N/A	0	No	55	No	39	No	39
Lanes Crossed (3.5m Lane Width)	N/A	0	6	55	7	39	7	39
SIGNAL PHASING AND TIMING								
Left Turn Conflict	N/A	0	Permissive	-8	No Left Turn/Prohibited	0	Permissive	-8
Right Turn Conflict	N/A	0	Permissive or Yield	-5	Permissive or Yield	-5	No Right Turn/Prohibited	0
Right Turn on Red	N/A	0	RTOR Allowed	-3	N/A	0	RTOR Allowed	-3
Leading Pedestrian Interval	N/A	0	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	N/A	0	> 10m to 15m	-6	> 10m to 15m	-6	No Right Turn	0
Parallel Right Turn Channel	N/A	0	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn	0
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
CROSSING TREATMENT								
Treatment	N/A	0	Standard	-7	Standard	-7	Standard	-7
	PETSI SCORE	-		20		15		19
	LOS	-		F		F		F
			DELAY SCORE					
Cycle Length		0		100		110		110
Pedestrian Walk Time		0.0		52.0		7.0		7.0
	DELAY SCORE	-		11.5		48.2		48.2
	LOS	-		В		E		E
	OVERALL			F		F		F

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	N/A	0	No	10	No		N/A	
Lanes Crossed (3.5m Lane Width)	N/A	0	10 +	-10	9	6	N/A	0
SIGNAL PHASING AND TIMING				· · ·		· · · · ·		
Left Turn Conflict	N/A	0	Protected	0	No Left Turn/Prohibited	0	N/A	0
Right Turn Conflict	N/A	0	Permissive or Yield	-5	Permissive or Yield	-5	N/A	0
Right Turn on Red	N/A	0	N/A	0	N/A	0	N/A	0
Leading Pedestrian Interval	N/A	0	No	-2	No	-2	N/A	0
CORNER RADIUS				• •		• •		•
Parallel Radius	N/A	0	> 15m to 25m	-8	> 15m to 25m	-8	N/A	0
Parallel Right Turn Channel	N/A	0	Conventional without Receiving	0	Conventional with Receiving	-3	N/A	0
Perpendicular Radius	N/A	0	> 15m to 25m	-8	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	Conventional with Receiving	-3	N/A	0	N/A	0
CROSSING TREATMENT	·							
Treatment	N/A	0	Standard	-7	Standard	-7	N/A	0
•	PETSI SCORE	-		-43		-19		-
	LOS	-		F		F		-
			DELAY SCORE					
Cycle Length		0		120		120		0
Pedestrian Walk Time		0.0		28.6		16.6		0.0
	DELAY SCORE	-		34.8		44.5		-
	LOS	-		D		E		-
	OVERALL	-		F		F		

Table 7: PLOS Intersection Analysis – Walkley Road/Conroy Road

Table 8: PLOS Intersection Analysis – St. Laurent Boulevard/Conroy Road

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	-10	No	-10	No	55	No	55
Lanes Crossed (3.5m Lane Width)	10 +	-10	10 +	-10	6	55	6	55
SIGNAL PHASING AND TIMING					•		·	
Left Turn Conflict	Permissive	-8	Perm + Prot	-8	Permissive	-8	Permissive	-8
Right Turn Conflict	Permissive or Yield	-5 Permissive or Yield		-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	N/A	0
Leading Pedestrian Interval	ading Pedestrian Interval No			-2	2 No		No	-2
CORNER RADIUS								
Parallel Radius	> 10m to 15m	-6	> 15m to 25m	-8	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	No Right Turn Channel	-4	Conventional without Receiving	0	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	N/A	0	> 15m to 25m	-8
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	Conventional without Receiving	0
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
	PETSI SCORE	-45		-43		20		15
	LOS	F		F		F		F
			DELAY SCORE					
Cycle Length		100		100		95		95
Pedestrian Walk Time		7.1		7.1		12.7		12.7
	DELAY SCORE	43.2		43.2		35.6		35.6
	LOS	E		E		D		D
	OVERALL	F		F		F		F

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Walkley Road/D				BEGG
Walkiey Hoda/D		Right Turn Lane		
North Approach	Mixed Traffic	Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed; 50 km/h	D
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	А
South Approach		Left Turn Accommodation	One lane crossed; \geq 60 km/h	F
East Approach Mixed Traf		Right Turn Lane Characteristics	Shared through/right turn lane	А
		Left Turn Accommodation	Two lanes crossed; <u>></u> 50 km/h	F
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	А
		Left Turn Accommodation	Two lanes crossed; <u>></u> 50 km/h	F
Walkley Road/10	60m West of Co	onroy Road		
		Right Turn Lane Characteristics	Right turn lane < 50m; turning speed <u><</u> 25 km/h	D
South Approach	Mixed Traffic	Left Turn	One lane crossed; < 40 km/h	P
		Accommodation	(private approach, low speed assumed)	В
Foot Annua och	Missed Treffic	Right Turn Lane Characteristics	No right turn	-
East Approach	Mixed Traffic	Left Turn Accommodation	Two lanes crossed; <u>></u> 50 km/h	F
Most Approach	Pocket	Right Turn Lane Characteristics	Right turn lane < 50m, and is introduced to the right	В
West Approach	Bike Lane	Left Turn Accommodation	No left turn	-
Walkley Road/C	onroy Road			
	Pocket	Right Turn Lane Characteristics	Bike lane shifts to the left; turning speed < 25 km/h	D
South Approach	Bike Lane	Left Turn Accommodation	Dual left turn lanes	F
		Right Turn Lane Characteristics	No right turn	-
East Approach	Mixed Traffic	Left Turn Accommodation	Dual left turn lanes	F
	Pocket	Right Turn Lane Characteristics	Right turn lane > 50m, and is introduced to the right	D
West Approach	Bike Lane	Left Turn Accommodation	No left turn	-

Table 9: BLOS Intersection Analysis

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
St. Laurent Bou	levard/Conroy	Road		
North Approach	Curbside	Right Turn Lane Characteristics	Shared through/right turn lane	A
North Approach	Bike Lane	Left Turn Accommodation	Three lanes crossed; \geq 50 km/h	F
South Approach	Curbside	Right Turn Lane Characteristics	Shared through/right turn lane	A
South Approach	Bike Lane	Left Turn Accommodation	Three lanes crossed; \geq 50 km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane <u><</u> 50m; turning speed <u><</u> 25 km/h	D
East Approach		Left Turn Accommodation	One lane crossed; <u>></u> 60 km/h	F
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane < 50m; turning speed <u><</u> 25 km/h	D
West Approach		Left Turn Accommodation	One lane crossed; <u>></u> 60 km/h	F

Table 10: TLOS Intersection Analysis

Approach	Del	Delay ⁽¹⁾								
Approach	AM Peak Hour	PM Peak Hour	TLOS							
Walkley Road/Don Reid Dr	Walkley Road/Don Reid Drive/Ryder Street									
North Approach	30 sec	40 sec	E							
East Approach	7 sec	10 sec	В							
West Approach	8 sec	13 sec	С							
Walkley Road/160m West of	of Conroy Road									
East Approach	9 sec	8 sec	В							
West Approach	3 sec	2 sec	В							
Walkley Road/Conroy Road	d									
South Approach	42 sec	36 sec	F							
East Approach	23 sec	28 sec	D							
West Approach	23 sec	31 sec	E							
St. Laurent Boulevard/Con	roy Road									
North Approach	13 sec	28 sec	D							
South Approach	11 sec	19 sec	С							
East Approach	25 sec	18 sec	D							

1. Delay based on outputs from Synchro analysis of existing conditions

Approach	Effective Corner Radius	Number of Receiving Lanes Departing Intersection	TkLOS
Walkley Road/Don Ro	eid Drive/Ryder Street		
North Approach	10m to 15m	2	В
South Approach	10m to 15m	2	В
East Approach	10m to 15m	1	Е
West Approach	10m to 15m	1	E
Walkley Road/160m \	Nest of Conroy Road		
South Approach	10m to 15m	2	В
West Approach	10m to 15m	1	E
Walkley Road/Conroy	y Road		
South Approach	> 15m	3	А
West Approach	> 15m	2	А
St. Laurent Boulevar	d/Conroy Road		
North Approach	10m to 15m	1	E
South Approach	10m to 15m	1	E
East Approach	10m to 15m	3	В
West Approach	> 15m	2	А

Table 11: TkLOS Intersection Analysis

APPENDIX N

Total Synchro Analysis

1: Don Reid/Ryder & Walkley AM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	5	A		5	Åβ		5	eî 🗧		5	f,	
Traffic Volume (vph)	29	925	173	46	1410	195	97	7	60	49	47	39
Future Volume (vph)	29	925	173	46	1410	195	97	7	60	49	47	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	0.0	50.0	1000	0.0	35.0	1000	0.0	30.0	1000	0.0
Storage Lanes	10.0		0.0	1		0.0	1		0.0	1		0.0
Taper Length (m)	25.0		Ū	30.0		v	25.0		Ū	30.0		U
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99	0.55	1.00	1.00	0.55	1.00	0.98	1.00	1.00	0.99	1.00
Frt		0.976		1.00	0.982		1.00	0.866		1.00	0.932	
Flt Protected	0.950	0.370		0.950	0.302		0.950	0.000		0.950	0.352	
Satd. Flow (prot)	1537	3169	0	1642	3166	0	1580	1367	0	1674	1630	0
Flt Permitted	0.119	3109	0	0.237	5100	0	0.701	1307	0	0.713	1030	U
		2400	٥	408	2400	0		1007	0		1020	0
Satd. Flow (perm)	193	3169	0	408	3166	0	1161	1367	0	1251	1630	0
Right Turn on Red		07	Yes		00	Yes		00	Yes		20	Yes
Satd. Flow (RTOR)		37			26			60			39	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		402.0			171.1			100.3			281.0	
Travel Time (s)		28.9			12.3			7.2			20.2	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
Confl. Bikes (#/hr)			3			3			3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	4%	1%	3%	5%	1%	7%	1%	12%	1%	1%	1%
Adj. Flow (vph)	29	925	173	46	1410	195	97	7	60	49	47	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	1098	0	46	1605	0	97	67	0	49	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		5.0			5.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		Cl+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel		OFLA			OULY			OULY			OFLA	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	0.0 NA	
Protected Phases	Peilli	NA 2		Felli	NA 6		Felli	NA 8		Felli	NA 4	
Permitted Phases	0	2		6	0		0	0		A	4	
remilled Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

J.Audia, Novatech

Synchro 10 Report

1: Don Reid/Ryder & Walkley AM Peak Hour

	٦	-	$\mathbf{\hat{v}}$	€	←	•	1	1	1	1	Ŧ	-
_ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	S
Switch Phase												
Vinimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	35.9	35.9		35.9	35.9		36.2	36.2		36.2	36.2	
Total Split (s)	64.0	64.0		64.0	64.0		36.0	36.0		36.0	36.0	
Fotal Split (%)	64.0%	64.0%		4.0%	64.0%		36.0%	36.0%		36.0%	36.0%	
Maximum Green (s)	58.1	58.1		58.1	58.1		29.8	29.8		29.8	29.8	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6		2.6	2.6		2.9	2.9		2.9	2.9	
₋ost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.9	5.9		5.9	5.9		6.2	6.2		6.2	6.2	
_ead/Lag												
_ead-Lag Optimize?												
/ehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-	-Max	C-Max		None	None		None	None	
Valk Time (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	5	5		5	5		5	5		5	5	
Act Effct Green (s)	76.1	76.1		76.1	76.1		16.2	16.2		16.2	16.2	
Actuated g/C Ratio	0.76	0.76		0.76	0.76		0.16	0.16		0.16	0.16	
//c Ratio	0.20	0.45		0.15	0.66		0.52	0.25		0.24	0.29	
Control Delay	11.6	7.3		4.8	5.4		46.2	11.9		36.4	22.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.6	7.3		4.8	5.4		46.2	11.9		36.4	22.1	
_OS	В	А		А	А		D	В		D	С	
Approach Delay		7.4			5.4			32.2			27.3	
Approach LOS		А			А			С			С	
Queue Length 50th (m)	1.3	32.5		1.3	26.7		16.5	1.1		8.0	7.6	
Queue Length 95th (m)	8.4	76.6	I	m2.4	29.6		25.8	9.6		14.5	16.3	
nternal Link Dist (m)		378.0			147.1			76.3			257.0	
Furn Bay Length (m)	40.0			50.0			35.0			30.0		
Base Capacity (vph)	147	2421		310	2416		345	449		372	513	
Starvation Cap Reductn	0	0		0	18		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	0.20	0.45		0.15	0.67		0.28	0.15		0.13	0.17	
ntersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 94 (94%), Referenced	to phase 2:E	BTL and 6:	WBTL, Start o	of Gree	n							
Vatural Cycle: 90												
Control Type: Actuated-Coord	linated											
/laximum v/c Ratio: 0.66												
ntersection Signal Delay: 8.5					tersection LO							
ntersection Capacity Utilization	on 72.1%			IC	CU Level of Se	ervice C						
Analysis Period (min) 15												

Splits and Phases: 1: Don Reid/Ryder & Walkley

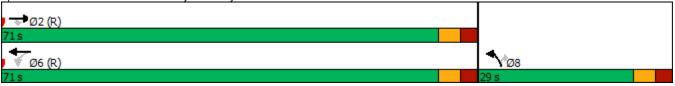


2: 160m W of Conroy & Walkley AM Peak Hour

Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane 1.09 1.09 1.09 1.09 1.09 Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right		-	\mathbf{r}	1	←	1	1
Lane Configurations Image: Configurations <	Lane Group	FRT	FRR	WRL	WRT	NRL	NRR
Traffic Volume (vph) 954 90 74 1595 66 60 Future Volume (vph) 954 90 74 1595 66 60 Geal Flow (vphpl) 1800 1800 1800 1800 1800 1800 Storage Length (m) 20.0 65.0 30.0 0.0 Lane Util. Factor 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.00 Ped Bike Factor 0.966 1.00 0.99 0.98 0.9850 0.850 Fit Protected 0.950 0.950 0.950 0.850 0.850 Statd. Flow (perm) 3221 1442 509 3191 1663 1456 Statd. Flow (RTOR) 71 60 50 50 51 Link Speed (k/h) 50 50 50 52 52 Confl. Peds. (#/hr) 10 100 1.00 1.00 1.00 1.00 Link Obstance (m) 15% 1% <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
Future Volume (vph) 954 90 74 1595 66 60 deal Flow (vphp) 1800 </td <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td>				-			
Ideal Flow (vphpl) 1800 100 0.0							
Storage Length (m) 20.0 65.0 30.0 0.0 Storage Lanes 1 1 1 1 1 Taper Length (m) 25.0 30.0 1.00 1.00 1.00 Lane Util. Factor 0.95 1.00 1.00 0.99 0.98 Ped Bike Factor 0.96 1.00 0.95 0.850 Fit Protected 0.950 0.950 0.850 Stadt, Flow (port) 3221 1448 1674 1433 Stadt, Flow (perm) 3221 1442 509 3191 1663 Stadt, Flow (perm) 3221 1442 509 3191 1683 1456 Right Turn on Red Yes Yes Yes Yes Yes Yes Stadt, Flow (perm) 12.3 12.2 9.3 Confl. Peds, (#hr) 10 10 1.00 1.00 Link Distance (m) 171.1 1691 128.6 60 60 Confl. Peds, (#hr) 3 3							
Storage Lanes 1 1 1 1 1 1 Taper Length (m) 25.0 30.0		1000			1000		
Taper Length (m) 25.0 30.0 Lane Ulti, Factor 0.95 1.00 1.00 0.95 1.00 1.00 Ped Bike Factor 0.96 1.00 0.99 0.98 Fit 0.850 0.950 0.850 Satd. Flow (prot) 3221 1498 1674 3191 1673 1443 Satd. Flow (perm) 3221 1442 509 3191 1663 1456 Sight Turn on Red Yes Yes Yes Yes Yes Satd. Flow (perm) 171.1 169.1 128.6 12.2 9.3 100 1.00 1							
Lane Util. Factor 0.95 1.00 1.00 0.95 1.00 1.00 Ped Bike Factor 0.96 1.00 0.99 0.98 Fit 0.850 0.850 0.850 Fit Protected 0.950 0.950 0.950 Satd. Flow (prot) 3221 1448 1674 3191 1663 1456 Satd. Flow (perm) 3221 1442 509 3191 1663 1456 Satd. Flow (perm) 3221 1442 50 50 50 50 Link Speed (k/h) 50 <td></td> <td></td> <td></td> <td>•</td> <td></td> <td></td> <td>1</td>				•			1
Ped Bike Factor 0.96 1.00 0.99 0.98 Fit 0.850 0.950 0.850 Fit Protected 0.950 0.950 0.850 Satd. Flow (port) 3221 1448 1674 3191 1674 1483 Fit Permitted 0.290 0.950 0.950 0.950 0.950 Satd. Flow (port) 3221 1442 509 3191 1663 1456 Right Turn on Red Yes Yes Yes Yes Yes Satd. Flow (RTOR) 71 60 50 50 50 Link Distance (m) 171.1 169.1 12.2 9.3 3 Confl. Peds. (#/hr) 3 7 5 5 5 Confl. Sikes (#/hr) 1.00 1.00 1.00 1.00 1.00 1.00 Leany Vehicles (%) 5% 1% 1% 6% 60 60 Enter Biocked Intersection No No No No No <td></td> <td>0.95</td> <td>1.00</td> <td></td> <td>0.95</td> <td></td> <td>1 00</td>		0.95	1.00		0.95		1 00
Fit 0.850 0.850 0.850 FIt Protected 0.950 0.950 0.950 Satd. Flow (prot) 3221 1498 1674 3191 1673 1483 Fit Permitted 0.290 0.950 0.950 0.950 0.950 Satd. Flow (perm) 3221 1442 509 3191 1663 1456 Right Turn on Red Yes Yes Yes Yes Yes Satd. Flow (RTOR) 71 60		0.95			0.55		
Fit Protected 0.950 0.950 Satd. Flow (port) 3221 1498 1674 3191 1674 1483 Satd. Flow (perm) 3221 1442 0.290 0.950 Satd. Flow (perm) 3221 1442 Satd. Flow (perm) 3221 1442 Satd. Flow (perm) 3221 1442 Satd. Flow (perm) 1663 1456 Satd. Flow (perm) 3221 1442 Satd. Flow (RTOR) 71 60 Link Speed (k/h) 50 50 50 50 50 50 Link Distance (m) 17.1 169.1 128.6 72.8 9.3 50 Confl. Bikes (#hr) 3 12.2 9.3 50 50 50 50 50 50 51 50 51 50 51 50 51				1.00		0.33	
Satd. Flow (prot) 3221 1498 1674 3191 1674 1483 Eft Permitted 0.290 0.950 Satd. Flow (perm) 3221 1442 509 3191 1663 1456 Stdt. Flow (RTOR) 71 60			0.000	0.950		0 950	0.000
Fit Permitted 0.290 0.950 Satd. Flow (perm) 3221 1442 509 3191 1663 1456 Right Turn on Red Yes 71 60 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Bikes (#hr) 10 10 5 5 Confl. Bikes (#hr) 3 10 1.00 1.00 1.00 1.00 Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 How (vph) 954 90 74 1595 66 60 Shared Lane Traffic (%)		3001	1/108		3101		1/183
Satd. Flow (perm) 3221 1442 509 3191 1663 1456 Right Turn on Red Yes 71 60	. ,	JZZT	1430		3131		1400
Right Turn on Red Yes Yes Satd. Flow (RTOR) 71 60 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 3 - - Travel Time (s) 10.0 1.00 1.00 1.00 1.00 Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 954 90 74 1595 66 60 Stared Lane Traffic (%)		2001	1//2		3101		1456
Said. Flow (RTOR) 71 60 Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 3 - - Confl. Bikes (#/hr) 3 - - Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 954 90 74 1595 66 60 Shared Lane Traffic (%) - - - - - - Lane Alignment Left Right LNA NA NA NA Wedian Width(m) 3.5 5.0 3.5 - - - Link Offset(m) 0.0 0.0 0.0 0.0 0.0 - - Headway Factor 1.09 1.09 1.09 1.09		5221		309	2131	1003	
Link Speed (k/h) 50 50 50 Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Reds. (#/hr) 10 10 5 5 Confl. Bikes (#/hr) 3							
Link Distance (m) 171.1 169.1 128.6 Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 3 7 7 Peak Hour Factor 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 954 90 74 1595 66 60 Shared Lane Traffic (%)		EO	11		EO	EO	00
Travel Time (s) 12.3 12.2 9.3 Confl. Peds. (#/hr) 3 5 5 Confl. Bikes (#/hr) 3 7 7 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 954 90 74 1595 66 60 Shared Lane Traffic (%)							
Confl. Peds. (#/hr) 10 10 5 5 Confl. Bikes (#/hr) 3 3							
Confl. Bikes (#/hr) 3 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 954 90 74 1595 66 60 Shared Lane Traffic (%)		12.3	40	40	12.2		-
Peak Hour Factor 1.00				10		5	5
Heavy Vehicles (%) 5% 1% 1% 6% 1% 2% Adj. Flow (vph) 954 90 74 1595 66 60 Shared Lane Traffic (%)		1.00		4.00	4.00	4.00	1.00
Adj. Flow (vph) 954 90 74 1595 66 60 Shared Lane Traffic (%) 0 No No <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
Shared Lane Traffic (%) Lane Group Flow (vph) 954 90 74 1595 66 60 Enter Blocked Intersection No No No No No No No Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 0.0 View ay Left Turn Lane							
Lane Group Flow (vph) 954 90 74 1595 66 60 Enter Blocked Intersection No No No No No No No Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane		954	90	74	1595	66	60
Enter Blocked Intersection No No <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>							
Lane Alignment Left Right L NA Left L NA R NA Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane							
Median Width(m) 3.5 5.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane							
Link Offset(m) 0.0 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 Two way Left Turn Lane	Lane Alignment		Right	L NA			R NA
Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.00 1.00 1.00 <td>Median Width(m)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Median Width(m)						
Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type Cl+Ex	Link Offset(m)						
Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Channel U U U U U U U Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28	Crosswalk Width(m)	5.0			5.0	5.0	
Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type Cl+Ex Detector 1 Channel 0.0	Two way Left Turn Lane						
Turning Speed (k/h) 14 24 24 14 Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Detector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7 28.7 28.7 28.7 24.5 24	Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors 2 1 1 2 1 1 Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type Cl+Ex Detector 1 Delay (s) 0.0 <td>Turning Speed (k/h)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Turning Speed (k/h)						
Detector Template Thru Right Left Thru Left Right Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 6.1 Detector 1 Type Cl+Ex Cl+Ex <td>Number of Detectors</td> <td>2</td> <td></td> <td></td> <td>2</td> <td></td> <td></td>	Number of Detectors	2			2		
Leading Detector (m) 30.5 6.1 6.1 30.5 6.1 6.1 30.5 6.1 6.1 30.5 6.1 6.1 30.5 6.1 6.1 30.5 6.1 6.1 30.5 6.1 6.1 7.1<	Detector Template		Right	Left	Thru	Left	Right
Trailing Detector (m) 0.0	Leading Detector (m)						
Detector 1 Position(m) 0.0							
Detector 1 Size(m) 1.8 6.1 6.1 1.8 6.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 8.1 8.1 8.1 8.1							
Detector 1 Type Cl+Ex							
Detector 1 Channel Detector 1 Extend (s) 0.0 <							
Detector 1 Extend (s) 0.0							
Detector 1 Queue (s) 0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s) 0.0 Detector 2 Size(m) 1.8 1.8 1.8 Detector 2 Type Cl+Ex Cl+Ex Detector 2 Channel 0.0 0.0 0.0 Turn Type NA Perm							
Detector 2 Position(m)28.728.7Detector 2 Size(m)1.81.8Detector 2 TypeCI+ExCI+ExDetector 2 Channel0.00.0Detector 2 Extend (s)0.00.0Turn TypeNAPermPermProtected Phases268Permitted Phases268							
Detector 2 Size(m)1.81.8Detector 2 TypeCI+ExCI+ExDetector 2 Channel0.00.0Detector 2 Extend (s)0.00.0Turn TypeNAPermPermProtected Phases268Permitted Phases268			0.0	0.0		0.0	0.0
Detector 2 Type CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 Turn Type NA Perm Protected Phases 2 6 8							
Detector 2 Channel Detector 2 Extend (s) 0.0 Turn Type NA Perm NA Prot Perm Protected Phases 2 6 8 Permitted Phases 2 6 8							
Detector 2 Extend (s)0.00.0Turn TypeNAPermPermNAProtPermProtected Phases2688Permitted Phases2688					OFEX		
Turn TypeNAPermPermNAProtPermProtected Phases268Permitted Phases268		0.0			0.0		
Protected Phases 2 6 8 Permitted Phases 2 6 8			Dorm	Dorm		Drot	Dorm
Permitted Phases 2 6 8			reim	reim			Perm
		2	~	^	0	ŏ	_
Detector Phase 2 2 6 6 8 8		_	2		•	•	
	Detector Phase	2	2	6	6	8	8

2: 160m W of Conroy & Walkley AM Peak Hour

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0
Total Split (s)	71.0	71.0	71.0	71.0	29.0	29.0
Total Split (%)	71.0%	71.0%	71.0%	71.0%	29.0%	29.0%
Maximum Green (s)	65.0	65.0	65.0	65.0	23.0	23.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	18.0	18.0	0 mux	O MUX	7.0	7.0
Flash Dont Walk (s)	13.0	13.0			16.0	16.0
Pedestrian Calls (#/hr)	5	5			5	5
Act Effct Green (s)	80.2	80.2	80.2	80.2	11.3	11.3
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.11	0.11
v/c Ratio	0.37	0.08	0.18	0.62	0.35	0.28
Control Delay	3.0	0.9	5.9	7.6	43.6	12.6
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	3.0	0.9	5.9	8.0	43.6	12.6
LOS	3.0 A	0.5 A	0.5 A	0.0 A	43.0 D	12.0 B
Approach Delay	2.8			7.9	28.8	
Approach LOS	2.0 A			A	20.0 C	
Queue Length 50th (m)	14.8	0.2	2.6	50.0	11.3	0.0
Queue Length 95th (m)	21.8	0.2	11.2	121.1	19.6	8.9
Internal Link Dist (m)	147.1	0.3	11.2	145.1	104.6	0.3
Turn Bay Length (m)	147.1	20.0	65.0	140.1	30.0	
Base Capacity (vph)	2583	1170	408	2560	385	381
Starvation Cap Reductn	2303	0	400	443	0	0
Spillback Cap Reductin	0	0	0	443 26	0	0
Spinback Cap Reductin	0	0	0	20	0	0
Reduced v/c Ratio	0.37	0.08	0.18	0.75	0.17	0.16
	0.37	0.00	0.10	0.75	0.17	0.10
Intersection Summary						
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 88 (88%), Referenced	I to phase 2:E	BT and 6:W	VBTL, Sta	rt of Greer	1	
Natural Cycle: 75						
Control Type: Actuated-Coord	dinated					
Maximum v/c Ratio: 0.62						
Intersection Signal Delay: 6.9				In	tersection	LOS: A
Intersection Capacity Utilizati					U Level of	
Analysis Period (min) 15						
Splits and Phases: 2: 160n	n W of Conroy	& Walkley	/			
		a manaoj				



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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	*	1	ካካ ካካ	<u>**</u>	RDU	ኘካ	101
Traffic Volume (vph)	801	267	250	996	14	683	471
Future Volume (vph)	801	267	250	996	14	683	471
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		1	2			2	1
Taper Length (m)		•	50.0			10.0	•
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor	0.00	0.97	0.99	0.00	0.00	0.07	0.98
Frt		0.850	0.00				0.850
Flt Protected		0.000	0.950			0.950	0.000
Satd. Flow (prot)	3161	1455	3066	3161	0	3186	1455
Flt Permitted	0101	1100	0.950	0101	0	0.950	1 100
Satd. Flow (perm)	3161	1409	3036	3161	0	3186	1423
Right Turn on Red	0101	Yes	0000	0101	0	0100	Yes
Satd. Flow (RTOR)		267					355
Link Speed (k/h)	50	201		50		60	
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2			19.6		346.5 20.9	
Confl. Peds. (#/hr)	12.2	15	15	19.0		20.9	5
		3	10				5 3
Confl. Bikes (#/hr)	1.00	3 1.00	1.00	1.00	1.00	1.00	3 1.00
Peak Hour Factor							
Heavy Vehicles (%)	7%	4%	7%	7%	2%	3%	4%
Adj. Flow (vph)	801	267	250	996	14	683	471
Shared Lane Traffic (%)	004	007	050	000	^	007	A –7 A
Lane Group Flow (vph)	801	267	250	996	0	697	471
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	LNA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7			
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			CI+Ex			
Detector 2 Channel				U. L A			
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases	2	2		0	8	0	8
Detector Phase	2	2	1	6	8	8	8
	2	2		0	0	0	0

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	55.0	55.0	25.0	80.0	40.0	40.0	40.0
Total Split (%)	45.8%	45.8%	20.8%	66.7%	33.3%	33.3%	33.3%
Maximum Green (s)	48.6	48.6	18.8	73.6	33.6	33.6	33.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	2.1	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	v .,		v . ,	v . 1
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0	NUNC		7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	10	10			5	5	5
Act Effct Green (s)	55.0	55.0	14.9	76.1	5	31.1	31.1
Actuated g/C Ratio	0.46	0.46	0.12	0.63		0.26	0.26
v/c Ratio	0.40	0.40	0.12	0.50		0.20	0.20
Control Delay	26.5	3.9	58.3	13.2		52.4	17.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	26.5	3.9	58.3	13.2		52.4	17.9
LOS	20.5 C	3.9 A	56.5 E	13.2 B		52.4 D	17.9 B
Approach Delay	20.8	- A	L	22.2		38.5	
Approach LOS	20.0 C			22.2 C		50.5 D	
Queue Length 50th (m)	66.6	0.0	27.0	58.8		72.6	21.3
Queue Length 95th (m)	90.9	14.6	38.0	75.0		92.2	59.1
Internal Link Dist (m)	145.1	14.0	30.0	247.7		92.2 324.5	39.1
Turn Bay Length (m)	145.1	75.0	200.0	241.1		524.0	
Base Capacity (vph)	1448	75.0	480	2004		892	654
Starvation Cap Reductn	0	790 0	400	2004		092	004
Spillback Cap Reductin	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.55	0.34	0.52	0.50		0.78	0.72
	0.00	0.34	0.52	0.50		0.70	0.72
Intersection Summary	01						
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 43 (36%), Reference	d to phase 2:E	BT and 6:V	VBT, Start	of Green			
Natural Cycle: 85							
Control Type: Actuated-Coo	rdinated						
Maximum v/c Ratio: 0.84							
Intersection Signal Delay: 27					tersection		
Intersection Capacity Utilizat	tion 69.4%			IC	U Level of	f Service C	;
Analysis Period (min) 15							
Onlike and Dhasses 2: Or	No. 0 Molles						
Splits and Phases: 3: Con	nroy & Walkley						

Ø1 5s Ø6 (R) Ø6 (R) Ø6 (R) Ø6 (R) Ø6 (R) Ø1 Ø1 Ø2 (R) Ø2 (R

4: Conroy & St. Laurent AM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲.	•	1	۲.	•	1	1	^		۲	≜1 ≱	
Traffic Volume (vph)	15	69	88	63	46	25	195	1187	199	87	370	57
Future Volume (vph)	15	69	88	63	46	25	195	1187	199	87	370	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0		50.0	55.0		55.0	0.0		0.0	110.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			10.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	0.99		0.97	0.99		0.98	0.98	0.99		0.99	0.99	
Frt			0.850			0.850		0.978			0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1353	1695	1427	1409	1589	1351	1642	4610	0	1674	3157	0
Flt Permitted	0.727			0.712			0.503			0.166		
Satd. Flow (perm)	1027	1695	1391	1044	1589	1322	850	4610	0	291	3157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			88			36		46			24	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)		14.2			19.6			22.4			20.9	
Confl. Peds. (#/hr)	10	11.4	15	15	10.0	10	20	22.1	25	25	20.0	20
Confl. Bikes (#/hr)	10		3	10		3	20		3	20		25
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	5%	6%	20%	12%	12%	3%	2%	2%	1%	4%	3%
Adj. Flow (vph)	15	69	88	63	46	25	195	1187	199	87	370	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	69	88	63	46	25	195	1386	0	87	427	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		3.5			3.5			7.0			6.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	Cl+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8	Ŭ	8	2	_		6	v	
Detector Phase	4	4	4	8	8	8	2	2		6	6	
	т	- T	т	U	0	0	-	-		U	U	

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Synchro 10 Report

AM Peak Hour											2024 Tota	al Traff
	٦	-	\mathbf{r}	4	+	•	1	1	۲	1	Ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Switch Phase												
Vinimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Vinimum Split (s)	43.9	43.9	43.9	43.9	43.9	43.9	30.3	30.3		30.3	30.3	
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	56.0	56.0		56.0	56.0	
Total Split (%)	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	56.0%	56.0%		56.0%	56.0%	
Maximum Green (s)	37.1	37.1	37.1	37.1	37.1	37.1	49.7	49.7		49.7	49.7	
fellow 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)	3.6	3.6	3.6	3.6	3.6	3.6	2.6	2.6		2.6	2.6	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	6.3	6.3		6.3	6.3	
.ead/Lag												
ead-Lag Optimize?												
/ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Valk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	30.0	30.0	30.0	30.0	30.0	30.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)	15	15	15	10	10	10	20	20		15	15	
Act Effct Green (s)	21.1	21.1	21.1	21.1	21.1	21.1	70.4	70.4		70.4	70.4	
ctuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.70	0.70		0.70	0.70	
/c Ratio	0.07	0.19	0.24	0.29	0.14	0.08	0.33	0.43		0.43	0.19	
Control Delay	24.3	28.7	7.4	31.8	27.7	5.2	13.1	10.4		23.6	8.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Delay	24.3	28.7	7.4	31.8	27.7	5.2	13.1	10.4		23.6	8.6	
.0S	C	С	A	С	С	A	В	В		С	A	
Approach Delay	C C	17.4		· ·	25.5		_	10.7			11.1	
Approach LOS		В			С			В			В	
Queue Length 50th (m)	2.5	11.7	1.7	10.8	7.6	0.0	9.2	25.0		4.5	8.7	
Queue Length 95th (m)	m5.2	17.2	9.9	16.1	12.1	3.5	39.9	73.0		#33.1	29.8	
nternal Link Dist (m)		173.7			247.8	0.0		348.7			324.5	
Furn Bay Length (m)	45.0		50.0	55.0		55.0				110.0	02.1.0	
Base Capacity (vph)	381	628	571	387	589	513	598	3257		204	2228	
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	0.04	0.11	0.15	0.16	0.08	0.05	0.33	0.43		0.43	0.19	
ntersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 23 (23%), Referenced	I to phase 2:N	BTL and 6	SBTL, Sta	art of Gree	n							
latural Cycle: 90												
Control Type: Actuated-Coor	dinated											
/laximum v/c Ratio: 0.43												
ntersection Signal Delay: 12	.1			In	tersection	LOS: B						
ntersection Capacity Utilizati				IC	CU Level o	f Service ()					
nalysis Period (min) 15												
4 95th percentile volume ex	ceeds canaci	ty anene i	may he lon	ner								

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Conroy & St. Laurent

Ø2 (R)	₩ Ø4	
56 s	44 s	
Ø6 (R)	◆ ▼ Ø8	
56 s	44 s	

5: Don Reid & St. Laurent AM Peak Hour

	4	•	1	1	1	Ļ	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	۲		el el			र्स	
Traffic Volume (vph)	75	59	71	22	101	176	
Future Volume (vph)	75	59	71	22	101	176	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt	0.941		0.968				
Flt Protected	0.973					0.982	
Satd. Flow (prot)	1547	0	1498	0	0	1669	
Flt Permitted	0.973					0.982	
Satd. Flow (perm)	1547	0	1498	0	0	1669	
Link Speed (k/h)	50		50			50	
Link Distance (m)	137.6		234.0			146.3	
Travel Time (s)	9.9		16.8			10.5	
Confl. Peds. (#/hr)				10	10		
Confl. Bikes (#/hr)		4		3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	4%	7%	15%	15%	6%	4%	
Adj. Flow (vph)	75	59	71	22	101	176	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	134	0	93	0	0	277	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.5	Ť.	0.0	•		0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	2.0		10.0			10.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Turning Speed (k/h)	24	14		14	24		
Sign Control	Stop		Free			Free	
Intersection Summary							
Area Type:	Other						
Control Type: Unsignalized							
Intersection Capacity Utilization	on 37.2%			IC	U Level of	Service A	Α
Analysia Daviad (min) 15							

6: St. Laurent & E Access AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્સ	eî 🗧		W.	
Traffic Volume (vph)	0	128	135	5	13	0
Future Volume (vph)	0	128	135	5	13	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.995			
Flt Protected					0.950	
Satd. Flow (prot)	0	1618	1615	0	1674	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1618	1615	0	1674	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		40.4	197.7		90.8	
Travel Time (s)		2.9	14.2		6.5	
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				3		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	10%	10%	1%	1%	1%
Adj. Flow (vph)	0	128	135	5	13	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	128	140	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	3.5	J -	3.5	J -
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		0.0	0.0		5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 19.4%			IC	U Level of	Service A
Analysis Deried (min) 15				10		2.3

7: St. Laurent & W Access AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્સ	4		W.	
Traffic Volume (vph)	0	123	133	2	5	1
Future Volume (vph)	0	123	133	2	5	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.977	
Flt Protected					0.960	
Satd. Flow (prot)	0	1618	1617	0	1653	0
Flt Permitted					0.960	
Satd. Flow (perm)	0	1618	1617	0	1653	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		137.6	40.4		92.1	
Travel Time (s)		9.9	2.9		6.6	
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				3		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	10%	10%	1%	1%	1%
Adj. Flow (vph)	0	123	133	2	5	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	123	135	0	6	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0	5 -	3.5	5,
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		0.0	0.0		5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized	0 1101					
Intersection Capacity Utilizati	on 19.2%			IC	U Level of	Service A
Analysis Daried (min) 15	01113.270			10		OGIVICE A

	4	•	1	*	1	Ŧ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		ĥ			ર્સ
Traffic Volume (vph)	1	15	139	0	6	252
Future Volume (vph)	1	15	139	0	6	252
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.873					
Flt Protected	0.997					0.999
Satd. Flow (prot)	1534	0	1618	0	0	1695
Flt Permitted	0.997					0.999
Satd. Flow (perm)	1534	0	1618	0	0	1695
Link Speed (k/h)	50		50			50
Link Distance (m)	105.3		30.4			100.3
Travel Time (s)	7.6		2.2			7.2
Confl. Peds. (#/hr)				10	10	
Confl. Bikes (#/hr)		3		3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	10%	1%	1%	5%
Adj. Flow (vph)	1	15	139	0	6	252
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	139	0	0	258
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5	J -	3.5	J •		3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	5.0		0.0			0.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 29 1%					Service A
Analysis Deried (min) 15	011 29.1 /0					Gervice A

1: Don Reid/Ryder & Walkley PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	A1⊅		۲.	≜1 ≱		۲.	el el		۲	ef 👘	
Traffic Volume (vph)	27	1405	119	27	1424	70	177	5	78	92	104	50
Future Volume (vph)	27	1405	119	27	1424	70	177	5	78	92	104	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	0.0	50.0	1000	0.0	35.0	1000	0.0	30.0	1000	0.0
Storage Lanes	10.0		0.0	1		0.0	1		0.0	1		0.0
Taper Length (m)	25.0		U	30.0		Ū	25.0		Ū	30.0		Ŭ
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00	0.55	1.00	1.00	0.55	1.00	0.98	1.00	1.00	0.99	1.00
Frt	1.00	0.988		1.00	0.993		1.00	0.859		1.00	0.951	
Flt Protected	0.950	0.500		0.950	0.995		0.950	0.000		0.950	0.551	
Satd. Flow (prot)	1674	3229	0	1674	3289	0	1674	1472	0	1674	1651	0
Flt Permitted	0.126	5229	0	0.121	5209	0	0.600	1472	0	0.703	1051	0
	222	3229	0	213	3289	0	1053	1472	0	1233	1651	٥
Satd. Flow (perm)	222	3229	Yes	213	3209	Yes	1055	1472	Yes	1200	1001	0 Yes
Right Turn on Red		45	res		0	res		40	res		22	res
Satd. Flow (RTOR)		15			8			48				
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		402.0			171.1			100.3			281.0	
Travel Time (s)	_	28.9	00	00	12.3	_	_	7.2	-	-	20.2	_
Confl. Peds. (#/hr)	5		20	20		5	5		5	5		5
Confl. Bikes (#/hr)			5			3			3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	3%	1%	2%	1%	1%	1%	2%	1%	1%	4%
Adj. Flow (vph)	27	1405	119	27	1424	70	177	5	78	92	104	50
Shared Lane Traffic (%)	07	4504	•	07		•	477	00	•	00	4 = 4	•
Lane Group Flow (vph)	27	1524	0	27	1494	0	177	83	0	92	154	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		5.0			5.0			3.5			3.5	_
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	CI+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

J.Audia, Novatech

Synchro 10 Report

1: Don Reid/Ryder & Walkley PM Peak Hour

PM Peak Hour	•							•			2024 Tota	
	٦	-	\rightarrow	•	-		1	Ť		*	Ŧ	-
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	S
witch Phase												
1inimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
1inimum Split (s)	35.9	35.9		35.9	35.9		36.2	36.2		36.2	36.2	
otal Split (s)	74.0	74.0		74.0	74.0		36.0	36.0		36.0	36.0	
otal Split (%)	67.3%	67.3%		67.3%	67.3%		32.7%	32.7%		32.7%	32.7%	
laximum Green (s)	68.1	68.1		68.1	68.1		29.8	29.8		29.8	29.8	
ellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
II-Red Time (s)	2.6	2.6		2.6	2.6		2.9	2.9		2.9	2.9	
ost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
otal Lost Time (s)	5.9	5.9		5.9	5.9		6.2	6.2		6.2	6.2	
ead/Lag												
ead-Lag Optimize?												
ehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
lecall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Valk Time (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
lash Dont Walk (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
edestrian Calls (#/hr)	10	10		5	5		5	5		5	5	
ct Effct Green (s)	75.6	75.6		75.6	75.6		22.3	22.3		22.3	22.3	
ctuated g/C Ratio	0.69	0.69		0.69	0.69		0.20	0.20		0.20	0.20	
/c Ratio	0.18	0.69		0.18	0.66		0.83	0.25		0.37	0.44	
ontrol Delay	11.6	13.2		9.8	11.3		71.0	18.1		40.2	35.1	
lueue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
otal Delay	11.6	13.2		9.8	11.3		71.0	18.1		40.2	35.1	
OS	В	В		Α	В		E	В		D	D	
pproach Delay		13.2			11.3			54.1			37.0	
pproach LOS		В			В			D			D	
Queue Length 50th (m)	1.7	84.6		1.9	122.0		33.5	5.7		15.7	22.7	
Queue Length 95th (m)	6.9	130.9		m2.9	49.9		52.9	16.2		27.3	37.3	
nternal Link Dist (m)		378.0			147.1			76.3			257.0	
urn Bay Length (m)	40.0			50.0			35.0			30.0		
ase Capacity (vph)	152	2223		146	2263		285	433		334	463	
tarvation Cap Reductn	0	0		0	4		0	0		0	0	
pillback Cap Reductn	0	0		0	0		0	0		0	0	
storage Cap Reductn	0	0		0	0		0	0		0	0	
educed v/c Ratio	0.18	0.69		0.18	0.66		0.62	0.19		0.28	0.33	
tersection Summary												
rea Type:	Other											
cycle Length: 110												
ctuated Cycle Length: 110												
ffset: 20 (18%), Referenced	to phase 2:E	BTL and 6:	WBTL, Starl	t of Gree	n							
atural Cycle: 80												
ontrol Type: Actuated-Coord	inated											
laximum v/c Ratio: 0.83						~ ~ ~						
tersection Signal Delay: 17.0					tersection L							
torogation Consolty I Itilizatio	on 82.3%			IC	U Level of S	Service E						
tersection Capacity Utilization nalysis Period (min) 15												

Splits and Phases: 1: Don Reid/Ryder & Walkley



2: 160m W of Conroy & Walkley PM Peak Hour

	-	\mathbf{i}	1	-	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	^	1	<u></u>	***		
Traffic Volume (vph)	TT 1590	64	1 36	TT 1456	1 49	r 41
Future Volume (vph)	1590	64	36	1456	49	41
Ideal Flow (vphpl)	1800	1800	1800	1450	1800	1800
Storage Length (m)	1000	20.0	65.0	1000	30.0	0.0
Storage Lanes		20.0	05.0		30.0	0.0
Taper Length (m)		1	25.0		30.0	1
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	0.90	0.95	1.00	0.95	0.99	0.98
Frt		0.95	1.00		0.99	0.90
Fit Protected		0.000	0.950		0.950	0.000
Satd. Flow (prot)	3252	1483	1642	3316	1658	1483
Flt Permitted	5252	1405	0.135	5510	0.950	1403
	3252	1413	233	2246	1646	1455
Satd. Flow (perm)	3252		233	3316	1040	Yes
Right Turn on Red		Yes				
Satd. Flow (RTOR)	F0	30		50	50	41
Link Speed (k/h)	50			50	50	
Link Distance (m)	171.1			169.1	128.6	
Travel Time (s)	12.3	45	45	12.2	9.3	-
Confl. Peds. (#/hr)		15	15		5	5
Confl. Bikes (#/hr)		3				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	2%	3%	2%	2%	2%
Adj. Flow (vph)	1590	64	36	1456	49	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1590	64	36	1456	49	41
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	L NA	Left	L NA	R NA
Median Width(m)	3.5			5.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						OI! LA
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	0.0	0.0	28.7	0.0	0.0
Detector 2 Size(m)	1.8			1.8		
				CI+Ex		
Detector 2 Type Detector 2 Channel	CI+Ex			OI+EX		
	0.0			0.0		
Detector 2 Extend (s)	0.0	Dem	Dem	0.0	D	D
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8

2: 160m W of Conroy & Walkley PM Peak Hour

	→	\mathbf{r}	4	+	•	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0
Total Split (s)	81.0	81.0	81.0	81.0	29.0	29.0
Total Split (%)	73.6%	73.6%	73.6%	73.6%	26.4%	26.4%
Maximum Green (s)	75.0	75.0	75.0	75.0	23.0	23.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	0.0	0.0	0.0	0.0	0.0	0.0
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	18.0	18.0	U-IVIAX		7.0	7.0
Flash Dont Walk (s)	13.0	13.0			16.0	16.0
Pedestrian Calls (#/hr)						10.0
Act Effct Green (s)	5	5	00.0	00.0	5	5 10.9
	90.6	90.6	90.6	90.6	10.9	
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.10	0.10
v/c Ratio	0.59	0.05	0.19	0.53	0.30	0.23
Control Delay	2.2	0.8	7.8	6.6	48.0	15.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	2.2	0.8	7.8	6.7	48.0	15.0
LOS	A	А	А	A	D	В
Approach Delay	2.1			6.8	32.9	
Approach LOS	А			А	С	
Queue Length 50th (m)	15.4	0.2	0.8	58.9	9.4	0.0
Queue Length 95th (m)	22.6	m0.8	m8.1	112.4	17.5	8.2
Internal Link Dist (m)	147.1			145.1	104.6	
Turn Bay Length (m)		20.0	65.0		30.0	
Base Capacity (vph)	2679	1169	192	2731	346	336
Starvation Cap Reductn	102	0	0	330	0	0
Spillback Cap Reductn	79	0	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.05	0.19	0.61	0.14	0.12
Intersection Summary						
Area Type:	Other					
Cycle Length: 110						
Actuated Cycle Length: 110						
Offset: 25 (23%), Referenced	to phase 2:E	BT and 6:\	NBTL. Sta	rt of Greer	ו	
Natural Cycle: 70			,			
Control Type: Actuated-Coord	inated					
Maximum v/c Ratio: 0.59						
Intersection Signal Delay: 5.1				In	tersection	LOS: A
Intersection Capacity Utilization	on 62.9%				CU Level of	
Analysis Period (min) 15	02.070					
m Volume for 95th percentile	a qualla is m	atarad hy i	instroom s	ianal		
		elered by t	apoucants	ngilai.		

Splits and Phases: 2: 160m W of Conroy & Walkley

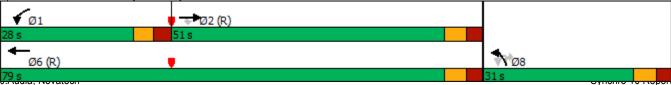


	-	\mathbf{i}	1	-	₹Ĩ	1	1
Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	<u>+</u>				NDU	ሻሻ	
Traffic Volume (vph)	TT 1179	452	518	77 999	43	461	319
Future Volume (vph)	1179	452	518	999	43	461	319
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		1	200.0			2	0.0
Taper Length (m)			50.0			10.0	1
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor	0.90	0.95	0.97	0.90	0.90	0.91	0.96
Frt		0.95	0.99				0.850
Flt Protected		0.000	0.950			0.950	0.000
Satd. Flow (prot)	3221	1483	3185	3349	0	3248	1469
Flt Permitted	JZZI	1405	0.950	0049	0	0.950	1403
Satd. Flow (perm)	3221	1414	3151	3349	0	3248	1406
Right Turn on Red	5221	Yes	3131	5549	0	5240	Yes
Satd. Flow (RTOR)		452					319
	50	402		50		60	219
Link Speed (k/h)							
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2	20	30	19.6		20.9	00
Confl. Peds. (#/hr)		30	30				20
Confl. Bikes (#/hr)	4.00	4	1.00	1.00	1.00	1.00	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	3%	1%	1%	1%	3%
Adj. Flow (vph)	1179	452	518	999	43	461	319
Shared Lane Traffic (%)	1170	150	F 4 A	000	^	F0.4	0.40
Lane Group Flow (vph)	1179	452	518	999	0	504	319
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	LNA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	0.0		28.7	0.0		
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2	1 0111	1	6	1 0111	8	1 0111
Permitted Phases	2	2		0	8	0	8
Detector Phase	2	2	1	6	8	8	8
Delector r llase	2	2		U	0	0	0

J.Audia, Novatech

Synchro 10 Report

	→	\mathbf{r}	4	+	₹I	1	1
Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	51.0	51.0	28.0	79.0	31.0	31.0	31.0
Total Split (%)	46.4%	46.4%	25.5%	71.8%	28.2%	28.2%	28.2%
Maximum Green (s)	44.6	44.6	21.8	72.6	24.6	24.6	24.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	0.1		0.1	0.1
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0	NULL		7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	20.0	20.0			17.0	17.0	17.0
Act Effct Green (s)	48.1	48.1	21.2	75.4	10	21.8	21.8
Actuated g/C Ratio	40.1 0.44	40.1 0.44	0.19	0.69		0.20	0.20
v/c Ratio	0.44	0.44	0.19	0.69		0.20	0.20
	32.2	0.52 6.6	0.85 56.6	0.44 8.8		0.78 50.9	9.1
Control Delay	0.0		0.0				
Queue Delay		0.0		0.0		0.0	0.0
Total Delay	32.2	6.6	56.6	8.8		50.9	9.1
LOS Approach Dolou	C	А	E	A		D	А
Approach Delay	25.1			25.1		34.7	
Approach LOS	C	~ ~ ~	50.0	C		C	0.0
Queue Length 50th (m)	72.1	0.0	50.0	43.5		48.4	0.0
Queue Length 95th (m)	#149.0	31.6	#72.9	57.4		63.9	21.3
Internal Link Dist (m)	145.1	^		247.7		324.5	
Turn Bay Length (m)		75.0	200.0				
Base Capacity (vph)	1407	872	640	2296		726	562
Starvation Cap Reductn	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.84	0.52	0.81	0.44		0.69	0.57
Intersection Summary							
Area Type:	Other						
Cycle Length: 110							
Actuated Cycle Length: 110							
Offset: 20 (18%), Referenced	to phase 2:E	BT and 6:V	VBT, Start	of Green			
Natural Cycle: 85							
Control Type: Actuated-Coord	inated						
Maximum v/c Ratio: 0.85							
Intersection Signal Delay: 27.7				In	tersection	LOS: C	
Intersection Capacity Utilization					U Level of		
Analysis Period (min) 15							
# 95th percentile volume exe	ceeds capaci	ty, queue n	nay be lon	ger.			
Queue shown is maximum				v			
Splits and Phases: 3: Conr	w & Walklow						
Splits and Phases: 3: Conro	y & Walkley						



4: Conroy & St. Laurent PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲.	•	1	Υ.	•	1	5	*††		1	tβ	
Traffic Volume (vph)	47	81	322	232	38	102	47	567	81	37	1058	21
Future Volume (vph)	47	81	322	232	38	102	47	567	81	37	1058	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0		50.0	55.0		55.0	0.0		0.0	110.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			10.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	0.99		0.98	0.99		0.98	1.00	0.99		0.99	1.00	
Frt			0.850			0.850		0.981			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1728	1483	1642	1618	1483	1642	4602	0	1537	3296	0
Flt Permitted	0.732			0.555			0.169		-	0.384		-
Satd. Flow (perm)	1281	1728	1452	953	1618	1453	291	4602	0	612	3296	0
Right Turn on Red	1201	1120	Yes		1010	Yes	201	1002	Yes	0.12	0200	Yes
Satd. Flow (RTOR)			122			82		29	100		2	100
Link Speed (k/h)		50	166		50	02		60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)		14.2			19.6			22.4			20.9	
Confl. Peds. (#/hr)	10	17.2	10	10	15.0	10	10	22.7	20	20	20.5	10
Confl. Bikes (#/hr)	10		3	10		3	10		5	20		10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	2%	3%	10%	2%	3%	2%	8%	1.00	2%	12%
Adj. Flow (vph)	47	81	322	232	38	102	47	567	81	37	1058	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	81	322	232	38	102	47	648	0	37	1079	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		3.5			3.5			7.0			6.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2	_		6		
Detector Phase	4	4	4	3	8	8	2	2		6	6	
				v	v	v	-	_		v	v	

J.Audia, Novatech

Synchro 10 Report

	≯	-	\mathbf{i}	1	-	•	1	1	1	1	↓	-
_ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SE
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
/linimum Split (s)	43.9	43.9	43.9	11.3	43.9	43.9	30.3	30.3		30.3	30.3	
Fotal Split (s)	44.0	44.0	44.0	15.0	59.0	59.0	36.0	36.0		36.0	36.0	
Total Split (%)	46.3%	46.3%	46.3%	15.8%	62.1%	62.1%	37.9%	37.9%		37.9%	37.9%	
/laximum Green (s)	37.1	37.1	37.1	9.3	52.1	52.1	29.7	29.7		29.7	29.7	
′ellow 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)	3.6	3.6	3.6	2.4	3.6	3.6	2.6	2.6		2.6	2.6	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Lost Time (s)	6.9	6.9	6.9	5.7	6.9	6.9	6.3	6.3		6.3	6.3	
ead/Lag	Lag	Lag	Lag	Lead								
ead-Lag Optimize?	Yes	Yes	Yes	Yes								
ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Valk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
lash Dont Walk (s)	30.0	30.0	30.0		30.0	30.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)	5	5	5		5	5	10	10		10	10	
Act Effct Green (s)	21.2	21.2	21.2	37.4	36.2	36.2	45.6	45.6		45.6	45.6	
ctuated g/C Ratio	0.22	0.22	0.22	0.39	0.38	0.38	0.48	0.48		0.48	0.48	
/c Ratio	0.16	0.21	0.77	0.52	0.06	0.17	0.34	0.29		0.13	0.68	
Control Delay	26.7	27.8	32.2	23.2	15.2	5.2	30.5	16.5		20.1	24.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Delay	26.7	27.8	32.2	23.2	15.2	5.2	30.5	16.5		20.1	24.6	
.OS	С	С	С	С	В	А	С	В		С	С	
Approach Delay		30.8			17.5			17.5			24.5	
Approach LOS		С			В			В			С	
Queue Length 50th (m)	6.6	11.5	32.9	28.1	4.2	2.2	4.5	21.2		3.2	68.2	
Queue Length 95th (m)	11.5	17.2	46.8	30.7	6.9	7.9	#20.7	40.1		12.0	#141.2	
nternal Link Dist (m)		173.7			247.8			348.7			324.5	
urn Bay Length (m)	45.0		50.0	55.0		55.0				110.0		
Base Capacity (vph)	500	674	641	442	887	833	139	2224		293	1583	
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	0.09	0.12	0.50	0.52	0.04	0.12	0.34	0.29		0.13	0.68	
ntersection Summary												
irea Type:	Other											
Cycle Length: 95												
ctuated Cycle Length: 95												
Offset: 2 (2%), Referenced to	phase 2:NBT	L and 6:S	BTL, Start	of Green								
latural Cycle: 90												
Control Type: Actuated-Coord	dinated											
1aximum v/c Ratio: 0.77												
ntersection Signal Delay: 22.					tersection							
ntersection Capacity Utilization	on 85.5%			IC	CU Level of	Service E						
Analysis Period (min) 15												
95th percentile volume ex			nay be lon	ger.								
Queue shown is maximum	after two cvo	les.										

Splits and Phases: 4: Conroy & St. Laurent

≪ Ø2 (R)	√ Ø3	↓ Ø4
36 s	15 s	44 s
₩ Ø6 (R)	Ø8	
36 s	59 s	Cynonio To Ropol

5: Don Reid & St. Laurent PM Peak Hour

	✓	•	1	1	1	Ŧ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		ef -			र्च
Traffic Volume (vph)	23	96	107	76	172	51
Future Volume (vph)	23	96	107	76	172	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.891		0.944			
Flt Protected	0.990					0.963
Satd. Flow (prot)	1462	0	1641	0	0	1592
Flt Permitted	0.990					0.963
Satd. Flow (perm)	1462	0	1641	0	0	1592
Link Speed (k/h)	50		50			50
Link Distance (m)	137.6		234.0			146.3
Travel Time (s)	9.9		16.8			10.5
Confl. Peds. (#/hr)				5	5	
Confl. Bikes (#/hr)		4		5		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	8%	2%	3%	4%	20%
Adj. Flow (vph)	23	96	107	76	172	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	119	0	183	0	0	223
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		10.0			10.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 41.9%			IC	U Level of	Service A
Analysia Daviad (min) 15						

6: St. Laurent & E Access PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્સ	eî 🕺		₩.	
Traffic Volume (vph)	1	249	122	11	9	1
Future Volume (vph)	1	249	122	11	9	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.986	
Flt Protected					0.957	
Satd. Flow (prot)	0	1695	1682	0	1663	0
Flt Permitted				2	0.957	
Satd. Flow (perm)	0	1695	1682	0	1663	0
Link Speed (k/h)		50	50	2	50	
Link Distance (m)		40.4	197.7		90.8	
Travel Time (s)		2.9	14.2		6.5	
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				3		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	5%	5%	1%	1%	1%
Adj. Flow (vph)	1	249	122	11	9	1
Shared Lane Traffic (%)		2.3			-	
Lane Group Flow (vph)	0	250	133	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)	2011	0.0	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		0.0	0.0		5.0	
Two way Left Turn Lane		0.0	0.0		0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	1.00	1.00	1.00	24	14
Sign Control	<u> </u>	Free	Free		Stop	
		1100	1100		City	
Intersection Summary	<u></u>					
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizatio	on 24.7%			IC	U Level of	Service A

7: St. Laurent & W Access PM Peak Hour

	≯	+	t	*	1	~
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્સ	ĥ		W.	
Traffic Volume (vph)	1	247	119	4	3	0
Future Volume (vph)	1	247	119	4	3	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.996			
Flt Protected					0.950	
Satd. Flow (prot)	0	1695	1691	0	1674	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1695	1691	0	1674	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		137.6	40.4		92.1	
Travel Time (s)		9.9	2.9		6.6	
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				3		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	5%	5%	1%	1%	1%
Adj. Flow (vph)	1	247	119	4	3	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	248	123	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0	Ŭ	3.5	Ŭ
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		0.0	0.0		5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized	0.000					
Intersection Capacity Utilizati	on 24.6%			IC	lllevelof	Service A
Analysis Poriod (min) 15	27.070			10		

	4	×	1	1	\mathbf{b}	Ť
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	M.		eî 👘			र्स
Traffic Volume (vph)	1	10	238	1	13	223
Future Volume (vph)	1	10	238	1	13	223
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.877		0.999			
Flt Protected	0.995					0.997
Satd. Flow (prot)	1538	0	1694	0	0	1694
Flt Permitted	0.995					0.997
Satd. Flow (perm)	1538	0	1694	0	0	1694
Link Speed (k/h)	50		50			50
Link Distance (m)	105.3		30.4			100.3
Travel Time (s)	7.6		2.2			7.2
Confl. Peds. (#/hr)	-			10	10	
Confl. Bikes (#/hr)		3		3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	5%	1%	1%	5%
Adj. Flow (vph)	1	10	238	1	13	223
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	239	0	0	236
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5	Ŭ	3.5	Ŭ		3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	5.0		0.0			0.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 33.6%			IC	U Level of	Service A
Analysis Daried (min) 15						

1: Don Reid/Ryder & Walkley AM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	5	≜1 ≽		5	Åβ		5	el 🕹		5	f,	
Traffic Volume (vph)	29	1125	173	46	1531	195	96	7	60	49	47	39
Future Volume (vph)	29	1125	173	46	1531	195	96	7	60	49	47	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	0.0	50.0	1000	0.0	35.0	1000	0.0	30.0	1000	0.0
Storage Lanes	10.0		0.0	1		0.0	1		0.0	1		0.0
Taper Length (m)	25.0		U	30.0		Ū	25.0		Ū	30.0		Ū
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99	0.55	1.00	1.00	0.55	1.00	0.98	1.00	1.00	0.99	1.00
Frt		0.980		1.00	0.983		1.00	0.866		1.00	0.932	
Flt Protected	0.950	0.300		0.950	0.303		0.950	0.000		0.950	0.352	
Satd. Flow (prot)	1537	3183	0	1642	3169	0	1580	1367	0	1674	1630	0
Flt Permitted	0.099	5105	0	0.184	5109	0	0.701	1307	0	0.713	1030	0
Satd. Flow (perm)	160	3183	0	317	3169	0	1161	1367	0	1251	1630	0
Right Turn on Red	100	3103	Yes	317	3109	Yes	1101	1307	Yes	1201	1030	Yes
Satd. Flow (RTOR)		29	165		23	res		60	165		30	Tes
()		29 50			23 50			50				
Link Speed (k/h)											50	
Link Distance (m)		402.0			171.1			100.3			281.0	
Travel Time (s)	F	28.9	10	10	12.3	F	F	7.2	F	F	20.2	F
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
Confl. Bikes (#/hr)	4.00	4.00	3	4.00	1 00	3	4.00	4 00	3	4.00	4.00	4 00
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	4%	1%	3%	5%	1%	7%	1%	12%	1%	1%	1%
Adj. Flow (vph) Shared Lane Traffic (%)	29	1125	173	46	1531	195	96	7	60	49	47	39
Lane Group Flow (vph)	29	1298	0	46	1726	0	96	67	0	49	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	LNA	Left	R NA	Left	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		5.0			5.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		Cl+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel	0 . 1 .	0/		0	0/		0	0/		0. 2/	0. 2/	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel					OFER			OFER				
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	i uni	2			6			8		1 0111	4	
Permitted Phases	2	2		6	0		8	0		4	т	
Detector Phase	2	2		6	6		8	8		4	4	
	2	2		0	0		0	0		4	4	

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1: Don Reid/Ryder & Walkley AM Peak Hour

EBL 10.0 35.9 64.0 58.1 3.3 2.6 0.0 5.9 3.0	EBT 10.0 35.9 64.0 64.0% 58.1 3.3 2.6 0.0 5.9	EBR	WBL 10.0 35.9 64.0 64.0% 58.1 3.3	WBT 10.0 35.9 64.0 64.0%	WBR	NBL 10.0 36.2	NBT 10.0 36.2	NBR	SBL 10.0 36.2	SBT 10.0	SBF
35.9 64.0 4.0% 58.1 3.3 2.6 0.0 5.9 3.0	35.9 64.0 64.0% 58.1 3.3 2.6 0.0		35.9 64.0 64.0% 58.1	35.9 64.0 64.0%		36.2					
35.9 64.0 4.0% 58.1 3.3 2.6 0.0 5.9 3.0	35.9 64.0 64.0% 58.1 3.3 2.6 0.0		35.9 64.0 64.0% 58.1	35.9 64.0 64.0%		36.2					
64.0 4.0% 58.1 3.3 2.6 0.0 5.9 3.0	64.0 64.0% 58.1 3.3 2.6 0.0		64.0 64.0% 58.1	64.0 64.0%			36.2		26.2		
4.0% 58.1 3.3 2.6 0.0 5.9 3.0	64.0% 58.1 3.3 2.6 0.0		64.0% 58.1	64.0%						36.2	
58.1 3.3 2.6 0.0 5.9 3.0	58.1 3.3 2.6 0.0		58.1			36.0	36.0		36.0	36.0	
3.3 2.6 0.0 5.9 3.0	3.3 2.6 0.0					36.0%	36.0%		36.0%	36.0%	
2.6 0.0 5.9 3.0	2.6 0.0		2 2	58.1		29.8	29.8		29.8	29.8	
0.0 5.9 3.0	0.0			3.3		3.3	3.3		3.3	3.3	
5.9 3.0			2.6	2.6		2.9	2.9		2.9	2.9	
3.0	5.9		0.0	0.0		0.0	0.0		0.0	0.0	
			5.9	5.9		6.2	6.2		6.2	6.2	
Max	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
-Max	C-Max		C-Max	C-Max		None	None		None	None	
15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
5	5		5	5		5	5		5	5	
76.2	76.2		76.2	76.2		16.1	16.1		16.1	16.1	
0.76	0.76		0.76	0.76		0.16	0.16		0.16	0.16	
0.24	0.53		0.19	0.71		0.51	0.25		0.24	0.30	
14.2	8.3		6.4	7.2		46.1	11.9		36.4	25.4	
0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
14.2			6.4			46.1			36.4		
									D		
							С			С	
1.4			1.4			16.4	1.1		8.0	9.1	
40.0			50.0			35.0			30.0		
	2432			2420			449			506	
									0	0	
									0		
0.24											
-				-							
0 5											
se 2:El	BIL and 6:	WBTL, Sta	irt of Gree	n							
				to so a strange	00. 4						
20/											
6%			IC	U Level of	Service D						
	tv. queue m	now he lose									
wo cyc		ay be long	ger.								
, , , ,	B 1.4 9.6 40.0 121 0 0 0.24 See 2:E	B A 8.4 A 1.4 43.0 9.6 100.6 378.0 40.0 121 2432 0 0 0 0 0 0 0 0 0.24 0.53	B A 8.4 A 1.4 43.0 9.6 100.6 378.0 40.0 121 2432 0 0 0 0 0 0 0.24 0.53 se 2:EBTL and 6:WBTL, Sta	B A A 8.4 A 1.4 43.0 1.4 9.6 100.6 m3.0 378.0 378.0 40.0 50.0 121 2432 241 0 0 0 0 0 0 0 0 0 0.24 0.53 0.19	B A A A 8.4 7.2 A A 1.4 43.0 1.4 28.4 9.6 100.6 m3.0 #191.4 378.0 147.1 40.0 50.0 121 2432 241 2420 0 0 0 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.24 0.53 0.19 0.72	B A A A 8.4 7.2 A A 1.4 43.0 1.4 28.4 9.6 100.6 m3.0 #191.4 378.0 147.1 40.0 50.0 121 2432 241 2420 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.24 0.53 0.19 0.72 Intersection LOS: A K Intersection LOS: A	B A A A D 8.4 7.2 A A A 1.4 43.0 1.4 28.4 16.4 9.6 100.6 m3.0 #191.4 25.6 378.0 147.1 40.0 50.0 35.0 121 2432 241 2420 345 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.24 0.53 0.19 0.72 0.28	B A A A D B 8.4 7.2 32.1 A A C 1.4 43.0 1.4 28.4 16.4 1.1 9.6 100.6 m3.0 #191.4 25.6 9.6 378.0 147.1 76.3 40.0 50.0 35.0 121 2432 241 2420 345 449 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.24 0.53 0.19 0.72 0.28 0.15	B A A A D B 8.4 7.2 32.1 A C 1.4 43.0 1.4 28.4 16.4 1.1 9.6 100.6 m3.0 #191.4 25.6 9.6 378.0 147.1 76.3 40.0 50.0 35.0 121 2432 241 2420 345 449 0 0 0 0 0 0 0 0 0 0 0 0 0 0.0 15 5 5 5 5 5 5 5	B A A A D B D 8.4 7.2 32.1	B A A A D B D C 8.4 7.2 32.1 29.4 A A C C 1.4 43.0 1.4 28.4 16.4 1.1 8.0 9.1 9.6 100.6 m3.0 #191.4 25.6 9.6 14.5 17.7 378.0 147.1 76.3 257.0 40.0 50.0 35.0 30.0 121 2432 241 2420 345 449 372 506 0

Splits and Phases: 1: Don Reid/Ryder & Walkley

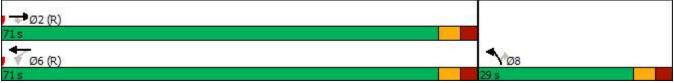
→ø2 (R)	Ø4	
64s	36 s	
🗸 🖉 Ø6 (R)	≤ ¶ <i>ø</i> 8	
64 s	36,5	

2: 160m W of Conroy & Walkley AM Peak Hour

	-	\mathbf{i}	•	←	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	*	1	<u></u>	***		
Traffic Volume (vph)	TT 1154	90	74	TT 1724	66	60
Future Volume (vph)	1154	90 90	74	1724	66	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	20.0	65.0	1000	30.0	0.0
Storage Lanes		20.0	05.0		30.0 1	0.0
Taper Length (m)		1	25.0		30.0	1
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	0.90	0.96	1.00	0.90	0.99	0.98
Frt		0.96	1.00		0.99	0.98
Fit Protected		0.000	0.950		0.950	0.000
	2004	1/00		2101		1/02
Satd. Flow (prot)	3221	1498	1674	3191	1674	1483
Fit Permitted	2004	1440	0.229	2404	0.950	1450
Satd. Flow (perm)	3221	1442	403	3191	1663	1456
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		59				60
Link Speed (k/h)	50			50	50	
Link Distance (m)	171.1			169.1	128.6	
Travel Time (s)	12.3			12.2	9.3	-
Confl. Peds. (#/hr)		10	10		5	5
Confl. Bikes (#/hr)		3				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	1%	1%	6%	1%	2%
Adj. Flow (vph)	1154	90	74	1724	66	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1154	90	74	1724	66	60
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	L NA	Left	L NA	R NA
Median Width(m)	3.5	_		5.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
	28.7	0.0	0.0		0.0	0.0
Detector 2 Position(m)				28.7 1.8		
Detector 2 Size(m)	1.8 CL/Ex					
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel	• • •					
Detector 2 Extend (s)	0.0	_	_	0.0	. .	P
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8

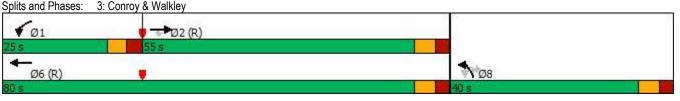
2: 160m W of Conroy & Walkley AM Peak Hour

	-	\mathbf{F}	4	+	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0
Total Split (s)	71.0	71.0	71.0	71.0	29.0	29.0
Total Split (%)	71.0%	71.0%	71.0%	71.0%	29.0%	29.0%
Maximum Green (s)	65.0	65.0	65.0	65.0	23.0	23.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	18.0	18.0	0 mux	0 Max	7.0	7.0
Flash Dont Walk (s)	13.0	13.0			16.0	16.0
Pedestrian Calls (#/hr)	5	5			5	5
Act Effct Green (s)	80.2	80.2	80.2	80.2	11.3	11.3
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.11	0.11
v/c Ratio	0.00	0.08	0.23	0.67	0.35	0.28
Control Delay	3.1	1.1	7.0	8.5	43.6	12.6
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0
Total Delay	3.1	1.1	7.0	9.1	43.6	12.6
LOS	A	A	7.0 A	A	D	12.0 B
Approach Delay	2.9			9.0	28.8	5
Approach LOS	A			A	20.0 C	
Queue Length 50th (m)	18.4	0.3	2.7	58.8	11.3	0.0
Queue Length 95th (m)	24.2	1.1	12.5	143.4	19.6	8.9
Internal Link Dist (m)	147.1	1.1	12.0	145.1	104.6	0.0
Turn Bay Length (m)	177.1	20.0	65.0	140.1	30.0	
Base Capacity (vph)	2583	1168	323	2560	385	381
Starvation Cap Reductn	0	0	0	405	0	0
Spillback Cap Reductn	0	0	0	70	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.08	0.23	0.80	0.17	0.16
Intersection Summary	0.+0	0.00	5.20	0.00	J . 17	0.10
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 88 (88%), Referenced	to phase 2.E	BT and Gi		rt of Groor	,	
	no phase z:El		VDIL, Sla	it of Greef	1	
Natural Cycle: 80 Control Type: Actuated-Coord	dinated					
Maximum v/c Ratio: 0.67	unaleu					
				ما	torcostion	
Intersection Signal Delay: 7.4					itersection	
Intersection Capacity Utilization Analysis Period (min) 15	011 00.0 %			IC.		
Analysis Period (min) 15						
Splits and Phases: 2: 160n	n W of Conroy	& Walkley	/			



	-	\mathbf{i}	•	-	₹Ĩ	1	1
Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	^	7	ሻሻ	1	NDO	ኘካ	7
Traffic Volume (vph)	994	280	261	1096	15	717	493
Future Volume (vph)	994	280	261	1096	15	717	493
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		1	200.0			2	1
Taper Length (m)			50.0			10.0	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor	0.00	0.97	0.99	0.00	0.00	0.01	0.98
Frt		0.850	0.00				0.850
Flt Protected		0.000	0.950			0.950	0.000
Satd. Flow (prot)	3161	1455	3066	3161	0	3186	1455
Flt Permitted	0101	1 100	0.950	0101		0.950	1100
Satd. Flow (perm)	3161	1409	3043	3161	0	3186	1423
Right Turn on Red	0101	Yes	00-10	0101	0	0100	Yes
Satd. Flow (RTOR)		280					330
Link Speed (k/h)	50	200		50		60	000
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2			19.6		20.9	
Confl. Peds. (#/hr)	12.2	15	15	19.0		20.9	5
Confl. Bikes (#/hr)		3	15				3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	4%	7%	7%	2%	3%	4%
Adj. Flow (vph)	994	280	261	1096	2% 15	5% 717	4%
Shared Lane Traffic (%)	334	200	201	1090	15	111	490
Lane Group Flow (vph)	994	280	261	1096	0	732	493
Enter Blocked Intersection	994 No	280 No	No	1096 No	No	732 No	493 No
	Left			Left	R NA	L NA	
Lane Alignment		R NA	Left		RINA		R NA
Median Width(m)	7.0 0.0			9.0		10.5	
Link Offset(m)				0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane	4.00	1.00	1.00	1.00	1.00	1.00	1.00
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	~	14	24		14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7			
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases		2			8		8
Detector Phase	2	2	1	6	8	8	8
	_	_		•	•	•	•

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	55.0	55.0	25.0	80.0	40.0	40.0	40.0
Total Split (%)	45.8%	45.8%	20.8%	66.7%	33.3%	33.3%	33.3%
Maximum Green (s)	48.6	48.6	18.8	73.6	33.6	33.6	33.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	0.1		0.1	0.1
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0	NULLE		7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	20.0	10			5	5	5
Act Effct Green (s)	53.9	53.9	15.2	75.4	5	31.8	31.8
Actuated g/C Ratio	0.45	0.45	0.13	0.63		0.26	0.26
v/c Ratio	0.43	0.45	0.13	0.55		0.20	0.20
Control Delay	30.8	4.0	58.5	14.3		53.7	23.4
Queue Delay	0.3	4.0	0.0	0.0		0.0	0.0
Total Delay	31.1	4.0	58.5	14.3		53.7	23.4
LOS	51.1 C	4.0 A	50.5 E	14.3 B		55.7 D	23.4 C
Approach Delay	25.2	Ā	L	22.8		41.5	0
Approach LOS	23.2 C			22.0 C		41.5 D	
Queue Length 50th (m)	92.0	0.0	28.1	69.3		76.5	33.1
Queue Length 95th (m)	121.0	14.9	39.6	86.1		97.6	75.1
Internal Link Dist (m)	121.0	14.3	39.0	247.7		97.0 324.5	75.1
Turn Bay Length (m)	140.1	75.0	200.0	241.1		524.5	
Base Capacity (vph)	1420	75.0	480	1985		892	636
Starvation Cap Reductn	93	0	400	1905		092	030
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.75	0.36	0.54	0.55		0.82	0.78
	0.75	0.30	0.04	0.00		0.02	0.70
Intersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 43 (36%), Reference		BT and 6:V	VBT. Start	of Green			
Natural Cycle: 85			,				
Control Type: Actuated-Coo	rdinated						
Maximum v/c Ratio: 0.87							
Intersection Signal Delay: 2	9.5			In	tersection	LOS: C	
Intersection Capacity Utiliza					U Level of)
Analysis Period (min) 15						50. 100 D	
Splits and Phases: 3: Cor	nroy & Walkley						



4: Conroy & St. Laurent AM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲.	†	1	5	†	1	5	^		5	∱1 ≽	
Traffic Volume (vph)	15	69	88	63	46	25	195	1246	199	87	389	57
Future Volume (vph)	15	69	88	63	46	25	195	1246	199	87	389	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0		50.0	55.0		55.0	0.0		0.0	110.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			10.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	0.99		0.97	0.99		0.98	0.98	0.99		1.00	0.99	
Frt			0.850			0.850		0.979			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1353	1695	1427	1409	1589	1351	1642	4617	0	1674	3162	0
Flt Permitted	0.727			0.712			0.494		-	0.154		-
Satd. Flow (perm)	1027	1695	1391	1044	1589	1322	835	4617	0	270	3162	0
Right Turn on Red	1021	1000	Yes		1000	Yes	000	1011	Yes	2.0	0102	Yes
Satd. Flow (RTOR)			88			36		43	100		23	100
Link Speed (k/h)		50	00		50	00		60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)		14.2			19.6			22.4			20.9	
Confl. Peds. (#/hr)	10	17.2	15	15	15.0	10	20	22.7	25	25	20.5	20
Confl. Bikes (#/hr)	10		3	10		3	20		3	25		25
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	5%	6%	20%	12%	12%	3%	2%	2%	1%	4%	3%
Adj. Flow (vph)	15	69	88	63	46	25	195	1246	199	87	389	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	69	88	63	46	25	195	1445	0	87	446	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		3.5			3.5			7.0			6.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0. LA									U. L A	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4	i Giiii	i Giiii	8	i Giiii	i Giiii	2		i Giiii	6	
Permitted Phases	4	4	4	8	0	8	2	2		6	0	
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Deletion mase	4	4	4	0	0	0	2	2		0	0	

J.Audia, Novatech

AM Peak Hour											2029 Tota	al Iratt
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Switch Phase												
Vinimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Vinimum Split (s)	43.9	43.9	43.9	43.9	43.9	43.9	30.3	30.3		30.3	30.3	
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	56.0	56.0		56.0	56.0	
Total Split (%)	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	56.0%	56.0%		56.0%	56.0%	
Maximum Green (s)	37.1	37.1	37.1	37.1	37.1	37.1	49.7	49.7		49.7	49.7	
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)	3.6	3.6	3.6	3.6	3.6	3.6	2.6	2.6		2.6	2.6	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Fotal Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	6.3	6.3		6.3	6.3	
_ead/Lag												
_ead-Lag Optimize?												
/ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Valk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	30.0	30.0	30.0	30.0	30.0	30.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)	15	15	15	10	10	10	20	20		15	15	
Act Effct Green (s)	21.1	21.1	21.1	21.1	21.1	21.1	70.4	70.4		70.4	70.4	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.70	0.70		0.70	0.70	
/c Ratio	0.07	0.19	0.24	0.29	0.14	0.08	0.33	0.44		0.46	0.20	
Control Delay	24.1	28.4	7.0	31.8	27.7	5.2	13.3	10.6		26.2	8.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	24.1	28.4	7.0	31.8	27.7	5.2	13.3	10.6		26.2	8.7	
LOS	C	C	A	C	C	A	B	B		C	A	
Approach Delay	Ŭ	17.1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Ŭ	25.5	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	D	10.9		Ŭ	11.5	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	2.5	11.7	1.6	10.8	7.6	0.0	9.2	26.7		4.6	9.3	
Queue Length 95th (m)	m4.9	m16.7	9.4	16.1	12.1	3.5	40.3	77.6		#35.0	31.2	
nternal Link Dist (m)	111.0	173.7	0.1	10.1	247.8	0.0	10.0	348.7		100.0	324.5	
Furn Bay Length (m)	45.0	170.7	50.0	55.0	247.0	55.0		0-10.7		110.0	024.0	
Base Capacity (vph)	381	628	571	387	589	513	587	3261		190	2231	
Starvation Cap Reductn	0	0_0	0	0	000	0	0	0201		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	0.04	0.11	0.15	0.16	0.08	0.05	0.33	0.44		0.46	0.20	
ntersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 23 (23%), Reference		BTL and 6	SBTL, Sta	art of Gree	n							
Vatural Cycle: 90												
Control Type: Actuated-Coo	rdinated											
/laximum v/c Ratio: 0.46												
ntersection Signal Delay: 12	2.3			Ir	ntersection	LOS: B						
ntersection Capacity Utiliza					CU Level o		;					

Intersection Capacity Utilization 72.2% Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Conroy & St. Laurent

Ø2 (R)	₩ 04	
56 s	44 s	
Ø6 (R)	₩ Ø8	
56 s	44 s	

5: Don Reid & St. Laurent AM Peak Hour

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	۲		el el			र्स	
Traffic Volume (vph)	75	59	71	22	101	176	
Future Volume (vph)	75	59	71	22	101	176	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt	0.941		0.968				
Flt Protected	0.973					0.982	
Satd. Flow (prot)	1547	0	1498	0	0	1669	
Flt Permitted	0.973					0.982	
Satd. Flow (perm)	1547	0	1498	0	0	1669	
Link Speed (k/h)	50		50			50	
Link Distance (m)	137.6		234.0			146.3	
Travel Time (s)	9.9		16.8			10.5	
Confl. Peds. (#/hr)				10	10		
Confl. Bikes (#/hr)		4		3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	4%	7%	15%	15%	6%	4%	
Adj. Flow (vph)	75	59	71	22	101	176	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	134	0	93	0	0	277	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.5	Ū.	0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	2.0		10.0			10.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Turning Speed (k/h)	24	14		14	24		
Sign Control	Stop		Free			Free	
Intersection Summary							
Area Type:	Other						
Control Type: Unsignalized							
Intersection Capacity Utilization	on 37.2%			IC	U Level of	Service A	А
Analysia Daviad (min) 15							

6: St. Laurent & E Access AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્સ	eî 🗧		W.	
Traffic Volume (vph)	0	128	135	5	13	0
Future Volume (vph)	0	128	135	5	13	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.995			
Flt Protected					0.950	
Satd. Flow (prot)	0	1618	1615	0	1674	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1618	1615	0	1674	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		40.4	197.7		90.8	
Travel Time (s)		2.9	14.2		6.5	
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				3		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	10%	10%	1%	1%	1%
Adj. Flow (vph)	0	128	135	5	13	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	128	140	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	3.5	J	3.5	5
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		0.0	0.0		5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 19.4%			IC		Service A
Analysis Deried (min) 15	011 19.4 /0				O Level OI	Service A

7: St. Laurent & W Access AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		र्स	eî 👘		¥.	
Traffic Volume (vph)	0	123	133	2	5	1
Future Volume (vph)	0	123	133	2	5	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.977	
Flt Protected					0.960	
Satd. Flow (prot)	0	1618	1617	0	1653	0
Flt Permitted	-			3	0.960	-
Satd. Flow (perm)	0	1618	1617	0	1653	0
Link Speed (k/h)	-	50	50	3	50	
Link Distance (m)		137.6	40.4		92.1	
Travel Time (s)		9.9	2.9		6.6	
Confl. Peds. (#/hr)	10	0.0		10	0.0	
Confl. Bikes (#/hr)				3		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	10%	10%	1%	1%	1%
Adj. Flow (vph)	0	123	133	2	5	1
Shared Lane Traffic (%)	•			_	, i i i i i i i i i i i i i i i i i i i	
Lane Group Flow (vph)	0	123	135	0	6	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)	Lon	0.0	0.0	, agrit	3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		0.0	0.0		5.0	
Two way Left Turn Lane		0.0	0.0		0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	1.00	1.00	1.05	24	14
Sign Control	24	Free	Free	17	Stop	T
ů.		1100	1100		Otop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 19.2%			IC	U Level of	Service A
naluaia Dariad (min) 15						

	4	•	1	*	1	Ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		4Î			ર્સ
Traffic Volume (vph)	1	15	139	1	6	252
Future Volume (vph)	1	15	139	1	6	252
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.873		0.999			
Flt Protected	0.997					0.999
Satd. Flow (prot)	1534	0	1618	0	0	1695
Flt Permitted	0.997					0.999
Satd. Flow (perm)	1534	0	1618	0	0	1695
Link Speed (k/h)	50	-	50		-	50
Link Distance (m)	105.3		30.4			100.3
Travel Time (s)	7.6		2.2			7.2
Confl. Peds. (#/hr)				10	10	
Confl. Bikes (#/hr)		3		3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	10%	1%	1%	5%
Adj. Flow (vph)	1	15	139	1	6	252
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	140	0	0	258
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5	J -	3.5	J •		3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	5.0		0.0			0.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 20.1%					Service A
Analysis Deried (min) 15	011 29.1 %				O Level OI	Service A

1: Don Reid/Ryder & Walkley PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	A1⊅		ሻ	A		ň	ef 👘		5	ĥ	
Traffic Volume (vph)	27	1557	119	27	1626	70	177	5	78	92	104	50
Future Volume (vph)	27	1557	119	27	1626	70	177	5	78	92	104	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	0.0	50.0	1000	0.0	35.0	1000	0.0	30.0	1000	0.0
Storage Lanes	10.0		0.0	1		0.0	1		0.0	1		0.0
Taper Length (m)	25.0		U	30.0		Ū	25.0		Ū	30.0		v
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.98	1.00	1.00	0.99	1.00
Frt		0.989			0.994		1.00	0.859		1.00	0.951	
Flt Protected	0.950	0.000		0.950	0.004		0.950	0.000		0.950	0.001	
Satd. Flow (prot)	1674	3234	0	1674	3293	0	1674	1472	0	1674	1651	0
Flt Permitted	0.089	5254	0	0.093	5255	U	0.600	1472	0	0.703	1001	U
Satd. Flow (perm)	157	3234	0	164	3293	0	1053	1472	0	1233	1651	0
Right Turn on Red	157	3234	Yes	104	3293	Yes	1055	1472	Yes	1200	1051	Yes
Satd. Flow (RTOR)		13	165		7	165		34	165		22	165
		50			50			50			50	
Link Speed (k/h)		402.0			171.1			100.3			281.0	
Link Distance (m)												
Travel Time (s)	5	28.9	20	20	12.3	F	F	7.2	F	5	20.2	F
Confl. Peds. (#/hr)	5			20		5	5		5	Э		5
Confl. Bikes (#/hr)	4 00	1.00	5	1.00	1 00	3	1.00	4 00	3	1.00	1.00	4 00
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	3%	1%	2%	1%	1%	1%	2%	1%	1%	4%
Adj. Flow (vph)	27	1557	119	27	1626	70	177	5	78	92	104	50
Shared Lane Traffic (%)	07	4070	0	07	4000	^	477	00	0	00	454	0
Lane Group Flow (vph)	27	1676	0	27	1696	0	177	83	0	92	154	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		5.0			5.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane		4			4.00					4.00		4 00
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
								-				
Protected Phases		2			6			8			4	
	2	2		6 6	6 6		8 8	8		4	4	

J.Audia, Novatech

1: Don Reid/Ryder & Walkley PM Peak Hour

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ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SE
Switch Phase												
/linimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
/linimum Split (s)	35.9	35.9		35.9	35.9		36.2	36.2		36.2	36.2	
otal Split (s)	74.0	74.0		74.0	74.0		36.0	36.0		36.0	36.0	
otal Split (%)	67.3%	67.3%		67.3%	67.3%		32.7%	32.7%		32.7%	32.7%	
laximum Green (s)	68.1	68.1		68.1	68.1		29.8	29.8		29.8	29.8	
ellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
II-Red Time (s)	2.6	2.6		2.6	2.6		2.9	2.9		2.9	2.9	
ost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
otal Lost Time (s)	5.9	5.9		5.9	5.9		6.2	6.2		6.2	6.2	
ead/Lag												
ead-Lag Optimize?												
ehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
lecall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Valk Time (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
lash Dont Walk (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
edestrian Calls (#/hr)	10	10		5	5		5	5		5	5	
ct Effct Green (s)	75.6	75.6		75.6	75.6		22.3	22.3		22.3	22.3	
ctuated g/C Ratio	0.69	0.69		0.69	0.69		0.20	0.20		0.20	0.20	
/c Ratio	0.25	0.75		0.24	0.75		0.83	0.26		0.37	0.44	
Control Delay	16.0	15.1		10.9	11.7		71.0	23.1		40.2	35.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
otal Delay	16.0	15.1		10.9	11.7		71.0	23.1		40.2	35.1	
OS	В	В		В	В		Е	С		D	D	
pproach Delay		15.1			11.7			55.7			37.0	
pproach LOS		В			В			E			D	
Queue Length 50th (m)	1.8	102.3		1.7	144.8		33.5	8.0		15.7	22.7	
Queue Length 95th (m)	8.4	158.6		m2.3	50.6		52.9	18.5		27.3	37.3	
nternal Link Dist (m)		378.0			147.1			76.3			257.0	
urn Bay Length (m)	40.0			50.0			35.0			30.0		
ase Capacity (vph)	107	2226		112	2265		285	423		334	463	
tarvation Cap Reductn	0	0		0	4		0	0		0	0	
pillback Cap Reductn	0	0		0	0		0	0		0	0	
torage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.75		0.24	0.75		0.62	0.20		0.28	0.33	
ntersection Summary												
rea Type:	Other											
Cycle Length: 110												
ctuated Cycle Length: 110												
Offset: 20 (18%), Referenced	to phase 2:E	BTL and 6:	WBTL, Sta	art of Gree	n							
latural Cycle: 90												
Control Type: Actuated-Coord	inated											
laximum v/c Ratio: 0.83												
ntersection Signal Delay: 17.7					tersection L							
ntersection Capacity Utilization	on 87.0%			IC	CU Level of	Service E						
nalysis Period (min) 15												

Splits and Phases: 1: Don Reid/Ryder & Walkley



2: 160m W of Conroy & Walkley PM Peak Hour

	-	\mathbf{r}	•	-	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1	7		***		
Traffic Volume (vph)	TT 1749	64	36	1659	49	41
Future Volume (vph)	1749	64	36	1659	49	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	20.0	65.0	1000	30.0	0.0
Storage Lanes		20.0	1		1	0.0
Taper Length (m)			25.0		30.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	0.00	0.95	1.00	0.00	0.99	0.98
Frt		0.850	1.00		0.00	0.850
Flt Protected		0.000	0.950		0.950	0.000
Satd. Flow (prot)	3252	1483	1642	3316	1658	1483
Flt Permitted	5252	1-100	0.109	0010	0.950	1-100
Satd. Flow (perm)	3252	1413	188	3316	1646	1455
Right Turn on Red	5252	Yes	100	5510	1040	Yes
Satd. Flow (RTOR)		28				32
	50	20		50	50	JZ
Link Speed (k/h)						
Link Distance (m)	171.1			169.1	128.6	
Travel Time (s)	12.3	45	45	12.2	9.3	F
Confl. Peds. (#/hr)		15	15		5	5
Confl. Bikes (#/hr)	4.00	3	4.00	4.00	4.00	4.00
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	2%	3%	2%	2%	2%
Adj. Flow (vph)	1749	64	36	1659	49	41
Shared Lane Traffic (%)				10-0	10	
Lane Group Flow (vph)	1749	64	36	1659	49	41
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	L NA	Left	L NA	R NA
Median Width(m)	3.5			5.0	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	0.0	0.0	28.7	0.0	0.0
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2	1 emi	1 CIIII	6	8	1 emi
Protected Phases Permitted Phases	2	2	6	0	0	0
Femilieu Fliases			6			8
Detector Phase	2	2	6	6	8	8

J.Audia, Novatech

2: 160m W of Conroy & Walkley PM Peak Hour

	-	\mathbf{F}	4	+	•	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	37.0	37.0	37.0	37.0	29.0	29.0
Total Split (s)	81.0	81.0	81.0	81.0	29.0	29.0
Total Split (%)	73.6%	73.6%	73.6%	73.6%	26.4%	26.4%
Maximum Green (s)	75.0	75.0	75.0	75.0	23.0	23.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	0.0	0.0	0.0	0.0	0.0	0.0
Lead-Lag Optimize?	20	2 0	2.0	2.0	20	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	18.0	18.0			7.0	7.0
Flash Dont Walk (s)	13.0	13.0			16.0	16.0
Pedestrian Calls (#/hr)	5	5			5	5
Act Effct Green (s)	90.6	90.6	90.6	90.6	10.9	10.9
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.10	0.10
v/c Ratio	0.65	0.05	0.23	0.61	0.30	0.24
Control Delay	2.3	0.8	9.4	7.6	48.0	20.9
Queue Delay	0.1	0.0	0.0	0.1	0.0	0.0
Total Delay	2.4	0.8	9.4	7.7	48.0	20.9
LOS	A	A	A	A	D	C
Approach Delay	2.4			7.8	35.6	•
Approach LOS	A			A	D	
Queue Length 50th (m)	16.8	0.1	0.6	75.4	9.4	1.7
Queue Length 95th (m)	23.4	m0.6	m7.5	143.2	17.5	9.7
Internal Link Dist (m)	147.1	110.0	1117.5	145.2	104.6	9.1
	147.1	20.0	65.0	140.1	30.0	
Turn Bay Length (m)	0070	20.0		0704		200
Base Capacity (vph)	2679	1169	155	2731	346	329
Starvation Cap Reductn	89	0	0	267	0	0
Spillback Cap Reductn	200	0	0	14	0	1
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.05	0.23	0.67	0.14	0.13
Intersection Summary						
Area Type:	Other					
Cycle Length: 110	Other					
Actuated Cycle Length: 110	to phone QrE	DT and Gi		rt of Croor		
Offset: 25 (23%), Referenced	to phase ZE	BT and 6:1	IVBIL, Sta	rt of Greer	1	
Natural Cycle: 80						
Control Type: Actuated-Coord	linated					
Maximum v/c Ratio: 0.65						
Intersection Signal Delay: 5.7					tersection	
Intersection Capacity Utilization	on 67.5%			IC	CU Level of	f Service (
Analysis Period (min) 15						
m Volume for 95th percentile	e queue is me	etered by ι	upstream s	ignal.		
	-	•		-		

Splits and Phases: 2: 160m W of Conroy & Walkley

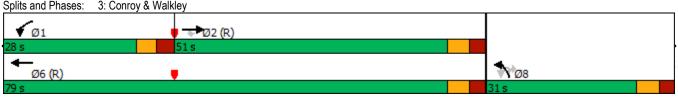


J.Audia, Novatech

	-	\mathbf{r}	1	-	₹Ĩ	1	1
Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	<u>+</u>		ካካ	••••	NDU	ሻሻ	
Traffic Volume (vph)	TT 1319	474	545	1180	45	484	334
Future Volume (vph)	1319	474	545 545	1180	45	484	334
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		1	200.0			2	0.0
Taper Length (m)		1	50.0			10.0	1
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor	0.30	0.95	0.97	0.35	0.35	0.51	0.96
Frt		0.95	0.99				0.90
Fit Protected		0.000	0.950			0.950	0.000
Satd. Flow (prot)	3221	1483	3185	3349	0	3248	1469
Flt Permitted	JZZI	1400	0.950	0049	0	0.950	1409
Satd. Flow (perm)	3221	1414	0.950 3157	3349	0	3248	1406
Right Turn on Red	5221	Yes	5157	5549	U	5240	Yes
Satd. Flow (RTOR)		440					334
	50	440		50		60	3 34
Link Speed (k/h)							
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2	20	30	19.6		20.9	00
Confl. Peds. (#/hr)		30	30				20
Confl. Bikes (#/hr)	4.00	4	1.00	1.00	1.00	1.00	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	3%	1%	1%	1%	3%
Adj. Flow (vph)	1319	474	545	1180	45	484	334
Shared Lane Traffic (%)	10.10				-		• • •
Lane Group Flow (vph)	1319	474	545	1180	0	529	334
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	L NA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	0.0	0.0	28.7	0.0	0.0	0.0
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			CI+Ex			
Detector 2 Channel				OFLA			
Detector 2 Extend (c)	0.0			0 0			
Detector 2 Extend (s)	0.0 NA	Dorm	Drot	0.0	Porm	Drot	Porm
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Turn Type Protected Phases			Prot 1			Prot 8	
Turn Type	NA	Perm 2 2		NA	Perm 8 8		Perm 8 8

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	-	\mathbf{r}	4	+	₹	1	1
Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	51.0	51.0	28.0	79.0	31.0	31.0	31.0
Total Split (%)	46.4%	46.4%	25.5%	71.8%	28.2%	28.2%	28.2%
Maximum Green (s)	44.6	44.6	21.8	72.6	24.6	24.6	24.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	••••		•••	•••
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0	110110	0 max	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	20.0	20.0			15	17.0	17.0
Act Effct Green (s)	47.2	47.2	21.5	74.8	10	22.4	22.4
Actuated g/C Ratio	0.43	0.43	0.20	0.68		0.20	0.20
v/c Ratio	0.45	0.45	0.20	0.52		0.20	0.20
Control Delay	43.5	8.3	59.4	10.0		51.5	9.1
Queue Delay	0.0	0.2	0.0	0.0		0.0	0.0
Total Delay	43.5	8.5	59.4	10.0		51.5	9.1
LOS	43.3 D	0.5 A	55.4 E	B		D	3.1 A
Approach Delay	34.2	Α.	L	25.6		35.1	~ ~
Approach LOS	04.2 C			23.0 C		55.1 D	
Queue Length 50th (m)	~112.0	4.2	53.6	56.9		50.8	0.0
Queue Length 95th (m)	#181.2	4.2	#79.3	73.0		67.3	21.9
Internal Link Dist (m)	145.1	40.5	#13.5	247.7		324.5	21.3
Turn Bay Length (m)	140.1	75.0	200.0	241.1		524.0	
Base Capacity (vph)	1380	857	638	2278		726	573
Starvation Cap Reductn	0	57	038	0		0	0
Spillback Cap Reductn	0	0	0	108		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.96	0.59	0.85	0.54		0.73	0.58
	0.90	0.59	0.00	0.54		0.75	0.00
Intersection Summary							
Area Type:	Other						
Cycle Length: 110							
Actuated Cycle Length: 110							
Offset: 20 (18%), Referenced	to phase 2:E	BT and 6:V	VBT, Start	of Green			
Natural Cycle: 95							
Control Type: Actuated-Coord	dinated						
Maximum v/c Ratio: 0.96							
Intersection Signal Delay: 31.	0			In	tersection	LOS: C	
Intersection Capacity Utilization				IC	U Level of	Service E	
Analysis Period (min) 15							
~ Volume exceeds capacity	, queue is the	oretically in	nfinite.				
Queue shown is maximum							
# 95th percentile volume ex			nay be lon	ger.			
Queue shown is maximum				-			
	,						
Splits and Phases: 3: Conr	oy & Walkley						



4: Conroy & St. Laurent PM Peak Hour

	٦	+	*	4	t	*	•	1	1	1	ţ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	•	1	۲.	•	1	٦ ۲	<u>ተተ</u> ኑ		۲	∱1 }	
Traffic Volume (vph)	47	81	322	232	38	102	47	595	81	37	1111	21
Future Volume (vph)	47	81	322	232	38	102	47	595	81	37	1111	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0		50.0	55.0		55.0	0.0		0.0	110.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			10.0			25.0		-
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	0.99		0.98	0.99		0.98		0.99		0.99	1.00	
Frt			0.850			0.850		0.982			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1728	1483	1642	1618	1483	1642	4610	0	1537	3296	0
Flt Permitted	0.732			0.555			0.151		, in the second s	0.370	0200	•
Satd. Flow (perm)	1281	1728	1452	953	1618	1453	261	4610	0	590	3296	0
Right Turn on Red	1201	1720	Yes	000	1010	Yes	201	4010	Yes	000	0200	Yes
Satd. Flow (RTOR)			121			73		27	105		2	103
Link Speed (k/h)		50	121		50	10		60			60	
Link Distance (m)		197.7			271.8			372.7			348.5	
Travel Time (s)		14.2			19.6			22.4			20.9	
Confl. Peds. (#/hr)	10	14.2	10	10	19.0	10	10	22.4	20	20	20.9	10
Confl. Bikes (#/hr)	10		3	10		3	10		5	20		14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1.00	3%	2%	3%	1.00	2%	3%	2%	8%	1.00	2%	12%
Adj. Flow (vph)	47	81	322	232	38	102	47	595	81	37	1111	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	81	322	232	38	102	47	676	0	37	1132	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		3.5			3.5			7.0			6.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	Cl+Ex	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex	Cl+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8	Ū	8	2	-		6	Ū	
Detector Phase	4	4	4	3	8	8	2	2		6	6	
		T	т	0	0	0	2	2		0	0	

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	٦	-	\mathbf{r}	1	-	•	1	1	1	1	Ŧ	-
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SI
witch Phase												
linimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
1inimum Split (s)	43.9	43.9	43.9	11.3	43.9	43.9	30.3	30.3		30.3	30.3	
otal Split (s)	44.0	44.0	44.0	15.0	59.0	59.0	36.0	36.0		36.0	36.0	
otal Split (%)	46.3%	46.3%	46.3%	15.8%	62.1%	62.1%	37.9%	37.9%		37.9%	37.9%	
laximum Green (s)	37.1	37.1	37.1	9.3	52.1	52.1	29.7	29.7		29.7	29.7	
′ellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
II-Red Time (s)	3.6	3.6	3.6	2.4	3.6	3.6	2.6	2.6		2.6	2.6	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Lost Time (s)	6.9	6.9	6.9	5.7	6.9	6.9	6.3	6.3		6.3	6.3	
ead/Lag	Lag	Lag	Lag	Lead								
ead-Lag Optimize?	Yes	Yes	Yes	Yes								
ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
ecall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Valk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
lash Dont Walk (s)	30.0	30.0	30.0		30.0	30.0	17.0	17.0		17.0	17.0	
edestrian Calls (#/hr)	5	5	5		5	5	10	10		10	10	
ct Effct Green (s)	21.2	21.2	21.2	37.4	36.2	36.2	45.6	45.6		45.6	45.6	
ctuated g/C Ratio	0.22	0.22	0.22	0.39	0.38	0.38	0.48	0.48		0.48	0.48	
c Ratio	0.16	0.21	0.77	0.52	0.06	0.17	0.38	0.30		0.13	0.72	
ontrol Delay	26.7	27.8	32.3	23.2	15.2	6.0	33.9	16.8		20.3	25.5	
ueue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Delay	26.7	27.8	32.3	23.2	15.2	6.0	33.9	16.8		20.3	25.5	
OS	С	С	С	С	В	A	С	В		С	С	
pproach Delay	U	30.9	Ŭ	, C	17.7			17.9		Ŭ	25.4	
pproach LOS		С			В			В			С	
ueue Length 50th (m)	6.6	11.5	33.1	28.1	4.1	3.1	4.6	22.4		3.2	73.5	
Queue Length 95th (m)	11.5	17.2	47.0	30.7	6.9	8.7	#22.3	42.1		12.1	#151.6	
nternal Link Dist (m)		173.7		••••	247.8	•		348.7			324.5	
furn Bay Length (m)	45.0	110.1	50.0	55.0	211.0	55.0		010.1		110.0	021.0	
ase Capacity (vph)	500	674	640	443	887	829	125	2224		282	1581	
tarvation Cap Reductn	0	0	0	0	0	0_0	0	0		0	0	
pillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
torage Cap Reductn	Ŭ Ŭ	0	0	Ũ	0	Ũ	Ũ	0		0	0	
educed v/c Ratio	0.09	0.12	0.50	0.52	0.04	0.12	0.38	0.30		0.13	0.72	
tersection Summary												
rea Type:	Other											
cycle Length: 95												
ctuated Cycle Length: 95												
Offset: 2 (2%), Referenced to	phase 2:NBT	L and 6:SI	BTL. Start	of Green								
atural Cycle: 90			,									
ontrol Type: Actuated-Coor	dinated											
laximum v/c Ratio: 0.77												
itersection Signal Delay: 23	2			In	tersection	1 OS: C						
itersection Capacity Utilizat					U Level of							
nalysis Period (min) 15	01.07.070											
95th percentile volume e	rceeds canaci	ty queue r	nav be lon	ner								
	Nuccus Lapall	iy, queue i	101	yoı.								

Splits and Phases: 4: Conroy & St. Laurent

Ø2 (R)	√ Ø3	₩ Ø4
36 s	15 s	44 s
₩ Ø6 (R)	Ø8	
36 s	59 s	Cynome re Roport

5: Don Reid & St. Laurent PM Peak Hour

	4	•	1	1	1	Ŧ	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	¥		eî 🗧			र्स	
Traffic Volume (vph)	23	96	107	76	172	51	
Future Volume (vph)	23	96	107	76	172	51	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt	0.891		0.944				
Flt Protected	0.990					0.963	
Satd. Flow (prot)	1462	0	1641	0	0	1592	
Flt Permitted	0.990					0.963	
Satd. Flow (perm)	1462	0	1641	0	0	1592	
Link Speed (k/h)	50		50			50	
Link Distance (m)	137.6		234.0			146.3	
Travel Time (s)	9.9		16.8			10.5	
Confl. Peds. (#/hr)				5	5		
Confl. Bikes (#/hr)		4		5			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	5%	8%	2%	3%	4%	20%	
Adj. Flow (vph)	23	96	107	76	172	51	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	119	0	183	0	0	223	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.5	Ŭ.	0.0	Ū.		0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	2.0		10.0			10.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Turning Speed (k/h)	24	14		14	24		
Sign Control	Stop		Free			Free	
Intersection Summary							
Area Type:	Other						
Control Type: Unsignalized							
Intersection Capacity Utilizati	on 41.9%			IC	U Level of	Service A	A
Analysia Dariad (min) 15							

6: St. Laurent & E Access PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્સ	eî 🕺		₩.	
Traffic Volume (vph)	1	249	122	11	9	1
Future Volume (vph)	1	249	122	11	9	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.986	
Flt Protected					0.957	
Satd. Flow (prot)	0	1695	1682	0	1663	0
Flt Permitted					0.957	
Satd. Flow (perm)	0	1695	1682	0	1663	0
Link Speed (k/h)		50	50	2	50	
Link Distance (m)		40.4	197.7		90.8	
Travel Time (s)		2.9	14.2		6.5	
Confl. Peds. (#/hr)	10	2.0		10	0.0	
Confl. Bikes (#/hr)				3		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	5%	5%	1%	1%	1%
Adj. Flow (vph)	1	249	122	11	9	1
Shared Lane Traffic (%)		2.3			-	
Lane Group Flow (vph)	0	250	133	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)	2011	0.0	3.5		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		0.0	0.0		5.0	
Two way Left Turn Lane		0.0	0.0		0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	1.00	1.00	1.00	24	14
Sign Control	<u> </u>	Free	Free		Stop	
		1100	1100		City	
Intersection Summary	0.1					
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizatio	on 24.7%			IC	U Level of	Service A

7: St. Laurent & W Access PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્સ	4Î		W.	
Traffic Volume (vph)	1	247	119	4	3	0
Future Volume (vph)	1	247	119	4	3	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.996			
Flt Protected					0.950	
Satd. Flow (prot)	0	1695	1691	0	1674	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1695	1691	0	1674	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		137.6	40.4		92.1	
Travel Time (s)		9.9	2.9		6.6	
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				3		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	5%	5%	1%	1%	1%
Adj. Flow (vph)	1	247	119	4	3	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	248	123	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0	U ·	3.5	U ·
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		0.0	0.0		5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 24 6%			IC	U Level of	Service A
Analysis Period (min) 15				10	0 2010 01	001110071

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		4			ર્સ
Traffic Volume (vph)	1	10	238	1	13	223
Future Volume (vph)	1	10	238	1	13	223
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.877		0.999			
Flt Protected	0.995					0.997
Satd. Flow (prot)	1538	0	1694	0	0	1694
Flt Permitted	0.995					0.997
Satd. Flow (perm)	1538	0	1694	0	0	1694
Link Speed (k/h)	50		50			50
Link Distance (m)	105.3		30.4			100.3
Travel Time (s)	7.6		2.2			7.2
Confl. Peds. (#/hr)	-			10	10	
Confl. Bikes (#/hr)		3		3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	5%	1%	1%	5%
Adj. Flow (vph)	1	10	238	1	13	223
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	239	0	0	236
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5	Ŭ	3.5	Ŭ		3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	5.0		0.0			0.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 33.6%			ICI	U Level of	Service A
Analysis Daried (min) 15						

	-	\mathbf{r}	1	-	₹Ĩ	1	1
Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	^	1	<u>ካ</u> ካ	<u>**</u>	100	ሻሻ	101
Traffic Volume (vph)	1319	474	545	1180	45	484	334
Future Volume (vph)	1319	474	545	1180	45	484	334
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	75.0	200.0	1000	1000	0.0	0.0
Storage Lanes		1	200.0			2	0.0
Taper Length (m)		I	50.0			10.0	I
Lane Util. Factor	0.95	1.00	0.97	0.95	0.95	0.97	1.00
Ped Bike Factor	0.55	0.95	0.97	0.35	0.35	0.31	0.95
Frt		0.95	0.33				0.850
Fit Protected		0.000	0.950			0.950	0.000
	3221	1483	3185	3349	٥	3248	1469
Satd. Flow (prot) Flt Permitted	3221	1403		5549	0	3248 0.950	1409
	2004	1440	0.950	2240	0		1400
Satd. Flow (perm)	3221	1410	3154	3349	0	3248	1402
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		427		50		00	334
Link Speed (k/h)	50			50		60	
Link Distance (m)	169.1			271.7		348.5	
Travel Time (s)	12.2			19.6		20.9	
Confl. Peds. (#/hr)		30	30				20
Confl. Bikes (#/hr)		4					4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	3%	1%	1%	1%	3%
Adj. Flow (vph)	1319	474	545	1180	45	484	334
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1319	474	545	1180	0	529	334
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Left	R NA	L NA	R NA
Median Width(m)	7.0			9.0		10.5	
Link Offset(m)	0.0			0.0		0.0	
Crosswalk Width(m)	5.0			5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		14	24	14
Number of Detectors	2	1	1	2	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel							
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7			
Detector 2 Size(m)	1.8			1.8			
Detector 2 Type	CI+Ex			CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type	NA	Perm	Prot	NA	Perm	Prot	Perm
Protected Phases	2		1	6		8	
Permitted Phases		2			8		8
Detector Phase	2	2	1	6	8	8	8

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Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	36.4	36.4	16.0	24.7	30.4	30.4	30.4
Total Split (s)	59.0	59.0	30.0	89.0	31.0	31.0	31.0
Total Split (%)	49.2%	49.2%	25.0%	74.2%	25.8%	25.8%	25.8%
Maximum Green (s)	52.6	52.6	23.8	82.6	24.6	24.6	24.6
Yellow Time (s)	3.7	3.7	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.7	2.7	2.9	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	2.1	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.2	6.4		6.4	6.4
Lead/Lag	Lag	Lag	Lead	0.1		0.1	0.1
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Walk Time (s)	10.0	10.0	110110	0 max	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0			17.0	17.0	17.0
Pedestrian Calls (#/hr)	20.0	20.0			17.0	15	17.0
Act Effct Green (s)	54.7	54.7	23.1	84.0	10	23.2	23.2
Actuated g/C Ratio	0.46	0.46	0.19	0.70		0.19	0.19
v/c Ratio	0.90	0.54	0.89	0.50		0.84	0.62
Control Delay	40.3	5.8	64.9	9.5		59.6	9.8
Queue Delay	6.3	0.0	0.0	0.0		0.0	0.0
Total Delay	46.7	5.8	64.9	9.5		59.6	9.8
LOS	40.7 D	5.0 A	04.9 E	9.5 A		59.0 E	9.0 A
Approach Delay	35.9	- A	L	27.0		40.3	- A
Approach LOS	55.9 D			27.0 C		40.5 D	
Queue Length 50th (m)	140.4	5.8	59.4	58.6		56.5	0.0
Queue Length 95th (m)	#184.1	28.0	#84.7	72.0		74.5	23.7
Internal Link Dist (m)	145.1	20.0	π0 4 .1	247.7		324.5	20.1
Turn Bay Length (m)	140.1	75.0	200.0	271.1		524.5	
Base Capacity (vph)	1467	874	631	2343		665	552
Starvation Cap Reductn	1407	11	031	2343		005	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.98	0.55	0.86	0.50		0.80	0.61
Intersection Summary	0.90	0.00	0.00	0.00		0.00	0.01
Area Type:	Other						
Cycle Length: 120	Ullei						
Actuated Cycle Length: 120	to phase 0.5	DT and GN		of Croos			
Offset: 20 (17%), Referenced	to phase 2:E		vb1, Start	of Green			
Natural Cycle: 95	lingtod						
Control Type: Actuated-Coord	linated						
Maximum v/c Ratio: 0.90	0				1 C		
Intersection Signal Delay: 33.					tersection		
Intersection Capacity Utilization	DN 88.6%			IC	CU Level of	Service E	
Analysis Period (min) 15							
# 95th percentile volume ex			nay be lon	ger.			
Queue shown is maximum	after two cyc	les.					
Splits and Phases: 3: Conre	oy & Walkley						
√ Ø1		- Ø2 (R)					

