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Environmental Restoration

Proposed Residential High-Rise 829 Carling Avenue, Ottawa

Transportation Impact Assessment



Proposed Residential High-Rise 829 Carling Avenue

Transportation Impact Assessment

Prepared By:

NOVATECH

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

> Dated: May 2021 Revised: April 2023

Novatech File: 121008 Ref: R-2021-015



April 27, 2023

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

Attention: Mr. Mike Giampa

Project Manager, Infrastructure Approvals

Dear Mr. Giampa:

Reference: 829 Carling Avenue

Revised Transportation Impact Assessment

Novatech File No. 121008

We are pleased to submit the following revised Transportation Impact Assessment (TIA), in support of Official Plan Amendment, Zoning By-Law Amendment, and Site Plan Control applications at 829 Carling Avenue. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

The original TIA in support of this development was submitted to the City in May 2021. This version of the TIA has been revised to address changes in the proposed site plan, and to address 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



TIA Plan Reports

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

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

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

CERTIFICATION

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

Dated at <u>Ottawa</u> (City)	this <u>27th</u> day of <u>April</u> , 2023.
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 for the property located at 829 Carling Avenue, in support of Official Plan Amendment, Zoning By-Law Amendment, and Site Plan Control applications. The subject site is approximately 0.38 acres in size and is currently occupied by a CIBC banking centre. The subject site is currently served by one driveway to Carling Avenue, and one driveway to Sidney Street. Both driveways are approximately 30m west of Preston Street.

The subject site is surrounded by the following:

- Sidney Street and future high-rise residential development to the north.
- Carling Avenue and Dow's Lake Public Parking to the south,
- Preston Street and future high-rise residential development to the east, and
- An existing auto dealership to the west.

The subject site is designated as 'Corridor – Mainstreet' (Carling Avenue) on Schedule B2 of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Arterial Mainstreet' (AM1). and the site is within the Preston-Carling District Secondary Plan.

The proposed development consists of a single 40-storey high-rise residential building with 396 dwellings and approximately 3,628 ft² (337 m²) GFA of ground-floor retail. A total of 196 parking spaces will be provided in seven levels of underground parking. Access to the parking garage will be provided via one two-way access to Sidney Street. The development will be constructed in a single phase, with a buildout year of 2028.

The study area for this report includes the boundary roadways Carling Avenue, Preston Street, and Sidney Street, as well as the following intersections:

- Carling Avenue/Sherwood Drive
- Carling Avenue/Champagne Avenue
- Carling Avenue/Trillium Pathway
- Carling Avenue/Preston Street
- Carling Avenue/Booth Street
- Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway
- Preston Street/Pamilla Street

Preston Street/Beech Street

- Preston Street/Adeline Street
- Preston Street/Sidney Street

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. Analysis will be completed for the 2028 build-out year and 2033 horizon year.

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

Forecasting

The proposed development is estimated to generate a net additional 140 person trips (including 17 vehicle trips) during the AM peak hour and 112 person trips (including 16 vehicle trips) during the PM peak hour.

Development Design

 Concrete sidewalks will be provided around the north, south, and east sides of the proposed building, and will connect to existing sidewalks on Sidney Street, Preston Street, and Carling Avenue. The proposed development will include eight exterior bicycle parking spaces and 192 interior bicycle parking spaces.

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- OC Transpo stops #2397, #6655, #6657, #7369, #8013, #8014, #8023, and the Dow's Lake O-Train Station are within 400m walking distance of all entrances to the proposed development.
- All required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the TDM checklist are met.

<u>Parking</u>

- The proposed development includes 196 vehicle parking spaces, meeting the minimum number of required parking spaces and maximum number of permitted parking spaces, as outlined in the City's Zoning By-Law (ZBL).
- The proposed development includes 200 bicycle parking spaces, meeting the minimum number of required spaces as outlined in the City's ZBL. Section 111 outlines a requirement to provide at least 25% of bicycle spaces within a secure area or structure, which is also met by the proposed development.

Boundary Streets

- Sidney Street meets the target pedestrian level of service (PLOS) A and the target bicycle level of service (BLOS) D.
- Preston Street does not meet the target PLOS A or BLOS B, meets the target truck level of service (TkLOS) D, and achieves a transit level of service (TLOS) F, but has no target.
- The best possible PLOS for Preston Street is a PLOS C, which would require sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m. This is identified for the City's consideration. Along the site's frontage, a sidewalk width greater than 4m is proposed. Considering 2m of this width to be boulevard width, the best possible PLOS C will be achieved. The target PLOS A is anticipated to be met by the proposed development from a crowding perspective, as the sidewalk widths along the site's frontages to Carling Avenue and Preston Street are anticipated to be 3.0m or wider, and will be significantly wider at the northwest corner of Carling Avenue/Preston Street.
- The target BLOS B for Preston Street can be achieved by reducing the operating speed to 40 km/h, or a combination of curbside bike lanes with a minimum width of 1.5m and an operating speed of 50 km/h. In areas with on-street parking, a 4.25m-wide bike plus parking lane would also achieve the target BLOS B. This is identified for the City's consideration.
- A sidewalk of approximately 2m width is proposed along the site's frontage to Sidney Street.
 This will maintain the PLOS of Sidney Street at the target PLOS A.

Access Design

 The existing depressed curbs to the subject site will be removed as part of the proposed development, and full-height curb and sidewalks will be reinstated per City standards. Curbs will be depressed and continuous across the proposed access to Sidney Street.

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- The proposed access meets the requirements of Sections 25(a) and 25(c) of the *Private Approach By-Law*, and Section 107(1) of the ZBL. It is requested that the requirements of Sections 25(m)(ii), 25(p), and 25(u) of the *Private Approach By-Law* be waived, as the access is proposed as far from Preston Street as possible, will maintain proper sightlines, and will not create a traffic hazard.
- The proposed access will be stop-controlled, with free flow on Sidney Street. It is anticipated that the proposed access will operate acceptably during both peak hours.

Transportation Demand Management

- The proponent has committed to providing the following TDM measures:
 - Display local area maps with walking/cycling access routes and key destinations at major entrances;
 - Display relevant transit schedules and route maps at entrances;
 - Unbundle parking cost from monthly rent;
 - o Provide a multimodal travel option information package to new residents.

Neighbourhood Traffic Management

• The proposed development relies on the local roadway Sidney Street for direct vehicular access. No neighbourhood traffic management measures are required, as Sidney Street is a short, dead-end roadway that only provides access to four different lots (7 Sidney Street, 490 Preston Street, 829 Carling Avenue, and 845 Carling Avenue).

Transit

• The proposed development is anticipated to generate an additional 58 transit trips during the AM peak hour (including 43 boarding and 15 alighting), and an additional 51 transit trips during the PM peak hour (including 21 boarding and 30 alighting). It is anticipated that the proposed development will not require more frequent service at the Dow's Lake O-Train Station and surrounding bus stops.

Intersection MMLOS

- The results of the intersection MMLOS analysis can be summarized as follows:
 - All study area intersections do not meet the target PLOS;
 - All study area intersections do not meet the target BLOS, except for Carling Avenue/ Trillium Pathway;
 - All study area intersections with targets meet the target TLOS, except for Carling Avenue/Preston Street and Carling Avenue/Booth Street;
 - All study area intersections do not meet the target TkLOS, except for Carling Avenue/ Sherwood Drive and Carling Avenue/Preston Street;
 - All study area intersections meet the target vehicular level of service (Auto LOS), except for Carling Avenue/Preston Street.
- Pedestrian Level of Service
 - All approaches at Carling Avenue/Sherwood Drive, Carling Avenue/Champagne Avenue, Carling Avenue/Preston Street, and Carling Avenue/Booth Street, and the east and west approach at Carling Avenue/Trillium Pathway, do not meet the target PLOS A. The functional design for the Carling Avenue Transit Priority Measures outlines various measures to improve the level of comfort for pedestrians, but the target PLOS A will not be achieved at any approach.

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- All approaches of Preston Street/Beech Street do not meet the target PLOS A. There
 is limited opportunity in improving the PLOS without the removal of auxiliary turn
 lanes.
- The north, south, and west approaches of Preston Street/Pamilla Street do not meet the target PLOS A. The north and south approaches meet the City's vehicle/ pedestrian conflict threshold for zebra-striped crosswalks. Therefore, textured crosswalks similar to the east and west approaches at this intersection could be considered. Curb bulbouts could be considered to reduce crossing distance.
- All approaches of Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway do not meet the target PLOS A. The north, east, and west approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. This is identified for the City's consideration.

Bicycle Level of Service

- The west approach of Carling Avenue/Sherwood Drive, the north and west approaches of Carling Avenue/Champagne Avenue, and all approaches of Carling Avenue/Booth Street do not meet the target BLOS. The functional design for the Carling Avenue Transit Priority Measures identify segregated cycling facilities and protected intersections at these locations, which will allow all left turns for cyclists to take place off-road, and improve these approaches to a BLOS A.
- All approaches of Carling Avenue/Preston Street does not meet the target BLOS B. The functional design for the Carling Avenue Transit Priority Measures identify segregated cycling facilities and two-stage left-turn bike boxes for eastbound and westbound cyclists, which would improve these approaches to a BLOS A. Two-stage bike boxes could be considered for northbound/southbound cyclists as well, and is identified for the City's consideration.
- The north, south, and east approaches of Preston Street/Beech Street do not meet the target BLOS B. The Ontario Traffic Manual – Book 18 identifies that designated bike lanes are appropriate on Beech Street, while a physically separated bikeway is appropriate for Preston Street. This is identified for the City's consideration. Alternatively, a reduction of the speed limit to 40 km/h on both roadways would improve the BLOS to the target.
- The north and south approaches of Preston Street/Pamilla Street do not meet the target BLOS B. Designated bike lanes or a reduction in the operating speed to 40 km/h on Preston Street could be considered.
- The north and west approaches of Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway do not meet the target BLOS B. The target BLOS can be achieved for these approaches with the implementation of two-stage left-turn bike boxes. This is identified for the City's consideration.

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• Transit Level of Service

The north, east, and west approaches at Carling Avenue/Preston Street, and the north and east approaches at Carling Avenue/Booth Street, do not meet the target TLOS C during the AM and PM peak hours. The transit priority measures on Carling Avenue are anticipated to allow the east and west approaches to operate at a TLOS C or better. The north approaches at both intersections are anticipated to continue operating below the target TLOS in future conditions.

Truck Level of Service

- The east approach of Carling Avenue/Champagne Avenue does not meet the target TkLOS D. As Champagne Avenue is a local roadway and not a truck route, no modifications are recommended.
- The east approach of Carling Avenue/Booth Street does not meet the target TkLOS D. Based on the functional design for the Carling Avenue Transit Priority Measures, the receiving lane for this movement will be a wider lane, and may accommodate trucks turning right from the east approach. Therefore, no further modifications are recommended.
- All approaches of Preston Street/Beech Street and Preston Street/Pamilla Street do not meet the target TkLOS D. While the target TkLOS could be met by increase the curb radii, Beech Street and Pamilla Street are local roadways and not truck routes. Therefore, no modifications are recommended.
- The south and west approaches of Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway do not meet the target TkLOS D. As these approaches involve heavy vehicles turning right into or out of the Dow's Lake Pavilion, no modifications are recommended.

Existing Intersection Operations

- At Carling Avenue/Preston Street, the northbound left turn, southbound through/right turn, and westbound left turn movements do not meet the target Auto LOS E during the PM peak hour.
- At Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway, the southbound left turn/through movement does not meet the target Auto LOS E during the AM and PM peak hours.
- During the AM and PM peak hours, southbound queueing at Carling Avenue/Preston Street
 extends through the upstream intersection at Preston Street/Sidney Street. While the
 Synchro analysis does not identify operational concerns at Preston Street/Sidney Street, it
 is acknowledged that additional traffic volumes generated by future developments may
 trigger a restriction of the eastbound movements on Sidney Street to right turns only, due to
 potential safety and congestion issues.

Background Intersection Operations

- Traffic throughout the study area could be displaced or alleviated through a combination of
 increased use of non-auto modes of transportation, alternate times of travel for drivers, and
 alternate routes of travel. It is assumed that the Carling Avenue Transit Priority Measures
 project will increase the transit modal share and decrease the auto modal share by the
 buildout year 2028.
- As congestion increases within the study area, some motorists may alter their travel times
 to occur outside of the peak hours and alter their routes to other roadways within proximity
 of the study area.
- At Carling Avenue/Preston Street, a reduction of 10 northbound left turning vehicles during the AM peak hour, and 90 northbound left turning vehicles, 30 southbound through/right turning vehicles, 10 eastbound left turning vehicles, 70 eastbound through/right turning vehicles, and 90 westbound left turning vehicles during the PM peak hour would be required to meet the target Auto LOS E in the 2033 background conditions.
- At Carling Avenue/Booth Street, a reduction of 30 westbound through vehicles during the AM peak hour, and 10 westbound through vehicles during the PM peak hour would be required to meet the target Auto LOS E in the 2033 background conditions.
- Restriction of the eastbound left turn at Preston Street/Sidney Street would impact the southbound left turn movement at Carling Avenue/Preston Street and the eastbound left turn movement at Carling Avenue/Booth Street. The Auto LOS for both movements will downgrade to an Auto LOS F during the AM peak hour.

Total Intersection Operations

- Traffic generated by the proposed development is anticipated to have marginal operational effects for most movements at the study area intersections.
- It is anticipated that northbound left turns and eastbound left/right turns at Preston Street/ Sidney Street will rely on courtesy from queued drivers on Preston Street to complete their turns during the peak hours. As there are two northbound lanes approaching Sidney Street, northbound through vehicles can use the curbside lane to bypass a northbound left turning vehicle. This is consistent with the existing intersection operations.
- The proposed development will add:
 - Six to twelve northbound left turning vehicles (equivalent to one vehicle every five to ten minutes during the peak hours);
 - Two to three eastbound left turning vehicles (equivalent to one vehicle every 20 to 30 minutes during the peak hours), and;
 - Nine to thirteen eastbound right turning vehicles (equivalent to one vehicle every four to seven minutes during the peak hours).
- Based on the foregoing, the proposed development can be recommended from a transportation perspective.

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1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared for the property located at 829 Carling Avenue, in support of Official Plan Amendment, Zoning By-Law Amendment, and Site Plan Control applications. The subject site is approximately 0.38 acres in size and is currently occupied by a CIBC banking centre. The subject site is currently served by one driveway to Carling Avenue, and one driveway to Sidney Street. Both driveways are approximately 30m west of Preston Street.

The subject site is surrounded by the following:

- Sidney Street and future high-rise residential development to the north,
- Carling Avenue and Dow's Lake Public Parking to the south,
- Preston Street and future high-rise residential development to the east, and
- An existing auto dealership to the west.

The site context is shown in **Figure 1**.

1.2 Proposed Development

The subject site is designated as 'Corridor – Mainstreet' (Carling Avenue) on Schedule B2 of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Arterial Mainstreet' (AM1), and the site is within the Preston-Carling District Secondary Plan.

The proposed development consists of a single 40-storey high-rise residential building with 396 dwellings and approximately 3,628 ft² (337 m²) GFA of ground-floor retail. A total of 196 parking spaces will be provided in seven levels of underground parking. Access to the parking garage will be provided via one two-way access to Sidney Street. The development will be constructed in a single phase, with a buildout year of 2028.

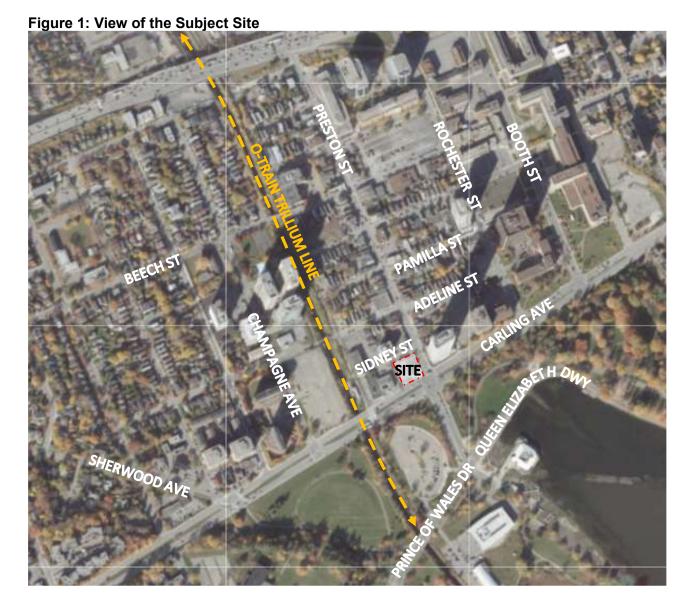
A copy of the proposed site plan is included in **Appendix A**.

1.3 Screening Form

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

- Trip Generation Trigger The development is expected to generate over 60 person trips during the peak hours; further assessment is **required** based on this trigger.
- Location Triggers The development is located with a Transit-Oriented Development Zone; further assessment is **required** based on this trigger.
- Safety Triggers The proposed driveway is located within the area of influence of an adjacent traffic signal; further assessment is **required** based on this trigger.

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



2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

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

Carling Avenue is an arterial roadway that generally runs on an east-west alignment between March Road and Bronson Avenue. Within the study area, it has a six-lane divided urban cross-section, concrete sidewalks on both sides of the roadway, and a posted speed limit of 60 km/h. Carling Avenue is classified as a truck route allowing full loads. Street parking is not permitted.

Preston Street is an arterial roadway that generally runs on a north-south alignment between Albert Street and Prince of Wales Drive. Within the study area, Preston Street has a four-lane undivided urban cross-section south of Carling Avenue, and a two-lane undivided urban cross-section north of Carling Avenue. Concrete sidewalks are provided on both sides of Preston Street, and the roadway has an unposted regulatory speed limit of 50 km/h. Preston Street is classified as a truck route allowing full loads. On-street parking lanes are provided in select locations on both sides of Preston Street north of Carling Avenue. Street parking is not permitted south of Carling Avenue.

Prince of Wales Drive is an arterial roadway that generally runs on a north-south alignment between Preston Street and Fourth Line Road in North Gower. Within the study area, it has a two-lane undivided urban cross section, a concrete sidewalk on the north side of the road and an asphalt sidewalk on the south side, and a posted speed limit of 60km/h. Prince of Wales Drive is classified as a truck route allowing full loads.

Queen Elizabeth Driveway is a federally owned roadway that travels between Preston Street and Laurier Avenue. It has a two-lane undivided urban cross section, a multi-use pathway on the south side of the road, and a posted speed limit of 40km/h except for the approach to Preston Street, which has a speed limit of 60 km/h. Queen Elizabeth Driveway is not classified as a truck route.

Booth Street is a major collector roadway that runs on a north-south alignment between Carling Avenue and north of the Sir John A MacDonald Parkway/Wellington Street West, where it continues as the Chaudiere Crossing interprovincial bridge to Gatineau. Within the study area it has a two-lane undivided urban cross section, sidewalks on both sides, and a regulatory speed limit of 50km/h. Booth Street is classified as a truck route allowing full loads between Carling Avenue and Raymond Street.

Rochester Street runs on a north-south alignment between Carling Avenue and north of Primrose Avenue. It is classified as a major collector roadway between Carling Avenue and Gladstone Avenue, where it continues north as a local roadway. Within the study area it has a two-lane undivided urban cross section, sidewalks on both sides, and a regulatory speed limit of 50km/h. Rochester Street is classified as a truck route allowing full loads between Carling Avenue and Gladstone Avenue.

Sherwood Drive is a collector roadway that generally runs on an east-west alignment between Holland Avenue and Reid Avenue, before running on a southeast-northwest alignment between Reid Avenue and Carling Avenue. Within the study area, Sherwood Drive has a two-lane undivided urban cross-section, concrete sidewalks on both sides of the roadway, and a posted speed limit of 30 km/h. Sherwood Drive is not classified as a truck route, and street parking is not permitted.

Champagne Avenue is a local roadway that generally runs on a north-south alignment between Young Street and Carling Avenue. Within the study area, Champagne Avenue has a two-lane undivided urban cross-section, concrete sidewalks on both sides of the roadway north of Beech Street, a concrete sidewalk on the west side of the roadway south of Beech Street, and a posted speed limit of 30 km/h. Champagne Avenue is not classified as a truck route. Street parking is generally permitted on both sides of Champagne Avenue north of the subject site, with one hour restrictions for non-permit holders on weekdays between 8:00am and 5:00pm. South of the subject site, street parking is generally permitted on the west side of Champagne Avenue.

Beech Street is a local roadway that generally runs on an east-west alignment between Lynwood Avenue and Rochester Street. Within the study area, Beech Street has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, a posted speed limit of 30 km/h west of Preston Street, and an unposted regulatory speed limit of 50 km/h east of Preston Street. Beech Street is not classified as a truck route. Street parking is generally permitted on the north side of Beech Street.

Pamilla Street is a local roadway that runs on an east-west alignment between Rochester Street and west of Preston Street. West of Preston Street it functions as a two-lane two-way roadway with parking permitted on the north side. East of Preston Street it functions as a one-way roadway with parking permitted on the south side. Sidewalks are provided on both sides of the entire length of the roadway. Pamilla Street has an unposted regulatory speed limit of 50km/h and is not classified as a truck route.

Adeline Street is a local roadway that runs on an east-west alignment between Rochester Street and west of Preston Street. It has a two-lane undivided urban cross section, sidewalks on both sides, and parking permitted on the south side. Adeline Street is not classified as a truck route.

Sidney Street is a local roadway that runs on an east-west alignment west of Preston Street. It has a two-lane undivided urban cross section, sidewalks on both sides, and parking permitted on the south side. Sidney Street is not classified as a truck route.

2.1.2 Intersections

Carling Ave/Sherwood Dr

- Signalized three-legged intersection
- North Approach: one left turn lane and one channelized right turn lane
- East Approach: one left turn lane, two through lanes, and one shared through/right turn lane
- West Approach: one left turn lane, two through lanes, and one transit-only through lane (not shown in aerial)
- Zebra-striped crosswalks implemented for all approaches in 2018
- The left turn lane on the east approach previously facilitated left turn movements for a development south of Carling Avenue. Since the development was removed, this turn lane is used to facilitate U-turn movements at this intersection



Carling Ave/Champagne Ave

- Signalized three-legged intersection
- North Approach: one left turn lane and one right turn lane
- East Approach: three through lanes and one right turn lane
- West Approach: one left turn lane, two through lanes, and one transit-only through lane (not shown in aerial)
- Standard crosswalks are provided on all approaches



Carling Ave/Trillium Pathway

- Signalized pedestrian/cyclist crossing
- North/South Approaches: a single, bidirectional multiuse pathway (MUP)
- East Approach: three through lanes
- West Approach: two through lanes and one transit-only through lane (not shown in aerial)
- Zebra-striped crosswalks provided for all approaches
- Crossride provided for cyclists crossing Carling Avenue



Carling Ave/Preston St

- Signalized four-legged intersection
- North Approach: one left turn lane and one shared through/right turn lane
- South Approach: one left turn lane, one through lane, and one shared through/right turn lane
- East Approach: one left turn lane, two through lanes, and one shared through/right turn lane
- West Approach: one left turn lane, two through lanes, one transit-only through lane, and one right turn lane (not shown in aerial)
- Standard crosswalks are provided on all approaches



Carling Ave/Booth St

- Signalized three-legged intersection
- North Approach: one left turn and one right turn lane
- East Approach: two through lanes, and one shared right turn lane/transit-only through lane
- West Approach: one left turn lane, two through lanes, and one transit-only through lane
- Standard crosswalks are provided on all approaches



Preston St/Beech St

- Signalized four-legged intersection
- North/South Approaches: one left turn lane and one shared through/right turn lane
- East Approach: one shared left turn/through lane and one right turn lane
- West Approach: one shared left turn/through/right turn lane
- Concrete textured crosswalks are provided on all approaches



Preston St/Pamilla St

- Signalized four-legged intersection
- North/South/West Approaches: one shared left turn/ through/right turn lane
- East approach is on-way eastbound
- Concrete textured crosswalks are provided on the east and west approaches
- Standard crosswalks are provided on the north and south approaches



Preston St/Adeline St

- Unsignalized four-legged intersection; stop control on east/west approaches
- All Approaches: one shared left turn/through/right turn lane
- · East approach is on-way eastbound
- Concrete textured crosswalks are provided on the east and west approaches



Preston St/Sidney St

- Unsignalized three-legged intersection; stop control on west approaches
- All Approaches: one shared lane
- A standard crosswalk is provided on the west approach



Preston St/Prince of Wales Dr/Queen Elizabeth Dwy

- Signalized four-legged intersection
- North Approach: one left turn lane and one shared through/right turn lane
- South Approach: one shared left/through/right turn lane
- East Approach: one left turn lane, one through lane, and one channelized right turn lane
- West Approach: one left turn lane and one shared through/right turn lane
- Standard crosswalks are provided on all legs
- Bike lanes are provided on the west leg
- A MUP is provided on south side of the road on the east leg



2.1.3 Driveways

In accordance with the 2017 TIA Guidelines, a review of adjacent driveways along the boundary roads are provided as follows:

Sidney Street, North Side:

- One access to a residential development at 7 Sidney Street
- One future access to a residential development at 500 Preston Street (under construction)
- One access to a car dealership at 845 Carling Avenue

Sidney Street, South Side:

None

Carling Avenue, North Side:

 Two accesses to a car dealership at 845 Carling Avenue

Carling Avenue, South Side:

None

Preston Street, East Side:

- One access to an auto repair shop at 495
 Preston Street
- One access to the Claridge ICON Sales Centre at 485 Preston Street

Preston Street, West Side:

None

2.1.4 Pedestrian and Cycling Facilities

Sidewalks are provided on both sides of Carling Avenue, Prince of Wales Drive, Sidney Street, Adeline Street, Pamilla Street, Beech Street, Booth Street, Preston Street, and Sherwood Drive, and on the west side of Champagne Avenue north of Carling Avenue. A multi-use pathway is provided on the east side of the Trillium Rail Corridor, referred to as the Trillium Pathway, and on the south side of Queen Elizabeth Driveway east of Preston Street. A multi-use pathway network is also provided through Commissioners Park east of Preston Street between Carling Avenue and Queen Elizabeth Driveway, and ties into the southeast corner of the Carling Avenue/Preston Street intersection. On-street bike lanes are provided on Prince of Wales Drive.

In the City of Ottawa's primary cycling network, Carling Avenue and Prince of Wales Drive are classified as Spine Routes, Preston Street and Adeline Street west of Preston Street are classified as Local Routes, and Sherwood Drive is classified as both a Local Route and Neighbourhood Bikeway. The Trillium Pathway is classified as a Crosstown Bikeway.

2.1.5 Transit

The Dow's Lake O-Train Station is located at a walking distance of approximately 120m from the proposed development. This station is currently under construction as part of the City's Phase 2 Light Rail Transit (LRT) Trillium Line extension and is scheduled to be reopen in 2023. Further details of Phase 2 LRT are provided in Section 2.2.

For the time where the Dow's Lake O-Train Station is closed for the Trillium Line Extension construction, Route 2 trains have been replaced by buses along Preston Street.

OC Transpo bus stops in proximity of the subject site are shown in **Figure 2**, and summarized as follows:

Carling Avenue/Dow's Lake O-Train Station

- Stop #7369 for routes 55, 56, and 85
 (located on the south side of Carling Avenue, approximately 50m west of the Trillium Pathway)
- Stop #8014 for routes 55, 56, and 85 (located on the north side of Carling Avenue, approximately 50m west of the Trillium Pathway)

Carling Avenue/Preston Street

- Stop #2397 for route 85 (located on the west side of Preston Street, approximately 10m north of Carling Avenue)
- Stop #6657 for routes 85 and 2 (located on the east side of Preston Street, approximately 45m north of Carling Avenue)
- Stop #8023 for routes 55 and 56 (located on the south side of Carling Avenue at Preston Street)

Preston Street/Adeline Street

 Stop #6655 – for route 2 (located on the west side of Preston Street, approximately 10m south of Adeline Street)

Carling Avenue/Norfolk Avenue

 Stop #8013 – for routes 55, 56, and 85 (located on the north side of Carling Avenue, approximately 15m east of the Norfolk Avenue)

OC Transpo Route 2 travels between Bayview O-Train Station and South Keys O-Train Station. The route operates on 10- to 15- minute headways, seven days a week.

OC Transpo Route 55 travels between Elmvale and Westgate Shopping Centre. The route operates on 15-minute headways on weekdays and 30-minute headways on weekends.

OC Transpo Route 56 travels between Tunney's Pasture Station and Civic Hospital seven days a week, and between Tunney's Pasture Station and King Edward/Union during peak periods on weekdays. The study area is served by this route during weekday peak periods only, on 30-minute headways.

OC Transpo Route 85 travels between Gatineau and Bayshore Station. The route operates every 15- to 30-minutes, seven days a week.

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



2.1.6 Area Traffic Management

There are no completed Area Traffic Management (ATM) studies within the study area. The Sherwood Drive Traffic Calming Study was initiated in Fall 2020 to address speeding, higher traffic volumes, and non-compliance of stop signs. This study is currently in progress.

Traffic calming measures such as curb extensions and flex posts have been implemented at select locations along Sherwood Drive, Beech Street, and Booth Street, and 30 km/h speed limit area signs have been installed on Sherwood Drive, Champagne Avenue, and Beech Street. Additionally, signage indicating that drivers are entering a traffic calmed neighbourhood has been installed on Rochester Street and Booth Street.

2.1.7 Existing Traffic Volumes

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

August 25, 2016 Carling Avenue/Sherwood Drive Carling Avenue/Champagne Avenue February 4, 2016 Carling Avenue/Trillium Pathway July 13, 2016 Carling Avenue/Preston Street June 20, 2017 Carling Avenue/Booth Street September 12, 2019 Preston Street/Beech Street September 7, 2016 September 7, 2016 Preston Street/Pamilla Street Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway January 10, 2018

It is noted that the City of Ottawa does not have traffic counts at the Preston Street/Adeline Street and Preston Street/Sidney Street intersections. Due to COVID-19 restrictions, new traffic counts at these intersections would not be reflective of typical traffic conditions, and therefore have not been conducted.

As part of the 500 Preston Street Community Transportation Study dated June 2011, Delcan conducted a traffic count at the Preston Street/Sidney Street intersection. At the time of the 2011 traffic count, the 845 Carling Avenue site contained a car dealership. As this site is still occupied by a car dealership, vehicular traffic to/from Sidney Street from the 2011 Delcan traffic count is considered representative of traffic along Sidney Street. Northbound and southbound through traffic volumes along Preston Street have been drawn from the Carling Avenue/Preston Street intersection.

As part of the 505 Preston Street Community Transportation Study dated December 2012, IBI Group conducted a traffic count at the Preston Street/Adeline Street intersection. As newer traffic counts were unavailable at the time of writing of this report, the 2012 IBI Group count has been used to reflect traffic to/from Adeline Street. Northbound and southbound through traffic volumes along Preston Street have been drawn from the Carling Avenue/Preston Street intersection.

All traffic count data previously discussed are included in **Appendix D**. Traffic volumes within the study area are shown in **Figure 3**.

2.1.8 Collision Records

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

The collision data has been evaluated to determine if there are any identifiable collision patterns. The number of collisions at each intersection from January 1, 2015 to December 31, 2019 is summarized in **Table 1**.

Transportation Impact Assessment 829 Carling Avenue

Figure 3: Existing Network Traffic Volumes

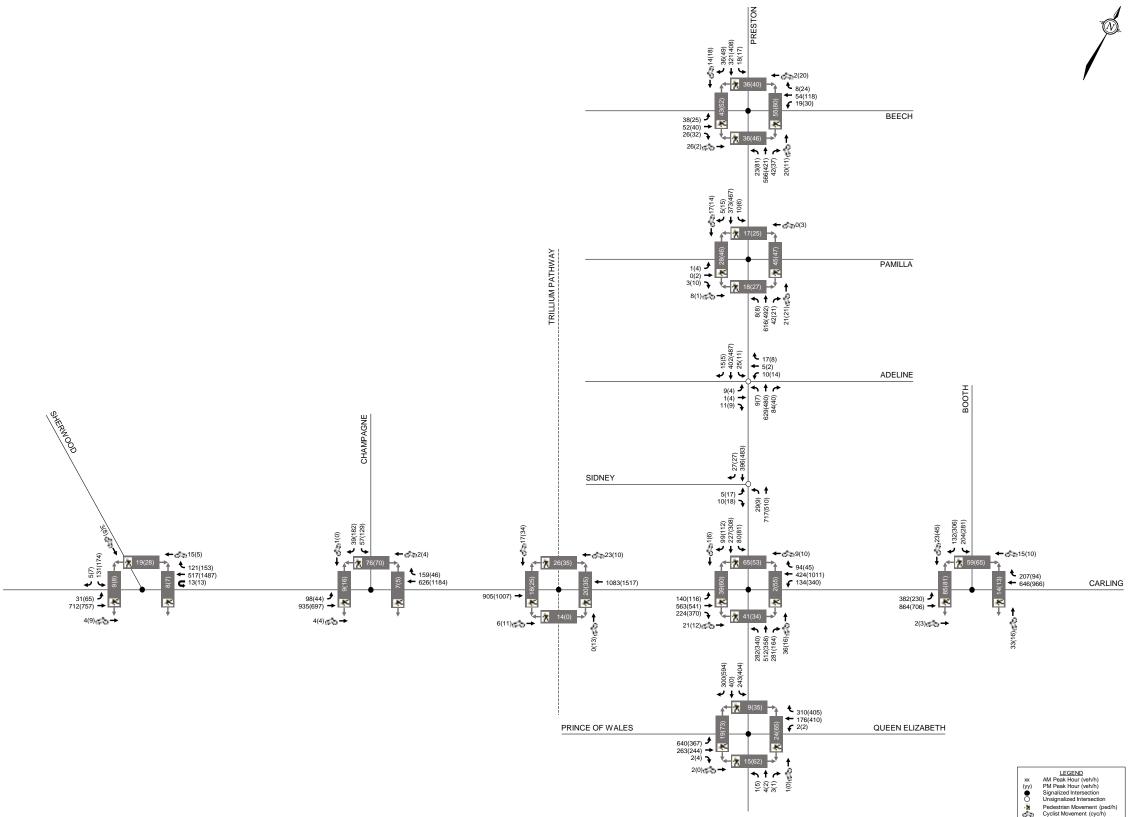


Table 1: Reported Collisions

Table 1. Reported Comstons							
Intersection	Angle	Sideswipe	Rear End	Turning Movement	Approach	SMV ⁽¹⁾ / Other	Total
Carling Avenue/ Sherwood Drive	-	-	5	2	ı	1	8
Carling Avenue/ Champagne Avenue	1	4	4	2	ı	-	11
Carling Avenue/ Trillium Pathway	-	-	1	-	ı	3	4
Carling Avenue/ Preston Street	6	10	24	10	-	6	56
Carling Avenue/ Booth Street	1	2	8	9	ı	ı	20
Preston Street/ Beech Street	1	2	1	3	ı	1	7
Preston Street/ Pamilla Street	1	-	3	1	1	1	7
Preston Street/ Adeline Street	1	-	1	-	-	2	4
Preston Street/ Sidney Street	6	1	1	1	-	-	9
Preston St/Prince of Wales Drive/Queen Elizabeth Dwy	5	4	11	5	-	1	26

^{1.} SMV = Single Motor Vehicle

Carling Avenue/Sherwood Drive

A total of eight collisions were reported at this intersection over the last five years, of which there were five rear-end impacts, two turning movement impacts, and one single vehicle/other impact. Three of the collisions resulted in personal injuries, but none caused fatalities. Four of the collisions occurred in poor driving conditions. None of the collisions involved pedestrians or cyclists.

Carling Avenue/Champagne Avenue

A total of eleven collisions were reported at this intersection over the last five years, of which there were four rear-end impacts, four sideswipe impacts, two turning movement impacts, and one angle impact. Three of the collisions resulted in personal injuries, but none caused fatalities. Five of the collisions occurred in poor driving conditions. None of the collisions involved pedestrians or cyclists.

Carling Avenue/Trillium Pathway

A total of four collisions were reported at this intersection over the last five years, of which there was one rear-end impact and three impacts involving a vehicle and a cyclist. All four collisions resulted in personal injuries, but none caused fatalities. No collisions occurred in poor driving conditions.

Carling Avenue/Preston Street

A total of 56 collisions were reported at this intersection over the last five years, of which there were 24 rear-end impacts, ten turning movement impacts, ten sideswipe impacts, six angle impacts, and six single vehicle/other impacts. Nineteen of the 56 collisions resulted in injuries, but none caused fatalities. Twenty-four of the collisions occurred under poor driving conditions. Eight of the collisions involved cyclists and one involved a pedestrian.

Of the 24 rear-end impacts, three occurred at the northbound approach (two left turn incident and one through vehicle incident), three occurred at the southbound approach (all through vehicle incidents), ten occurred at the eastbound approach (nine through vehicle incidents and one left turn incident), and eight occurred at the westbound approach (one left turn incident, six through vehicle incidents, and one right turn incident). Eight of the 24 collision occurred in poor driving conditions.

Of the nine turning movement impacts, six involved southbound left turning vehicles (four of which involved cyclists), two involved northbound right turning vehicles (one of which involved a cyclist), one involved a southbound right turning vehicle and a cyclist, and one involved a westbound left turning vehicle. Six of the collisions resulted in personal injuries, but none caused fatalities. Six of the collisions occurred under poor driving conditions.

It is likely that some or all of the northbound cyclists entered the intersection from the MUP approach at the southeast corner of Carling Avenue/Preston Street. Cyclists coming from the MUP enter the intersection on an angle, rather than parallel with northbound or westbound traffic. As such, drivers may not recognize which direction cyclists are heading until the cyclist has entered the intersection. It is noted that as crossrides are not provided for cyclists at this intersection, cyclists are required to dismount when crossing. The Carling Avenue Transit Priority Measures functional design may address this pattern of collisions, as a realignment of the MUP approach at this intersection is identified in the design. The functional design does not include crossrides for cyclists crossing Carling Avenue from the MUP, and cyclists will still be required to dismount when crossing.

Of the ten sideswipe impacts, one occurred at the northbound approach, four occurred at the southbound approach, two occurred at the eastbound approach, and three occurred at the westbound approach. All of the collisions resulted in property damage only. Five collisions occurred in poor driving conditions.

Carling Avenue/Booth Street

A total of 20 collisions were reported at this intersection over the last five years, of which there were nine turning movement impacts, eight rear-end impacts, two sideswipe impacts, and one angle impact. Six of the collisions resulted in personal injuries, but none caused fatalities. Seven of the collisions occurred in poor driving conditions. One of the collisions involved a cyclist and none of the involved pedestrians.

Of the nine turning movement impacts, seven involved eastbound left turning vehicles, one involved a southbound left turning vehicle, and one involved a westbound left turning vehicle making a Uturn. Three of the collisions caused personal injuries and four occurred under poor driving conditions.

Of the eight rear-end impacts, four included westbound vehicles, three included eastbound vehicles, and one included southbound vehicles. Three caused personal injuries and two occurred under in poor driving conditions.

Preston Street/Beech Street

A total of seven collisions were reported at this intersection over the last five years, of which there were three turning movement impacts, two sideswipe impact, one angle impact, and one single vehicle/other impact. Only one of the collisions resulted in personal injuries. Two of the collisions occurred in poor driving conditions. None of the collisions involved pedestrians or cyclists.

Preston Street/Pamilla Street

A total of seven collisions were reported at this intersection over the last five years, of which there were three rear-end impacts, one angle impact, one turning movement impact, one approach impact, and one single vehicle/other impact. Only one of the collisions resulted in personal injuries. Two of the collisions occurred in poor driving conditions. One of the collisions involved a pedestrian and none involved cyclists.

Preston Street/Adeline Street

A total of four collisions were reported at this intersection over the last five years, of which there were two single vehicle/other impacts, one angle impact, and one rear-end impact. All of the collisions caused property damage only. Three of the collisions occurred under poor driving conditions. None of the collisions involved pedestrians or cyclists. None of the collisions involved pedestrians or cyclists.

Preston Street/Sidney Street

A total of nine collisions were reported at this intersection over the last five years, of which there were six angle impacts, one sideswipe impact, one rear-end impact, and one turning movement impact. All of the collisions caused property damage only. Five of the collisions occurred in poor driving conditions. None of the collisions involved pedestrians or cyclists.

Of the six angle impacts, four involved eastbound left turning vehicles, one involved an eastbound right turning vehicle and one involved an eastbound vehicle performing an unknown maneuver.

Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway

A total of 26 collisions were reported at this intersection over the last five years, of which there were 11 rear-end impacts, five turning movement impacts, five angle impacts, four sideswipe impacts, and one single vehicle/other impact. Six of the collisions resulted in personal injuries, but none caused fatalities. Ten of the collisions occurred in poor driving conditions. Four of the collisions involved a cyclists and none of the involved pedestrians.

Of the 11 rear-end impacts, five included southbound vehicles, three involved eastbound vehicles, and three involved westbound vehicles. One caused personal injuries and four occurred under in poor driving conditions.

2.2 Planned Conditions

2.2.1 Planned Roadway and Transit Projects

Within the study area, the 2013 Ottawa Cycling Plan identifies the planned Westboro Neighbourhood Bikeway which includes shared use lanes on Sherwood Drive between Fairmont Avenue and Carling Avenue as a Phase 1 (2014-2019) project. The 2013 Ottawa Pedestrian Plan does not identify any improvements within the study area.

The City's 2013 Transportation Master Plan (TMP) does not identify any roadway projects within the study area in its Affordable Road Network. The Carling Avenue Transit Priority Measures project is identified in the 2013 TMP as an improvement in the Affordable Rapid Transit and Transit Priority (RTTP) Network.

The TMP indicates that between Lincoln Fields Station and Dow's Lake O-Train Station, exclusive bus lanes will be made available via reallocation of existing traffic lanes. Between Dow's Lake O-Train Station and Bronson Avenue, transit signal priority and queue jump lanes will be implemented at select intersections. The preliminary functional design of the Carling Avenue Transit Priority Measures project for the section within the study area is shown in **Figure 4**.

Construction for Phase 2 of the LRT began in 2019. Phase 2 of LRT will extend the Confederation Line east and west and will extend the Trillium Line south. The Trillium Line extension will continue the Trillium Line from Greenboro Station to Limebank Road in Riverside South, along with a link to the Ottawa Macdonald-Cartier International Airport. Revenue service for this extension is planned for 2023. A map of the planned Phase 2 LRT extensions are shown in **Figure 5**.

2.2.2 Other Area Developments

In proximity of the proposed development, there are multiple other residential and mixed-use developments are under construction, approved, or in the approval process. Other developments in the area include:

A residential expansion containing 197 residential units is proposed for 17 Aberdeen Street. A Transportation Overview dated August 2016 was prepared in support of this development.

A mixed-use development containing 1,000 residential units and 142,200 ft² of commercial space is proposed at 552 Booth Street. A TIA dated December 2018 was prepared in support of a Zoning By-law Amendment and Official Plan Amendment application for this development.

A residential development containing 207 apartment dwellings and 71 student housing dwellings is proposed at 770-774 Bronson Avenue. A TIA dated December 2022 was prepared in support of a Site Plan Control application for this development.

A mixed-use building containing 40 residential units and 1,000 ft² of Office space is proposed at 289 Carling Avenue. A TIA dated August 2019 was prepared in support of this development.

A mixed-use development containing 1,123 units and 16,255 ft² of commercial space is proposed at 845 Carling Avenue. A Community Transportation Study/Transportation Impact Study was prepared in support of a Zoning By-law Amendment application for this development in April 2013.

A residential development containing 236 units is proposed at 90 Champagne Avenue. A TIA dated November 2019 was prepared in support of this development.

Two high-rise residential towers containing a combined 540 units are currently under construction at 101 and 105 Champagne Avenue. A Transportation Overview dated November 2011 and Parking Requirements Study dated November 2015 were prepared in support of this development.

A residential development containing 117 units is proposed for 93-105 Norman Street. A Transportation Brief Addendum 1 dated October 2013 was prepared in support of this application.

A mixed-use development containing 280 residential units and 10,441 ft² of commercial space is currently under construction at 500 Preston Street. A Community Transportation Study dated June 2011, Addendum dated July 2013, and Addendum 2 dated October 2013 in support of this application.



Figure 5: LRT Phase 2



A mixed-use development containing 252 residential units, 4,786 ft² of retail space, and 16,047 ft² of office space is currently under construction at 505 Preston Street. A Community Transportation Study dated December 2012 and Transportation Overview dated May 2013 were prepared in support of this development.

A mixed-use development containing 540 residential units and 59,182 ft² of commercial space is proposed at 450 Rochester Street. A TIA dated October 2019 was prepared in support of this report.

The New Civic Development of the Ottawa Civic Hospital is planned at 930 Carling Avenue (north and west of Prince of Wales Drive, south of Carling Avenue, and east of Birch Drive). Opening day of the development is estimated to occur in 2028, and will include approximately 5,000 full-time staff and 641 patient beds, with a gross floor area of approximately 2,686,000 ft². Ultimate buildout of the New Civic Development is estimated to occur in 2048 (i.e. beyond the timeframe of this study), consisting of three towers with office, commercial, and residential uses. The ultimate development will also include an expansion of the hospital, such that the entire hospital consists of approximately 9,956 full-time staff, 1,136 patient beds, and a gross floor area of approximately 4,940,000 ft². TIA reports were prepared by Parsons in July 2021, December 2021, and November 2022, in support of this development.

2.3 Study Area and Time Periods

The study area for this report includes the boundary roadways Carling Avenue, Preston Street, and Sidney Street, as well as the following intersections:

- Carling Avenue/Sherwood Drive
- Carling Avenue/Champagne Avenue
- Carling Avenue/Trillium Pathway
- Carling Avenue/Preston Street
- Carling Avenue/Booth Street
- Preston Street/Beech Street
- Preston Street/Pamilla Street
- Preston Street/Adeline Street
- Preston Street/Sidney Street
- Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway

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 2028 build-out year and 2033 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 2**.

Table 2: TIA Exemptions

Module	Element	Exemption Criteria	Status
Design Review		Exemption officia	Otatus
4.1	4.1.2 Circulation and Access	Only required for site plans	Not Exempt
Development Design	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
4.2	4.2.1 Parking Supply	Only required for site plans	Not Exempt
Parking	4.2.2 Spillover Parking	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	4.6.1 Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	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	Not Exempt

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

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

The subject site is currently occupied with a CIBC banking centre (approximately 4,300 ft² GFA in size). The proposed development will replace the existing banking centre with a total of 396 high-rise dwellings and approximately 3,628 ft² GFA of ground-floor retail. The methodology and results of estimating the trip generation for each land use are discussed in the subsequent sections.

The *TRANS Trip Generation Manual Summary Report*, prepared in October 2020 by WSP, includes data to estimate the mode shares for commercial trip generators (in Table 13 of the manual) and high-rise multifamily housing (in Table 8 of the manual) for the AM and PM peak periods, based on district. The *TRANS Trip Generation Manual* identifies the subject site as being located within the Ottawa Inner Area district, and outlines the following mode shares for commercial and residential developments in the Ottawa Inner Area.

Commercial Mode Shares

Auto Driver: 39% AM, 22% PMAuto Passenger: 2% AM, 4% PM

Transit: 16% AM, 12% PM
Cyclist: 3% AM, 4% PM
Podestrian: 40% AM, 58% F

Pedestrian: 40% AM, 58% PM

Residential Mode Shares

Auto Driver: 26% AM, 25% PMAuto Passenger: 6% AM, 8% PM

Transit: 28% AM, 21% PMCyclist: 5% AM, 6% PM

Pedestrian: 34% AM, 39% PM

As the site is located within 600m of the Dow's Lake O-Train Station, the proposed development is considered a Transit-Oriented Development (TOD). In TOD zones, the transit share is assumed to increase significantly compared to any TRANS O-D district. The City has outlined sustainable mode share targets for transit-oriented developments, which can be summarized as follows:

Auto Driver: 15% during peak periods;
 Auto Passenger: 5% during peak periods;
 Transit: 65% during peak periods;
 Non-Auto (Active): 15% during peak periods.

Given the subject site's proximity to amenities and destinations such as Preston Street and Carleton University, the assumed mode shares for the existing and proposed land uses reflect a higher non-auto mode share and a lower transit share than the TOD mode share targets described above. It is also assumed that the non-auto mode share for the existing bank and proposed retail uses is higher than the non-auto mode share for the proposed high-rise dwellings.

The mode shares carried forward in the trip generation estimates for each land use are included in **Table 3**.

	Evictio	a Donk	Dropos	d Dotoil	Proposed Residential		
Mode	⊏XIStin	g Bank	Propose	ed Retail			
Mode	AM	PM	AM	PM	AM	PM	
Auto Driver	15%	15%	15%	15%	15%	15%	
Auto Passenger	5%	5%	5%	5%	5%	5%	
Transit	35%	15%	35%	15%	40%	35%	
Cyclist	5%	5%	5%	5%	5%	5%	
Pedestrian	40%	60%	40%	60%	35%	40%	

3.1.1.1 Existing Bank Trip Generation

Trips generated by the existing bank have been estimated using the Drive-in Bank land use rates included in the *ITE Trip Generation Manual*, 11th Edition. The estimated number of person trips generated by the existing development are shown in **Table 4**.

Table 4: Existing Development – Trip Generation

Land Use	ITE Code	GFA	AM Pe	ak Hour (pph ⁽¹⁾)	PM Peak Hour (pph)		
	IIE Code		IN	OUT	ТОТ	IN	OUT	TOT
Drive-in Bank	912	4,300 ft ²	30	22	52	56	56	112

^{1.} pph: Person Trips per Hour - Calculated using an ITE Trip to Person Trip factor of 1.28, consistent with the 2017 TIA Guidelines

Based on the previous table, the existing banking centre is estimated to generate 52 person trips during the AM peak hour and 112 person trips during the PM peak hour. A breakdown of these trips by modal share is shown in **Table 5**.

Table 5: Existing Development – Trips by Mode Share

Travel Mode	Mode	Share	A	M Peak Hou	ır	PM Peak Hour		
Travel Mode	AM	PM	IN	OUT	TOT	IN	OUT	TOT
Peak Hour Persor		n Trips	30	22	52	56	56	112
Auto Driver	15%	15%	5	3	8	8	8	16
Auto Passenger	5%	5%	1	1	2	3	3	6
Transit	35%	15%	11	8	19	8	8	16
Cyclist	5%	5%	1	1	2	3	3	6
Pedestrian	40%	60%	12	9	21	34	34	68

From the previous table, the existing banking centre is estimated to generate eight vehicle trips during the AM peak hour and 16 vehicle trips during the PM peak hour.

This land use is anticipated to generate two types of external peak hour trips: primary and pass-by trips. Primary trips are made for the specific purpose of visiting the site, while pass-by trips are made as intermediate stops on the way to another destination. Peak hour pass-by trips for the existing development are estimated to be approximately 35%, based on the average rate identified in the *ITE Trip Generation Handbook* for the Drive-in Bank land use. The primary and pass-by trips generated by the existing banking centre are summarized in **Table 6**.

Table 6: Existing	Development	: – Primary	and Pass-by	/ Trips
-------------------	-------------	-------------	-------------	---------

Trip Type	AM Peak Hour (vph ⁽¹⁾)			PM Peak Hour (vph)			
Trip Type	IN	OUT	TOT	IN	OUT	TOT	
Existing Development Vehicle Trips	5	3	8	8	8	16	
Pass-by	1	1	2	3	3	6	
Primary	4	2	6	5	5	10	

^{1.} vph: Vehicle Trips per Hour

3.1.1.2 Proposed Retail Trip Generation

Since the retail uses are not known at this time, the trips generated by the proposed retail uses have been estimated using the Strip Retail Plaza land use rates included in the *ITE Trip Generation Manual*, 11th Edition. The estimated number of person trips generated by the proposed ground-floor retail are shown in **Table 7**.

Table 7: Proposed Retail - Trip Generation

Land Use	ITE Code	GFA	AM P	eak Hour	(pph)	PM P	eak Hour	(pph)
Land Use TIE C	TIE Code	GFA	IN	OUT	ТОТ	IN	OUT	TOT
Strip Retail Plaza	822	3,628 ft ²	11	8	19	25	25	50

Based on the previous table, the proposed retail is estimated to generate 19 person trips during the AM peak hour and 50 person trips during the PM peak hour. A breakdown of these trips by modal share is shown in **Table 8**.

Table 8: Proposed Retail - Trips by Mode Share

Travel Mode	Mode	Share	A	M Peak Ho	ır	PM Peak Hour		
Travel Mode	AM	PM	IN	OUT	TOT	IN	OUT	TOT
Peak Hour	Perso	n Trips	11	8	19	25	25	50
Auto Driver	15%	15%	1	1	2	4	4	8
Auto Passenger	5%	5%	1	-	1	1	1	2
Transit	35%	15%	4	3	7	4	4	8
Cyclist	5%	5%	-	1	1	1	1	2
Pedestrian	40%	60%	5	3	8	15	15	30

From the previous table, the proposed retail is estimated to generate two vehicle trips during the AM peak hour and eight vehicle trips during the PM peak hour.

Given the low projected vehicular volumes generated by the proposed retail, it is not assumed to generate any pass-by trips. This is further justified since the site will only be accessed via Sidney Street, whereas the existing banking centre includes an access to Carling Avenue as well as an access to Sidney Street.

3.1.1.3 Proposed Residential Trip Generation

The trips generated by the 396 proposed dwellings have been estimated using the *TRANS Trip Generation Manual*, which present peak hour trip generation rates for different types of housing for the AM and PM peak periods. For the High-Rise Multifamily Housing land use, 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 dwellings for the AM and PM peak periods are shown in **Table 9**. A breakdown of these trips by modal share is shown in **Table 10**.

Table 9: Proposed Residential – Peak Period Trip Generation

l and llas	TRANS	Heite	AM Peak Period (ppp ⁽¹⁾)			PM Peak Period (ppp)		
Land Use	Rate	Units	IN	OUT	тот	IN	OUT	тот
High-Rise Multifamily Housing	AM: 0.80 PM: 0.90	396	98	219	317	206	150	356

^{1.} ppp: Person Trips per Peak Period

Table 10: Proposed Residential – Peak Period Trips by Mode Share

Travel Mode	Mode Share		All	AM Peak Period			PM Peak Period		
Traver Mode	AM	PM	IN	OUT	TOT	IN	OUT	TOT	
Peak Period Person Trips			98	219	317	206	150	356	
Auto Driver	15%	15%	15	33	48	31	22	53	
Auto Passenger	5%	5%	5	11	16	10	8	18	
Transit	40%	35%	39	88	127	73	52	125	
Cyclist	5%	5%	5	11	16	10	8	18	
Pedestrian	35%	40%	34	76	110	82	60	142	

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 11**.

Table 11: Proposed Residential – Peak Hour Trips by Mode Share

Travel Mode	Adj. Factor ⁽¹⁾		А	AM Peak Hour			PM Peak Hour			
Traver mode	AM	PM	IN	OUT	TOT	IN	OUT	TOT		
Auto Driver	0.48	0.44	7	16	23	14	10	24		
Auto Passenger	0.48	0.44	2	5	7	5	3	8		
Transit	0.55	0.47	22	48	70	34	25	59		
Cyclist	0.58	0.48	3	6	9	5	4	9		
Pedestrian	0.58	0.52	20	44	64	43	31	74		
Peak Hou	r Perso	n Trips	54	119	173	101	73	174		

^{1.} Adjustment Factors are included in Table 4 of the TRANS Trip Generation Manual

From the previous table, the proposed high-rise dwellings are estimated to generate 173 person trips (including 23 vehicle trips) during the AM peak hour and 174 person trips (including 24 vehicle trips) during the PM peak hour.

3.1.1.4 Summary of Trip Generation Estimates

A summary of the peak hour person trips generated by the existing banking centre, proposed retail, and proposed residential are included in **Table 12**.

Table 12: Trip Generation Summary

Travel Mode		AM Peak Hοι	ır	F	PM Peak Hou	ır
Travel Wiode	IN	OUT	TOT	IN	OUT	TOT
Existing Development						
Banking Centre Trips	30	22	52	56	56	112
Auto Driver	5	3	8	8	8	16
Auto Passenger	1	1	2	3	3	6
Transit	11	8	19	8	8	16
Cyclist	1	1	2	3	3	6
Pedestrian	12	9	21	34	34	68
Proposed Redevelopment						
Retail Trips	11	8	19	25	25	50
Auto Driver	1	1	2	4	4	8
Auto Passenger	1	-	1	1	1	2
Transit	4	3	7	4	4	8
Cyclist	-	1	1	1	1	2
Pedestrian	5	3	8	15	15	30
Residential Trips	54	119	173	101	73	174
Auto Driver	7	16	23	14	10	24
Auto Passenger	2	5	7	5	3	8
Transit	22	48	70	34	25	59
Cyclist	3	6	9	5	4	9
Pedestrian	20	44	64	43	31	74
Net Additional Trips	35	107	140	70	42	112
Auto Driver	3	14	17	10	6	16
Auto Passenger	2	4	6	3	1	4
Transit	15	43	<i>5</i> 8	30	21	51
Cyclist	2	6	8	3	2	5
Pedestrian	13	38	51	24	12	36

From the previous table, the proposed development is estimated to generate a net additional 140 person trips (including 17 vehicle trips) during the AM peak hour and 112 person trips (including 16 vehicle trips) during the PM peak hour.

It is likely that a percentage of the trips generated by the proposed development will be internally captured (for example, residents of the building making a trip to any of the businesses on the ground floor). No deduction has been made to account for internally captured trips, as the proposed retail trip generation is relatively low. Therefore, all trips generated by the proposed retail is assumed to have an origin or destination beyond the subject site. This simplifying assumption also allows for a more conservative analysis.

3.1.2 Trip Distribution

The assumed distribution of trips generated by the existing and proposed developments have been derived from existing traffic patterns within the study area and logical trip routing. Site-generated retail trips are anticipated to follow the two-way traffic patterns of the PM peak hour, and site-generated residential trips are anticipated to follow the traffic patterns associated with the typical commute (i.e. departing the study area during the AM peak and arriving during the PM peak). The distribution of site-generated trips can be described as follows.

Existing Bank and Proposed Retail Distribution

- 5% to/from the north via Champagne Avenue;
- 15% to/from the north via Preston Street;
- 5% to/from the north via Booth Street;
- 20% to/from the east via Carling Avenue;
- 10% to/from the east via Queen Elizabeth Driveway;
- 5% to/from the west via Sherwood Drive;
- 25% to/from the west via Carling Avenue;
- 15% to/from the west via Prince of Wales Drive.

Proposed Residential Distribution

- 10% to/from the north via Preston Street;
- 10% to/from the north via Booth Street:
- 20% to/from the east via Carling Avenue;
- 10% to/from the east via Beech Street;
- 15% to/from the east via Queen Elizabeth Driveway;
- 5% to/from the west via Sherwood Drive;
- 15% to/from the west via Carling Avenue;
- 15% to/from the west via Prince of Wales Drive.

3.1.3 Trip Assignment

Trips generated by the existing banking centre have been assigned to the Carling Avenue and Sidney Street accesses. Based on the origin/destination, some trips are anticipated to arrive at one access but exit at the other. This reflects the existing condition that the Carling Avenue access is restricted to right-in/right-out (RIRO) only, whereas the Preston Street/Sidney Street intersection allows all movements. The trip assignment for the existing banking centre trips can be summarized as follows.

Carling Avenue Access

- 100% of pass-by trips;
- 100% of inbound trips from the north via Booth Street, the east via Carling Avenue and Queen Elizabeth Driveway, and the west via Prince of Wales Drive;
- 100% of outbound trips to the north via Champagne Avenue, and the west via Sherwood Drive and Carling Avenue.

Sidney Street Access

- 100% of inbound trips from the north via Preston Street and Champagne Avenue, and the west via Sherwood Drive and Carling Avenue;
- 100% of outbound trips to the north via Preston Street and Booth Street, the east via Carling Avenue and Queen Elizabeth Driveway, and the west via Prince of Wales Drive.

All trips generated by the proposed development will enter and exit the site via the proposed twoway access to Sidney Street.

3.2 Background Traffic

3.2.1 Other Area Developments

A review of other area development traffic has been conducted, per the developments listed in Section 2.2.2. Traffic generated by the following other area developments that under construction, approved, or are in the approval process have been considered for this report. Relevant excerpts of the traffic studies associated with the developments below are included in **Appendix F**.

17 Aberdeen Street

A residential expansion including 197 dwellings is proposed at 17 Aberdeen Street. A Transportation Overview was prepared by IBI Group in August 2016, in support of a Site Plan Control application for this development. The study identified that the expansion would generate an increase of 40 vph during the AM peak hour and 50 vph during the PM peak hour. No trip distribution or site-generated traffic figures were developed as part of the Transportation Overview. Traffic generated by this development have been added to the 2028 and 2033 background volumes, based on the trip distribution assumptions described in Section 3.1.2.

552 Booth Street

A mixed-use development including 1,000 dwellings and 142,200 ft² GFA of retail/office space is proposed at 552 Booth Street. A TIA was prepared by Parsons in December 2018, in support of Official Plan and Zoning By-Law Amendment applications for the development. The TIA presented trip generation projections for the 2025 buildout year using existing mode shares and the 2030 horizon year using target mode shares to reflect the City's initiative to increase transit ridership. In this scenario, the development is projected to generate approximately 175 vph during the peak hours. For the purposes of this TIA, the trip generation projections associated with the target mode shares have been added to the 2028 and 2033 background volumes.

770-774 Bronson Avenue

A residential development including 207 apartment dwellings and 71 student housing dwellings is proposed at 770-774 Bronson Avenue. A TIA was prepared by CGH Transportation in December 2022, in support of the development. The TIA identified that the development would have negligible impact on the road network, and has not been added to the 2028 or 2033 background volumes.

289 Carling Avenue

A mixed-use development including 40 dwellings and 1,000 ft² GFA of ground-floor office space is proposed at 289 Carling Avenue. A TIA was prepared by CGH Transportation in August 2019, in support of the development. The TIA identified that the development would have negligible impact on the road network, and has not been added to the 2028 or 2033 background volumes.

845 Carling Avenue

A mixed-use development including 1,123 dwellings and 16,000 ft² GFA of ground-floor retail is proposed at 845 Carling Avenue. A Community Transportation Study/Transportation Impact Study (CTS/TIS) was prepared by Delcan in April 2013, in support of a Zoning By-Law Amendment application for the development. The CTS/TIS identified that the development would generate a net increase of approximately 150 vph during the AM peak hour and 175 vph during the PM peak hour. The study identified that construction of the development would be phased over a 15 to 20 year period, and the project has not advanced to the Site Plan Control stage. For the purposes of this TIA, 50% of traffic generated by this development has been added to the 2028 background volumes and 100% of traffic generated by this development has been added to the 2033 background volumes.

90 Champagne Avenue

A residential development including 236 dwellings is proposed at 90 Champagne Avenue. A TIA was prepared by Novatech in November 2019, in support of Zoning By-Law Amendment and Site Plan Control applications for the development. The TIA identified that the development would generate an increase of approximately 25 vph during the AM and PM peak hours. Traffic generated by this development has been added to the 2028 and 2033 background volumes.

101-105 Champagne Avenue

A residential development including 540 dwellings is currently under construction at 101 and 105 Champagne Avenue. A Transportation Overview and Parking Requirements Study were prepared by Delcan/Parsons in November 2011 and November 2015, respectively, in support of Official Plan Amendment, Zoning By-Law Amendment, and Site Plan Control applications for the development. The studies identified that the development would generate a net increase of approximately 55 vph during the peak hours. Traffic generated by this development has been added to the 2028 and 2033 background volumes.

93-105 Norman Street

A residential development including 117 dwellings is proposed at 93-105 Norman Street. A Transportation Brief and Addendum were prepared by Delcan in October 2013, in support of a Site Plan Control application for the development. The study identified that the development would generate a net increase of approximately 70 to 80 person trips during the peak hours, equating to approximately 15 vph assuming a 20% driver share. Traffic generated by this development have been added to the 2028 and 2033 background volumes, based on the trip distribution assumptions described in Section 3.1.2.

500 Preston Street

A mixed-use development including 280 dwellings and 10,000 ft² GFA of ground-floor retail is currently under construction at 500 Preston Street. A CTS dated June 2011, and subsequent addenda dated December 2012 and October 2013, were prepared by Delcan in support of a Site Plan Control for the development. The reports identified that the development would generate a net increase of approximately 95 vph during the AM peak hour and 110 vph during the PM peak hour. Traffic generated by this development has been added to the 2028 and 2033 background volumes.

505 Preston Street

A mixed-use development including 252 dwellings and 20,800 ft² GFA of office/retail uses is currently under construction at 505 Preston Street. A CTS dated December 2012, and Transportation Overview dated May 2013, were prepared by IBI Group in support of Zoning By-Law Amendment and Site Plan Control applications for the development. The studies identified that the development would generate a net increase of approximately 50 vph during the AM peak hour and 60 vph during the PM peak hour. Traffic generated by this development has been added to the 2028 and 2033 background volumes.

450 Rochester Street

A mixed-use development including 540 dwellings and 59,182 ft² GFA of commercial space is proposed at 450 Rochester Street. A TIA was prepared in October 2019 by Parsons, in support of Zoning By-Law Amendment and Site Plan Control applications for the development. The TIA identified that the development would generate a net increase of approximately 260 vph during the peak hours. Traffic generated by this development has been added to the 2028 and 2033 background volumes.

New Civic Development

The New Civic Development of the Ottawa Civic Hospital is planned at 930 Carling Avenue. Phase 1 of the development is anticipated to include approximately 641 beds, 5,000 full-time staff, and 2,686,000 ft² GFA of floor area. Buildout of Phase 1 is anticipated to occur in 2028. Ultimate buildout of the New Civic Development is anticipated to occur in 2048, beyond the timeframe of this study, and therefore only Phase 1 has been considered. TIA reports prepared by Parsons in July 2021, December 2021, and November 2022 have identified the trip generation estimates and necessary road modifications required to support this development. These estimates and road modifications have been considered for the 2028 and 2033 background volumes.

A summary of the estimated number of vehicle trips generated by Phase 1 of the New Civic Development of the Ottawa Civic Hospital is included in **Table 13**.

Travel Mode	A	M Peak Hou	ır	PM Peak Hour			
Travel Wode	IN	OUT	TOT	IN	OUT	TOT	
Hospital Trips	1,408	385	1,793	131	804	935	
Auto Driver	611	233	844	102	357	459	
Auto Passenger	138	62	200	23	81	104	
Transit	569	76	645	4	316	320	
Cyclist	38	5	43	1	21	22	
Pedestrian	52	9	61	1	29	30	

Vehicles will access Phase 1 of the new hospital development via a new south approach at Carling Avenue/Champagne Avenue (i.e. within the study area), two new approaches to Prince of Wales Drive (outside of the study area), and a new east approach at Maple Drive/Winding Lane (outside of the study area).

Within the study area, the TIA reports in support of the New Civic Development identified auxiliary eastbound right turn and westbound left turn lanes, plus two new northbound lanes at Carling Avenue/Champagne Avenue, and dual eastbound left turn lanes at Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway.

3.2.2 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 G**. Comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes, the *Strategic Long-Range Model* suggests positive growth on all arterial roadways, ranging from approximately 0.5% per annum on Preston Street to 4% per annum of Prince of Wales Drive. The *Intersection Traffic Growth Rates* figures, which determine growth rates based on total vehicular volumes entering the intersection, identify the following growth rates between 2000 and 2016:

- Carling Avenue/Sherwood Drive
 - o AM Peak Hour: negative growth between -0.2% and -2% per annum;
 - PM Peak Hour: positive growth between +0.2% and +2% per annum.
- Carling Avenue/Champagne Avenue
 - AM Peak Hour: negative growth between -0.2% and -2% per annum;
 - o PM Peak Hour: positive growth between +0.2% and +2% per annum.

- Carling Avenue/Preston Street
 - o AM Peak Hour: negative growth between -0.2% and -2% per annum;
 - o PM Peak Hour: negative growth between -0.2% and -2% per annum.
- Carling Avenue/Booth Street
 - o AM Peak Hour: negative growth between -0.2% and -2% per annum;
 - o PM Peak Hour: negative growth between -0.2% and -2% per annum.
- Preston Street/Beech Street
 - o AM Peak Hour: negative growth between -0.2% and -2% per annum;
 - o PM Peak Hour: negative growth between -0.2% and -2% per annum.
- Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway
 - AM Peak Hour: negative growth between -0.2% and -2% per annum;
 - o PM Peak Hour: no growth (i.e. between -0.2% and +2% per annum).

It is anticipated that background growth along the study area roadways will be captured through the addition of traffic generated by other area developments, as described in the previous section. Therefore, no background growth rates have been applied to any of the study area roadways.

East-west traffic along Carling Avenue is forecasted to decrease by as much as 20% in the peak direction and 15% in the off-peak direction by 2031, through implementation of the Carling Avenue transit priority measures shown in **Figure 4**. It is anticipated that the measures will be implemented by the buildout year 2028, and will progressively reduce east-west traffic volumes. A reduction of 10% in east-west traffic on Carling Avenue has been assumed for the 2028 background traffic conditions for both the peak and off-peak directions. The full reductions of 20% in the peak direction and 15% in the off-peak direction have been assumed for the 2033 background traffic conditions.

3.2.3 Existing Traffic Volume Balancing

To account for discrepancies in the different traffic counts conducted, the existing through traffic volumes have been balanced throughout the study area for any through movements with discrepancies of greater than 10%. Volumes between the study area intersections along the Carling Avenue and Preston Street corridors have therefore been adjusted to be within 10% of each other. The balanced existing traffic volumes are shown in **Figure 6**.

3.3 Future Traffic Conditions

The figures listed below present the following future traffic conditions:

- Existing site-generated traffic volumes are shown in **Figure 7**;
- Proposed site-generated traffic volumes are shown in Figure 8;
- Net site-generated traffic volumes are shown in Figure 9;
- Other area development-generated traffic volumes in 2028 are shown in Figure 10;
- Other area development-generated traffic volumes in 2033 are shown in Figure 11;
- Background traffic volumes in 2028 are shown in Figure 12;
- Background traffic volumes in 2033 are shown in Figure 13;
- Total traffic volumes in 2028 are shown in **Figure 14**;
- Total traffic volumes in 2033 are shown in Figure 15.

Figure 6: Balanced Existing Traffic Volumes

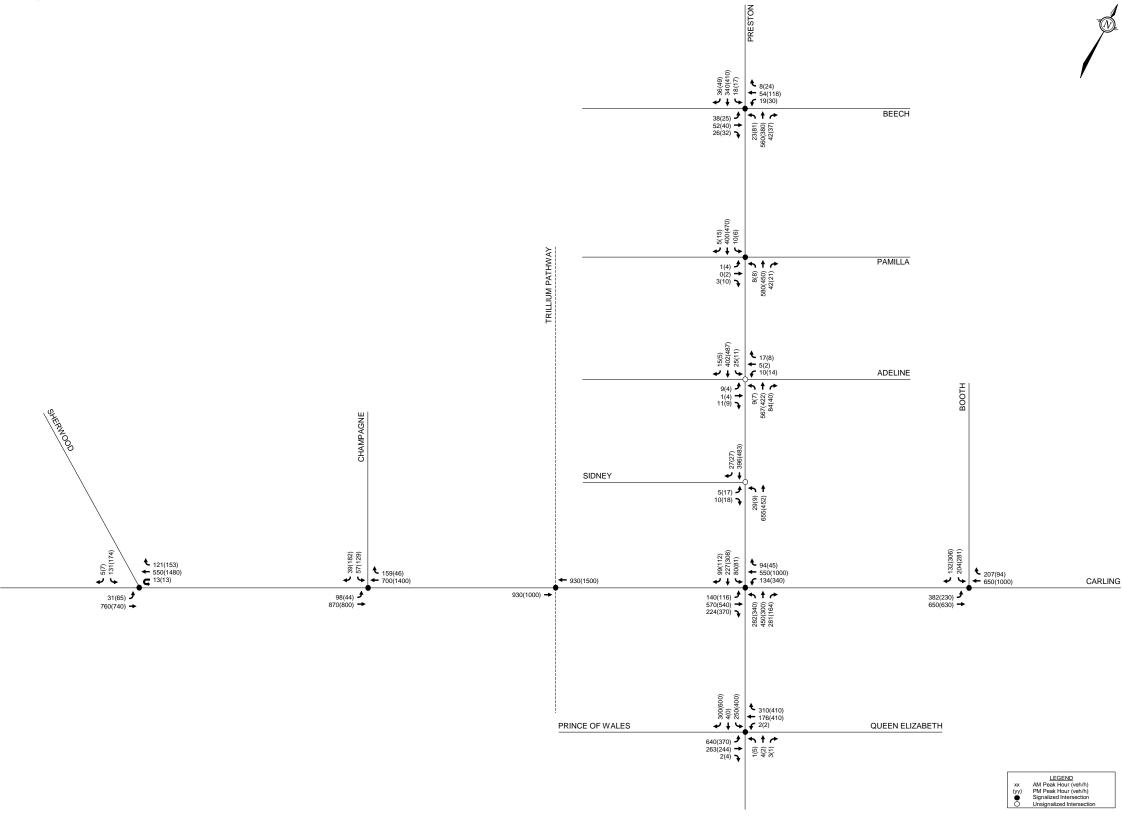


Figure 7: Existing Site-Generated Traffic Volumes

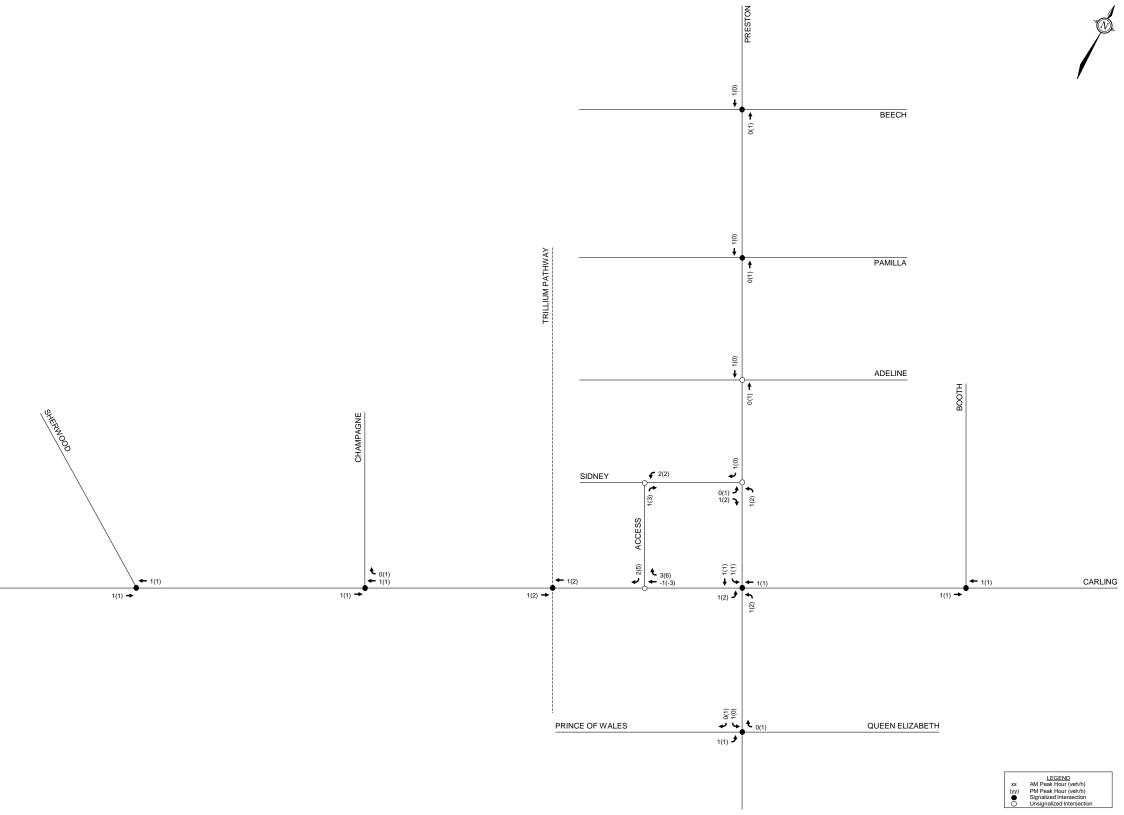


Figure 8: Proposed Site-Generated Traffic Volumes

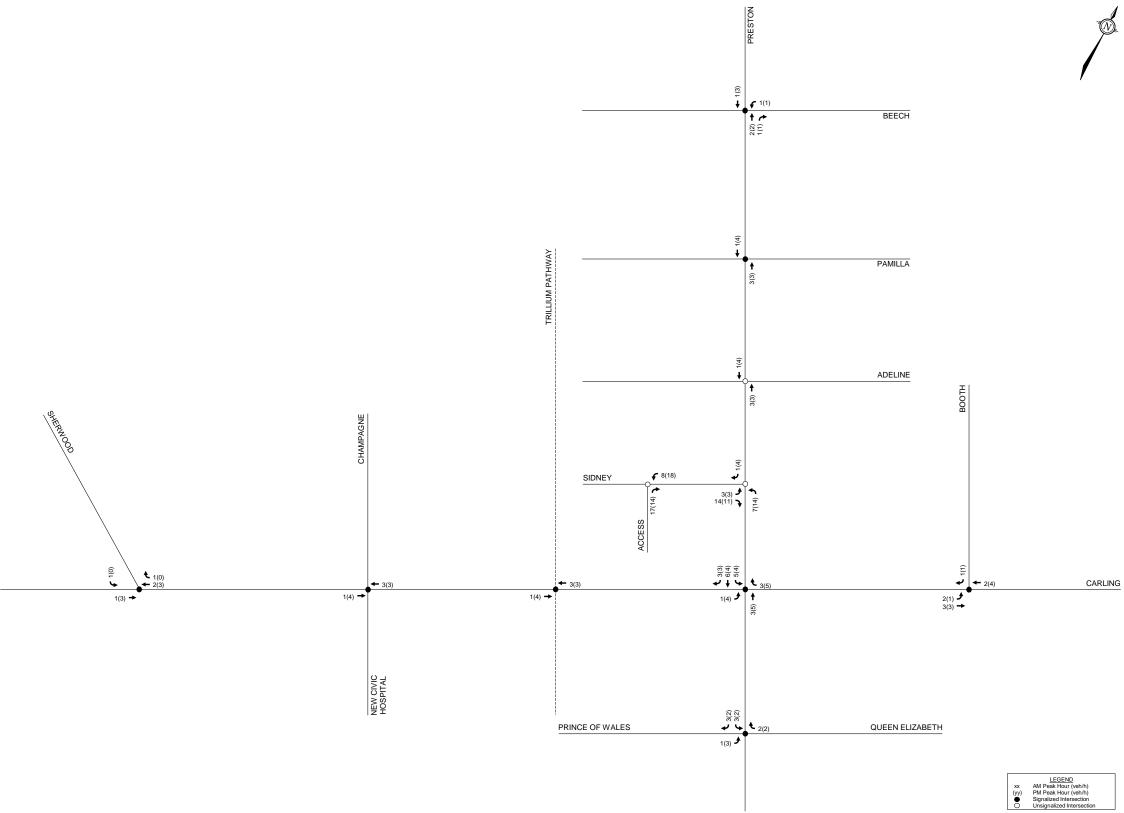


Figure 9: Net Site-Generated Traffic Volumes

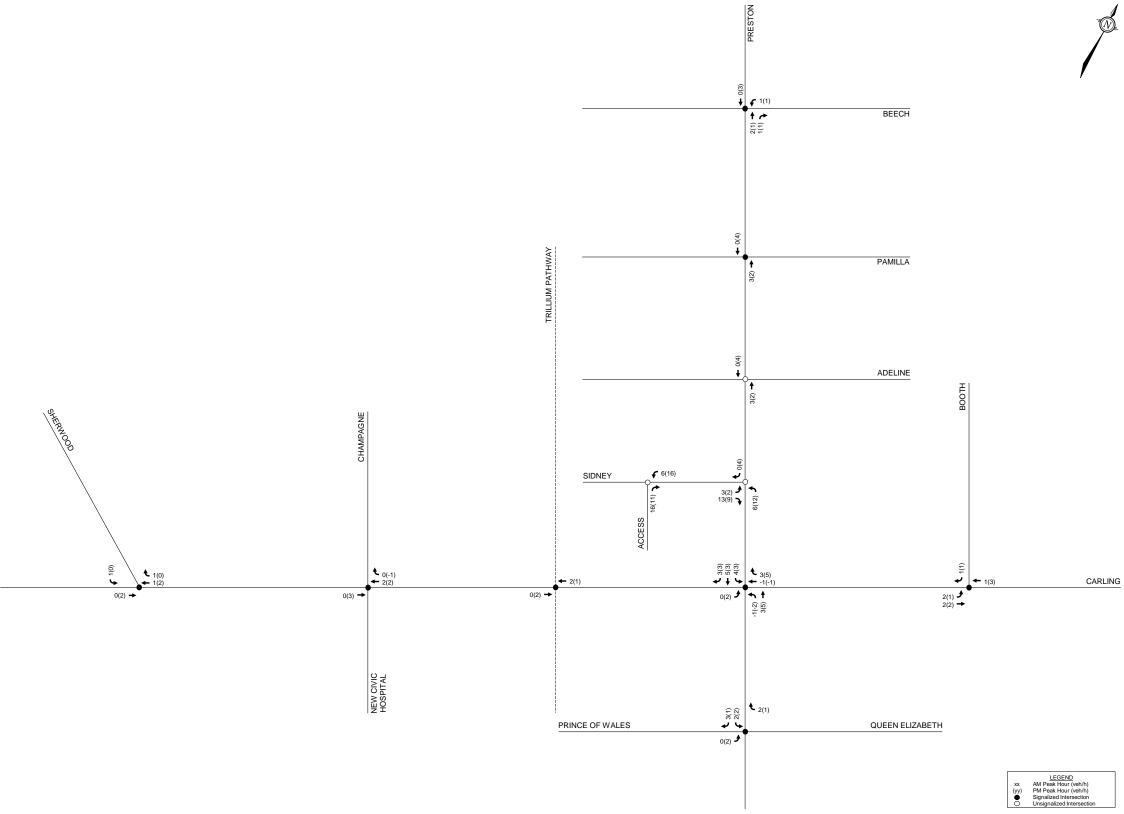


Figure 10: 2028 Other Area Development-Generated Traffic Volumes

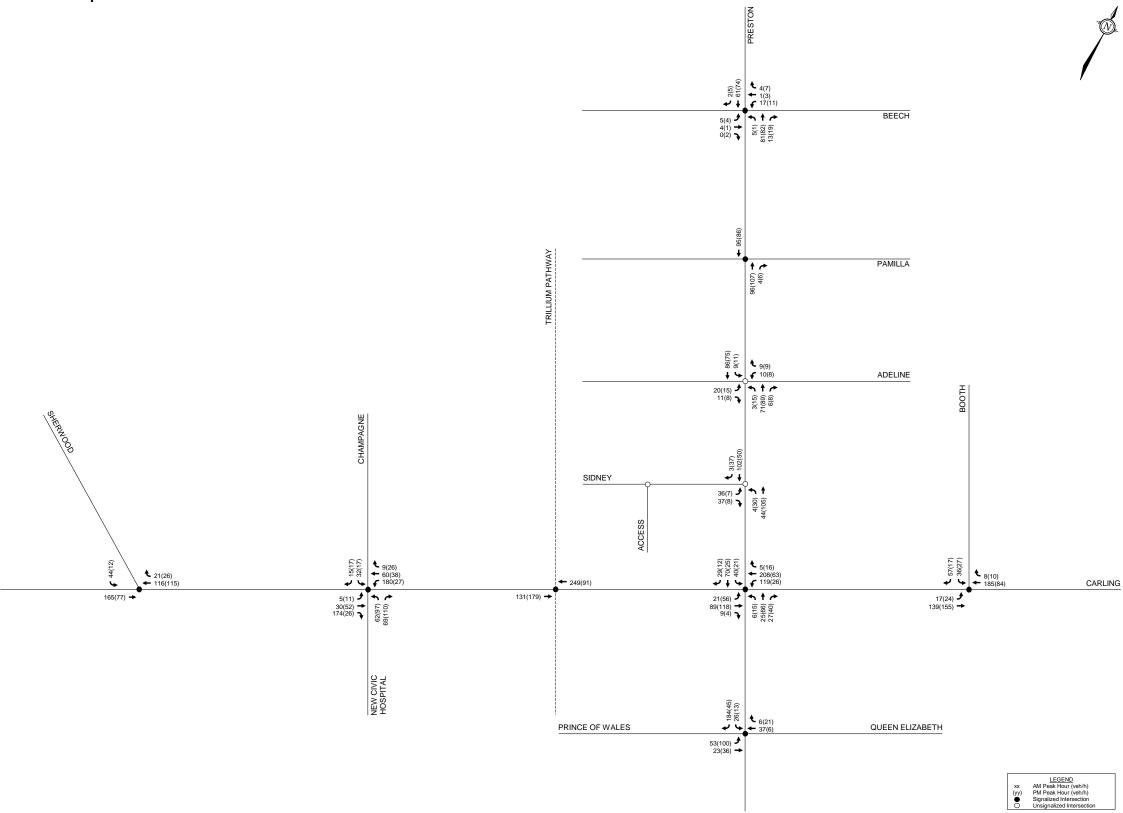


Figure 11: 2033 Other Area Development-Generated Traffic Volumes

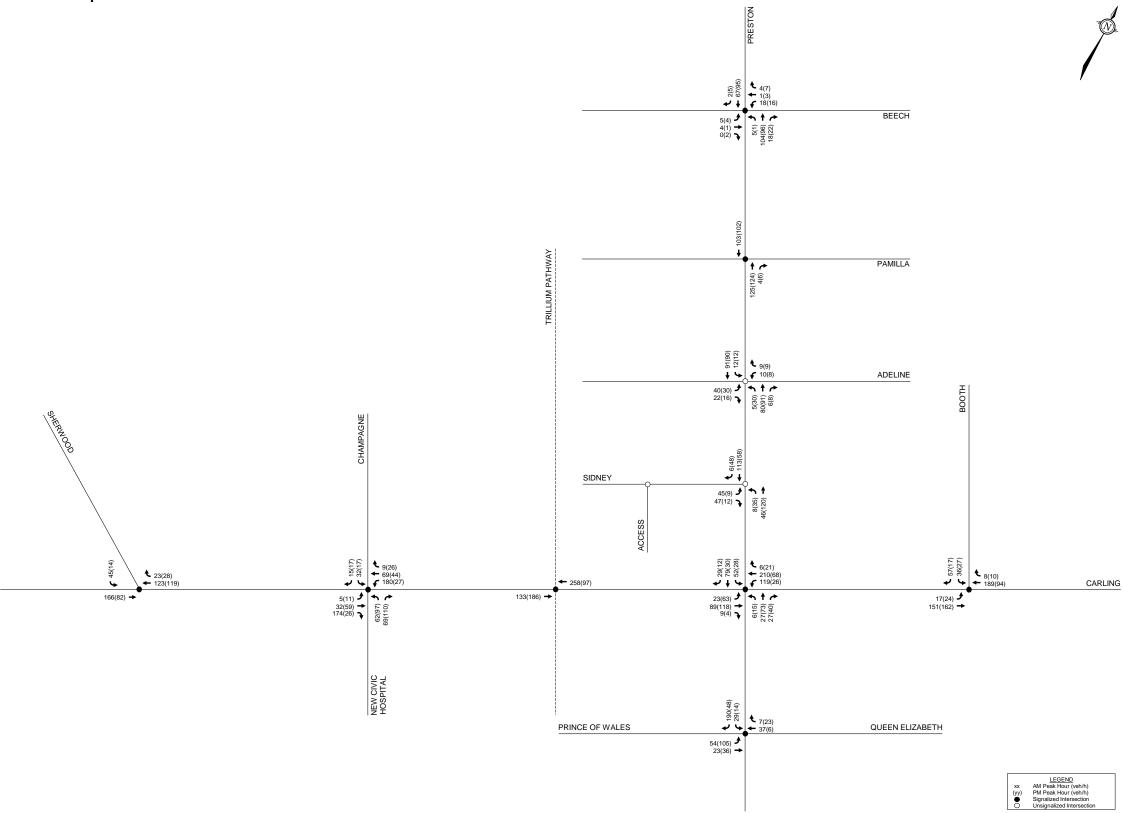


Figure 12: 2028 Background Traffic Volumes

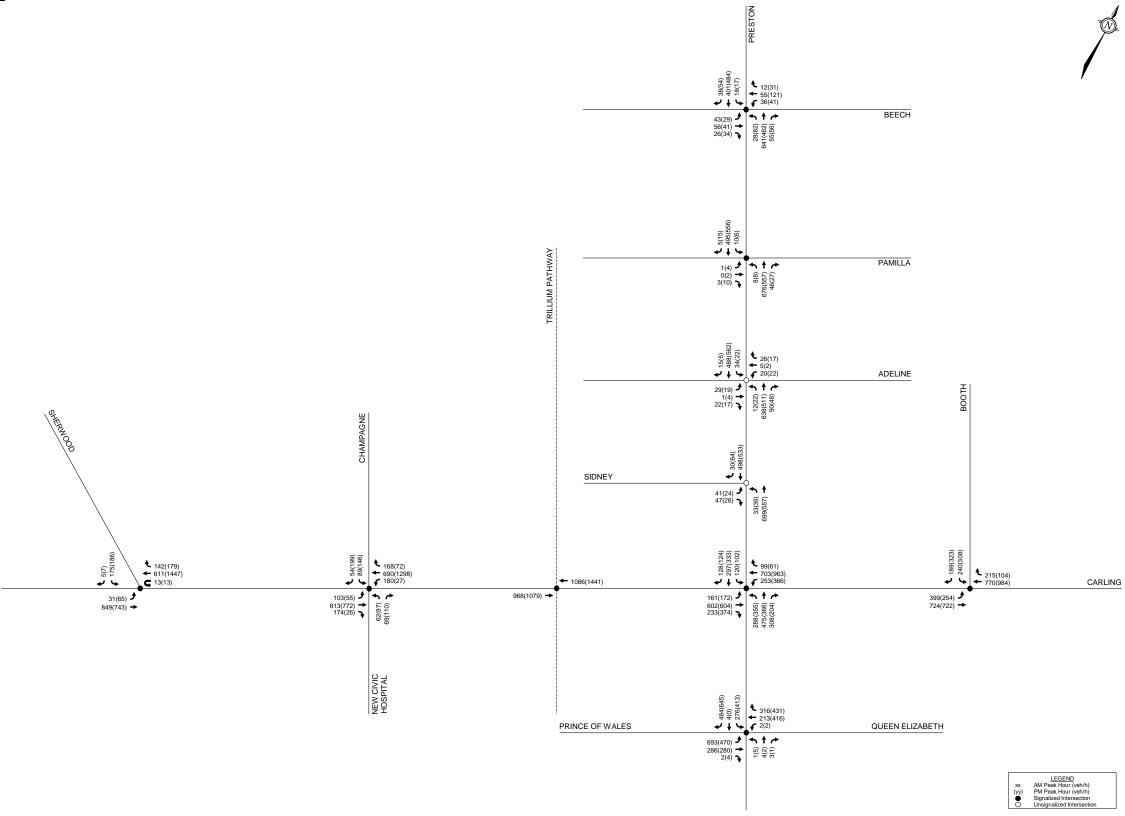


Figure 13: 2033 Background Traffic Volumes

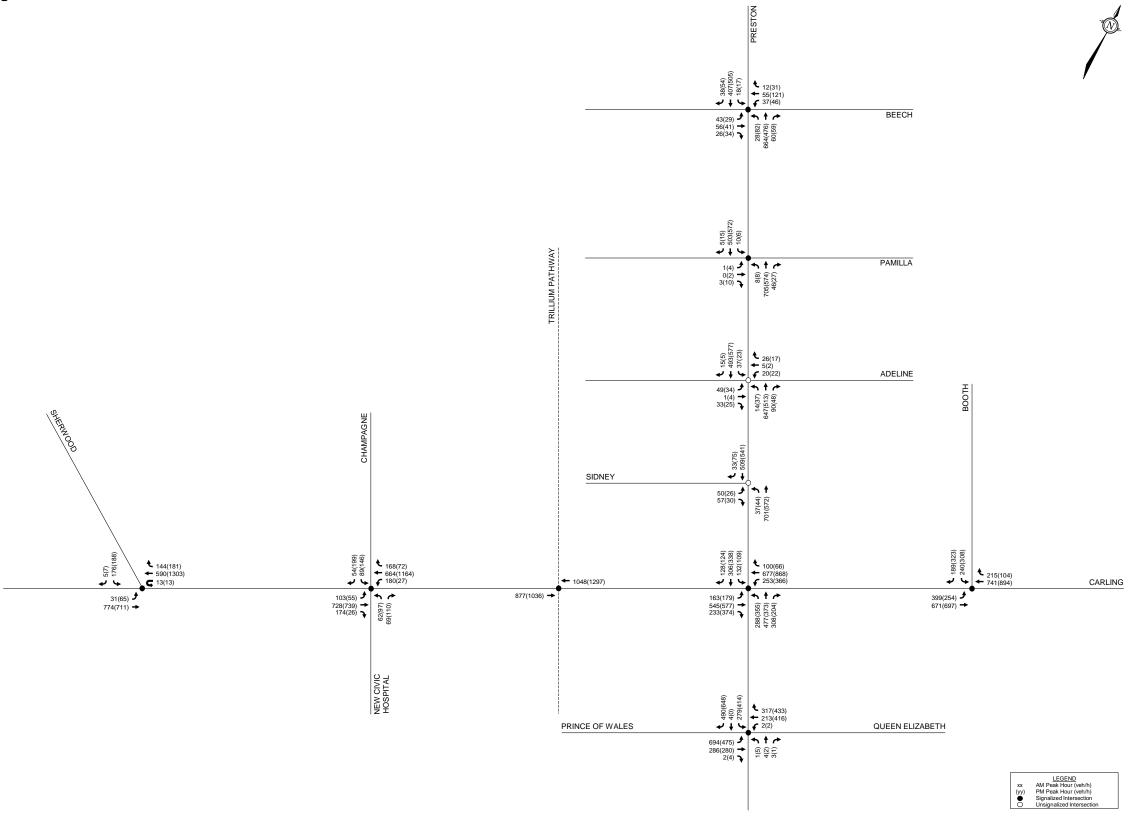


Figure 14: 2028 Total Traffic Volumes

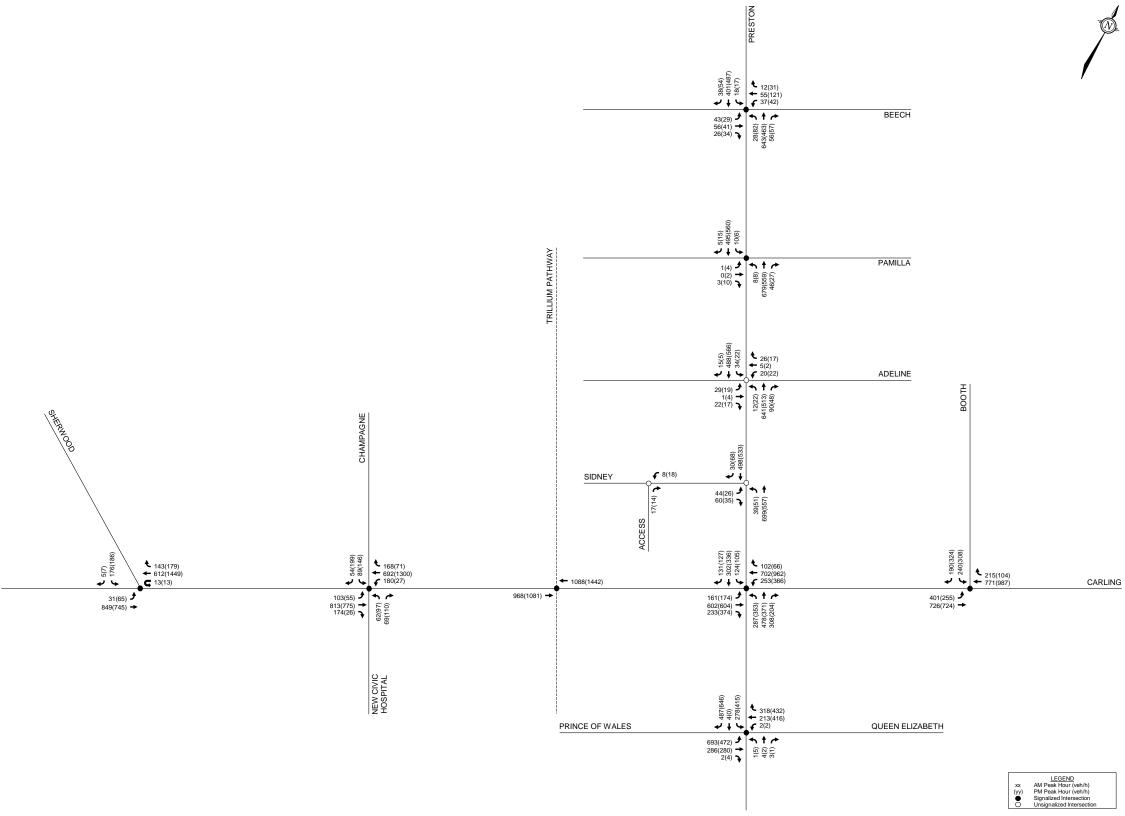
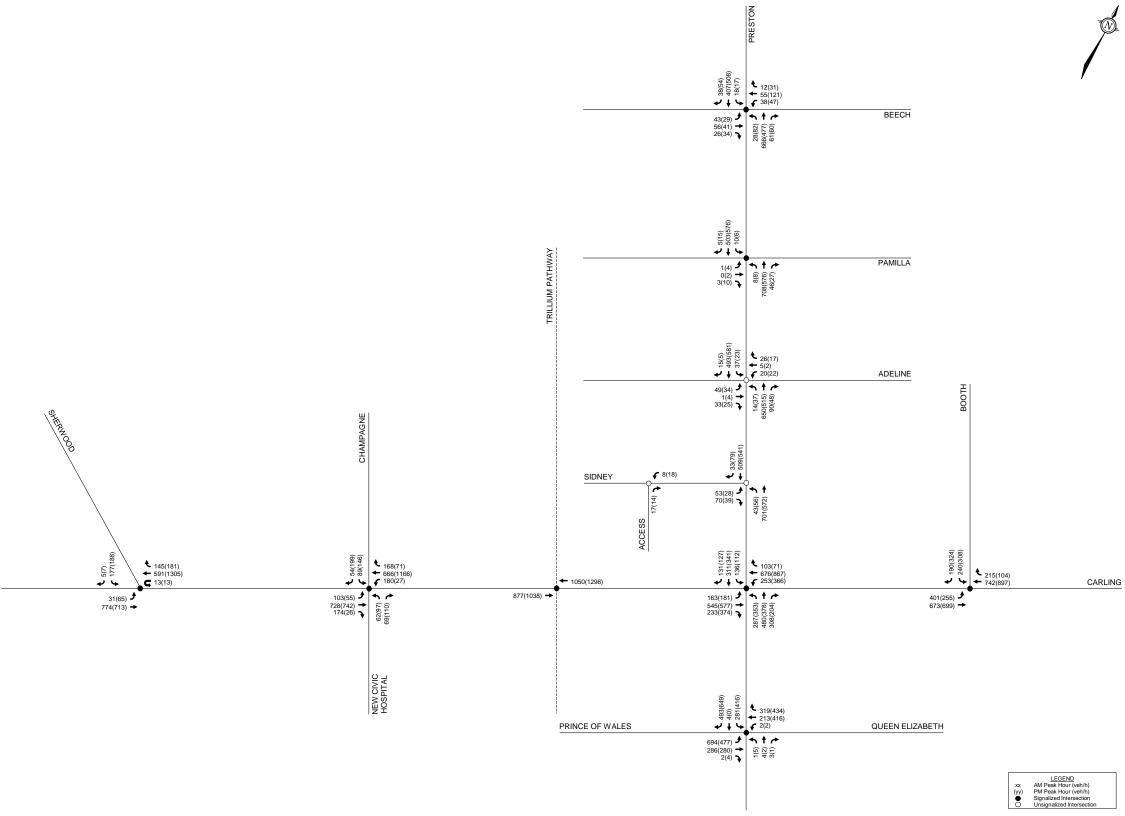


Figure 15: 2033 Total Traffic Volumes



3.4 Demand Rationalization

A review of the existing and background intersection operations has been conducted 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 E, which equates to a vehicle-to-capacity (v/c) ratio of 1.00.

Intersection and lane geometry for all future conditions is consistent with the planned roadway modifications within the study area (for example, lane reductions on Carling Avenue and new lanes at Carling Avenue/Champagne Avenue and Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway are included). Signal timing plans were obtained from the City, and are included in **Appendix H**.

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 14** and **Table 15** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix I**.

Table 14: Existing Traffic Operations

		Critica	al Mov	ements	In	tersectio	n
Intersection	Period	Max v/c or Delay	Los	Mvmt	v/c	Delay	LOS
Carling Avenue/	AM	0.52	Α	SBL	0.30	12 sec	Α
Sherwood Drive ⁽¹⁾	PM	0.69	В	SBL	0.63	19 sec	В
Carling Avenue/	AM	0.39	Α	EBT	0.22	6 sec	Α
Champagne Avenue ⁽¹⁾	PM	0.59	Α	WBT	0.58	10 sec	Α
Carling Avenue/	AM	0.39	Α	EBT	0.34	3 sec	Α
Trillium Pathway ⁽²⁾	PM	0.45	Α	WBT	0.45	7 sec	Α
	AM	1.00	Е	EBL	0.87	43 sec	D
Carling Avenue/		1.44	F	NBL			
Preston Street ⁽¹⁾	PM	1.03	F	SBT/R	1.08	83 sec	F
		1.33	F	WBL			
Carling Avenue/	AM	0.84	D	EBL	0.59	25 sec	Α
Booth Street ⁽¹⁾	PM	0.85	D	SBL	0.59	23 sec	Α
Preston Street/	AM	0.61	В	NBT	0.54	12 sec	Α
Beech Street ⁽¹⁾	PM	0.54	В	WBL/T	0.42	12 sec	Α
Preston Street/	AM	0.47	Α	NBT	0.41	4 sec	Α
Pamilla Street ⁽¹⁾	PM	0.38	Α	SBT	0.37	4 sec	Α
Preston Street/	AM	23 sec	O	WBL/T/R			
Adeline Street ⁽³⁾	PM	20 sec	С	WBL/T/R	-		
Preston Street/	AM	15 sec	В	EBL/R			
Sidney Street ⁽³⁾	PM	17 sec	С	EBL/R		-	
Preston Street/Prince of Wales	AM	1.16	F	SBL/T	0.84	30 sec	D
Drive/Queen Elizabeth Driveway(1)	PM	1.21	F	SBL/T	0.98	60 sec	Е

^{1.} Signalized intersection

^{2.} Signalized pathway crossing

^{3.} Unsignalized intersection

Tahla	15.	Existing	Ω
Iabic	IJ.	LAISHING	Queues

		Storage/		AM Peak		PM Peak				
Intersection	Mvmt	Spacing ⁽¹⁾	v/c	50 th %	95 th %	v/c	50 th %	95 th %		
		9	[LOS]	Queue (m)	Queue (m)	[LOS]	Queue (m)	Queue (m)		
	NBL	75m	0.79 [C]	54	m73	1.44 [F]	~116	#174		
Carling Avenue	SBT/R	35m	0.70 [B]	64	96	1.03 [F]	~125	#186		
Carling Avenue/ Preston Street	EBL	65m	1.00 [E]	37	#76	0.68 [B]	33	55		
Presion Street	WBL	75m	0.91 [E]	34	#71	1.33 [F]	~125	#182		
	WBT	50m	0.65 [B]	21	51	0.81 [D]	100	#134		
Carling Avenue/	SBL		0.69 [B]	47	64	0.85 [D]	71	98		
Booth Street	EBL	45m	0.84 [D]	75	m#106	0.76 [C]	21	48		
Preston Street/ Prince of Wales	SBL/T	135m	1.16 [F]	~71	m#118	1.21 [F]	~128	#186		
Drive/Queen Elizabeth Driveway	EBL	55m	0.87 [D]	74	#115	0.87 [D]	68	#113		

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

From the previous tables, the northbound left turn, southbound through/right turn, and westbound left turn movements at Carling Avenue/Preston Street, and the southbound left turn/through movement at Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway do not meet the target Auto LOS E. All other movements within the study area currently meet the City's target Auto LOS. A summary of the critical queueing at the study area intersections is provided below.

During the AM peak hour, the average (50th-percentile) and maximum (95th-percentile) queue lengths of the eastbound left turn movements at Carling Avenue/Booth Street and Preston Street/ Prince of Wales Drive/Queen Elizabeth Driveway exceed the storage lengths provided for those movements. Additionally, the maximum queue length of the eastbound left turn movement at Carling Avenue/Preston Street exceeds the storage length provided. Both the average and maximum queue lengths for the southbound through/right turn movement at Carling Avenue/ Preston Street extend through the upstream intersection at Preston Street/Sidney Street.

During the PM peak hour, the average and maximum queue lengths of the northbound and westbound left turn movements at Carling Avenue/Preston Street and the eastbound left turn movement at Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway exceed the storage lengths provided for these movements. Further, the maximum queue length of the eastbound left turn movement at Carling Avenue/Booth Street exceed the storage length provided. Both the average and maximum queue lengths of the southbound through/right turn and westbound through movements at Carling Avenue/Preston Street extend through the upstream intersections of Preston Street/Adeline Street and Carling Avenue/Norfolk Avenue, respectively. Additionally, the maximum queue length of the southbound left turn/through movement at Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway extends through the upstream intersection at Carling Street/ Preston Street.

The approximate required reduction in volumes to meet the target Auto LOS for each over-capacity movement is included below.

AM Peak Hour

- Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway
 - Southbound left turn/through (v/c: 1.13): reduction of 40 vehicles required.

m: volume for the 95th percentile queue is metered by an upstream signal #: volume for the 95th percentile cycle exceeds capacity

^{~:} approach is above capacity

PM Peak Hour

- Carling Avenue/Preston Street
 - o Northbound left turn (v/c: 1.44): reduction of 90 vehicles required;
 - Southbound through/right turn (v/c: 1.03): reduction of 20 vehicles required;
 - Westbound left turn (v/c: 1.33): reduction of 90 vehicles required.
- Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway
 - Southbound left turn/through (v/c: 1.21): reduction of 70 vehicles required.

While the Synchro analysis does not identify operational concerns at Preston Street/Sidney Street, it is acknowledged that additional traffic volumes generated by future developments may trigger a restriction of the eastbound movements on Sidney Street to right turns only, due to potential safety and congestion issues. The background future conditions have been analyzed with both scenarios considered (i.e. eastbound left turns permitted, and eastbound left turns prohibited).

3.4.2 2028 Background Intersection Operations

Intersection capacity analysis has been conducted for the 2028 background traffic conditions. Signal timing plans within the study area have been optimized to reflect the planned changes in the roadway network. The results of the analysis are summarized in **Table 16** and **Table 17** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix J**.

Table 16: 2028 Background Traffic Operations

		Critic	al Move	ements	İr	itersectio	n
Intersection	Period	Max v/c or Delay	Los	Mvmt	v/c	Delay	LOS
Carling Avenue/	AM	0.55	Α	SBL	0.36	12 sec	Α
Sherwood Drive ⁽¹⁾	PM	0.70	В	WBT	0.68	15 sec	В
Carling Avenue/	AM	0.45	Α	WBL	0.35	7 sec	Α
Champagne Avenue ⁽¹⁾	PM	0.67	В	SBR	0.53	13 sec	Α
Carling Avenue/	AM	0.41	Α	WBT	0.39	4 sec	Α
Trillium Pathway ⁽²⁾	PM	0.53	Α	WBT	0.47	3 sec	Α
	AM	1.01	F	NBL	1.02	53 sec	F
	Alvi	1.07	F	EBT	1.02	55 Sec	Г
Carling Avanua/		1.44	F	NBL			
Carling Avenue/ Preston Street ⁽¹⁾		1.04	F	SBT/R			
Fieston Street	PM	1.01	F	EBL	1.19	92 sec	F
		1.13	F	EBT/R			
		1.29	F	WBL			
Carling Avenue/	AM	1.09	F	WBT	0.99	49 sec	Е
Booth Street ⁽¹⁾	PM	1.11	F	WBT	1.05	58 sec	F
Preston Street/	AM	0.63	Α	NBT	0.56	12 sec	Α
Beech Street ⁽¹⁾	PM	0.55	Α	WBL/T	0.45	12 sec	Α
Preston Street/	AM	0.49	Α	NBT	0.44	4 sec	Α
Pamilla Street ⁽¹⁾	PM	0.41	Α	NBT	0.40	5 sec	Α
Preston Street/	AM	29 sec	D	EBL/T/R			
Adeline Street ⁽³⁾	PM	23 sec	С	EBL/T/R		-	
Preston Street/	AM	20 sec	С	EBL/R			
Sidney Street ⁽³⁾	PM	19 sec	С	EBL/R	<u>-</u>		
Preston Street/Prince of Wales	AM	0.63	В	SBL/T	0.58	18 sec	Α
Drive/Queen Elizabeth Driveway(1)	PM	0.97	Е	SBL/T	0.77	30 sec	С

^{1.} Signalized intersection

^{2.} Signalized pathway crossing

^{3.} Unsignalized intersection

Table 17: 2028 Background Queues	Table	17:	2028	Background	Queues
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	9.00	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)		
	NBL	75m	1.01 [F]	~44	#97	1.44 [F]	~105	m#166		
	SBL	35m	0.75 [C]	26	#56	0.56 [A]	23	42		
Carling Avenue/	SBT/R	35m	0.96 [E]	96	#156	1.04 [F]	~123	#185		
Carling Avenue/ Preston Street	EBL	65m	0.81 [D]	30	#63	1.01 [F]	~40	#87		
Presion Sireet	EBT/R	95m	1.07 [F]	~107	#141	1.13 [F]	~144	#175		
	WBL	110m	0.95 [E]	54	m#58	1.29 [F]	~117	m#121		
	WBT	50m	0.77 [C]	91	m90	0.88 [D]	133	m125		
Carling Avenue	SBL		0.70 [B]	50	75	0.88 [D]	74	#114		
Carling Avenue/ Booth Street	EBL	75m	0.97 [E]	~112	m#132	1.00 [E]	~75	m#85		
Dooin Street	WBT	85m	1.09 [F]	~204	#272	1.11 [F]	~286	#358		
Preston Street/ Prince of Wales	SBL/T	135m	0.63 [B]	45	m45	0.97 [E]	90	m64		
Drive/Queen Elizabeth Driveway	EBL	55m	0.62 [B]	48	61	0.60 [A]	34	44		

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

In the 2028 background conditions, the northbound left turn, southbound through/right turn, eastbound left turn, eastbound through/right turn, and westbound left turn movements at Carling Avenue/Preston Street, and the westbound through movement at Carling Avenue/Booth Street do not meet the target Auto LOS E during one or both of the peak hours. All other intersections within the study area are projected meet the City's target. A summary of the critical queueing at the study area intersections is provided below.

During the AM peak hour, the average and maximum queue lengths of the eastbound left turn movement at Carling Avenue/Booth Street exceeds the storage length provided. Additionally, the maximum queue length of the northbound and southbound left turn movements at Carling Avenue/Preston Street and the eastbound left turn movement at Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway exceed the storage lengths provided. Both the average and maximum queue lengths for the southbound through/right turn, eastbound through/right turn, and westbound through movements at Carling Avenue/Preston Street extend through at least one upstream intersection (i.e. at Sidney Street and Adeline Street for the southbound movement, at the Trillium Pathway for the eastbound movement, and at Norfolk Avenue for the westbound movement). Both the average and maximum queue lengths for the westbound through movement at Carling Avenue/Booth Street extend through at least one upstream intersection east of the study area (i.e. at Lebreton Street and Bell Street).

During the PM peak hour, the average and maximum queue lengths of the northbound and westbound left turn movements at Carling Avenue/Preston Street and the eastbound left turn movement at Carling Avenue/Booth Street exceed the storage lengths provided. Additionally, the maximum queue lengths of the southbound left turn and eastbound left turn movements at Carling Avenue/Preston Street exceed the storage lengths provided. Both the average and maximum queue lengths of the southbound through/right turn, eastbound through/right turn, and westbound through movements at Carling Avenue/Preston Street extend through at least one upstream intersection (i.e. at Sidney Street and Adeline Street for the southbound movement, at the Trillium Pathway for the eastbound movement, and at Norfolk Avenue for the westbound movement).

m: volume for the 95th percentile queue is metered by an upstream signal

 $[\]mbox{\#:}$ volume for the $95\mbox{th}$ percentile cycle exceeds capacity

^{~:} approach is above capacity

Additionally, both the average and maximum queue lengths for the westbound through movement at Carling Avenue/Booth Street extend through at least three upstream intersections east of the study area (i.e. at Lebreton Street, Bell Street, and Cambridge Street).

The approximate required reduction in volumes to meet the target Auto LOS for each over-capacity movement is included below.

AM Peak Hour

- Carling Avenue/Preston Street
 - o Northbound left turn (v/c: 1.01): reduction of 10 vehicles required;
 - o Eastbound through/right turn (v/c: 1.07): reduction of 50 vehicles required.
- Carling Avenue/Booth Street
 - Westbound through (v/c: 1.09): reduction of 60 vehicles required.

PM Peak Hour

- Carling Avenue/Preston Street
 - Northbound left turn (v/c: 1.44): reduction of 100 vehicles required;
 - Southbound through/right turn (v/c: 1.04): reduction of 20 vehicles required;
 - o Eastbound left turn (v/c: 1.01): reduction of 10 vehicles required;
 - Eastbound through/right turn (v/c: 1.13): reduction of 100 vehicles required;
 - Westbound left turn (v/c: 1.29): reduction of 90 vehicles required.
- Carling Avenue/Booth Street
 - Westbound through (v/c: 1.11): reduction of 100 vehicles required.

As discussed in the previous section, an alternate scenario has been analyzed where Sidney Street is restricted to eastbound right turns only at Preston Street, due to potential safety and congestion issues. All eastbound left turning volumes generated by the proposed development at 845 Carling Avenue have been reassigned to Preston Street/Adeline Street, and all other eastbound left turning volumes have been reassigned to turn right onto Preston Street, left onto Carling Avenue, and left onto Booth Street. The analysis identifies that this restriction would impact the southbound left turn movement at Carling Avenue/Preston Street and the eastbound left turn movement at Carling Avenue/Booth Street, and these impacts can be summarized as follows:

- Carling Avenue/Preston Street (southbound left turn)
 - o AM Peak Hour: v/c ratio increases from 0.75 to 0.95
 - PM Peak Hour: v/c ratio increases from 0.56 to 0.68
- Carling Avenue/Booth Street (eastbound left turn)
 - AM Peak Hour: v/c ratio increases from 0.97 to 1.05
 - o PM Peak Hour: v/c ratio increases from 1.00 to 1.09

Therefore, restricting eastbound left turns at Preston Street/Sidney Street could be considered. Detailed reports for this alternate scenario are also included in **Appendix J**.

3.4.3 **2033 Background Intersection Operations**

Intersection capacity analysis has been conducted for the 2033 background traffic conditions. Signal timing plans within the study area have been optimized to reflect the planned changes in the roadway network. The results of the analysis are summarized in Table 18 and Table 19 for the weekday AM and PM peak hours. Detailed reports are included in Appendix J.

Table 18: 2033 Background Traffic Operations

		Critica	al Mov	ements	Intersection				
Intersection	Period	Max v/c or Delay	Los	Mvmt	v/c	Delay	LOS		
Carling Avenue/	AM	0.56	Α	SBL	0.35	13 sec	Α		
Sherwood Drive ⁽¹⁾	PM	0.63	В	WBT	0.62	15 sec	В		
Carling Avenue/	AM	0.41	Α	WBL	0.31	7 sec	Α		
Champagne Avenue ⁽¹⁾	PM	0.64	В	SBR	0.48	13 sec	Α		
Carling Avenue/	AM	0.39	Α	WBT	0.36	4 sec	Α		
Trillium Pathway ⁽²⁾	PM	0.47	Α	WBT	0.43	3 sec	Α		
·	AM	1.03	F	NBL	0.99	50 sec	E		
		1.45	F	NBL					
Carling Avenue/		1.05	F	SBT/R					
Preston Street ⁽¹⁾	PM	1.05	F	EBL	1.18	92 sec	F		
		1.09	F	EBT/R					
		1.29	F	WBL					
Carling Avenue/	AM	1.05	F	WBT	0.97	46 sec	Е		
Booth Street ⁽¹⁾	PM	1.01	F	WBT	0.98	46 sec	Е		
Preston Street/	AM	0.66	В	NBT	0.59	12 sec	Α		
Beech Street ⁽¹⁾	PM	0.57	Α	WBL/T	0.46	12 sec	Α		
Preston Street/	AM	0.51	Α	NBT	0.45	4 sec	Α		
Pamilla Street ⁽¹⁾	PM	0.43	Α	NBT	0.42	5 sec	Α		
Preston Street/	AM	38 sec	Е	EBL/T/R					
Adeline Street ⁽³⁾	PM	28 sec	D	EBL/T/R		-			
Preston Street/	AM	22 sec	С	EBL/R					
Sidney Street ⁽³⁾	PM	20 sec	С	EBL/R					
Preston Street/Prince of Wales	AM	0.64	В	SBL/T	0.59 18 sec A				
Drive/Queen Elizabeth Driveway(1)	PM	0.97	Е	SBL/T	0.77	30 sec	С		

^{1.} Signalized intersection

Signalized pathway crossing
 Unsignalized intersection

	Table 19:	2033	Background	Queues
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				AM Peak		PM Peak				
Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	v/c	50 th %	95 th %	v/c	50 th %	95 th %		
		Spacing	[LOS]	Queue (m)	Queue (m)	[LOS]	Queue (m)	Queue (m)		
	NBL	75m	1.03 [F]	~48	#101	1.45 [F]	~107	m#167		
	SBL	35m	0.82 [D]	29	#63	0.60 [A]	25	45		
Carling Avenue	SBT/R	35m	0.98 [E]	99	#161	1.05 [F]	~126	#187		
Carling Avenue/ Preston Street	EBL	65m	0.81 [D]	30	#64	1.05 [F]	~47	#91		
Presion Street	EBT/R	95m	0.99 [E]	50	#125	1.09 [F]	~134	#167		
	WBL	110m	0.95 [E]	54	m#67	1.29 [F]	~117	m#135		
	WBT	50m	0.74 [C]	87	m90	0.80 [C]	116	m119		
Carling Avenue	SBL		0.70 [B]	50	75	0.88 [D]	74	#114		
Carling Avenue/ Booth Street	EBL	75m	0.97 [E]	~113	m#139	1.00 [E]	~75	m#88		
Booth Street	WBT	85m	1.05 [F]	~190	#257	1.01 [F]	~227	#309		
Preston Street/ Prince of Wales	SBL/T	135m	0.64 [B]	46	m47	0.97 [E]	91	m64		
Drive/Queen Elizabeth Driveway	EBL	55m	0.62 [B]	48	61	0.61 [B]	34	44		

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

In the 2033 background conditions, the northbound left turn, southbound through/right turn, eastbound left turn, eastbound through/right turn, and westbound left turn movements at Carling Avenue/Preston Street, and the westbound through movements at Carling Avenue/Booth Street do not meet the target Auto LOS E during one or both of the peak hours. All other intersections within the study area are projected meet the City's target. The critical queues within the study area are generally consistent with the 2028 background conditions.

The approximate required reduction in volumes to meet the target Auto LOS for each over-capacity movement is included below.

AM Peak Hour

- Carling Avenue/Preston Street
 - o Northbound left turn (v/c: 1.03): reduction of 10 vehicles required.
- Carling Avenue/Booth Street
 - Westbound through (v/c: 1.05): reduction of 30 vehicles required.

PM Peak Hour

- Carling Avenue/Preston Street
 - Northbound left turn (v/c: 1.45): reduction of 90 vehicles required;
 - Southbound through/right turn (v/c: 1.05): reduction of 30 vehicles required;
 - Eastbound left turn (v/c: 1.05): reduction of 10 vehicles required;
 - Eastbound through/right turn (v/c: 1.09): reduction of 70 vehicles required;
 - Westbound left turn (v/c: 1.29): reduction of 90 vehicles required.
- Carling Avenue/Booth Street
 - Westbound through (v/c: 1.01): reduction of 10 vehicles required.

m: volume for the 95th percentile queue is metered by an upstream signal #: volume for the 95th percentile cycle exceeds capacity

^{~:} approach is above capacity

As discussed in the previous section, an alternate scenario has been analyzed where Sidney Street is restricted to eastbound right turns only at Preston Street. The analysis identifies that this restriction would impact the southbound left turn movement at Carling Avenue/Preston Street and the eastbound left turn movement at Carling Avenue/Booth Street, and these impacts can be summarized as follows:

- Carling Avenue/Preston Street (southbound left turn)
 - AM Peak Hour: v/c ratio increases from 0.82 to 1.02
 - PM Peak Hour: v/c ratio increases from 0.60 to 0.72
- Carling Avenue/Booth Street (eastbound left turn)
 - o AM Peak Hour: v/c ratio increases from 0.97 to 1.05
 - o PM Peak Hour: v/c ratio increases from 1.00 to 1.09

Detailed reports for this alternate scenario are also included in **Appendix J**.

Traffic throughout the study area could be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate time to travel for drivers using the study area roadways to make use of off-peak capacity, and alternate routes for travel. A further description of each option is provided as follows.

Increased Use of Non-Auto Modes

It is assumed that the Carling Avenue Transit Priority Measures project will be completed by the buildout year 2028. These measures will provide more reliable transit between Lincoln Fields Station, Dow's Lake O-Train Station, and Bronson Avenue, connecting western Ottawa with the inner area and downtown core. This is anticipated to increase the transit modal share and decrease the auto modal share, thereby reducing traffic volumes within the study area. As stated in Section 3.2.2, a reduction in east-west traffic volumes on Carling Avenue is assumed starting in 2028 to reflect the implementation of the Carling Avenue Transit Priority Measures.

Alternate Travel Times

As congestion increases within the study area, some motorists may alter their travel to occur outside of the peak hours. This shift in travel times may result in a reduction of peak hour traffic volumes.

Alternate Routes of Travel

As congestion increases within the study area, some motorists may choose alternate routes of travel outside the study area. Alternative north-south routes outside of the study area include Parkdale Avenue and Bronson Avenue. Alternative east-west routes outside of the study area include Baseline Road, Highway 417, Gladstone Avenue, Somerset Street, Scott Street/Albert Street, and Sir John A. Macdonald Parkway.

4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

Concrete sidewalks will be provided around the north, south, and east sides of the proposed building, and will connect to existing sidewalks on Sidney Street, Preston Street, and Carling Avenue.

Eight bicycle parking spaces will be provided along the south and east sides of the proposed building (i.e. on Carling Avenue and Preston Street). A total of 192 bicycle parking spaces will be provided on the second floor, with access via a bike elevator near the Sidney Street entrance. In total, 200 bicycle parking spaces are proposed. Further review of the bicycle parking requirements as outlined in the City's *Zoning By-Law* (ZBL) are included in Section 4.2.

OC Transpo stops #2397, #6655, #6657, #7369, #8013, #8014, #8023, and the Dow's Lake O-Train Station are within 400m walking distance of all entrances to the proposed development. These stops provide service to OC Transpo routes 2, 55, 56, and 85.

A review of the City's *Transportation Demand Management (TDM)-Supportive Development Design and Infrastructure Checklist* has been conducted. All required TDM-supportive design and infrastructure measures in the TDM checklist are met. A copy of this checklist is included in **Appendix K**. 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 the building close to the street, and do not locate parking areas between the street and building entrances;
- Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations;
- Located building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort;
- Provide safe, direct, and attractive walking routes from building entrances to nearby transit stops;
- Provide lighting, landscaping, and benches along walking and cycling routes between building entrances and streets, sidewalks, and trails;
- Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer to encourage other cyclists and ensure adequate capacity in peak cycling season;
- Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met);
- 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).

4.1.2 Circulation and Access

Pick-ups and drop-offs will occur curbside on Sidney Street. Garbage collection will also take place curbside on Sidney Street, as waste bins will be wheeled out to the curb. There is no on-site fire route proposed as part of this development. Therefore, the fire route for the development is considered to consist of Carling Avenue, Preston Street, and Sidney Street.

4.2 Parking

The subject site is located in Area B of Schedule 1 and Area Z of Schedule 1A of the City's ZBL. Vehicular and bicycle parking requirements for the proposed development are identified in Sections 101, 102, 103, and 111 of the ZBL, and are summarized in **Table 20**.

Table 20: Parking Requirements

Table 20. Parking Requirer	ilelita							
Land Use	Rate	Units/GFA	Required					
Minimum Vehicle Parking Red	quirements							
Dwelling, Mixed-Use Building	0.1 per dwelling unit after the first 12 units, up to a maximum of 30 spaces (visitors only)	396 units	30					
Retail Store	Retail Store No spaces required (Area Z)							
	ım Required	30						
Total Parking Proposed								
Maximum Vehicle Parking Requirements								
Dwelling, Mixed-Use Building	1.75 per dwelling unit (combined total of resident and visitor parking)	396 units	693					
Retail Store	3.6 per 100 m ² GFA	337 m ²	12					
	Maximu	m Permitted	705					
	Total Parkii	ng Proposed	196					
Minimum Bicycle Parking Red	quirements							
Dwelling, Mixed-Use Building 0.5 per dwelling unit 396 units								
Retail Store	337 m ²	1						
Minimum Required								
	Total Bicycle Parkii	ng Proposed	200					

Based on the previous table, the proposed number of vehicle and bicycle parking spaces meet all requirements of the ZBL. Of the 196 parking spaces, six will be allocated as accessible parking spaces.

Section 111(12) of the ZBL identifies that, where the number of bicycle parking spaces required for a single residential building exceeds 50 spaces, a minimum of 25% of the required total must be located within a building or structure, a secure area, or bicycle lockers. The proposed development will include eight exterior bicycle parking spaces and 192 interior bicycle parking spaces. Therefore, this requirement is met.

4.3 Boundary Streets

This section provides a review of the boundary streets Carling Avenue, Preston Street, and Sidney Street, 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 Preston Street and Sidney Street. Per the *2017 TIA Guidelines*, an MMLOS review is not required for any streets where a complete streets concept has been developed. This applies to Carling Avenue, based on the functional design shown in **Figure 4**. Given the width between the proposed building and the curbline of Carling Avenue, it is anticipated that the sidewalks and segregated cycling facilities shown in the functional design can be accommodated. The segregated cycling facilities will provide a boulevard for pedestrians.

Due to the subject site's proximity to Dow's Lake O-Train Station, Preston Street and Sidney Street have been evaluated against the targets outlined for the 'Within 600m of a Rapid Transit Station' policy area, based on existing conditions.

A detailed MMLOS review of the boundary streets is included in **Appendix L**. A summary of the results of the segment MMLOS analysis for Preston Street and Sidney Street are provided in **Table 21**.

Table 21: Segment MMLOS Summary

Sogmont	PLOS		BL	os	TL	os	TkLOS		
Segment	Actual	Target	Actual	Target	Actual	Target	Actual	Target	
Preston Street	Е	Α	F	В	F	-	В	D	
Sidney Street	Α	Α	Α	D	-	-	-	-	

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

- Sidney Street meets the target pedestrian level of service (PLOS), while Preston Street does not:
- Sidney Street meets the target bicycle level of service (BLOS), while Preston Street does not;
- Preston Street achieves a transit level of service (TLOS) F, but does not have a TLOS target;
- Preston Street meets the target truck level of service (TkLOS).

Preston Street currently achieves a PLOS E. The best possible score is a PLOS C without changing the operating speed of the roadway (i.e. roadways with a curb lane AADT greater than 3,000 vpd and no on-street parking can only achieve a PLOS A if the operating speed is 30 km/h). To achieve a PLOS C, sidewalks with a minimum width of 2.0m and minimum boulevard width of 2.0m are required. This is identified for the City's consideration. Along the site's frontage, a sidewalk width greater than 4m is proposed. Considering 2m of this width to be boulevard width, the best possible PLOS C is achieved.

Sidewalk crowding has also been considered when determining the PLOS. Per Table 1 of the *Addendum to the MMLOS Guidelines*, a minimum sidewalk width of 3.0m is required to achieve the target PLOS A when the number of peak hour pedestrians is approximately 250 pedestrians. Based on the existing pedestrian volumes shown in **Figure 3**, the sidewalk at the northwest corner of Carling Avenue/Preston Street serves approximately 105 pedestrians during the AM peak hour and 115 pedestrians during the PM peak hour. Upon buildout of the proposed development, as well as other area developments, it is anticipated that the pedestrian volumes at this corner could increase closer to 250 pedestrians during the peak hours. The target PLOS A is anticipated to be met by the proposed development from a crowding perspective, as the sidewalk widths along the site's frontages to Carling Avenue and Preston Street are anticipated to be 3.0m or wider, and will be significantly wider at the northwest corner of Carling Avenue/Preston Street.

A sidewalk of approximately 2m width is proposed along the site's frontage to Sidney Street. This will maintain the PLOS of Sidney Street at the target PLOS A.

Preston Street currently achieves a BLOS D. Based on Exhibit 11 of the MMLOS Guidelines, the target BLOS B can be achieved by reducing the operating speed to 40 km/h, or a combination of curbside bike lanes with a minimum width of 1.5m and an operating speed of 50 km/h. In areas with on-street parking, a 4.25m-wide bike plus parking lane would also achieve the target BLOS B. This is identified for the City's consideration.

4.4 Access Design

The proposed development includes one two-way access to Sidney Street, at the northwest corner of the site. The existing depressed curbs to the subject site will be removed as part of the proposed development, and full-height curb and sidewalks will be reinstated per City standards. Curbs will be depressed and continuous across the proposed access to Sidney Street. The design of the proposed access has been evaluated using the provisions of the City's ZBL and *Private Approach By-Law* (PABL).

Section 25(a) of the PABL identifies that, for sites with 35m to 45m of frontage, a maximum of two private approaches (one-way or two-way) are permitted. The proposed private approach meets 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 the private approach is approximately 6.0m in width, this requirement is met.

Section 25(m)(ii) of the PABL identifies that, for a property that abuts an arterial roadway or is within 46m of one, there is a minimum distance requirement between a private approach and the nearest intersecting street line, based on the land use and the number of parking spaces provided. For apartment buildings with 300 or more parking spaces, a minimum distance of 45m is required. The subject site does not have adequate frontage onto Carling Avenue, Preston Street, or Sidney Street to meet this requirement. Per Section 25(n) of the PABL, relief from the above requirement is permissible if the private approaches are constructed on the roadway carrying the least traffic and are located as far from the intersecting street as possible. Since the private approaches are proposed on Sidney Street, and are located as far from Preston Street as possible, it is therefore requested that the requirements of Section 25(m)(ii) be waived.

Section 25(p) of the PABL identifies a minimum separation requirement of 3m between a private approach and the nearest property line, as measured at the street line. As the proposed approach is approximately 2.7m from the western property line, this requirement is not met. Section 25(p) of the PABL also states that the 3m minimum can be reduced to as little as 0.3m, provided the proposed approach is located a safe distance from an access to the adjacent property, has adequate sight lines, and does not create a traffic hazard. As the proposed access is located at the terminus of Sidney Street, it is not anticipated to create a traffic hazard. Therefore, it is requested that the requirement of Section 25(p) be waived.

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. Measuring from the property line, the grade of the proposed approach is 6% for 6m and 15% for the remaining 3m. Although the grade exceeds 2% for a distance of 9m within the property, the section of the ramp with a grade of 6% is long enough to allow outbound drivers to see pedestrians walking along Sidney Street. Therefore, a waiver of the PABL is requested.

Section 107(1)(a) of the ZBL identifies that for any driveway providing access to a residential parking garage, a minimum driveway width of 6.0m and maximum driveway width of 6.7m is allowed for a double traffic lane leading to 20 or more spaces. As the width of the proposed access is 6.0m in width, this requirement is met.

Section 107(1)(c) of the ZBL identifies that any drive aisles serving parking spaces within a parking garage must have a minimum width of 6.0m. As the width of all drive aisles within the parking garage have a width of 6.0m, this requirement is met.

The proposed access will be stop-controlled, with free flow on Sidney Street. It is anticipated that the proposed access will operate at an Auto LOS A in both peak hours. Detailed Synchro analysis of total traffic conditions is included in Sections 4.8.2 and 4.8.3.

4.5 Transportation Demand Management

4.5.1 Context for TDM

A breakdown of the proposed development's 396 dwellings into type can be summarized as follows:

- 25 bachelor/studio dwellings;
- 197 one-bedroom dwellings;
- 149 two-bedroom dwellings;
- 25 three-bedroom dwellings.

The proposed development also includes opportunities for ground-floor retail, located along the Carling Avenue frontage. The tenants for these retail areas are not yet known, but are assumed to be small trip generators with few employees, given the size. Therefore, the TDM measures checklist has not been reviewed for the retail use, as it is not required.

4.5.2 Need and Opportunity

The subject site is located in the Preston-Carling District Secondary Plan, and is designated as 'Mixed Use Centre' in Schedule B of the City's Official Plan. As first shown in **Table 3**, the mode shares for the proposed uses are somewhat consistent with the mode share targets for a Transit-Oriented Development, with a lower transit share and higher non-auto share being applied. For both the proposed retail and residential uses, a 15% driver share was assumed during both the AM and PM peak hours.

The Ottawa Inner Area includes retail driver shares of 39% in the AM peak and 22% in the PM peak, and residential driver shares of 26% in the AM peak and 25% in the PM peak. Comparing to the mode share targets for a TOD site, failure to meet the 15% driver share target would equate an addition of approximately 24 vehicle trips during the AM peak hour and 26 vehicles during the PM peak hour.

As the planned transit lanes on Carling Avenue will often take the place of a general travel lane for all vehicles, it is anticipated that vehicular congestion will increase, and a failure to meet the proposed mode share targets may marginally increase congestion. However, the proposed development is located in close proximity to multiple bus stops as well as an LRT station, and connects to existing pedestrian and cycling networks. Further, the development is located in close proximity to many amenities, including commercial and retail areas, parks, recreation centres, and multi-use pathways.

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. A copy of the completed measures checklist is included in **Appendix K**.

- Display local area maps with walking/cycling access routes and key destinations at major entrances:
- Display relevant transit schedules and route maps at entrances;
- Unbundle parking cost from monthly rent;
- Provide a multimodal travel option information package to new residents.

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, when a site relies on local or collector roadways for access. For a local roadway, the NTM two-way volume threshold is 120 vph. This threshold is anticipated to be exceeded in all background and total traffic conditions (2028 and 2033). The proposed development relies on Sidney Street, a local roadway, as the only road to provide direct vehicular access. No neighbourhood traffic management measures are required, as Sidney Street is a dead-end street that only provides access to four different lots (7 Sidney Street, 490 Preston Street, 829 Carling Avenue, and 845 Carling Avenue).

4.7 Transit

Based on the trip generation presented in Section 3.1.1.4, the proposed development is anticipated to generate an additional 58 transit trips during the AM peak hour (including 43 boarding and 15 alighting), and an additional 51 transit trips during the PM peak hour (including 21 boarding and 30 alighting). The area is well-served with bus and light rail transit, and is served by OC Transpo Routes 2, 55, 56, and 85. Implementation of the Carling Avenue Transit Priority Measures and the extension of the Trillium Line are anticipated to be in place prior to buildout of the proposed development (i.e. OC Route 2 will return to rail service rather than bus replacement service).

The assumed distribution of vehicle trips to/from the proposed development were outlined in Section 3.1.2, and can be summarized as follows:

Proposed Retail Distribution

- 25% to/from the north;
- 25% to/from the south;
- 20% to/from the east;
- 30% to/from the west.

Proposed Residential Distribution

- 20% to/from the north;
- 30% to/from the south:
- 30% to/from the east:
- 20% to/from the west.

For the purposes of this review, the assumed transit distribution includes 25% for all four cardinal directions, with any trips originating from or destined to Prince of Wales Drive/Queen Elizabeth Driveway being redistributed to the south via OC Route 2. Per discussions with City staff, transit trips to/from the north are equally split between OC Routes 2, 56, and 85, transit trips to/from the south are solely assigned to OC Route 2, transit trips to/from the east are equally split between OC Routes 2 (transferring at Bayview Station to Route 1), 55, and 56, and transit trips to/from the west are equally split between OC Routes 2 (transferring at Bayview Station to Route 1), 55, and 85.

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 obtained for stops #2397, #6655, #6657, #7369, #8013, #8014, and #8023. Ridership projections for the Dow's Lake O-Train Station are confidential at the time of writing this report, and therefore, capacity analysis has only been conducted for the bus routes (OC Routes 55, 56, and 85).

Existing and projected boarding and alighting information is summarized in **Table 22**. 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 divided by three and rounded up to convert to peak hour boardings and alightings.

Table 22: Existing and Projected Transit Utilization

	Leasting and Tre				arding (tpl	h) ⁽¹⁾	Alig	ghting (tpl	h) ⁽¹⁾
Stop	Location	Route	e (Dir)	Existing	Site	Total	Existing	Site	Total
AM Pea	k Hour								
#2061	Dow's Lake Station	2	NB	-	11	-	-	4	-
#3061	Dow's Lake Station	2	SB	-	11	-	-	4	-
#2397	Preston/Carling	85	WB	2	1	3	8	0	8
#6655	Preston/Adeline	85	WB	0	1	1	2	0	2
#6657	Preston/Carling	85	EB	9	2	11	11	1	12
	Carling/	55	EB	3	2	5	8	1	9
#7369	O-Train Station	56	EB	2	2	4	2	1	3
	O-Haili Station	85	EB	3	2	5	24	1	25
#8013	Carling/Norfolk	55	WB	5	2	7	8	1	9
#0013	Carling/Nortolk	56	WB	0	2	2	5	1	6
	Carling/	55	WB	12	2	14	2	1	3
#8014	Carling/ O-Train Station	56	WB	3	2	5	2	0	2
	O-Haili Station	85	WB	10	1	11	4	0	4
#8023	Carling/Proston	55	EB	1	1	2	7	0	7
#0023	Carling/Preston	56	EB	1	1	2	1	0	1
PM Pea	k Hour								
#2004	Davida I alsa Otation	0	NB	-	5	-	-	8	-
#3061	Dow's Lake Station	2	SB	-	5	-	-	8	-
#2397	Preston/Carling	85	WB	7	1	8	2	1	3
#6655	Preston/Adeline	85	WB	1	1	2	3	1	4
#6657	Preston/Carling	85	EB	7	1	8	3	1	4
	Carling/	55	EB	2	1	3	11	1	12
#7369	Carling/ O-Train Station	56	EB	1	1	2	4	1	5
	O-Haili Station	85	EB	3	1	4	17	1	18
#0012	Carling/Norfalls	55	WB	16	1	17	1	1	2
#8013	Carling/Norfolk	56	WB	2	1	3	1	1	2
	Carling/	55	WB	10	1	11	2	1	3
#8014	Carling/ O-Train Station	56	WB	4	1	5	2	1	3
	O-Hain Station	85	WB	29	1	30	8	1	9
#8023	Carling/Proster	55	EB	2	0	2	3	1	4
#0023	Carling/Preston	56	EB	2	0	2	1	2	3

OC Routes 55, 56, and 85 are served by multiple bus stops within the study area, and therefore the average bus load at departure for stops further downstream account for site-generated transit trips boarding at the stops further downstream, and vice versa. The order of bus stops in the study area can be summarized as follows:

OC Route 55

to Elmvale: #7369, #8023to Westgate: #8013, #8014

OC Route 85

• to Gatineau: #7369, #6657

• to Bayshore: #6655, #2397, #8014

OC Route 56

to King Edward: #7369, #8023to Tunney's Pasture: #8013, #8014

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

Route 2 (to Bayview)

The proposed development is estimated to generate a net addition of 11 AM boarding trips, four AM alighting trips, five PM boarding trips, and eight PM alighting trips. As Route 2 runs on approximately 10-minute intervals, this equates to two AM boarding trips, one AM alighting trips, one PM boarding trip, and two PM alighting trips per train during the peak hours.

Route 2 (to Limebank/Airport)

The proposed development is estimated to generate a net addition of 11 AM boarding trips, four AM alighting trips, five PM boarding trips, and eight PM alighting trips. As Route 2 runs on approximately 10-minute intervals, this equates to two AM boarding trips, one AM alighting trips, one PM boarding trip, and two PM alighting trips per train during the peak hours.

Route 55 (to Elmvale)

At stops #7389 and #8023, the proposed development is estimated to generate a net addition of zero to two boarding or alighting trips at each stop during the AM and PM peak hours. As Route 55 runs on approximately 15-minute intervals, this equates to zero to one boarding or 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 55 (to Westgate)

At stops #8013 and #8014, the proposed development is estimated to generate a net addition of one to two boarding or alighting trips at each stop during the AM and PM peak hours. As Route 55 runs on approximately 15-minute intervals, this equates to zero to one boarding or 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 56 (to King Edward)

At stops #7369 and #8023, the proposed development is estimated to generate a net addition of one to two boarding or alighting trips at each stop during the AM and PM peak hours. As Route 56 runs on approximately 30-minute intervals, this equates to one to two boarding or 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 56 (to Tunney's Pasture)

At stops #8013 and #8014, the proposed development is estimated to generate a net addition of one to two boarding or alighting trips at each stop during the AM and PM peak hours. As Route 56 runs on approximately 30-minute intervals, this equates to zero to one boarding or 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 85 (to Gatineau)

At stops #6657 and #7369, the proposed development is estimated to generate a net addition of one to two boarding or alighting trips at each stop during the AM and PM peak hours. As Route 85 runs on approximately 15-minute intervals, this equates to zero to one boarding or 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 85 (to Bayshore)

At stops #2397, #6655, and #8014, the proposed development is estimated to generate a net addition of zero to one boarding or alighting trips at each stop during the AM and PM peak hours. As Route 85 runs on approximately 15-minute intervals, this equates to zero to one boarding or alighting trips per bus during the peak hours. 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 an MMLOS review of the signalized study area intersections, using complete streets principles. All intersections have been evaluated using the MMLOS targets for intersections within 600m of a rapid transit station, and are based on existing conditions.

The full intersection MMLOS analysis is included in **Appendix L**. A summary of the results is shown in **Table 23**.

Table 23: Intersection MMLOS Summary

Intersection	PL	PLOS		BLOS		TLOS		TkLOS		LOS
intersection	Actual	Target								
Carling Avenue/ Sherwood Drive	F	Α	F	В	С	С	D	D	В	Е
Carling Avenue/ Champagne Avenue	F	Α	F	С	С	С	F	D	Α	Е
Carling Avenue/ Trillium Pathway ⁽¹⁾	F	Α	Α	В	В	С	-	-	Α	Е
Carling Avenue/ Preston Street	F	Α	F	В	F	С	D	D	F	Е
Carling Avenue/ Booth Street	F	Α	F	С	F	С	F	D	Α	Е
Preston Street/ Beech Street	D	Α	F	В	В	1	F	D	Α	Е
Preston Street/ Pamilla Street	D	Α	D	В	В	1	F	D	Α	Е
Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway	F	Α	F	В	-	ı	F	D	Ш	Е

Intersection	PL	PLOS		BLOS		TLOS		TkLOS		Auto LOS	
intersection	Actual	Target									
Preston Street/ Adeline Street ⁽²⁾	-	1	-		-	-	-	1	С	Е	
Preston Street/ Sidney Street ⁽²⁾	-	ı	1	1	1	1		ı	С	Е	

- 1. Signalized intersection with MUP, not evaluated for TkLOS
- 2. Unsignalized intersection, evaluated for Auto LOS only

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

- All study intersections do not meet the target PLOS;
- All study intersections do not meet the target BLOS, except for Carling Avenue/Trillium Pathway;
- All study intersections with targets meet the target TLOS, except for Carling Avenue/Preston Street and Carling Avenue/Booth Street;
- All study intersections do not meet the target TkLOS, except for Carling Avenue/Sherwood Drive and Carling Avenue/Preston Street;
- All study area intersections meet the target Auto LOS, except for Carling Avenue/Preston Street.

The following includes further discussion for each intersection.

Carling Avenue/Sherwood Drive

The intersection does not meet the target PLOS A or BLOS B.

All approaches do not meet the target PLOS A, and have a cross-section equivalent to five lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes. Based on Exhibit 5 of the 2017 Addendum to the MMLOS Guidelines, any approach with a cross-section equivalent to four or more lanes crossed cannot achieve a PLOS A. Based on the functional design for the Carling Avenue Transit Priority Measures (shown in **Figure 4**), the future intersection will include shortened crossing distances at all approaches and a median refuge at the east approach.

The west approach does not meet the target BLOS B, based on left turn characteristics. Based on the functional design for the Carling Avenue Transit Priority Measures, segregated cycling facilities and a protected intersection design are planned, which will allow all left turns for cyclists to take place off-road. This would improve the intersection to a BLOS A.

Carling Avenue/Champagne Avenue

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

All approaches do not meet the target PLOS A, and have a cross-section equivalent to four lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes. Based on the functional design for the Carling Avenue Transit Priority Measures, the future intersection will include shortened crossing distances at all approaches, a median refuge at the east approach, and zebra-striped crosswalks at the east and west approaches. No other modifications are identified.

The north and west approaches do not meet the target BLOS B, based on left turn characteristics, and the east approach does not meet the target based on right turn characteristics. Based on the functional design for the Carling Avenue Transit Priority Measures, segregated cycling facilities and a protected intersection design are planned, which will allow all left turns for cyclists to take place off-road. This would improve the intersection to a BLOS A.

The east approach does not meet the target TkLOS D. Increasing the curb radius for westbound right turns is required to meet the target. As Champagne Avenue is a local roadway and not a truck route, no modifications are recommended.

Carling Avenue/Trillium Pathway

The intersection does not meet the target PLOS A.

The east and west approaches do not meet the target PLOS A, as these approaches have a cross-section equivalent to nine lanes. There is limited opportunity in improving the PLOS without reducing the number of travel lanes on Carling Avenue. Based on the functional design for the Carling Avenue Transit Priority Measures, the future crossing will include a median refuge at the east approach. No other modifications are recommended.

Carling Avenue/Preston Street

The intersection does not meet the target PLOS A, BLOS B, TLOS C, or Auto LOS E.

All approaches do not meet the target PLOS A, and have a cross-section equivalent to four lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes. Based on the functional design for the Carling Avenue Transit Priority Measures, the future intersection will include zebra-striped crosswalks at all approaches and reduced crossing distances at the north and south approaches. No other modifications are recommended.

All approaches do not meet the target BLOS B, based on left turn characteristics. Based on the functional design for the Carling Avenue Transit Priority Measures, segregated cycling facilities are planned at the east and west approaches, and two-stage left-turn bike boxes are planned for eastbound and westbound cyclists. This will improve these approaches to a BLOS A. Two-stage left-turn bike boxes could be considered for northbound and southbound cyclists as well, and is identified for the City's consideration.

The north, east, and west approaches do not meet the target TLOS C during the AM and PM peak hours. As Preston Street is not designated within the City's RTTP networks, no recommendations are identified for the north approach. Comparing the delays of the north approach in the existing, 2033 background, and 2033 total conditions, the TLOS of the north approach is anticipated to remain at a TLOS F. It is anticipated that the transit priority measures proposed on Carling Avenue will allow the east and west approaches to operate at the target TLOS C or better (i.e. delays for buses will be 20 seconds or less for buses at these approaches).

The Auto LOS of the overall intersection does not meet the target Auto LOS E during the PM peak hour. As discussed, the northbound left turn, southbound through/right turn, and westbound left turn movements individually do not meet the target Auto LOS E. Further discussion of the existing operations at this intersection are included in Section 3.4.1.

Carling Avenue/Booth Street

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

All approaches do not meet the target PLOS A, and have a cross-section equivalent to four lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes. Based on the functional design for the Carling Avenue Transit Priority Measures, the future intersection will include shortened crossing distances at all approaches, and zebra-striped crosswalks at the east and west approaches. No other modifications are recommended.

All approaches do not meet the target BLOS C, based on both left and right turn characteristics. Based on the functional design for the Carling Avenue Transit Priority Measures, segregated cycling facilities and a protected intersection design are planned, which will allow all left turns for cyclists to take place off-road. This would improve the intersection to a BLOS A.

The north and east approaches do not meet the target TLOS C during the AM and PM peak hours, and the west approach does not meet the target TLOS C during the AM peak hour only. As Booth Street is not designated within the City's RTTP networks, no recommendations are identified for the north approach. The TLOS of the north approach is anticipated to remain at a TLOS F in future conditions. It is anticipated that the transit priority measures proposed on Carling Avenue will allow the east and west approaches to operate at the target TLOS C or better (i.e. delays for buses will be 20 seconds or less for buses at these approaches).

The east approach does not meet the target TkLOS D. Based on the functional design for the Carling Avenue Transit Priority Measures, the receiving lane for this movement will be a wider lane, and may accommodate trucks turning right from the east approach. Therefore, no further modifications are recommended.

Preston Street/Beech Street

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

All approaches do not meet the target PLOS A, and have a cross-section equivalent to three or four lanes crossed. There is limited opportunity in improving the PLOS at each approach to the target, without the removal of auxiliary turn lanes.

The north, south, and east approaches do not meet the target BLOS B based on left turn characteristics, and the east approach does not meet the target BLOS B based on right turn characteristics. A review of the Desirable Cycling Facility Pre-Selection Nomograph included in *Ontario Traffic Manual (OTM) – Book 18* identifies that designated bike lanes are appropriate on Beech Street, while a physically separated bikeway is appropriate for Preston Street. This is identified for the City's consideration. The pre-selection tool is included in **Figure 16**. Alternatively, a reduction of the operating speed to 40 km/h on Preston Street and Beech Street on all approaches would improve the BLOS to the target BLOS B based on left turn characteristics.

All approaches do not meet the target TkLOS D. Increasing the curb radii are required to meet the target. As Beech Street is a local roadway and not a truck route, no modifications are recommended.

≥80 **Physically** 70 Separated **Bikeway** Separated Bicycle Lane 60 - Cycle Track STREET Multi-Use Path Posted Speed Limit¹ (km/h) 50 Designated 40 **Operating** Space² - Bicycle Lane 30 (maximum one motor vehicle lane per direction)3 Contraflow Bicycle Lane Shared - Buffered Bicycle Lane 20 Operating Space Shared Street 10 Neighbourhood Bikeway - Advisory Bike Lane 7 0 1 2 3 4 5 6 8 9 ≥10 Average Daily Traffic Volume (Thousands)

Figure 16: Desirable Cycling Facility Pre-Selection Nomograph

Preston Street/Pamilla Street

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

The north, south, and west approaches do not meet the target PLOS A. There is limited opportunity in improving the PLOS at these approaches as the number of travel lanes cannot be reduced. The north and south 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). Therefore, these crosswalks could be textured similar to the crosswalks at the east and west approaches, or similar to the crosswalks at Preston Street/Beech Street. Curb bulbouts could be considered to reduce crossing distance.

The north and south approaches do not meet the target BLOS B based on left turn characteristics. As stated for the previous intersection, designated bike lanes or a reduction in the operating speed to 40 km/h on Preston Street could be considered.

All approaches do not meet the target TkLOS D. Increasing the curb radii are required to meet the target TkLOS D. As Pamilla Street is a local roadway and not a truck route, no modifications are recommended.

Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway

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

All approaches do not meet the target PLOS A, and have a cross-section equivalent to four lanes crossed or more. There is limited opportunity in improving the PLOS at each approach to the target, without the removal of auxiliary turn lanes. Based on Exhibit 5 of the 2017 Addendum to the MMLOS Guidelines, any approach with a cross-section of four or more lanes crossed cannot achieve a PLOS A. The north, east, and west approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks, and could increase the level of comfort for pedestrians. This is identified for the City's consideration.

The north and west approaches do not meet the target BLOS B based on left turn characteristics, and the north approach does not meet the target BLOS B based on right turn characteristics. Based on Exhibit 12 of the MMLOS Guidelines, the target BLOS can be achieved by implementing two-stage left-turn bike boxes for southbound and westbound cyclists. As discussed previously, curbside bike lanes on Preston Street are also identified as appropriate per the OTM Pre-Selection Tool. These improvements are identified for the City's consideration.

The south and west approaches do not meet the target TkLOS D. As these approaches involve heavy vehicles turning right into or out of the Dow's Lake Pavilion, no modifications are recommended.

4.8.2 2028 Total Intersection Operations

Intersection capacity analysis has been conducted for the 2028 total traffic conditions. Signal timings within the study area reflect the optimized conditions first described in Section 3.4.2. The results of the analysis are summarized in **Table 23** and **Table 24** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix M**.

Table 24: 2028 Total Traffic Operations

		Critica	al Move	ements	Intersection		
Intersection		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
Carling Avenue/	AM	0.56	Α	SBL	0.36	12 sec	Α
Sherwood Drive ⁽¹⁾	PM	0.70	В	WBT	0.68	15 sec	В
Carling Avenue/	AM	0.45	Α	WBL	0.35	7 sec	Α
Champagne Avenue ⁽¹⁾	PM	0.67	В	SBR	0.53	13 sec	Α
Carling Avenue/	AM	0.41	Α	WBT	0.39	4 sec	Α
Trillium Pathway ⁽²⁾	PM	0.53	Α	WBT	0.47	3 sec	Α

		Critica	al Mov	ements	Intersection			
Intersection	Period	Max v/c or Delay	Los	Mvmt	v/c	Delay	LOS	
	AM	1.02	F	NBL	1.02	53 sec	F	
	Aivi	1.07	F	EBT/R	1.02	33 Sec	•	
Carling Avenue/		1.45	F	NBL				
Preston Street ⁽¹⁾		1.05	F	SBT/R				
Presion Street	PM	1.02	F	EBL	1.19	92 sec	F	
		1.13	F	EBT/R				
		1.29	F	WBL				
Carling Avenue/	AM	1.09	F	WBT	0.99	49 sec	Е	
Carling Avenue/ Booth Street ⁽¹⁾	PM	1.01	F	EBL	1.05	58 sec	F	
Booth Street		1.11	F	WBT			Г	
Preston Street/	AM	0.64	В	NBT	0.56	12 sec	Α	
Beech Street ⁽¹⁾	PM	0.55	Α	WBL/T	0.45	12 sec	Α	
Preston Street/	AM	0.50	Α	NBT	0.44	4 sec	Α	
Pamilla Street ⁽¹⁾	PM	0.42	Α	NBT	0.40	5 sec	Α	
Preston Street/	AM	29 sec	D	EBL/T/R				
Adeline Street ⁽³⁾	PM	24 sec	С	WBL/T/R	-			
Preston Street/	AM	21 sec	С	EBL/R	-			
Sidney Street(3)	PM	20 sec	С	EBL/R				
Preston Street/Prince of Wales	AM	0.64	В	SBL/T	0.58	18 sec	D	
Drive/Queen Elizabeth Driveway(1)	PM	0.97	Е	SBL/T	0.77	30 sec	С	
Sidney Street/	AM	9 sec	Α	NBR		•		
Site Access ⁽³⁾	PM	9 sec	Α	NBR		-		

Table 25: 2028 Total Queues

		Storage/		AM Peak		PM Peak		
Intersection	Mvmt	Spacing ⁽¹⁾	v/c	50 th %	95 th %	v/c	50 th %	95 th %
		Spacing	[LOS]	Queue (m)	Queue (m)	[LOS]	Queue (m)	Queue (m)
	NBL	75m	1.02 [F]	~48	#100	1.45 [F]	~107	m#166
	SBL	35m	0.78 [C]	27	#58	0.58 [A]	23	43
Carling Avenue/	SBT/R	35m	0.98 [E]	98	#160	1.05 [F]	~126	#188
Carling Avenue/ - Preston Street -	EBL	65m	0.81 [D]	30	#63	1.02 [F]	~41	#89
	EBT/R	95m	1.07 [F]	~107	#141	1.13 [F]	~144	#175
	WBL	110m	0.95 [E]	54	m58	1.29 [F]	~117	m#120
	WBT	50m	0.77 [C]	91	m90	0.88 [D]	133	m124
Carling Avenue	SBL		0.70 [B]	50	75	0.88 [D]	74	#114
Carling Avenue/ Booth Street	EBL	75m	0.98 [E]	~113	m#133	1.01 [F]	~76	m#85
booth Street	WBT	85m	1.09 [F]	~204	#272	1.12 [F]	~287	#360
Preston Street/ Prince of Wales	SBL/T	135m	0.64 [B]	45	m45	0.97 [E]	93	m64
Drive/Queen Elizabeth Driveway	EBL	55m	0.62 [B]	48	61	0.61 [B]	34	44

Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection for through lanes m: volume for the 95th percentile queue is metered by an upstream signal #: volume for the 95th percentile cycle exceeds capacity ~: approach is above capacity

Signalized intersection
 Signalized pathway crossing
 Unsignalized intersection

Comparing the previous tables and the 2028 background conditions, traffic generated by the proposed development is anticipated to have marginal operational effects within the study area. The discussion of over-capacity movements and queue lengths are generally consistent with those described in Section 3.4.2.

4.8.3 2033 Total Intersection Operations

Intersection capacity analysis has been conducted for the 2033 total traffic conditions. Signal timings within the study area reflect the optimized conditions first described in Section 3.4.2. The results of the analysis are summarized in **Table 25** and **Table 26** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix M**.

Table 26: 2033 Total Traffic Operations

		Critic	al Mov	ements	Intersection			
Intersection	Period	Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS	
Carling Avenue/	AM	0.56	Α	SBL	0.35	13 sec	Α	
Sherwood Drive ⁽¹⁾	PM	0.63	В	WBT	0.62	15 sec	В	
Carling Avenue/	AM	0.41	Α	WBL	0.31	7 sec	Α	
Champagne Avenue ⁽¹⁾	PM	0.64	В	SBR	0.48	13 sec	Α	
Carling Avenue/	AM	0.39	Α	WBT	0.36	4 sec	Α	
Trillium Pathway ⁽²⁾	PM	0.47	Α	WBT	0.43	3 sec	Α	
	AM	1.05	F	NBL	0.99	50 sec	Е	
		1.46	F	NBL				
Carling Avenue/		1.07	F	SBT/R	1.18	92 sec	F	
Preston Street ⁽¹⁾	PM	1.06	F	EBL				
		1.09	F	EBT/R				
		1.29	F	WBL				
Carling Avenue/	AM	1.05	F	WBT	0.97	46 sec	Е	
Carling Avenue/ Booth Street ⁽¹⁾	PM	1.01	F	EBL	0.98	46 sec	Е	
Booth Street	FIVI	1.01	F	WBT		46 Sec	_	
Preston Street/	AM	0.66	В	NBT	0.59	12 sec	Α	
Beech Street ⁽¹⁾	PM	0.58	Α	WBL/T	0.46	12 sec	Α	
Preston Street/	AM	0.51	Α	NBT	0.45	4 sec	Α	
Pamilla Street ⁽¹⁾	PM	0.43	Α	NBT	0.42	5 sec	Α	
Preston Street/	AM	38 sec	Е	EBL/T/R	-			
Adeline Street ⁽³⁾	PM	28 sec	D	EBL/T/R				
Preston Street/	AM	23 sec	С	EBL/R				
Sidney Street ⁽³⁾	PM	21 sec	С	EBL/R				
Preston Street/Prince of Wales	AM	0.64	В	SBL/T	0.59	18 sec	Α	
Drive/Queen Elizabeth Driveway ⁽¹⁾	PM	0.98	Е	SBL/T	0.77	30 sec	С	
Sidney Street/	AM	9 sec	Α	NBR				
Site Access ⁽³⁾	PM	9 sec	Α	NBR		-		

^{1.} Signalized intersection

^{2.} Signalized pathway crossing

^{3.} Unsignalized intersection

Table 27: 2033 Total Queues

		Storage/		AM Peak		PM Peak			
Intersection	Mvmt	Spacing ⁽¹⁾	v/c	50 th %	95 th %	v/c	50 th %	95 th %	
		Spacing	[LOS]	Queue (m)	Queue (m)	[LOS]	Queue (m)	Queue (m)	
	NBL	75m	1.05 [F]	~51	#103	1.46 [F]	~107	m#167	
	SBL	35m	0.85 [D]	30	#65	0.62 [B]	25	46	
Carling Avenue	SBT/R	35m	1.00 [E]	102	#165	1.07 [F]	~129	#191	
Carling Avenue/ Preston Street	EBL	65m	0.81 [D]	30	#64	1.06 [F]	~48	#92	
	EBT/R	95m	0.99 [E]	50	#125	1.09 [F]	~134	#167	
	WBL	110m	0.95 [E]	54	m#64	1.29 [F]	~117	m#134	
	WBT	50m	0.74 [C]	87	m89	0.80 [C]	115	m119	
Carling Avenue	SBL		0.70 [B]	50	75	0.88 [D]	74	#114	
Carling Avenue/ Booth Street	EBL	75m	0.98 [E]	~114	m#139	1.01 [F]	~76	m#89	
Booth Street	WBT	85m	1.05 [F]	~190	#258	1.01 [F]	~230	#311	
Preston Street/ Prince of Wales	SBL/T	135m	0.64 [B]	46	m47	0.98 [E]	94	m65	
Drive/Queen Elizabeth Driveway	EBL	55m	0.62 [B]	48	61	0.61 [B]	34	45	

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

Comparing the previous tables and the 2033 background conditions, traffic generated by the proposed development is anticipated to have marginal operational effects within the study area. The discussion of over-capacity movements and queue lengths are consistent with those described in Section 3.4.3.

Based on the southbound queues at Carling Avenue/Preston Street, it is anticipated that northbound left turns and eastbound left/right turns at Preston Street/Sidney Street will rely on courtesy from queued drivers on Preston Street to complete their turns during the peak hours. As there are two northbound lanes approaching Sidney Street, northbound through vehicles can use the curbside lane to bypass a northbound left turning vehicle. This is consistent with the existing intersection operations.

Based on the net site-generated traffic volumes shown in Figure 9, the proposed development will add:

- Six to twelve northbound left turning vehicles (equivalent to one vehicle every five to ten minutes during the peak hours);
- Two to three eastbound left turning vehicles (equivalent to one vehicle every 20 to 30 minutes during the peak hours), and;
- Nine to thirteen eastbound right turning vehicles (equivalent to one vehicle every four to seven minutes during the peak hours).

m: volume for the 95th percentile queue is metered by an upstream signal #: volume for the 95th percentile cycle exceeds capacity

^{~:} approach is above capacity

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Forecasting

 The proposed development is estimated to generate a net additional 140 person trips (including 17 vehicle trips) during the AM peak hour and 112 person trips (including 16 vehicle trips) during the PM peak hour.

Development Design

- Concrete sidewalks will be provided around the north, south, and east sides of the proposed building, and will connect to existing sidewalks on Sidney Street, Preston Street, and Carling Avenue. The proposed development will include eight exterior bicycle parking spaces and 192 interior bicycle parking spaces.
- OC Transpo stops #2397, #6655, #6657, #7369, #8013, #8014, #8023, and the Dow's Lake O-Train Station are within 400m walking distance of all entrances to the proposed development.
- All required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the TDM checklist are met.

<u>Parking</u>

- The proposed development includes 196 vehicle parking spaces, meeting the minimum number of required parking spaces and maximum number of permitted parking spaces, as outlined in the City's Zoning By-Law (ZBL).
- The proposed development includes 200 bicycle parking spaces, meeting the minimum number of required spaces as outlined in the City's ZBL. Section 111 outlines a requirement to provide at least 25% of bicycle spaces within a secure area or structure, which is also met by the proposed development.

Boundary Streets

- Sidney Street meets the target pedestrian level of service (PLOS) A and the target bicycle level of service (BLOS) D.
- Preston Street does not meet the target PLOS A or BLOS B, meets the target truck level of service (TkLOS) D, and achieves a transit level of service (TLOS) F, but has no target.
- The best possible PLOS for Preston Street is a PLOS C, which would require sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m. This is identified for the City's consideration. Along the site's frontage, a sidewalk width greater than 4m is proposed. Considering 2m of this width to be boulevard width, the best possible PLOS C will be achieved. The target PLOS A is anticipated to be met by the proposed development from a crowding perspective, as the sidewalk widths along the site's frontages to Carling Avenue and Preston Street are anticipated to be 3.0m or wider, and will be significantly wider at the northwest corner of Carling Avenue/Preston Street.

- The target BLOS B for Preston Street can be achieved by reducing the operating speed to 40 km/h, or a combination of curbside bike lanes with a minimum width of 1.5m and an operating speed of 50 km/h. In areas with on-street parking, a 4.25m-wide bike plus parking lane would also achieve the target BLOS B. This is identified for the City's consideration.
- A sidewalk of approximately 2m width is proposed along the site's frontage to Sidney Street. This will maintain the PLOS of Sidney Street at the target PLOS A.

Access Design

- The existing depressed curbs to the subject site will be removed as part of the proposed development, and full-height curb and sidewalks will be reinstated per City standards. Curbs will be depressed and continuous across the proposed access to Sidney Street.
- The proposed access meets the requirements of Sections 25(a) and 25(c) of the *Private Approach By-Law*, and Section 107(1) of the ZBL. It is requested that the requirements of Sections 25(m)(ii), 25(p), and 25(u) of the *Private Approach By-Law* be waived, as the access is proposed as far from Preston Street as possible, will maintain proper sightlines, and will not create a traffic hazard.
- The proposed access will be stop-controlled, with free flow on Sidney Street. It is anticipated
 that the proposed access will operate acceptably during both peak hours.

Transportation Demand Management

- The proponent has committed to providing the following TDM measures:
 - Display local area maps with walking/cycling access routes and key destinations at major entrances;
 - Display relevant transit schedules and route maps at entrances;
 - Unbundle parking cost from monthly rent;
 - o Provide a multimodal travel option information package to new residents.

Neighbourhood Traffic Management

• The proposed development relies on the local roadway Sidney Street for direct vehicular access. No neighbourhood traffic management measures are required, as Sidney Street is a short, dead-end roadway that only provides access to four different lots (7 Sidney Street, 490 Preston Street, 829 Carling Avenue, and 845 Carling Avenue).

Transit

 The proposed development is anticipated to generate an additional 58 transit trips during the AM peak hour (including 43 boarding and 15 alighting), and an additional 51 transit trips during the PM peak hour (including 21 boarding and 30 alighting). It is anticipated that the proposed development will not require more frequent service at the Dow's Lake O-Train Station and surrounding bus stops.

Intersection MMLOS

- The results of the intersection MMLOS analysis can be summarized as follows:
 - All study area intersections do not meet the target PLOS;
 - All study area intersections do not meet the target BLOS, except for Carling Avenue/ Trillium Pathway;
 - All study area intersections with targets meet the target TLOS, except for Carling Avenue/Preston Street and Carling Avenue/Booth Street;
 - All study area intersections do not meet the target TkLOS, except for Carling Avenue/ Sherwood Drive and Carling Avenue/Preston Street;
 - All study area intersections meet the target vehicular level of service (Auto LOS), except for Carling Avenue/Preston Street.

Pedestrian Level of Service

- All approaches at Carling Avenue/Sherwood Drive, Carling Avenue/Champagne Avenue, Carling Avenue/Preston Street, and Carling Avenue/Booth Street, and the east and west approach at Carling Avenue/Trillium Pathway, do not meet the target PLOS A. The functional design for the Carling Avenue Transit Priority Measures outlines various measures to improve the level of comfort for pedestrians, but the target PLOS A will not be achieved at any approach.
- All approaches of Preston Street/Beech Street do not meet the target PLOS A. There
 is limited opportunity in improving the PLOS without the removal of auxiliary turn
 lanes.
- The north, south, and west approaches of Preston Street/Pamilla Street do not meet the target PLOS A. The north and south approaches meet the City's vehicle/ pedestrian conflict threshold for zebra-striped crosswalks. Therefore, textured crosswalks similar to the east and west approaches at this intersection could be considered. Curb bulbouts could be considered to reduce crossing distance.
- All approaches of Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway do not meet the target PLOS A. The north, east, and west approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. This is identified for the City's consideration.

Bicycle Level of Service

- The west approach of Carling Avenue/Sherwood Drive, the north and west approaches of Carling Avenue/Champagne Avenue, and all approaches of Carling Avenue/Booth Street do not meet the target BLOS. The functional design for the Carling Avenue Transit Priority Measures identify segregated cycling facilities and protected intersections at these locations, which will allow all left turns for cyclists to take place off-road, and improve these approaches to a BLOS A.
- All approaches of Carling Avenue/Preston Street does not meet the target BLOS B. The functional design for the Carling Avenue Transit Priority Measures identify segregated cycling facilities and two-stage left-turn bike boxes for eastbound and westbound cyclists, which would improve these approaches to a BLOS A. Two-stage bike boxes could be considered for northbound/southbound cyclists as well, and is identified for the City's consideration.

- The north, south, and east approaches of Preston Street/Beech Street do not meet the target BLOS B. The Ontario Traffic Manual – Book 18 identifies that designated bike lanes are appropriate on Beech Street, while a physically separated bikeway is appropriate for Preston Street. This is identified for the City's consideration. Alternatively, a reduction of the speed limit to 40 km/h on both roadways would improve the BLOS to the target.
- The north and south approaches of Preston Street/Pamilla Street do not meet the target BLOS B. Designated bike lanes or a reduction in the operating speed to 40 km/h on Preston Street could be considered.
- The north and west approaches of Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway do not meet the target BLOS B. The target BLOS can be achieved for these approaches with the implementation of two-stage left-turn bike boxes. This is identified for the City's consideration.

Transit Level of Service

The north, east, and west approaches at Carling Avenue/Preston Street, and the north and east approaches at Carling Avenue/Booth Street, do not meet the target TLOS C during the AM and PM peak hours. The transit priority measures on Carling Avenue are anticipated to allow the east and west approaches to operate at a TLOS C or better. The north approaches at both intersections are anticipated to continue operating below the target TLOS in future conditions.

Truck Level of Service

- The east approach of Carling Avenue/Champagne Avenue does not meet the target TkLOS D. As Champagne Avenue is a local roadway and not a truck route, no modifications are recommended.
- The east approach of Carling Avenue/Booth Street does not meet the target TkLOS D. Based on the functional design for the Carling Avenue Transit Priority Measures, the receiving lane for this movement will be a wider lane, and may accommodate trucks turning right from the east approach. Therefore, no further modifications are recommended.
- All approaches of Preston Street/Beech Street and Preston Street/Pamilla Street do not meet the target TkLOS D. While the target TkLOS could be met by increase the curb radii, Beech Street and Pamilla Street are local roadways and not truck routes. Therefore, no modifications are recommended.
- The south and west approaches of Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway do not meet the target TkLOS D. As these approaches involve heavy vehicles turning right into or out of the Dow's Lake Pavilion, no modifications are recommended.

Existing Intersection Operations

 At Carling Avenue/Preston Street, the northbound left turn, southbound through/right turn, and westbound left turn movements do not meet the target Auto LOS E during the PM peak hour.

- At Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway, the southbound left turn/through movement does not meet the target Auto LOS E during the AM and PM peak hours.
- During the AM and PM peak hours, southbound queueing at Carling Avenue/Preston Street extends through the upstream intersection at Preston Street/Sidney Street. While the Synchro analysis does not identify operational concerns at Preston Street/Sidney Street, it is acknowledged that additional traffic volumes generated by future developments may trigger a restriction of the eastbound movements on Sidney Street to right turns only, due to potential safety and congestion issues.

Background Intersection Operations

- Traffic throughout the study area could be displaced or alleviated through a combination of
 increased use of non-auto modes of transportation, alternate times of travel for drivers, and
 alternate routes of travel. It is assumed that the Carling Avenue Transit Priority Measures
 project will increase the transit modal share and decrease the auto modal share by the
 buildout year 2028.
- As congestion increases within the study area, some motorists may alter their travel times
 to occur outside of the peak hours and alter their routes to other roadways within proximity
 of the study area.
- At Carling Avenue/Preston Street, a reduction of 10 northbound left turning vehicles during the AM peak hour, and 90 northbound left turning vehicles, 30 southbound through/right turning vehicles, 10 eastbound left turning vehicles, 70 eastbound through/right turning vehicles, and 90 westbound left turning vehicles during the PM peak hour would be required to meet the target Auto LOS E in the 2033 background conditions.
- At Carling Avenue/Booth Street, a reduction of 30 westbound through vehicles during the AM peak hour, and 10 westbound through vehicles during the PM peak hour would be required to meet the target Auto LOS E in the 2033 background conditions.
- Restriction of the eastbound left turn at Preston Street/Sidney Street would impact the southbound left turn movement at Carling Avenue/Preston Street and the eastbound left turn movement at Carling Avenue/Booth Street. The Auto LOS for both movements will downgrade to an Auto LOS F during the AM peak hour.

Total Intersection Operations

- Traffic generated by the proposed development is anticipated to have marginal operational effects for most movements at the study area intersections.
- It is anticipated that northbound left turns and eastbound left/right turns at Preston Street/ Sidney Street will rely on courtesy from queued drivers on Preston Street to complete their turns during the peak hours. As there are two northbound lanes approaching Sidney Street, northbound through vehicles can use the curbside lane to bypass a northbound left turning vehicle. This is consistent with the existing intersection operations.

- The proposed development will add:
 - Six to twelve northbound left turning vehicles (equivalent to one vehicle every five to ten minutes during the peak hours);
 - Two to three eastbound left turning vehicles (equivalent to one vehicle every 20 to 30 minutes during the peak hours), and;
 - Nine to thirteen eastbound right turning vehicles (equivalent to one vehicle every four to seven minutes during the peak hours).

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

NOVATECH

Prepared by:



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Project Engineer | Transportation

Reviewed by:



Brad Byvelds, P.Eng.
Project Manager | Transportation

APPENDIX A

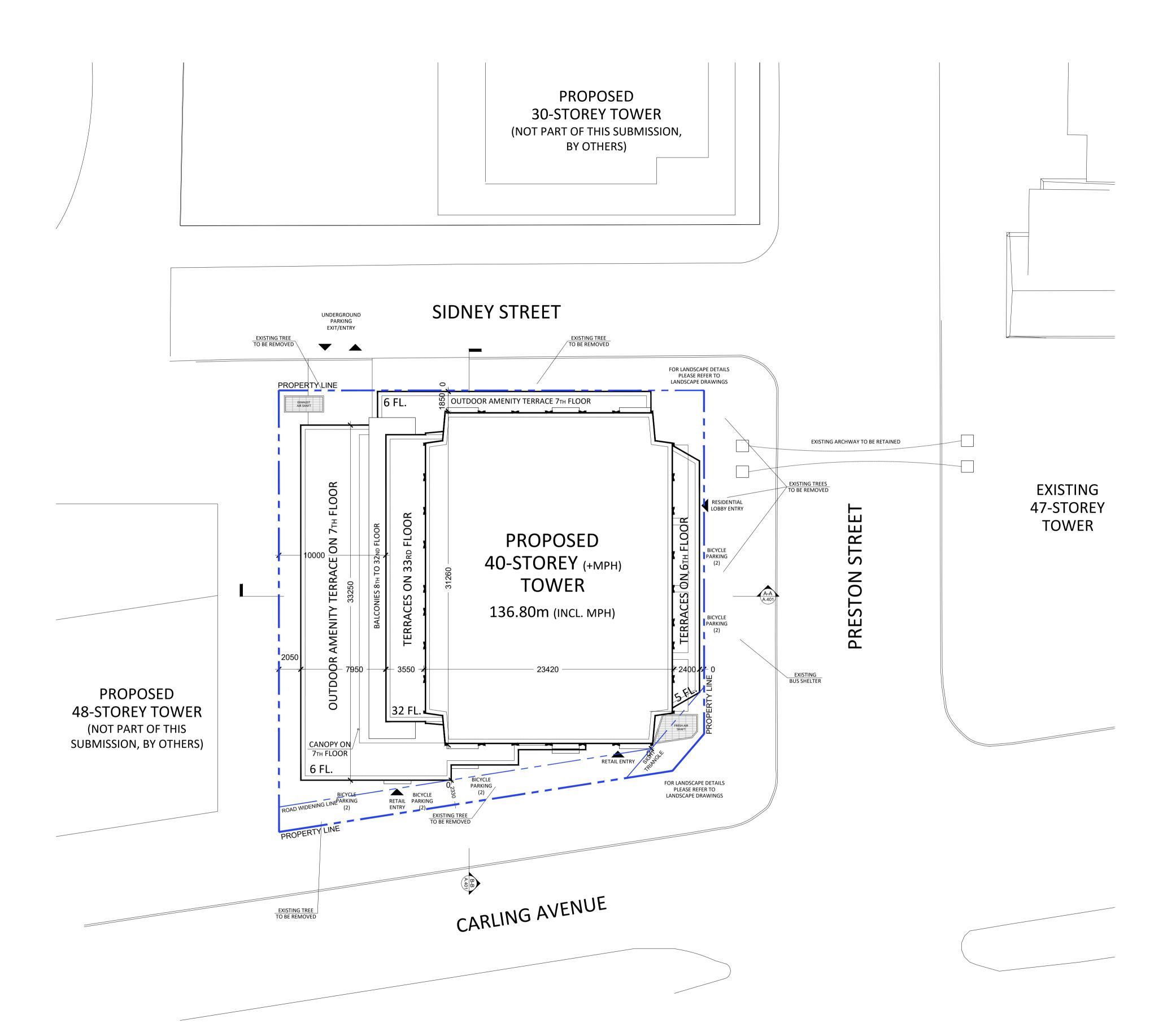
Proposed Site Plan

DEVELOPMENT AREA SUMMARY				
SITE AREA (INCL. ROAD WIDENING)	1,519 m2	16,350 ft2		
SITE AREA (EXCL. ROAD WIDENING)	1,417 m2	15,253 ft2		
FSI (LOT AREA INCL. ROAD WIDENING)	15,35			

DEVELOPMENT GFA SUMMARY					
TOTAL RESID. GFA	22,983.0 m2	247,394 ft2			
TOTAL RETAIL GFA	337.0 m2	3,628 ft2			
TOTAL GFA	23,320.0 m2	251,022 ft2			

RESIDENTIAL UNIT BREAKDOWN						
B./ST.	1BR	2BR	3BR	TOTAL		
25	197	149	25	396		
6.3%	49.8%	37.6%	6.3%	-		

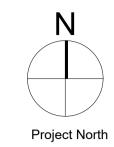
	ZONING TABLI				
PROVISION	REQUIRED	PROVIDED	COMPLIANCE		
MIN. LOT AREA	NO MINIMUM	1,519 m2	✓		
MIN. LOT WIDTH	NO MINIMUM	32.16 m	✓		
MIN. FRONT YARD SETBACK	MIXED-USE BLDG: 0m	0 m	✓		
MIN. CORNER SIDE YARD SETBACK	MIXED-USE BLDG: 0m	0 m	✓		
MIN. REAR YARD	MIXED-USE BLDG NOT ABUTTING A RESIDENTIAL ZONE: 0m	0 m	✓		
BUILDING HEIGHT	MAX. 30m AND NO HIGHER THAN 9 STOREYS	136.80m (INCL. мрн); 40 ST.	×		
AMENITY AREA	MIN. 6m2/DU; 50% MUST BE COMMUNAL; 396x6=2,376m2 TOTAL AND 1,188m2 COMM.	COMMUNAL: 1,199 m2	✓		
MINIMUM RESID. VEHICLE PARKING	AREA Z: NO PARKING REQ'D.	166 SPACES	✓		
MAXIMUM RESID. VEHICLE PARKING	1.75 SPACES / DU 396 x 1.75 = 693	166 SPACES	✓		
MINIMUM VISITOR PARKING	0.1 SPACES / DU AFTER FIRST 12 DU, MAX. 30 SPACES REQUIRED	30 SPACES	✓		
MIN. COMMERCIAL VEHICLE PARKING	AREA Z: NO PARKING REQ'D.	0 SPACES	✓		
MIN. RESIDENTIAL BICYCLE PARKING	MIN. RESID. BICYCLE PARK. 0.5 SPACES / DU 396 x 0.5 = 198 SPACES	198 SPACES	✓		
MIN. COMMERCIAL BICYCLE PARKING	1 / 250m2 GFA 335m2 = 1.34 (2 ROUNDED)	2 SPACES	✓		
DRIVEWAY WIDTH	TWO-WAY FOR RESID.: 6.0m	6.0 m	✓		
AISLE WIDTH	90-DEGREE PARKING SPACES: 6.0m	6.0 m	✓		
PARKING SPACE SIZE	MAX. 40% OF RESID. SPACES CAN BE SMALL SIZE (2.4m x 4.6m) 196 x 40% = 79 SPACES	SMALL SIZE PARK.: 25	√		

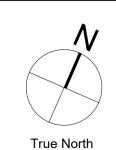


General Notes:

- 1. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretations of these documents by the contractor. Upon written application the Architect will provide written/graphic clarification or supplementary information regarding the intent of the Contract Documents. The Architect will review Shop Drawings submitted by the Contractor for design conformance only.
- 2. Drawings are not to be scaled for construction. Contractor to verify all existing conditions and dimensions required to perform the Work and report any discrepancies with the Contract Documents to the Architect before commencing work.
- 3. Positions of exposed or finished mechanical or electrical devices, fittings, and fixtures are indicated on the Architectural drawings. The locations shown on the Architectural drawings govern over the Mechanical and Electrical drawings.

 Those items not clearly located will be located as directed by the Architect.







PROJECT TEAM

CLIENT

SURVEYOR

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CLARDIGE HOMES

ANNIS O'SULLIVAN, VOLLEBEKK LTD.

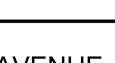


Architect of Record:

HARIRI PONTARINI **ARCHITECTS**

235 Carlaw Avenue Suite 301 TEL 416 929 4901





Project Title:

829 CARLING AVENUE

MIXED-USE DEVELOPMENT

OTTAWA, ON

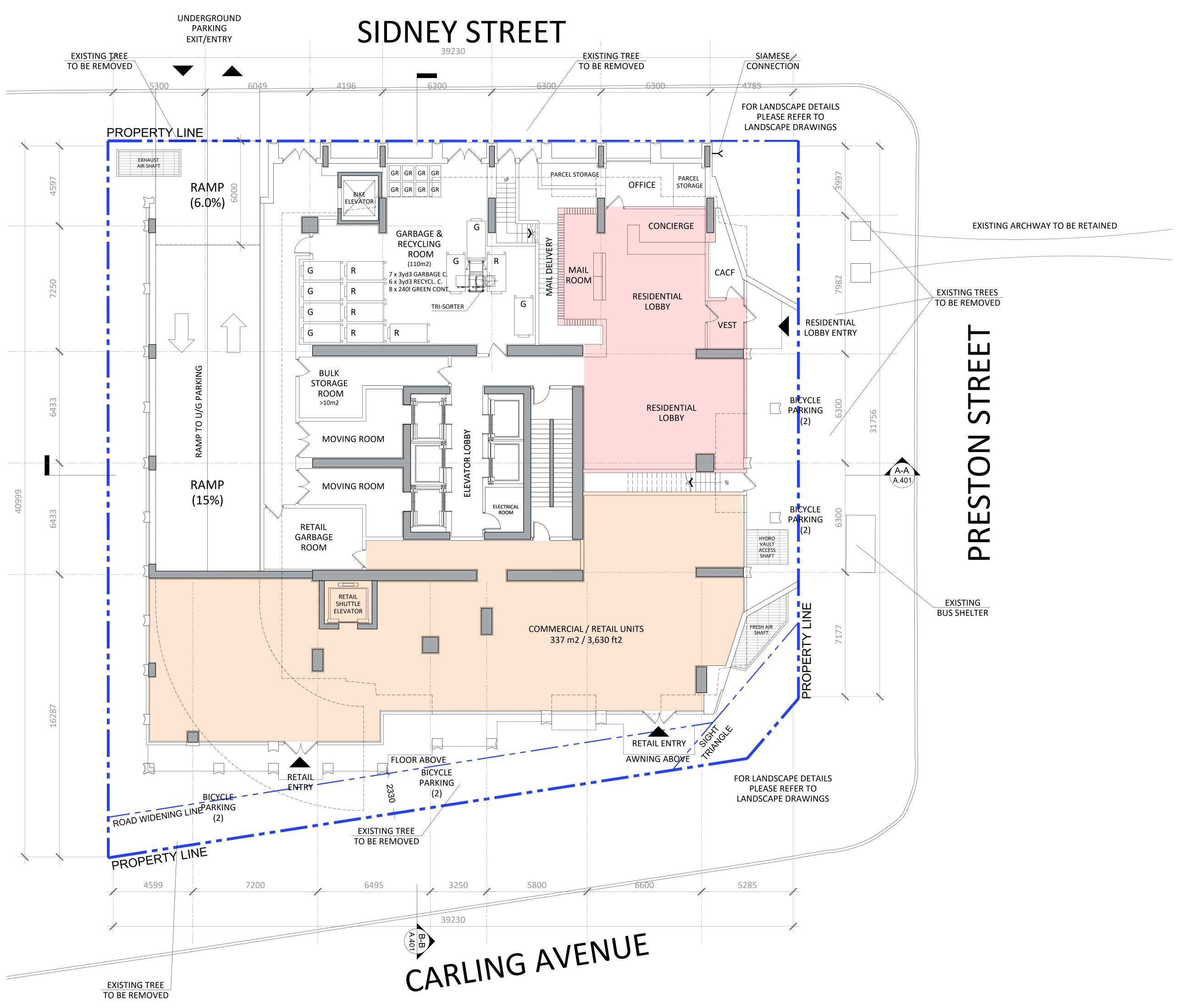
SITE PLAN

2030 Project number: 1:200 Date: MARCH 24, 2023 Drawn by:

Drawing No.:

Revision:

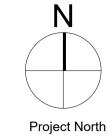
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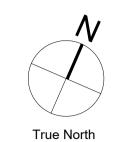


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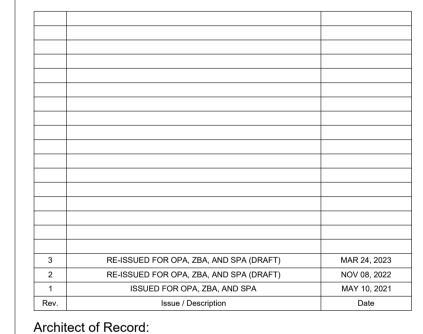


PROJECT TEAM

SURVEYOR

CLIENT CLARDIGE HOMES **ARCHITECT** HARIRI PONTARINI ARCHITECTS LANDSCAPE JAMES B. LENNOX + ASSOCIATES **PLANNING** FOTENN PLANNING + DESIGN STRUCTURAL GOODEVE STRUCTURAL INC. CIVIL/TRAFFIC NOVATECH GROUP **GEOTECH** PATERSON GROUP INC. GRADIENT WIND ENGINEERING

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Project Title:

829 CARLING AVENUE

MIXED-USE DEVELOPMENT

OTTAWA, ON

GROUND FLOOR PLAN

2030 Project number: 1:100 Scale: Date: Drawn by:

MARCH 24, 2023 HPA

Drawing No.:

Revision:

A.301

APPENDIX B

TIA Screening Form



City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	829 Carling Avenue
Description of Location	Located directly north of Carling Avenue, south of Sidney Street, and west of Preston Street
Land Use Classification	Residential apartments, ground floor retail
Development Size (units)	396 dwellings
Development Size (m²)	337 m ² (3,628 ft ²) GFA retail
Number of Accesses and Locations	One proposed access to Sidney Street
Phase of Development	1
Buildout Year	2028

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 m²
Industrial	5,000 m²
Fast-food restaurant or coffee shop	100 m ²
Destination retail	1,000 m²
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> Trigger is satisfied.



3. Location Triggers

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

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

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

4. Safety Triggers

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

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

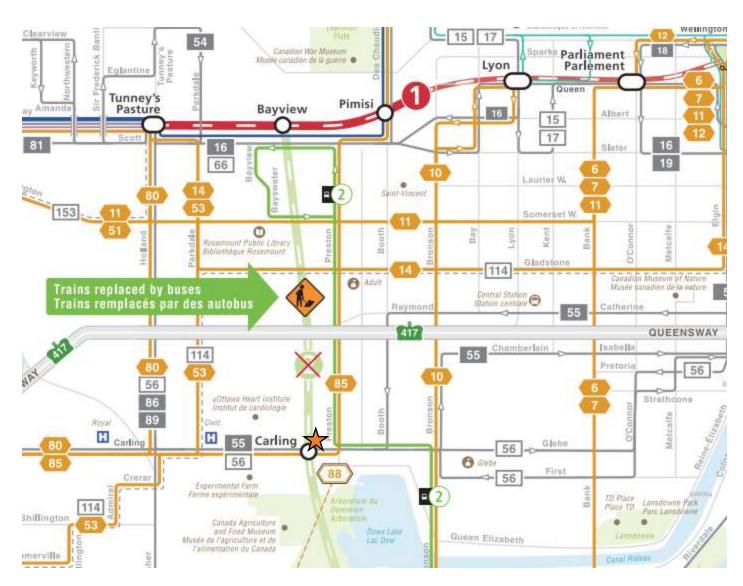
5. Summary

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

If none of the triggers are satisfied, <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 Maps



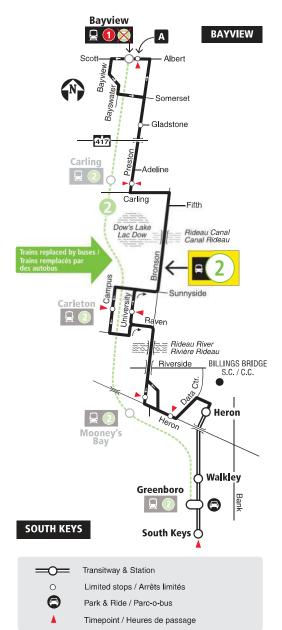


Subject Site



Bus service during O-Train Line 2 expansion

Service d'autobus durant le prolongement de la Ligne 2 de l'O-Train



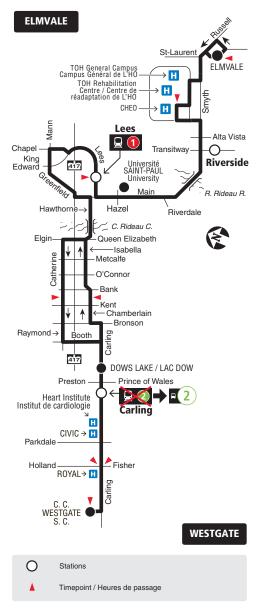
2020.09





Local

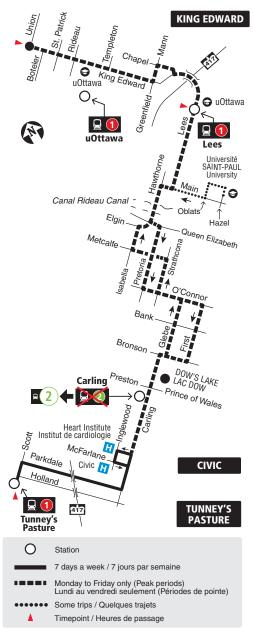
7 days a week / 7 jours par semaine





7 days a week / 7 jours par semaine

Local



2021.06







7 days a week / 7 jours par semaine

All day service Service toute la journée



O Station

▲ Timepoint / Heures de passage

2020.04



Joshua Audia

Subject: FW: 829 Carling Avenue - Request for Transit Data

From: Rathwell, Graham <graham.rathwell@ottawa.ca>

Sent: Friday, January 28, 2022 10:31 AM

To: Joshua Audia < j.audia@novatech-eng.com>

Subject: RE: 829 Carling Avenue - Request for Transit Data

Hi Josh, apologies for the delay.

We have been discussing internally what exactly we would want to see from a Line 2 capacity analysis. Given that the development would be completed after Line 2 is reopened, one factor to consider is that pre-closure ridership data would need to be compared to the higher capacity available with the new Line 2 trains. However, we don't believe this would be a useful comparison because the nature of Line 2 is also changing: the line is expected to draw new ridership due to new stations along the existing alignment plus new stations along the extended southern alignment.

Ridership projections were made to account for these differences as part of the Stage 2 South planning process. Unfortunately, we are currently unable to share these as they are held as confidential information by the Stage 2 office. Without this information I don't think it makes sense to ask you for a Line 2 capacity analysis.

Here is what I would like to see: distribute the site-generated transit trips among the bus stops and the O-Train station. Match them to the appropriate stops, routes, and directions based on the destinations that they serve. The trip distribution values from Section 3.1.2 of the TIA can be used as a guide, or a different distribution can be presented with some justification. As long as it seems reasonable, for example:

- Trips to the north split between Route 56 WB, Route 85 NB, and Line 2 NB
- Trips to the south assigned to Line 2 SB
- Trips to the east split between Route 55 EB, Route 56 EB, and Line 2 NB (with assumed connection to Line 1 at Bayview Station to continue east).
- Trips to the west split between Route 55 WB, Route 85 WB, and Line 2 NB (with assumed connection to Line 1 at Bayview Station to continue west).

Then, add the new transit trips to the bus stop data below and comment on any capacity concerns for bus routes. For Line 2, please just report the number of new transit trips by direction and time period (AM vs PM peak period) - no comments regarding capacity are needed.

Please let me know if there are any questions.

From: Rathwell, Graham

Sent: January 19, 2022 4:02 PM

To: Joshua Audia < j.audia@novatech-eng.com >

Subject: RE: 829 Carling Avenue - Request for Transit Data

Hi Josh,

The requested bus stop data is shown in the table below. Data for Line 2 at Carling Station is taking a bit longer to prepare but I expect to be able to share it next week. The below data were 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.

Stop No.	Location	Route (Direction)		AM (6:00-9:00)		PM (15:00-18:00)			24-HR			
				Boardings	Alightings	Avg Load at Departure	Boardings	Alightings	Avg Load at Departure	Boardings	Alightings	Avg Load at Departure
#2397	Preston / Carling	85	WB	5	24	22	21	6	20	43	42	15
#6655	Preston / Adeline	85	WB	0	5	23	1	7	20	2	18	15
#6657	Preston / Carling	85	EB	27	32	22	20	7	19	68	64	15
	Carling / O-Train Station	55	EB	9	22	29	4	32	15	19	106	16
#7369		56	EB	4	4	6	2	11	11	9	19	8
		85	EB	8	70	22	9	51	18	35	235	15
#8013	Carling / Norfolk	55	WB	13	24	20	48	3	22	76	40	16
		56	WB	0	14	10	4	1	16	3	17	10
	Carling / O-Train Station	55	WB	35	6	23	30	5	28	103	17	18
#8014		56	WB	8	5	11	12	5	16	24	12	11
		85	WB	29	10	23	86	24	27	257	69	18
#8023	Carling / Preston	55	EB	2	21	27	6	9	14	18	39	16
		56	EB	1	1	7	5	2	12	6	6	9

Please let me know if there are any questions. I will follow-up with the Carling Station Line 2 data as soon as it is ready.

Thank you,

Graham Rathwell

Transit Planner, Network Service Design Service Planning Branch Transit Services Department

APPENDIX D

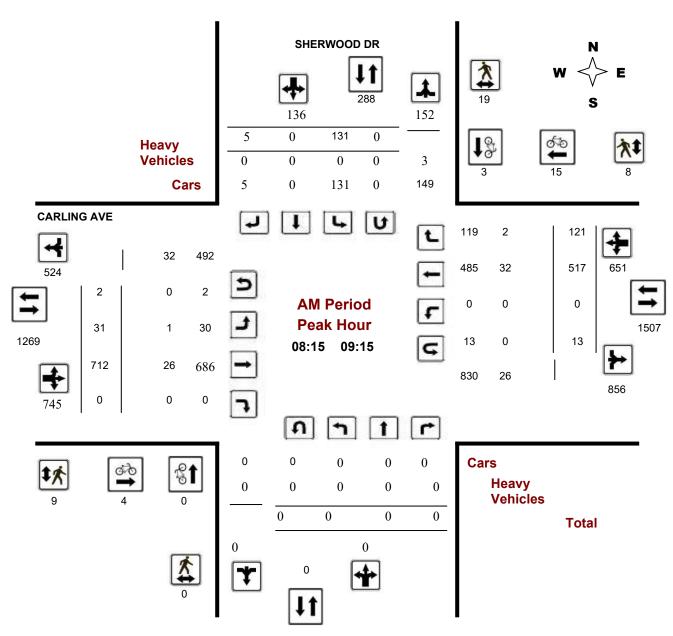
Traffic Count Data



Turning Movement Count - Peak Hour Diagram

CARLING AVE @ SHERWOOD DR

Survey Date:Thursday, August 25, 2016WO No:36249Start Time:07:00Device:Miovision



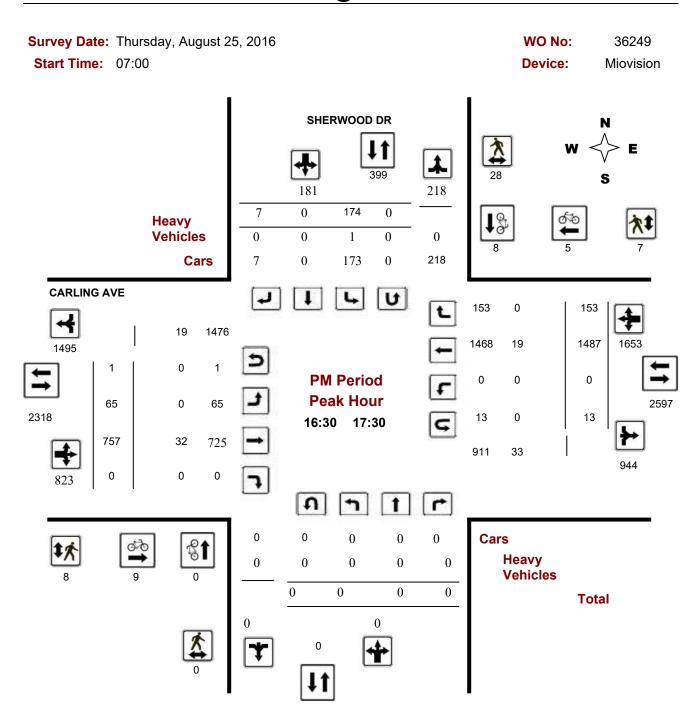
Comments

2019-Feb-06 Page 1 of 4



Turning Movement Count - Peak Hour Diagram

CARLING AVE @ SHERWOOD DR



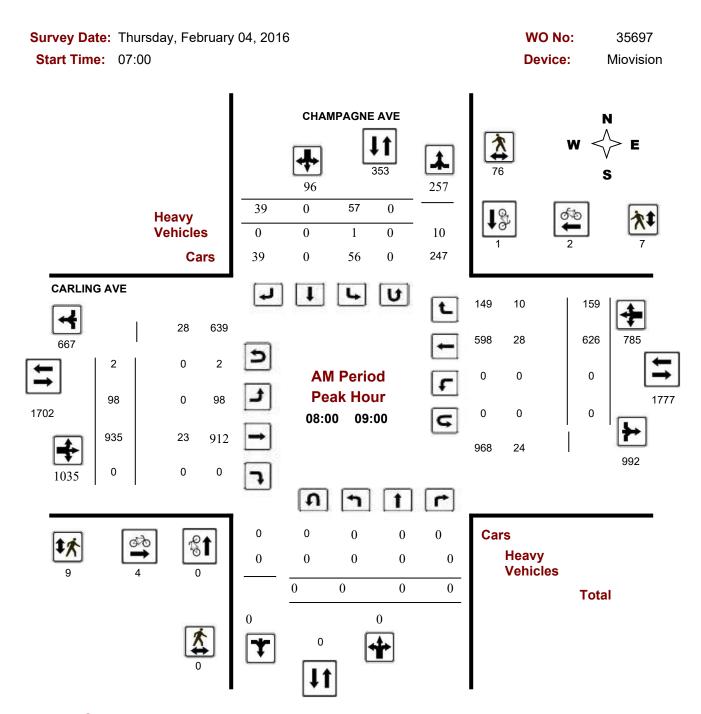
Comments

2019-Feb-06 Page 4 of 4



Turning Movement Count - Peak Hour Diagram

CARLING AVE @ CHAMPAGNE AVE



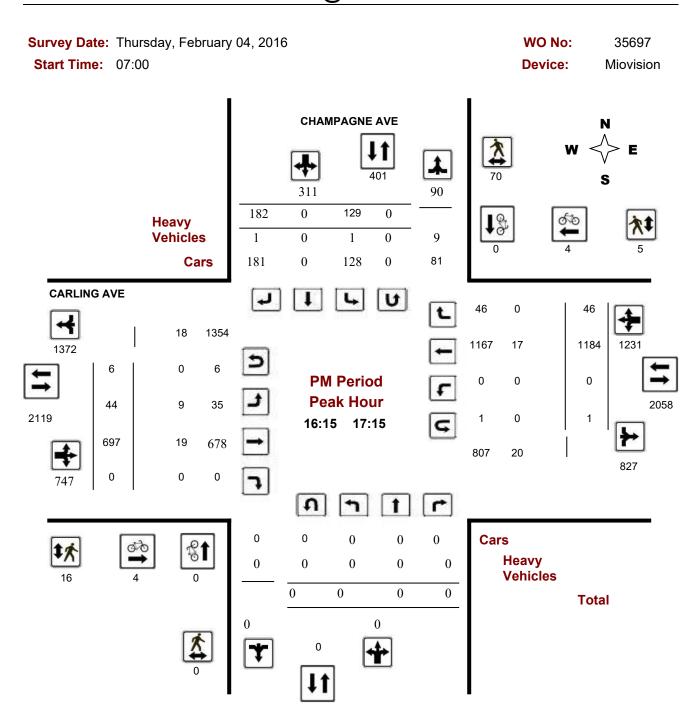
Comments

2019-Feb-06 Page 1 of 4



Turning Movement Count - Peak Hour Diagram

CARLING AVE @ CHAMPAGNE AVE



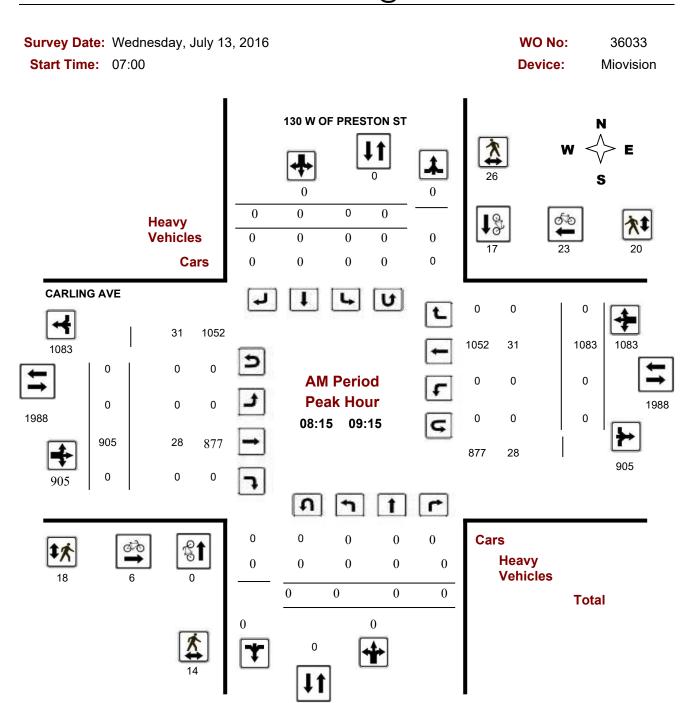
Comments

2019-Feb-06 Page 4 of 4



Turning Movement Count - Peak Hour Diagram

130 W OF PRESTON ST @ CARLING AVE



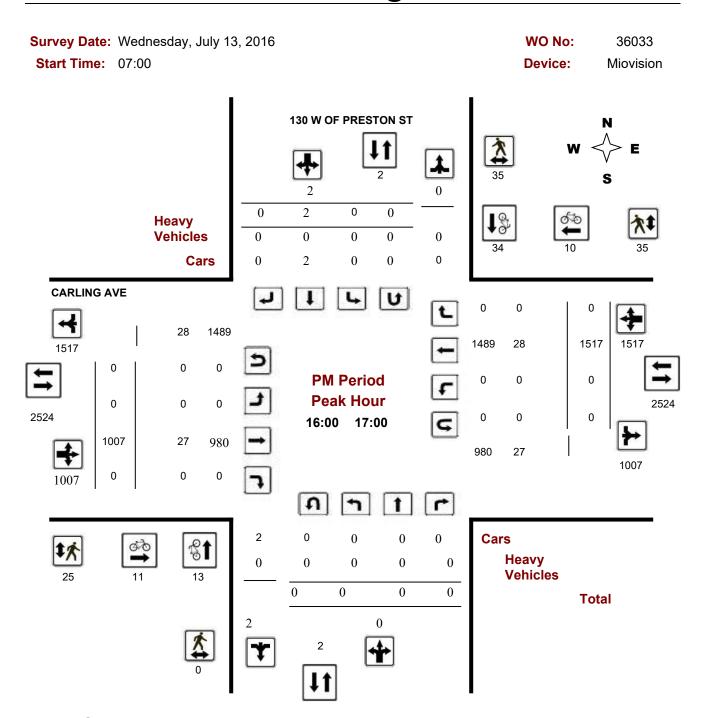
Comments INTERSECTION: CARLING AVE 130M WEST OF PRESTON ST

2021-Feb-09 Page 1 of 3



Turning Movement Count - Peak Hour Diagram

130 W OF PRESTON ST @ CARLING AVE



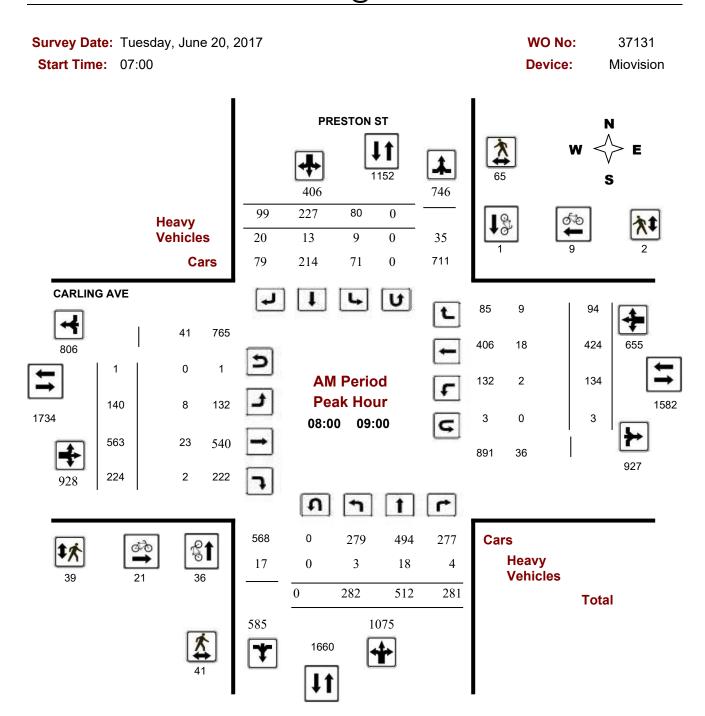
Comments INTERSECTION: CARLING AVE 130M WEST OF PRESTON ST

2021-Feb-09 Page 3 of 3



Turning Movement Count - Peak Hour Diagram

CARLING AVE @ PRESTON ST



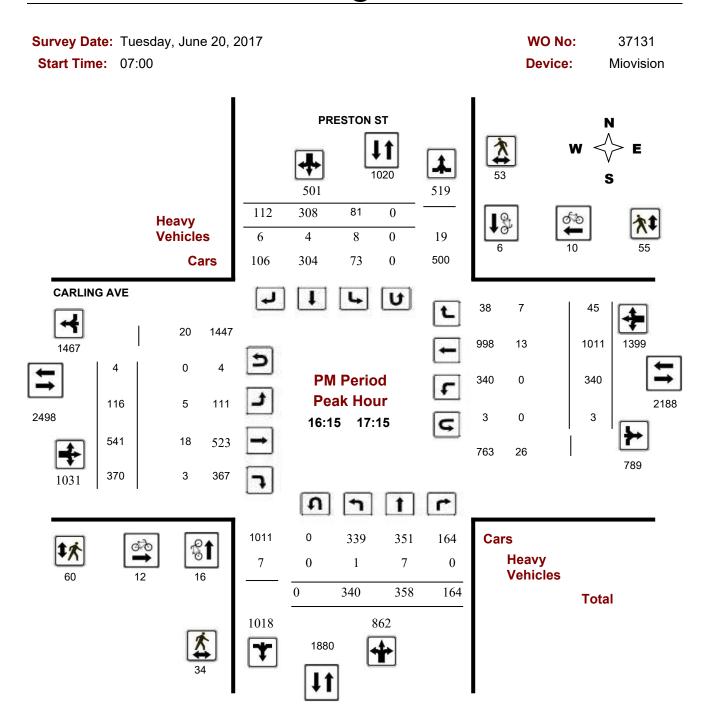
Comments

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Turning Movement Count - Peak Hour Diagram

CARLING AVE @ PRESTON ST



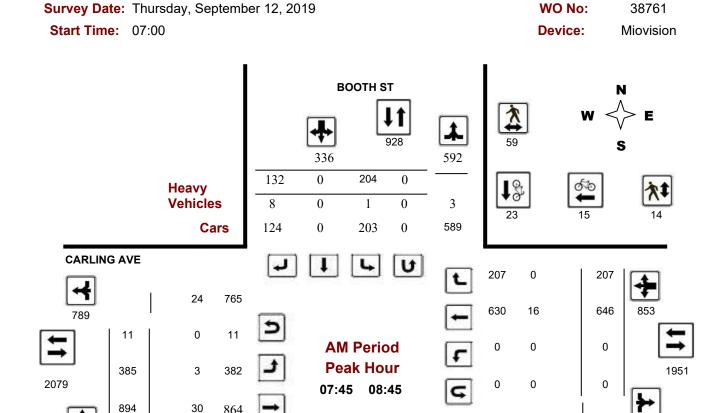
Comments

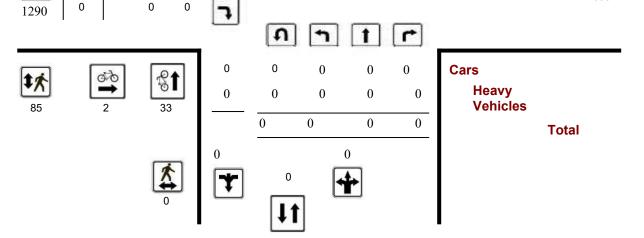
2019-Feb-06 Page 4 of 4



Turning Movement Count - Peak Hour Diagram

BOOTH ST @ CARLING AVE





1067

31

1098

Comments

0

1290

864

0

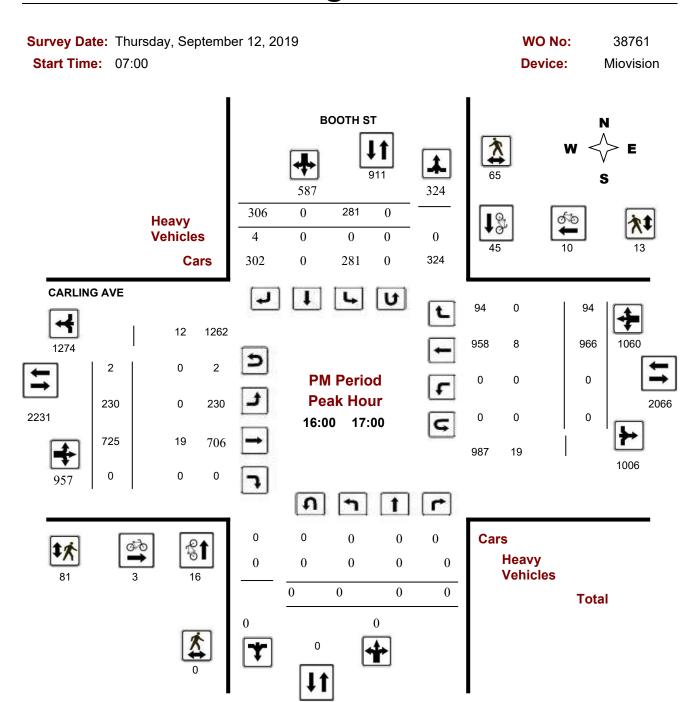
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2021-Feb-09 Page 1 of 3



Turning Movement Count - Peak Hour Diagram

BOOTH ST @ CARLING AVE



Comments

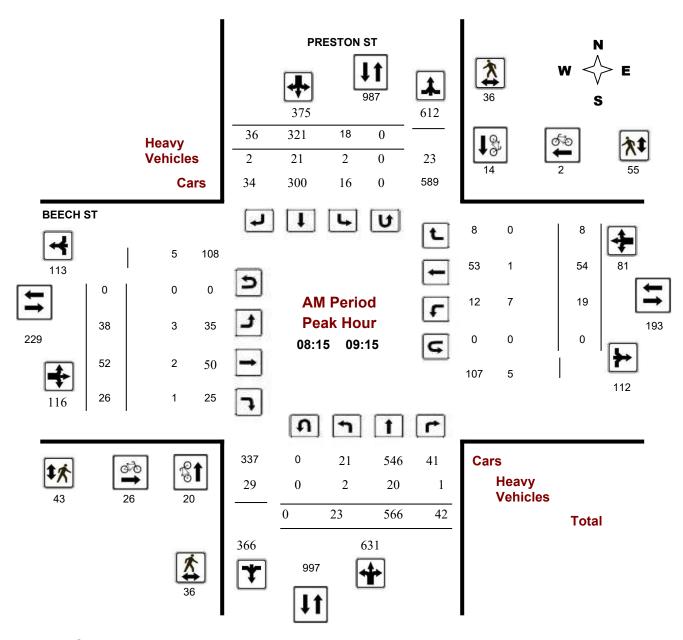
2021-Feb-09 Page 3 of 3



Turning Movement Count - Peak Hour Diagram

BEECH ST @ PRESTON ST





Comments

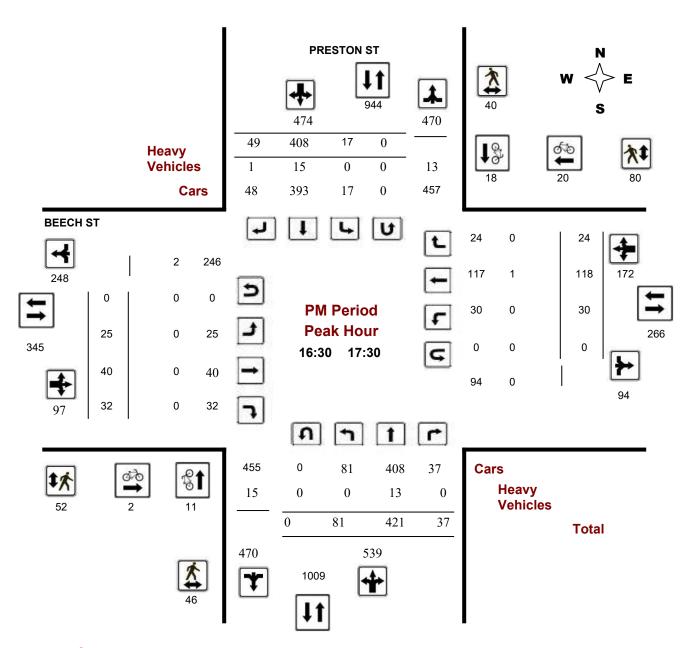
2019-Feb-06 Page 1 of 4



Turning Movement Count - Peak Hour Diagram

BEECH ST @ PRESTON ST





Comments

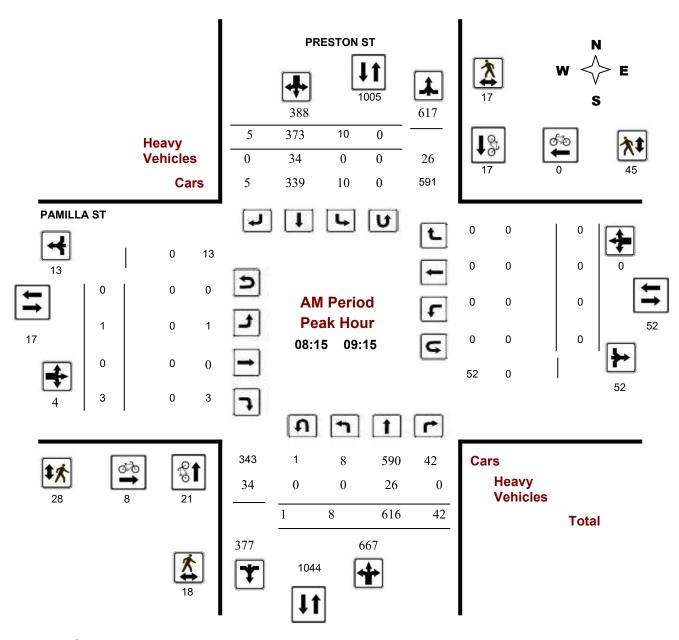
2019-Feb-06 Page 4 of 4



Turning Movement Count - Peak Hour Diagram

PAMILLA ST @ PRESTON ST





Comments

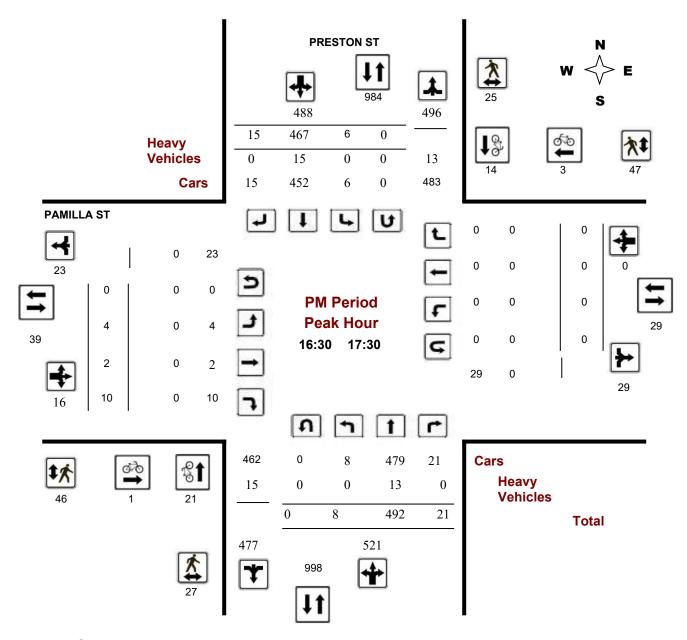
2021-Feb-09 Page 1 of 3



Turning Movement Count - Peak Hour Diagram

PAMILLA ST @ PRESTON ST





Comments

2021-Feb-09 Page 3 of 3

Recorded Traffic Volumes

Street 1 Preston Street

Street 2 Adeline Stret

Road Conditions wet

Date March 8, 2012

Day Name Thursday

Start Time 07:30

Number of Hours 4

TIME		BOUND API		SOUTHBO	UND APPR PRESTON	OACH ON	EASTBOU	ND APPRO	DACH ON	WESTBOU	ND APPRO	OACH ON	
TIIVIE	LT	ST	RT	LT	ST	RT	LT	ST	RT	LT	ST	RT	
0730-0745	1	N/A	13	4	N/A	1	0	0	0	1	0	3	
0745-0800	4	N/A	12	2	N/A	3	0	1	0	3	2	4	
0800-0815	3	N/A	12	8	N/A	5	1	1	6	3	0	2	
0815-0830	0	N/A	18	2	N/A	4	3	0	2	3	0	4	1 AM
0830-0845	4	N/A	24	13	N/A	3	4	0	2	3	3	6	PEAK
0845-0900	² q	N/A	30	225	N/A	3/5	19	0,	1 //	1 10	² 5	5,7]
0900-0915	0	N/A	19	2	N/A	4	1	0	3	3	1	3	
0915-0930	1	N/A	12	2	N/A	4	2	0	4	3	1	4	
SUB TOTAL	15	0	140	35	0	27	12	2	18	20	9	31	
1530-1545	2	N/A	5	3	N/A	1	1	1	2	1	0	3	
1545-1600	1	N/A	7	2	N/A	1	1	0	4	1	0	3	
1600-1615	0	N/A	8	1	N/A	1	0	0	2	5	0	2	1
1615-1630	3	N/A	8	1	N/A	1	0	2	4	3	0	1	1 PM
1630-1645	4	N/A	12	4	N/A	1	2	1	2	3	0	2	I PM PEAK
1645-1700	0 -	N/A	12	5	N/A	² 5	24	1	19	3	² 2	38	ل
1700-1715	07	N/A	0	0	N/A	0	0	0	0	0	0	0	
1715-1730	0	N/A	0	0	N/A	0	0	0	0	0	0	0	
SUB TOTAL	10	0	52	16	0	7	6	5	15	16	2	14	
TOTAL	25	0	192	51	0	34	18	7	33	36	11	45	

DIRECTIONAL TRAFFIC FLOW

Intersection:	Peston	at _Sid	ney	
DATE: Day:	2 Month: March	Year: 2011	_ Day of Week:	Wednesday
Observer: K	yle Delaney	Weather: Clou	ıdy	
		Chkd by:	Date:	
TIME PERIOD Instruc	: From: 7 : 30 etions: 1) Use tally marks to in 2) Use one sheet for each	dicate vehicles.	8 : 30 d.	N
	27		Pass. Vehicles Trks Bus Street Name: Preston	
Street Name: Sidney IS Trks Pass. Vehicles	J J s		D R C	
5			Ī	
	→ •		ø←	
			- -	
10		s 	R /Pa	Street Name:
<i>Delcan</i>	Prestron Bus Trks Pass. Vehicles 65			

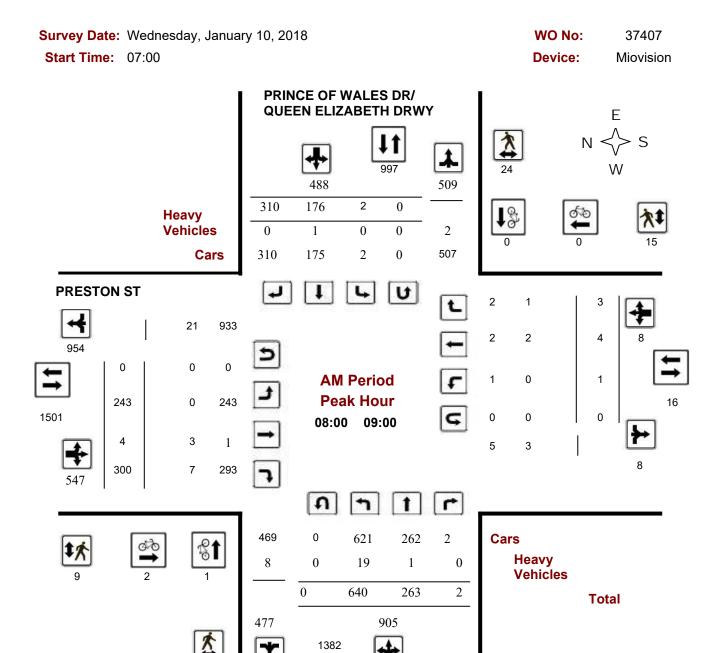
DIRECTIONAL TRAFFIC FLOW

Intersection: <u>I</u>	Peston	at Sid	ney	
DATE: Day: 1	Month: March	Year: _2011	_ Day of Week:	Tuesday
Observer: Kyle	Delaney	Weather: Clea	ır	
		Chkd by:	Date:	
TIME PERIOD: F	rom: <u>4 : 00</u> ons: 1) Use tally marks to in 2) Use one sheet for eac	dicate vehicles.	5 : 00 d.	N
	27		Pass. Vehicles Trks Bus Street Name: Preston	
Street Name: Sidney Bus Trks Pass Vehicles	J R s		→ R C	
17		_	- L	
	→ Ø		ø←	
	<u> </u>		r •	
18		\$ 1	R /Pa	Street Name:
Street Name:	Bus Trks Pass. Vehicles			



Turning Movement Count - Peak Hour Diagram

PRESTON ST @ PRINCE OF WALES DR/QUEEN ELIZABET



Comments

2021-Feb-09 Page 1 of 3

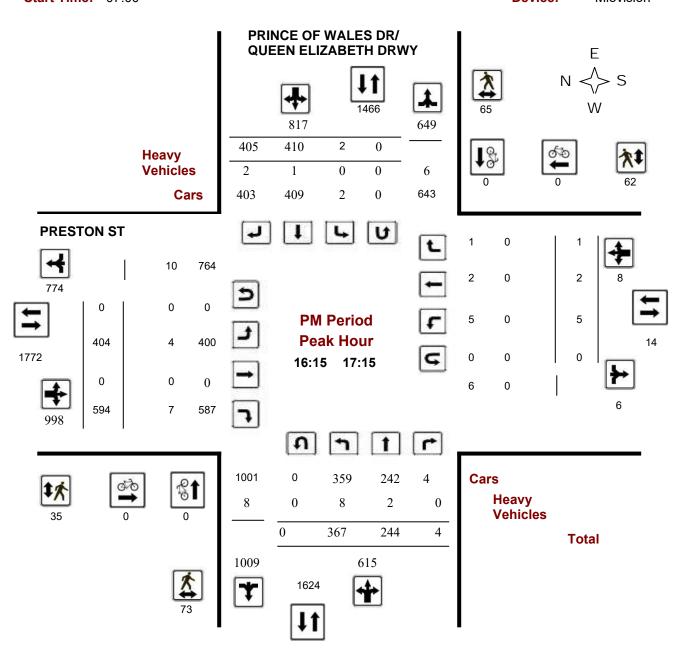
11



Turning Movement Count - Peak Hour Diagram

PRESTON ST @ PRINCE OF WALES DR/QUEEN ELIZABET

Survey Date: Wednesday, January 10, 2018 WO No: 37407
Start Time: 07:00 Device: Miovision



Comments

2021-Feb-09 Page 3 of 3

APPENDIX E

Collision Records



Collision Details Report - Public Version

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

Location: 130 W OF PRESTON ST @ CARLING AVE

Traffic Control: Traffic signal Total Collisions: 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2018-Apr-12, Thu,10:02	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-21, Mon,18:31	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Bicycle	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Cyclist	
2019-May-07, Tue,11:42	Clear	Angle	Non-fatal injury	Dry	West	Slowing or stoppin	g Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2019-May-16, Thu,18:02	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other	
					North	Going ahead	Bicycle	Other motor vehicle	

Location: BEECH ST @ PRESTON ST

Traffic Control: Traffic signal Total Collisions: 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvei	r Vehicle type	First Event	No. Ped
2015-Jan-26, Mon,12:42	Clear	Other	P.D. only	Dry	North	Reversing	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Apr-12, Sun,19:59	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-13, Thu,11:25	Clear	Turning movement	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Oct-01, Sun,15:15	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-24, Tue,14:26	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

February 11, 2021 Page 1 of 15



Collision Details Report - Public Version

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

Location: BEECH ST @ PRESTON ST

Traffic Control: Traffic signal Total Collisions: 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2019-Mar-28, Thu,16:20	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	
2019-Oct-24, Thu,20:49	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: BOOTH ST @ CARLING AVE

Traffic Control: Traffic signal Total Collisions: 20

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2015-Apr-02, Thu,16:29	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-May-06, Wed,10:23	Clear	Rear end	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jun-30, Tue,16:26	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jul-23, Thu,10:34	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Truck and trailer	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Oct-27, Thu,16:41	Snow	Turning movement	P.D. only	Wet	East	Turning left	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-10, Tue,17:30	Snow	Turning movement	P.D. only	Loose snow	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-18, Thu,17:27	Snow	Rear end	P.D. only	Wet	West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-07, Thu,16:17	Clear	Turning movement	P.D. only	Dry	East	Turning left	Passenger van	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

February 11, 2021 Page 2 of 15



Collision Details Report - Public Version

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

Location: BOOTH ST @ CARLING AVE

Traffic Control: Traffic signal Total Collisions: 20

Trainic Control. Tra	ino oignai						Total Comsions.	20	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2018-Jun-21, Thu,15:48	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-13, Fri,15:32	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2018-Sep-19, Wed,10:51	Clear	Sideswipe	P.D. only	Dry	South	Unknown	Automobile, station wagon	Other motor vehicle	0
					South	Unknown	Automobile, station wagon	Other motor vehicle	
2018-Sep-28, Fri,16:30	Clear	Rear end	P.D. only	Dry	West	Going ahead	School bus	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-18, Thu,07:03	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-24, Thu,14:20	Clear	Sideswipe	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-14, Thu,12:33	Clear	Turning movement	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-May-22, Wed,06:15	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	
2019-Jun-15, Sat,17:53	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-18, Tue,22:00	Clear	Turning movement	P.D. only	Dry	West	Making "U" turn	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-01, Sun,10:44	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

February 11, 2021 Page 3 of 15



Collision Details Report - Public Version

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

Location: BOOTH ST @ CARLING AVE

Traffic Control: Traffic signal Total Collisions: 20

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2019-Dec-17, Tue,17:46	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: CARLING AVE @ CHAMPAGNE AVE

Traffic Control: Traffic signal Total Collisions: 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2015-Feb-02, Mon,11:48	Snow	Angle	P.D. only	Packed snow	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Mar-27, Fri,08:25	Snow	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jun-16, Tue,21:15	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	g Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Oct-05, Wed,12:52	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2017-Aug-15, Tue,16:57	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-15, Mon,16:15	Clear	Sideswipe	P.D. only	Packed snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2018-Nov-24, Sat,13:45	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	
2019-May-15, Wed,08:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

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

Location: CARLING AVE @ CHAMPAGNE AVE

Traffic Control: Traffic signal Total Collisions: 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2019-Sep-03, Tue,21:10	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Bus (other)	Other motor vehicle	0
					West	Going ahead	Motorcycle	Other motor vehicle	
2019-Dec-04, Wed,16:28	Snow	Rear end	P.D. only	Wet	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-28, Sat,14:25	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Passenger van	Other motor vehicle	

Location: CARLING AVE @ PRESTON ST

Traffic Control: Traffic signal Total Collisions: 56

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2015-Jan-16, Fri,15:45	Clear	Rear end	Non-fatal injury	Loose snow	West	Turning right	Passenger van	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Mar-19, Thu,19:32	Clear	Sideswipe	P.D. only	Slush	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Apr-15, Wed,09:04	Clear	Rear end	P.D. only	Dry	East	Unknown	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Passenger van	Other motor vehicle	
2015-Apr-29, Wed,20:00	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2015-May-12, Tue,18:50	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	
2015-May-26, Tue,23:49	Clear	SMV other	P.D. only	Dry	East	Reversing	Municipal transit bus	Concrete guide rail	0
2015-Jun-06, Sat,21:44	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Bicycle	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Cyclist	

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Collision Details Report - Public Version

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

Location: CARLING AVE @ PRESTON ST

Traffic Control: Traffic signal Total Collisions: 56

Trainic Control. Tra	illo olgilal						rotal completions.	50	
oate/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2015-Jun-23, Tue,23:02	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Intercity bus	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-24, Wed,15:39	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Municipal transit bus	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
					West	Slowing or stopping	g Passenger van	Other motor vehicle	
2015-Jul-30, Thu,19:39	Clear	Angle	P.D. only	Dry	North	Turning right	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2015-Aug-17, Mon,14:00	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Changing lanes	Automobile, station wagon	Other motor vehicle	
2015-Sep-22, Tue,16:56	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Oct-05, Mon,06:19	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Pick-up truck	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2015-Oct-17, Sat,13:21	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	g Pick-up truck	Other motor vehicle	
2016-May-18, Wed,23:39	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jul-06, Wed,08:39	Clear	Turning movement	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2016-Jul-23, Sat,23:13	Clear	Rear end	P.D. only	Dry	West	Unknown	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-09, Wed,18:00	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

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

Location: CARLING AVE @ PRESTON ST

Traffic Control: Traffic signal Total Collisions: 56

Trainic Control. Tra	ine signal								
oate/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2017-Feb-10, Fri,13:45	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-Mar-06, Mon,16:53	Snow	Angle	P.D. only	Ice	South	Overtaking	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Mar-21, Tue,18:10	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-26, Wed,16:44	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
					West	Stopped	Passenger van	Other motor vehicle	
2017-Apr-27, Thu,16:07	Clear	Rear end	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Pick-up truck	Other motor vehicle	
2017-Jun-26, Mon,08:54	Clear	Turning movement	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2017-Jul-29, Sat,00:57	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-14, Sat,15:47	Clear	SMV other	P.D. only	Dry	South	Turning left	Automobile, station wagon	Pole (utility, power)	0
2017-Nov-29, Wed,07:36	Clear	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-01, Fri,14:10	Rain	SMV other	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Pedestrian	1
2018-Jan-12, Fri,10:50	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-Jan-15, Mon,08:54	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

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

Location: CARLING AVE @ PRESTON ST

Traffic Control: Traffic signal Total Collisions: 56

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2018-Jan-26, Fri,16:00	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-06, Tue,20:44	Clear	Rear end	Non-fatal injury	Slush	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-01, Thu,14:30	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	
2018-Mar-17, Sat,15:00	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-Mar-21, Wed,18:00	Clear	Sideswipe	P.D. only	Dry	South	Overtaking	Automobile, station wagon	Other motor vehicle	0
					South	Overtaking	Automobile, station wagon	Other motor vehicle	
2018-Apr-12, Thu,17:12	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	
2018-Jun-07, Thu,16:51	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
2018-Jun-14, Thu,06:57	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Sep-05, Wed,16:47	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2018-Sep-21, Fri,20:22	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-05, Wed,14:47	Snow	Sideswipe	P.D. only	Slush	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

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

Location: CARLING AVE @ PRESTON ST

Traffic Control: Traffic signal Total Collisions: 56

Trainic Control. Tra	ino oigriai						Total Comstons	. 50	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2019-Jan-12, Sat,15:14	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-27, Wed,08:20	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	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-15, Mon,15:30	Clear	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-03, Mon,10:40	Rain	Other	P.D. only	Wet	South	Reversing	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-04, Tue,08:55	Clear	Rear end	P.D. only	Dry	East	Going ahead	Delivery van	Other motor vehicle	0
					East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
2019-Jun-28, Fri,15:07	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-16, Tue,20:45	Clear	Sideswipe	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-28, Sun,17:30	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jul-30, Tue,15:06	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	
2019-Sep-03, Tue,16:00	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-Oct-25, Fri,09:03	Clear	Other	Non-fatal injury	Dry	East	Turning right	Unknown	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	

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Collision Details Report - Public Version

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

Location: CARLING AVE @ PRESTON ST

Traffic Control: Traffic signal Total Collisions: 56

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2019-Nov-25, Mon,17:30	Rain	Rear end	Non-fatal injury	Wet	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-29, Fri,16:19	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Truck - open	Other motor vehicle	
2019-Dec-04, Wed,09:20	Snow	Rear end	P.D. only	Ice	East	Turning left	Automobile, station wagon	Skidding/sliding	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-06, Fri,16:09	Clear	SMV other	Non-fatal injury	Wet	North	Turning left	Automobile, station wagon	Pedestrian	1

Location: CARLING AVE @ SHERWOOD DR

Traffic Control: Traffic signal Total Collisions: 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2015-Feb-28, Sat,10:25	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jan-05, Tue,09:01	Clear	Rear end	P.D. only	Ice	West	Slowing or stoppin	g Delivery van	Other motor vehicle	0
					West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	
2019-Jan-22, Tue,12:30	Clear	Rear end	P.D. only	Packed snow	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-09, Tue,16:57	Snow	Rear end	P.D. only	Loose snow	West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-24, Fri,09:30	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-31, Thu,16:19	Rain	Rear end	Non-fatal injury	Wet	East	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

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

Location: CARLING AVE @ SHERWOOD DR

Traffic Control: Traffic signal Total Collisions: 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2019-Nov-16, Sat,06:45	Clear	Turning movement	Non-fatal injury	Dry	West East	Going ahead Turning left	Automobile, station wagon Automobile, station wagon		0
2019-Dec-04, Wed,09:27	Snow	Other	P.D. only	Wet	East East	Slowing or stoppin	g Automobile, station wagon g Pick-up truck	Curb Other motor vehicle	0

Location: PAMILLA ST @ PRESTON ST

Traffic Control: Traffic signal Total Collisions: 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2015-May-13, Wed,15:06	Clear	Turning movement	P.D. only	Dry	North	Pulling away from shoulder or curb	Pick-up truck	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2016-Dec-31, Sat,22:11	Snow	Approaching	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Feb-25, Sat,15:11	Rain	Angle	P.D. only	Wet	South	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Nov-20, Mon,14:15	Clear	SMV other	Non-fatal injury	Dry	North	Going ahead	Unknown	Pedestrian	1
2017-Nov-22, Wed,10:17	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-26, Tue,16:30	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
2019-Jan-28, Mon,15:35	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

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

Location: PRESTON ST @ PRINCE OF WALES DR/QUEEN ELIZABET

Traffic Control: Traffic signal Total Collisions: 26

Trainic Gontrol. Tra	illo olgilal						Total Combions	20	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2015-Feb-26, Thu,09:52	Clear	Rear end	P.D. only	Dry	East	Turning left	Delivery van	Other motor vehicle	0
					East	Turning left	Truck and trailer	Other motor vehicle	
2015-Apr-13, Mon,15:31	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-May-08, Fri,16:17	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-09, Tue,19:25	Rain	Other	P.D. only	Wet	East	Reversing	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2015-Oct-28, Wed,23:24	Rain	Angle	P.D. only	Wet	South	Turning right	Unknown	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Nov-12, Thu,13:36	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Nov-20, Fri,19:20	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-26, Sat,18:13	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Passenger van	Other motor vehicle	
2017-Feb-23, Thu,18:13	Clear	Rear end	P.D. only	Wet	West	Turning right	Unknown	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Apr-08, Sat,14:47	Clear	Rear end	P.D. only	Dry	South	Turning right	Unknown	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Aug-03, Thu,11:25	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

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

Location: PRESTON ST @ PRINCE OF WALES DR/QUEEN ELIZABET

Traffic Control: Traffic signal Total Collisions: 26

Trainic Control. Tra	o orginal				Total Comsions. 20						
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped		
2017-Aug-04, Fri,13:07	Clear	Angle	P.D. only	Dry	East	Going ahead	Bicycle	Other motor vehicle	0		
					South	Going ahead	Motorcycle	Cyclist			
2017-Sep-12, Tue,09:20	Clear	Turning movement	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0		
					South	Turning left	Automobile, station wagon	Other motor vehicle			
2017-Oct-02, Mon,12:45	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			
2017-Nov-03, Fri,15:22	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0		
					West	Going ahead	Pick-up truck	Other motor vehicle			
2017-Dec-21, Thu,16:00	Clear	Rear end	P.D. only	Wet	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0		
					West	Stopped	Automobile, station wagon	Other motor vehicle			
2018-Feb-01, Thu,11:00	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Bicycle	Other motor vehicle	0		
					North	Going ahead	Automobile, station wagon	Cyclist			
2018-Apr-09, Mon,09:23	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Bicycle	Other motor vehicle	0		
					West	Turning right	Automobile, station wagon	Cyclist			
2018-Dec-21, Fri,21:16	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0		
					West	Going ahead	Automobile, station wagon	Other motor vehicle			
2019-May-16, Thu,17:55	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0		
					South	Stopped	Automobile, station wagon	Other motor vehicle			
2019-Jul-02, Tue,18:27	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0		
					East	Going ahead	Automobile, station wagon	Other motor vehicle			
2019-Jul-04, Thu,11:15	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0		
					South	Turning right	Automobile, station wagon	Other motor vehicle			
2019-Aug-26, Mon,07:45	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			

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Collision Details Report - Public Version

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

Location: PRESTON ST @ PRINCE OF WALES DR/QUEEN ELIZABET

Traffic Control: Traffic signal Total Collisions: 26

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2019-Oct-17, Thu,18:58	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-26, Sat,15:52	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2019-Nov-14, Thu,09:50	Snow	Sideswipe	P.D. only	Loose snow	East	Overtaking	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: PRESTON ST @ SIDNEY ST

Traffic Control: Stop sign Total Collisions: 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2015-Jan-16, Fri,16:00	Snow	Angle	P.D. only	Slush	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-May-15, Fri,21:59	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-18, Thu,13:49	Snow	Sideswipe	P.D. only	Slush	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Truck - closed	Other motor vehicle	
2017-Jan-23, Mon,11:14	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Delivery van	Other motor vehicle	
2017-Jun-23, Fri,16:43	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-16, Tue,08:10	Snow	Turning movement	P.D. only	Loose snow	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-07, Wed,15:27	Clear	Angle	P.D. only	Wet	East	Unknown	Automobile, station wagon	Other motor vehicle	0
					South	Unknown	Automobile, station wagon	Other motor vehicle	

February 11, 2021 Page 14 of 15



Collision Details Report - Public Version

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

Location: PRESTON ST @ SIDNEY ST

Traffic Control: Stop sign Total Collisions: 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2019-Jun-28, Fri,16:40	Rain	Rear end	P.D. only	Wet	South	Unknown	Unknown	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2019-Sep-09, Mon,13:30	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	

February 11, 2021 Page 15 of 15

Intersection	Date	Time	Environment	Road Surface	Control	Collision Location	Light	Classification	Impact Type
ADELINE ST @ PRESTON ST	2/17/2016	9:52	01 - Clear	01 - Dry	02 - Stop sign	02 - Intersection related	01 - Daylight	03 - P.D. only	03 - Rear end
ADELINE ST @ PRESTON ST	2/18/2017	12:46	01 - Clear	04 - Slush	02 - Stop sign	03 - At intersection	01 - Daylight	03 - P.D. only	06 - SMV
ADELINE ST @ PRESTON ST	2/12/2017	18:40	03 - Snow	03 - Loose snow	02 - Stop sign	03 - At intersection	07 - Dark	03 - P.D. only	02 - Angle
ADELINE ST @ PRESTON ST	2/8/2017	11:20	01 - Clear	04 - Slush	02 - Stop sign	02 - Intersection related	01 - Daylight	03 - P.D. only	06 - SMV

APPENDIX F

Other Area Developments

OTHER AREA DEVELOPMENTS

17 Aberdeen Street

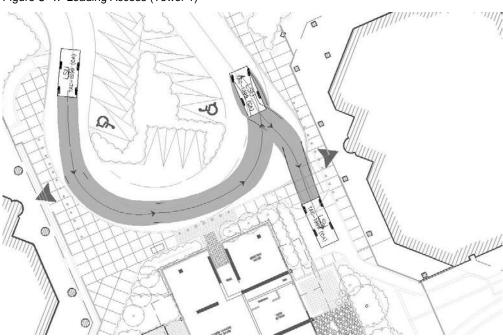


Figure 6-4: Loading Access (Tower 1)

7 Existing Traffic Volumes

Existing (2012) traffic volumes have been obtained from the City of Ottawa. Two-way peak hour traffic volumes on Aberdeen Street are in the order of 130 to 230 vehicles per hour during the weekday morning and afternoon peak hours, respectively. Two-way peak hour traffic volumes on Rochester Street are in the order of 500 to 650 vehicles per hour during the weekday morning and afternoon peak hours, respectively. Both of these roads are well under capacity for their classification of road and number of lanes.

Based on analysis of these volumes, the intersection is operating at a Level of Service 'A' with average delays of 20 seconds on the eastbound approach during the weekday morning peak hour. During the weekday afternoon peak hour, the intersection operates at approximately Level of Service 'A' with average delays of 22 seconds on the eastbound approach. These results are consistent with field observations.

8 Trip Generation

Based on data presented in the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 9th Edition, site generated traffic associated with the proposed development is expected to increase by a maximum of 94 vehicles per hour (80% exiting, 20% entering) and 119 vehicles per hour (35% exiting, 65% entering) during the weekday morning and afternoon peak hours, respectively.

August 2016 10

The vehicular trip generation rates referenced in the Trip Generation Manual are typically for highly suburbanized locations with little to no access to public transit. The ITE rates generally capture roughly 95% of all trips to/from a development. Since auto occupancy is assumed to be in the order of 1.2 people per vehicle, the resulting Person Trip conversion factor is 1.26.

Based on local information available in the 2011 NCR Household Origin-Destination Survey, conducted by the TRANS Committee for the City of Ottawa, the breakdown of trips by transportation mode in Ottawa Inner Area is approximated as follows:

Auto Driver: 33%

Auto Passenger: 10%

Transit: 19%Non-Auto: 39%

The local adjustment factors above therefore indicate that the development will generate approximately 39 vehicles per hour and 49 vehicles per hour during the weekday morning and afternoon peak hours, respectively. It is important to note that these are two-way trips (in and out) and will be distributed amongst each of the four active parking garage ramps. The effect on the adjacent road network is therefore expected to be insignificant.

August 2016 11

OTHER AREA DEVELOPMENTS

552 Booth Street

PARSONS

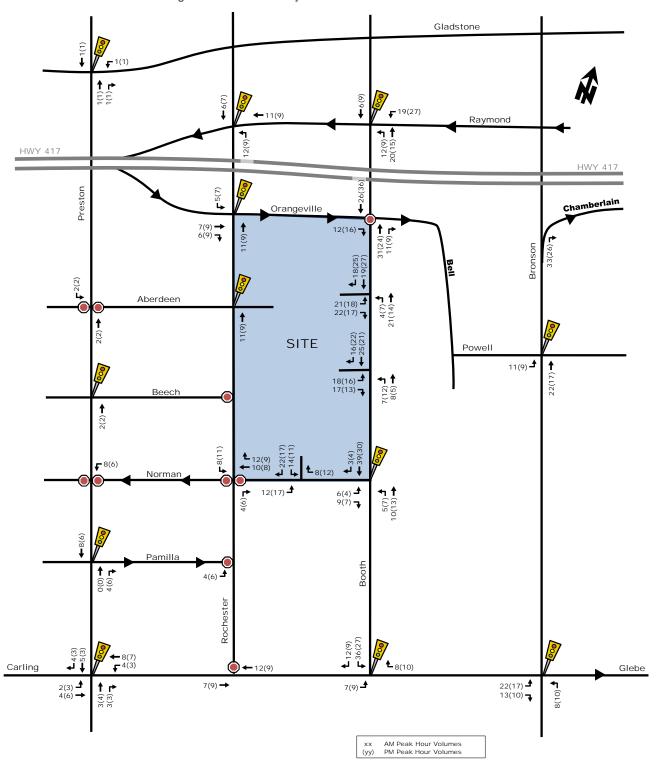


Figure 13: 'New' and 'Pass-by' 2030 Site-Generated Vehicle Traffic

3.2. BACKGROUND NETWORK TRAVEL DEMANDS

3.2.1. TRANSPORTATION NETWORK PLANS

Refer to Section 2.1.2 Planned Conditions.

OTHER AREA DEVELOPMENTS

845 Carling Avenue

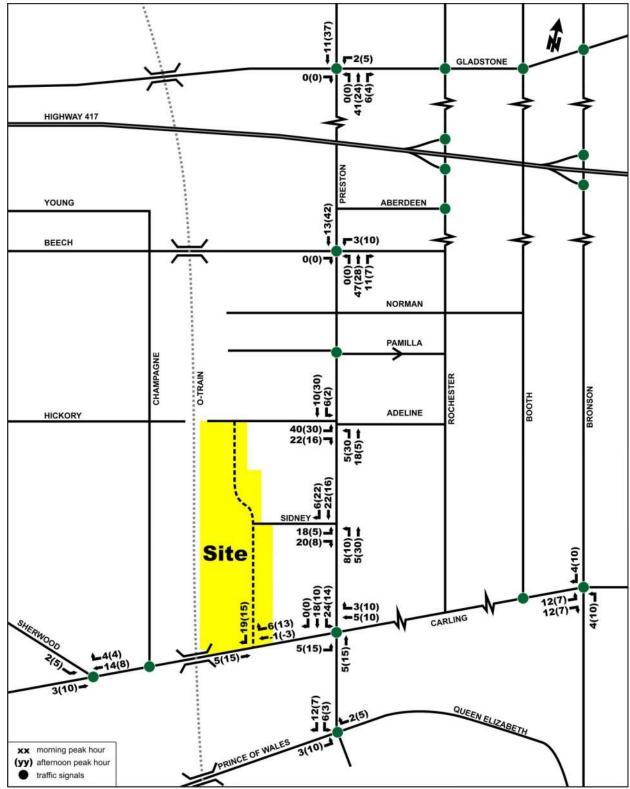


Figure 6: 'New' and 'Pass-by' Site-Generated Traffic Volumes



OTHER AREA DEVELOPMENTS

90 Champagne Avenue

patterns associated with the typical commute (i.e. departing the study area during the AM peak hour, and entering the study area during the PM peak hour). The distribution of site-generated trips can be described as follows:

- 15% to/from the north via Preston Street;
- 20% to/from the south via Preston Street;
- 30% to/from the east via Carling Avenue;
- 5% to/from the east via Beech Street:
- 20% to/from the west via Carling Avenue;
- 5% to/from the west via Sherwood Avenue; and
- 5% to/from the west via Beech Street.

Trips generated by the subject site are shown in **Figure 5**.

5.2 Background Traffic

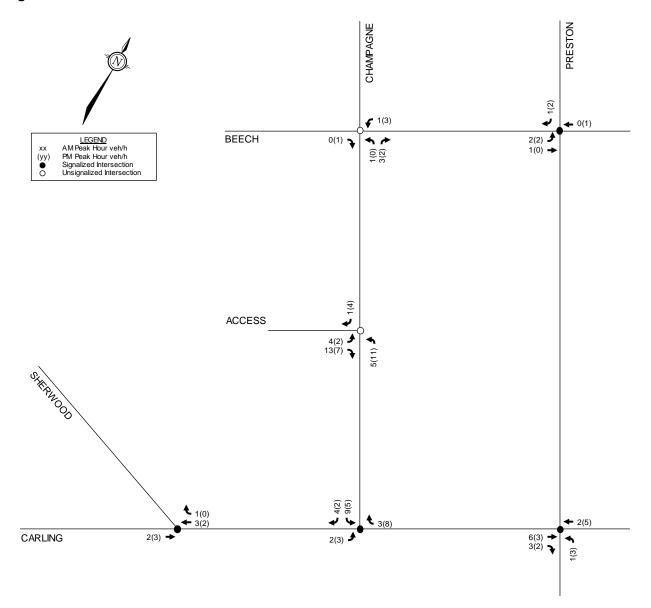
5.2.1 General Background Growth Rate

A review of the City of Ottawa's Strategic Long-Range Model was conducted. Comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes suggests Carling Avenue between Sherwood Drive and Preston Street will not grow significantly, while Preston Street between Carling Avenue and Beech Street will grow at a rate of 1% per annum. A review of City of Ottawa traffic count data at the Carling Avenue/Preston Street intersection from June 2015 and June 2017 suggests the Annual Average Daily Traffic (AADT) at this intersection has not grown significantly over the two years.

Based on the foregoing, no growth rate has been applied to the existing traffic volumes. As described in Section 5.2.2 below, background growth along the study area roadways will be captured by adding traffic generated by other area developments to the background traffic volumes. This approach is consistent with other traffic studies in the area.

Novatech Page 18

Figure 6: Site Generated Traffic Volumes



Novatech Page 19

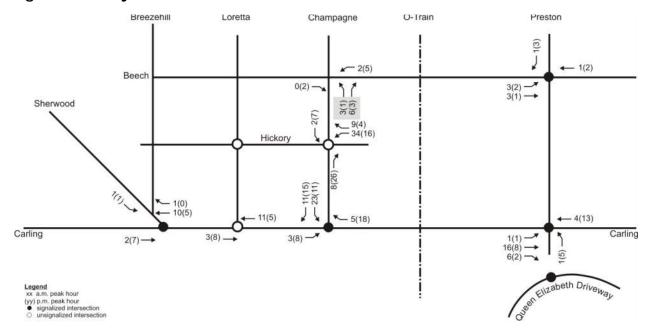
OTHER AREA DEVELOPMENTS

101-105 Champagne Avenue

Table 10: Site-Generated Traffic Summary of Study Area Development Projects Two-way Table (vph)

Development	Proje	Projected Net Traffic Generated vph							
Development	AM Peak	%	PM Peak	%					
320/330 Loretta Avenue (Domicile)	+70	9%	+85	11%					
855 Champagne Avenue (Arnon)	+502	62%	+438	55%					
125 Hickory Street (Mastercraft Starwood)	+147	18%	+174	22%					
100 Champagne Avenue (Domicile)	+40	5%	+50	6%					
101 Champagne Avenue (Ashcroft)	+53	6%	+53	6%					
TOTALS	+812	100%	+800	100%					

Figure 10: Projected Peak Hour Ashcroft Site-Generated Traffic



6.4 Analysis of Projected Future Conditions

The combined site-generated traffic for the five aforementioned projects, superimposed on current volumes (Figure 5), is depicted in Figure 11.

6.4.1 Traffic Signal Warrants

The existing traffic signals at the Carling/Champagne intersection are not warranted based on recent City of Ottawa traffic counts (August: 2009: Appendix A) and were not judged to be warranted based on the projected impact of the Arnon development alone. However, as reported in the CTS for the Mastercraft Starwood proposed development at 125 Hickory Street, the signals were judged to be warranted based on the combined impact of the surrounding developments.



OTHER AREA DEVELOPMENTS

93-105 Norman Street

However, ITE rates were adjusted based on vehicle occupancy and modal splits to develop the Modified Person Trips summarized in Table 5 of the original TB to better reflect the type of area where the subject site is located. The 1.15 vehicle occupancy value and the 10% transit/non-motorized modal share split used to calculate the 1.3 factor are based on recent available census data for the United States.

Given that the Site Plan has been revised, the total person trips have been re-calculated based on the revised number of dwelling units. The following Table 3 includes the total person trips calculated using the method outlined in the original TB and the total person trips calculated using the City's suggested method (outlined above) for the revised Site Plan.

Table 3: Modified Person Trip Generation

Land Use	Data	Units	AM Pe	eak (pei	rsons)	PM Pe	eak (pei	rsons)
Lanu Use	Source	Ullits	In	Out	Total	In	Out	Total
High-Rise Condominium ⁽¹⁾	ITE 232	117 Units	15	65	80	43	27	70
High-Rise Condominium ⁽²⁾	-	117 Units	18	80	98	43	27	70
Original TB Modifie	d Person	Trip Gener	ation					
High-Rise Condominium	ITE 232	159 Units	18	80	98	56	35	91
Note: (1) 1.3 factor to account for typical North American auto occupancy values of approximately 1.15								

and combined transit and non-motorized modal shares of less than 10%.

(2) The suggested rates used were as follows:

1.2 person/unit factor and 0.7 (AM peak) and 0.5 (PM peak) person trip generation rate.

As shown in Table 3, the suggested methodology produces the same or similar results as the methodology outlined in the original TB. As both of the resultant person trip totals are less than or equal to the person trips total from the original TB, the projected Level of Service at study area intersections will be the same or better than the projected Levels of Service summarized in the original report. As such, no additional analysis is required as the original TB did not identify any required changes to the off-site roadway geometry or traffic control.

With regard to peak hour operations for this development, the analysis was performed for the hour during which the adjacent road network experiences the heaviest morning and afternoon traffic volumes. For a residential development it is appropriate to assume that this peak hour analysis will constitute the "worst case" scenario. Should the majority of person traffic from the proposed development travel outside of this peak hour, in terms of traffic operations, the impact would be less outside the peak hour, given there would be fewer vehicles overall on study area roads.

OTHER AREA DEVELOPMENTS

500 Preston Street

Figure 5: "Net" Increase in Site-Generated Traffic

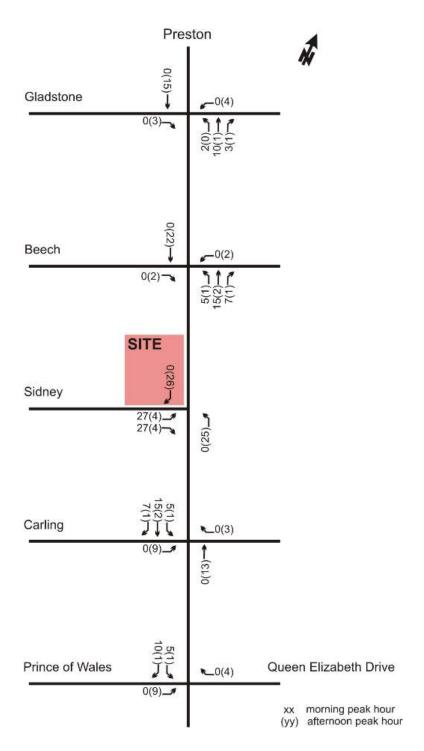




TABLE 5: High Rise Condo Trip Generation (Net Increase)

		1	AM Peal	<	PM Peak			
Travel Mode	Mode Share	(Pe	ersons/	hr)	(Persons/hr)			
		In	Out	Total	In	Out	Total	
Auto Driver	30%	3	12	15	6	4	10	
Auto Passenger	10%	1	4	5	2	2	4	
Transit	40%	3	16	19	8	5	13	
Non-motorized	20%	1	7	8	3	2	5	
Total Person Trips	100%	8	39	47	19	13	32	
Total 'N	3	12	15	6	4	10		

TABLE 6: Commercial Trip Generation (Net Increase)

		AM Peak					PM Peak			
Travel Mode	Mode Share	(Pe	ersons/	hr)	(Persons/hr)					
		In	Out	Total	In	Out	Total			
Auto Driver	30%	8	3	11	5	11	16			
Auto Passenger	10%	2	1	3	2	4	6			
Transit	40%	10	2	12	5	14	19			
Non-motorized	20%	5	1	6	2	7	9			
Total Person Trips	100%	25	7	32	14	36	50			
Total 'N	8	3	11	5	11	16				

TABLE 7: Total Additional Site Vehicle Trip Generation (condo + commercial/office)

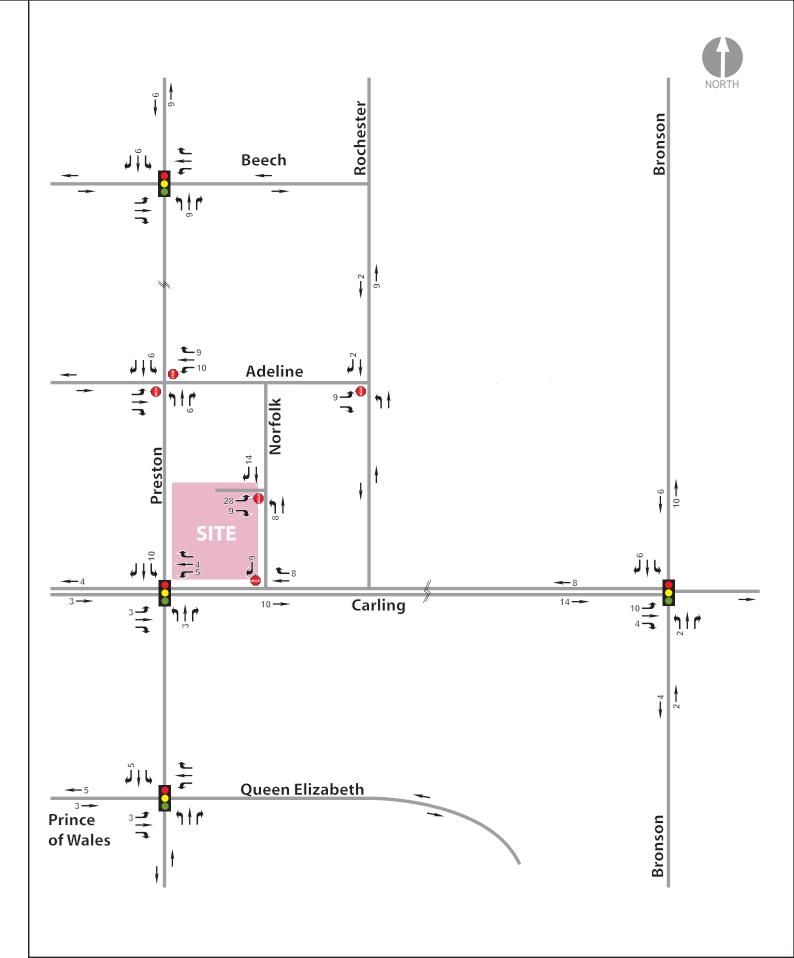
Travel Mode	AM Peak (veh/h)			PM Peak (veh/h)		
Traver Mode	In	Out	Total	In	Out	Total
High Rise Condo Trip Generation	3	12	15	6	4	10
Commercial/Office Trip Generation	8	3	11	5	11	16
Total 'New' Auto Trips	11	15	26	11	15	26

As summarized in Table 7, the net traffic increase associated with the proposed Site Plan changes is estimated at 26 vph during both peak periods, or less than one new vehicle every two minutes during peak hours.

As the initial proposal addressed in the June 2011 CTS had a "net" new traffic generation of 50 vph to 65 vph two-way total, as the changes per the December 2012 Addendum #1 added 8 vph and as the current Site Plan changes add 26 vph, the resultant total peak hour generation of the current proposal is in the range of 85 vph to 100 vph, with approximately

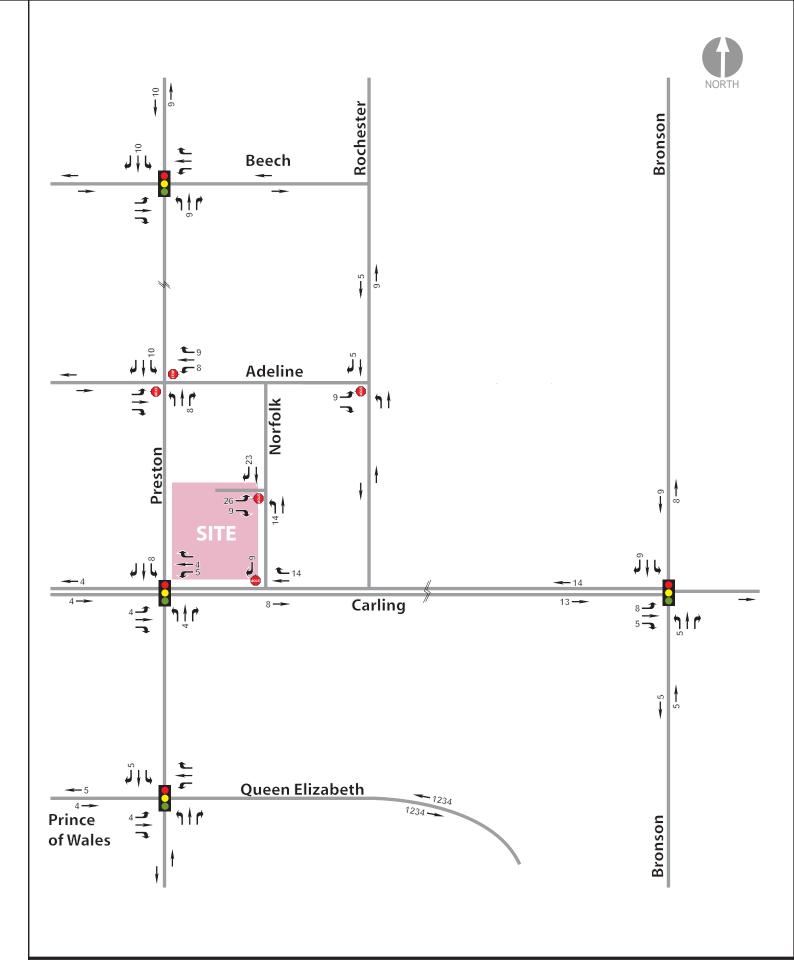
OTHER AREA DEVELOPMENTS

505 Preston Street





PROJECT No. 31637
DATE: Dec. 2012
SCALE: N.T.S.
Om Om Om





PROJECT No. 31637
DATE: Dec. 2012
SCALE: N.T.S.
Om Om Om

IBI Group 3

Claridge Homes Inc. - 2013-05-22

TABLE 2 - TRIP GENERATION SUMMARY - BY MODE

Travel Mode	Modal	Modal AM Peak Hour			PM Peak Hour			
	Share	In	Out	Total	In	Out	Total	
Total Person Trips	100%	56	101	157	101	91	192	
Auto Driver	31%	17	31	49	31	28	60	
Auto Passenger	7%	4	7	11	7	6	13	
Public Transit	35%	20	36	55	36	32	67	
Non-Motorized	27%	15	27	42	27	25	52	
New Auto Trips		17	31	49	31	28	60	
New Auto Trips (2012 CTS)		22	37	59	37	35	72	

Background Traffic

As analysed by Delcan in transportation studies for nearby development proposals including 101 Champagne, 505 Preston and 514-532 Rochester, traffic growth has been shown to be on a decline within the study area during the period of 2001 to 2010. It is expected that this trend will continue and that there will be a stagnant rate of background traffic growth in the study area with the exception of traffic generation from known development applications.

Since the submission of the CTS for 505 Preston Street, there have been a number of additional development applications within the study area. The following table lists all of the current applications (both in the initial planning and approval stages), along with their corresponding trip generation.

TABLE 3 - PROPOSED TRAFFIC GENERATION FROM PROPOSED DEVELOPMENTS WITHIN THE STUDY AREA

Development	Projected Net Tr	affic Generated	Status
	AM Peak Hour	PM Peak Hour	
855 Carling Avenue (Arnon) *UPDATED	+176	+208	Revision Likely
125 Hickory Street (Mastercraft Starwood)	+150	+175	Under Construction
100 Champagne Avenue (Domicile)	+40	+50	Under Construction
500 Preston Street (Mastercraft Starwood)	+65	+72	Approved
101 Champagne (Ashcroft)	+53	+53	Approved
93-105 Norman Street (Taggart) *NEW	+52	+56	Application On Hold
845 Carling (Richcraft) *NEW	+151	+175	Submitted for ZBA
320/330 Loretta Avenue (Domicile)	+83	+98	Recently Built-Out
350 Loretta Avenue (Domicile)	+90	+105	Recently Built-Out
514-532 Rochester Street (Domicile) *NEW	+54	+60	Submitted for SPA
774 Bronson Avenue (Samcon) *NEW	+37	+48	Submitted for SPA
265 Carling (Taggart) *NEW	+47	+43	Approved
TOTAL	998	1,143	

^{*} Note: Site traffic generation values have been confirmed by IBI Group.

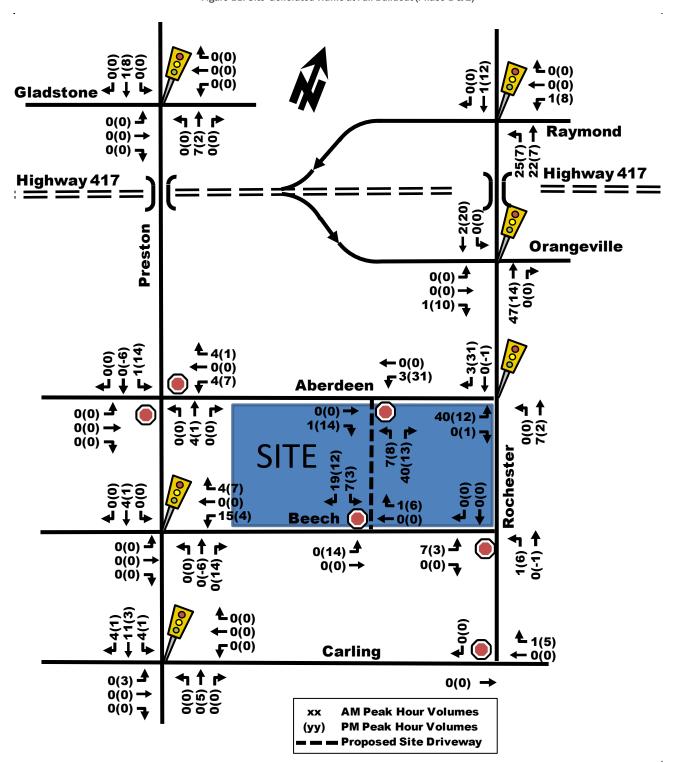
The update to trip generation values for each of the developments listed above suggests a net increase of 31 trips in the weekday morning peak hour and 34 trips in the weekday afternoon

OTHER AREA DEVELOPMENTS

450 Rochester Street

PARSONS

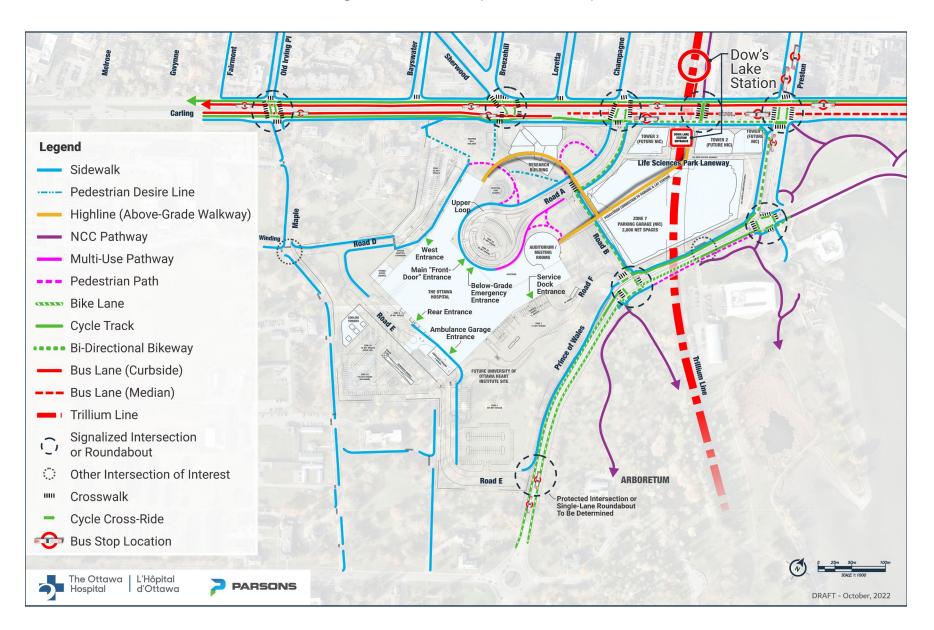
Figure 11: Site-Generated Traffic at Full Buildout (Phase 1 & 2)

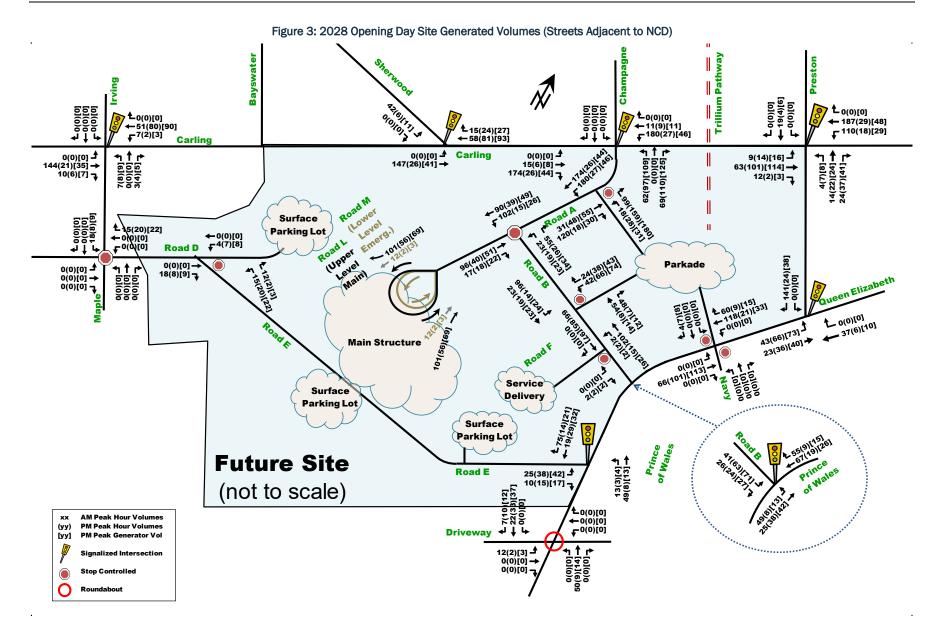


Note: values in negative reflect changes in routes based on pass-by trips or net change between trips generated and reduction in public parking lot.

OTHER AREA DEVELOPMENTS Ottawa Civic Hospital Expansion (930 Carling Avenue)

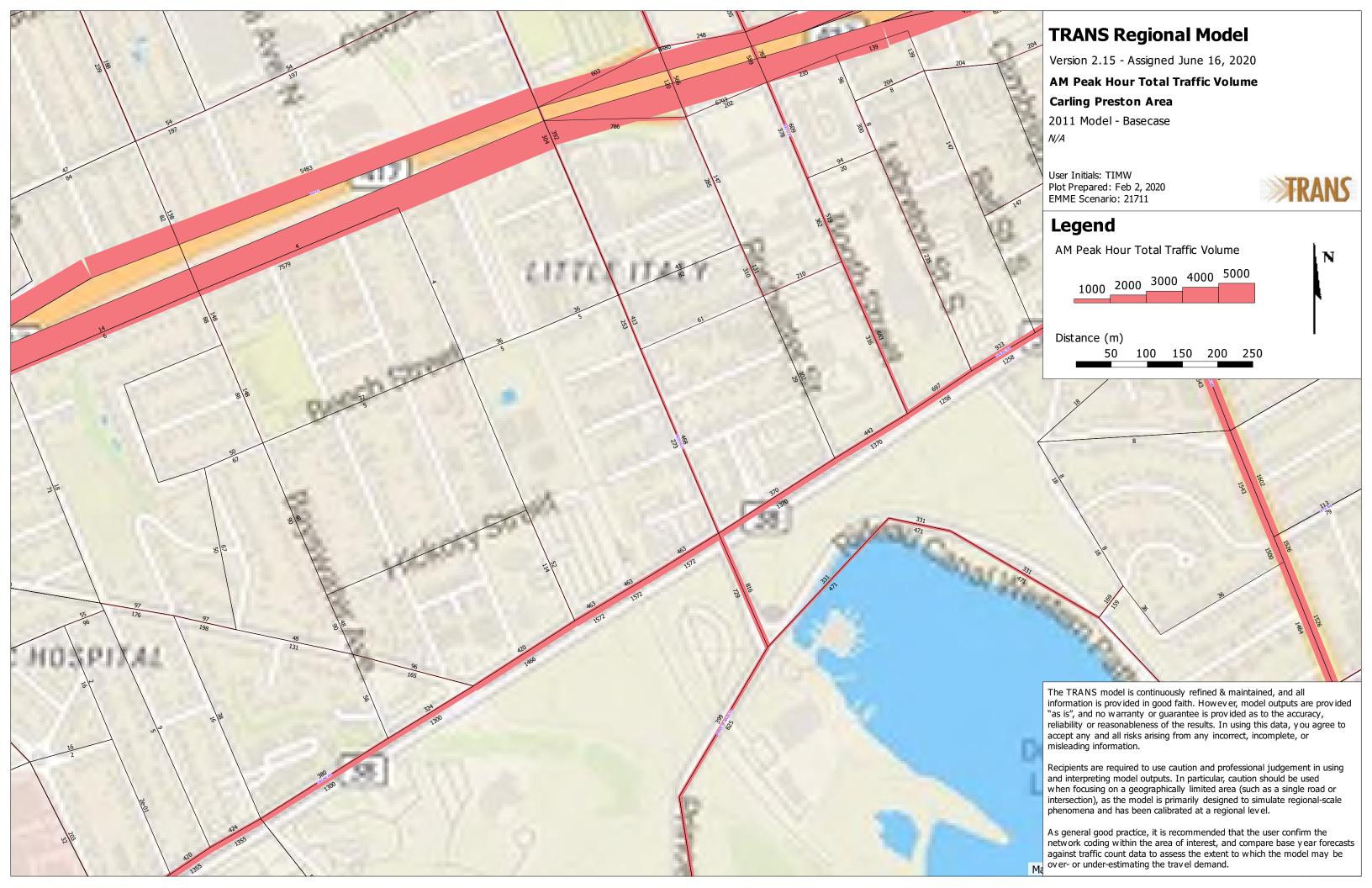
Figure 5: Future Active Transportation Network Map

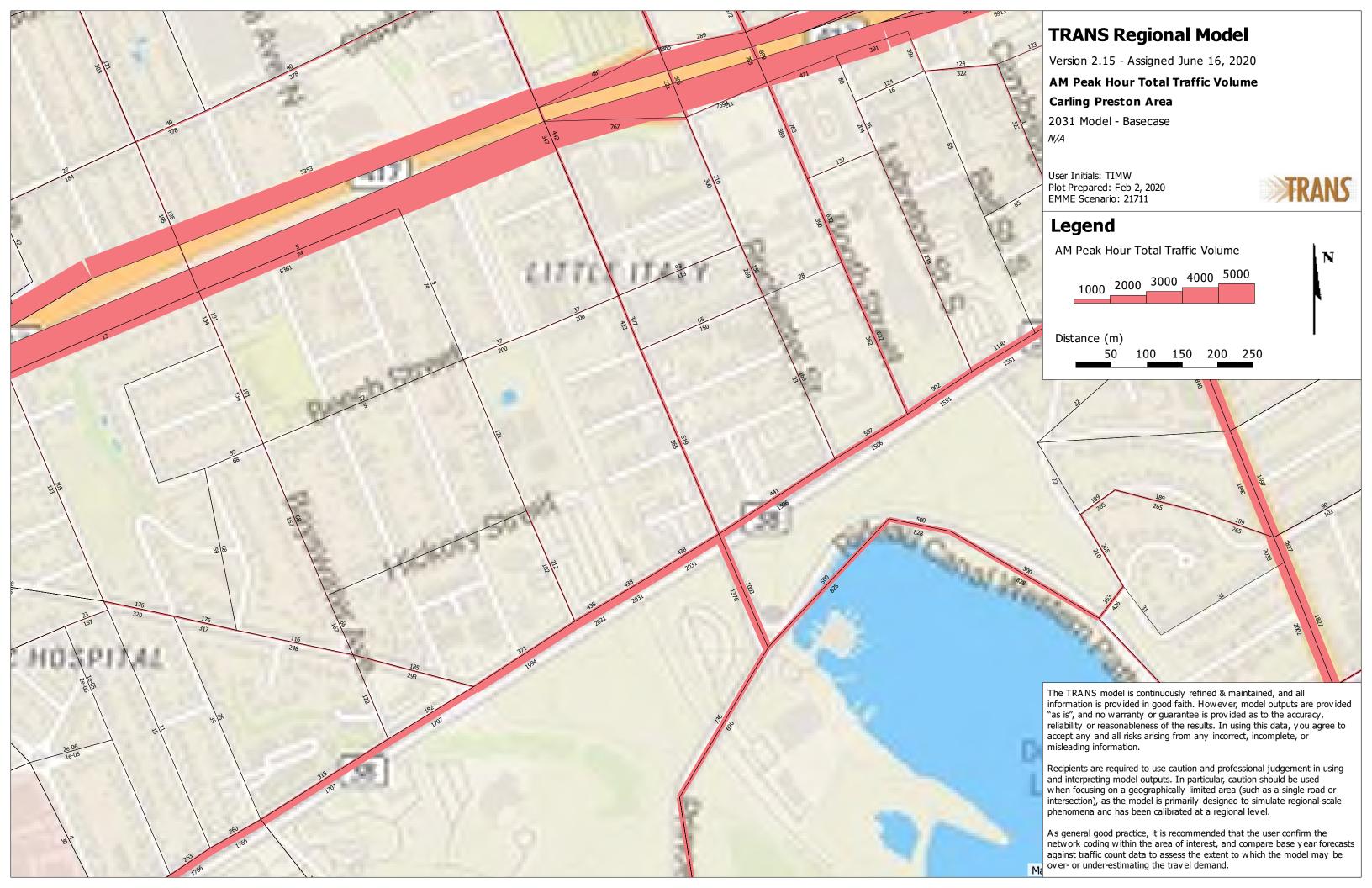






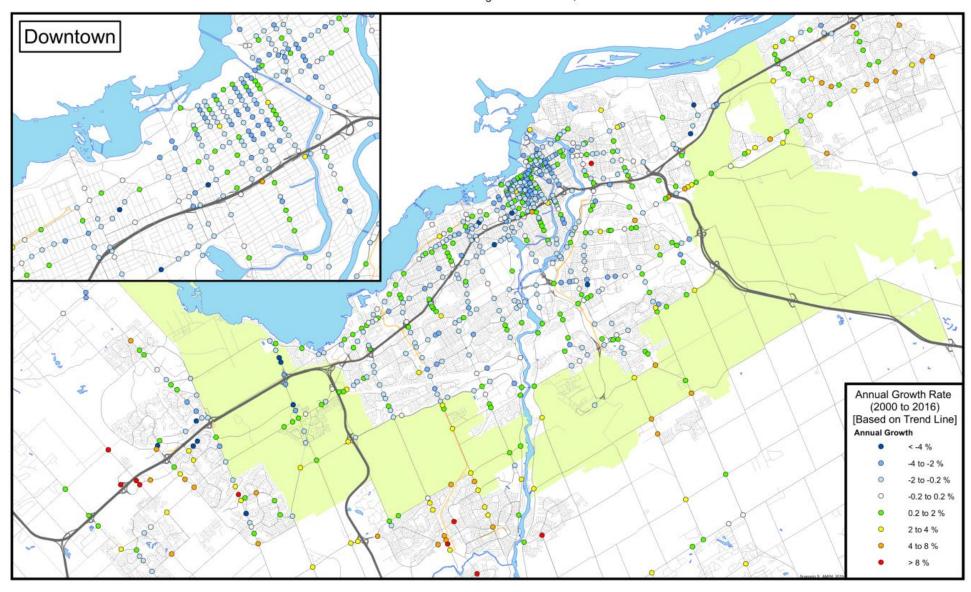
APPENDIX G Strategic Long-Range Model and Intersection Growth Rate Figures





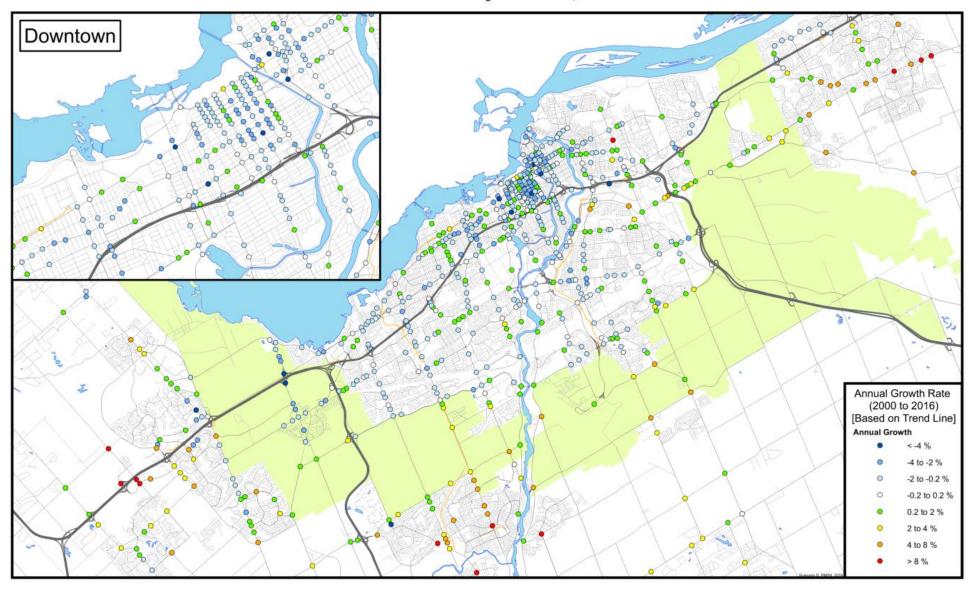
INTERSECTION TRAFFIC GROWTH RATE, AM PEAK PERIOD

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 H

Signal Timing Plans

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

 Intersection:
 Main:
 Carling
 Side:
 Sherwood

 Controller:
 ATC 3
 TSD:
 5135

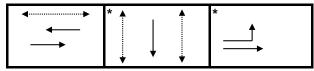
 Author:
 Matthew Anderson
 Date:
 04-Mar-2021

Existing Timing Plans[†]

	Plan			Ped Minimum Time				
	AM Peak	Off Peak	Night	PM Peak	Walk	DW	A+R	
	1	2	9	13				
Cycle	120	130	Free	140				
Offset	112	41	Х	24				
EB Thru	79	89	105.4	99	-	-	3.7+2.7	
WB Thru	66	73	105.4	84	12	15	3.7+2.7	
SB Thru	41	41	33.1	41	26	7	3.3+3.8	
EB Left (fp)	13	16	20.2	15	-	-	3.7+1.5	

Phasing Sequence[∓]

Plan: All



Notes:

1) In plan 9, if the NS pedestrian phases are actuated, the SB green will be extended to match.

Schedule

Weekday

Time	Plan
0:15	9
6:30	1
9:30	2
15:00	13
18:30	2
22:35	9

Saturday

outu. uu	,
Time	Plan
0:15	9
7:00	2
22:30	9

Sunday

Time	Plan
0:10	9
7:30	2
22:30	9

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, Transportation Services Department

Traffic Signal Operations Unit

Intersection: Main: Carling Side: Champagne

Controller: MS 3200 TSD: 5341

Date: **Author:** Matthew Anderson 04-Mar-2021

Existing Timing Plans[†]

Plan

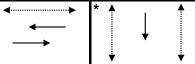
Ped Minimum Time

	AM Peak	Off Peak	PM Peak	Night	Walk	DW	A+R
	1	2	13	4			
Cycle	120	65	70	70			
Offset	106	19	11	Х			
EB Thru	82	27	32	32		-	3.7+1.6
WB Thru	82	27	32	32	10	10	3.7+1.6
SB Thru	38	38	38	38	7	25	3.3+2.6

Phasing Sequence[‡]

Plan: All





Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	13
18:30	2
23:30	4

Saturday

Time	Plan
0:15	4
7:00	2
23:30	4

Sunday

Time	Plan
0:15	4
7:30	2
23:30	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

Cost is \$59.96 (\$53.06 + HST)

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

Intersection:Main:CarlingSide:130m W of PrestonController:ATC 3TSD:6731Author:Matthew AndersonDate:04-Mar-2021

Existing Timing Plans[†]

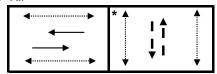
Plan

Ped Minimum Time

	AM Peak	Off Peak	PM Peak	Night	Walk	DW	A+R
	1	2	13	4			
Cycle	120	65	70	70			
Offset	112	0	6	Х			
ED There	0.4	20	25	25	45	Г	27.44
EB Thru	84	30	35	35	15	5	3.7+1.4
WB Thru	84	30	35	35	15	5	3.7+1.4
NB Bike	36	35	35	35	7	22	3.0+3.6
SB Bike	36	35	35	35	7	22	3.0+3.6

Phasing Sequence[‡]

Plan: All



Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	13
18:30	2
23:30	4

Saturday

Time	Plan
0:15	4
7:00	2
23:30	4

Sunday

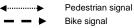
Time	Plan
0:15	4
7:30	2
23:30	4

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



Cost is \$59.96 (\$53.06 + HST)

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

 Intersection:
 Main:
 Carling
 Side:
 Preston

 Controller:
 MS 3200
 TSD:
 5183

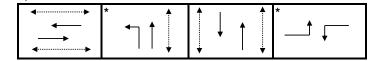
 Author:
 Matthew Anderson
 Date:
 04-Mar-2021

Existing Timing Plans[†]

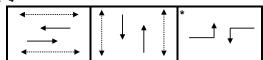
	Plan				Ped Min	imum T	ime
	AM Peak	Off Peak	PM Peak	Night	Walk	DW	A+R
	1	2	13	4			
Cycle	120	130	140	90			
Offset	116	0	6	6			
EB Thru	35	38	41	32	7	17	3.7+2.3
WB Thru	35	38	41	32	7	17	3.7+2.3
NB Left	20	20	24		-	-	3.3+3.6
NB Thru	67	65	69	45	7	30	3.3+3.6
SB Thru	47	45	45	45	7	30	3.3+3.6
EB Left (fp)	18	27	30	13	·	-	3.7+2.5
WB Left (fp)	18	27	30	13	-	-	3.7+2.5

Phasing Sequence[‡]





Plan: 4



Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	13
18:30	2
23:30	4

Saturday

Time	Plan
0:15	4
7:00	2
23:30	4

Sunday

Time	Plan
0:15	4
7:30	2
23:30	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, Transportation Services Department

Traffic Signal Operations Unit

 Intersection:
 Main:
 Carling
 Side:
 Booth

 Controller:
 MS 3200
 TSD:
 5270

 Author:
 Matthew Anderson
 Date:
 04-Mar-2021

Existing Timing Plans[†]

47

81

67

Cycle

Offset

EB Thru

WB Thru

Plan **Ped Minimum Time** Walk DW A+R AM Peak Off Peak PM Peak Night Weekend 2 3 4 5 120 120 130 70 90 116 85 110 Χ Χ 3.7+2.0 81 31 51

51

13

11

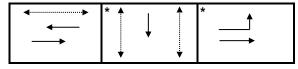
3.7+2.0

SB Thru 39 39 40 39 39 7 26 3.3+2.7 EB Left 34 23 3.7+2.2

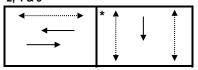
31

Phasing Sequence[‡]

Plan: 1 & 3



Plan: 2,4 & 5



Schedule

Weekday

Plan
4
1
2
3
2
4

Saturday

Time	Plan
0:15	4
7:00	5
23:30	4

Sunday

Time	Plan
0:15	4
7:00	5
23:30	4

Notes

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

Cost is \$59.96 (\$53.06 + HST)

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

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

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

Intersection:	Main:	Preston	Side	de:	Beech
Controller:	MS 3200		TS	TSD: 5413	
Author:	Matthew	Anderson	Da	Date: 04-Mar-2021	

Existing Timing Plans[†]

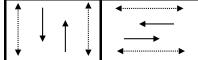
Plan

Ped Minimum Time

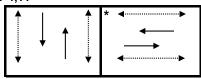
	AM Peak	Off Peak	PM Peak	Night	Weekend	AM Peak	Walk	DW	A+R
	1	2	3	4	5	11			
Cycle	80	80	90	70	80	80			
Offset	40	11	43	Х	0	40			
NB Thru	57	57	67	47	57	57	18	10	3.3+2.2
SB Thru	57	57	67	47	57	57	18	10	3.3+2.2
EB Thru	23	23	23	23	23	23	7	10	3.3+2.3
WB Thru	23	23	23	23	23	23	7	10	3.3+2.3

Phasing Sequence[‡]





Plan: 4,11



Schedule

Weekday

Time	Plan
0:15	4
6:00	11
7:00	1
9:30	2
15:00	3
18:00	2
22:00	4

Weekend

Time	Plan
0:15	4
8:00	2
12:00	5
18:00	2
22:00	4

Notes

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

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

Intersection: Main: Preston Side: Pamilla

Controller: MS-3200 TSD: 6150

Author: Date: 04-Mar-2021

Existing Timing Plans[†]

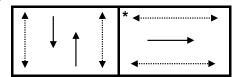
Plan

Ped Minimum Time

	AM Peak	Off Peak	PM Peak	Night	Weekend	Walk	DW	A+R
	1	2	3	4	5			
Cycle	80	80	90	70	80			
Offset	48	0	27	Х	Х			
NB Thru	59	59	69	49	59	18	5	3.3+1.8
SB Thru	59	59	69	49	59	18	5	3.3+1.8
EB Thru	21	21	21	21	21	7	8	3.3+2.2

Phasing Sequence[‡]

Plan: All



Schedule

Weekday

Time	Plan
0:15	4
6:00	1
9:30	2
15:00	3
18:00	2
22:00	4

Saturday

Time	Plan
0:15	4
12:00	5
22:00	4

Sunday

Time	Plan
0:15	4
8:00	5
22:00	4

Notes

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

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

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

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

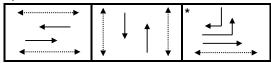
Intersection:	Main:	Prince of Wales	Side:	Preston
Controller:	ATC 3		TSD:	5199
Author:	Matthew	Anderson	Date:	04-Mar-2021

Existing Timing Plans[†]

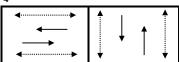
	Plan		Ped Min	imum T	ime		
	AM Peak Off Peak PM F		PM Peak	Night	Walk	DW	A+R
	1	2	3	4			
Cycle	120	130	130	75			
Offset	4	0	6	31			
EB Thru	90	88	81	43	7	19	3.7+2.4
WB Thru	52	52	42	43	7	19	3.7+2.4
NB Thru	30	42	49	32	12	12	3.3+2.2
SB Thru	30	42	49	32	12	12	3.3+2.2
EB Left	38	36	39	-	-	-	3.7+2.4
SB Right	38	36	39	-	-	-	3.7+2.4

Phasing Sequence[‡]





Plan: 4



Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	3
18:30	2
23:30	4

Saturday

Time	Plan
0:15	4
7:00	2
23:30	4

Sunday

Time	Plan
0:15	4
7:30	2
23:30	4

notes

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

Pedestrian signal

Cost is \$59.96 (\$53.06 + HST)

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

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

APPENDIX I

Existing Synchro Analysis

Shared Lane Traffic (%) Lane Group Flow (vph) 34 844 14 745 0 152 0 Enter Blocked Intersection No		•	→	F	•	•	>	4
Lane Configurations	Lane Group	FBI	FBT	WBU	WBT	WBR	SBI	SBR
Traffic Volume (vph)						1151		ODIN
Future Volume (rph)					550	121		5
Ideal Flow (vphpl) 1800								
Storage Length (m) 35.0 25.0 0.0 0.0 0.0								
Storage Lanes			1000		1000			
Taper Length (m) 25.0 25.0 25.0 Lane Util. Factor 1.00 0.95 1.00 0.91 0.91 1.00 1.00 Ped Bike Factor 0.98 0.99 0.99 0.99 FIT POPED BIKE Factor 0.973 0.995 0.950 0.950 0.950 0.950 0.954 Satd. Flow (prot) 1642 3283 1674 4399 0 1667 0 0.954 Satd. Flow (prot) 1617 3283 590 4399 0 1657 0 0.954 Satd. Flow (prot) 1677 0 0.954 Satd. Flow (prot) 1617 3283 590 4399 0 1657 0 0 0.954 Satd. Flow (prot) 1678 284 184 0								
Lane Util. Factor						U	-	U
Ped Bike Factor 0.98			0.05		N Q1	0.01		1.00
Fit Protected			0.33	1.00		0.31		1.00
Fit Protected		0.90						
Satd. Flow (prot) 1642 3283 1674 4399 0 1671 0		0.050		0.050	0.313			
Fit Permitted			2002		4200	0		0
Satd. Flow (perm) 1617 3283 590 4399 0 1657 0 Right Turn on Red Yes Yes Yes Satd. Flow (RTOR) 57 2 Link Speed (k/h) 60 60 40 Link Distance (m) 196.1 162.9 242.3 Travel Time (s) 11.8 9.8 21.8 Confl. Peds. (#/hr) 19 19 8 9 Confl. Bikes (#/hr) 19 19 8 9 Confl. Bikes (#/hr) 34 844 14 611 134 146 6 Shared Lane Traffic (%) Lane Group Flow (vph) 34 844 14 745 0 152 0 Lane Group Flow (vph) 34 844 14 745 0 152 0 Lane Alignment Left Left R NA Left Right L NA Right Median Width(m) 7.0 7.0 3.5 Link Offset(m) 0.0 0.0 0.0 0.0 Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane Headway Factor 1.09 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) 24 14 14 40 14 Number of Detectors 1 2 1 2 1 Detector Template Left Thru Left Left Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 Trailing Detector (m) 6.1 30.5 6.1 30.5 6.1 Trailing Detector (m) 6.1 18 6.1 1.8 6.1 Detector 1 Diay (s) 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 Detector 1 Channel Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Detector 2 Type Cl+Ex Cl+Ex Cl+Ex Cl+Ex Detector 2 Type Cl+Ex Cl+Ex Cl+Ex Detector 2 Channel Detector 2 Protition(m) 28.7 28.7 Detector 2 Type Cl+Ex Cl+Ex Cl+Ex Detector 2 Channel Detector 2 Protition(m) 28.7 28.7 Detector 2 Channel Detector 2 Protition(m) 28.7 28.7 Detector 2 Position(m) 28.7 28.7 Detec	,, ,		3283		4399	U		U
Right Turn on Red Yes Yes Satd. Flow (RTOR) 57 2 Link Speed (k/h) 60 60 40 Link Distance (m) 196.1 162.9 242.3 Travel Time (s) 11.8 9.8 21.8 Confl. Peds. (#/hr) 19 19 8 9 Confl. Bikes (#/hr) 30 30 10 0.90			2002		4200	^		^
Satd. Flow (RTOR)		1617	3283	590	4399	~	165/	
Link Speed (k/h) 60 60 40 Link Distance (m) 196.1 162.9 242.3 Travel Time (s) 11.8 9.8 21.8 Confl. Peds. (#/hr) 19 19 19 19 8 9 Confl. Bikes (#/hr) 19 19 15 3 3 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.9					F-7	Yes	^	Yes
Link Distance (m) 196.1 162.9 242.3 Travel Time (s) 11.8 9.8 21.8 Confl. Peds. (#/hr) 19 19 8 9 Confl. Bikes (#/hr) 15 3 3 15 3 Peak Hour Factor 0.90								
Travel Time (s)								
Confl. Peds. (#/hr)								
Confl. Bikes (#/hr)			11.8		9.8			
Peak Hour Factor 0.90 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.07 1.00 1.00 1.00 No <		19					8	
Heavy Vehicles (%) 3% 3% 1% 7% 2% 1% 1% Adj. Flow (vph) 34 844 14 611 134 146 6								
Adj. Flow (vph) 34 844 14 611 134 146 6 Shared Lane Traffic (%) Lane Group Flow (vph) 34 844 14 745 0 152 0 Enter Blocked Intersection No Pa 1								
Shared Lane Traffic (%) Lane Group Flow (vph) 34 844 14 745 0 152 0								
Lane Group Flow (vph) 34 844 14 745 0 152 0 Enter Blocked Intersection No	Adj. Flow (vph)	34	844	14	611	134	146	6
Enter Blocked Intersection No No <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>								
Lane Alignment Left Left R NA Left Right L NA Right Median Width(m) 7.0 7.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane 1.09 <t< td=""><td>Lane Group Flow (vph)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Lane Group Flow (vph)							
Median Width(m) 7.0 7.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane 1.09 1.09 1.09 1.09 1.09 1.09 Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 24 14 14 40 14 Number of Detectors 1 2 1 2 1 1 2 1 2 1 2 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 1 2 6 1 1 1 1 1 1 1 1 1 1 1 2 1 1 1 2 </td <td>Enter Blocked Intersection</td> <td>No</td> <td></td> <td></td> <td>No</td> <td></td> <td></td> <td></td>	Enter Blocked Intersection	No			No			
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Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.00 </td <td>Median Width(m)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Median Width(m)							
Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.00 </td <td>Link Offset(m)</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td></td>	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 1.09 1.09 Turning Speed (k/h) 24 14 14 40 14 Number of Detectors 1 2 1 2 1 Detector Template Left Thru Left Thru Left Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 6.1 1.8 6.1 1.8 6.1 Detector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Channel Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 Detector 1 Delay (s) 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 CI+Ex CI+Ex Detector 2 CI+Ex CI+Ex CI+Ex Detector 2 CH+Ex Detector 2 CH+Ex CI+Ex Detector 2 CH+Ex Detector 2 CH+Ex Detector 2 CH+Ex Detector 3 CI+Ex Detector 4 CI+Ex Detector 5 CI+Ex Detector 6 CI+Ex Detector 6 CI+Ex Detector 7 CI+Ex Detector 8 CI+Ex Detector 9	Crosswalk Width(m)		5.0		10.0		5.0	
Headway Factor 1.09 1.00 1.0 <t< td=""><td>Two way Left Turn Lane</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Two way Left Turn Lane							
Turning Speed (k/h) 24 14 14 40 14 Number of Detectors 1 2 1 2 1 2 1 Detector Template Left Thru Left Thru Left Left Left Thru Left Left Thru Left Left Thru Left Thru Left Left Thru Left Thru Left Left Left Thru Left	Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors 1 2 1 2 1 Detector Template Left Thru Left Thru Left Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 Trailing Detector (m) 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 6.1 1.8 6.1 1.8 6.1 Detector 1 Type 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 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 Detector 2 Type CI+Ex CI+Ex CI+Ex Detector 2 Type CI+Ex CI+Ex CI+Ex								
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Detector 1 Delay (s) 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 Prot NA Perm NA Perm Protected Phases 5 2 6 6 4								
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		5	2	_	6			
Detector Phase 5 2 6 6 4								
	Detector Phase	5	2	6	6		4	

J.Audia, Novatech Synchro 10 Report

	۶	→	F	←	•	\	✓
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0		10.0	
Minimum Split (s)	10.2	16.4	33.4	33.4		40.1	
Total Split (s)	13.0	79.0	66.0	66.0		41.0	
Total Split (%)	10.8%	65.8%	55.0%	55.0%		34.2%	
Maximum Green (s)	7.8	72.6	59.6	59.6		33.9	
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	
All-Red Time (s)	1.5	2.7	2.7	2.7		3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.2	6.4	6.4	6.4		7.1	
Lead/Lag		0.4				1.1	
Lead/Lag Optimize?	Lead		Lag	Lag			
	3.0	2.0	2.0	2.0		3.0	
Vehicle Extension (s)		3.0	3.0	3.0			
Recall Mode	None	C-Max	C-Max	C-Max		None	
Walk Time (s)			12.0	12.0		26.0	
Flash Dont Walk (s)			15.0	15.0		7.0	
Pedestrian Calls (#/hr)			20	20		20	
Act Effct Green (s)	7.5	85.3	77.1	77.1		21.2	
Actuated g/C Ratio	0.06	0.71	0.64	0.64		0.18	
v/c Ratio	0.33	0.36	0.04	0.26		0.52	
Control Delay	62.2	8.6	8.6	6.6		48.2	
Queue Delay	0.0	0.0	0.0	0.0		0.0	
Total Delay	62.2	8.6	8.6	6.6		48.2	
LOS	Е	Α	Α	Α		D	
Approach Delay		10.7		6.6		48.2	
Approach LOS		В		Α		D	
Queue Length 50th (m)	7.2	27.5	0.7	11.2		31.4	
Queue Length 95th (m)	16.8	59.2	1.9	10.3		43.2	
nternal Link Dist (m)		172.1		138.9		218.3	
Turn Bay Length (m)	35.0		25.0				
Base Capacity (vph)	112	2334	379	2848		469	
Starvation Cap Reductn	0	0	0	0		0	
Spillback Cap Reductn	0	0	0	0		0	
Storage Cap Reductn	0	0	0	0		0	
Reduced v/c Ratio	0.30	0.36	0.04	0.26		0.32	
ntersection Summary Area Type:	Other						
Cycle Length: 120	Ou ioi						
Actuated Cycle Length: 120							
	l to phase Ou	EDT and 6	·\\\DTII C	art of Cra-	n		
Offset: 112 (93%), Referenced	i to priase 2:	ם מחמ ל	.vvb i U, S1	art or Gree	11		
Natural Cycle: 85	inatad						
Control Type: Actuated-Coordi	nated						
Maximum v/c Ratio: 0.52						00.5	
Intersection Signal Delay: 12.2					tersection I		
Intersection Capacity Utilization	n 51.7%			IC	U Level of	Service A	
Analysis Period (min) 15							
Splits and Phases: 1: Carling	g & Sherwoo	od_					
_							704
→ø2 (R) •							Ø4
79 s							41 s
∕ _{Ø5} ↓ ← _{Ø6 (R)}							
Ø5)						1

J.Audia, Novatech Synchro 10 Report

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	EDL K	^	↑	WDIN	SDL	JUN.
Traffic Volume (vph)	9 8	TT 870	TTT 700	159	1 57	39
Future Volume (vph)	98	870	700	159	57 57	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
	45.0	1000	1000	35.0	20.0	0.0
Storage Length (m)	45.0 1			35.0	20.0	0.0
Storage Lanes				T	•	T
Taper Length (m)	25.0	0.05	0.04	1.00	25.0	4.00
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00
Ped Bike Factor	0.93			0.76	0.99	0.98
Frt	0.050			0.850	0.050	0.850
Flt Protected	0.950	0000	10=0		0.950	1100
Satd. Flow (prot)	1674	3283	4672	1414	1658	1498
Flt Permitted	0.342		46 -		0.950	
Satd. Flow (perm)	559	3283	4672	1069	1645	1464
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				177		43
Link Speed (k/h)		60	60		50	
Link Distance (m)		162.9	117.5		178.4	
Travel Time (s)		9.8	7.1		12.8	
Confl. Peds. (#/hr)	76			76	7	9
Confl. Bikes (#/hr)				2		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	4%	7%	2%	1%
Adj. Flow (vph)	109	967	778	177	63	43
Shared Lane Traffic (%)	103	301	110	177	00	40
	109	967	770	177	63	43
Lane Group Flow (vph)			778	177 No		No
Enter Blocked Intersection	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)		7.0	7.0		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)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type		CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
	CI+Ex	CI+EX	CI+EX	CI+EX	CI+EX	UI+EX
Detector 1 Channel	^ ^	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	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
DOLOGIOI I HASE			U	U	7	7

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.3	15.3	25.3	25.3	37.9	37.9	
Total Split (s)	82.0	82.0	82.0	82.0	38.0	38.0	
Total Split (%)	68.3%	68.3%	68.3%	68.3%	31.7%	31.7%	
Maximum Green (s)	76.7	76.7	76.7	76.7	32.1	32.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3	
All-Red Time (s)	1.6	1.6	1.6	1.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.9	5.9	
Lead/Lag	5.5	0.0	0.0	0.0	5.9	5.5	
Lead-Lag Optimize?	2.0	3.0	2.0	2.0	2.0	2.0	
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)			10.0	10.0	7.0	7.0	
Flash Dont Walk (s)			10.0	10.0	25.0	25.0	
Pedestrian Calls (#/hr)	20.5	60.0	20	20	20	20	
Act Effct Green (s)	89.8	89.8	89.8	89.8	23.2	23.2	
Actuated g/C Ratio	0.75	0.75	0.75	0.75	0.19	0.19	
v/c Ratio	0.26	0.39	0.22	0.21	0.20	0.14	
Control Delay	7.2	6.4	2.9	0.6	38.2	10.8	
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	
Total Delay	7.2	6.5	2.9	0.6	38.2	10.8	
LOS	Α	Α	Α	Α	D	В	
Approach Delay		6.5	2.5		27.1		
Approach LOS		Α	Α		С		
Queue Length 50th (m)	12.4	65.0	7.7	0.0	10.5	0.0	
Queue Length 95th (m)	6.8	22.0	7.0	0.4	21.0	8.1	
Internal Link Dist (m)		138.9	93.5		154.4		
Turn Bay Length (m)	45.0			35.0	20.0		
Base Capacity (vph)	418	2458	3498	844	440	423	
Starvation Cap Reductn	0	322	0	0	0	0	
Spillback Cap Reductn	0	11	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.26	0.45	0.22	0.21	0.14	0.10	
Intersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 106 (88%), Reference	d to phase 2:	EBTL and	6:WBT. St	art of Gree	en		
Natural Cycle: 65			,				
Control Type: Actuated-Coord	dinated						
Maximum v/c Ratio: 0.39							
Intersection Signal Delay: 5.7				In	tersection	LOS: A	
Intersection Capacity Utilization						f Service A	
Analysis Period (min) 15	511 0 1.0 70				O LCVCI O	OCIVICE / V	
Splits and Phases: 2: Carlin	ng & Champa	ane					
	ig a champa	3.10					- N
J → Ø2 (R)							Ø4
02 S							38 s
Ø6 (R)							
82 s							

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^			ተ ተተ							
Traffic Volume (vph)	0	930	0	0	930	0	0	0	0	0	0	0
Future Volume (vph)	0	930	0	0	930	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3283	0	0	4718	0	0	0	0	0	0	0
FIt Permitted												
Satd. Flow (perm)	0	3283	0	0	4718	0	0	0	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		117.5			124.7			157.3			54.9	
Travel Time (s)		7.1			7.5			11.3			4.0	
Confl. Peds. (#/hr)	26		14	14		26	18		20	20		18
Confl. Bikes (#/hr)			6			23						17
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 (%)	2%	3%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	1033	0	0	1033	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1033	0	0	1033	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			0.0			0.0	
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		2			2							
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5							
Trailing Detector (m)		0.0			0.0							
Detector 1 Position(m)		0.0			0.0							
Detector 1 Size(m)		1.8			1.8							
Detector 1 Type		CI+Ex			CI+Ex							
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0							
Detector 1 Queue (s)		0.0			0.0							
Detector 1 Delay (s)		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			NA							
Protected Phases		2			6							
Permitted Phases												
Detector Phase		2			6							
Switch Phase												
Minimum Initial (s)		10.0			10.0							
Minimum Split (s)		25.1			25.1							
. , ,												

Lane Group	Ø4	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	4	
Permitted Phases	7	
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	35.6	
wiii iii iiu iii opiit (8)	33.0	

Ø6 (R)

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Lane Group	EBL EBT	EBR W	BL WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	84.0		84.0							
Total Split (%)	70.0%		70.0%							
Maximum Green (s)	78.9		78.9							
Yellow Time (s)	3.7		3.7							
All-Red Time (s)	1.4		1.4							
Lost Time Adjust (s)	0.0		0.0							
Total Lost Time (s)	5.1		5.1							
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0		3.0							
Recall Mode	C-Max		C-Max							
Walk Time (s)	15.0		15.0							
Flash Dont Walk (s)	5.0		5.0							
Pedestrian Calls (#/hr)	20		20							
Act Effct Green (s)	95.6		95.6							
Actuated g/C Ratio	0.80		0.80							
v/c Ratio	0.40		0.27							
Control Delay	2.2		3.1							
Queue Delay	0.0		0.1							
Total Delay	2.2		3.2							
LOS	А		Α							
Approach Delay	2.2		3.2							
Approach LOS	А		Α							
Queue Length 50th (m)	7.9		9.2							
Queue Length 95th (m)	9.0		17.5							
Internal Link Dist (m)	93.5		100.7			133.3			30.9	
Turn Bay Length (m)										
Base Capacity (vph)	2615		3757							
Starvation Cap Reductn	139		1268							
Spillback Cap Reductn	0		0							
Storage Cap Reductn	0		0							
Reduced v/c Ratio	0.42		0.42							
Intersection Summary										
Area Type:	Other									
Cycle Length: 120										
Actuated Cycle Length: 120										
Offset: 112 (93%), Referenced	to phase 2:EBT and 6	:WBT. Start of G	reen							
Natural Cycle: 65		,								
Control Type: Actuated-Coordi	nated									
Maximum v/c Ratio: 0.40										
Intersection Signal Delay: 2.7			Intersection	LOS: A						
Intersection Capacity Utilization	า 31.4%		ICU Level of							
Analysis Period (min) 15			.00 2010.0							
Splits and Phases: 3: Trillium	n Pathway & Carling									
→ Ø2 (R)	,					# 1 0	74			
04-						200-	<i>y</i> 1			

Lane Group	Ø4
Total Split (s)	36.0
Total Split (%)	30%
Maximum Green (s)	29.4
Yellow Time (s)	3.0
All-Red Time (s)	3.6
Lost Time Adjust (s)	0.0
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	
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EBIL EBT EBR WEL WBT WBR NBI NBT NBR SBI SBT SBR Lane Configurations The April The A		۶	→	•	•	+	4	1	†	/	/	+	✓
Traffic Volume (uph)	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	Lane Configurations	7	^	7	7	ተ ቀሴ		7	∱ ∱₃		7	£	
Ideal Flow (ynhph)	Traffic Volume (vph)	140			134		94	282		281	80		99
Storage Length (m)	Future Volume (vph)	140	570	224	134	550	94	282	450	281	80	227	99
Storage Lanes	Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Taper Length (m)	Storage Length (m)	65.0		40.0	75.0		0.0	75.0		0.0	0.0		0.0
Taper Length (m)		1		1	1		0	1		0	1		
Lane Unit Factor		25.0			25.0			25.0			25.0		
Fith		1.00	0.95	1.00	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00
Fith	Ped Bike Factor	0.96		0.91	0.97	0.98		0.98	0.99		1.00	0.98	
Satic Flow (prort) 1595 3252 1483 1658 44456 0 1674 3051 0 1510 1517 0	Frt			0.850		0.978			0.942			0.954	
FILP emitted	Flt Protected	0.950			0.950			0.950			0.950		
FILP emitted 0.950	Satd. Flow (prot)	1595	3252	1483	1658	4456	0	1674	3051	0	1510	1517	0
Right Turn on Red		0.950			0.950			0.312			0.345		
Right Turn on Red	Satd. Flow (perm)	1538	3252	1350	1616	4456	0	541	3051	0	548	1517	0
Link Distance (m) 124.7 193.9 164.5 65.2 Link Distance (m) 124.7 193.9 164.5 65.2 Travel Time (s) 7.5 11.6 111.8 24.7 Confl. Peds. (#/hr) 65 41 41 65 339 22 2 389 Confl. Bikes (#/hr) 21 21 9 39 36 36 1 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.9							Yes			Yes			Yes
Link Speed (k/h)				199		26			163			20	
Link Distance (m)			60			60							
Travel Time (s)													
Confl. Peds. (#hry													
Confi. Bikes (#/hr)		65		41	41		65	39		2	2		39
Peak Hour Factor 0.90 0.											_		
Heavy Vehicles (%)		0.90	0.90		0.90	0.90		0.90	0.90		0.90	0.90	0.90
Adj. Flow (vph) 156 633 249 149 611 104 313 500 312 89 252 110													
Shared Lane Traffic (%) Lane Group Flow (vph) 156 633 249 149 715 0 313 812 0 89 362 0 Enter Blocked Intersection No No No No No No No													
Lane Group Flow (vph) 156 633 249 149 715 0 313 812 0 89 362 0		100	000	210	110	VII	101	010	000	012	00	LUL	110
Enter Blocked Intersection No No No No No No No		156	633	249	149	715	0	313	812	0	89	362	0
Line Alignment	,									~			-
Median Width(m) 7.0 7.0 3.5 3.5 1.5													
Link Offset(m) 0.0 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Two way Left Turn Lane S.0 5.0 Headway Factor 1.09		L 14/1		rtigitt	LIVI		rtigitt	L IVI		11101	L 14/1		11171
Crosswalk Width(m) 5.0 5.0 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09													
Two way Left Turn Lane Headway Factor 1.09													
Headway Factor 1.09			0.0			0.0			0.0			0.0	
Turning Speed (k/h)		1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Number of Detectors 1 2 1 1 2 1 3 3 4 4			1.00			1.00			1.03			1.00	
Detector Template			2			2	17		2	14		2	14
Leading Detector (m) 6.1 30.5 6.1 6.1 30.5 6.1 30.5 Trailing Detector (m) 0.0		· · · · · · · · · · · · · · · · · · ·						-					
Trailing Detector (m) 0.0													
Detector 1 Position(m) 0.0													
Detector 1 Size(m)													
Detector 1 Type													
Detector 1 Channel Detector 1 Extend (s) 0.0													
Detector 1 Extend (s) 0.0		CI+EX	CI+EX	CI+EX	CI+EX	UI+EX		CI+EX	CI+EX		UI+EX	UI+EX	
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 28.7 28.	. ,												
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 0.0 Turn Type Prot NA Perm Prot NA pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4													
Detector 2 Size(m) 1.8 1.8 1.8 1.8 Detector 2 Type CI+Ex CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type Prot NA Perm Prot NA pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4		0.0		0.0	0.0			0.0			0.0		
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 0.0 Turn Type Prot NA Perm Prot NA pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4													
Detector 2 Channel 0.0													
Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type Prot NA Perm Prot NA pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4			CI+EX			CI+Ex			CI+EX			CI+Ex	
Turn TypeProtNAPermProtNAPm+ptNAPermNAProtected Phases5216384													
Protected Phases 5 2 1 6 3 8 4		_											
				Perm							Perm		
Dame: Had Dhanna		5	2		1	6			8			4	
	Permitted Phases			2				8			4		
Detector Phase 5 2 2 1 6 3 8 4 4	Detector Phase	5	2	2	1	6		3	8		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0	30.0	11.2	30.0		11.9	43.9		43.9	43.9	
Total Split (s)	18.0	35.0	35.0	18.0	35.0		20.0	67.0		47.0	47.0	
Total Split (%)	15.0%	29.2%	29.2%	15.0%	29.2%		16.7%	55.8%		39.2%	39.2%	
Maximum Green (s)	11.8	29.0	29.0	11.8	29.0		13.1	60.1		40.1	40.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3	2.3	2.5	2.3		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0	6.0	6.2	6.0		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?		,	Ţ.		,					Ţ,	Ţ.	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0			7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0		17.0			30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20	20		20			20		20	20	
Act Effct Green (s)	11.8	29.0	29.0	11.8	29.0		60.1	60.1		40.1	40.1	
Actuated g/C Ratio	0.10	0.24	0.24	0.10	0.24		0.50	0.50		0.33	0.33	
v/c Ratio	1.00	0.81	0.52	0.91	0.65		0.79	0.50		0.49	0.70	
Control Delay	136.7	40.9	8.8	117.5	41.7		42.1	25.2		42.6	41.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	136.7	40.9	8.8	117.5	41.7		42.1	25.2		42.6	41.0	
LOS	F	D	Α	F	D		D	С		D	D	
Approach Delay		47.6			54.8			29.9			41.3	
Approach LOS		D			D			С			D	
Queue Length 50th (m)	36.5	27.3	0.5	34.3	21.4		54.2	68.5		15.3	64.3	
Queue Length 95th (m)	#76.3	60.5	16.1	#70.5	51.1		m72.6	m91.3		31.6	96.3	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0		40.0	75.0			75.0					
Base Capacity (vph)	156	785	477	163	1096		394	1609		183	520	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	1.00	0.81	0.52	0.91	0.65		0.79	0.50		0.49	0.70	

Intersection Summary

Other

Area Type: Cycle Length: 120

Actuated Cycle Length: 120

Offset: 116 (97%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 42.8 Intersection Capacity Utilization 97.2%

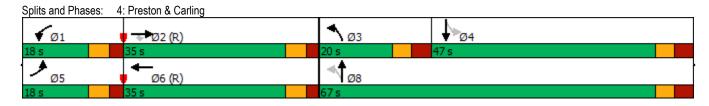
Intersection LOS: D ICU Level of Service F

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.



	•	→	←	•	\	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	<u> </u>	^	411	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,) T	7
Traffic Volume (vph)	382	650	650	207	204	132
Future Volume (vph)	382	650	650	207	204	132
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0	1000	1000	35.0	0.0	45.0
Storage Lanes	45.0			33.0	1	45.0
	40.0				10.0	
Taper Length (m) Lane Util. Factor	1.00	0.95	0.91	0.91	1.00	1.00
		0.95		0.91		0.88
Ped Bike Factor	0.98		0.96		0.98	
Frt	0.050		0.964		0.050	0.850
Flt Protected	0.950	2052	4070	^	0.950	4407
Satd. Flow (prot)	1674	3252	4373	0	1674	1427
Flt Permitted	0.215	00=0	10=0		0.950	10==
Satd. Flow (perm)	370	3252	4373	0	1649	1258
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			73			147
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1		16.5	
Confl. Peds. (#/hr)	59			59	14	85
Confl. Bikes (#/hr)				15		23
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	3%	1%	1%	6%
Adj. Flow (vph)	424	722	722	230	227	147
Shared Lane Traffic (%)	424	122	122	230	221	147
	404	700	050	٥	207	117
Lane Group Flow (vph)	424 No.	722	952	0	227	147
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)		7.0	7.0		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)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
•	6.1	30.5	30.5		6.1	6.1
Leading Detector (m)						
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8	1.8		6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel		OI LX	OI · LA			
Detector 2 Extend (s)		0.0	0.0			
	nm i nt				Dorm	Dorm
Turn Type	pm+pt	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2	_			4	4
Detector Phase	5	2	6		4	4

	•	-	•	•	-	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0		10.0	10.0
Minimum Split (s)	10.9	15.7	29.7		39.0	39.0
Total Split (s)	34.0	81.0	47.0		39.0	39.0
Total Split (%)	28.3%	67.5%	39.2%		32.5%	32.5%
Maximum Green (s)	28.1	75.3	41.3		33.0	33.0
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.2	2.0	2.0		2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7		6.0	6.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?			<u> </u>			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	C-Max	C-Max		None	None
Walk Time (s)			13.0		7.0	7.0
Flash Dont Walk (s)			11.0		26.0	26.0
Pedestrian Calls (#/hr)			20		20	20
Act Effct Green (s)	83.9	84.1	55.7		24.2	24.2
Actuated g/C Ratio	0.70	0.70	0.46		0.20	0.20
v/c Ratio	0.84	0.32	0.46		0.69	0.40
Control Delay	45.7	8.5	23.4		54.0	8.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	45.7	8.5	23.4		54.0	8.7
LOS	D	Α	С		D	Α
Approach Delay		22.3	23.4		36.2	
Approach LOS		С	С		D	
Queue Length 50th (m)	74.9	29.4	46.4		47.2	0.0
Queue Length 95th (m)	m#105.5	49.0	71.3		64.3	14.0
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	45.0					45.0
Base Capacity (vph)	564	2280	2070		453	452
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.75	0.32	0.46		0.50	0.33
Interception Cummens						

Intersection Summary

Other

Area Type: Cycle Length: 120

Actuated Cycle Length: 120

Offset: 116 (97%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84 Intersection Signal Delay: 24.8

Intersection Capacity Utilization 83.4%

Intersection LOS: C ICU Level of Service E

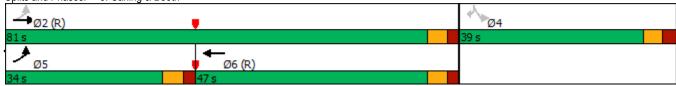
Analysis Period (min) 15

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: 5: Carling & Booth



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		- 43-			र्स	7	7	ĵ.		7	£	
Traffic Volume (vph)	38	52	26	19	54	8	23	560	42	18	340	36
Future Volume (vph)	38	52	26	19	54	8	23	560	42	18	340	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	15.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (m)	25.0			20.0			20.0			20.0		
Lane Util. 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
Ped Bike Factor		0.94			0.98	0.89	0.97	0.99		0.98	0.99	
Frt		0.970				0.850		0.989			0.986	
Flt Protected		0.984			0.987		0.950			0.950		
Satd. Flow (prot)	0	1557	0	0	1627	1498	1537	1696	0	1537	1643	0
Flt Permitted		0.876			0.904		0.488			0.322		
Satd. Flow (perm)	0	1352	0	0	1465	1339	764	1696	0	508	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				34		10			13	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		101.4			151.8			160.5			163.2	
Travel Time (s)		7.3			10.9			11.6			11.8	
Confl. Peds. (#/hr)	36		36	36		36	43		55	55		43
Confl. Bikes (#/hr)			26			2			20			14
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 (%)	9%	4%	4%	25%	2%	1%	10%	3%	3%	10%	6%	5%
Adj. Flow (vph)	42	58	29	21	60	9	26	622	47	20	378	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	129	0	0	81	9	26	669	0	20	418	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0	•		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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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		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	
Detector 1 Queue (s)	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	
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	Perm	NA		Perm	NA	
Protected Phases		4		2	8	*****	2	2			6	
Permitted Phases	4	•		8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
	•	•		•			_	_		•	•	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	57.0	57.0		57.0	57.0	
Total Split (%)	28.8%	28.8%		28.8%	28.8%	28.8%	71.3%	71.3%		71.3%	71.3%	
Maximum Green (s)	17.4	17.4		17.4	17.4	17.4	51.5	51.5		51.5	51.5	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped	Ped	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	20	20		20	20	20	20	20		20	20	
Act Effct Green (s)		17.1			17.1	17.1	51.8	51.8		51.8	51.8	
Actuated g/C Ratio		0.21			0.21	0.21	0.65	0.65		0.65	0.65	
v/c Ratio		0.43			0.26	0.03	0.05	0.61		0.06	0.39	
Control Delay		28.6			28.8	0.5	5.3	9.1		5.8	7.7	
Queue Delay		0.0			0.0	0.0	0.0	0.1		0.0	0.0	
Total Delay		28.6			28.8	0.5	5.3	9.2		5.8	7.7	
LOS		С			С	Α	Α	Α		Α	Α	
Approach Delay		28.6			26.0			9.1			7.7	
Approach LOS		С			С			Α			А	
Queue Length 50th (m)		13.5			9.5	0.0	1.2	46.6		0.9	23.1	
Queue Length 95th (m)		27.9			20.1	0.5	m2.4	37.9		3.1	38.1	
Internal Link Dist (m)		77.4			127.8			136.5			139.2	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		307			318	317	494	1101		329	1068	
Starvation Cap Reductn		0			0	0	0	45		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.42			0.25	0.03	0.05	0.63		0.06	0.39	

Intersection Summary

Area Type: Other

Area Type: Cycle Length: 80

Actuated Cycle Length: 80

Offset: 40 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 11.6
Intersection Capacity Utilization 76.3%

Intersection LOS: B
ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 6: Preston & Beech



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4						4			44	
Traffic Volume (vph)	1	0	3	0	0	0	8	580	42	10	400	5
Future Volume (vph)	1	0	3	0	0	0	8	580	42	10	400	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor		0.93						0.99			1.00	
Frt		0.899						0.991			0.998	
Flt Protected		0.988						0.999			0.999	
Satd. Flow (prot)	0	1470	0	0	0	0	0	1701	0	0	1617	0
Flt Permitted		0.988						0.995			0.984	
Satd. Flow (perm)	0	1453	0	0	0	0	0	1694	0	0	1591	0
Right Turn on Red		1100	Yes			Yes		1001	Yes		1001	Yes
Satd. Flow (RTOR)		29	103			103		10	103		2	103
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		114.6			152.9			73.8			160.5	
Travel Time (s)		8.3			11.0			5.3			11.6	
Confl. Peds. (#/hr)	17	0.5	18	18	11.0	17	28	0.0	45	45	11.0	28
Confl. Bikes (#/hr)	17		8	10		17	20		21	40		17
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
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	3%	0.90 1%	1%	10%	1%
			3		2%							
Adj. Flow (vph) Shared Lane Traffic (%)	1	0	J	0	U	0	9	644	47	11	444	6
` ,	0	4	^	^	0	0	^	700	^	0	404	0
Lane Group Flow (vph)	0	4	0	0	0	0	0	700	0	0	461	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		-2.0			-1.0			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	
Detector Template	Left	Thru					Left	Thru		Left	Thru	
Leading Detector (m)	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	
Detector 1 Position(m)	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	
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			28.7	
Detector 2 Size(m)		1.8						1.8			1.8	
Detector 2 Type		CI+Ex						CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		
Detector Phase	4	4					2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	

	•	→	•	•	←	•	4	†	/	-	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)	21.0	21.0					59.0	59.0		59.0	59.0	
Total Split (%)	26.3%	26.3%					73.8%	73.8%		73.8%	73.8%	
Maximum Green (s)	15.5	15.5					53.9	53.9		53.9	53.9	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0					18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	8.0	8.0					5.0	5.0		5.0	5.0	
Pedestrian Calls (#/hr)	20	20					20	20		20	20	
Act Effct Green (s)		12.0						69.8		20	69.8	
Actuated g/C Ratio		0.15						0.87			0.87	
v/c Ratio		0.02						0.47			0.33	
Control Delay		0.0						5.2			1.9	
Queue Delay		0.0						0.0			0.0	
Total Delay		0.0						5.2			1.9	
LOS		Α						Α			Α	
Approach Delay		Λ.						5.2			1.9	
Approach LOS								Α			Α	
Queue Length 50th (m)		0.0						0.0			0.0	
Queue Length 95th (m)		0.0						71.1			14.1	
Internal Link Dist (m)		90.6			128.9			49.8			136.5	
Turn Bay Length (m)		30.0			120.5			₹3.0			100.0	
Base Capacity (vph)		304						1478			1387	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.01						0.47			0.33	
		0.01						0.47			0.55	
Intersection Summary Area Type:	Other											
Cycle Length: 80	Othor											
Actuated Cycle Length: 80												
Offset: 48 (60%), Referenced	to phase 2:N	BTL and 6:	SBTL. Sta	rt of Greer	1							
Natural Cycle: 60	p		,		<u> </u>							
Control Type: Actuated-Coordi	inated											
Maximum v/c Ratio: 0.47												
Intersection Signal Delay: 3.9				ln:	tersection	I OS: A						
Intersection Capacity Utilizatio	n 58.2%				U Level of		}					
Analysis Period (min) 15					2 2010. 0.							
Splits and Phases: 7: Presto	on & Pamilla											
- . .	<u> </u>							T	A			
Ø2 (R)									Ø4			

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		₩			4			4			4	
Traffic Volume (vph)	9	1	11	10	5	17	9	567	84	25	402	15
Future Volume (vph)	9	1	11	10	5	17	9	567	84	25	402	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor												
Frt		0.930			0.929			0.983			0.995	
Flt Protected		0.979			0.985			0.999			0.997	
Satd. Flow (prot)	0	1589	0	0	1597	0	0	1699	0	0	1686	0
Flt Permitted		0.979			0.985			0.999			0.997	
Satd. Flow (perm)	0	1589	0	0	1597	0	0	1699	0	0	1686	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.6			154.3			71.5			73.8	
Travel Time (s)		8.2			11.1			5.1			5.3	
Confl. Peds. (#/hr)							28		45	45		28
Confl. Bikes (#/hr)									21			17
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	5%	2%
Adj. Flow (vph)	10	1	12	11	6	19	10	630	93	28	447	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	36	0	0	733	0	0	492	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		-2.0			-2.0			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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 50.2%
Analysis Period (min) 15

ICU Level of Service A

Synchro 10 Report J.Audia, Novatech

	•	•	1	†		1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			414	ĵ.	
Traffic Volume (vph)	5	10	29	655	396	27
Future Volume (vph)	5	10	29	655	396	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.913				0.991	
Flt Protected	0.983			0.998		
Satd. Flow (prot)	1566	0	0	3278	1683	0
Flt Permitted	0.983	,	,	0.998		
Satd. Flow (perm)	1566	0	0	3278	1683	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			28			28
Confl. Bikes (#/hr)						17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%
Adj. Flow (vph)	6	11	32	728	440	30
Shared Lane Traffic (%)				•		
Lane Group Flow (vph)	17	0	0	760	470	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	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	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

ICU Level of Service A

Control Type: Unsignalized Intersection Capacity Utilization 51.6% Analysis Period (min) 15

Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ĵ.		¥	+	7		4			ર્ન	7
Traffic Volume (vph)	640	263	2	2	176	310	1	4	3	250	4	300
Future Volume (vph)	640	263	2	2	176	310	1	4	3	250	4	300
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. 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
Ped Bike Factor	0.99	1.00		0.98		0.98		0.97			0.94	0.93
Frt		0.999				0.850		0.949				0.850
Flt Protected	0.950			0.950				0.994			0.953	
Satd. Flow (prot)	1642	1760	0	1674	1762	1498	0	1211	0	0	1668	1469
Flt Permitted	0.530			0.580				0.969			0.724	
Satd. Flow (perm)	909	1760	0	999	1762	1462	0	1177	0	0	1193	1371
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				344		3				333
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		233.9			203.3			76.1			164.5	
Travel Time (s)		14.0			12.2			5.5			11.8	
Confl. Peds. (#/hr)	9		15	15		9	19	0.0	24	24	11.0	19
Confl. Bikes (#/hr)	•		2			· ·	10		1	= '		10
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 (%)	3%	1%	1%	1%	1%	1%	1%	50%	25%	1%	50%	3%
Adj. Flow (vph)	711	292	2	2	196	344	1	4	3	278	4	333
Shared Lane Traffic (%)	711	232	2	L	130		•	7	3	210	7	
Lane Group Flow (vph)	711	294	0	2	196	344	0	8	0	0	282	333
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			3.5	
Link Offset(m)		2.0			0.0			5.0			0.0	
Crosswalk Width(m)		5.0			10.0			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	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
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	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+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		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 Type Detector 2 Channel		OI LX			OI · LX			OI · LA			OI LX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	рит-рі 5	2		1 61111	6	1 61111	i Giiii	8		1 61111	4	рш+оv 5
Permitted Phases	2			6	U	6	8	U		4	4	4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Detector Pridse	5	2		0	0	0	0	0		4	4	J

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	38.0	90.0		52.0	52.0	52.0	30.0	30.0		30.0	30.0	38.0
Total Split (%)	31.7%	75.0%		43.3%	43.3%	43.3%	25.0%	25.0%		25.0%	25.0%	31.7%
Maximum Green (s)	31.9	83.9		45.9	45.9	45.9	24.5	24.5		24.5	24.5	31.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	83.9	83.9		47.5	47.5	47.5		24.5			24.5	54.2
Actuated g/C Ratio	0.70	0.70		0.40	0.40	0.40		0.20			0.20	0.45
v/c Ratio	0.87	0.24		0.01	0.28	0.44		0.03			1.16	0.40
Control Delay	22.9	7.1		23.0	26.6	4.5		32.1			142.8	2.7
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	22.9	7.1		23.0	26.6	4.5		32.1			142.8	2.7
LOS	С	Α		С	С	Α		С			F	Α
Approach Delay		18.3			12.5			32.1			67.0	
Approach LOS		В			В			С			Е	
Queue Length 50th (m)	73.5	20.6		0.3	29.2	0.0		0.9			~70.8	3.0
Queue Length 95th (m)	#115.3	30.5		1.9	45.9	16.7		4.8			m#112.7	m5.5
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	830	1230		396	697	786		242			243	841
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	0.86	0.24		0.01	0.28	0.44		0.03			1.16	0.40

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

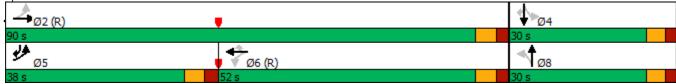
Intersection Signal Delay: 30.7
Intersection Capacity Utilization 95.4%

Intersection LOS: C
ICU Level of Service F

Analysis Period (min) 15

- Volume exceeds capacity, queue is theoretically infinite.
 - Queue shown is maximum after two cycles.
- # 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: 10: Prince of Wales/Queen Elizabeth & Preston



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Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations	7	^	1	ተ ተኈ	HBIT	**	OBIN
Traffic Volume (vph)	65	760	13	1480	153	174	7
Future Volume (vph)	65	760	13	1480	153	174	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0	1000	25.0	1000	0.0	0.0	0.0
Storage Lanes	1		1		0.0	1	0.0
Taper Length (m)	25.0		25.0		U	25.0	U
Lane Util. Factor	1.00	0.95	1.00	0.91	0.91	1.00	1.00
Ped Bike Factor	0.99	0.95	1.00	0.99	0.91	0.99	1.00
Frt Frt	0.99			0.986		0.995	
Flt Protected	0.950		0.950	0.900		0.954	
	1674	3252	1674	4660	0	1671	0
Satd. Flow (prot) Flt Permitted	0.950	3232	0.335	4000	U	0.954	U
		2050		4660	0		0
Satd. Flow (perm)	1664	3252	590	4660	0	1657	0
Right Turn on Red				20	Yes	. 1	Yes
Satd. Flow (RTOR)		00		20		1	
Link Speed (k/h)		60		60		40	
Link Distance (m)		196.1		162.9		242.3	
Travel Time (s)	^^	11.8		9.8	^^	21.8	•
Confl. Peds. (#/hr)	28				28	7	8
Confl. Bikes (#/hr)					5		8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	1%	2%	1%	1%	1%
Adj. Flow (vph)	72	844	14	1644	170	193	8
Shared Lane Traffic (%)							
Lane Group Flow (vph)	72	844	14	1814	0	201	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Right	L NA	Right
Median Width(m)		7.0		7.0		3.5	
Link Offset(m)		0.0		0.0		0.0	
Crosswalk Width(m)		5.0		10.0		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)	24		14		14	40	14
Number of Detectors	1	2	1	2		1	
Detector Template	Left	Thru	Left	Thru		Left	
Leading Detector (m)	6.1	30.5	6.1	30.5		6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	6.1	1.8	6.1	1.8		6.1	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	Cl+Ex		CI+Ex	
Detector 1 Channel	J	J. L.	J	J. L/		J. L.	
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	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	
Detector 2 Position(m)	0.0	28.7	0.0	28.7		0.0	
Detector 2 Size(m)		1.8		1.8			
Detector 2 Type				Cl+Ex			
Detector 2 Channel				OITEX			
DELECTOR & CHAILLE		CI+Ex					
Detector 2 Extend (s)	Drot	0.0	Dorm	0.0		Dorm	
Detector 2 Extend (s) Turn Type	Prot	0.0 NA	Perm	0.0 NA		Perm	
Detector 2 Extend (s) Turn Type Protected Phases	Prot 5	0.0		0.0			
Detector 2 Extend (s) Turn Type		0.0 NA	Perm 6 6	0.0 NA		Perm 4 4	

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Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0		10.0	
Minimum Split (s)	10.2	16.4	33.4	33.4		40.1	
Total Split (s)	15.0	99.0	84.0	84.0		41.0	
Total Split (%)	10.7%	70.7%	60.0%	60.0%		29.3%	
Maximum Green (s)	9.8	92.6	77.6	77.6		33.9	
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	
All-Red Time (s)	1.5	2.7	2.7	2.7		3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.2	6.4	6.4	6.4		7.1	
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	
Recall Mode	None	C-Max	C-Max	C-Max		None	
Walk Time (s)			12.0	12.0		26.0	
Flash Dont Walk (s)			15.0	15.0		7.0	
Pedestrian Calls (#/hr)			20	20		20	
Act Effct Green (s)	10.0	102.2	87.0	87.0		24.3	
Actuated g/C Ratio	0.07	0.73	0.62	0.62		0.17	
v/c Ratio	0.61	0.36	0.04	0.62		0.70	
Control Delay	84.5	8.2	14.7	16.4		65.8	
Queue Delay	0.0	0.0	0.0	0.4		0.0	
Total Delay	84.5	8.2	14.7	16.8		65.8	
LOS	F	Α	В	В		Е	
Approach Delay		14.2		16.7		65.8	
Approach LOS		В		В		Е	
Queue Length 50th (m)	17.9	34.6	0.6	28.9		49.5	
Queue Length 95th (m)	#33.8	57.9	m2.4	155.1		68.0	
Internal Link Dist (m)		172.1		138.9		218.3	
Turn Bay Length (m)	35.0		25.0				
Base Capacity (vph)	125	2372	366	2903		401	
Starvation Cap Reductn	0	0	0	495		0	
Spillback Cap Reductn	0	0	0	0		0	
Storage Cap Reductn	0	0	0	0		0	
Reduced v/c Ratio	0.58	0.36	0.04	0.75		0.50	
Intersection Summary							
Area Type:	Other						
Cycle Length: 140	Other						
Actuated Cycle Length: 140							
Offset: 24 (17%), Referenced	l to phase 2.F	DT and 6.1	MDTII C+~	ert of Croon			
Natural Cycle: 85	i to phase Z.E	o i aliu 6:\	void, Sta	iit di Green			
Control Type: Actuated-Coor	dinatod						
Maximum v/c Ratio: 0.70	uiiialeu						
iviaximum v/c Ratio. 0.70							

Intersection Signal Delay: 19.3

Intersection Capacity Utilization 68.4%

Intersection LOS: B ICU Level of Service C

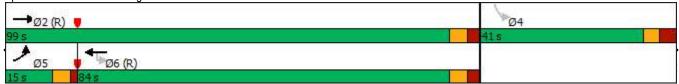
Analysis Period (min) 15

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: 1: Carling & Sherwood



	•	→	—	•	\	1
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	T T	^	↑	<u>₩Ы</u> ₹	JDL Š	7
Traffic Volume (vph)	44	800	1400	46	129	182
Future Volume (vph)	44	800	1400	46	129	182
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
	45.0	1000	1000	35.0	20.0	0.0
Storage Length (m)				35.0 1		
Storage Lanes	1			7	1	1
Taper Length (m)	25.0	^ ^=	2.21	4.00	25.0	4.00
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00
Ped Bike Factor	0.99			0.86	1.00	0.98
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1409	3283	4764	1498	1674	1498
Flt Permitted	0.116				0.950	
Satd. Flow (perm)	171	3283	4764	1283	1669	1464
Right Turn on Red		0_00	., 🗸 .	Yes	. 300	Yes
Satd. Flow (RTOR)				45		2
Link Speed (k/h)		60	60	40	50	
Link Distance (m)		162.9	117.5		178.4	
Travel Time (s)	70	9.8	7.1	70	12.8	-10
Confl. Peds. (#/hr)	70			70	5	16
Confl. Bikes (#/hr)				4		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	20%	3%	2%	1%	1%	1%
Adj. Flow (vph)	49	889	1556	51	143	202
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	889	1556	51	143	202
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
	Leit	7.0	7.0	Night	3.5	IX INA
Median Width(m)						
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)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+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
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		OI LA	O. LA			
Detector 2 Extend (s)		0.0	0.0			
	Perm	NA	NA	Perm	Perm	Perm
Turn Type Protected Phases	reiiii			reiiii	reiiii	reiiii
PINIACIAN PROCAC		2	6			
	_			_		
Permitted Phases Detector Phase	2	2	6	6	4	4

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	15.3	25.3	25.3	37.9	37.9
Total Split (s)	32.0	32.0	32.0	32.0	38.0	38.0
Total Split (%)	45.7%	45.7%	45.7%	45.7%	54.3%	54.3%
Maximum Green (s)	26.7	26.7	26.7	26.7	32.1	32.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.6	1.6	1.6	1.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.9	5.9
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)			10.0	10.0	7.0	7.0
Flash Dont Walk (s)			10.0	10.0	25.0	25.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	38.5	38.5	38.5	38.5	20.3	20.3
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.29	0.29
v/c Ratio	0.52	0.49	0.59	0.07	0.30	0.48
Control Delay	39.3	9.9	6.4	1.5	18.3	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	39.3	9.9	6.4	1.5	18.3	21.9
LOS	D	Α	А	Α	В	С
Approach Delay		11.4	6.2		20.4	
Approach LOS		В	Α		С	
Queue Length 50th (m)	2.7	25.3	48.6	0.3	14.9	22.0
Queue Length 95th (m)	#24.9	47.2	15.0	0.0	18.8	26.7
Internal Link Dist (m)		138.9	93.5		154.4	
Turn Bay Length (m)	45.0			35.0	20.0	
Base Capacity (vph)	94	1805	2620	725	765	672
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	2	38	0	0	53
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.49	0.60	0.07	0.19	0.33
l-tti O						
Intersection Summary	0.11					
Area Type:	Other					

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

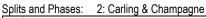
Maximum v/c Ratio: 0.59 Intersection Signal Delay: 9.6

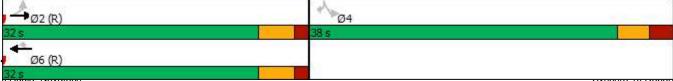
Intersection LOS: A Intersection Capacity Utilization 63.8% ICU Level of Service B

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.





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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^			^							
Traffic Volume (vph)	0	1000	0	0	1500	0	0	0	0	0	0	0
Future Volume (vph)	0	1000	0	0	1500	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3283	0	0	4764	0	0	0	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	3283	0	0	4764	0	0	0	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		117.5			124.7			157.3			54.9	
Travel Time (s)		7.1			7.5			11.3			4.0	
Confl. Peds. (#/hr)	35					35	25		35	35		25
Confl. Bikes (#/hr)			11			10			13			34
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 (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	1111	0	0	1667	0	0	0	0	0	0	0
Shared Lane Traffic (%)		1111	•	- U	1001	•				•	- U	J
Lane Group Flow (vph)	0	1111	0	0	1667	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Leit	7.0	Tagnt	LGIL	7.0	rtigrit	Leit	0.0	ragnt	LGIL	0.0	rtigrit
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		5.0			3.0			3.0			5.0	
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	1.09	24	1.03	1.09	24	1.03	1.09	24	1.03	1.03
Number of Detectors	24	2	17	24	2	17	24		17	24		14
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5							
Trailing Detector (m)		0.0			0.0							
Detector 1 Position(m)		0.0			0.0							
Detector 1 Size(m)		1.8			1.8							
Detector 1 Type		CI+Ex			Cl+Ex							
		UI+EX			UI+EX							
Detector 1 Channel Detector 1 Extend (s)		0.0			0.0							
					0.0							
Detector 1 Queue (s) Detector 1 Delay (s)		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		0.0			0.0							
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA			NA							
Protected Phases		2			6							
Permitted Phases		^			^							
Detector Phase		2			6							
Switch Phase		40.0			40.0							
Minimum Initial (s)		10.0			10.0							
Minimum Split (s)		25.1			25.1							

Lane Group	Ø4	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
FIt Protected		
Satd. Flow (prot)		
FIt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	4	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	35.6	
- F - (-)		

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Lane Group	EBL EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)	35.0			35.0							
Total Split (%)	50.0%			50.0%							
Maximum Green (s)	29.9			29.9							
Yellow Time (s)	3.7			3.7							
All-Red Time (s)	1.4			1.4							
Lost Time Adjust (s)	0.0			0.0							
Total Lost Time (s)	5.1			5.1							
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0			3.0							
Recall Mode	C-Max			C-Max							
Walk Time (s)	15.0			15.0							
Flash Dont Walk (s)	5.0			5.0							
Pedestrian Calls (#/hr)	20			20							
Act Effct Green (s)	54.0			54.0							
Actuated g/C Ratio	0.77			0.77							
v/c Ratio	0.44			0.45							
Control Delay	6.3			7.9							
Queue Delay	0.0			0.0							
Total Delay	6.3			7.9							
LOS	Α			Α							
Approach Delay	6.3			7.9							
Approach LOS	A			A							
Queue Length 50th (m)	0.1			0.0							
Queue Length 95th (m)	41.4			m78.0							
Internal Link Dist (m)	93.5			100.7			133.3			30.9	
Turn Bay Length (m)											
Base Capacity (vph)	2531			3672							
Starvation Cap Reductn	0			0							
Spillback Cap Reductn	0			0							
Storage Cap Reductn	0			0							
Reduced v/c Ratio	0.44			0.45							
Intersection Summary											
	her										
Cycle Length: 70											
Actuated Cycle Length: 70											
Offset: 6 (9%), Referenced to pha	ase 2:EBT and 6:WB	T. Start of	Green								
Natural Cycle: 65		,									
Control Type: Actuated-Coordinate	ted										
Maximum v/c Ratio: 0.45											
Intersection Signal Delay: 7.3			In	tersection	OS: A						
Intersection Capacity Utilization 3	4.8%			U Level of							
Analysis Period (min) 15	1.070			20 20101 01	001110071						
m Volume for 95th percentile qu	ueue is metered by u	pstream s	ignal.								
Splits and Phases: 3: Trillium F	Pathway & Carling										
N resto e-ove				Ak	34						3
) → Ø2 (R) 35 s				35 s	74						
Ø6 (R)				- 1							

Lane Group	Ø4
Total Split (s)	35.0
Total Split (%)	50%
Maximum Green (s)	28.4
Yellow Time (s)	3.0
All-Red Time (s)	3.6
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Internation Comments	
Intersection Summary	

	۶	→	•	•	+	•	1	†	/	/	+	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^	7	7	ተ ቀጮ		7	∱ ∱		7	£	
Traffic Volume (vph)	116	540	370	340	1000	45	340	300	164	81	308	112
Future Volume (vph)	116	540	370	340	1000	45	340	300	164	81	308	112
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		40.0	75.0		0.0	75.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98		0.92	0.97	1.00		0.98	0.97		0.97	0.98	
Frt			0.850		0.994			0.947			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3283	1483	1674	4705	0	1674	3061	0	1537	1626	0
Flt Permitted	0.950			0.950			0.104			0.462		
Satd. Flow (perm)	1581	3283	1365	1631	4705	0	180	3061	0	725	1626	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			299		5			95			13	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	53		34	34		53	60		55	55		60
Confl. Bikes (#/hr)			12			10			16			6
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 (%)	5%	3%	2%	1%	2%	6%	1%	2%	1%	10%	2%	5%
Adj. Flow (vph)	129	600	411	378	1111	50	378	333	182	90	342	124
Shared Lane Traffic (%)											*	
Lane Group Flow (vph)	129	600	411	378	1161	0	378	515	0	90	466	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2	• •	1	2	• •	1	2	• •
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	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	0.0	
Detector 1 Position(m)	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	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	CI+Ex	
Detector 1 Channel	OI · LX	OI · Ex	OI · LX	OI · EX	OI · LX		OI · EX	OITEX		OI LX	OI LX	
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	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	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			Cl+Ex	
Detector 2 Channel		OITEX			OITEX			OITEX			OITEX	
		0.0			0.0			0.0			0.0	
Detector 2 Extend (s) Turn Type	Prot	NA	Perm	Prot	NA		nm : nt	NA		Perm	NA	
Protected Phases		NA 2	reilli	Prot 1	NA 6		pm+pt	NA 8		reilli	NA 4	
	5	Z	0	I	Ö		3	ð		A	4	
Permitted Phases	F	2	2	1			8	0		4	4	
Detector Phase	5	2	2	1	6		3	8		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0	30.0	11.2	30.0		11.9	43.9		43.9	43.9	
Total Split (s)	30.0	41.0	41.0	30.0	41.0		24.0	69.0		45.0	45.0	
Total Split (%)	21.4%	29.3%	29.3%	21.4%	29.3%		17.1%	49.3%		32.1%	32.1%	
Maximum Green (s)	23.8	35.0	35.0	23.8	35.0		17.1	62.1		38.1	38.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3	2.3	2.5	2.3		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0	6.0	6.2	6.0		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0			7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0		17.0			30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20	20		20			20		20	20	
Act Effct Green (s)	16.5	35.0	35.0	23.8	42.3		62.1	62.1		38.1	38.1	
Actuated g/C Ratio	0.12	0.25	0.25	0.17	0.30		0.44	0.44		0.27	0.27	
v/c Ratio	0.68	0.73	0.73	1.33	0.81		1.44	0.37		0.46	1.03	
Control Delay	79.7	42.2	20.1	215.0	50.9		250.2	21.5		51.3	99.1	
Queue Delay	0.0	8.0	1.4	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	79.7	43.0	21.5	215.0	50.9		250.2	21.5		51.3	99.1	
LOS	E	D	С	F	D		F	С		D	F	
Approach Delay		39.4			91.2			118.3			91.3	
Approach LOS		D			F			F			F	
Queue Length 50th (m)	32.7	63.0	13.5	~124.7	100.1		~115.7	36.4		19.2	~124.5	
Queue Length 95th (m)	54.9	68.5	53.0	#181.9	#134.1		#173.7	49.3		35.9	#186.3	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0		40.0	75.0			75.0					
Base Capacity (vph)	273	820	565	284	1426		262	1410		197	451	
Starvation Cap Reductn	0	57	49	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.47	0.79	0.80	1.33	0.81		1.44	0.37		0.46	1.03	

Intersection Summary

Other

Area Type: Cycle Length: 140 Actuated Cycle Length: 140

Offset: 6 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.44 Intersection Signal Delay: 82.8 Intersection Capacity Utilization 112.3%

Intersection LOS: F ICU Level of Service H

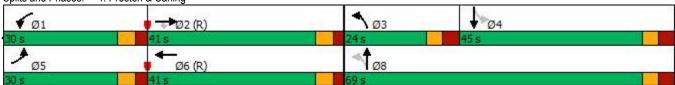
Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Preston & Carling



	•	→	←	•	-	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	T T	^	411	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,) T	7
Traffic Volume (vph)	230	630	1000	94	281	306
Future Volume (vph)	230	630	1000	94	281	306
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	45.0	1000	1000	35.0	0.0	45.0
Storage Lanes	45.0			33.0	1	45.0
	40.0				10.0	I
Taper Length (m) Lane Util. Factor	1.00	0.95	0.91	0.91	1.00	1.00
		0.95		0.91		
Ped Bike Factor	0.98		0.98		0.98	0.86
Frt	0.050		0.987		0.050	0.850
Flt Protected	0.950	2042	1000	^	0.950	4.400
Satd. Flow (prot)	1674	3316	4626	0	1674	1483
Flt Permitted	0.161	0615	1655		0.950	10=0
Satd. Flow (perm)	279	3316	4626	0	1649	1279
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			16			262
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1		16.5	
Confl. Peds. (#/hr)	65			65	13	81
Confl. Bikes (#/hr)				10		45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	2%	1%	1%	2%
Adj. Flow (vph)	256	700	1111	104	312	340
	230	700	1111	104	312	340
Shared Lane Traffic (%)	050	700	4045	^	240	240
Lane Group Flow (vph)	256	700	1215	0	312	340
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)		7.0	7.0		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)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
		0.0	0.0			0.0
Trailing Detector (m)	0.0				0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	1.8	1.8		6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel		OI LX	OI · LA			
Detector 2 Extend (s)		0.0	0.0			
	nm i nt				Dorm	Dorm
Turn Type	pm+pt	NA	NA		Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2	_			4	4
Detector Phase	5	2	6		4	4

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	10.9	15.7	29.7		39.0	39.0	
Fotal Split (s)	23.0	90.0	67.0		40.0	40.0	
otal Split (%)	17.7%	69.2%	51.5%		30.8%	30.8%	
Maximum Green (s)	17.1	84.3	61.3		34.0	34.0	
'ellow Time (s)	3.7	3.7	3.7		3.3	3.3	
All-Red Time (s)	2.2	2.0	2.0		2.7	2.7	
ost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.9	5.7	5.7		6.0	6.0	
		5.7			0.0	0.0	
ead/Lag	Lead		Lag				
ead-Lag Optimize?	2.0	2.0	2.0		2.0	2.0	
/ehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max		None	None	
Valk Time (s)			13.0		7.0	7.0	
Flash Dont Walk (s)			11.0		26.0	26.0	
Pedestrian Calls (#/hr)			20		20	20	
Act Effct Green (s)	89.2	89.4	69.9		28.9	28.9	
Actuated g/C Ratio	0.69	0.69	0.54		0.22	0.22	
ı/c Ratio	0.76	0.31	0.49		0.85	0.70	
Control Delay	27.3	9.0	20.6		69.7	19.0	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Γotal Delay	27.3	9.0	20.6		69.7	19.0	
.OS	С	Α	С		Е	В	
Approach Delay		13.9	20.6		43.2		
Approach LOS		В	С		D		
Queue Length 50th (m)	20.9	32.1	63.5		70.6	15.4	
Queue Length 95th (m)	47.9	45.4	85.4		98.4	46.1	
nternal Link Dist (m)		96.9	494.9		205.0		
Furn Bay Length (m)	45.0					45.0	
Base Capacity (vph)	374	2281	2496		431	527	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.68	0.31	0.49		0.72	0.65	
ntersection Summary							
	Other						
Cycle Length: 130							
Actuated Cycle Length: 130							
Offset: 110 (85%), Referenced Natural Cycle: 90	to phase 2:	EBTL and	6:WBT, Sta	art of Gree	n		
Control Type: Actuated-Coordin	nated						
Maximum v/c Ratio: 0.85							
ntersection Signal Delay: 23.5				In	tersection	LOS: C	
ntersection Capacity Utilization	77 0%					Service D	
Analysis Period (min) 15	111.970			10	O Level O	Service D	
Splits and Phases: 5: Carling	g & Booth						
→ Ø2 (R)							Ø4
90 s							40 s
∕ ø5	Ø6 (R)						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		₩			ની	7	7	1₃		7	£	
Traffic Volume (vph)	25	40	32	30	118	24	81	380	37	17	410	49
Future Volume (vph)	25	40	32	30	118	24	81	380	37	17	410	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	15.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (m)	25.0			20.0			20.0			20.0		
Lane Util. 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
Ped Bike Factor		0.93			0.98	0.84	0.96	0.99		0.94	0.99	
Frt		0.955				0.850		0.987			0.984	
Flt Protected		0.987			0.990		0.950			0.950		
Satd. Flow (prot)	0	1582	0	0	1745	1498	1674	1686	0	1674	1668	0
FIt Permitted		0.883			0.922		0.432			0.463		
Satd. Flow (perm)	0	1386	0	0	1593	1261	733	1686	0	765	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				30		12			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		101.4			151.8			160.5			163.2	
Travel Time (s)		7.3			10.9			11.6			11.8	
Confl. Peds. (#/hr)	40	1.0	46	46	10.0	40	52	11.0	80	80	11.0	52
Confl. Bikes (#/hr)			2	10		20	02		11	00		18
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%	1%	1%	1%	1%	1%	1%	3%	1%	1%	4%	2%
Adj. Flow (vph)	28	44	36	33	131	27	90	422	41	19	456	54
Shared Lane Traffic (%)	20	77	00	00	101	21	30	TLL	71	10	700	04
Lane Group Flow (vph)	0	108	0	0	164	27	90	463	0	19	510	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Leit	0.0	Night	Leit	0.0	Night	Leit	3.5	Rigiit	Leit	3.5	Rigiil
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		5.0			3.0			5.0			5.0	
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
	24	1.09	1.09	24	1.09	1.09	24	1.09	1.09	24	1.09	1.09
Turning Speed (k/h) Number of Detectors	2 4 1	2	14	2 4 1	2	14	2 4 1	2	14	2 4 1	2	14
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	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	
Detector 1 Queue (s)	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	
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	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	67.0	67.0		67.0	67.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%	25.6%	74.4%	74.4%		74.4%	74.4%	
Maximum Green (s)	17.4	17.4		17.4	17.4	17.4	61.5	61.5		61.5	61.5	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped	Ped	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	20	20		20	20	20	20	20		20	20	
Act Effct Green (s)		17.1			17.1	17.1	61.8	61.8		61.8	61.8	
Actuated g/C Ratio		0.19			0.19	0.19	0.69	0.69		0.69	0.69	
v/c Ratio		0.38			0.54	0.10	0.18	0.40		0.04	0.44	
Control Delay		28.8			40.6	11.4	2.8	4.4		4.8	7.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		28.8			40.6	11.4	2.8	4.4		4.8	7.6	
LOS		С			D	В	Α	А		Α	Α	
Approach Delay		28.8			36.4			4.1			7.5	
Approach LOS		С			D			Α			Α	
Queue Length 50th (m)		11.5			23.8	0.0	3.5	28.8		8.0	30.5	
Queue Length 95th (m)		25.1			41.6	5.8	0.8	2.4		2.8	47.8	
Internal Link Dist (m)		77.4			127.8			136.5			139.2	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		288			307	267	503	1161		525	1150	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.38			0.53	0.10	0.18	0.40		0.04	0.44	
Intersection Summary												

Other

Area Type: Cycle Length: 90

Actuated Cycle Length: 90

Offset: 43 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

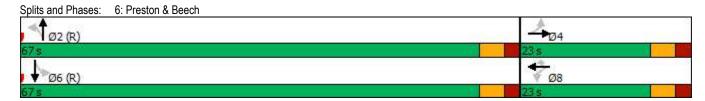
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 11.8 Intersection Capacity Utilization 66.2%

Intersection LOS: B ICU Level of Service C

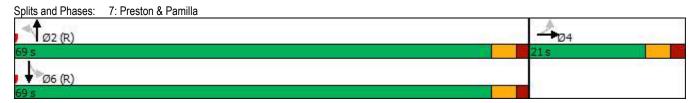
Analysis Period (min) 15



Synchro 10 Report J.Audia, Novatech

Traffic Volume (vph)		۶	→	•	•	+	•	1	†	/	/	+	✓
Traffic Volume (uph) 4	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (uph) 4	Lane Configurations		43-						43-			43-	
Future Volume (ryhr)		4		10	0	0	0	8		21	6		15
Idea Flow (yohp) 1800						0					6		
Lane UNIF Factor													
Ped Bike Factor													
Fit Horloctocled												1.00	
Filt Protected													
Sald Flow (prot) 0 1485 0 0 0 0 0 1709 0 0 1715 0 0.994 Sald Flow (perm) 0 1459 0 0 0 0 0 1696 0 0 1715 0 0 Right Turn on Red													
File Permitted		0		0	0	0	0	0		0	0		0
Sald Flow (Perm) Sald Flow (Perm) Sald Flow (Porm) Sald Flow (RTOR) Sald F													
Right Tum on Red		0		0	0	0	0	0		0	0		0
Safe Flow (RTOR)		U	1400		•	0		•	1000			1700	
Link Speader (k/h)			11	163			163		6	163		1	163
Link Distance (m)						50							
Travel Time (s)													
Confl. Pikes (#hr)													
Confl. Bikes (#/hr)	())E	0.3	07	07	11.0	O.E.	46	5.3	17	17	11.0	46
Peak Hour Factor		25			21			40			47		
Heavy Vehicles (%)		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
Adj. Flow (vph)													
Shared Lane Traffic (%) Lane Group Flow (yph) 0													
Lane Group Flow (vph) 0 17 0 0 0 0 0 532 0 0 546 0 0 Enter Blocked Intersection No		4	2	11	0	0	0	9	500	23	/	522	17
Enter Blocked Intersection		_			_					_			
Left Left Right Righ													
Median Width(m) 0.0 0.0 3.5 3.5 Link Offset(m) -2.0 -1.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>													
Link Offset(m) -2.0 -1.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.0		Left		Right	Left		Right	Left		Right	Left		Right
Crosswalk Width(m) 5.0 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 <td></td>													
Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09													
Headway Factor 1.09			5.0			5.0			5.0			5.0	
Turning Speed (k/h) 24 14 <td></td>													
Number of Detectors 1 2 1 2 1 2 Detector Template Left Thru Left Thru Left Thru Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 30.5 Trailing Detector (m) 0.0			1.09	1.09		1.09			1.09			1.09	1.09
Detector Template	Turning Speed (k/h)	24		14	24		14	24		14	24		14
Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 30.5 Trailing Detector (m) 0.0	Number of Detectors	1	2						2			2	
Trailing Detector (m) 0.0	Detector Template	Left	Thru					Left	Thru			Thru	
Detector 1 Position(m) 0.0	Leading Detector (m)	6.1	30.5					6.1	30.5		6.1	30.5	
Detector 1 Size(m) 6.1 1.8 6.1 1.8 Detector 1 Type 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 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Delay (s) 0.0 <td>Trailing Detector (m)</td> <td>0.0</td> <td>0.0</td> <td></td> <td></td> <td></td> <td></td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td></td>	Trailing Detector (m)	0.0	0.0					0.0	0.0		0.0	0.0	
Detector 1 Type CI+Ex	Detector 1 Position(m)	0.0	0.0					0.0	0.0		0.0	0.0	
Detector 1 Channel Detector 1 Extend (s) 0.0	Detector 1 Size(m)	6.1	1.8					6.1	1.8		6.1	1.8	
Detector 1 Channel Detector 1 Extend (s) 0.0	Detector 1 Type	CI+Ex	CI+Ex					CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Queue (s) 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 Position(m) 28.7 28.7 28.7 Detector 2 Size(m) 1.8 1.8 1.8 Detector 2 Type CI+Ex CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Perm NA Perm NA Perm NA Protected Phases 4 2 6 6 Permitted Phases 4 4 2 6 6 Switch Phase 4 4 2 2 6 6 Switch Phase 4 10.0 10.0 10.0 10.0 10.0 10.0	Detector 1 Channel												
Detector 1 Queue (s) 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 Position(m) 28.7 28.7 28.7 Detector 2 Size(m) 1.8 1.8 1.8 Detector 2 Type CI+Ex CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Perm NA Perm NA Perm NA Protected Phases 4 2 6 6 Permitted Phases 4 4 2 6 6 Switch Phase 4 4 2 2 6 6 Switch Phase 4 10.0 10.0 10.0 10.0 10.0 10.0	Detector 1 Extend (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 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Stze(m) 28.7 29.7 28.7 29.7 <	Detector 1 Queue (s)												
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 Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 6 Switch Phase Minimum Initial (s) 10.0 10.0 10.0 10.0													
Detector 2 Size(m) 1.8 1.8 1.8 Detector 2 Type CI+Ex CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 Switch Phase 4 4 10.0	Detector 2 Position(m)												
Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase 4 10.0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>													
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase 4 10.0 10.0 10.0 10.0 10.0													
Detector 2 Extend (s) 0.0 0.0 Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase 5 10.0 10.0 10.0 10.0 10.0 10.0			V. =/\						V/.			υ. <u>-</u> ν	
Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase 8 10.0 10.0 10.0 10.0 10.0 10.0			0.0						0.0			0.0	
Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase 8 8 10.0 10.0 10.0 10.0 10.0 10.0		Perm						Perm			Perm		
Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0		1 Gilli						1 01111			i Gilli		
Detector Phase 4 4 2 2 6 6 Switch Phase Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0		1	7					2			6	U	
Switch Phase 10.0			1						2			6	
Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0		4	4					۷			U	Ü	
		10.0	10.0					10.0	10.0		10.0	10.0	
Willimini Spin (S) 20.5 20.5 20.5 28.1 28.1 28.1													
	wiiilitiutti Split (S)	20.5	20.5					28.1	28.1		20.1	26.1	

	•	→	\rightarrow	•	←	•	•	†	/	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	21.0	21.0					69.0	69.0		69.0	69.0	
Total Split (%)	23.3%	23.3%					76.7%	76.7%		76.7%	76.7%	
Maximum Green (s)	15.5	15.5					63.9	63.9		63.9	63.9	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0					18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	8.0	8.0					5.0	5.0		5.0	5.0	
Pedestrian Calls (#/hr)	20	20					20	20		20	20	
Act Effct Green (s)		12.0						75.6			75.6	
Actuated g/C Ratio		0.13						0.84			0.84	
v/c Ratio		0.08						0.37			0.38	
Control Delay		21.6						4.4			3.5	
Queue Delay		0.0						0.0			0.1	
Total Delay		21.6						4.4			3.6	
LOS		С						Α			Α	
Approach Delay		21.6						4.4			3.6	
Approach LOS		С						Α			Α	
Queue Length 50th (m)		0.9						21.7			19.1	
Queue Length 95th (m)		6.0						44.5			30.9	
Internal Link Dist (m)		90.6			128.9			49.8			136.5	
Turn Bay Length (m)												
Base Capacity (vph)		260						1426			1433	
Starvation Cap Reductn		0						0			109	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.07						0.37			0.41	
Intersection Summary												
	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 27 (30%), Referenced t	o phase 2:N	BTL and 6:	SBTL, Sta	rt of Greei	า							
Natural Cycle: 50												
Control Type: Actuated-Coordi	nated											
Maximum v/c Ratio: 0.38												
Intersection Signal Delay: 4.2					tersection							
Intersection Capacity Utilization	า 51.2%			IC	U Level of	Service A	1					
Analysis Period (min) 15												



	۶	→	•	•	←	•	4	†	/	/	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			₩			4			4	
Traffic Volume (vph)	4	4	9	14	2	8	7	422	40	11	487	5
Future Volume (vph)	4	4	9	14	2	8	7	422	40	11	487	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor												
Frt		0.925			0.955			0.989			0.999	
Flt Protected		0.989			0.971			0.999			0.999	
Satd. Flow (prot)	0	1596	0	0	1618	0	0	1709	0	0	1725	0
Flt Permitted		0.989			0.971			0.999			0.999	
Satd. Flow (perm)	0	1596	0	0	1618	0	0	1709	0	0	1725	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.6			154.3			71.5			73.8	
Travel Time (s)		8.2			11.1			5.1			5.3	
Confl. Peds. (#/hr)							46		47	47		46
Confl. Bikes (#/hr)									21			14
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Adj. Flow (vph)	4	4	10	16	2	9	8	469	44	12	541	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	27	0	0	521	0	0	559	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0	Ţ.		0.0	, i		0.0	Ţ.		0.0	J
Link Offset(m)		-2.0			-2.0			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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 43.9%
Analysis Period (min) 15

ICU Level of Service A

Synchro 10 Report J.Audia, Novatech

	•	\rightarrow	4	†	↓	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	N/	•	•	41≯	ĵ.	
Traffic Volume (vph)	17	18	9	452	483	27
Future Volume (vph)	17	18	9	452	483	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.931				0.993	
Flt Protected	0.976			0.999		
Satd. Flow (prot)	1586	0	0	3281	1717	0
Flt Permitted	0.976			0.999		
Satd. Flow (perm)	1586	0	0	3281	1717	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			46			47
Confl. Bikes (#/hr)						14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	3%	3%	2%
Adj. Flow (vph)	19	20	10	502	537	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	0	512	567	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5		,	0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	5.0	
Two way Left Turn Lane	0.0				0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
_	О.СР					
Intersection Summary	0.11					
Area Type:	Other					
Control Type: Unsignalized						

Control Type: Unsignalized Intersection Capacity Utilization 38.8% Analysis Period (min) 15

ICU Level of Service A

Synchro 10 Report J.Audia, Novatech

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 pm+pt NA Perm NA Perm NA Perm NA Perm NA Perm NA pm+ov Perm NA NA Perm NA NA Perm NA NA Perm NA NA NA NA </th <th></th> <th>۶</th> <th>→</th> <th>•</th> <th>•</th> <th>+</th> <th>•</th> <th>1</th> <th>†</th> <th>/</th> <th>/</th> <th>+</th> <th>-√</th>		۶	→	•	•	+	•	1	†	/	/	+	-√
Traffic Volume (rph)	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	Lane Configurations	*	f)		7	•	7		4			ની	7
Ideal Flow (yr)hpt 1800		370		4			410	5		1	400		
Ideal Flow (yrohp)	Future Volume (vph)	370	244	4	2	410	410	5	2	1	400	0	600
Storage Length (m) 55.0 0.0 30.0 25.0 0.0 0.0 0.0 0.1		1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Lanes	Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Taper Length (m)		1		0	1		1	0		0	0		
Ped Bike Factor	Taper Length (m)	25.0			25.0			25.0			25.0		
Fit Protected	Lane Util. 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
Fil Principated 0.950 0.950 0.950 0.968 0.950 0.968 0.950 0.968 0.950 0.968 0.950 0.968 0.950 0.968 0.950 0.968 0.950 0.968 0.950 0.968 0.950 0.968 0.950 0.968 0.950 0.968 0.950 0.952 0.	Ped Bike Factor		1.00		0.89		0.94		0.94			0.83	0.79
Sata Flow (prort) 16A2 1754 0 1674 1762 1498 0 1644 0 0 1674 1488	Frt		0.998				0.850		0.985				0.850
FILP Emmitted	Flt Protected	0.950			0.950				0.968			0.950	
Satis Flow (perm)	Satd. Flow (prot)	1642	1754	0		1762	1498	0		0	0	1674	1483
Right Turn on Red	Flt Permitted	0.157			0.590				0.821			0.752	
Satt Flow (RTOR)	Satd. Flow (perm)	271	1754		930	1762	1403	0	1343		0	1095	1166
Link Speed (k/h)	Right Turn on Red			Yes						Yes			
Link Distance (m)	Satd. Flow (RTOR)						175						87
Travel Time (S)	Link Speed (k/h)					60							
Conf. Peds. (#hr)	Link Distance (m)		233.9			203.3			76.1			164.5	
Peak Hour Factor	Travel Time (s)		14.0			12.2			5.5			11.8	
Heavy Vehicles (%)	Confl. Peds. (#/hr)	35		62	62		35	73		65	65		73
Adj. Flow (vph) 411 271 4 2 456 456 6 2 1 444 0 667 Shared Lane Traffic (%) Lane Group Flow (vph) 411 275 0 2 456 456 0 9 0 0 444 667 Enter Blocked Intersection No	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
Shared Lane Traffic (%) Lane Group Flow (vph)	Heavy Vehicles (%)	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%
Lane Group Flow (vph)	Adj. Flow (vph)	411	271	4	2	456	456	6	2	1	444	0	667
Enter Blocked Intersection No No No No No No No	Shared Lane Traffic (%)												
Left Left Left Right Left Right Left Right Left Right Left Right Left Right Righ	Lane Group Flow (vph)	411	275	0	2	456	456	0	9	0	0	444	667
Median Width(m) 3.5 3.5 0.0 3.5 1.0	Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Link Offset(m) 2.0 0.0 5.0 0.0 5.0	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Two way Left Turn Lane	Median Width(m)		3.5			3.5			0.0			3.5	
Two way Left Turn Lane Headway Factor 1.09	Link Offset(m)		2.0			0.0			5.0			0.0	
Headway Factor	Crosswalk Width(m)		5.0			10.0			5.0			5.0	
Turning Speed (k/h) 24	Two way Left Turn Lane												
Number of Detectors	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
Detector Template	Turning Speed (k/h)	24		14	24		14	24		14	24		14
Leading Detector (m) 6.1 30.5 6.1 30.0 0.0 <t< td=""><td></td><td></td><td>2</td><td></td><td>1</td><td>2</td><td>1</td><td></td><td>2</td><td></td><td>1</td><td>2</td><td>1</td></t<>			2		1	2	1		2		1	2	1
Trailing Detector (m) 0.0	Detector Template				Left		Right						Right
Detector 1 Position(m) 0.0	Leading Detector (m)							6.1					
Detector 1 Size(m)													
Detector 1 Type	Detector 1 Position(m)	0.0				0.0							0.0
Detector 1 Channel Detector 1 Extend (s) 0.0	Detector 1 Size(m)												
Detector 1 Extend (s) 0.0	Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	CI+Ex
Detector 1 Queue (s) 0.0	Detector 1 Channel												
Detector 1 Delay (s) 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 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 pm+pt NA Perm NA Perm NA Perm NA Perm NA Perm NA pm+ov Perm NA NA Perm NA NA Perm NA NA Perm NA NA NA NA </td <td>Detector 1 Queue (s)</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td>	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 2 Size(m) 1.8 1.8 1.8 1.8 Detector 2 Type CI+Ex CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+ov Protected Phases 5 2 6 8 4 4 5 Permitted Phases 2 6 6 8 4 4 4 Detector Phase 5 2 6 6 8 8 4 4 5	Detector 1 Delay (s)	0.0			0.0		0.0	0.0			0.0		0.0
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 pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+ov Protected Phases 5 2 6 8 4 5 Permitted Phases 2 6 6 8 4 4 4 Detector Phase 5 2 6 6 8 8 4 4 5	Detector 2 Position(m)												
Detector 2 Channel Detector 2 Extend (s) 0.0	Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+ov NA pm+ov NA Perm NA pm+ov NA Perm NA Perm NA NA NA NA	Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+ov Protected Phases 5 2 6 8 4 5 Permitted Phases 2 6 6 8 4 4 4 Detector Phase 5 2 6 6 8 8 4 4 5	Detector 2 Channel												
Protected Phases 5 2 6 8 4 5 Permitted Phases 2 6 6 8 4 4 Detector Phase 5 2 6 6 8 8 4 4 5	Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Permitted Phases 2 6 6 8 4 4 4 Detector Phase 5 2 6 6 6 8 8 4 4 5	Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Detector Phase 5 2 6 6 6 8 8 4 4 5	Protected Phases		2			6			8			4	
Detector Phase 5 2 6 6 6 8 8 4 4 5	Permitted Phases	2			6		6	8			4		4
	Detector Phase	5	2		6	6			8			4	
	Switch Phase												

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	39.0	81.0		42.0	42.0	42.0	49.0	49.0		49.0	49.0	39.0
Total Split (%)	30.0%	62.3%		32.3%	32.3%	32.3%	37.7%	37.7%		37.7%	37.7%	30.0%
Maximum Green (s)	32.9	74.9		35.9	35.9	35.9	43.5	43.5		43.5	43.5	32.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	74.9	74.9		38.9	38.9	38.9		43.5			43.5	72.8
Actuated g/C Ratio	0.58	0.58		0.30	0.30	0.30		0.33			0.33	0.56
v/c Ratio	0.87	0.27		0.01	0.87	0.84		0.02			1.21	0.87
Control Delay	46.7	14.7		34.5	61.6	41.8		27.2			156.6	33.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	46.7	14.7		34.5	61.6	41.8		27.2			156.6	33.4
LOS	D	В		С	Е	D		С			F	С
Approach Delay		33.8			51.7			27.3			82.7	
Approach LOS		С			D			С			F	
Queue Length 50th (m)	67.6	31.1		0.3	105.4	68.4		1.3			~127.8	84.5
Queue Length 95th (m)	#113.1	45.8		2.3	#163.6	#125.3		5.0			#186.2	#128.6
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	503	1010		278	527	542		450			366	796
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	0.82	0.27		0.01	0.87	0.84		0.02			1.21	0.84

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 59.8

Intersection LOS: E
ICU Level of Service G

Intersection Capacity Utilization 101.8% ICU Level of

Analysis Period (min) 15

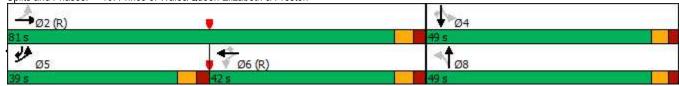
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 10: Prince of Wales/Queen Elizabeth & Preston



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^	7	7	ተ ቀጭ		7	∱ ∱		7	f)	
Traffic Volume (vph)	140	570	224	134	550	94	282	450	281	80	227	99
Future Volume (vph)	140	570	224	134	550	94	282	450	281	80	227	99
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		40.0	75.0		0.0	75.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.96		0.91	0.97	0.98		0.98	0.99		1.00	0.98	
Frt			0.850		0.978			0.942			0.954	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1595	3252	1483	1658	4456	0	1674	3051	0	1510	1517	0
Flt Permitted	0.950			0.950			0.312			0.345		
Satd. Flow (perm)	1538	3252	1350	1616	4456	0	541	3051	0	548	1517	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			199		26			163			20	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	65		41	41		65	39		2	2		39
Confl. Bikes (#/hr)			21			9			36			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 (%)	6%	4%	2%	2%	4%	10%	1%	4%	2%	12%	6%	20%
Adj. Flow (vph)	156	633	249	149	611	104	313	500	312	89	252	110
Shared Lane Traffic (%)									*			
Lane Group Flow (vph)	156	633	249	149	715	0	313	812	0	89	362	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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				
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	2		1	2	• •
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	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	0.0	
Detector 1 Position(m)	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	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel	OI · EX	OI · EX	OI · LX	OI · EX	OI · LX		OI LX	OI · EX		OI · EX	OI · Ex	
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	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	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			CI+Ex			CI+Ex	
Detector 2 Channel		CITEX			OITEX			OITEX			OITEX	
		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	Prot	NA	Perm	Prot	NA		nm : nt	NA		Dorm	NA	
Turn Type		NA 2	reiiii	Prot 1			pm+pt			Perm	NA 4	
Protected Phases	5	Z	0		6		3	8		4	4	
Permitted Phases		2	2	1			8	0		4		
Detector Phase	5	2	2	1	6		3	8		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0	30.0	11.2	30.0		11.9	43.9		43.9	43.9	
Total Split (s)	18.0	35.0	35.0	18.0	35.0		20.0	67.0		47.0	47.0	
Total Split (%)	15.0%	29.2%	29.2%	15.0%	29.2%		16.7%	55.8%		39.2%	39.2%	
Maximum Green (s)	11.8	29.0	29.0	11.8	29.0		13.1	60.1		40.1	40.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3	2.3	2.5	2.3		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0	6.0	6.2	6.0		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0			7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0		17.0			30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20	20		20			20		20	20	
Act Effct Green (s)	11.8	29.0	29.0	11.8	29.0		60.1	60.1		40.1	40.1	
Actuated g/C Ratio	0.10	0.24	0.24	0.10	0.24		0.50	0.50		0.33	0.33	
v/c Ratio	1.00	0.81	0.52	0.91	0.65		0.79	0.50		0.49	0.70	
Control Delay	136.7	40.9	8.8	117.5	41.7		42.1	25.2		42.6	41.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	136.7	40.9	8.8	117.5	41.7		42.1	25.2		42.6	41.0	
LOS	F	D	Α	F	D		D	С		D	D	
Approach Delay		47.6			54.8			29.9			41.3	
Approach LOS		D			D			С			D	
Queue Length 50th (m)	36.5	27.3	0.5	34.3	21.4		54.2	68.5		15.3	64.3	
Queue Length 95th (m)	#76.3	60.5	16.1	#70.5	51.1		m72.6	m91.3		31.6	96.3	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0		40.0	75.0			75.0					
Base Capacity (vph)	156	785	477	163	1096		394	1609		183	520	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	1.00	0.81	0.52	0.91	0.65		0.79	0.50		0.49	0.70	

Area Type: Cycle Length: 120 Other

Actuated Cycle Length: 120

Offset: 116 (97%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 42.8 Intersection Capacity Utilization 97.2%

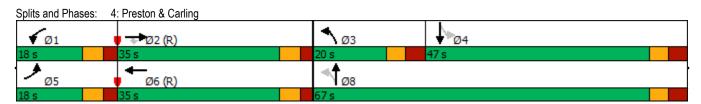
Intersection LOS: D ICU Level of Service F

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.



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	1>		7	†	7		4			ર્ન	7
Traffic Volume (vph)	640	263	2	2	176	310	1	4	3	210	4	300
Future Volume (vph)	640	263	2	2	176	310	1	4	3	210	4	300
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0	.000	0.0
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (m)	25.0		· ·	25.0		•	25.0		· ·	25.0		•
Lane Util. 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
Ped Bike Factor	0.99	1.00	1.00	0.98	1.00	0.98	1.00	0.97	1.00	1.00	0.94	0.93
Frt	0.55	0.999		0.50		0.850		0.949			0.54	0.850
Flt Protected	0.950	0.555		0.950		0.000		0.994			0.953	0.000
Satd. Flow (prot)	1642	1760	0	1674	1762	1498	0	1211	0	0	1666	1469
Flt Permitted	0.530	1700	U	0.580	1702	1430	U	0.972	U	U	0.724	1403
Satd. Flow (perm)	909	1760	0	999	1762	1462	0	1180	0	0	1192	1371
	909	1700	Yes	999	1702	Yes	U	1100	Yes	U	1192	Yes
Right Turn on Red		1	res					2	res			333
Satd. Flow (RTOR)		1			00	344		3				333
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		233.9			203.3			76.1			164.5	
Travel Time (s)	^	14.0	45	4.5	12.2	^	40	5.5	0.4	0.4	11.8	40
Confl. Peds. (#/hr)	9		15	15		9	19		24	24		19
Confl. Bikes (#/hr)			2						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 (%)	3%	1%	1%	1%	1%	1%	1%	50%	25%	1%	50%	3%
Adj. Flow (vph)	711	292	2	2	196	344	1	4	3	233	4	333
Shared Lane Traffic (%)												
Lane Group Flow (vph)	711	294	0	2	196	344	0	8	0	0	237	333
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			3.5	
Link Offset(m)		2.0			0.0			5.0			0.0	
Crosswalk Width(m)		5.0			10.0			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	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
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	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	CI+Ex
Detector 1 Channel	OI LX	OI LX		OI LX	OI · Ex	OI LX	OI · EX	OI · EX		OI · EX	OI - EX	OI · EX
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	28.7	0.0	0.0	28.7		0.0	28.7	0.0
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		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)		0.0		_	0.0	ρ.	D.	0.0		_	0.0	
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		_	6			8			4	5
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	38.0	90.0		52.0	52.0	52.0	30.0	30.0		30.0	30.0	38.0
Total Split (%)	31.7%	75.0%		43.3%	43.3%	43.3%	25.0%	25.0%		25.0%	25.0%	31.7%
Maximum Green (s)	31.9	83.9		45.9	45.9	45.9	24.5	24.5		24.5	24.5	31.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	83.9	83.9		47.5	47.5	47.5		24.5			24.5	54.2
Actuated g/C Ratio	0.70	0.70		0.40	0.40	0.40		0.20			0.20	0.45
v/c Ratio	0.87	0.24		0.01	0.28	0.44		0.03			0.98	0.40
Control Delay	22.9	7.1		23.0	26.6	4.5		32.1			91.6	2.7
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	22.9	7.1		23.0	26.6	4.5		32.1			91.6	2.7
LOS	С	Α		С	С	Α		С			F	Α
Approach Delay		18.3			12.5			32.1			39.6	
Approach LOS		В			В			С			D	
Queue Length 50th (m)	73.5	20.6		0.3	29.2	0.0		0.9			45.9	3.0
Queue Length 95th (m)	#115.3	30.5		1.9	45.9	16.7		4.8			m#89.3	m5.5
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	830	1230		396	697	786		243			243	841
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	0.86	0.24		0.01	0.28	0.44		0.03			0.98	0.40

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98 Intersection Signal Delay: 22.6

Intersection Signal Delay: 22.6 Intersection Capacity Utilization 93.8% ICU Level of Service F

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: 10: Prince of Wales/Queen Elizabeth & Preston



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^	7	7	ተ ቀጮ		¥	↑ ↑		7	f)	
Traffic Volume (vph)	116	540	370	250	1000	45	250	300	164	81	288	112
Future Volume (vph)	116	540	370	250	1000	45	250	300	164	81	288	112
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		40.0	75.0		0.0	75.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98		0.92	0.97	1.00		0.98	0.97		0.97	0.98	
Frt			0.850		0.994			0.947			0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3283	1483	1674	4705	0	1674	3061	0	1537	1620	0
Flt Permitted	0.950			0.950			0.131			0.462		
Satd. Flow (perm)	1581	3283	1365	1631	4705	0	226	3061	0	725	1620	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			299		5			95			14	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	53		34	34		53	60		55	55		60
Confl. Bikes (#/hr)			12			10			16			6
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 (%)	5%	3%	2%	1%	2%	6%	1%	2%	1%	10%	2%	5%
Adj. Flow (vph)	129	600	411	278	1111	50	278	333	182	90	320	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	600	411	278	1161	0	278	515	0	90	444	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	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	0.0	
Detector 1 Position(m)	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	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	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	
Detector 1 Queue (s)	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	
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	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		
Detector Phase	5	2	2	1	6		3	8		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0	30.0	11.2	30.0		11.9	43.9		43.9	43.9	
Total Split (s)	30.0	41.0	41.0	30.0	41.0		24.0	69.0		45.0	45.0	
Total Split (%)	21.4%	29.3%	29.3%	21.4%	29.3%		17.1%	49.3%		32.1%	32.1%	
Maximum Green (s)	23.8	35.0	35.0	23.8	35.0		17.1	62.1		38.1	38.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3	2.3	2.5	2.3		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0	6.0	6.2	6.0		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Ped		Ped	Ped	
Walk Time (s)		7.0	7.0		7.0			7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0		17.0			30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20	20		20			20		20	20	
Act Effct Green (s)	16.5	35.0	35.0	23.8	42.3		62.1	62.1		38.1	38.1	
Actuated g/C Ratio	0.12	0.25	0.25	0.17	0.30		0.44	0.44		0.27	0.27	
v/c Ratio	0.68	0.73	0.73	0.98	0.81		1.00	0.37		0.46	0.98	
Control Delay	79.7	42.2	20.1	105.6	50.9		88.6	21.5		51.3	87.5	
Queue Delay	0.0	0.8	1.4	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	79.7	43.0	21.5	105.6	50.9		88.6	21.5		51.3	87.5	
LOS	Е	D	С	F	D		F	С		D	F	
Approach Delay		39.4			61.5			45.0			81.4	
Approach LOS		D			Е			D			F	
Queue Length 50th (m)	32.7	63.0	13.5	71.4	100.1		~52.4	36.4		19.2	110.2	
Queue Length 95th (m)	54.9	68.5	53.0	#123.1	#134.1		#106.1	49.3		35.9	#174.0	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0		40.0	75.0			75.0					
Base Capacity (vph)	273	820	565	284	1426		277	1410		197	451	
Starvation Cap Reductn	0	57	49	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.47	0.79	0.80	0.98	0.81		1.00	0.37		0.46	0.98	

Other

Area Type: Cycle Length: 140 Actuated Cycle Length: 140

Offset: 6 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 54.4 Intersection Capacity Utilization 101.7%

Intersection LOS: D ICU Level of Service G

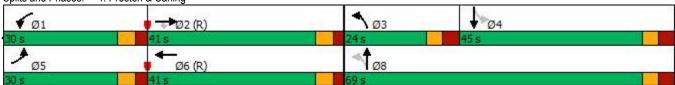
Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Preston & Carling



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	1 >		ች		7		4			4	7
Traffic Volume (vph)	370	244	4	2	410	410	5	2	1	330	0	600
Future Volume (vph)	370	244	4	2	410	410	5	2	1	330	0	600
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (m)	25.0		•	25.0		•	25.0			25.0		•
Lane Util. 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
Ped Bike Factor	1.00	1.00	1.00	0.89	1.00	0.94	1.00	0.93	1.00	1.00	0.83	0.79
Frt		0.998		0.00		0.850		0.985			0.00	0.850
Flt Protected	0.950	0.000		0.950		0.000		0.968			0.950	0.000
Satd. Flow (prot)	1642	1754	0	1674	1762	1498	0	1644	0	0	1674	1483
Flt Permitted	0.157	1701	· ·	0.590	1102	1100	· ·	0.836	V	v	0.752	1 100
Satd. Flow (perm)	271	1754	0	930	1762	1403	0	1347	0	0	1095	1166
Right Turn on Red	211	1754	Yes	300	1702	Yes	U	10-11	Yes	U	1000	Yes
Satd. Flow (RTOR)		1	103			175		1	100			87
Link Speed (k/h)		60			60	175		50			50	01
Link Distance (m)		233.9			203.3			76.1			164.5	
Travel Time (s)		14.0			12.2			5.5			11.8	
Confl. Peds. (#/hr)	35	14.0	62	62	12.2	35	73	5.5	65	65	11.0	73
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 (%)	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%
	411	271	4	2	456	456	6	2		367	0	667
Adj. Flow (vph)	411	211	4	2	400	400	0		1	307	U	007
Shared Lane Traffic (%)	444	075	^	2	450	450	^	^	0	0	207	007
Lane Group Flow (vph)	411	275	0	2	456	456	0	9	0	0	367	667
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			3.5	
Link Offset(m)		2.0			0.0			5.0			0.0	
Crosswalk Width(m)		5.0			10.0			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	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
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	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		Cl+Ex	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		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	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
		0		^	G			8			4	
Detector Phase	5	2		6	6	6	8	0		4	4	5

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	39.0	81.0		42.0	42.0	42.0	49.0	49.0		49.0	49.0	39.0
Total Split (%)	30.0%	62.3%		32.3%	32.3%	32.3%	37.7%	37.7%		37.7%	37.7%	30.0%
Maximum Green (s)	32.9	74.9		35.9	35.9	35.9	43.5	43.5		43.5	43.5	32.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	74.9	74.9		38.9	38.9	38.9		43.5			43.5	72.8
Actuated g/C Ratio	0.58	0.58		0.30	0.30	0.30		0.33			0.33	0.56
v/c Ratio	0.87	0.27		0.01	0.87	0.84		0.02			1.00	0.87
Control Delay	46.7	14.7		34.5	61.6	41.8		27.2			91.2	33.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	46.7	14.7		34.5	61.6	41.8		27.2			91.2	33.4
LOS	D	В		С	Е	D		С			F	С
Approach Delay		33.8			51.7			27.3			53.9	
Approach LOS		С			D			С			D	
Queue Length 50th (m)	67.6	31.1		0.3	105.4	68.4		1.3			~86.7	84.5
Queue Length 95th (m)	#113.1	45.8		2.3	#163.6	#125.3		5.0			#145.5	#128.6
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	503	1010		278	527	542		451			366	796
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	0.82	0.27		0.01	0.87	0.84		0.02			1.00	0.84

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.00 Intersection Signal Delay: 47.8 Intersection Capacity Utilization 101.8%

Intersection LOS: D ICU Level of Service G

Analysis Period (min) 15

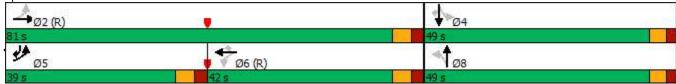
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 10: Prince of Wales/Queen Elizabeth & Preston



APPENDIX J

Background Synchro Analysis

	•	→	F	•	•	\	4
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations	T LDL	^	₩ D	<u></u> ↑↑	WDIN	SBL Š	JDK 7
Traffic Volume (vph)	31	77 849	13	611	142	175	5
Future Volume (vph)	31	849	13	611	142	175	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	50.0	1000	110.0	0.0	10.0
Storage Lanes	40.0		1		110.0	1	10.0
•	25.0		25.0			25.0	I
Taper Length (m) Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
		0.95	1.00	0.95			0.95
Ped Bike Factor	0.97				0.90	0.96	
Frt	0.050		0.050		0.850	0.050	0.850
Flt Protected	0.950	2002	0.950	2404	1.400	0.950	1.400
Satd. Flow (prot)	1642	3283	1674	3161	1483	1674	1498
Flt Permitted	0.950	0000	0.333	0404	4000	0.950	4.405
Satd. Flow (perm)	1591	3283	587	3161	1328	1615	1425
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					142		3
Link Speed (k/h)		60		60		40	
Link Distance (m)		196.1		162.9		242.3	
Travel Time (s)		11.8		9.8		21.8	
Confl. Peds. (#/hr)	30				30	30	30
Confl. Bikes (#/hr)					17		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	1%	7%	2%	1%	1%
Adj. Flow (vph)	31	849	13	611	142	175	5
Shared Lane Traffic (%)							
Lane Group Flow (vph)	31	849	13	611	142	175	5
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		7.0		7.0		3.5	
Link Offset(m)		0.0		0.0		0.0	
Crosswalk Width(m)		5.0		10.0		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)	24		14		14	40	14
Number of Detectors	1	2	1	2	1	1	1
Detector Template	Left	Thru	Left	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	Cl+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Channel	UIŤEX	OITEX	OITEX	OITEX	OITEX	OITEX	OITEX
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	
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	Prot	NA	Perm	NA	Perm	Perm	Perm
Protected Phases	5	2		6			
Permitted Phases			6		6	4	4
Detector Phase	5	2	6	6	6	4	4

	•	→	F	←	4	/	4
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Switch Phase		LDI	WDO	VVDI	WDIX	ODL	OBIN
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.2	33.4	33.4	33.4	33.4	40.1	40.1
Total Split (s)	17.0	78.0	61.0	61.0	61.0	52.0	52.0
Total Split (%)	13.1%	60.0%	46.9%	46.9%	46.9%	40.0%	40.0%
Maximum Green (s)	11.8	71.6	54.6	54.6	54.6	44.9	44.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.5	2.7	2.7	2.7	2.7	3.8	3.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	6.4	6.4	6.4	6.4	7.1	7.1
Lead/Lag	Lead	• • • • • • • • • • • • • • • • • • • •	Lag	Lag	Lag		
Lead-Lag Optimize?	2000		Lug	Lug	Lug		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	110110	12.0	12.0	12.0	12.0	7.0	7.0
Flash Dont Walk (s)		15.0	15.0	15.0	15.0	26.0	26.0
Pedestrian Calls (#/hr)		20	20	20	20	20.0	20.0
Act Effct Green (s)	8.0	90.9	82.3	82.3	82.3	25.6	25.6
Actuated g/C Ratio	0.06	0.70	0.63	0.63	0.63	0.20	0.20
v/c Ratio	0.00	0.70	0.03	0.03	0.03	0.55	0.20
Control Delay	65.6	9.6	5.7	5.0	0.10	52.1	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.6	9.6	5.7	5.0	0.7	52.1	27.4
LOS	03.0 E	9.0 A	3.7 A	3.0 A	Α	J2.1	27.4 C
Approach Delay	L	11.5		4.2	A	51.4	
Approach LOS		В		4.2 A		D D	
Queue Length 50th (m)	7.2	47.4	0.5	11.1	0.0	34.7	0.4
Queue Length 95th (m)	16.3	58.8	1.6	15.3	1.3	55.1	3.4
Internal Link Dist (m)	10.5	172.1	1.0	138.9	1.0	218.3	J. 1
Turn Bay Length (m)	40.0	172.1	50.0	130.9	110.0	210.5	10.0
Base Capacity (vph)	149	2295	371	2000	892	557	494
Starvation Cap Reductn	0	0	0	0	092	0	0
Spillback Cap Reductin	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.37	0.04	0.31	0.16	0.31	0.01
Neudoed WC Rallo	0.21	0.37	0.04	0.51	0.10	0.31	0.01
Intersection Summary							
	Other						
Cycle Length: 130							
Actuated Cycle Length: 130							
Offset: 107 (82%), Referenced	to phase 2:I	EBT and 6	:WBTU, St	tart of Gree	en		
Natural Cycle: 85							
Control Type: Actuated-Coordin	nated						
Maximum v/c Ratio: 0.55							
Intersection Signal Delay: 12.4				In	tersection	LOS: B	
Intersection Capacity Utilization	59.6%				U Level of		
Analysis Period (min) 15							
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✓ ø5 🕶 ø6 ((R)						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	^	7	*	^	7	*		7	*		7
Traffic Volume (vph)	103	813	174	180	690	168	62	0	69	89	0	54
Future Volume (vph)	103	813	174	180	690	168	62	0	69	89	0	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		30.0	60.0		25.0	0.0	,,,,,	0.0	20.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		0.95	0.95		0.69	0.96		0.95	0.98		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3283	1483	1658	3252	1414	1658	0	1483	1658	0	1498
Flt Permitted	0.375			0.325			0.950			0.950		
Satd. Flow (perm)	597	3283	1404	542	3252	978	1586	0	1403	1617	0	1443
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174			168			69			54
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		162.9			117.5			121.7			178.4	
Travel Time (s)		9.8			7.1			8.8			12.8	
Confl. Peds. (#/hr)	90		90	90		90	20		20	20		20
Confl. Bikes (#/hr)			5			4						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%	2%	2%	4%	7%	2%	2%	2%	2%	2%	1%
Adj. Flow (vph)	103	813	174	180	690	168	62	0	69	89	0	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	813	174	180	690	168	62	0	69	89	0	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2	1	1		1	1		1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left		Right	Left		Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1		6.1	6.1		6.1
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		6.1	6.1		6.1
Detector 1 Type	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+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							
Detector 2 Size(m)		1.8			1.8							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases		2			6							
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	2	2	2	6	6	6	8		8	4		4

	•	-	•	•	←	•	4	†	~	\	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0		5.0	10.0		10.0
Minimum Split (s)	15.3	15.3	15.3	25.3	25.3	25.3	24.0		24.0	37.9		37.9
Total Split (s)	92.0	92.0	92.0	92.0	92.0	92.0	38.0		38.0	38.0		38.0
Total Split (%)	70.8%	70.8%	70.8%	70.8%	70.8%	70.8%	29.2%		29.2%	29.2%		29.2%
Maximum Green (s)	86.7	86.7	86.7	86.7	86.7	86.7	32.0		32.0	32.1		32.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0		3.0	3.3		3.3
All-Red Time (s)	1.6	1.6	1.6	1.6	1.6	1.6	3.0		3.0	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)	5.3	5.3	5.3	5.3	5.3	5.3	6.0		6.0	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
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	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None		None	None		None
Walk Time (s)				10.0	10.0	10.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)				10.0	10.0	10.0	11.0		11.0	25.0		25.0
Pedestrian Calls (#/hr)				20	20	20	20		20	20		20
Act Effct Green (s)	95.5	95.5	95.5	95.5	95.5	95.5	23.2		23.2	23.3		23.3
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.18		0.18	0.18		0.18
v/c Ratio	0.24	0.34	0.16	0.45	0.29	0.22	0.22		0.23	0.31		0.18
Control Delay	5.9	5.0	0.9	7.5	3.2	2.0	43.8		10.5	46.1		11.2
Queue Delay	0.0	0.1	0.0	0.0	0.2	0.0	0.0		0.0	0.0		0.0
Total Delay	5.9	5.0	0.9	7.5	3.3	2.0	43.8		10.5	46.1		11.2
LOS	Α	Α	Α	Α	Α	Α	D		В	D		В
Approach Delay		4.5			3.9			26.2			32.9	
Approach LOS		Α			Α			С			С	
Queue Length 50th (m)	4.6	19.1	1.1	9.4	18.8	2.8	11.6		0.0	16.9		0.0
Queue Length 95th (m)	7.7	22.4	2.6	13.8	22.5	7.9	22.6		10.8	30.5		9.7
Internal Link Dist (m)		138.9			93.5			97.7			154.4	
Turn Bay Length (m)	70.0		30.0	60.0		25.0				20.0		
Base Capacity (vph)	438	2412	1077	397	2389	762	390		397	399		396
Starvation Cap Reductn	0	433	0	0	803	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	0.24	0.41	0.16	0.45	0.44	0.22	0.16		0.17	0.22		0.14
Intersection Summary												
Area Tyne:	Other											

Other

Area Type: Cycle Length: 130

Actuated Cycle Length: 130

Offset: 85 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

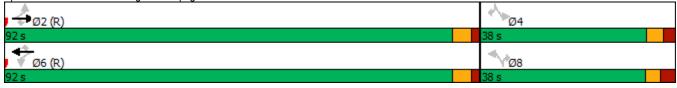
Maximum v/c Ratio: 0.45

Intersection Signal Delay: 7.1 Intersection Capacity Utilization 56.3%

Intersection LOS: A ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Carling & Champagne



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^			^							
Traffic Volume (vph)	0	968	0	0	1086	0	0	0	0	0	0	0
Future Volume (vph)	0	968	0	0	1086	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3283	0	0	3283	0	0	0	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	3283	0	0	3283	0	0	0	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		117.5			124.7			157.3			54.9	
Travel Time (s)		7.1			7.5			11.3			4.0	
Confl. Peds. (#/hr)	40		14	14		40	18		20	20		18
Confl. Bikes (#/hr)			7			25						17
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 (%)	2%	3%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	968	0	0	1086	0	0	0	0	0	0	0
Shared Lane Traffic (%)	<u> </u>											
Lane Group Flow (vph)	0	968	0	0	1086	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			0.0			0.0	g
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		14	24		14	24		14	24		14
Number of Detectors		2			2							
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5							
Trailing Detector (m)		0.0			0.0							
Detector 1 Position(m)		0.0			0.0							
Detector 1 Size(m)		1.8			1.8							
Detector 1 Type		CI+Ex			CI+Ex							
Detector 1 Channel		0. 2 /.			O/.							
Detector 1 Extend (s)		0.0			0.0							
Detector 1 Queue (s)		0.0			0.0							
Detector 1 Delay (s)		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			NA							
Protected Phases		2			6							
Permitted Phases		_										
Detector Phase		2			6							
Switch Phase		_										
Minimum Initial (s)		10.0			10.0							
Minimum Split (s)		25.1			25.1							
		_0.1			_0.1							

Lane Group	Ø4	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
FIt Protected		
Satd. Flow (prot)		
FIt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	4	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	35.6	
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Lane Group	EBL EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)	94.0			94.0							
Total Split (%)	72.3%			72.3%							
Maximum Green (s)	88.9			88.9							
Yellow Time (s)	3.7			3.7							
All-Red Time (s)	1.4			1.4							
Lost Time Adjust (s)	0.0			0.0							
Total Lost Time (s)	5.1			5.1							
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0			3.0							
Recall Mode	C-Max			C-Max							
Walk Time (s)	15.0			15.0							
Flash Dont Walk (s)	5.0			5.0							
Pedestrian Calls (#/hr)	20			20							
Act Effct Green (s)	105.6			105.6							
Actuated g/C Ratio	0.81			0.81							
v/c Ratio	0.36			0.41							
Control Delay	4.5			3.2							
Queue Delay	0.1			0.1							
Total Delay	4.6			3.3							
LOS	4.C			3.3 A							
	4.6			3.3							
Approach LOS											
Approach LOS	24.5			Α							
Queue Length 50th (m)	34.3			29.5							
Queue Length 95th (m)	42.0			m32.3			400.0			00.0	
Internal Link Dist (m)	93.5			100.7			133.3			30.9	
Turn Bay Length (m)	0000			0000							
Base Capacity (vph)	2666			2666							
Starvation Cap Reductn	486			470							
Spillback Cap Reductn	181			0							
Storage Cap Reductn	(0							
Reduced v/c Ratio	0.44			0.49							
Intersection Summary											
Area Type:	Other										
Cycle Length: 130											
Actuated Cycle Length: 130											
Offset: 59 (45%), Referenced to	to phase 2:EBT and (S:WBT, Start	t of Green								
Natural Cycle: 65											
Control Type: Actuated-Coordi	inated										
Maximum v/c Ratio: 0.41											
Intersection Signal Delay: 3.9				rsection LO							
Intersection Capacity Utilizatio	n 35.9%		ICU	Level of S	Service A						
Analysis Period (min) 15											
m Volume for 95th percentile	queue is metered by	upstream s	signal.								
Splits and Phases: 3: Trilliur	n Pathway & Carling										
→ Ø2 (R)							Ĭ	k _{Ø4}			
94 s							36				
←											
Ø6 (R)											
J 1 U											

Total Split (s) 36.0 Total Split (%) 28% Maximum Green (s) 29.4 Yellow Time (s) 3.0 All-Red Time (s) 3.6 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode None Walk Time (s) 7.0 Flash Dont Walk (s) 22.0 Pedestrian Calls (#/hr) 20 Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Reduced v/c Ratio Intersection Summary	Lane Group	Ø4
Total Split (%) 28% Maximum Green (s) 29.4 Yellow Time (s) 3.0 All-Red Time (s) 3.6 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode None Walk Time (s) 7.0 Flash Dont Walk (s) 22.0 Pedestrian Calls (#/hr) 20 Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Maximum Green (s) 29.4 Yellow Time (s) 3.0 All-Red Time (s) 3.6 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode None Walk Time (s) 7.0 Flash Dont Walk (s) 22.0 Pedestrian Calls (#/hr) 20 Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Yellow Time (s) 3.0 All-Red Time (s) 3.6 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode None Walk Time (s) 7.0 Flash Dont Walk (s) 22.0 Pedestrian Calls (#/hr) 20 Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
All-Red Time (s) 3.6 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode None Walk Time (s) 7.0 Flash Dont Walk (s) 22.0 Pedestrian Calls (#/hr) 20 Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) Recall Mode Walk Time (s) Pedestrian Calls (#/hr) Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Reduced v/c Ratio		
Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode None Walk Time (s) 7.0 Flash Dont Walk (s) 22.0 Pedestrian Calls (#/hr) 20 Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		0.0
Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode None Walk Time (s) 7.0 Flash Dont Walk (s) 22.0 Pedestrian Calls (#/hr) 20 Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode None Walk Time (s) 7.0 Flash Dont Walk (s) 22.0 Pedestrian Calls (#/hr) 20 Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Vehicle Extension (s) Recall Mode None Walk Time (s) Flash Dont Walk (s) Pedestrian Calls (#/hr) Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Reduced v/c Ratio		
Recall Mode None Walk Time (s) 7.0 Flash Dont Walk (s) 22.0 Pedestrian Calls (#/hr) 20 Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Reduced v/c Ratio		3.0
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v/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
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Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio	v/c Ratio	
Total Delay LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio	Control Delay	
LOS Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Approach Delay Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Approach LOS Queue Length 50th (m) Queue Length 95th (m) Internal Link Dist (m) Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
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Turn Bay Length (m) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio		
Storage Cap Reductn Reduced v/c Ratio		
Reduced v/c Ratio		
Intersection Summary	Reduced v/c Ratio	
	Intersection Summary	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	∱ 1≽		- 1	^	7	*	↑ 1>		ች	1	
Traffic Volume (vph)	161	602	233	253	703	99	288	475	308	120	297	128
Future Volume (vph)	161	602	233	253	703	99	288	475	308	120	297	128
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0	1000	0.0	110.0	1000	90.0	75.0	1000	0.0	0.0	1000	0.0
Storage Lanes	1		0.0	110.0		1	1 1		0.0	1		0.0
Taper Length (m)	25.0		U	25.0			25.0		U	25.0		U
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.94	0.93	0.95	0.98	0.95	0.84	0.98	0.98	0.95	1.00	0.98	1.00
Frt	0.94	0.958		0.90		0.850	0.90	0.941		1.00	0.955	
	0.050	0.900		0.050		0.000	0.050	0.941		0.050	0.900	
Flt Protected	0.950	2040	^	0.950	2050	4075	0.950	2025	0	0.950	4500	0
Satd. Flow (prot)	1595	3049	0	1658	3252	1375	1674	3035	0	1510	1506	0
Flt Permitted	0.950	00.10		0.950	00=0	4450	0.179	2225		0.355	4=00	
Satd. Flow (perm)	1507	3049	0	1623	3252	1153	309	3035	0	562	1506	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42				143		148			17	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	90		41	41		90	60		10	10		60
Confl. Bikes (#/hr)			22			10			36			5
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 (%)	6%	4%	2%	2%	4%	10%	1%	4%	2%	12%	6%	20%
Adj. Flow (vph)	161	602	233	253	703	99	288	475	308	120	297	128
Shared Lane Traffic (%)		**-								•		
Lane Group Flow (vph)	161	835	0	253	703	99	288	783	0	120	425	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)	2101	7.0	rugiit	_101	7.0	rugiit	2101	3.5	11101	_ 1077	3.5	11171
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		3.0			3.0			5.0			3.0	
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
	24	1.09	1.09	24	1.09	1.09	24	1.09	1.09	24	1.09	1.09
Turning Speed (k/h)	1	2	14	1	2	14	1	2	14	1	2	14
Number of Detectors				•						-		
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6	. 31111	3	8		. 51111	4	
Permitted Phases		L		-		6	8			4	Т.	
Detector Phase	5	2		1	6	6	3	8		4	4	
Dolotto I Hase	J			ı	U	U	J	U		7	7	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	24.0	38.0		27.0	41.0	41.0	21.0	65.0		44.0	44.0	
Total Split (%)	18.5%	29.2%		20.8%	31.5%	31.5%	16.2%	50.0%		33.8%	33.8%	
Maximum Green (s)	17.8	32.0		20.8	35.0	35.0	14.1	58.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	16.3	32.0		20.8	36.5	36.5	58.1	58.1		37.1	37.1	
Actuated g/C Ratio	0.13	0.25		0.16	0.28	0.28	0.45	0.45		0.29	0.29	
v/c Ratio	0.81	1.07		0.95	0.77	0.23	1.01	0.54		0.75	0.96	
Control Delay	88.3	83.1		63.1	41.3	8.8	70.1	8.7		71.4	78.9	
Queue Delay	0.0	2.7		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	88.3	85.7		63.1	41.3	8.8	70.1	8.7		71.4	78.9	
LOS	F	F		Е	D	Α	Е	Α		Е	Е	
Approach Delay		86.1			43.5			25.2			77.3	
Approach LOS		F			D			С			Е	
Queue Length 50th (m)	29.8	~107.2		53.6	90.9	5.5	~43.6	51.9		25.8	95.8	
Queue Length 95th (m)	#63.1	#140.8		m#58.3	m90.3	m7.2	#97.1	60.1		#55.8	#155.6	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	218	782		265	913	426	286	1438		160	441	
Starvation Cap Reductn	0	5		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.74	1.07		0.95	0.77	0.23	1.01	0.54		0.75	0.96	

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07 Intersection Signal Delay: 54.7

Intersection Capacity Utilization 110.5%

Intersection LOS: D ICU Level of Service H

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



399 399 1800 75.0 1 25.0 1.00 0.93 0.950 1674 0.950 1565	724 724 724 1800 0.95	770 770 770 1800 1.00	215 215 215 1800 25.0 1 1.00 0.78 0.850 1498	240 240 1800 0.0 1 10.0 1.00 0.98 0.950 1674 0.950 1647	189 189 1800 45.0 1 1.00 0.79 0.850
399 399 1800 75.0 1 25.0 1.00 0.93	724 724 1800 0.95	770 770 1800 1.00	215 215 1800 25.0 1 1.00 0.78 0.850 1498	240 240 1800 0.0 1 10.0 1.00 0.98 0.950 1674 0.950	189 189 1800 45.0 1 1.00 0.79 0.850
399 399 1800 75.0 1 25.0 1.00 0.93 0.950 1674 0.950	724 724 1800 0.95	770 770 1800 1.00	215 215 1800 25.0 1 1.00 0.78 0.850 1498	240 240 1800 0.0 1 10.0 1.00 0.98 0.950 1674 0.950	189 189 1800 45.0 1 1.00 0.79 0.850
399 1800 75.0 1 25.0 1.00 0.93 0.950 1674 0.950	724 1800 0.95 3252 3252	770 1800 1.00	215 1800 25.0 1 1.00 0.78 0.850 1498	240 1800 0.0 1 10.0 1.00 0.98 0.950 1674 0.950	189 1800 45.0 1 1.00 0.79 0.850
1800 75.0 1 25.0 1.00 0.93 0.950 1674 0.950	0.95 3252 3252	1.00	1800 25.0 1 1.00 0.78 0.850 1498	1800 0.0 1 10.0 1.00 0.98 0.950 1674 0.950	1800 45.0 1 1.00 0.79 0.850
75.0 1 25.0 1.00 0.93 0.950 1674 0.950	0.95 3252 3252	1.00	25.0 1 1.00 0.78 0.850 1498	0.0 1 10.0 1.00 0.98 0.950 1674 0.950	45.0 1 1.00 0.79 0.850
1 25.0 1.00 0.93 0.950 1674 0.950	3252 3252	1728	1 1.00 0.78 0.850 1498	1 10.0 1.00 0.98 0.950 1674 0.950	1.00 0.79 0.850 1427
25.0 1.00 0.93 0.950 1674 0.950	3252 3252	1728	1.00 0.78 0.850 1498	10.0 1.00 0.98 0.950 1674 0.950	1.00 0.79 0.850
1.00 0.93 0.950 1674 0.950	3252 3252	1728	0.78 0.850 1498 1172	1.00 0.98 0.950 1674 0.950	0.79 0.850 1427
0.93 0.950 1674 0.950	3252 3252	1728	0.78 0.850 1498 1172	0.98 0.950 1674 0.950	0.79 0.850 1427
0.950 1674 0.950	3252		0.850 1498 1172	0.950 1674 0.950	0.850 1427
1674 0.950	3252		1498 1172	1674 0.950	1427
1674 0.950	3252		1172	1674 0.950	
0.950	3252		1172	0.950	
		1728			
1565		1728		16/17	
	60		Voo	1047	1125
	60				Yes
	60		60		189
		60		50	
	120.9	518.9		229.0	
70			70		85
, ,					23
1.00	1.00	1.00		1.00	1.00
					6%
399	724	770	215	240	189
000	704	770	045	0.40	400
					189
					No
Left			Right		R NA
		7.0			
		0.0			
	5.0	5.0		5.0	
1.09	1.09	1.09	1.09	1.09	1.09
24					14
1	2	2	1		1
					Right
					6.1
					0.0
					0.0
					6.1
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	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
	OI! LX	OI · LA			
	0.0	0.0			
Drot			Dorm	Dorm	Dom
			Perm	reim	Perm
5	2	6			
					4
5	2	6	6	4	4
	1.00 1% 399 399 No Left 1.09 24 1 Left 6.1 0.0 0.0 6.1 CI+Ex	120.9 7.3 70 1.00 1.00 1% 4% 399 724 No No Left Final 1.09 24 1 2 Left Thru 6.1 30.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	120.9 518.9 7.3 31.1 70 1.00 1.00 1.00 1% 4% 3% 399 724 770 399 724 770 No No No No Left Left Left 7.0 7.0 0.0 0.0 5.0 5.0 1.09 1.09 1.09 24 1 2 2 Left Thru Thru 6.1 30.5 30.5 0.0 0.0 0.0 0.0 0.0 0.0 0.1 1.8 1.8 CI+Ex CI+Ex CI+Ex 0.0	120.9 518.9 7.3 31.1 70 70 16 1.00	120.9 518.9 229.0 7.3 31.1 16.5 70 14 16 1.00 1.00 1.00 1.00 1% 4% 3% 1% 1% 399 724 770 215 240 No No No No No No 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 24 14 24 14 24 1 2 2 1 1 Left Thru Thru Right Left

	•	-	—	•	-	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	32.0	91.0	59.0	59.0	39.0	39.0
Total Split (%)	24.6%	70.0%	45.4%	45.4%	30.0%	30.0%
Maximum Green (s)	26.1	85.3	53.3	53.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?			Ţ.	Ţ.		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	31.9	91.1	53.3	53.3	27.2	27.2
Actuated g/C Ratio	0.25	0.70	0.41	0.41	0.21	0.21
v/c Ratio	0.97	0.32	1.09	0.42	0.70	0.49
Control Delay	67.3	2.8	97.0	22.1	57.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.3	2.8	97.0	22.1	57.8	9.9
LOS	Е	Α	F	С	Е	Α
Approach Delay		25.7	80.7		36.7	
Approach LOS		С	F		D	
Queue Length 50th (m)	~112.0	14.5	~203.8	25.3	49.7	0.0
Queue Length 95th (m)	m#131.8	m17.0	#271.9	45.4	75.0	17.8
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	411	2279	708	515	418	426
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn			^	0	0	0
	0	0	0	0	U	U
Storage Cap Reductn	0	0	0	0 0.42	0	0

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 16 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09 Intersection Signal Delay: 48.9

Intersection LOS: D ICU Level of Service G

Intersection Capacity Utilization 107.3%

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

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: 5: Carling & Booth Ø4 Ø2 (R) Ø5 Ø6 (R)

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		₩			र्स	7	7	ĵ.		7	f)	
Traffic Volume (vph)	43	56	26	36	55	12	28	641	55	18	401	38
Future Volume (vph)	43	56	26	36	55	12	28	641	55	18	401	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	15.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (m)	25.0			20.0			20.0			20.0		
Lane Util. 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
Ped Bike Factor		0.94			0.97	0.89	0.96	0.99		0.98	0.99	
Frt		0.972				0.850		0.988			0.987	
Flt Protected		0.983			0.981		0.950			0.950		
Satd. Flow (prot)	0	1558	0	0	1572	1498	1537	1693	0	1537	1645	0
Flt Permitted		0.865			0.853		0.473			0.306		
Satd. Flow (perm)	0	1336	0	0	1327	1339	738	1693	0	484	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				34		11			12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		101.4			151.8			160.5			163.2	
Travel Time (s)		7.3			10.9			11.6			11.8	
Confl. Peds. (#/hr)	36		40	40		36	50		55	55		50
Confl. Bikes (#/hr)			26			2			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 (%)	9%	4%	4%	25%	2%	1%	10%	3%	3%	10%	6%	5%
Adj. Flow (vph)	43	56	26	36	55	12	28	641	55	18	401	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	91	12	28	696	0	18	439	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0	•		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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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		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	
Detector 1 Queue (s)	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	
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	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		2	8	*****	*****	2			6	
Permitted Phases	4	•		8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
	•			•			_	_		•		

	٠	→	*	•	+	•	•	†	/	/		4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	57.0	57.0		57.0	57.0	
Total Split (%)	28.8%	28.8%		28.8%	28.8%	28.8%	71.3%	71.3%		71.3%	71.3%	
Maximum Green (s)	17.4	17.4		17.4	17.4	17.4	51.5	51.5		51.5	51.5	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped	Ped	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	20	20		20	20	20	20	20		20	20	
Act Effct Green (s)		17.1			17.1	17.1	51.8	51.8		51.8	51.8	
Actuated g/C Ratio		0.21			0.21	0.21	0.65	0.65		0.65	0.65	
v/c Ratio		0.42			0.32	0.04	0.06	0.63		0.06	0.41	
Control Delay		28.9			30.3	2.8	5.4	9.5		5.8	8.0	
Queue Delay		0.0			0.0	0.0	0.0	0.1		0.0	0.0	
Total Delay		28.9			30.3	2.8	5.4	9.7		5.8	8.0	
LOS		С			С	Α	Α	Α		Α	Α	
Approach Delay		28.9			27.1			9.5			7.9	
Approach LOS		С			С			Α			Α	
Queue Length 50th (m)		13.3			10.9	0.0	1.3	50.0		8.0	24.8	
Queue Length 95th (m)		27.3			22.3	1.2	m2.6	40.2		3.0	40.7	
Internal Link Dist (m)		77.4			127.8			136.5			139.2	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		302			288	317	477	1100		313	1069	
Starvation Cap Reductn		0			0	0	0	38		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.41			0.32	0.04	0.06	0.66		0.06	0.41	

Area Type: Other

Area Type: Cycle Length: 80

Actuated Cycle Length: 80

Offset: 40 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 12.0
Intersection Capacity Utilization 81.7%

Intersection LOS: B
ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 6: Preston & Beech



	۶	→	•	•	+	•	1	†	/	/	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4						4			4	
Traffic Volume (vph)	1	0	3	0	0	0	8	676	46	10	495	5
Future Volume (vph)	1	0	3	0	0	0	8	676	46	10	495	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor		0.93						0.99			1.00	
Frt		0.899						0.991			0.999	
Flt Protected		0.988						0.999			0.999	
Satd. Flow (prot)	0	1470	0	0	0	0	0	1702	0	0	1617	0
Flt Permitted		0.988						0.995			0.987	
Satd. Flow (perm)	0	1453	0	0	0	0	0	1694	0	0	1597	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29						9			1	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		114.6			152.9			73.8			160.5	
Travel Time (s)		8.3			11.0			5.3			11.6	
Confl. Peds. (#/hr)	17	3.0	18	18	11.0	17	35	0.0	45	45	11.0	35
Confl. Bikes (#/hr)	• • • • • • • • • • • • • • • • • • • •		8	10		.,			21			17
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%	1%	1%	2%	2%	2%	1%	3%	1%	1%	10%	1%
Adj. Flow (vph)	1	0	3	0	0	0	8	676	46	10	495	5
Shared Lane Traffic (%)	'				0			010	70	10	700	J
Lane Group Flow (vph)	0	4	0	0	0	0	0	730	0	0	510	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Leit	0.0	ragnt	Leit	0.0	rtigrit	LGIL	3.5	rtigrit	Leit	3.5	rtigrit
Link Offset(m)		-2.0			-1.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane		5.0			5.0			5.0			5.0	
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
	24	1.03	1.09	24	1.09	1.09	24	1.09	1.09	24	1.09	1.09
Turning Speed (k/h) Number of Detectors	1	2	14	24		14	1	2	14	1	2	14
Detector Template	Left	Thru					Left	Thru		Left	Thru	
Leading Detector (m)	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	
Detector 1 Position(m)	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	
Detector 1 Type	CI+Ex	CI+Ex					CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel	0.0	0.0						2.2		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			28.7	
Detector 2 Size(m)		1.8						1.8			1.8	
Detector 2 Type		CI+Ex						CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		
Detector Phase	4	4					2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	

AIVI Peak Houl								_			• Backgroun	,
	•	-	*	•	•	•	1	†	~	-	¥	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Total Split (s)	21.0	21.0					59.0	59.0		59.0	59.0	
Total Split (%)	26.3%	26.3%					73.8%	73.8%		73.8%	73.8%	
Maximum Green (s)	15.5	15.5					53.9	53.9		53.9	53.9	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0					18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	8.0	8.0					5.0	5.0		5.0	5.0	
Pedestrian Calls (#/hr)	20	20					20	20		20	20	
Act Effct Green (s)		12.0						69.8			69.8	
Actuated g/C Ratio		0.15						0.87			0.87	
v/c Ratio		0.02						0.49			0.37	
Control Delay		0.0						5.4			2.5	
Queue Delay		0.0						0.0			0.0	
Total Delay		0.0						5.4			2.5	
LOS		Α						A			A.	
Approach Delay		Λ						5.4			2.5	
Approach LOS								3. 4			2.5 A	
Queue Length 50th (m)		0.0						0.0			0.0	
Queue Length 95th (m)		0.0						76.8			17.5	
Internal Link Dist (m)		90.6			128.9			49.8			136.5	
		90.0			120.9			49.0			130.3	
Turn Bay Length (m)		304						1478			1393	
Base Capacity (vph)												
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.01						0.49			0.37	
Intersection Summary	0.11											
Area Type: Cycle Length: 80	Other											
Actuated Cycle Length: 80	ta nhaaa 2:N	DTI and G	CDTI Cto	rt of Croos								
Offset: 48 (60%), Referenced	to priase Z:N	D I L 8110 6:	odil, ota	it of Greet	I							
Natural Cycle: 60	linatad											
Control Type: Actuated-Coord	iiriated											
Maximum v/c Ratio: 0.49						1.00. 4						
Intersection Signal Delay: 4.2					tersection							
Intersection Capacity Utilizatio	on 64.1%			IC	U Level of	Service C	,					
Analysis Period (min) 15												
Splits and Phases: 7: Presto	on & Pamilla											
- 4									<u> A.</u>			
Ø2 (R)									Ø4		_	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			€			44			44	
Traffic Volume (vph)	29	1	22	20	5	26	12	638	90	34	488	15
Future Volume (vph)	29	1	22	20	5	26	12	638	90	34	488	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor												
Frt		0.943			0.931			0.984			0.996	
Flt Protected		0.973			0.981			0.999			0.997	
Satd. Flow (prot)	0	1601	0	0	1594	0	0	1701	0	0	1688	0
Flt Permitted		0.973			0.981			0.999			0.997	
Satd. Flow (perm)	0	1601	0	0	1594	0	0	1701	0	0	1688	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.6			154.3			71.5			73.8	
Travel Time (s)		8.2			11.1			5.1			5.3	
Confl. Peds. (#/hr)							28		45	45		28
Confl. Bikes (#/hr)									21			17
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	5%	2%
Adj. Flow (vph)	29	1	22	20	5	26	12	638	90	34	488	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	52	0	0	51	0	0	740	0	0	537	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		-2.0			-2.0			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
Sign Control		Stop			Stop			Free			Free	

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 59.9%
Analysis Period (min) 15

ICU Level of Service B

Synchro 10 Report J.Audia, Novatech

	•	•	1	†	Ţ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			414	ą.	
Traffic Volume (vph)	41	47	33	699	498	30
Future Volume (vph)	41	47	33	699	498	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.928				0.992	
Flt Protected	0.977			0.998		
Satd. Flow (prot)	1582	0	0	3278	1684	0
Flt Permitted	0.977			0.998		
Satd. Flow (perm)	1582	0	0	3278	1684	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			28			28
Confl. Bikes (#/hr)						17
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%
Adj. Flow (vph)	41	47	33	699	498	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	0	0	732	528	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	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	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

ICU Level of Service B

Intersection Capacity Utilization 58.2% Analysis Period (min) 15

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	16.0	ĵ.		ħ	•	7		4			ર્ન	7
Traffic Volume (vph)	693	286	2	2	213	316	1	4	3	276	4	484
Future Volume (vph)	693	286	2	2	213	316	1	4	3	276	4	484
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Storage Lanes	2		0	1		1	0		0	0		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.97		0.97		0.96			0.94	0.91
Frt		0.999				0.850		0.949				0.850
Flt Protected	0.950			0.950				0.994			0.953	
Satd. Flow (prot)	3185	1760	0	1674	1762	1498	0	1209	0	0	1668	1469
Flt Permitted	0.459			0.583				0.980			0.724	
Satd. Flow (perm)	1519	1760	0	1002	1762	1460	0	1186	0	0	1187	1340
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						257		3				358
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		233.9			203.3			76.1			164.5	
Travel Time (s)		14.0			12.2			5.5			11.8	
Confl. Peds. (#/hr)	9		15	15		9	25		24	24		25
Confl. Bikes (#/hr)			3						1			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 (%)	3%	1%	1%	1%	1%	1%	1%	50%	25%	1%	50%	3%
Adj. Flow (vph)	693	286	2	2	213	316	1	4	3	276	4	484
Shared Lane Traffic (%)												
Lane Group Flow (vph)	693	288	0	2	213	316	0	8	0	0	280	484
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0	-		7.0	<u> </u>		0.0			3.5	J
Link Offset(m)		2.0			0.0			5.0			0.0	
Crosswalk Width(m)		5.0			10.0			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	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
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	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+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		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	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6		2	8			4	5
Permitted Phases	2	_		6		6	8			4	-	4
Detector Phase	5	2		6	6	6	8	8		4	4	5
		_		•						-	•	

	•	→	\rightarrow	•	←	•	4	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	35.0	76.0		41.0	41.0	41.0	54.0	54.0		54.0	54.0	35.0
Total Split (%)	26.9%	58.5%		31.5%	31.5%	31.5%	41.5%	41.5%		41.5%	41.5%	26.9%
Maximum Green (s)	28.9	69.9		34.9	34.9	34.9	48.5	48.5		48.5	48.5	28.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	69.9	69.9		39.7	39.7	39.7		48.5			48.5	72.0
Actuated g/C Ratio	0.54	0.54		0.31	0.31	0.31		0.37			0.37	0.55
v/c Ratio	0.62	0.30		0.01	0.40	0.51		0.02			0.63	0.52
Control Delay	20.5	17.7		34.5	39.6	11.5		21.4			28.4	2.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	20.5	17.7		34.5	39.6	11.5		21.4			28.4	2.2
LOS	С	В		С	D	В		С			С	Α
Approach Delay		19.7			22.9			21.4			11.8	
Approach LOS		В			С			С			В	
Queue Length 50th (m)	48.0	36.2		0.3	39.8	10.1		0.7			45.3	9.8
Queue Length 95th (m)	60.7	53.1		2.3	64.0	36.3		3.9			m45.1	m9.1
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	1187	946		305	537	623		444			442	966
Starvation Cap Reductn	0	0		0	0	0		0			0	21
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	0.58	0.30		0.01	0.40	0.51		0.02			0.63	0.51

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 7 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 17.8
Intersection Capacity Utilization 90.4%

Intersection LOS: B
ICU Level of Service E

Analysis Period (min) 15

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



Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Lane Configurations 1	AMITEARTION	•		_		_	_		A		1	I	
Lane Configurations Table (Soft) graph (16) 16 552 233 253 703 99 278 475 308 120 297 128 februre (lock) (l			-	•	•	•	_		T		-	¥	*
Traffic Volume (yph)	Lane Group		EBT	EBR	WBL					NBR		SBT	SBR
Traffic Volume (yph)	Lane Configurations	7	ħβ		- 1	*	7	7	ተ ኈ		- 1	ĵ₃.	
Ideal Flow (polph) 1800 1000	Traffic Volume (vph)	161		233	253		99	278		308	120	297	128
Ideal Flow (rophpi) 1800 1000 100	Future Volume (vph)	161	552	233	253	703	99	278	475	308	120	297	128
Storage Length (m)									1800				
Storage Lanes													
Taper Length (m)													
Laine Utili Factor				•	-		•			•	25.0		
Ped Bike Factor			0.95	0.95		0.95	1 00		0.95	0.95		1 00	1.00
Fit 0.950				0.00		0.00				0.00			1.00
Filt Protected		0.54			0.50			0.50			1.00		
Said Flow (prof) 1595 3035 0 1568 3252 1375 1674 3035 0 1510 1506 0		0.050	0.555		0.050		0.000	0.050	0.541		0.050	0.555	
Fit Permitted			2025	٥		2252	1275		2025	٥		1506	٥
Sald, Flow (perm) 1507 3035 0 1621 3252 1133 309 3035 0 562 1506 0	· ,		3033	U		3232	1373		3033	U		1300	U
Right Turn on Red			2025	^		2050	4450		2025	0		4500	0
Said, Flow (RTOR) 48 148 148 177 1chink Speed (k/h) 60 60 60 60 60 60 60 60 60 6		1507	3035		1021	3232		309	3035		502	1500	_
Link Speed (k/h) 60 60 50 50 50 50 11.8 Initial Speed (k/h) 124.7 193.9 164.5 65.2 Initial Speed (k/h) 90 124.7 193.9 164.5 65.2 Initial Speed (k/h) 90 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1			40	Yes					4.40	Yes		4-	Yes
Link Distance (m)	, ,						143						
Travel Time (s)													
Confil Picks (#hr) 90 41 41 41 90 60 10 10 10 60 Confil Rikes (#hr) 22 10 36 5 50 5 50 10 10 100 1.00 1.00 1.00 1.00													
Confl. Bikes (#/hr)			7.5			11.6			11.8			4.7	
Peak Hour Factor		90			41			60			10		60
Heavy Vehicles (%)	Confl. Bikes (#/hr)									36			
Adj. Flow (vph)	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
Shared Lane Traffic (%) Lane Group Flow (vph) 161	Heavy Vehicles (%)	6%	4%	2%	2%	4%	10%	1%	4%	2%	12%	6%	20%
Shared Lane Traffic (%) Lane Group Flow (yph) 161	Adj. Flow (vph)	161	552	233	253	703	99	278	475	308	120	297	128
Lane Group Flow (vph)													
Enter Blocked Intersection No		161	785	0	253	703	99	278	783	0	120	425	0
Lane Alignment	,			No									No
Median Width(m) 7.0 7.0 0.0 1.09 <													
Link Offset(m) 0.0 0.0 5.0 5.0 5.0 5.0 Trosswalk 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		2101		rugiit	_101		rugiit	_ I.V.		11101	_10/		1 (1 () (
Crosswalk Width(m) 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 1.09 1.09													
Headway Factor 1.09			5.0			5.0			5.0			5.0	
Turning Speed (k/h) 24 14 24 14 24 14 24 14 24 14 1		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Number of Detectors 1 2 1 2 1 1 2 2 2 2 2			1.09			1.09			1.09			1.09	
Detector Template			2	14		2			2	14		2	14
Leading Detector (m) 6.1 30.5 6.1 30.0 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 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>-</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													
Detector 1 Size(m) 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 CI+Ex CI+E													
Detector 1 Type CI+Ex													
Detector 1 Channel													
Detector 1 Extend (s) 0.0		CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	
Detector 1 Queue (s) 0.0	Detector 1 Channel												
Detector 1 Delay (s) 0.0	Detector 1 Extend (s)	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 Cl+Ex Cl+Ex Cl+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4	Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
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 0.0 Turn Type Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4	Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
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 0.0 Turn Type Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4	Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Type CI+Ex CI+Ex CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 <t< td=""><td>Detector 2 Size(m)</td><td></td><td>1.8</td><td></td><td></td><td></td><td></td><td></td><td>1.8</td><td></td><td></td><td>1.8</td><td></td></t<>	Detector 2 Size(m)		1.8						1.8			1.8	
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type Prot NA Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4													
Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type Prot NA Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4													
Turn Type Prot NA Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4			0.0			0.0			0.0			0.0	
Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4		Prot			Prot		Parm	nm+nt			Parm		
Permitted Phases 6 8 4	· · · · · · · · · · · · · · · · · · ·						1 61111				1 61111		
		บ				U	G		0		1	4	
Detection Finalse 3 2 1 0 0 3 8 4 4			0		4	C			0			1	
	Detector Fliase	5	2			0	0	3	ð		4	4	

0

0.75

0

0.96

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	24.0	38.0		27.0	41.0	41.0	21.0	65.0		44.0	44.0	
Total Split (%)	18.5%	29.2%		20.8%	31.5%	31.5%	16.2%	50.0%		33.8%	33.8%	
Maximum Green (s)	17.8	32.0		20.8	35.0	35.0	14.1	58.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	16.3	32.0		20.8	36.5	36.5	58.1	58.1		37.1	37.1	
Actuated g/C Ratio	0.13	0.25		0.16	0.28	0.28	0.45	0.45		0.29	0.29	
v/c Ratio	0.81	1.00		0.95	0.77	0.23	0.97	0.54		0.75	0.96	
Control Delay	88.3	63.7		70.5	43.1	8.4	60.8	8.5		71.4	78.9	
Queue Delay	0.0	5.4		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	88.3	69.1		70.5	43.1	8.4	60.8	8.5		71.4	78.9	
LOS	F	Е		Е	D	Α	Е	Α		Е	Е	
Approach Delay		72.4			46.4			22.2			77.3	
Approach LOS		Е			D			С			Е	
Queue Length 50th (m)	29.5	~48.9		54.1	90.3	4.8	40.5	51.8		25.8	95.8	
Queue Length 95th (m)	#62.9	#126.7		m#72.8	m96.3	m8.3	#91.0	60.0		#55.8	#155.6	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	218	783		265	913	426	286	1438		160	441	
Starvation Cap Reductn	0	15		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	

0

0.95

Intersection Summary

Storage Cap Reductn

Reduced v/c Ratio

Area Type: Other

Cycle Length: 130 Actuated Cycle Length: 130

Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green

0

0.74

0

1.02

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 50.8 Intersection Capacity Utilization 108.5%

Intersection LOS: D
ICU Level of Service G

0

0.77

0

0.23

0

0.97

0

0.54

Analysis Period (min) 15

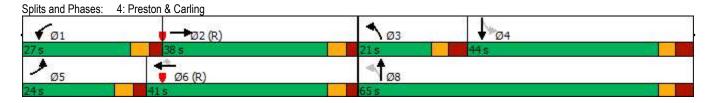
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



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Long Croup	EDI	EDT	MDT	MDD	CDI	CDD
Lane Group	EBL *	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑	215	240	7 189
Traffic Volume (vph)	399	724 724	710	215	240	189
Future Volume (vph)	399	724	710	215	240	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0			25.0	0.0	45.0 1
Storage Lanes	1			1	•	1
Taper Length (m)	25.0	0.05	1.00	1.00	10.0	4.00
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93			0.78	0.98	0.79
Frt	0.050			0.850	0.050	0.850
Flt Protected	0.950	0050	4700	4.400	0.950	4.40=
Satd. Flow (prot)	1674	3252	1728	1498	1674	1427
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1565	3252	1728	1172	1647	1125
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				65		189
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1		16.5	
Confl. Peds. (#/hr)	70			70	14	85
Confl. Bikes (#/hr)				16		23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	1%	1%	6%
Adj. Flow (vph)	399	724	710	215	240	189
Shared Lane Traffic (%)						
Lane Group Flow (vph)	399	724	710	215	240	189
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)	LOIL	7.0	7.0	ragiit	3.5	IV IVA
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		5.0	5.0		5.0	
		5.0	5.0		5.0	
Two way Left Turn Lane	4.00	1.00	1.00	1.00	1.00	1.00
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	^	^	14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+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
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)	0.0	28.7	28.7	0.0	0.0	0.0
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	CI+Ex			
		CI+EX	CI+EX			
Detector 2 Channel		0.0	0.0			
Detector 2 Extend (s)	5 1	0.0	0.0	_		_
Turn Type	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases				6	4	4
Detector Phase	5	2	6	6	4	4

	•	-	←	•	-	1
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	32.0	91.0	59.0	59.0	39.0	39.0
Total Split (%)	24.6%	70.0%	45.4%	45.4%	30.0%	30.0%
Maximum Green (s)	26.1	85.3	53.3	53.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	31.9	91.1	53.3	53.3	27.2	27.2
Actuated g/C Ratio	0.25	0.70	0.41	0.41	0.21	0.21
v/c Ratio	0.97	0.32	1.00	0.42	0.70	0.49
Control Delay	71.9	3.0	73.0	21.4	57.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.9	3.0	73.0	21.4	57.8	9.9
LOS	Е	Α	Е	С	Е	Α
Approach Delay		27.5	61.0		36.7	
Approach LOS		С	Е		D	
Queue Length 50th (m)	~112.6	15.7	~166.4	24.4	49.7	0.0
Queue Length 95th (m)	m#141.4	m19.6	#241.6	44.3	75.0	17.8
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	411	2279	708	518	418	426
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	0.97	0.32	1.00	0.42	0.57	0.44

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 16 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 41.6

Intersection LOS: D ICU Level of Service G

Intersection Capacity Utilization 104.0%

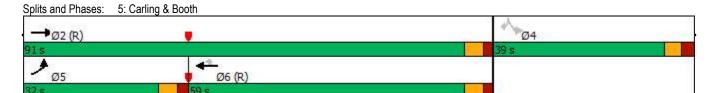
Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

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.



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ħβ		7	^	7	7	ħβ		7	ĵ.	
Traffic Volume (vph)	161	602	233	253	703	99	288	475	308	152	297	128
Future Volume (vph)	161	602	233	253	703	99	288	475	308	152	297	128
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.94	0.97		0.98		0.84	0.98	0.98		1.00	0.98	
Frt		0.958				0.850		0.941			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1595	3049	0	1658	3252	1375	1674	3035	0	1510	1506	0
Flt Permitted	0.950			0.950			0.179			0.355		
Satd. Flow (perm)	1507	3049	0	1623	3252	1153	309	3035	0	562	1506	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42				143		148			17	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	90		41	41		90	60		10	10		60
Confl. Bikes (#/hr)			22			10			36			5
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 (%)	6%	4%	2%	2%	4%	10%	1%	4%	2%	12%	6%	20%
Adj. Flow (vph)	161	602	233	253	703	99	288	475	308	152	297	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	835	0	253	703	99	288	783	0	152	425	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	Cl+Ex		Cl+Ex	CI+Ex	CI+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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8		• • • • • • • • • • • • • • • • • • • •	4	
Permitted Phases				•		6	8			4	•	
Detector Phase	5	2		1	6	6	3	8		4	4	
		_			•		•			•	•	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	24.0	38.0		27.0	41.0	41.0	21.0	65.0		44.0	44.0	
Total Split (%)	18.5%	29.2%		20.8%	31.5%	31.5%	16.2%	50.0%		33.8%	33.8%	
Maximum Green (s)	17.8	32.0		20.8	35.0	35.0	14.1	58.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	16.3	32.0		20.8	36.5	36.5	58.1	58.1		37.1	37.1	
Actuated g/C Ratio	0.13	0.25		0.16	0.28	0.28	0.45	0.45		0.29	0.29	
v/c Ratio	0.81	1.07		0.95	0.77	0.23	1.01	0.54		0.95	0.96	
Control Delay	88.3	83.1		63.1	41.3	8.8	70.1	8.7		105.6	78.9	
Queue Delay	0.0	2.7		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	88.3	85.7		63.1	41.3	8.8	70.1	8.7		105.6	78.9	
LOS	F	F		Е	D	Α	Е	Α		F	Е	
Approach Delay		86.1			43.5			25.2			85.9	
Approach LOS		F			D			С			F	
Queue Length 50th (m)	29.8	~107.2		53.6	90.9	5.5	~43.6	51.9		35.2	95.8	
Queue Length 95th (m)	#63.1	#140.8		m#58.3	m90.3	m7.2	#97.1	60.1		#74.9	#155.6	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	218	782		265	913	426	286	1438		160	441	
Starvation Cap Reductn	0	5		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.74	1.07		0.95	0.77	0.23	1.01	0.54		0.95	0.96	

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07 Intersection Signal Delay: 56.3

Intersection Capacity Utilization 110.5%

Analysis Period (min) 15

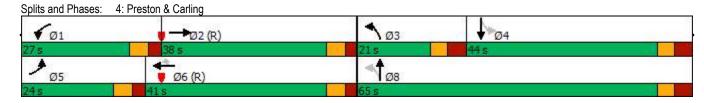
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



Intersection LOS: E

ICU Level of Service H

	•	→	—	•	\	1
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	T LDL	†		WDIN	SDL	JDK 7
Traffic Volume (vph)	431	TT 715	770	215	240	189
Future Volume (vph)	431	715	770	215	240	189
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
	75.0	1000	1000	25.0	0.0	45.0
Storage Lanes	75.0			25.0	1	45.0
Storage Lanes				I		
Taper Length (m)	25.0	0.05	1.00	1.00	10.0	1.00
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93			0.78	0.98	0.79
Frt	0.050			0.850	0.050	0.850
Flt Protected	0.950	0050	4700	4.400	0.950	4.40=
Satd. Flow (prot)	1674	3252	1728	1498	1674	1427
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1565	3252	1728	1172	1647	1125
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				60		189
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1		16.5	
Confl. Peds. (#/hr)	70	7.0	31.1	70	14	85
Confl. Bikes (#/hr)	- 10			16	17	23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1.00	4%	3%	1.00	1.00	6%
Adj. Flow (vph)	431	715	770	215	240	189
Shared Lane Traffic (%)	404	745	770	045	0.40	400
Lane Group Flow (vph)	431	715	770	215	240	189
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)		7.0	7.0		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)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	1.8	6.1	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			2
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel		CITEX	OITEX			
		0.0	0.0			
	Dest			D	D	D
				Perm	Perm	Perm
	5	2	6			
					4	
Detector Phase	5	2	6	6	4	4
Detector 2 Extend (s) Turn Type Protected Phases Permitted Phases	Prot 5	0.0 NA 2	0.0 NA 6	Perm 6 6		Perm 4 4

	•	→	←	•	\	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	32.0	91.0	59.0	59.0	39.0	39.0
Total Split (%)	24.6%	70.0%	45.4%	45.4%	30.0%	30.0%
Maximum Green (s)	26.1	85.3	53.3	53.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?			3			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	31.9	91.1	53.3	53.3	27.2	27.2
Actuated g/C Ratio	0.25	0.70	0.41	0.41	0.21	0.21
v/c Ratio	1.05	0.31	1.09	0.42	0.70	0.49
Control Delay	85.3	2.7	97.0	22.1	57.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.3	2.7	97.0	22.1	57.8	9.9
LOS	F	Α	F	С	E	Α
Approach Delay		33.8	80.7		36.7	
Approach LOS		С	F		D	
Queue Length 50th (m)	~128.2	13.6	~203.8	25.3	49.7	0.0
Queue Length 95th (m)	m#142.6	m15.3	#271.9	45.4	75.0	17.8
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	411	2279	708	515	418	426
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	1.05	0.31	1.09	0.42	0.57	0.44
Intersection Summary						

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 16 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09 Intersection Signal Delay: 52.3

Intersection Capacity Utilization 109.2%

intersection Capacity Offication 109.2%

Intersection LOS: D
ICU Level of Service H

Analysis Period (min) 15

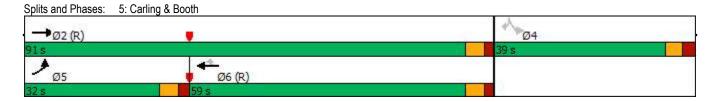
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



7 NVI I CUIT TIOUI							2020 Baokground Trainio (Olario) Toolik
	٠	•	1	†	+	4	
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		7		414	f)		
Traffic Volume (vph)	0	7 9	33	669	498	30	
Future Volume (vph)	0	79	33	669	498	30	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	
Ped Bike Factor							
Frt		0.865			0.992		
FIt Protected				0.998			
Satd. Flow (prot)	0	1510	0	3278	1684	0	
FIt Permitted				0.998			
Satd. Flow (perm)	0	1510	0	3278	1684	0	
Link Speed (k/h)	30			50	50		
Link Distance (m)	68.0			65.2	71.5		
Travel Time (s)	8.2			4.7	5.1		
Confl. Peds. (#/hr)			28			28	
Confl. Bikes (#/hr)						17	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%	
Adj. Flow (vph)	0	79	33	669	498	30	
Shared Lane Traffic (%)							
ane Group Flow (vph)	0	79	0	702	528	0	
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes	
ane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(m)	0.0	<u> </u>		0.0	0.0		
Link Offset(m)	0.0			0.0	0.0		
Crosswalk Width(m)	5.0			2.0	5.0		
Two way Left Turn Lane							
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Furning Speed (k/h)	24	14	24			14	
Sign Control	Stop			Free	Free		
Intersection Summary							
Area Type:	Other						
O t T							

Control Type: Unsignalized Intersection Capacity Utilization 48.6% Analysis Period (min) 15

ICU Level of Service A

Synchro 10 Report J.Audia, Novatech

	٠	→	F	←	•	\	4
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations	<u> </u>	^	T MBO	*	<u>₩Ы</u> ₹) T	7
Traffic Volume (vph)	65	743	13	1447	179	186	7
Future Volume (vph)	65	743	13	1447	179	186	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	50.0	1000	110.0	0.0	10.0
Storage Lanes	1		30.0		110.0	1	10.0
Taper Length (m)	25.0		25.0			25.0	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99	0.95	1.00	0.95	0.91	0.99	0.97
Frt Frt	0.99					0.99	0.850
	0.050		0.950		0.850	0.950	0.000
Flt Protected	0.950	2050		2246	1/100		1400
Satd. Flow (prot)	1674	3252	1674	3316	1498	1674	1498
Flt Permitted	0.950	2050	0.370	2040	1057	0.950	4454
Satd. Flow (perm)	1658	3252	652	3316	1357	1659	1454
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)		22		22	179	40	3
Link Speed (k/h)		60		60		40	
Link Distance (m)		196.1		162.9		242.3	
Travel Time (s)		11.8		9.8		21.8	
Confl. Peds. (#/hr)	28				28	7	8
Confl. Bikes (#/hr)					5		8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	2%	1%	1%	1%
Adj. Flow (vph)	65	743	13	1447	179	186	7
Shared Lane Traffic (%)							
Lane Group Flow (vph)	65	743	13	1447	179	186	7
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		7.0		7.0		3.5	
Link Offset(m)		0.0		0.0		0.0	
Crosswalk Width(m)		5.0		10.0		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)	24		14		14	40	14
Number of Detectors	1	2	1	2	1	1	1
Detector Template	Left	Thru	Left	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	6.1	1.8	6.1	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)	0.0	28.7	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		OITEX		OITEX			
Detector 2 Extend (s)		0.0		0.0			
	Prot	NA	Perm	NA	Perm	Perm	Perm
Turn Type	Prot 5	NA 2	reilli	NA 6	reiiii	reiiii	reilli
Protected Phases	5	Z		D		4	4
Permitted Phases	_		6		6	4	4
Detector Phase	5	2	6	6	6	4	4

	•	-	F	←	•	-	1
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.2	33.4	33.4	33.4	33.4	40.1	40.1
Total Split (s)	17.0	99.0	82.0	82.0	82.0	41.0	41.0
Total Split (%)	12.1%	70.7%	58.6%	58.6%	58.6%	29.3%	29.3%
Maximum Green (s)	11.8	92.6	75.6	75.6	75.6	33.9	33.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.5	2.7	2.7	2.7	2.7	3.8	3.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	6.4	6.4	6.4	6.4	7.1	7.1
Lead/Lag	Lead		Lag	Lag	Lag		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		12.0	12.0	12.0	12.0	7.0	7.0
Flash Dont Walk (s)		15.0	15.0	15.0	15.0	26.0	26.0
Pedestrian Calls (#/hr)		20	20	20	20	20	20
Act Effct Green (s)	10.3	100.4	87.2	87.2	87.2	26.1	26.1
Actuated g/C Ratio	0.07	0.72	0.62	0.62	0.62	0.19	0.19
v/c Ratio	0.53	0.32	0.03	0.70	0.20	0.60	0.03
Control Delay	77.4	8.6	5.8	10.8	1.1	59.1	33.3
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	77.4	8.6	5.8	10.9	1.1	59.1	33.3
LOS	Е	Α	Α	В	Α	Е	С
Approach Delay		14.1		9.8		58.2	
Approach LOS		В		Α		Е	
Queue Length 50th (m)	16.2	39.9	0.6	90.4	0.4	41.2	8.0
Queue Length 95th (m)	30.2	49.4	m1.4	137.1	3.3	63.3	4.6
Internal Link Dist (m)		172.1		138.9		218.3	
Turn Bay Length (m)	40.0		50.0		110.0		10.0
Base Capacity (vph)	145	2331	406	2065	912	401	354
Starvation Cap Reductn	0	0	0	78	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.32	0.03	0.73	0.20	0.46	0.02
Intersection Summary							

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 7 (5%), Referenced to phase 2:EBT and 6:WBTU, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70
Intersection Signal Delay: 14.7

Intersection Capacity Utilization 76.7%

Intersection LOS: B
ICU Level of Service D

Analysis Period (min) 15

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



	•	→	\rightarrow	•	←	•	•	†	/	>	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	^	7	7	44	7	7		7	7		7
Traffic Volume (vph)	55	772	26	27	1298	72	97	0	110	146	0	199
Future Volume (vph)	55	772	26	27	1298	72	97	0	110	146	0	199
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		30.0	60.0		25.0	0.0		0.0	20.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.95	0.96		0.74	0.95		0.94	0.97		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1409	3283	1483	1658	3316	1498	1658	0	1483	1674	0	1498
Flt Permitted	0.179			0.341			0.950			0.950		
Satd. Flow (perm)	266	3283	1415	572	3316	1106	1580	0	1398	1630	0	1440
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			24			34			110			54
Link Speed (k/h)		60			60	• •		50			50	
Link Distance (m)		162.9			117.5			121.7			178.4	
Travel Time (s)		9.8			7.1			8.8			12.8	
Confl. Peds. (#/hr)	70	0.0	70	70		70	20	0.0	20	20		20
Confl. Bikes (#/hr)			5	. •		4						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 (%)	20%	3%	2%	2%	2%	1%	2%	2%	2%	1%	2%	1%
Adj. Flow (vph)	55	772	26	27	1298	72	97	0	110	146	0	199
Shared Lane Traffic (%)				=-	00	•=	•	•			•	.00
Lane Group Flow (vph)	55	772	26	27	1298	72	97	0	110	146	0	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)	Lon	7.0	11101	_ I I V (7.0	rugiit	·	3.5	11101		3.5	1110
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	1	1	2	1	1		1	1		1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left		Right	Left		Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1		6.1	6.1		6.1
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		6.1	6.1		6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex		Cl+Ex	Cl+Ex		CI+Ex
Detector 1 Channel	OI LX	OI LX	OI LX	OI LX	OI LX	OI LX	OI - EX		OI LX	OI LX		OI LX
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		0.0	0.0		0.0
Detector 2 Size(m)		1.8			1.8							
Detector 2 Type		CI+Ex			CI+Ex							
Detector 2 Type Detector 2 Channel		OIILX			OITEX							
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	i Giiil	2	1 51111	1 51111	6	i Giiii	i Giiii		i Giiii	i Giiii		1 51111
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	2	2	2	6	6	6	8		8	4		4
Detector i nase				U	U	U	Ü		U	4		4

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0		5.0	10.0		10.0
Minimum Split (s)	15.3	15.3	15.3	25.3	25.3	25.3	24.0		24.0	37.9		37.9
Total Split (s)	95.0	95.0	95.0	95.0	95.0	95.0	45.0		45.0	45.0		45.0
Total Split (%)	67.9%	67.9%	67.9%	67.9%	67.9%	67.9%	32.1%		32.1%	32.1%		32.1%
Maximum Green (s)	89.7	89.7	89.7	89.7	89.7	89.7	39.0		39.0	39.1		39.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0		3.0	3.3		3.3
All-Red Time (s)	1.6	1.6	1.6	1.6	1.6	1.6	3.0		3.0	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)	5.3	5.3	5.3	5.3	5.3	5.3	6.0		6.0	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
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	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None		None	None		None
Walk Time (s)				10.0	10.0	10.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)				10.0	10.0	10.0	11.0		11.0	25.0		25.0
Pedestrian Calls (#/hr)				20	20	20	20		20	20		20
Act Effct Green (s)	104.1	104.1	104.1	104.1	104.1	104.1	24.6		24.6	24.7		24.7
Actuated g/C Ratio	0.74	0.74	0.74	0.74	0.74	0.74	0.18		0.18	0.18		0.18
v/c Ratio	0.28	0.32	0.02	0.06	0.53	0.09	0.35		0.33	0.51		0.67
Control Delay	11.9	7.1	2.4	2.8	3.2	1.8	51.8		10.2	56.6		48.6
Queue Delay	0.0	0.1	0.0	0.0	0.4	0.0	0.0		0.0	0.0		0.0
Total Delay	11.9	7.2	2.4	2.8	3.6	1.8	51.8		10.2	56.6		48.6
LOS	В	Α	Α	Α	Α	Α	D		В	Е		D
Approach Delay		7.4			3.5			29.7			52.0	
Approach LOS		Α			Α			С			D	
Queue Length 50th (m)	3.0	21.9	0.3	1.0	25.7	0.7	20.5		0.0	31.8		32.6
Queue Length 95th (m)	17.6	33.4	m1.5	m1.9	28.7	2.1	35.6		14.0	51.0		56.4
Internal Link Dist (m)		138.9			93.5			97.7			154.4	
Turn Bay Length (m)	70.0		30.0	60.0		25.0				20.0		
Base Capacity (vph)	197	2441	1058	425	2466	831	440		468	455		441
Starvation Cap Reductn	0	593	0	0	600	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	116	0	0		0	0		1
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.28	0.42	0.02	0.06	0.70	0.09	0.22		0.24	0.32		0.45

Other

Area Type: Cycle Length: 140 Actuated Cycle Length: 140

Offset: 5 (4%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

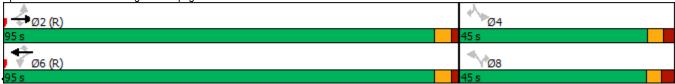
Intersection Signal Delay: 12.6 Intersection Capacity Utilization 78.5%

Intersection LOS: B ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Carling & Champagne



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^			^							
Traffic Volume (vph)	0	1079	0	0	1441	0	0	0	0	0	0	0
Future Volume (vph)	0	1079	0	0	1441	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3283	0	0	3316	0	0	0	0	0	0	0
Flt Permitted	<u> </u>	0200	U	0	0010	- U	U	- U	U	<u> </u>	U	U
Satd. Flow (perm)	0	3283	0	0	3316	0	0	0	0	0	0	0
Right Turn on Red		0200	Yes		0010	Yes	- U		Yes	•	- U	Yes
Satd. Flow (RTOR)			163			163			163			163
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		117.5			124.7			157.3			54.9	
Travel Time (s)		7.1			7.5			11.3			4.0	
Confl. Peds. (#/hr)	35	1.1			1.5	35	25	11.5	35	35	4.0	25
	33		11			10	20		13	33		34
Confl. Bikes (#/hr) 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
	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Heavy Vehicles (%)												
Adj. Flow (vph)	0	1079	0	0	1441	0	0	0	0	0	0	0
Shared Lane Traffic (%)	0	4070	^	^	4444	^	0	^	0	^	0	
Lane Group Flow (vph)	0	1079	0	0	1441	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			0.0			0.0	
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	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		2			2							
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5							
Trailing Detector (m)		0.0			0.0							
Detector 1 Position(m)		0.0			0.0							
Detector 1 Size(m)		1.8			1.8							
Detector 1 Type		CI+Ex			Cl+Ex							
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0							
Detector 1 Queue (s)		0.0			0.0							
Detector 1 Delay (s)		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			NA							
Protected Phases		2			6							
Permitted Phases												
Detector Phase		2			6							
Switch Phase												
Minimum Initial (s)		10.0			10.0							
Minimum Split (s)		25.1			25.1							

Lane Group	Ø4		
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot) Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (k/h)			
Number of Detectors			
Detector Template			
Leading Detector (m)			
Trailing Detector (m)			
Detector 1 Position(m)			
Detector 1 Size(m)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(m)			
Detector 2 Size(m)			
Detector 2 Type Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	4		
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0		
Minimum Split (s)	35.6		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	1	04.0			104.0							
Total Split (%)		1.3%			74.3%							
Maximum Green (s)		98.9			98.9							
Yellow Time (s)		3.7			3.7							
All-Red Time (s)		1.4			1.4							
Lost Time Adjust (s)		0.0			0.0							
Total Lost Time (s)		5.1			5.1							
Lead/Lag		0.1			0.1							
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0							
Recall Mode	_	-Max			C-Max							
Walk Time (s)		15.0			15.0							
Flash Dont Walk (s)		5.0			5.0							
Pedestrian Calls (#/hr)		20			20							
Act Effct Green (s)		15.6			115.6							
Actuated g/C Ratio		0.83			0.83							
v/c Ratio		0.40			0.53							
Control Delay		4.3			2.3							
Queue Delay		0.1			0.1							
Total Delay		4.5			2.4							
LOS		Α			Α							
Approach Delay		4.5			2.4							
Approach LOS		Α			Α							
Queue Length 50th (m)		38.1			28.3							
Queue Length 95th (m)		45.7			m27.7							
Internal Link Dist (m)		93.5			100.7			133.3			30.9	
Turn Bay Length (m)												
Base Capacity (vph)	1	2710			2737							
Starvation Cap Reductn	•	588			368							
Spillback Cap Reductn		266			0							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.51			0.61							
		0.51			0.01							
Intersection Summary Area Type:	Other											
Cycle Length: 140	Other											
Actuated Cycle Length: 140	4b 0.FDT	C	WDT Ct-	4 -4 0	_							
Offset: 108 (77%), Referenced	to phase 2:EBT	and o	WB1, Star	t of Green	1							
Natural Cycle: 80												
Control Type: Actuated-Coordin	nated											
Maximum v/c Ratio: 0.53												
Intersection Signal Delay: 3.3					ntersection L							
Intersection Capacity Utilization	า 46.3%			IC	CU Level of S	Service A						
Analysis Period (min) 15												
m Volume for 95th percentile	queue is metere	ed by u	pstream s	ignal.								
Splits and Phases: 3: Trillium	n Pathway & Cai	rling										
→ø2 (R)									#1 _{Ø4}			
104 s									36 s			
← Ø6 (R)												
104 s												

Lane Group	Ø4
Total Split (s)	36.0
Total Split (%)	26%
Maximum Green (s)	29.4
Yellow Time (s)	3.0
All-Red Time (s)	3.6
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ŧβ		7	44	7	7	ħβ		7	ĵ.	
Traffic Volume (vph)	172	604	374	366	963	61	355	366	204	102	333	124
Future Volume (vph)	172	604	374	366	963	61	355	366	204	102	333	124
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	0.97		0.98		0.89	0.98	0.97		0.97	0.98	
Frt		0.943				0.850		0.946			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3014	0	1674	3316	1427	1674	3057	0	1537	1623	0
Flt Permitted	0.950			0.950			0.102			0.438		
Satd. Flow (perm)	1571	3014	0	1649	3316	1272	176	3057	0	689	1623	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		93				132		96			13	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	53		34	34		53	60		55	55		60
Confl. Bikes (#/hr)			12			10			16			6
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 (%)	5%	3%	2%	1%	2%	6%	1%	2%	1%	10%	2%	5%
Adj. Flow (vph)	172	604	374	366	963	61	355	366	204	102	333	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	978	0	366	963	61	355	570	0	102	457	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	21.0	43.0		30.0	52.0	52.0	23.0	67.0		44.0	44.0	
Total Split (%)	15.0%	30.7%		21.4%	37.1%	37.1%	16.4%	47.9%		31.4%	31.4%	
Maximum Green (s)	14.8	37.0		23.8	46.0	46.0	16.1	60.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	14.8	37.0		23.8	46.0	46.0	60.1	60.1		37.1	37.1	
Actuated g/C Ratio	0.11	0.26		0.17	0.33	0.33	0.43	0.43		0.26	0.26	
v/c Ratio	1.01	1.13		1.29	0.88	0.12	1.44	0.42		0.56	1.04	
Control Delay	139.4	102.9		177.3	40.8	1.6	243.8	6.0		58.0	102.0	
Queue Delay	0.0	0.1		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	139.4	103.0		177.3	40.8	1.6	243.8	6.0		58.0	102.0	
LOS	F	F		F	D	Α	F	Α		Е	F	
Approach Delay		108.5			75.0			97.3			94.0	
Approach LOS		F			Е			F			F	
Queue Length 50th (m)	~39.5	~143.5		~117.3	133.3	0.0	~105.3	27.2		22.6	~123.0	
Queue Length 95th (m)	#87.0	#174.9	r	m#120.7	m125.1	m0.0	m#165.5	34.7		41.5	#184.8	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	170	864		284	1089	506	247	1367		182	439	
Starvation Cap Reductn	0	17		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.01	1.15		1.29	0.88	0.12	1.44	0.42		0.56	1.04	

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.44 Intersection Signal Delay: 92.3 Intersection Capacity Utilization 126.1%

Intersection LOS: F
ICU Level of Service H

Analysis Period (min) 15

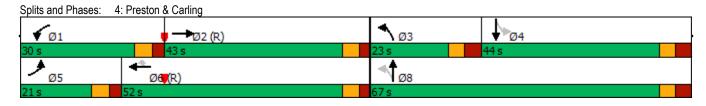
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



	•	-	•	•	-	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	<u> </u>	^	<u>₩</u>	7) T	<u>∪</u>
Traffic Volume (vph)	254	722	984	104	308	323
Future Volume (vph)	254	722	984	104	308	323
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0	1000	1000	25.0	0.0	45.0
Storage Lanes	1			23.0	1	45.0
	25.0			- 1	10.0	
Taper Length (m) Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
		0.95	1.00			
Ped Bike Factor	0.95			0.79	0.98	0.75
Frt	0.050			0.850	0.050	0.850
Flt Protected	0.950	2042	1715	1400	0.950	4.400
Satd. Flow (prot)	1674	3316	1745	1498	1674	1483
Flt Permitted	0.950	0010	4= 1=		0.950	4
Satd. Flow (perm)	1593	3316	1745	1181	1647	1117
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				25		262
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1		16.5	
Confl. Peds. (#/hr)	65			65	13	81
Confl. Bikes (#/hr)				10		45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%	1%	1%	2%
Adj. Flow (vph)	254	722	984	104	308	323
	204	122	904	104	300	323
Shared Lane Traffic (%)	054	700	004	101	200	202
Lane Group Flow (vph)	254	722	984	104	308	323
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)		7.0	7.0		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)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
•	6.1	30.5	30.5	6.1	6.1	6.1
Leading Detector (m)						
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)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+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
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		OFFLA	OFFLA			
		0.0	0.0			
Detector 2 Extend (s)	Dast			De	Dema	De
Turn Type	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases				6	4	4
Detector Phase	5	2	6	6	4	4

Switch Phase Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 10.0 10.0 Minimum Split (s) 10.9 15.7 29.7 29.7 39.0		•	-	←	•	-	4
Switch Phase Minimum Initial (s) 5.0 10.0 30.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 30.0 <th< td=""><td>Lane Group</td><td>EBL</td><td>EBT</td><td>WBT</td><td>WBR</td><td>SBL</td><td>SBR</td></th<>	Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s) 10.9 15.7 29.7 29.7 39.0 39.0 Total Split (s) 24.0 101.0 77.0 77.0 39.0 39.0 Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 3.7 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.0 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) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max None None None None None							
Minimum Split (s) 10.9 15.7 29.7 29.7 39.0 39.0 Total Split (s) 24.0 101.0 77.0 77.0 39.0 39.0 Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Iost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max None None N	Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Total Split (s) 24.0 101.0 77.0 77.0 39.0 39.0 Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 3.7 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 6.0 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lead Lead Lag Lag Lead Lead Lag Lag Lead Lag	()						39.0
Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max C-Max None None Walk Time (s) 13.0 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max C-Max None None None None None None None None None 20.0		24.0	101.0	77.0	77.0	39.0	39.0
Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 3.7 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 <td></td> <td>17.1%</td> <td>72.1%</td> <td>55.0%</td> <td>55.0%</td> <td>27.9%</td> <td>27.9%</td>		17.1%	72.1%	55.0%	55.0%	27.9%	27.9%
Yellow Time (s) 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lag Lead Lead-Lag Optimize? Vehicle Extension (s) 3.0			95.3	71.3	71.3		33.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max C-Max None None Walk Time (s) 13.0 13.0 7.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effet Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 V/c Ratio 1.00 0.31 1.11 0.17 0.88 0.73 Control Delay 86.0 6.6 97.5 14.7 77.9	Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
Lost Time Adjust (s) 0.0		2.2	2.0	2.0	2.0	2.7	2.7
Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag 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>0.0</td>		0.0	0.0	0.0	0.0	0.0	0.0
Lead-Lag Optimize? Vehicle Extension (s) 3.0		5.9	5.7	5.7	5.7	6.0	6.0
Lead-Lag Optimize? Vehicle Extension (s) 3.0 26.0 26.0 26.0 26.0 20.0 20.0 20.0 20.0 20.0 20.0 <td>Lead/Lag</td> <td>Lead</td> <td></td> <td>Lag</td> <td>Lag</td> <td></td> <td></td>	Lead/Lag	Lead		Lag	Lag		
Recall Mode None C-Max C-Max None None Walk Time (s) 13.0 13.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.31 1.11 0.17 0.88 0.73 Control Delay 86.0 6.6 97.5 14.7 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.0 6.6 97.5 14.7 77.9 20.9 LOS F A F B E C Approach Delay 27.3 89.6 48.7 A Approach LOS C F <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
Recall Mode None C-Max C-Max C-Max None None Walk Time (s) 13.0 13.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.31 1.11 0.17 0.88 0.73 Control Delay 86.0 6.6 97.5 14.7 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.0 6.6 97.5 14.7 77.9 20.9 LOS F A F B E C Approach Delay 27.3 89.6 48.7 A A F D </td <td>Vehicle Extension (s)</td> <td>3.0</td> <td>3.0</td> <td>3.0</td> <td>3.0</td> <td>3.0</td> <td>3.0</td>	Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Walk Time (s) 13.0 13.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.31 1.11 0.17 0.88 0.73 Control Delay 86.0 6.6 97.5 14.7 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.0 6.6 97.5 14.7 77.9 20.9 LOS F A F B E C Approach Delay 27.3 89.6 48.7 Approach LOS C F D D 0 Queue Length 50th (m) ~75.3 49.5			C-Max	C-Max	C-Max	None	None
Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.31 1.11 0.17 0.88 0.73 Control Delay 86.0 6.6 97.5 14.7 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.0 6.6 97.5 14.7 77.9 20.9 LOS F A F B E C Approach Delay 27.3 89.6 48.7 A Approach LOS C F D D Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.	Walk Time (s)						
Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.31 1.11 0.17 0.88 0.73 Control Delay 86.0 6.6 97.5 14.7 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.0 6.6 97.5 14.7 77.9 20.9 LOS F A F B E C Approach Delay 27.3 89.6 48.7 Approach LOS C F D Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 25.0 45.0 <t< td=""><td></td><td></td><td></td><td>11.0</td><td>11.0</td><td>26.0</td><td>26.0</td></t<>				11.0	11.0	26.0	26.0
Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.31 1.11 0.17 0.88 0.73 Control Delay 86.0 6.6 97.5 14.7 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.0 6.6 97.5 14.7 77.9 20.9 LOS F A F B E C Approach Delay 27.3 89.6 48.7 Approach LOS C F D Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 Sta	Pedestrian Calls (#/hr)			20	20	20	20
V/c Ratio 1.00 0.31 1.11 0.17 0.88 0.73 Control Delay 86.0 6.6 97.5 14.7 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.0 6.6 97.5 14.7 77.9 20.9 LOS F A F B E C Approach Delay 27.3 89.6 48.7 Approach LOS C F D D Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reduct	Act Effct Green (s)	21.2	98.4	71.3	71.3	29.9	29.9
v/c Ratio 1.00 0.31 1.11 0.17 0.88 0.73 Control Delay 86.0 6.6 97.5 14.7 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.0 6.6 97.5 14.7 77.9 20.9 LOS F A F B E C Approach Delay 27.3 89.6 48.7 Approach LOS C F D D Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 20.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 Starvation Cap Reductn 0 0	Actuated g/C Ratio	0.15	0.70	0.51	0.51		0.21
Control Delay 86.0 6.6 97.5 14.7 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.0 6.6 97.5 14.7 77.9 20.9 LOS F A F B E C Approach Delay 27.3 89.6 48.7 Approach LOS C F D D Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reductn 0		1.00	0.31	1.11	0.17	0.88	0.73
Total Delay 86.0 6.6 97.5 14.7 77.9 20.9 LOS F A F B E C Approach Delay 27.3 89.6 48.7 Approach LOS C F D Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 45.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 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	Control Delay	86.0	6.6	97.5	14.7		20.9
LOS F A F B E C Approach Delay 27.3 89.6 48.7 Approach LOS C F D Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 17.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 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	Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
LOS F A F B E C Approach Delay 27.3 89.6 48.7 Approach LOS C F D Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 45.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 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	Total Delay	86.0	6.6	97.5	14.7	77.9	20.9
Approach LOS C F D Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0		F	Α	F	В	E	С
Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 45.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 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	Approach Delay		27.3	89.6		48.7	
Queue Length 50th (m) ~75.3 49.5 ~285.5 10.3 74.4 12.7 Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 45.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 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	Approach LOS		С	F		D	
Queue Length 95th (m) m#84.7 m48.6 #358.0 20.3 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 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		~75.3	49.5	~285.5	10.3	74.4	12.7
Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 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		m#84.7	m48.6	#358.0	20.3	#113.7	47.1
Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 463 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			96.9			205.0	
Base Capacity (vph) 253 2330 888 613 388 463 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		75.0			25.0		45.0
Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0	Base Capacity (vph)	253	2330	888	613	388	463
Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0	Starvation Cap Reductn	0	0	0	0	0	0
	Spillback Cap Reductn	0	0	0	0	0	0
-		0	0	0	0	0	0
Reduced v/c Ratio 1.00 0.31 1.11 0.17 0.79 0.70		1.00	0.31	1.11	0.17	0.79	0.70

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 62 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11 Intersection Signal Delay: 57.5

Intersection Signal Delay: 57.5 Intersection LOS: E
Intersection Capacity Utilization 111.0% ICU Level of Service H

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

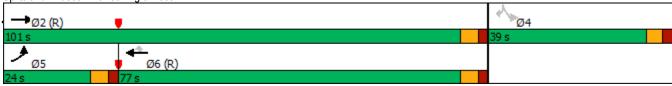
Queue shown is maximum after two cycles.

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: 5: Carling & Booth



Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT Lane Configurations 4 7 1 1 1 1 1 1 1 1 1 1 1 1 48 1 1 1 1 48 1 1 1 1 1 48 1 1 1 1 48 1 1 1 1 1 48 1 1 1 1 1 1 48 1	
Traffic Volume (vph) 29 41 34 41 121 31 82 462 56 17 48 Future Volume (vph) 29 41 34 41 121 31 82 462 56 17 48 Ideal Flow (vphpl) 1800	SBR
Traffic Volume (vph) 29 41 34 41 121 31 82 462 56 17 48 Future Volume (vph) 29 41 34 41 121 31 82 462 56 17 48 Ideal Flow (vphpl) 1800	,
Ideal Flow (vphpl) 1800 <td></td>	
Storage Length (m) 0.0 0.0 15.0 0.0 25.0 0.0 25.0 Storage Lanes 0 0 1 1 1 0 1 Taper Length (m) 25.0 20.0 20.0 20.0 20.0 Lane Util. Factor 1.00 <td>54</td>	54
Storage Length (m) 0.0 0.0 15.0 0.0 25.0 0.0 25.0 Storage Lanes 0 0 1 1 1 1 0 1 Taper Length (m) 25.0 20.0 20.0 20.0 20.0 20.0 Lane Util. Factor 1.00	1800
Storage Lanes 0 0 1 1 1 0 1 Taper Length (m) 25.0 20.0 20.0 20.0 20.0 20.0 Lane Util. Factor 1.00	0.0
Taper Length (m) 25.0 20.0 20.0 20.0 Lane Util. Factor 1.00 <td< td=""><td>0</td></td<>	0
Ped Bike Factor 0.93 0.98 0.84 0.97 0.98 0.94 0.95 Frt 0.956 0.850 0.984 0.985 Flt Protected 0.986 0.988 0.950 0.950 Satd. Flow (prot) 0 1584 0 0 1741 1498 1674 1676 0 1674 1670	
Frt 0.956 0.850 0.984 0.986 Flt Protected 0.986 0.988 0.950 0.950 Satd. Flow (prot) 0 1584 0 0 1741 1498 1674 1676 0 1674 1676	1.00
Flt Protected 0.986 0.988 0.950 0.950 Satd. Flow (prot) 0 1584 0 0 1741 1498 1674 1676 0 1674 1676	
Satd. Flow (prot) 0 1584 0 0 1741 1498 1674 1676 0 1674 1676	
Clt Dermitted 0.000 0.445 0.407	0
Fit Permitted 0.875 0.906 0.415 0.427	
Satd. Flow (perm) 0 1374 0 0 1557 1261 706 1676 0 710 1670	
Right Turn on Red Yes Yes Yes	Yes
Satd. Flow (RTOR) 24 31 15	
Link Speed (k/h) 50 50 50	
Link Distance (m) 101.4 151.8 160.5 163.5	
Travel Time (s) 7.3 10.9 11.6 11.1	
Confl. Peds. (#/hr) 40 46 46 40 52 80 80	52
Confl. Bikes (#/hr) 2 20 11	18
Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00
Heavy Vehicles (%) 1% 1% 1% 1% 1% 1% 1% 3% 1% 1% 49	2%
Adj. Flow (vph) 29 41 34 41 121 31 82 462 56 17 48-	54
Shared Lane Traffic (%)	
Lane Group Flow (vph) 0 104 0 0 162 31 82 518 0 17 538	0
Enter Blocked Intersection No	No No
Lane Alignment Left Left Right Left Right Left Left Right Left Left Left Left Left Left Left Lef	
Median Width(m) 0.0 0.0 3.5 3.	
Link Offset(m) 0.0 0.0 0.0 0.0	
Crosswalk Width(m) 5.0 5.0 5.0 5.0	1
Two way Left Turn Lane	
Headway Factor 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 1 2	
Detector Template Left Thru Left Thru Right 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 0.0	
Detector 1 Position(m) 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 1.8 6.1 1.8 6.1 1.8	
Detector 1 Type CI+Ex CI	
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	
Detector 1 Queue (s) 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	
Detector 2 Position(m) 28.7 28.7 28.7	
Detector 2 Size(m) 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 Perm NA	
Permitted Phases 4 8 8 2 6	
Detector Phase 4 4 8 8 8 2 2 6	5

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			V	V			١,		/	201	•	-
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Switch Phase	40.0	40.0		40.0	40.0	40.0	40.0	40.0		40.0	40.0	
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	67.0	67.0		67.0	67.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%	25.6%	74.4%	74.4%		74.4%	74.4%	
Maximum Green (s)	17.4	17.4		17.4	17.4	17.4	61.5	61.5		61.5	61.5	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped	Ped	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	20	20		20	20	20	20	20		20	20	
Act Effct Green (s)		17.1			17.1	17.1	61.8	61.8		61.8	61.8	
Actuated g/C Ratio		0.19			0.19	0.19	0.69	0.69		0.69	0.69	
v/c Ratio		0.37			0.55	0.12	0.17	0.45		0.03	0.47	
Control Delay		28.8			40.9	12.2	2.5	4.6		4.8	7.9	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		28.8			40.9	12.2	2.5	4.6		4.8	7.9	
LOS		С			D	В	A	Α		Α	Α	
Approach Delay		28.8			36.2	_		4.3			7.8	
Approach LOS		С			D			Α			Α	
Queue Length 50th (m)		11.1			23.6	0.0	2.6	33.7		0.8	33.1	
Queue Length 95th (m)		24.5			41.4	6.6	0.5	1.8		2.6	51.6	
Internal Link Dist (m)		77.4			127.8	0.0	0.0	136.5		2.0	139.2	
Turn Bay Length (m)		,,.,			121.0		25.0	100.0		25.0	100.2	
Base Capacity (vph)		285			301	268	484	1156		487	1151	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.36			0.54	0.12	0.17	0.45		0.03	0.47	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												

Actuated Cycle Length: 90

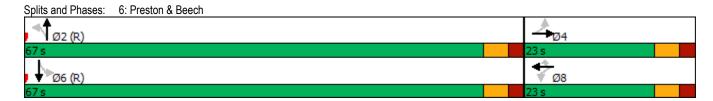
Offset: 43 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60 Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 11.7 Intersection Capacity Utilization 85.9% Analysis Period (min) 15

Intersection LOS: B ICU Level of Service E



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4						4			44	
Traffic Volume (vph)	4	2	10	0	0	0	8	557	27	6	556	15
Future Volume (vph)	4	2	10	0	0	0	8	557	27	6	556	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor		0.92						0.99			1.00	
Frt		0.916						0.994			0.996	
Flt Protected		0.988						0.999			0.999	
Satd. Flow (prot)	0	1494	0	0	0	0	0	1709	0	0	1716	0
Flt Permitted		0.988						0.993			0.995	
Satd. Flow (perm)	0	1466	0	0	0	0	0	1698	0	0	1708	0
Right Turn on Red		1400	Yes	<u> </u>		Yes	•	1030	Yes	0	1700	Yes
Satd. Flow (RTOR)		10	163			163		7	163		4	163
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		114.6			152.9			73.8			160.5	
Travel Time (s)		8.3			11.0			5.3			11.6	
()	25	0.3	27	27	11.0	25	46	5.5	47	47	11.0	46
Confl. Peds. (#/hr)	20			21			40		21	47		
Confl. Bikes (#/hr)	4.00	4.00	1	4.00	4.00	3	4.00	4.00		4.00	4.00	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%	1%	1%	2%	2%	2%	1%	3%	1%	1%	3%	1%
Adj. Flow (vph)	4	2	10	0	0	0	8	557	27	6	556	15
Shared Lane Traffic (%)										•		
Lane Group Flow (vph)	0	16	0	0	0	0	0	592	0	0	577	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		-2.0			-1.0			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	
Detector Template	Left	Thru					Left	Thru		Left	Thru	
Leading Detector (m)	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	
Detector 1 Position(m)	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	
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			28.7	
Detector 2 Size(m)		1.8						1.8			1.8	
Detector 2 Type		CI+Ex						CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4	'					2			6		
Detector Phase	4	4					2	2		6	6	
Switch Phase		7								U	U	
Minimum Initial (s)	10.0	10.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	
willingin Opiit (8)	20.5	20.0					20.1	20.1		20.1	20.1	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBI
Total Split (s)	21.0	21.0					69.0	69.0		69.0	69.0	
Total Split (%)	23.3%	23.3%					76.7%	76.7%		76.7%	76.7%	
Maximum Green (s)	15.5	15.5					63.9	63.9		63.9	63.9	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0					18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	8.0	8.0					5.0	5.0		5.0	5.0	
Pedestrian Calls (#/hr)	20	20					20	20		20	20	
Act Effct Green (s)	20	12.0					20	75.6		20	75.6	
Actuated g/C Ratio		0.13						0.84			0.84	
v/c Ratio		0.08						0.41			0.40	
Control Delay		21.9						4.7			3.6	
Queue Delay		0.0						0.0			0.0	
Total Delay		21.9						4.7			3.6	
LOS		Z1.9						4.7 A			3.0 A	
Approach Delay		21.9						4.7			3.6	
Approach LOS		Z1.9 C						4.7 A			3.0 A	
Queue Length 50th (m)		0.9						25.3			20.5	
		5.8						52.0			32.2	
Queue Length 95th (m) Internal Link Dist (m)		90.6			128.9			49.8			136.5	
		90.0			120.9			49.0			130.3	
Turn Bay Length (m)		000						1.400			1420	
Base Capacity (vph)		260						1428			1436	
Starvation Cap Reductn		0						0			86	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.06						0.41			0.43	
Intersection Summary												
7 1	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 27 (30%), Referenced to	o phase 2:N	BIL and 6:	SBTL, Sta	rt of Greer	1							
Natural Cycle: 55												
Control Type: Actuated-Coordin	nated											
Maximum v/c Ratio: 0.41												
Intersection Signal Delay: 4.4	F3 70'				tersection							
Intersection Capacity Utilization	า 57.7%			IC	U Level of	Service B						
Analysis Period (min) 15												
Splits and Phases: 7: Presto	n & Pamilla											
+												
Ø2 (R)										Ø4		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			€			4			- 43-	
Traffic Volume (vph)	19	4	17	22	2	17	22	511	48	22	562	5
Future Volume (vph)	19	4	17	22	2	17	22	511	48	22	562	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor												
Frt		0.943			0.944			0.989			0.999	
Flt Protected		0.977			0.974			0.998			0.998	
Satd. Flow (prot)	0	1608	0	0	1605	0	0	1708	0	0	1724	0
FIt Permitted		0.977			0.974			0.998			0.998	
Satd. Flow (perm)	0	1608	0	0	1605	0	0	1708	0	0	1724	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.6			154.3			71.5			73.8	
Travel Time (s)		8.2			11.1			5.1			5.3	
Confl. Peds. (#/hr)							46		47	47		46
Confl. Bikes (#/hr)									21			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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Adj. Flow (vph)	19	4	17	22	2	17	22	511	48	22	562	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	41	0	0	581	0	0	589	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		-2.0			-2.0			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
Sign Control		Stop			Stop			Free			Free	

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 51.0%
Analysis Period (min) 15

ICU Level of Service A

Synchro 10 Report J.Audia, Novatech

	•	•	•	†	↓	✓
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			414	f.	
Traffic Volume (vph)	24	26	39	557	533	64
Future Volume (vph)	24	26	39	557	533	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.930				0.986	
Flt Protected	0.977			0.997		
Satd. Flow (prot)	1586	0	0	3276	1706	0
Flt Permitted	0.977			0.997		
Satd. Flow (perm)	1586	0	0	3276	1706	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			46			47
Confl. Bikes (#/hr)						14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	3%	3%	2%
Adj. Flow (vph)	24	26	39	557	533	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	596	597	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5	J -		0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	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	Stop			Free	Free	
Intersection Summary	'					
Area Type:	Other					
Control Type: Unsignalized	Otrici					
Intersection Capacity Utilization	n 57 10/			IC	U Level of	Sonvice D
intersection Capacity Utilizatio	JII 37.470			10	O LEVEI OI	Service B

Intersection Capacity Utilization 57.4% Analysis Period (min) 15

Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	77	1≽		7	+	7		4			सी	7
Traffic Volume (vph)	470	280	4	2	416	431	5	2	1	413	0	645
Future Volume (vph)	470	280	4	2	416	431	5	2	1	413	0	645
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Storage Lanes	2		0	1		1	0		0	0		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.89		0.93		0.93			0.81	0.77
Frt		0.998				0.850		0.983				0.850
Flt Protected	0.950			0.950				0.970			0.950	
Satd. Flow (prot)	3185	1754	0	1674	1762	1498	0	1637	0	0	1674	1483
FIt Permitted	0.225			0.586				0.851			0.752	
Satd. Flow (perm)	754	1754	0	917	1762	1397	0	1373	0	0	1077	1144
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				164		1				88
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		233.9			203.3			76.1			164.5	
Travel Time (s)		14.0			12.2			5.5			11.8	
Confl. Peds. (#/hr)	35		62	62		35	73		65	65		73
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 (%)	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%
Adj. Flow (vph)	470	280	4	2	416	431	5	2	1	413	0	645
Shared Lane Traffic (%)												
Lane Group Flow (vph)	470	284	0	2	416	431	0	8	0	0	413	645
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			0.0			3.5	
Link Offset(m)		2.0			0.0			5.0			0.0	
Crosswalk Width(m)		5.0			10.0			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	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
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	1.8	6.1	6.1	1.8		6.1	1.8	6.1
	CI+Ex	CI+Ex		CI+Ex	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		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	
	om+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	37.0	79.0		42.0	42.0	42.0	61.0	61.0		61.0	61.0	37.0
Total Split (%)	26.4%	56.4%		30.0%	30.0%	30.0%	43.6%	43.6%		43.6%	43.6%	26.4%
Maximum Green (s)	30.9	72.9		35.9	35.9	35.9	55.5	55.5		55.5	55.5	30.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	72.9	72.9		44.6	44.6	44.6		55.5			55.5	77.1
Actuated g/C Ratio	0.52	0.52		0.32	0.32	0.32		0.40			0.40	0.55
v/c Ratio	0.60	0.31		0.01	0.74	0.78		0.01			0.97	0.89
Control Delay	22.5	20.3		38.0	53.1	37.9		24.4			43.3	11.9
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.1
Total Delay	22.5	20.3		38.0	53.1	37.9		24.4			43.3	12.0
LOS	С	С		D	D	D		С			D	В
Approach Delay		21.7			45.4			24.4			24.2	
Approach LOS		С			D			С			С	
Queue Length 50th (m)	33.8	40.2		0.3	92.5	62.8		1.1			89.9	57.4
Queue Length 95th (m)	44.0	58.1		2.5	#159.3	#128.1		4.4			m63.7	m21.3
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	929	913		292	561	556		544			426	809
Starvation Cap Reductn	0	0		0	0	0		0			0	6
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	0.51	0.31		0.01	0.74	0.78		0.01			0.97	0.80

Other Area Type:

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 53 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.97 Intersection Signal Delay: 30.2 Intersection Capacity Utilization 105.1%

Intersection LOS: C ICU Level of Service G

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: 10: Prince of Wales/Queen Elizabeth & Preston [®]Ø2 (R) Ø4 1 08 Ø6 (R)

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ች	↑ ↑		*	^	7	*	† 1>		ች	1	02.1
Traffic Volume (vph)	162	504	374	276	963	61	255	366	204	102	313	124
Future Volume (vph)	162	504	374	276	963	61	255	366	204	102	313	124
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	0.97		0.98		0.89	0.98	0.97		0.97	0.98	
Frt		0.936				0.850		0.946			0.957	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	2982	0	1674	3316	1427	1674	3057	0	1537	1617	0
Flt Permitted	0.950			0.950			0.127			0.438		
Satd. Flow (perm)	1571	2982	0	1645	3316	1272	219	3057	0	689	1617	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		131				132		96			14	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	53		34	34		53	60		55	55		60
Confl. Bikes (#/hr)			12			10			16			6
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 (%)	5%	3%	2%	1%	2%	6%	1%	2%	1%	10%	2%	5%
Adj. Flow (vph)	162	504	374	276	963	61	255	366	204	102	313	124
Shared Lane Traffic (%)						• •						
Lane Group Flow (vph)	162	878	0	276	963	61	255	570	0	102	437	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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		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	0.0	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6	. 31111	3	8		. 5	4	
Permitted Phases		_				6	8	-		4		
Detector Phase	5	2		1	6	6	3	8		4	4	
		_		•							•	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	21.0	43.0		30.0	52.0	52.0	23.0	67.0		44.0	44.0	
Total Split (%)	15.0%	30.7%		21.4%	37.1%	37.1%	16.4%	47.9%		31.4%	31.4%	
Maximum Green (s)	14.8	37.0		23.8	46.0	46.0	16.1	60.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	14.8	37.0		23.8	46.0	46.0	60.1	60.1		37.1	37.1	
Actuated g/C Ratio	0.11	0.26		0.17	0.33	0.33	0.43	0.43		0.26	0.26	
v/c Ratio	0.95	0.99		0.97	0.88	0.12	0.98	0.42		0.56	1.00	
Control Delay	126.3	54.8		78.4	43.4	1.6	76.6	5.5		58.0	91.8	
Queue Delay	0.0	17.5		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	126.3	72.3		78.4	43.4	1.6	76.6	5.5		58.0	91.8	
LOS	F	Е		Е	D	Α	Е	Α		Е	F	
Approach Delay		80.7			48.9			27.5			85.4	
Approach LOS		F			D			С			F	
Queue Length 50th (m)	34.8	55.1		67.6	132.9	0.0	44.4	26.7		22.6	109.0	
Queue Length 95th (m)	#80.2	#139.4		m#87.3	m136.2	m0.0	m#93.8	34.3		41.5	#173.0	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	170	884		284	1089	506	261	1367		182	438	
Starvation Cap Reductn	0	49		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.95	1.05		0.97	0.88	0.12	0.98	0.42		0.56	1.00	

Other

Area Type: Cycle Length: 140 Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 58.4 Intersection Capacity Utilization 112.2%

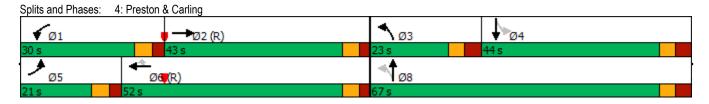
Intersection LOS: E ICU Level of Service H

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.



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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	CDL K	^		WDK	SDL	ODK 7
Traffic Volume (vph)	254	TT 722	884	104	308	323
Future Volume (vph)	254	722	884	104	308	323
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0	1000	1000	25.0	0.0	45.0
Storage Lanes	1			1	1	1
Taper Length (m)	25.0				10.0	•
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.00	1.00	0.79	0.98	0.75
Frt	0.50			0.850	0.00	0.850
Flt Protected	0.950			0.000	0.950	0.000
Satd. Flow (prot)	1674	3316	1745	1498	1674	1483
Flt Permitted	0.950	0010	1740	1-130	0.950	1700
Satd. Flow (perm)	1593	3316	1745	1181	1647	1117
	1093	3310	1/45		1047	Yes
Right Turn on Red				Yes		
Satd. Flow (RTOR)		00	00	28	Γ0	262
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)	^=	7.3	31.1	^-	16.5	2.1
Confl. Peds. (#/hr)	65			65	13	81
Confl. Bikes (#/hr)				10		45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%	1%	1%	2%
Adj. Flow (vph)	254	722	884	104	308	323
Shared Lane Traffic (%)						
Lane Group Flow (vph)	254	722	884	104	308	323
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)		7.0	7.0		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)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	Cl+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Channel	∪i≠⊑X	OITEX	OITEX	OITEX	OITEX	OITEX
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	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases				6	4	4
Detector Phase	5	2	6	6	4	4

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	24.0	101.0	77.0	77.0	39.0	39.0
Total Split (%)	17.1%	72.1%	55.0%	55.0%	27.9%	27.9%
Maximum Green (s)	18.1	95.3	71.3	71.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?				9		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)	710110	•	13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	21.2	98.4	71.3	71.3	29.9	29.9
Actuated g/C Ratio	0.15	0.70	0.51	0.51	0.21	0.21
v/c Ratio	1.00	0.31	1.00	0.17	0.88	0.73
Control Delay	99.5	6.5	63.4	14.1	77.9	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.5	6.5	63.4	14.1	77.9	20.9
LOS	F	A	E	В	Ε	C
Approach Delay	•	30.7	58.2		48.7	
Approach LOS		C	E		D	
Queue Length 50th (m)	~76.2	42.5	218.6	9.9	74.4	12.7
Queue Length 95th (m)	m#100.1	m48.5	#304.1	19.8	#113.7	47.1
Internal Link Dist (m)	1111/100.1	96.9	494.9	10.0	205.0	17.1
Turn Bay Length (m)	75.0	30.5	707.0	25.0	200.0	45.0
Base Capacity (vph)	253	2330	888	615	388	463
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	1.00	0.31	1.00	0.17	0.79	0.70
Troductu V/O Trailo	1.00	0.01	1.00	0.17	0.13	0.70

Area Type: Other

Cycle Length: 140
Actuated Cycle Length: 140

Offset: 62 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 45.5 Intersection Capacity Utilization 105.5%

Intersection LOS: D
ICU Level of Service G

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ħβ		7	44	7	7	ħβ		7	ĵ.	
Traffic Volume (vph)	172	604	374	366	963	61	355	366	204	123	333	124
Future Volume (vph)	172	604	374	366	963	61	355	366	204	123	333	124
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	0.97		0.98		0.89	0.98	0.97		0.97	0.98	
Frt		0.943				0.850		0.946			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3014	0	1674	3316	1427	1674	3057	0	1537	1623	0
Flt Permitted	0.950			0.950			0.102			0.438		
Satd. Flow (perm)	1571	3014	0	1649	3316	1272	176	3057	0	689	1623	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		93				132		96			13	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	53		34	34		53	60		55	55		60
Confl. Bikes (#/hr)			12			10			16			6
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 (%)	5%	3%	2%	1%	2%	6%	1%	2%	1%	10%	2%	5%
Adj. Flow (vph)	172	604	374	366	963	61	355	366	204	123	333	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	978	0	366	963	61	355	570	0	123	457	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	21.0	43.0		30.0	52.0	52.0	23.0	67.0		44.0	44.0	
Total Split (%)	15.0%	30.7%		21.4%	37.1%	37.1%	16.4%	47.9%		31.4%	31.4%	
Maximum Green (s)	14.8	37.0		23.8	46.0	46.0	16.1	60.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	14.8	37.0		23.8	46.0	46.0	60.1	60.1		37.1	37.1	
Actuated g/C Ratio	0.11	0.26		0.17	0.33	0.33	0.43	0.43		0.26	0.26	
v/c Ratio	1.01	1.13		1.29	0.88	0.12	1.44	0.42		0.68	1.04	
Control Delay	139.4	102.9		177.3	40.8	1.6	243.8	6.0		66.1	102.0	
Queue Delay	0.0	0.1		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	139.4	103.0		177.3	40.8	1.6	243.8	6.0		66.1	102.0	
LOS	F	F		F	D	Α	F	Α		Е	F	
Approach Delay		108.5			75.0			97.3			94.4	
Approach LOS		F			Е			F			F	
Queue Length 50th (m)	~39.5	~143.5		~117.3	133.3	0.0	~105.3	27.2		28.2	~123.0	
Queue Length 95th (m)	#87.0	#174.9	1	m#120.7	m125.1	m0.0	m#165.5	34.7		#54.3	#184.8	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	170	864		284	1089	506	247	1367		182	439	
Starvation Cap Reductn	0	17		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.01	1.15		1.29	0.88	0.12	1.44	0.42		0.68	1.04	

Area Type: Other

Cycle Length: 140
Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.44 Intersection Signal Delay: 92.4 Intersection Capacity Utilization 126.1%

Intersection LOS: F
ICU Level of Service H

Analysis Period (min) 15

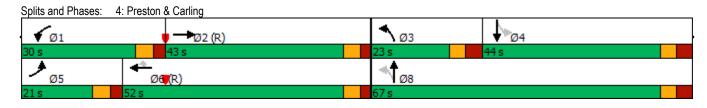
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



Link Distance (m) 120.9 518.9 229.0		•	→	←	•	\	4	
Lane Configurations	Lane Group	FRI	FRT	WRT	WRR	SBI	SBR	
Traffic Volume (vph)								
Future Volume (vph)								
Ideal Flow (vphpt)								
Storage Length (m) 75.0 25.0 0.0 45.0								
Storage Lanes			1000	1000				
Taper Length (m)								
Lane Util. Factor					I		I	
Ped Bike Factor			0.05	1.00	1.00		1.00	
Fit Protected 0.950 0.950 0.950			0.95	1.00				
Fit Protected 0.950 3316 1745 1498 1674 1483 1674 1475 1675		0.95				0.98		
Satd. Flow (prot) 1674 3316 1745 1498 1674 1488		0.050			0.830	0.050	0.850	
Fit Permitted			2240	4745	4.400		4400	
Satd. Flow (perm) 1593 3316 1745 1181 1647 1117 11	,		3316	1/45	1498		1483	
Right Turn on Red Yes Yes Satd. Flow (RTOR) 25 262			0615	4= 1=	4.5.		4	
Satd. Flow (RTOR)		1593	3316	1745		1647		
Link Speed (k/h) 60 60 50 Link Distance (m) 120.9 518.9 229.0 Travel Time (s) 7.3 31.1 16.5 Confl. Peds. (#/hr) 65 65 13 81 Confl. Bikes (#/hr) 10 45 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 1% 2% 2% 1% 1% 2% Adj. Flow (vph) 275 722 984 104 308 323 Shared Lane Traffic (%) Lane Group Flow (vph) 275 722 984 104 308 323 Enter Blocked Intersection No No No No No No No Lane Alignment Left Left Left Right L NA R NA Median Width(m) 7.0 7.0 3.5 Link Offset(m) 0.0 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) 24 14 24 14 Number of Detectors 1 2 2 2 1 1 1 Detector Template Left Thru Thru Right Left Right Leding Detector (m) 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 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 6.1 1.8 1.8 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 Channel Detector 1 Channel 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 CI+Ex Detector 2 Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Protected Phases 5 2 6 Permitted Phases 6 4 4								
Link Distance (m)					25		262	
Travel Time (s) 7.3 31.1 16.5 Confl. Peds. (#/hr) 65 65 13 81 Confl. Bikes (#/hr) 10 45 45 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 1% 2% 2% 1% 1% 2% Adj. Flow (vph) 275 722 984 104 308 323 Shared Lane Traffic (%) Lane Group Flow (vph) 275 722 984 104 308 323 Enter Blocked Intersection No	Link Speed (k/h)							
Confl. Peds. (#/hr) 65 65 13 81 Confl. Bikes (#/hr) 10 45 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 1% 2% 2% 1% 1% 2% Adj. Flow (vph) 275 722 984 104 308 323 Shared Lane Traffic (%) <td a="" company="" of="" rows="" t<="" td="" the=""><td>Link Distance (m)</td><td></td><td></td><td></td><td></td><td></td><td></td></td>	<td>Link Distance (m)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Link Distance (m)						
Confl. Peds. (#/hr) 65 65 13 81 Confl. Bikes (#/hr) 10 45 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 1% 2% 2% 1% 1% 2% Adj. Flow (vph) 275 722 984 104 308 323 Shared Lane Traffic (%) <td a="" company="" of="" rows="" t<="" td="" the=""><td>Travel Time (s)</td><td></td><td>7.3</td><td>31.1</td><td></td><td>16.5</td><td></td></td>	<td>Travel Time (s)</td> <td></td> <td>7.3</td> <td>31.1</td> <td></td> <td>16.5</td> <td></td>	Travel Time (s)		7.3	31.1		16.5	
Confl. Bikes (#/hr)	Confl. Peds. (#/hr)	65			65		81	
Peak Hour Factor								
Heavy Vehicles (%)		1 00	1.00	1.00		1.00		
Adj. Flow (vph) 275 722 984 104 308 323 Shared Lane Traffic (%) Lane Group Flow (vph) 275 722 984 104 308 323 Enter Blocked Intersection No No No No No No No No Lane Alignment Left Left Left Right L NA R NA Median Width(m) 7.0 7.0 3.5 Link Offset(m) 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								
Samed Lane Traffic (%) Lane Group Flow (vph) 275 722 984 104 308 323								
Lane Group Flow (vph) 275 722 984 104 308 323		213	122	30 4	104	300	323	
Enter Blocked Intersection No No <th< td=""><td></td><td>275</td><td>700</td><td>094</td><td>104</td><td>300</td><td>200</td></th<>		275	700	094	104	300	200	
Lane Alignment	,							
Median Width(m) 7.0 7.0 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) 24 14 24 14 Number of Detectors 1 2 2 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 6.1 30.5 30.5 6.1 6.1 6.1 Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Leading Detector (m) 0.0								
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 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Left			Right		RNA	
Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane 1.09 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00								
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 Number of Detectors 1 2 2 1 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 6.1 30.5 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) 6.1 1.8 1.8 6.1 6.1 6.1 Detector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Channel Detector 1 Channel 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 CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Prot NA NA Perm Perm Perm Protected Phases 5 2 6 Permitted Phases 6 4 4								
Headway Factor			5.0	5.0		5.0		
Turning Speed (k/h) Number of Detectors 1 2 2 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 6.1 30.5 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) Detector 1 Size(m) 6.1 1.8 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) Detector 1 Queue (s) Detector 1 Delay (s) Detector 2 Position(m) 28.7 28.7 Detector 2 Type CI+Ex CI+Ex Detector 2 Type CI+Ex CI+Ex Detector 2 Extend (s) Detector 2 Fype CI+Ex CI+Ex Detector 2 Fype CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) Turn Type Prot NA NA Perm Two way Left Turn Lane								
Turning Speed (k/h) Number of Detectors 1 2 2 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 6.1 30.5 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) 6.1 1.8 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 CI+Ex Detector 1 Channel Detector 1 Extend (s) Detector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Delay (s) Detector 2 Position(m) 28.7 28.7 Detector 2 Type CI+Ex CI+Ex CI+Ex Detector 2 Type CI+Ex CI+Ex Detector 2 Type CI+Ex CI+Ex Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Prot NA NA Perm Perm Perm Perm Protected Phases 5 2 6 Permitted Phases	Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	
Number of Detectors 1 2 2 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 6.1 30.5 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 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 6.1 1.8 1.8 6.1 6.1 6.1 Detector 1 Type Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Detector 1 Extend (s) 0.0	Turning Speed (k/h)						14	
Detector Template	Number of Detectors		2	2				
Leading Detector (m) 6.1 30.5 30.5 6.1 6.1 6.1 Trailing Detector (m) 0.0					-		-	
Trailing Detector (m) 0.0	•							
Detector 1 Position(m) 0.0								
Detector 1 Size(m) 6.1 1.8 1.8 6.1 6.1 6.1 Detector 1 Type CI+Ex								
Detector 1 Type CI+Ex								
Detector 1 Channel Detector 1 Extend (s) 0.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Detector 1 Extend (s) 0.0		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 Detector 1 Delay (s) 0.0								
Detector 1 Delay (s) 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 Prot NA NA Perm Perm Perm Protected Phases 5 2 6 6 4 4	. ()							
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 Prot NA NA Perm Perm Perm Protected Phases 5 2 6 4 4	Detector 1 Delay (s)	0.0			0.0	0.0	0.0	
Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 NA Turn Type Prot NA NA Perm Perm Perm Protected Phases 5 2 6 4 4 Permitted Phases 6 4 4	Detector 2 Position(m)							
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA NA Perm Perm Perm Protected Phases 5 2 6 4 4 Permitted Phases 6 4 4	Detector 2 Size(m)		1.8	1.8				
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA NA Perm Perm Perm Protected Phases 5 2 6 4 4 Permitted Phases 6 4 4	Detector 2 Type		CI+Ex					
Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA NA Perm Perm Perm Protected Phases 5 2 6 4 4	Detector 2 Channel							
Turn TypeProtNANAPermPermPermProtected Phases526Permitted Phases644			0.0	0.0				
Protected Phases 5 2 6 Permitted Phases 6 4 4		Prot			Perm	Perm	Perm	
Permitted Phases 6 4 4					. 0.111	. 0.111	. 5.111	
		- 3		- 0	6	1	1	
Detector 11056 3 2 0 0 4 4		E	2	6				
	DEIGUIUI FIIASE	<u></u>	Z	U	U	4	4	

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	24.0	101.0	77.0	77.0	39.0	39.0
Total Split (%)	17.1%	72.1%	55.0%	55.0%	27.9%	27.9%
Maximum Green (s)	18.1	95.3	71.3	71.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead	U. 1	Lag	Lag	0.0	0.5
Lead-Lag Optimize?	Load		Lug	Lug		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)	INOTIC	U WILL	13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20.0	20.0
Act Effct Green (s)	21.2	98.4	71.3	71.3	29.9	29.9
Actuated g/C Ratio	0.15	0.70	0.51	0.51	0.21	0.21
v/c Ratio	1.09	0.70	1.11	0.31	0.21	0.21
Control Delay	108.0	6.4	97.5	14.7	77.9	20.9
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0
Total Delay	108.0	6.4	97.5	14.7	77.9	20.9
LOS	F		97.5 F	14.7 B	11.9 E	20.9 C
Approach Delay	Г	A 34.4	89.6	D	48.7	U
		34.4 C	69.6 F		40.7 D	
Approach LOS	~86.3	47.5	~285.5	10.3	74.4	12.7
Queue Length 50th (m)						
Queue Length 95th (m)	m#96.2	m47.1	#358.0	20.3	#113.7	47.1
Internal Link Dist (m)	75.0	96.9	494.9	05.0	205.0	45.0
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	253	2330	888	613	388	463
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	1.09	0.31	1.11	0.17	0.79	0.70
Intersection Cummen						

Area Type: Other

Cycle Length: 140
Actuated Cycle Length: 140

Offset: 62 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11 Intersection Signal Delay: 59.8 Intersection Capacity Utilization 112.3%

Intersection LOS: E ICU Level of Service H

Analysis Period (min) 15

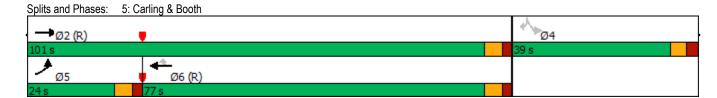
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		#		41₽	د اً		
Traffic Volume (vph)	0	47	39	557	533	64	
Future Volume (vph)	0	47	39	557	533	64	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	
Ped Bike Factor							
Frt		0.865			0.986		
Flt Protected				0.997			
Satd. Flow (prot)	0	1510	0	3276	1706	0	
Flt Permitted				0.997			
Satd. Flow (perm)	0	1510	0	3276	1706	0	
Link Speed (k/h)	30			50	50		
Link Distance (m)	68.0			65.2	71.5		
Travel Time (s)	8.2			4.7	5.1		
Confl. Peds. (#/hr)			46			47	
Confl. Bikes (#/hr)						14	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	2%	2%	3%	3%	2%	
Adj. Flow (vph)	0	47	39	557	533	64	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	47	0	596	597	0	
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(m)	0.0			0.0	0.0		
Link Offset(m)	0.0			0.0	0.0		
Crosswalk Width(m)	5.0			2.0	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	Stop			Free	Free		
Intersection Summary							
Area Type:	Other						
Control Type: Unsignalized							

Intersection Capacity Utilization 50.7% Analysis Period (min) 15

ICU Level of Service A

Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations	T LDL	^	₽ Q	<u></u> ↑↑	7701	SDL Š	₹ T
Traffic Volume (vph)	31	777	13	590	144	176	5
Future Volume (vph)	31	774	13	590	144	176	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	50.0	1000	110.0	0.0	10.0
Storage Lanes	40.0		1		110.0	1	10.0
Taper Length (m)	25.0		25.0			25.0	I
Lane Util. Factor		0.95	1.00	0.95	1.00	1.00	1.00
	1.00	0.95	1.00	0.95			0.95
Ped Bike Factor	0.97				0.90	0.96	
Frt	0.050		0.050		0.850	0.050	0.850
Flt Protected	0.950	2002	0.950	2404	1.400	0.950	1400
Satd. Flow (prot)	1642	3283	1674	3161	1483	1674	1498
Flt Permitted	0.950	0000	0.358	0404	4000	0.950	4.40=
Satd. Flow (perm)	1589	3283	631	3161	1328	1615	1425
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					144		3
Link Speed (k/h)		60		60		40	
Link Distance (m)		196.1		162.9		242.3	
Travel Time (s)		11.8		9.8		21.8	
Confl. Peds. (#/hr)	30				30	30	30
Confl. Bikes (#/hr)					17		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	1%	7%	2%	1%	1%
Adj. Flow (vph)	31	774	13	590	144	176	5
Shared Lane Traffic (%)							
Lane Group Flow (vph)	31	774	13	590	144	176	5
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		7.0		7.0		3.5	
Link Offset(m)		0.0		0.0		0.0	
Crosswalk Width(m)		5.0		10.0		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)	24		14		14	40	14
Number of Detectors	1	2	1	2	1	1	1
Detector Template	Left	Thru	Left	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	6.1	1.8	6.1	6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	CI+Ex	Cl+Ex
Detector 1 Channel	OITLA	OFFLA	OFFLA	OFFLA	OFFLA	OITEX	OIFLA
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
Detector 1 Queue (s)							
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)	5 .	0.0		0.0			<u> </u>
Turn Type	Prot	NA	Perm	NA	Perm	Perm	Perm
Protected Phases	5	2		6			
Permitted Phases			6		6	4	4
Detector Phase	5	2	6	6	6	4	4

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Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Switch Phase			20			022	02.1
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.2	33.4	33.4	33.4	33.4	40.1	40.1
Total Split (s)	17.0	78.0	61.0	61.0	61.0	52.0	52.0
Total Split (%)	13.1%	60.0%	46.9%	46.9%	46.9%	40.0%	40.0%
Maximum Green (s)	11.8	71.6	54.6	54.6	54.6	44.9	44.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.5	2.7	2.7	2.7	2.7	3.8	3.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	6.4	6.4	6.4	6.4	7.1	7.1
Lead/Lag	Lead		Lag	Lag	Lag		
Lead-Lag Optimize?					, ,		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		12.0	12.0	12.0	12.0	7.0	7.0
Flash Dont Walk (s)		15.0	15.0	15.0	15.0	26.0	26.0
Pedestrian Calls (#/hr)		20	20	20	20	20	20
Act Effct Green (s)	8.0	90.9	82.3	82.3	82.3	25.6	25.6
Actuated g/C Ratio	0.06	0.70	0.63	0.63	0.63	0.20	0.20
v/c Ratio	0.31	0.34	0.03	0.29	0.16	0.56	0.02
Control Delay	65.6	9.2	5.8	5.1	0.8	52.2	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.6	9.2	5.8	5.1	0.8	52.2	27.4
LOS	Е	Α	Α	Α	Α	D	С
Approach Delay		11.4		4.3		51.5	
Approach LOS		В		Α		D	
Queue Length 50th (m)	7.2	42.0	0.5	11.1	0.0	35.0	0.4
Queue Length 95th (m)	16.3	52.5	1.6	15.3	1.3	55.4	3.4
Internal Link Dist (m)		172.1		138.9		218.3	
Turn Bay Length (m)	40.0		50.0		110.0		10.0
Base Capacity (vph)	149	2295	399	2000	893	557	494
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.34	0.03	0.29	0.16	0.32	0.01
Intersection Summary	011						
	Other						
Cycle Length: 130							
Actuated Cycle Length: 130		EDT 10	MOTILO				
Offset: 107 (82%), Referenced	to phase 2:1	EBI and 6	:WBTU, S1	art of Gree	en		
Natural Cycle: 85	(1						
Control Type: Actuated-Coordi	nated						
Maximum v/c Ratio: 0.56						1 00 D	
Intersection Signal Delay: 12.5					tersection		
Intersection Capacity Utilization	n 59.6%			IC	U Level of	Service E	}
Analysis Period (min) 15							
Splits and Phases: 1: Carling	g & Sherwoo	od					
— (a) (b) —	_						√
→Ø2 (R)							Ø4
/8 S						5	2 s
	(D)						
05 06	(K)						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	^	7	*	^	7	ሻ		1	*		7
Traffic Volume (vph)	103	728	174	180	664	168	62	0	69	89	0	54
Future Volume (vph)	103	728	174	180	664	168	62	0	69	89	0	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		30.0	60.0		25.0	0.0		0.0	20.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	25.0			25.0		•	25.0		•	25.0		•
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.00	0.95	0.95	0.00	0.69	0.96	1.00	0.95	0.98	1.00	0.96
Frt	0.50		0.850	0.50		0.850	0.50		0.850	0.50		0.850
Flt Protected	0.950		0.000	0.950		0.000	0.950		0.000	0.950		0.000
Satd. Flow (prot)	1674	3283	1483	1658	3252	1414	1658	0	1483	1658	0	1498
Flt Permitted	0.387	3203	1403	0.359	3232	1414	0.950	U	1403	0.950	U	1430
	613	3283	1404	593	3252	978	1586	۸	1403	1617	٥	1443
Satd. Flow (perm)	013	3203	Yes	593	3232	Yes	1000	0		1017	0	
Right Turn on Red									Yes 69			Yes 54
Satd. Flow (RTOR)		00	174		00	168			09			54
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		162.9			117.5			121.7			178.4	
Travel Time (s)	00	9.8	00	00	7.1	00	00	8.8	20	00	12.8	20
Confl. Peds. (#/hr)	90		90	90		90	20		20	20		20
Confl. Bikes (#/hr)	4.00	4.00	5	4.00	4.00	4	4.00	1.00	4.00	4.00	4.00	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%	2%	2%	4%	7%	2%	2%	2%	2%	2%	1%
Adj. Flow (vph) Shared Lane Traffic (%)	103	728	174	180	664	168	62	0	69	89	0	54
Lane Group Flow (vph)	103	728	174	180	664	168	62	0	69	89	0	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)	LGIL	7.0	IV IVA	LIVA	7.0	rtigrit	LIVA	3.5	IV IVA	LINA	3.5	IN 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		5.0			5.0			5.0			5.0	
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	1.09	24	1.03	1.09	24	1.03	1.09	24	1.03	1.03
Number of Detectors	1	2	1	1	2	1	1		1	1		1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left		Right	Left		Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1		6.1	6.1		6.1
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		6.1	6.1		6.1
Detector 1 Type Detector 1 Channel	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex		CI+Ex
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		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							
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	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases		2			6							
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	2	2	2	6	6	6	8		8	4		4

AIVI Peak Hour										2000	Backgrour	iu manic
	•	-	•	•	•	•	1	†	/	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0		5.0	10.0		10.0
Minimum Split (s)	15.3	15.3	15.3	25.3	25.3	25.3	24.0		24.0	37.9		37.9
Total Split (s)	92.0	92.0	92.0	92.0	92.0	92.0	38.0		38.0	38.0		38.0
Total Split (%)	70.8%	70.8%	70.8%	70.8%	70.8%	70.8%	29.2%		29.2%	29.2%		29.2%
Maximum Green (s)	86.7	86.7	86.7	86.7	86.7	86.7	32.0		32.0	32.1		32.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0		3.0	3.3		3.3
All-Red Time (s)	1.6	1.6	1.6	1.6	1.6	1.6	3.0		3.0	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)	5.3	5.3	5.3	5.3	5.3	5.3	6.0		6.0	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
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	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None		None	None		None
Walk Time (s)				10.0	10.0	10.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)				10.0	10.0	10.0	11.0		11.0	25.0		25.0
Pedestrian Calls (#/hr)				20	20	20	20		20	20		20
Act Effct Green (s)	95.5	95.5	95.5	95.5	95.5	95.5	23.2		23.2	23.3		23.3
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.18		0.18	0.18		0.18
v/c Ratio	0.23	0.30	0.16	0.41	0.28	0.22	0.22		0.23	0.31		0.18
Control Delay	6.2	5.2	1.2	6.3	3.2	2.1	43.8		10.5	46.1		11.2
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0		0.0	0.0		0.0
Total Delay	6.2	5.2	1.2	6.3	3.3	2.1	43.8		10.5	46.1		11.2
LOS	Α	Α	Α	Α	Α	Α	D		В	D		В
Approach Delay		4.6			3.7			26.2			32.9	
Approach LOS		Α			Α			С			С	
Queue Length 50th (m)	4.9	18.3	1.4	9.4	18.1	2.8	11.6		0.0	16.9		0.0
Queue Length 95th (m)	8.2	21.8	3.1	13.9	21.8	8.1	22.6		10.8	30.5		9.7
Internal Link Dist (m)		138.9			93.5			97.7			154.4	
Turn Bay Length (m)	70.0		30.0	60.0		25.0				20.0		
Base Capacity (vph)	450	2412	1077	435	2389	762	390		397	399		396
Starvation Cap Reductn	0	0	0	0	827	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	0.23	0.30	0.16	0.41	0.43	0.22	0.16		0.17	0.22		0.14
Intersection Summary												
Area Type:	Other											
Cycle Length: 130												
Actuated Cycle Length: 130												

Actuated Cycle Length: 130
Offset: 85 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75 Control Type: Actuated-Coordinated

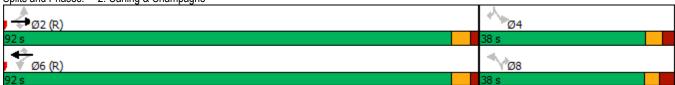
Maximum v/c Ratio: 0.41

Intersection Signal Delay: 7.2 Intersection Capacity Utilization 55.1%

Intersection LOS: A ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Carling & Champagne



Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^			^							
Traffic Volume (vph)	0	877	0	0	1048	0	0	0	0	0	0	0
Future Volume (vph)	0	877	0	0	1048	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												1100
Frt												
Flt Protected												
Satd. Flow (prot)	0	3283	0	0	3283	0	0	0	0	0	0	0
Flt Permitted		0200			0200							
Satd. Flow (perm)	0	3283	0	0	3283	0	0	0	0	0	0	0
Right Turn on Red		0200	Yes		0200	Yes			Yes			Yes
Satd. Flow (RTOR)			100			100			100			100
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		117.5			124.7			157.3			54.9	
Travel Time (s)		7.1			7.5			11.3			4.0	
Confl. Peds. (#/hr)	40	7.1	14	14	1.5	40	18	11.0	20	20	4.0	18
Confl. Bikes (#/hr)	40		7	14		25	10		20	20		17
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
	2%	3%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Heavy Vehicles (%)			2%	2%	1048				2%			2%
Adj. Flow (vph)	0	877	U	U	1048	0	0	0	U	0	0	U
Shared Lane Traffic (%)	0	077	^	0	4040	^	0	0	^	^	^	
Lane Group Flow (vph)	0	877	0	0	1048	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			0.0			0.0	
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	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		2			2							
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5							
Trailing Detector (m)		0.0			0.0							
Detector 1 Position(m)		0.0			0.0							
Detector 1 Size(m)		1.8			1.8							
Detector 1 Type		CI+Ex			CI+Ex							
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0							
Detector 1 Queue (s)		0.0			0.0							
Detector 1 Delay (s)		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			NA							
Protected Phases		2			6							
Permitted Phases												
Detector Phase		2			6							
Switch Phase		_										
Minimum Initial (s)		10.0			10.0							
Minimum Split (s)		25.1			25.1							
million opii (s)		20.1			20.1							

Lane Group	Ø4	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
FIt Protected		
Satd. Flow (prot)		
FIt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	4	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	35.6	
- F - (-)		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)		94.0			94.0							
Total Split (%)		72.3%			72.3%							
Maximum Green (s)		88.9			88.9							
Yellow Time (s)		3.7			3.7							
All-Red Time (s)		1.4			1.4							
Lost Time Adjust (s)		0.0			0.0							
Total Lost Time (s)		5.1			5.1							
Lead/Lag		<u> </u>			<u> </u>							
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0							
Recall Mode		C-Max			C-Max							
Walk Time (s)		15.0			15.0							
Flash Dont Walk (s)		5.0			5.0							
Pedestrian Calls (#/hr)		20			20							
Act Effct Green (s)		105.6			105.6							
Actuated g/C Ratio		0.81			0.81							
v/c Ratio		0.33			0.39							
Control Delay		4.3			3.2							
Queue Delay		0.1			0.1							
Total Delay		4.4			3.3							
LOS		Α.			3.5 A							
Approach Delay		4.4			3.3							
Approach LOS		Α.4			3.5 A							
Queue Length 50th (m)		31.3			28.4							
Queue Length 95th (m)		38.8			m31.2							
Internal Link Dist (m)		93.5			100.7			133.3			30.9	
Turn Bay Length (m)		33.3			100.7			100.0			30.3	
Base Capacity (vph)		2666			2666							
Starvation Cap Reductn		602			482							
Spillback Cap Reductn		82			0							
Storage Cap Reductin		0			0							
Reduced v/c Ratio		0.42			0.48							
		0.42			0.40							
Intersection Summary Area Type:	Other											
Cycle Length: 130	Othor											
Actuated Cycle Length: 130												
Offset: 59 (45%), Referenced t	to nhase 2:FR	T and 6·V	/RT Start	of Green								
Natural Cycle: 65	to pridoo 2.22	i ana o.v	ibi, otait	01 010011								
Control Type: Actuated-Coordi	inated											
Maximum v/c Ratio: 0.39	iriatoa											
Intersection Signal Delay: 3.8				In	tersection	ΩS: Δ						
Intersection Capacity Utilizatio	n 34 8%				U Level of							
Analysis Period (min) 15	11 04.070			10	O LOVOI OI	OCIVICO / C						
m Volume for 95th percentile	queue is me	tered by u	pstream si	gnal.								
Splits and Phases: 3: Trilliur	m Pathway &	Carling										
	adimay d	- uy						ĭ	ħ _{Ø4}			
J → Ø2 (R) 94 s								36				
4								30				
-												

Long Croup	Ø4
Lane Group	36.0
Total Split (%)	28%
Total Split (%) Maximum Green (s)	28%
Yellow Time (s)	3.0
	3.6
All-Red Time (s)	ა.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	2.0
Vehicle Extension (s) Recall Mode	3.0
	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lame Group		۶	→	•	•	+	•	•	†	/	\	 	-√
Lane Configurations	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (right)													
Future Volume (viph)				233						308			128
Idea Flow (vphpi)													
Storage Length (m)													
Storage Lanes			1000			1000			1000			1000	
Taper Length (m)													
Lane URL Feator 1.00 0.95 0.95 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0		•		· ·	-		•	-		V	•		J
Ped Bike Factor 0.94	,		N 95	0.95		N 95	1.00		N 95	0.95		1.00	1.00
Fit Protected 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.1688 0.355 0.1688				0.50		0.50				0.50			1.00
Fit Protocted 0.950 0.95		0.54			0.50			0.50			1.00		
Satis Flow (prom) 1595 3035 0 1658 3252 1375 1674 3035 0 1510 1510 0		0.050	0.555		0.050		0.000	0.050	0.541		0.050	0.550	
File Permitted			3035	٥		3050	1275		3035	٥		1510	0
Satu Flow (perm) 1504 3035 0 1620 3252 1133 290 3035 0 562 1510 0	· ,		3033	U		3232	1373		3033	U		1310	U
Right Turn on Red			2025	٥		2050	1150		2025	٥		1510	0
Saits Flow (RTOR)		1504	3033		1020	3232		290	3033		302	1510	
Link Desped (k/h) 60 60 50 50 Link Distance (m)			40	res					4.47	res		40	res
Link Distance (m)						00	143						
Travel Time (s)													
Confl. Bikes (#/hr) 90 41 41 41 90 60 10 10 10 60 Confl. Bikes (#/hr) 22 10 0 36 36 5 Seak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0													
Confi. Bikes (#/hr)			7.5			11.6			11.8			4.7	
Peak Hour Factor		90			41			60			10		
Heavy Vehicles (%)													
Adj. Flow (vph)													
Shared Lane Traffic (%) Lane Group Flow (vph) 163 778 0 253 677 100 288 785 0 132 434 0 0 254 245 100 255 257 287 287 287 257	Heavy Vehicles (%)												
Lane Group Flow (vph) 163 778 0 253 677 100 288 785 0 132 434 0	Adj. Flow (vph)	163	545	233	253	677	100	288	477	308	132	306	128
Enter Blocked Intersection	Shared Lane Traffic (%)												
Lane Alignment	Lane Group Flow (vph)	163	778	0	253	677	100	288	785	0	132	434	0
Median Width(m) 7.0 7.0 0.0 1.09	Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Link Offset(m) 0.0 1.09 <t< td=""><td>Lane Alignment</td><td>L NA</td><td>Left</td><td>Right</td><td>L NA</td><td>Left</td><td>Right</td><td>L NA</td><td>Left</td><td>R NA</td><td>L NA</td><td>Left</td><td>R NA</td></t<>	Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Crosswalk Width(m) 5.0 5.0 5.0 5.0 Two way Left Turn Lane 1.09 1.00 1.00 1.00 1.00	Median Width(m)		7.0			7.0			3.5			3.5	
Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09	Link Offset(m)		0.0			0.0			0.0			0.0	
Headway Factor 1.09	Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Headway Factor 1.09	Two way Left Turn Lane												
Turning Speed (k/h) 24 14 <td></td> <td>1.09</td>		1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors 1 2 1 2 1 1 2 2 2 2 2													
Detector Template			2			2			2			2	
Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 30.5 6.1 30.5 Trailing Detector (m) 0.0		Left			Left		Riaht	Left			Left		
Trailing Detector (m) 0.0	·												
Detector 1 Position(m) 0.0													
Detector 1 Size(m) 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 6.1 1.8 CI+Ex CI+E													
Detector 1 Type													
Detector 1 Channel Detector 1 Extend (s) 0.0													
Detector 1 Extend (s) 0.0	• • • • • • • • • • • • • • • • • • • •	OI LX	OI LX		OI LX	OI · EX	OI LX	OI LX	OI LX		OI LX	OI LX	
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													
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 0.0 Turn Type Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4													
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 0.0 Turn Type Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4		0.0			0.0		0.0	0.0			0.0		
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 0.0 Turn Type Prot NA Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4	()												
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4													
Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type Prot NA Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4			OITEX			OITEX			OITEX			OITEX	
Turn Type Prot NA Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4			0.0			0.0			0.0			0.0	
Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4		Drot			Drot		Dom	nm : nt			Dom		
Permitted Phases 6 8 4							Perm				rerm		
		5	2		1	Ь	^	-	8		4	4	
Detector Phase 5 2 1 6 6 3 8 4 4		_	^		4	^			^			4	
	Detector Phase	5	2		1	6	6	3	8		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	24.0	38.0		27.0	41.0	41.0	21.0	65.0		44.0	44.0	
Total Split (%)	18.5%	29.2%		20.8%	31.5%	31.5%	16.2%	50.0%		33.8%	33.8%	
Maximum Green (s)	17.8	32.0		20.8	35.0	35.0	14.1	58.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	16.4	32.0		20.8	36.4	36.4	58.1	58.1		37.1	37.1	
Actuated g/C Ratio	0.13	0.25		0.16	0.28	0.28	0.45	0.45		0.29	0.29	
v/c Ratio	0.81	0.99		0.95	0.74	0.24	1.03	0.55		0.82	0.98	
Control Delay	88.6	61.5		65.4	41.1	9.0	78.3	8.8		81.5	83.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	88.6	61.5		65.4	41.1	9.0	78.3	8.8		81.5	83.1	
LOS	F	Е		Е	D	Α	Е	Α		F	F	
Approach Delay		66.2			43.9			27.4			82.8	
Approach LOS		Е			D			С			F	
Queue Length 50th (m)	30.1	50.4		53.9	87.2	5.5	~48.1	52.2		29.2	98.8	
Queue Length 95th (m)	#64.3	#125.4		m#67.4	m89.5	m8.0	#100.7	60.4		#62.7	#160.6	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	218	784		265	911	425	279	1437		160	442	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.75	0.99		0.95	0.74	0.24	1.03	0.55		0.82	0.98	

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03 Intersection Signal Delay: 50.9

Intersection Capacity Utilization 108.9%

ICU Level of Service G

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



Intersection LOS: D

	•	-	←	•	-	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	`ኝ	^		7	7	<u> </u>
Traffic Volume (vph)	399	671	741	215	240	189
Future Volume (vph)	399	671	741	215	240	189
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0	1000	1000	25.0	0.0	45.0
Storage Lanes	1			25.0	1	45.0
Taper Length (m)	25.0				10.0	I
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93	0.95	1.00	0.78	0.98	0.79
Frt	0.93			0.78	0.90	0.79
	0.050			0.000	0.950	0.000
Fit Protected	0.950	2050	4700	1400		4407
Satd. Flow (prot)	1674	3252	1728	1498	1674	1427
Flt Permitted	0.950	0050	4700	11=0	0.950	440=
Satd. Flow (perm)	1561	3252	1728	1172	1647	1125
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				62		189
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1		16.5	
Confl. Peds. (#/hr)	70			70	14	85
Confl. Bikes (#/hr)				16		23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	1%	1%	6%
Adj. Flow (vph)	399	671	741	215	240	189
Shared Lane Traffic (%)		• • •				
Lane Group Flow (vph)	399	671	741	215	240	189
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)	LCIL	7.0	7.0	ragnt	3.5	I V I V/A
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		5.0	5.0		5.0	
Two way Left Turn Lane	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
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel	, <u> </u>					
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)	0.0	28.7	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		2.2	2.2			
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases				6	4	4
Detector Phase	5	2	6	6	4	4

	•	-	—	•	-	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	32.0	91.0	59.0	59.0	39.0	39.0
Total Split (%)	24.6%	70.0%	45.4%	45.4%	30.0%	30.0%
Maximum Green (s)	26.1	85.3	53.3	53.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?			Ţ.	Ţ.		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	31.9	91.1	53.3	53.3	27.2	27.2
Actuated g/C Ratio	0.25	0.70	0.41	0.41	0.21	0.21
v/c Ratio	0.97	0.29	1.05	0.42	0.70	0.49
Control Delay	70.5	2.7	84.3	21.8	57.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.5	2.7	84.3	21.8	57.8	9.9
LOS	Е	Α	F	С	Е	Α
Approach Delay		28.0	70.2		36.7	
Approach LOS		С	Е		D	
Queue Length 50th (m)	~113.2	12.0	~189.6	24.9	49.7	0.0
Queue Length 95th (m)	m#139.4	m15.3	#257.2	44.9	75.0	17.8
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	411	2279	708	517	418	426
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0
	0	0	U	U	U	•
Storage Cap Reductn	0	0	0	0 0.42	0	0

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 16 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05 Intersection Signal Delay: 46.0

Intersection Capacity Utilization 105.7%

Intersection LOS: D
ICU Level of Service G

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			ર્ન	7	ř	ĵ,		7	ĵ.	
Traffic Volume (vph)	43	56	26	37	55	12	28	664	60	18	407	38
Future Volume (vph)	43	56	26	37	55	12	28	664	60	18	407	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	15.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (m)	25.0			20.0			20.0			20.0		
Lane Util. 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
Ped Bike Factor		0.94			0.97	0.89	0.96	0.99		0.98	0.99	
Frt		0.972			0.0.	0.850	0.00	0.988		0.00	0.987	
Flt Protected		0.983			0.980		0.950			0.950		
Satd. Flow (prot)	0	1558	0	0	1568	1498	1537	1692	0	1537	1645	0
Flt Permitted		0.865	•		0.853	1.00	0.468	.002	•	0.289		•
Satd. Flow (perm)	0	1336	0	0	1325	1339	730	1692	0	457	1645	0
Right Turn on Red	· ·	1000	Yes	V	1020	Yes	700	1002	Yes	101	1010	Yes
Satd. Flow (RTOR)		15	100			34		11	100		12	100
Link Speed (k/h)		50			50	04		50			50	
Link Distance (m)		101.4			151.8			160.5			163.2	
Travel Time (s)		7.3			10.9			11.6			11.8	
Confl. Peds. (#/hr)	36	7.5	40	40	10.5	36	50	11.0	55	55	11.0	50
Confl. Bikes (#/hr)	30		26	+0		2	30		20	55		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 (%)	9%	4%	4%	25%	2%	1.00	10%	3%	3%	10%	6%	5%
Adj. Flow (vph)	43	56	26	37	55	170	28	664	60	18	407	38
Shared Lane Traffic (%)	43	50	20	31	55	12	20	004	00	10	407	30
Lane Group Flow (vph)	0	125	0	0	92	12	28	724	0	18	445	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel	<u> </u>	J/.		J/.	J/.	Ψ. <u>-</u> ,	V/\	V/		J/.	J,	
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	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	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			CI+Ex			CI+Ex	
Detector 2 Channel		OI+LX			OITEX			OITEX			OITEX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
* .	reiiii			reiiii	NA 8	reiiii	reiiii			reiiii		
Protected Phases	,	4		0	Ŏ	0	0	2		0	6	
Permitted Phases	4	4		8	0	8	2	0		6	^	
Detector Phase	4	4		8	8	8	2	2		6	6	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	57.0	57.0		57.0	57.0	
Total Split (%)	28.8%	28.8%		28.8%	28.8%	28.8%	71.3%	71.3%		71.3%	71.3%	
Maximum Green (s)	17.4	17.4		17.4	17.4	17.4	51.5	51.5		51.5	51.5	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped	Ped	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	20	20		20	20	20	20	20		20	20	
Act Effct Green (s)		17.1			17.1	17.1	51.8	51.8		51.8	51.8	
Actuated g/C Ratio		0.21			0.21	0.21	0.65	0.65		0.65	0.65	
v/c Ratio		0.42			0.33	0.04	0.06	0.66		0.06	0.42	
Control Delay		28.9			30.4	2.8	5.7	10.1		5.9	8.0	
Queue Delay		0.0			0.0	0.0	0.0	0.1		0.0	0.0	
Total Delay		28.9			30.4	2.8	5.7	10.3		5.9	8.0	
LOS		С			С	Α	Α	В		Α	Α	
Approach Delay		28.9			27.2			10.1			8.0	
Approach LOS		С			С			В			Α	
Queue Length 50th (m)		13.3			11.0	0.0	1.3	53.4		0.8	25.4	
Queue Length 95th (m)		27.3			22.7	1.2	m2.7	44.8		3.0	41.4	
Internal Link Dist (m)		77.4			127.8			136.5			139.2	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		302			288	317	472	1099		296	1069	
Starvation Cap Reductn		0			0	0	0	33		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.41			0.32	0.04	0.06	0.68		0.06	0.42	

Area Type: Other

Area Type: Cycle Length: 80

Actuated Cycle Length: 80

Offset: 40 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 12.3
Intersection Capacity Utilization 83.3%

Intersection LOS: B
ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 6: Preston & Beech



	۶	→	•	•	+	•	1	†	/	/	+	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4						44			4	
Traffic Volume (vph)	1	0	3	0	0	0	8	705	46	10	503	5
Future Volume (vph)	1	0	3	0	0	0	8	705	46	10	503	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor		0.93						0.99			1.00	
Frt		0.899						0.992			0.999	
Flt Protected		0.988						0.999			0.999	
Satd. Flow (prot)	0	1470	0	0	0	0	0	1704	0	0	1617	0
Flt Permitted		0.988						0.995			0.987	
Satd. Flow (perm)	0	1453	0	0	0	0	0	1697	0	0	1597	0
Right Turn on Red	U	1400	Yes	•	0	Yes	•	1007	Yes	U U	1007	Yes
Satd. Flow (RTOR)		29	163			163		9	163		1	163
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		114.6			152.9			73.8			160.5	
					11.0			5.3				
Travel Time (s)	17	8.3	18	18	11.0	17	35	5.3	45	45	11.6	35
Confl. Peds. (#/hr)	17			10		17	ან			45		
Confl. Bikes (#/hr)	4.00	4.00	8	4.00	4.00	4.00	4.00	4.00	21	4.00	4.00	17
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%	1%	1%	2%	2%	2%	1%	3%	1%	1%	10%	1%
Adj. Flow (vph)	1	0	3	0	0	0	8	705	46	10	503	5
Shared Lane Traffic (%)	_		_	_	_	_	_	_	_	_		
Lane Group Flow (vph)	0	4	0	0	0	0	0	759	0	0	518	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		-2.0			-1.0			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	
Detector Template	Left	Thru					Left	Thru		Left	Thru	
Leading Detector (m)	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	
Detector 1 Position(m)	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	
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)	0.0	28.7					0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8						1.8			1.8	
Detector 2 Type		CI+Ex						CI+Ex			CI+Ex	
Detector 2 Channel		OITEX						OITEX			OITEX	
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
	reiiii						reiiii			reiiii		
Protected Phases	Α	4					2	2		6	6	
Permitted Phases	4	4					2	0		6	^	
Detector Phase	4	4					2	2		6	6	
Switch Phase	40.0	40.0					40.0	40.0		40.0	40.0	
Minimum Initial (s)	10.0	10.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	21.0	21.0					59.0	59.0		59.0	59.0	
Total Split (%)	26.3%	26.3%					73.8%	73.8%		73.8%	73.8%	
Maximum Green (s)	15.5	15.5					53.9	53.9		53.9	53.9	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0					18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	8.0	8.0					5.0	5.0		5.0	5.0	
Pedestrian Calls (#/hr)	20	20					20	20		20	20	
Act Effct Green (s)		12.0						69.8			69.8	
Actuated g/C Ratio		0.15						0.87			0.87	
v/c Ratio		0.02						0.51			0.37	
Control Delay		0.0						5.7			2.5	
Queue Delay		0.0						0.0			0.0	
Total Delay		0.0						5.7			2.5	
LOS		Α						Α			Α	
Approach Delay								5.7			2.5	
Approach LOS								Α			Α	
Queue Length 50th (m)		0.0						0.0			0.0	
Queue Length 95th (m)		0.0						82.6			17.7	
Internal Link Dist (m)		90.6			128.9			49.8			136.5	
Turn Bay Length (m)												
Base Capacity (vph)		304						1481			1393	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.01						0.51			0.37	
Intersection Summary												
Area Type:	Other											
Cycle Length: 80												
Actuated Cycle Length: 80	4 I O-NI	DTII C	ODTI 04-	4 - (0	_							
Offset: 48 (60%), Referenced	to phase 2:N	BIL and 6:	SBTL, Sta	rt of Greei	1							
Natural Cycle: 60	linatad											
Control Type: Actuated-Coord	iiriated											
Maximum v/c Ratio: 0.51				1	torooctic:-	100.4						
Intersection Signal Delay: 4.4	n GE 70/				tersection		.					
Intersection Capacity Utilization Analysis Period (min) 15	.7% ווע			- IC	U Level of	Service C						
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Splits and Phases: 7: Prest	on & Pamilla											
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	49	1	33	20	5	26	14	647	90	37	493	15
Future Volume (vph)	49	1	33	20	5	26	14	647	90	37	493	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor												
Frt		0.946			0.931			0.984			0.996	
Flt Protected		0.971			0.981			0.999			0.997	
Satd. Flow (prot)	0	1603	0	0	1594	0	0	1701	0	0	1688	0
Flt Permitted		0.971			0.981			0.999			0.997	
Satd. Flow (perm)	0	1603	0	0	1594	0	0	1701	0	0	1688	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.6			154.3			71.5			73.8	
Travel Time (s)		8.2			11.1			5.1			5.3	
Confl. Peds. (#/hr)							28		45	45		28
Confl. Bikes (#/hr)									21			17
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	5%	2%
Adj. Flow (vph)	49	1	33	20	5	26	14	647	90	37	493	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	0	0	51	0	0	751	0	0	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		-2.0			-2.0			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
Sign Control		Stop			Stop			Free			Free	

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 64.2%
Analysis Period (min) 15

ICU Level of Service C

Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			414	f.	
Traffic Volume (vph)	50	57	37	701	509	33
Future Volume (vph)	50	57	37	701	509	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.928				0.992	
Flt Protected	0.977			0.997		
Satd. Flow (prot)	1582	0	0	3275	1685	0
Flt Permitted	0.977			0.997		
Satd. Flow (perm)	1582	0	0	3275	1685	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			28			28
Confl. Bikes (#/hr)						17
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%
Adj. Flow (vph)	50	57	37	701	509	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	107	0	0	738	542	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	5.0	
Two way Left Turn Lane	0.0				0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
_						
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

Control Type: Unsignalized Intersection Capacity Utilization 62.7% Analysis Period (min) 15

ICU Level of Service B

Synchro 10 Report J.Audia, Novatech

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Traffic Volume (vph)	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	Lane Configurations	75	ĵ.		7	•	7		4			ની	7
Future Volume (riph)				2	2		317	1		3	279		
		694	286	2	2	213	317	1	4	3	279	4	490
Storage Length (m)		1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Lanes		55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Taper Length (m)		2		0	1		1	0		0	0		1
		25.0			25.0			25.0			25.0		
Ped Bike Factor			1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Fit Protected 0.950 0.	Ped Bike Factor	0.99	1.00		0.97		0.97		0.96			0.94	
Fit Principated 0.950 0.950 0.950 0.950 0.994 0.953 Satd. Flow (prot) 3185 1760 0.1674 1762 1498 0.1209 0.0 1688 1469 Fit Permitted 0.459 0.883 0.979 0.724 Satd. Flow (perm) 1519 1760 0.1002 1762 1460 0.1185 0.0 1187 1340 Right Turn on Red Yes Yes Yes Yes Satd. Flow (RITOR) 1.550 0.50 Link Speed (Rh) 6.0 6.0 6.0 5.0 5.0 Link Distance (m) 233.9 233.9 233.3 76.1 164.5 Travel Time (s) 14.0 12.2 5.5 24 24 25 Confl. Piets, (#hr) 9 15.1 5 9 25 24 24 25 Confl. Ries (#hr) 9 15.1 5 9 25 24 24 25 Confl. Ries (#hr) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0			0.999				0.850						
Satis Flow (prot) 3185 1760 0 1674 1762 1498 0 1209 0 0 1668 1469 1469 1469 1469 1469 1460 1499 1499 1499 1499 1499 1499 1499 1499 1490 1499	Flt Protected	0.950			0.950				0.994			0.953	
Fit Permitted			1760	0		1762	1498	0		0	0		1469
Satd Flow (perm) 1519 1760 0 1002 1762 1460 0 1185 0 0 1187 1340													
Right Turn on Red	Satd. Flow (perm)		1760	0		1762	1460	0		0	0		1340
Satist Flow (RTOR)				Yes									
Link Distance (m)									3				
Link Distance (m)			60			60						50	
Travel Time (s)													
Confi. Peds. (#hr)													
Confile Bikes (#hr)		9	11.0	15	15		9	25	0.0	24	24	11.0	25
Peak Hour Factor		<u>.</u>					•						2
Heavy Vehicles (%)	,	1 00	1 00		1 00	1 00	1 00	1 00	1 00		1 00	1 00	
Adj. Flow (vph) 694 286 2 2 213 317 1 4 3 279 4 490													
Shared Lane Traffic (%) Lane Group Flow (vph) 694 288 0 2 213 317 0 8 0 0 283 490													
Lane Group Flow (vph)		001	200	_	_	210	017	•	•	•	210	•	100
Enter Blocked Intersection No No No No No No No		694	288	0	2	213	317	0	8	0	0	283	490
Left Left Right Right Left Right Right Left Right ,			-						~	~			
Median Width(m)													
Link Offset(m) 2.0 0.0 5.0 5.0 0.0		LOIL		ragiit	LOIL		rtigrit	LOIL		rtigitt	LOIL		rtigitt
Two way Left Turn Lane													
Two way Left Turn Lane Headway Factor 1.09													
Headway Factor 1.09			0.0			10.0			0.0			0.0	
Turning Speed (k/h)		1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Number of Detectors			1.00			1.00			1.00			1.03	
Detector Template			2	17		2			2	IT		2	
Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 30.5 6.1 30.5 6.1 Trailing Detector (m) 0.0					-								
Trailing Detector (m) 0.0													
Detector 1 Position(m) 0.0													
Detector 1 Size(m)													
Detector 1 Type													
Detector 1 Channel Detector 1 Extend (s) 0.0													
Detector 1 Extend (s) 0.0		UI+EX	CI+EX		CI+EX	CI+EX	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		0.0	0.0	0.0
Detector 1 Delay (s) 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 pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+ov Protected Phases 5 2 6 8 4 5 Permitted Phases 2 6 6 8 4 4													
Detector 2 Size(m) 1.8 1.8 1.8 1.8 Detector 2 Type CI+Ex		0.0			0.0		0.0	0.0			0.0		0.0
Detector 2 Type CI+Ex	· ,												
Detector 2 Channel Detector 2 Extend (s) 0.0													
Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+ov Protected Phases 5 2 6 8 4 5 Permitted Phases 2 6 6 8 4 4			CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+ov Protected Phases 5 2 6 8 4 5 Permitted Phases 2 6 6 8 4 4			^ ^			2.2			2.2				
Protected Phases 5 2 6 8 4 5 Permitted Phases 2 6 6 8 4 4													
Permitted Phases 2 6 6 8 4 4					Perm		Perm	Perm			Perm		
		-	2			6			8			4	
Detector Phase 5 2 6 6 6 8 8 4 4 5						_							
	Detector Phase	5	2		6	6	6	8	8		4	4	5

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	35.0	76.0		41.0	41.0	41.0	54.0	54.0		54.0	54.0	35.0
Total Split (%)	26.9%	58.5%		31.5%	31.5%	31.5%	41.5%	41.5%		41.5%	41.5%	26.9%
Maximum Green (s)	28.9	69.9		34.9	34.9	34.9	48.5	48.5		48.5	48.5	28.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	69.9	69.9		39.7	39.7	39.7		48.5			48.5	72.0
Actuated g/C Ratio	0.54	0.54		0.31	0.31	0.31		0.37			0.37	0.55
v/c Ratio	0.62	0.30		0.01	0.40	0.51		0.02			0.64	0.53
Control Delay	20.5	17.7		34.5	39.6	11.5		21.4			28.5	2.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	20.5	17.7		34.5	39.6	11.5		21.4			28.5	2.4
LOS	С	В		С	D	В		С			С	Α
Approach Delay		19.7			22.8			21.4			12.0	
Approach LOS		В			С			С			В	
Queue Length 50th (m)	48.1	36.2		0.3	39.8	10.1		0.7			45.6	10.1
Queue Length 95th (m)	60.8	53.1		2.3	64.0	36.4		3.9			m46.5	m10.3
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	1187	946		305	537	624		443			442	966
Starvation Cap Reductn	0	0		0	0	0		0			0	21
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	0.58	0.30		0.01	0.40	0.51		0.02			0.64	0.52

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 7 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 17.8
Intersection Capacity Utilization 90.8%

Intersection LOS: B ICU Level of Service E

Analysis Period (min) 15

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



Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Lane Configurations Traffic Volume (vph) 163 545 233 253 677 100 278 477 308 132 306 128 Future Volume (vph) 163 545 233 253 677 100 278 477 308 132 306 128 Future Volume (vph) 1800 1800 1800 1800 1800 1800 1800 180	AMITEARTION	•				_	_		<u> </u>	_	\	I	
Lane Configurations Table (Soft) graph (18) Table (Soft) graph (19) Table (Sof			-	•	•	•	_		T		-	¥	*
Traffic Volume (pyh) 163 545 233 253 677 100 278 477 308 132 306 128 truture Volume (pyh) 163 545 233 253 677 100 278 477 308 132 306 128 truture Volume (pyh) 163 545 233 253 677 100 278 477 308 132 306 128 1666 110 100 1800 1800 1800 1800 1800	Lane Group		EBT	EBR	WBL					NBR		SBT	SBR
Traffic Volume (yph)	Lane Configurations	* *	ħβ		- 1	*	7	7	ተ ኈ		- 1	ĵ₃.	
Ideal Flow (polph) 1800 1000	Traffic Volume (vph)	163		233	253		100	278		308	132	306	128
Ideal Flow (rophpi)	Future Volume (vph)	163	545	233	253	677	100	278	477	308	132	306	128
Storage Length (m) 65.0 0.0 110.0 90.0 75.0 0.0 0.0 0.0 10.0 1 1 1 1 0 0 1 0.0 1 1.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1.0 0.95 0.95 0.95 1.0 0.95 0.95 0.95 1.0 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.		1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Lanes					110.0								
Taper Length (m)													
Laine Utili Factor					25.0						25.0		
Ped Bike Factor			0.95	0.95		0.95	1.00		0.95	0.95		1.00	1.00
Fit 0.950				0.00		0.00				0.00			1.00
Filt Protected		0.01			0.00			0.00			1.00		
Said Flow (prof) 1595 3035 0 1568 3252 1375 1674 3035 0 1510 1510 0		0.950	0.000		0.950		0.000	0.950	0.011		0.950	0.000	
Fit Permitted			3035	0		3252	1375		3035	0		1510	0
Sald, Flow (perm) 1504 3035 0 1620 3252 1133 290 3035 0 562 1510 0	· ,		0000	U		0202	1070		0000	U		1010	U
Right Turn on Red			3035	٥		3252	1153		3035	٥		1510	Λ
Said, Flow (RTOR) 49 143 147 158 Link Speed (kh) 60 60 60 60 50 50 Link Speed (kh) 60 60 60 60 50 50 Link Speed (kh) 60 60 60 60 50 10 10 60 Confl. Peds. (#hr) 90 41 41 41 90 60 10 10 30 50 Feak Hour Factor 1,00		1304	3033		1020	JZJZ		230	3033		302	1310	_
Link Speed (k/h) 60 60 50 50 50 50 100 1101 1101 124.7 193.9 164.5 65.2 111.6			40	169					117	169		16	165
Link Distance (m)	, ,					60	143						
Travel Time (s)													
Confl. Bikes (#/hr) 90 41 41 41 90 60 10 10 10 60 Confl. Bikes (#/hr) 22 10 36 5 Each Horn Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0													
Confi. Bikes (#/hr)		00	7.5	4.4	44	11.6	00	00	11.8	40	40	4.7	00
Peak Hour Factor		90			41			60			10		
Heavy Vehicles (%)													
Adj. Flow (vph)													
Shared Lane Traffic (%) Lane Group Flow (vph) 163 778 0 253 677 100 278 785 0 132 434 0 0 102 102 103	, ,												
Lane Group Flow (vph) 163 778 0 253 677 100 278 785 0 132 434 0 Enter Blocked Intersection No		163	545	233	253	677	100	278	477	308	132	306	128
Enter Blocked Intersection No													
Lane Alignment	,												
Median Width(m) 7.0 7.0 0.0 1.09 <													
Link Offset(m) 0.0 0.0 5.0 5.0 5.0 5.0 Trosswalk 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		L NA		Right	L NA	Left	Right	L NA		R NA	L NA		R NA
Crosswalk Width(m) 5.0 5.0 5.0 5.0 5.0	Median Width(m)												
Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09	Link Offset(m)												
Headway Factor 1.09	Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Turning Speed (k/h) 24 14 24 14 24 14 24 14 24 14 1	Two way Left Turn Lane												
Number of Detectors 1 2 1 1 2 1 2 1 1 2 1 2 1 1 2 1 2 1 1 2 1	Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	
Detector Template	Turning Speed (k/h)	24		14	24		14	24		14	24		14
Leading Detector (m) 6.1 30.5 6.1 30.0 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 <td< td=""><td>Number of Detectors</td><td>1</td><td>2</td><td></td><td>1</td><td>2</td><td>1</td><td>1</td><td>2</td><td></td><td>1</td><td>2</td><td></td></td<>	Number of Detectors	1	2		1	2	1	1	2		1	2	
Trailing Detector (m) 0.0	Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Detector 1 Position(m) 0.0	Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Detector 1 Position(m) 0.0	Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Type CI+Ex	Detector 1 Position(m)		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Type CI+Ex		6.1				1.8		6.1	1.8		6.1	1.8	
Detector 1 Channel						Cl+Ex	CI+Ex						
Detector 1 Extend (s) 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	
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 Cl+Ex Cl+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4													
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 0.0 Turn Type Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4		0.0			0.0		0.0				0.0		
Detector 2 Type CI+Ex CI+Ex CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 <t< td=""><td>\,</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	\ ,												
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type Prot NA Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4													
Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type Prot NA Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4			OI LA			OI LX			OI · LA			OILLY	
Turn Type Prot NA Prot NA Perm pm+pt NA Perm NA Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4			0.0			0.0			0.0			0.0	
Protected Phases 5 2 1 6 3 8 4 Permitted Phases 6 8 4		Drot			Drot		Dorm	nm±nt			Dorm		
Permitted Phases 6 8 4	· · · · · · · · · · · · · · · · · · ·						Fellii				Fellii		
		5	2			0	G		0		1	4	
Detection Finalse 3 2 1 0 0 3 8 4 4			0		1	•			0			1	
	Detector Friase	<u>_</u>				0	O	J	0		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	24.0	38.0		27.0	41.0	41.0	21.0	65.0		44.0	44.0	
Total Split (%)	18.5%	29.2%		20.8%	31.5%	31.5%	16.2%	50.0%		33.8%	33.8%	
Maximum Green (s)	17.8	32.0		20.8	35.0	35.0	14.1	58.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	16.4	32.0		20.8	36.4	36.4	58.1	58.1		37.1	37.1	
Actuated g/C Ratio	0.13	0.25		0.16	0.28	0.28	0.45	0.45		0.29	0.29	
v/c Ratio	0.81	0.99		0.95	0.74	0.24	1.00	0.55		0.82	0.98	
Control Delay	88.6	61.5		69.1	41.9	8.7	68.4	8.6		81.5	83.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	88.6	61.5		69.1	41.9	8.7	68.4	8.6		81.5	83.1	
LOS	F	Е		Е	D	Α	Е	Α		F	F	
Approach Delay		66.2			45.4			24.3			82.8	
Approach LOS		Е			D			С			F	
Queue Length 50th (m)	30.1	50.4		54.1	86.8	5.1	42.2	52.1		29.2	98.8	
Queue Length 95th (m)	#64.3	#125.4		m#72.1	m92.3	m8.5	#94.2	60.3		#62.7	#160.6	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	218	784		265	911	425	279	1437		160	442	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.75	0.99		0.95	0.74	0.24	1.00	0.55		0.82	0.98	

Other

Area Type: Cycle Length: 130

Actuated Cycle Length: 130

Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 50.5

Intersection Capacity Utilization 108.4%

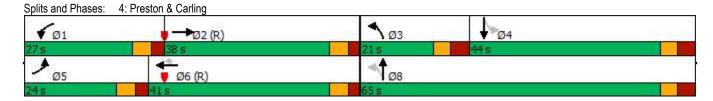
Intersection LOS: D ICU Level of Service G

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.



<u> </u>
Lane Group EBL EBT WBT WBR SBL SBR
Lane Configurations
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 1800 180
Storage Length (m) 75.0 25.0 0.0 45.0 Storage Lanes 1 1 1 1
torage Earles
Taper Length (m) 25.0 10.0
Lane Util. Factor 1.00 0.95 1.00 1.00 1.00
Ped Bike Factor 0.93 0.78 0.98 0.79
Frt 0.850 0.850
Flt Protected 0.950 0.950
Satd. Flow (prot) 1674 3252 1728 1498 1674 1427
Flt Permitted 0.950 0.950
Satd. Flow (perm) 1561 3252 1728 1172 1647 1125
Right Turn on Red Yes Yes
Satd. Flow (RTOR) 65 189
Link Speed (k/h) 60 60 50
Link Distance (m) 120.9 518.9 229.0
Travel Time (s) 7.3 31.1 16.5
Confl. Peds. (#/hr) 70 14 85
Confl. Bikes (#/hr) 16 23
Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00
Heavy Vehicles (%) 1% 4% 3% 1% 1% 6%
Adj. Flow (vph) 399 671 711 215 240 189
Shared Lane Traffic (%)
Lane Group Flow (vph) 399 671 711 215 240 189
Enter Blocked Intersection No No No No No No
Lane Alignment Left Left Right L NA R NA
Median Width(m) 7.0 7.0 3.5
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) 24 14 24 14
Number of Detectors 1 2 2 1 1 1
Detector Template Left Thru Thru Right Left Right
Leading Detector (m) 6.1 30.5 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 0.0
Detector 1 Size(m) 6.1 1.8 1.8 6.1 6.1 6.1
Detector 1 Type CI+Ex CI
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 CI+Ex
Detector 2 Channel
Detector 2 Extend (s) 0.0 0.0
Dototol L Exterio (a) 0.0 0.0
Turn Type Prot NA NA Perm Perm Perm
Turn Type Prot NA NA Perm Perm Perm Protected Phases 5 2 6
Turn Type Prot NA NA Perm Perm Perm

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	32.0	91.0	59.0	59.0	39.0	39.0
Total Split (%)	24.6%	70.0%	45.4%	45.4%	30.0%	30.0%
Maximum Green (s)	26.1	85.3	53.3	53.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?				Ĭ		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	31.9	91.1	53.3	53.3	27.2	27.2
Actuated g/C Ratio	0.25	0.70	0.41	0.41	0.21	0.21
v/c Ratio	0.97	0.29	1.00	0.42	0.70	0.49
Control Delay	70.5	2.7	73.3	21.4	57.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.5	2.7	73.3	21.4	57.8	9.9
LOS	Е	Α	Е	С	Е	Α
Approach Delay		28.0	61.3		36.7	
Approach LOS		С	Е		D	
Queue Length 50th (m)	~113.2	12.0	~167.1	24.4	49.7	0.0
Queue Length 95th (m)	m#139.3	m15.3	#242.0	44.3	75.0	17.8
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	411	2279	708	518	418	426
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	0.97	0.29	1.00	0.42	0.57	0.44

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 16 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 42.2 Intersection Capacity Utilization 104.0%

Intersection LOS: D
ICU Level of Service G

Analysis Period (min) 15

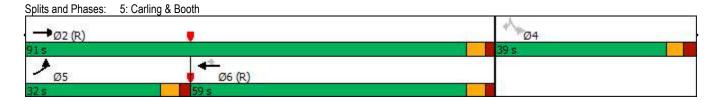
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ች	∱ ∱≽		7	44	7	7	ħβ		7	f)	
Traffic Volume (vph)	163	545	233	253	677	100	288	477	308	164	306	128
Future Volume (vph)	163	545	233	253	677	100	288	477	308	164	306	128
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.94	0.97		0.98		0.84	0.98	0.98		1.00	0.98	
Frt		0.955				0.850		0.941			0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1595	3035	0	1658	3252	1375	1674	3035	0	1510	1510	0
Flt Permitted	0.950			0.950			0.168			0.355		
Satd. Flow (perm)	1504	3035	0	1620	3252	1153	290	3035	0	562	1510	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49				143		147			16	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	90		41	41		90	60		10	10		60
Confl. Bikes (#/hr)			22			10			36			5
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 (%)	6%	4%	2%	2%	4%	10%	1%	4%	2%	12%	6%	20%
Adj. Flow (vph)	163	545	233	253	677	100	288	477	308	164	306	128
Shared Lane Traffic (%)		0.0			• • • • • • • • • • • • • • • • • • • •	,,,,						0
Lane Group Flow (vph)	163	778	0	253	677	100	288	785	0	164	434	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0		,	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								<u> </u>				
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	1	2		1	2	• •
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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		CI+Ex	CI+Ex	
Detector 1 Channel	OI · EX	OI LX		OI · EX	OI · LX	OI · LX	OI LX	OI · EX		OI · EX	OI · Ex	
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	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	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			CI+Ex			CI+Ex	
Detector 2 Channel		CITEX			OITEX			OITEX			OITEX	
		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	Prot	NA		Prot		Perm	nm : nt	NA		Dorm	NA	
Turn Type				Prot 1	NA 6	reiiii	pm+pt			Perm	NA 4	
Protected Phases	5	2			Ö	0	3	8		4	4	
Permitted Phases	F	2		1		6	8	0		4		
Detector Phase	5	Z			6	6	3	8		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	24.0	38.0		27.0	41.0	41.0	21.0	65.0		44.0	44.0	
Total Split (%)	18.5%	29.2%		20.8%	31.5%	31.5%	16.2%	50.0%		33.8%	33.8%	
Maximum Green (s)	17.8	32.0		20.8	35.0	35.0	14.1	58.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	16.4	32.0		20.8	36.4	36.4	58.1	58.1		37.1	37.1	
Actuated g/C Ratio	0.13	0.25		0.16	0.28	0.28	0.45	0.45		0.29	0.29	
v/c Ratio	0.81	0.99		0.95	0.74	0.24	1.03	0.55		1.02	0.98	
Control Delay	88.6	61.5		65.4	41.1	9.0	78.3	8.8		124.0	83.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	88.6	61.5		65.4	41.1	9.0	78.3	8.8		124.0	83.1	
LOS	F	Е		Е	D	Α	Е	Α		F	F	
Approach Delay		66.2			43.9			27.4			94.4	
Approach LOS		Е			D			С			F	
Queue Length 50th (m)	30.1	50.4		53.9	87.2	5.5	~48.1	52.2		~41.1	98.8	
Queue Length 95th (m)	#64.3	#125.4		m#67.4	m89.5	m8.0	#100.7	60.4		#82.3	#160.6	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	218	784		265	911	425	279	1437		160	442	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.75	0.99		0.95	0.74	0.24	1.03	0.55		1.02	0.98	

Area Type: Other

Cycle Length: 130 Actuated Cycle Length: 130

Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03 Intersection Signal Delay: 53.1

Intersection Capacity Utilization 108.9%

Intersection LOS: D
ICU Level of Service G

Analysis Period (min) 15

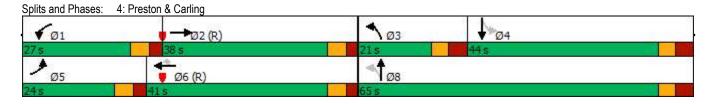
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



	•	→	+	•	<u> </u>	4
Lano Group	EDI	EDT	\\/DT	\\/DD	CDI	CDD
Lane Group Lane Configurations	EBL	EBT	WBT	WBR	SBL 7	SBR
Traffic Volume (vph)	1 431	↑↑ 671	↑ 741	2 15	1 240	189
Future Volume (vph)	431	671	741	215	240	189
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0	1000	1000	25.0	0.0	45.0
Storage Lanes	13.0			25.0	1	45.0
Taper Length (m)	25.0				10.0	I
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93	0.33	1.00	0.78	0.98	0.79
Frt	0.93			0.76	0.90	0.79
Flt Protected	0.950			0.030	0.950	0.000
	1674	3252	1700	1498	1674	1427
Satd. Flow (prot)		3232	1728	1498	0.950	1427
Flt Permitted	0.950	2050	1700	1170		1405
Satd. Flow (perm)	1561	3252	1728	1172	1647	1125
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)		00	^^	62		189
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1		16.5	
Confl. Peds. (#/hr)	70			70	14	85
Confl. Bikes (#/hr)				16		23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	1%	1%	6%
Adj. Flow (vph)	431	671	741	215	240	189
Shared Lane Traffic (%)						
Lane Group Flow (vph)	431	671	741	215	240	189
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)		7.0	7.0		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)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	1.8	6.1	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 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	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases				6	4	4
Detector Phase	5	2	6	6	4	4

	•	→	←	•	\	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	32.0	91.0	59.0	59.0	39.0	39.0
Total Split (%)	24.6%	70.0%	45.4%	45.4%	30.0%	30.0%
Maximum Green (s)	26.1	85.3	53.3	53.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag	- 0.0	
Lead-Lag Optimize?	2000			_~9		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)	110110	Jiviak	13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	31.9	91.1	53.3	53.3	27.2	27.2
Actuated g/C Ratio	0.25	0.70	0.41	0.41	0.21	0.21
v/c Ratio	1.05	0.29	1.05	0.42	0.70	0.49
Control Delay	88.6	2.8	84.3	21.8	57.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.6	2.8	84.3	21.8	57.8	9.9
LOS	F	2.0 A	04.5 F	C C	57.0 E	3.5 A
Approach Delay		36.3	70.2	0	36.7	
Approach LOS		30.3 D	70.2 E		30.7 D	
Queue Length 50th (m)	~128.7	13.2	~189.6	24.9	49.7	0.0
Queue Length 95th (m)	m#150.0	m14.0	#257.2	44.9	75.0	17.8
Internal Link Dist (m)	111#150.0	96.9	494.9	44.9	205.0	17.0
Turn Bay Length (m)	75.0	90.9	494.9	25.0	200.0	45.0
	411	2279	708	25.0 517	418	45.0 426
Base Capacity (vph)					418	
Starvation Cap Reductn	0	0	0	0	~	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0 10	0 57	0 11
Reduced v/c Ratio	1.05	0.29	1.05	0.42	0.57	0.44
Intersection Summary						
Area Type:	Other					

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 16 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05 Intersection Signal Delay: 49.4

Intersection Capacity Utilization 107.6%

Intersection LOS: D
ICU Level of Service G

Analysis Period (min) 15

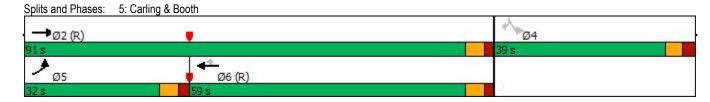
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



	•	•	1	†	↓	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		414	f.	
Traffic Volume (vph)	0	89	37	701	509	33
Future Volume (vph)	0	89	37	701	509	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.992	
Flt Protected				0.997		
Satd. Flow (prot)	0	1510	0	3275	1685	0
Flt Permitted				0.997		
Satd. Flow (perm)	0	1510	0	3275	1685	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			28			28
Confl. Bikes (#/hr)						17
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%
Adj. Flow (vph)	0	89	37	701	509	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	89	0	738	542	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	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	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
C C O SCHOOL C	EO 00/			10		

Intersection Capacity Utilization 52.8% Analysis Period (min) 15

ICU Level of Service A

Synchro 10 Report J.Audia, Novatech

	•	-	F	•	•	-	4
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations	<u> </u>	^	₽	<u></u> ★★	<u>₩Ы</u> ₹) T	₹ T
Traffic Volume (vph)	65	711	13	1303	181	188	7
Future Volume (vph)	65	711	13	1303	181	188	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	50.0	1000	110.0	0.0	10.0
Storage Lanes	1		1		1 10.0	1	10.0
	25.0		25.0		1	25.0	- 1
Taper Length (m) Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
		0.95	1.00	0.95			
Ped Bike Factor	0.99				0.91	0.99	0.97
Frt	0.050		0.050		0.850	0.050	0.850
Fit Protected	0.950	2050	0.950	2240	4400	0.950	4400
Satd. Flow (prot)	1674	3252	1674	3316	1498	1674	1498
Flt Permitted	0.950	0050	0.381	00.10	4055	0.950	4454
Satd. Flow (perm)	1654	3252	671	3316	1357	1659	1454
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					181		3
Link Speed (k/h)		60		60		40	
Link Distance (m)		196.1		162.9		242.3	
Travel Time (s)		11.8		9.8		21.8	
Confl. Peds. (#/hr)	28				28	7	8
Confl. Bikes (#/hr)					5		8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	2%	1%	1%	1%
Adj. Flow (vph)	65	711	13	1303	181	188	7
Shared Lane Traffic (%)							
Lane Group Flow (vph)	65	711	13	1303	181	188	7
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Right	L NA	R NA
Median Width(m)	Loit	7.0		7.0	ყ	3.5	
Link Offset(m)		0.0		0.0		0.0	
Crosswalk Width(m)		5.0		10.0		5.0	
Two way Left Turn Lane		5.0		10.0		5.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	1.09	1.09	1.09	1.09	1.09	40	1.09
Number of Detectors	2 4 1	2	14	2	14	40 1	14
			-		-		
Detector Template	Left	Thru	Left	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	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		28.7			
Detector 2 Size(m)		1.8		1.8			
Detector 2 Type		CI+Ex		CI+Ex			
Detector 2 Channel		OI LA		OI LX			
Detector 2 Extend (s)		0.0		0.0			
	_		Perm	NA	Perm	Perm	Perm
IIIrn IVne	Pr∩t	KIΔ			1 01111	i Gilli	i Gilli
Turn Type Protected Phases	Prot 5	NA 2	reiiii				
Protected Phases	Prot 5	NA 2		6	A	1	Л
			6		6	4	4

	•	→	F	←	•	-	4
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.2	33.4	33.4	33.4	33.4	40.1	40.1
Total Split (s)	17.0	99.0	82.0	82.0	82.0	41.0	41.0
Total Split (%)	12.1%	70.7%	58.6%	58.6%	58.6%	29.3%	29.3%
Maximum Green (s)	11.8	92.6	75.6	75.6	75.6	33.9	33.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.5	2.7	2.7	2.7	2.7	3.8	3.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	6.4	6.4	6.4	6.4	7.1	7.1
Lead/Lag	Lead		Lag	Lag	Lag		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		12.0	12.0	12.0	12.0	7.0	7.0
Flash Dont Walk (s)		15.0	15.0	15.0	15.0	26.0	26.0
Pedestrian Calls (#/hr)		20	20	20	20	20	20
Act Effct Green (s)	10.3	100.3	87.2	87.2	87.2	26.2	26.2
Actuated g/C Ratio	0.07	0.72	0.62	0.62	0.62	0.19	0.19
v/c Ratio	0.53	0.31	0.03	0.63	0.20	0.61	0.03
Control Delay	77.4	8.5	6.2	10.0	1.3	59.3	33.3
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	77.4	8.5	6.2	10.1	1.3	59.3	33.3
LOS	Е	Α	Α	В	Α	Е	С
Approach Delay		14.2		9.0		58.4	
Approach LOS		В		Α		Е	
Queue Length 50th (m)	16.2	37.7	0.7	68.5	2.2	41.6	0.8
Queue Length 95th (m)	30.2	46.8	m1.6	107.2	4.2	63.9	4.6
Internal Link Dist (m)		172.1		138.9		218.3	
Turn Bay Length (m)	40.0		50.0		110.0		10.0
Base Capacity (vph)	145	2330	417	2064	913	401	354
Starvation Cap Reductn	0	0	0	88	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.31	0.03	0.66	0.20	0.47	0.02
Intersection Summary							

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 7 (5%), Referenced to phase 2:EBT and 6:WBTU, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63
Intersection Signal Delay: 14.5

Intersection Capacity Utilization 72.6%

Intersection LOS: B
ICU Level of Service C

Analysis Period (min) 15

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



Lane Cortigurations		۶	→	•	•	←	4	4	†	/	/	↓	✓
Timefile Volume (vph) 55 799 26 27 1164 72 97 0 110 146 0 199	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Timefile Volume (uph) 55 739 26 27 1164 72 97 0 110 146 0 199	Lane Configurations	*	*	7	7	^	7	*		7	7		7
Flutrue Volume (vph)		55		26	27		72	97	0	110	146	0	199
Ideal Flow (ynphp)		55	739	26		1164	72	97	0	110	146	0	
Storage Length (m)		1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Lanes													
Taper Length (m)		1			1		1	1			1		
Lane Util. Factor 1.00		25.0			25.0			25.0			25.0		
Ped Bike Factor 0.95			0.95	1.00		0.95	1.00		1.00	1.00		1.00	1.00
Fit Ped Bike Factor			0.95	0.96		0.74	0.95		0.94	0.97		0.96	
File Prioritected 0.950							0.850						0.850
Satic Flow (proft) 1409 3283 1483 1658 3316 1498 1658 0 1483 1674 0 1498	Flt Protected	0.950			0.950			0.950			0.950		
File Permitted			3283	1483		3316	1498		0	1483		0	1498
Satic Flow (perm) 316 3283 1415 594 3316 1106 1580 0 1398 1630 0 1440 1480 1490 1580 1590 15													
Right Turn on Red	Satd. Flow (perm)		3283	1415		3316	1106		0	1398		0	1440
Satic Flow (RTOR)													
Link Speed (k/h) 60													
Link Distance (m)			60			60			50			50	
Travel Time (s)													
Confile Reds. (#/hr)													
Confi. Bikes (#/hr)		70	0.0	70	70		70	20	0.0	20	20		20
Peak Hour Factor					. •								
Heavy Vehicles (%) 20% 3% 2% 2% 2% 1% 2% 2% 2% 1% 2% 2		1 00	1 00		1 00	1 00		1 00	1 00	1 00	1 00	1 00	
Adj. Flow (vph) 55 739 26 27 1164 72 97 0 110 146 0 199 Shared Lane Traffic (%) Cane Group Flow (vph) 55 739 26 27 1164 72 97 0 110 146 0 199 Enter Blocked Intersection No													
Shared Lane Traffic (%) Lane Group Flow (vph) 55 739 26 27 1164 72 97 0 110 146 0 199 Enter Blocked Intersection No No No No No No No													
Lane Group Flow (vph) 55 739 26 27 1164 72 97 0 110 146 0 199		00	100	20	21	1101	12	01	· ·	110	110	V	100
Enter Blocked Intersection No No No No No No No		55	739	26	27	1164	72	97	0	110	146	0	199
Left Left Left RNA LNA Left Right LNA Left RNA Left Right	,											-	
Median Width(m)													
Link Offset(m) 0.0 0.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane 1.09 1.00		Loit		11171	L 14/ (rugiit	_ I 17/1		11101	L 14/1		1010
Crosswalk Width(m) S.0 S.0 S.0 S.0 S.0 Two way Left Turn Lane Headway Factor 1.09													
Two way Left Turn Lane Headway Factor 1.09													
Headway Factor			0.0			0.0			0.0			0.0	
Turning Speed (k/h) 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 14 24 14 24 14 14 24 14 14 24 14 14 24 14 14 24 14 <td></td> <td>1 09</td>		1 09	1 09	1 09	1 09	1 09	1 09	1 09	1 09	1 09	1 09	1 09	1 09
Number of Detectors			1.00			1.00			1.00			1.00	
Detector Template			2	1		2							
Leading Detector (m) 6.1 30.5 6.1 6.1 30.5 6.1 6.1 6.1 6.1 6.1 Trailing Detector (m) 0.0				Right	•					-			
Trailing Detector (m) 0.0													
Detector 1 Position(m) 0.0													
Detector 1 Size(m) 6.1 1.8 6.1 6.1 1.8 6.1 6.1 6.1 6.1 6.1 6.1													
Detector 1 Type													
Detector 1 Channel	\ ,												
Detector 1 Extend (s)		OITLX	OITLX	OITLX	OITLX	OITLX	OITEX	CITLX		OITLX	OITLX		CITEX
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
Detector 1 Delay (s) 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 Perm NA Perm NA Perm													
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 Perm NA Perm NA Perm <		0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Detector 2 Type CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 Turn Type Perm NA Perm Perm NA Perm Perm Perm Perm Perm Perm Perm Perm Perm Perm Perm Perm Perm Perm													
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0													
Detector 2 Extend (s) 0.0 0.0 Turn Type Perm NA Perm NA Perm Perm <td></td> <td></td> <td>CI+EX</td> <td></td> <td></td> <td>CI+EX</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			CI+EX			CI+EX							
Turn Type Perm NA Perm NA Perm Perm <t< td=""><td></td><td></td><td>0.0</td><td></td><td></td><td>0.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>			0.0			0.0							
Protected Phases 2 6 Permitted Phases 2 2 6 8 8 4 4		D		De	D		D	D		D	De		D
Permitted Phases 2 2 6 6 8 8 4 4		Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
			2			6	_	_		_			,
Detector Phase 2 2 2 6 6 6 8 8 4 4													
	Detector Phase	2	2	2	6	6	6	8		8	4		4

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0		5.0	10.0		10.0
Minimum Split (s)	15.3	15.3	15.3	25.3	25.3	25.3	24.0		24.0	37.9		37.9
Total Split (s)	95.0	95.0	95.0	95.0	95.0	95.0	45.0		45.0	45.0		45.0
Total Split (%)	67.9%	67.9%	67.9%	67.9%	67.9%	67.9%	32.1%		32.1%	32.1%		32.1%
Maximum Green (s)	89.7	89.7	89.7	89.7	89.7	89.7	39.0		39.0	39.1		39.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0		3.0	3.3		3.3
All-Red Time (s)	1.6	1.6	1.6	1.6	1.6	1.6	3.0		3.0	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)	5.3	5.3	5.3	5.3	5.3	5.3	6.0		6.0	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
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	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None		None	None		None
Walk Time (s)				10.0	10.0	10.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)				10.0	10.0	10.0	11.0		11.0	25.0		25.0
Pedestrian Calls (#/hr)				20	20	20	20		20	20		20
Act Effct Green (s)	104.3	104.3	104.3	104.3	104.3	104.3	24.4		24.4	24.5		24.5
Actuated g/C Ratio	0.74	0.74	0.74	0.74	0.74	0.74	0.17		0.17	0.18		0.18
v/c Ratio	0.23	0.30	0.02	0.06	0.47	0.09	0.35		0.33	0.51		0.64
Control Delay	10.1	7.2	2.5	3.0	3.2	1.9	52.0		10.2	56.9		41.8
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0		0.0	0.0		0.0
Total Delay	10.1	7.2	2.5	3.0	3.5	1.9	52.0		10.2	56.9		41.8
LOS	В	Α	Α	Α	Α	Α	D		В	Е		D
Approach Delay		7.3			3.4			29.8			48.2	
Approach LOS		Α			Α			С			D	
Queue Length 50th (m)	3.1	21.8	0.4	1.1	24.4	0.7	20.5		0.0	31.8		28.3
Queue Length 95th (m)	16.7	32.9	m1.5	m2.3	27.2	2.0	35.6		14.0	51.0		51.6
Internal Link Dist (m)		138.9			93.5			97.7			154.4	
Turn Bay Length (m)	70.0		30.0	60.0		25.0				20.0		
Base Capacity (vph)	235	2446	1061	442	2471	833	440		468	455		454
Starvation Cap Reductn	0	0	0	0	603	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	44	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.23	0.30	0.02	0.06	0.62	0.09	0.22		0.24	0.32		0.44

Other

Area Type: Cycle Length: 140 Actuated Cycle Length: 140

Offset: 5 (4%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.5 Intersection LOS: B Intersection Capacity Utilization 74.6% ICU Level of Service D

Analysis Period (min) 15

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





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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^			^							
Traffic Volume (vph)	0	1036	0	0	1297	0	0	0	0	0	0	0
Future Volume (vph)	0	1036	0	0	1297	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.00			0.00		1.00					
Frt												
Flt Protected												
Satd. Flow (prot)	0	3283	0	0	3316	0	0	0	0	0	0	0
Flt Permitted	<u> </u>	0200	, ,	U	0010	U	, ,	U	U		, ,	J
Satd. Flow (perm)	0	3283	0	0	3316	0	0	0	0	0	0	0
Right Turn on Red		0200	Yes	· ·	0010	Yes		- U	Yes	•	•	Yes
Satd. Flow (RTOR)			163			163			163			163
Link Speed (k/h)		60			60			50			50	
Link Speed (k/ll) Link Distance (m)		117.5			124.7			157.3			54.9	
Travel Time (s)		7.1			7.5			11.3			4.0	
	25	1.1			1.5	25	٥٢	11.3	25	25	4.0	25
Confl. Peds. (#/hr)	35		11			35	25		35 13	35		25 34
Confl. Bikes (#/hr)	4.00	4.00	11	4.00	4.00	10	4.00	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 (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	1036	0	0	1297	0	0	0	0	0	0	0
Shared Lane Traffic (%)	•	4000		•	400-	•		_				
Lane Group Flow (vph)	0	1036	0	0	1297	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			0.0			0.0	
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		2			2							
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5							
Trailing Detector (m)		0.0			0.0							
Detector 1 Position(m)		0.0			0.0							
Detector 1 Size(m)		1.8			1.8							
Detector 1 Type		CI+Ex			CI+Ex							
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0							
Detector 1 Queue (s)		0.0			0.0							
Detector 1 Delay (s)		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			NA							
Protected Phases		2			6							
Permitted Phases					J							
Detector Phase		2			6							
Switch Phase					U							
Minimum Initial (s)		10.0			10.0							
Minimum Split (s)		25.1			25.1							
wiii iii iu iii opiit (8)		20.1			20.1							

Lane Group	Ø4		
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot) Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (k/h)			
Number of Detectors			
Detector Template			
Leading Detector (m)			
Trailing Detector (m)			
Detector 1 Position(m)			
Detector 1 Size(m)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(m)			
Detector 2 Size(m)			
Detector 2 Type Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	4		
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0		
Minimum Split (s)	35.6		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)		104.0			104.0							
Total Split (%)		74.3%			74.3%							
Maximum Green (s)		98.9			98.9							
Yellow Time (s)		3.7			3.7							
All-Red Time (s)		1.4			1.4							
Lost Time Adjust (s)		0.0			0.0							
Total Lost Time (s)		5.1			5.1							
Lead/Lag		• • • • • • • • • • • • • • • • • • • •			<u> </u>							
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0							
Recall Mode		C-Max			C-Max							
Walk Time (s)		15.0			15.0							
Flash Dont Walk (s)		5.0			5.0							
Pedestrian Calls (#/hr)		20			20							
Act Effct Green (s)		115.6			115.6							
Actuated g/C Ratio		0.83			0.83							
v/c Ratio		0.38			0.03							
Control Delay		4.2			2.2							
Queue Delay		0.1			0.1							
Total Delay		4.3			2.3							
LOS		4.5 A			2.3 A							
Approach Delay		4.3			2.3							
Approach LOS		4.5 A			2.3 A							
Queue Length 50th (m)		34.7			26.4							
Queue Length 95th (m)		42.5			m25.8							
Internal Link Dist (m)		93.5			100.7			133.3			30.9	
Turn Bay Length (m)		93.5			100.7			133.3			30.9	
		2710			2737							
Base Capacity (vph)		636			414							
Starvation Cap Reducts		244										
Spillback Cap Reductn		0			0							
Storage Cap Reductn Reduced v/c Ratio												
		0.50			0.56							
Intersection Summary Area Type:	Other											
Cycle Length: 140	Otrici											
Actuated Cycle Length: 140												
Offset: 108 (77%), Referenced	to phase 2.El	RT and 6.	WRT Star	t of Green								
Natural Cycle: 70	to pridoc z.E.	Di ana o.	WD1, Otal	t or order								
Control Type: Actuated-Coordi	inated											
Maximum v/c Ratio: 0.47	nateu											
Intersection Signal Delay: 3.2				In	tersection	08· V						
Intersection Capacity Utilization	n 12 1%				U Level of							
Analysis Period (min) 15	11 72.170			10	O LEVEI OI	OCI VICE A						
m Volume for 95th percentile	queue is met	ered by u	pstream si	gnal.								
Splits and Phases: 3: Trillium	m Pathway & C	Carling										
•	aumay a c	Janniy							Ååø₄			
J → Ø2 (R) 104 s									.π. . Ø4 36 s			
10.19									JU 3			
Ø6 (R)								I				

Lane Group	Ø4
Total Split (s)	36.0
Total Split (%)	26%
Maximum Green (s)	29.4
Yellow Time (s)	3.0
All-Red Time (s)	3.6
Lost Time Adjust (s)	3.0
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	20
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ħβ		7	^	7	7	∱ β		7	ĵ.	
Traffic Volume (vph)	179	577	374	366	868	66	355	373	204	109	338	124
Future Volume (vph)	179	577	374	366	868	66	355	373	204	109	338	124
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.97	0.97		0.98		0.89	0.98	0.97		0.97	0.98	
Frt		0.941				0.850		0.947			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3005	0	1674	3316	1427	1674	3061	0	1537	1625	0
Flt Permitted	0.950			0.950			0.096			0.435		
Satd. Flow (perm)	1566	3005	0	1648	3316	1272	166	3061	0	684	1625	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		103				132		92			13	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	53		34	34		53	60		55	55		60
Confl. Bikes (#/hr)			12			10			16			6
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 (%)	5%	3%	2%	1%	2%	6%	1%	2%	1%	10%	2%	5%
Adj. Flow (vph)	179	577	374	366	868	66	355	373	204	109	338	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	951	0	366	868	66	355	577	0	109	462	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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		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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8		• • • • • • • • • • • • • • • • • • • •	4	
Permitted Phases				•		6	8			4	•	
Detector Phase	5	2		1	6	6	3	8		4	4	
2 3.30(0) 7 71000										· ·		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	21.0	43.0		30.0	52.0	52.0	23.0	67.0		44.0	44.0	
Total Split (%)	15.0%	30.7%		21.4%	37.1%	37.1%	16.4%	47.9%		31.4%	31.4%	
Maximum Green (s)	14.8	37.0		23.8	46.0	46.0	16.1	60.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	14.8	37.0		23.8	46.0	46.0	60.1	60.1		37.1	37.1	
Actuated g/C Ratio	0.11	0.26		0.17	0.33	0.33	0.43	0.43		0.26	0.26	
v/c Ratio	1.05	1.09		1.29	0.80	0.13	1.45	0.42		0.60	1.05	
Control Delay	147.9	88.8		180.4	38.6	2.1	251.8	6.3		60.8	104.3	
Queue Delay	0.0	2.4		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	147.9	91.2		180.4	38.6	2.1	251.8	6.3		60.8	104.3	
LOS	F	F		F	D	Α	F	Α		Е	F	
Approach Delay		100.1			76.7			99.8			96.0	
Approach LOS		F			Е			F			F	
Queue Length 50th (m)	~47.1	~134.0		~117.4	115.7	0.0	~107.2	28.0		24.5	~125.6	
Queue Length 95th (m)	#91.3	#167.1	1	m#134.5	m119.2	m0.0	m#167.0	35.8		44.7	#187.3	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	170	869		284	1089	506	244	1366		181	440	
Starvation Cap Reductn	0	16		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.05	1.11		1.29	0.80	0.13	1.45	0.42		0.60	1.05	

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.45 Intersection Signal Delay: 91.7 Intersection Capacity Utilization 125.3%

Intersection LOS: F
ICU Level of Service H

Analysis Period (min) 15

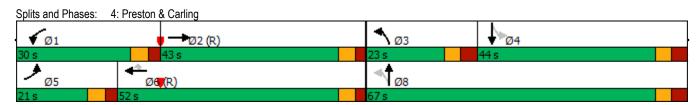
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



	•	→	•	•	-	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	T LDL	^		WDIN	SBL Š	JUN.
Traffic Volume (vph)	254	TT 697	894	104	308	323
Future Volume (vph)	254	697	894	104	308	323
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0	1000	1000	25.0	0.0	45.0
Storage Lanes	1			23.0	1	45.0
Taper Length (m)	25.0				10.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.90	1.00	0.79	0.98	0.75
Frt Factor	0.90			0.79	0.98	0.75
FIt Protected	0.950			0.000	0.950	0.000
		2240	4745	4400		4400
Satd. Flow (prot)	1674	3316	1745	1498	1674	1483
Flt Permitted	0.950	0040	4=4=	4404	0.950	4.1.1-
Satd. Flow (perm)	1583	3316	1745	1181	1647	1117
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				28		262
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1		16.5	
Confl. Peds. (#/hr)	65			65	13	81
Confl. Bikes (#/hr)				10		45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%	1%	1%	2%
Adj. Flow (vph)	254	697	894	104	308	323
Shared Lane Traffic (%)	201	001	001	101	000	020
Lane Group Flow (vph)	254	697	894	104	308	323
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)	Leit	7.0	7.0	Rigili	3.5	IV IVA
		0.0	0.0		0.0	
Link Offset(m)						
Crosswalk Width(m)		5.0	5.0		5.0	
Two way Left Turn Lane	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
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Channel	J. L.	J	Ç	J. L.	Ç	J L.K
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)	0.0	28.7	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		2.2	^ ^			
Detector 2 Extend (s)	_	0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases				6	4	4
Detector Phase	5	2	6	6	4	4

Switch Phase Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 10.0 10.0 Minimum Split (s) 10.9 15.7 29.7 29.7 39.0		•	-	←	•	-	4
Switch Phase Minimum Initial (s) 5.0 10.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 39.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s) 10.9 15.7 29.7 29.7 39.0 39.0 Total Split (s) 24.0 101.0 77.0 77.0 39.0 39.0 Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 3.7 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Lead Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead-Lag Optimize? Vehicle Extension (s) 3.0 <							
Minimum Split (s) 10.9 15.7 29.7 29.7 39.0 39.0 Total Split (s) 24.0 101.0 77.0 77.0 39.0 39.0 Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Iost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max None No	Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Total Split (s) 24.0 101.0 77.0 77.0 39.0 39.0 Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 3.7 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0	()						39.0
Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max C-Max None None Walk Time (s) 13.0 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max C-Max None None None None None None None None None 20.0							39.0
Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 3.7 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 <td></td> <td>17.1%</td> <td>72.1%</td> <td>55.0%</td> <td>55.0%</td> <td>27.9%</td> <td>27.9%</td>		17.1%	72.1%	55.0%	55.0%	27.9%	27.9%
Yellow Time (s) 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lag Lead Lead-Lag Optimize? Lead-Lag Optimize? Vehicle Extension (s) 3.0 <td></td> <td></td> <td>95.3</td> <td>71.3</td> <td>71.3</td> <td></td> <td>33.0</td>			95.3	71.3	71.3		33.0
All-Red Time (s) 2.2 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max C-Max None	Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max None		2.2	2.0	2.0	2.0	2.7	2.7
Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max None 26.0 26.0 26.0 26.0 26.0 26.0 26.0 26.0 26.0 26.0 20 20 20 20 20 20 20 20 20		0.0	0.0	0.0	0.0	0.0	0.0
Lead-Lag Optimize? Vehicle Extension (s) 3.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 1.0 1.0 2.0 2.0 20		5.9	5.7	5.7	5.7	6.0	6.0
Lead-Lag Optimize? Vehicle Extension (s) 3.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 2.0 20 <	Lead/Lag	Lead		Lag	Lag		
Recall Mode None C-Max C-Max C-Max None None Walk Time (s) 13.0 13.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.30 1.01 0.17 0.88 0.73 Control Delay 88.5 6.2 66.1 14.1 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 88.5 6.2 66.1 14.1 77.9 20.9 LOS F A E B E C Approach LOS C E D D Queue Length 50th (m) ~75.4	Lead-Lag Optimize?			, ,			
Recall Mode None C-Max C-Max C-Max None None Walk Time (s) 13.0 13.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.30 1.01 0.17 0.88 0.73 Control Delay 88.5 6.2 66.1 14.1 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 88.5 6.2 66.1 14.1 77.9 20.9 LOS F A E B E C Approach Delay 28.2 60.7 48.7 Approach LOS C E	Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Walk Time (s) 13.0 13.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.30 1.01 0.17 0.88 0.73 Control Delay 88.5 6.2 66.1 14.1 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 88.5 6.2 66.1 14.1 77.9 20.9 LOS F A E B E C Approach Delay 28.2 60.7 48.7 48.7 Approach LOS C E D D Queue Length 50th (m) ~75.4 44.0			C-Max	C-Max	C-Max	None	None
Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.30 1.01 0.17 0.88 0.73 Control Delay 88.5 6.2 66.1 14.1 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 88.5 6.2 66.1 14.1 77.9 20.9 LOS F A E B E C Approach Delay 28.2 60.7 48.7 48.7 Approach LOS C E D Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.30 1.01 0.17 0.88 0.73 Control Delay 88.5 6.2 66.1 14.1 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 88.5 6.2 66.1 14.1 77.9 20.9 LOS F A E B E C Approach Delay 28.2 60.7 48.7 A A A E B E C Approach LOS C E D D D A A A A A A A A A B B C C B D				11.0	11.0	26.0	26.0
Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.00 0.30 1.01 0.17 0.88 0.73 Control Delay 88.5 6.2 66.1 14.1 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 88.5 6.2 66.1 14.1 77.9 20.9 LOS F A E B E C Approach Delay 28.2 60.7 48.7 48.7 Approach LOS C E D D Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463	Pedestrian Calls (#/hr)			20	20	20	20
V/c Ratio 1.00 0.30 1.01 0.17 0.88 0.73 Control Delay 88.5 6.2 66.1 14.1 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 88.5 6.2 66.1 14.1 77.9 20.9 LOS F A E B E C Approach Delay 28.2 60.7 48.7 Approach LOS C E D Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 Starvation Cap Reductn 0 0 0	Act Effct Green (s)	21.2	98.4	71.3	71.3	29.9	29.9
v/c Ratio 1.00 0.30 1.01 0.17 0.88 0.73 Control Delay 88.5 6.2 66.1 14.1 77.9 20.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 88.5 6.2 66.1 14.1 77.9 20.9 LOS F A E B E C Approach Delay 28.2 60.7 48.7 48.7 Approach LOS C E D D Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 Starvation Cap Reductn 0	Actuated g/C Ratio	0.15	0.70	0.51	0.51		0.21
Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 88.5 6.2 66.1 14.1 77.9 20.9 LOS F A E B E C Approach Delay 28.2 60.7 48.7 Approach LOS C E D Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0		1.00	0.30	1.01	0.17	0.88	0.73
Total Delay 88.5 6.2 66.1 14.1 77.9 20.9 LOS F A E B E C Approach Delay 28.2 60.7 48.7 Approach LOS C E D Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 17.1 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 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	Control Delay	88.5	6.2	66.1	14.1		20.9
LOS F A E B E C Approach Delay 28.2 60.7 48.7 Approach LOS C E D Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 17.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 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	Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
LOS F A E B E C Approach Delay 28.2 60.7 48.7 Approach LOS C E D Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 17.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 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	Total Delay	88.5	6.2	66.1	14.1	77.9	20.9
Approach LOS C E D Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0		F	Α	E	В	E	С
Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 45.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 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	Approach Delay		28.2	60.7		48.7	
Queue Length 50th (m) ~75.4 44.0 ~226.5 9.9 74.4 12.7 Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 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							
Queue Length 95th (m) m#88.2 m45.4 #309.3 19.8 #113.7 47.1 Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 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		~75.4	44.0	~226.5	9.9	74.4	12.7
Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 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		m#88.2	m45.4	#309.3	19.8	#113.7	47.1
Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 615 388 463 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			96.9	494.9		205.0	
Base Capacity (vph) 253 2330 888 615 388 463 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		75.0			25.0		45.0
Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0	Base Capacity (vph)	253	2330	888	615	388	463
Storage Cap Reductn 0 0 0 0 0	Starvation Cap Reductn	0	0	0	0	0	0
	Spillback Cap Reductn	0	0	0	0	0	0
-		0	0	0	0	0	0
Reduced v/c Ratio 1.00 0.30 1.01 0.17 0.79 0.70	Reduced v/c Ratio	1.00	0.30	1.01	0.17	0.79	0.70

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 62 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01 Intersection Signal Delay: 45.8 Intersection Capacity Utilization 106.0%

Intersection LOS: D
ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		₩			ની	7	7	ĵ.		7	f)	
Traffic Volume (vph)	29	41	34	46	121	31	82	476	59	17	505	54
Future Volume (vph)	29	41	34	46	121	31	82	476	59	17	505	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	15.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (m)	25.0			20.0			20.0			20.0		
Lane Util. 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
Ped Bike Factor		0.93			0.97	0.84	0.97	0.98		0.95	0.99	
Frt		0.956				0.850		0.983			0.986	
Flt Protected		0.986			0.986		0.950			0.950		
Satd. Flow (prot)	0	1584	0	0	1738	1498	1674	1674	0	1674	1673	0
Flt Permitted		0.874			0.896		0.402			0.417		
Satd. Flow (perm)	0	1373	0	0	1537	1261	685	1674	0	695	1673	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24				31		16			14	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		101.4			151.8			160.5			163.2	
Travel Time (s)		7.3			10.9			11.6			11.8	
Confl. Peds. (#/hr)	40		46	46		40	52		80	80		52
Confl. Bikes (#/hr)			2			20			11			18
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%	1%	1%	1%	1%	1%	1%	3%	1%	1%	4%	2%
Adj. Flow (vph)	29	41	34	46	121	31	82	476	59	17	505	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	104	0	0	167	31	82	535	0	17	559	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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		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	
Detector 1 Queue (s)	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	
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	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
2.2.2							_			-		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	67.0	67.0		67.0	67.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%	25.6%	74.4%	74.4%		74.4%	74.4%	
Maximum Green (s)	17.4	17.4		17.4	17.4	17.4	61.5	61.5		61.5	61.5	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped	Ped	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	20	20		20	20	20	20	20		20	20	
Act Effct Green (s)		17.1			17.1	17.1	61.8	61.8		61.8	61.8	
Actuated g/C Ratio		0.19			0.19	0.19	0.69	0.69		0.69	0.69	
v/c Ratio		0.37			0.57	0.12	0.17	0.46		0.04	0.49	
Control Delay		28.8			41.7	12.2	2.5	4.8		4.9	8.2	
Queue Delay		0.0			0.0	0.0	0.0	0.1		0.0	0.0	
Total Delay		28.8			41.7	12.2	2.5	4.9		4.9	8.2	
LOS		С			D	В	Α	Α		Α	Α	
Approach Delay		28.8			37.1			4.6			8.1	
Approach LOS		С			D			Α			Α	
Queue Length 50th (m)		11.1			24.4	0.0	2.6	35.4		8.0	34.9	
Queue Length 95th (m)		24.5			42.6	6.6	0.5	1.7		2.6	54.7	
Internal Link Dist (m)		77.4			127.8			136.5			139.2	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		284			297	268	470	1153		477	1152	
Starvation Cap Reductn		0			0	0	0	99		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.37			0.56	0.12	0.17	0.51		0.04	0.49	
Intersection Summary	011											
Area Type:	Other											
Cycle Length: 90												

Actuated Cycle Length: 90

Offset: 43 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

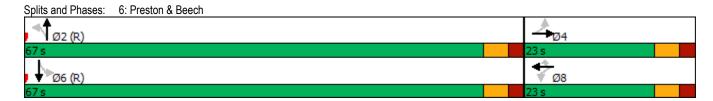
Natural Cycle: 60 Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 11.9 Intersection Capacity Utilization 87.1%

Intersection LOS: B ICU Level of Service E

Analysis Period (min) 15



Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4						44			44	
Traffic Volume (vph)	4	2	10	0	0	0	8	574	27	6	572	15
Future Volume (vph)	4	2	10	0	0	0	8	574	27	6	572	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor		0.92						0.99			1.00	
Frt		0.916						0.994			0.997	
Flt Protected		0.988						0.999			0.999	
Satd. Flow (prot)	0	1494	0	0	0	0	0	1709	0	0	1717	0
Flt Permitted		0.988						0.993			0.995	
Satd. Flow (perm)	0	1466	0	0	0	0	0	1698	0	0	1710	0
Right Turn on Red	U	1400	Yes	•	· ·	Yes	•	1000	Yes	U U	17 10	Yes
Satd. Flow (RTOR)		10	163			163		6	163		4	163
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		114.6			152.9			73.8			160.5	
					11.0			5.3				
Travel Time (s)	25	8.3	27	27	11.0	25	46	5.3	47	47	11.6	46
Confl. Peds. (#/hr)	25			21		25	40			47		
Confl. Bikes (#/hr)	4.00	4.00	1	4.00	4.00	3	4.00	4.00	21	4.00	4.00	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%	1%	1%	2%	2%	2%	1%	3%	1%	1%	3%	1%
Adj. Flow (vph)	4	2	10	0	0	0	8	574	27	6	572	15
Shared Lane Traffic (%)				_	_				_	_		
Lane Group Flow (vph)	0	16	0	0	0	0	0	609	0	0	593	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		-2.0			-1.0			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	
Detector Template	Left	Thru					Left	Thru		Left	Thru	
Leading Detector (m)	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	
Detector 1 Position(m)	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	
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)	0.0	28.7					0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8						1.8			1.8	
Detector 2 Type		CI+Ex						CI+Ex			CI+Ex	
Detector 2 Channel		OITEX						OITEX			OITEX	
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
	Pelili						reiiii			reiiii		
Protected Phases	A	4					0	2		•	6	
Permitted Phases	4	4					2	^		6	^	
Detector Phase	4	4					2	2		6	6	
Switch Phase										4		
Minimum Initial (s)	10.0	10.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	

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Laine Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT		۶	→	*	•	←	4	1	†	<u> </u>	/	↓	1
Total Split (s)	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBI
Total Spirit (%) 23.3% 76.7% 7													
Maximum Green (s) 15.5 15.5 15.5 15.5 16.3 63.9 63.9 63.9 63.9 63.9 63.9 63.9 6													
Vellow Time (s) 3.3 3.5 3.3 3.3 3.3 3.0 3.													
All-Red Time (s)													
Lost Time Adjust (s)													
Total Lost Time (s) 5.5 5.1 5.1 5.1 Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0													
Lead-Lag Optimize? Vehicle Extension (s)													
Learl-Lag Optimize? Verbicle Extension (s) 3.0			0.0						V			•	
Vehicle Extension (s) 3.0													
Recall Mode None None C-Max C-Max C-Max C-Max C-Max Walk Time (s) 7.0 7.0 18		3.0	3.0					3.0	3.0		3.0	3.0	
Walk Time (s) 7.0 7.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18													
Flash Dont Walk (s) 8.0 8.0 5.0 5.0 5.0 5.0 5.0 20 20 20 20 20 20 20 20 20 20 20 20 20													
Pedestrian Calls (#/hr) 20 20 20 20 20 20 20 20 Act Effet Green (s) 12.0 75.6 75.6 75.6 Act Lafted Green (s) 12.0 75.6 75.6 75.6 Act Lated (g/C Ratio 0.13 0.84 0.84 v/c Ratio 0.08 0.43 0.41 0.84 v/c Ratio 0.08 0.43 0.41 0.84 v/c Ratio 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.													
Act Effct Green (s) 12.0 75.6 75.6 Actuated g/C Ratio 0.13 0.84 0.84 V/C Ratio 0.13 0.84 0.84 V/C Ratio 0.08 0.43 0.41 0.41 Control Delay 0.0 0.08 0.43 0.41 0.41 Control Delay 21.9 4.9 3.6 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 21.9 4.9 3.6 LOS C A A A A A Approach Delay 21.9 4.9 3.6 LOS C A A A A Approach Delay 21.9 4.9 3.6 Approach Delay 21.9 4.9 3.6 Approach Delay 21.9 4.9 3.6 C A A A A Approach Delay 0.0 0.0 Total Delay 0.0 0.0 0.0 Total Delay 0.0 0.0 0.0 Total Delay 0.0 0.0 0.0 Total Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
Actuated g/C Ratio 0.13 0.84 0.84 0.84 0/c Ratio 0.08 0.43 0.41 0.41 0.410 0.08 0.43 0.41 0.41 0.410 0.08 0.43 0.41 0.41 0.410 0.410 0.41 0.41 0.41 0.		20						20			20		
v/c Ratio 0.08 0.43 0.41 Control Delay 21.9 4.9 3.6 Queue Delay 0.0 0.0 0.0 Total Delay 21.9 4.9 3.6 LOS C A A Approach Delay 21.9 4.9 3.6 Approach LOS C A A Approach LOS C A A Queue Length 50th (m) 0.9 26.7 21.0 Queue Length 95th (m) 5.8 54.3 32.6 Internal Link Dist (m) 90.6 128.9 49.8 136.5 Turn Bay Length (m) Base Capacity (vph) 260 1428 1437 Starvation Cap Reductn 0 0 71 Spillback Cap Reductn 0 0 0 Storage Cap Reductn 0 0 0 Reduced v/c Ratio 0.06 0.43 0.43 Intersection Summary Area Type: Other Cycle Length: 90 Other Orfset: 27 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green Natural Cycle: 55 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.43 Intersection LOS: A Intersection Gap													
Control Delay													
Queue Delay 0.0 0.0 0.0 Total Delay 21.9 4.9 3.6 LOS C A A Approach Delay 21.9 4.9 3.6 Approach LOS C A A Queue Length 90th (m) 0.9 26.7 21.0 Queue Length 95th (m) 5.8 54.3 32.6 Internal Link Dist (m) 90.6 128.9 49.8 136.5 Turn Bay Length (m) 260 1428 1437 Starvation Cap Reductn 0 0 71 Spillback Cap Reductn 0 0 0 Starvation Cap Reductn 0 0 0 Storage Cap Reductn 0 0 0 Reduced v/c Ratio 0.06 0.43 0.43 Intersection Summary Area Type: Other Cycle Length: 90 0 0 0 Actuated Cycle Length: 90 Offset: 27 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green Natural Cycle: 55 Control Type: Actuated-Coordinated <													
Total Delay 21.9 4.9 3.6 LOS C A A A A Approach Delay 21.9 4.9 3.6 Approach Delay 21.9 4.9 3.6 Approach LOS C A A A A Queue Length 50th (m) 0.9 26.7 21.0 Queue Length 95th (m) 5.8 54.3 32.6 Internal Link Dist (m) 90.6 128.9 49.8 136.5 Turn Bay Length (m) Base Capacity (vph) 260 1428 1437 Starvation Cap Reducth 0 0 0 71 Spillback Cap Reducth 0 0 0 0 Reduced vic Ratio 0.06 0.43 0.43 Intersection Summary Area Type: Other Cycle Length: 90 Actuated Cycle Length: 90 Coffset: 27 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green Natural Cycle: 55 Control Type: Actuated-Coordinated Maximum vic Ratio: 0.43 Intersection Capacity Utilization 58.6% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 7: Preston & Pamilla													
LOS C A A A A Approach Delay 21.9 4.9 3.6 Approach LOS C A A Approach LOS C A A A A Queue Length 95th (m) 0.9 26.7 21.0 Queue Length 95th (m) 5.8 54.3 32.6 Internal Link Dist (m) 90.6 128.9 49.8 136.5 Turn Bay Length (m) Base Capacity (vph) 260 1428 1437 Starvation Cap Reductn 0 0 0 71 Spillback Cap Reductn 0 0 0 71 Spillback Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0													
Approach Delay 21.9 4.9 3.6 Approach LOS C A A A Queue Length 50th (m) 0.9 26.7 21.0 Queue Length 95th (m) 5.8 54.3 32.6 Internal Link Dist (m) 90.6 128.9 49.8 136.5 Turn Bay Length (m) Base Capacity (vph) 260 1428 1437 Starvation Cap Reductn 0 0 0 71 Spillback Cap Reductn 0 0 0 71 Spillback Cap Reductn 0 0 0 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.06 0.43 0.43 Intersection Summary Area Type: Other Cycle Length: 90 Offset: 27 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green Natural Cycle: 55 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.43 Intersection Signal Delay: 4.5 Intersection LOS: A Intersection Capacity Utilization 58.6% ICU Level of Service B Analysis Period (min) 15													
Approach LOS C A A A Queue Length 50th (m) 0.9 26.7 21.0 Queue Length 95th (m) 5.8 54.3 32.6 Internal Link Dist (m) 90.6 128.9 49.8 136.5 Turn Bay Length (m) Base Capacity (vph) 260 1428 1437 Starvation Cap Reductn 0 0 71 Spillback Cap Reductn 0 0 0 71 Spillback Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.06 0.43 0.43 Intersection Summary Area Type: Other Cycle Length: 90 Actuated Cycle Length: 90 Offset: 27 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green Natural Cycle: 55 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.43 Intersection Signal Delay: 4.5 Intersection LOS: A Intersection Capacity Utilization 58.6% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 7: Preston & Pamilla													
Queue Length 50th (m) 0.9 26.7 21.0 Queue Length 95th (m) 5.8 54.3 32.6 Internal Link Dist (m) 90.6 128.9 49.8 136.5 Turn Bay Length (m) Base Capacity (vph) 260 1428 1437 Starvation Cap Reductn 0 0 71 Spillback Cap Reductn 0 0 0 Storage Cap Reductn 0 0 0 Reduced v/c Ratio 0.06 0.43 0.43 Intersection Summary Area Type: Other Cycle Length: 90 Offset: 27 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green Natural Cycle: 55 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.43 Intersection Signal Delay: 4.5 Intersection LOS: A Intersection Capacity Utilization 58.6% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 7: Preston & Pamilla													
Queue Length 95th (m) 5.8 54.3 32.6 Internal Link Dist (m) 90.6 128.9 49.8 136.5 Turn Bay Length (m) 8 128.9 49.8 136.5 Turn Bay Length (m) 8 1428 1437 Starvation Cap Reductn 0 1428 1437 Starvation Cap Reductn 0 0 7.1 Spillback Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0													
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Splits and Phases: 7: Preston & Pamilla		1011 30.0%				O Level Of	Service E						
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (vph)	34	4	25	22	2	17	37	513	48	23	577	5
Future Volume (vph)	34	4	25	22	2	17	37	513	48	23	577	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor												
Frt		0.946			0.944			0.989			0.999	
Flt Protected		0.974			0.974			0.997			0.998	
Satd. Flow (prot)	0	1608	0	0	1605	0	0	1706	0	0	1724	0
Flt Permitted		0.974			0.974			0.997			0.998	
Satd. Flow (perm)	0	1608	0	0	1605	0	0	1706	0	0	1724	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.6			154.3			71.5			73.8	
Travel Time (s)		8.2			11.1			5.1			5.3	
Confl. Peds. (#/hr)							46		47	47		46
Confl. Bikes (#/hr)									21			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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Adj. Flow (vph)	34	4	25	22	2	17	37	513	48	23	577	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	41	0	0	598	0	0	605	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		-2.0			-2.0			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
Sign Control		Stop			Stop			Free			Free	

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 58.9%
Analysis Period (min) 15

ICU Level of Service B

Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			414	f.	
Traffic Volume (vph)	26	30	44	572	541	75
Future Volume (vph)	26	30	44	572	541	75
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.928				0.984	
Flt Protected	0.977			0.996		
Satd. Flow (prot)	1582	0	0	3273	1703	0
Flt Permitted	0.977			0.996		
Satd. Flow (perm)	1582	0	0	3273	1703	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			46			47
Confl. Bikes (#/hr)						14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	3%	3%	2%
Adj. Flow (vph)	26	30	44	572	541	75
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	0	616	616	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	5.0	
Two way Left Turn Lane	0.0				0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop	• • •		Free	Free	
	О.СР					
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

Control Type: Unsignalized Intersection Capacity Utilization 62.2% Analysis Period (min) 15

ICU Level of Service B

Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	76	ĵ.		7	^	7		- 43→			ર્ની	7
Traffic Volume (vph)	475	280	4	2	416	433	5	2	1	414	0	648
Future Volume (vph)	475	280	4	2	416	433	5	2	1	414	0	648
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Storage Lanes	2		0	1		1	0		0	0		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.89		0.93		0.93			0.81	0.77
Frt		0.998				0.850		0.983				0.850
Flt Protected	0.950			0.950				0.970			0.950	
Satd. Flow (prot)	3185	1754	0	1674	1762	1498	0	1637	0	0	1674	1483
Flt Permitted	0.224			0.586				0.851			0.752	
Satd. Flow (perm)	751	1754	0	917	1762	1397	0	1373	0	0	1077	1144
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				165		1				88
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		233.9			203.3			76.1			164.5	
Travel Time (s)		14.0			12.2			5.5			11.8	
Confl. Peds. (#/hr)	35		62	62		35	73		65	65		73
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 (%)	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%
Adj. Flow (vph)	475	280	4	2	416	433	5	2	1	414	0	648
Shared Lane Traffic (%)												
Lane Group Flow (vph)	475	284	0	2	416	433	0	8	0	0	414	648
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			0.0			3.5	
Link Offset(m)		2.0			0.0			5.0			0.0	
Crosswalk Width(m)		5.0			10.0			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	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
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	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+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		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			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase						,					<u> </u>	J
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	37.0	79.0		42.0	42.0	42.0	61.0	61.0		61.0	61.0	37.0
Total Split (%)	26.4%	56.4%		30.0%	30.0%	30.0%	43.6%	43.6%		43.6%	43.6%	26.4%
Maximum Green (s)	30.9	72.9		35.9	35.9	35.9	55.5	55.5		55.5	55.5	30.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	72.9	72.9		44.4	44.4	44.4		55.5			55.5	77.3
Actuated g/C Ratio	0.52	0.52		0.32	0.32	0.32		0.40			0.40	0.55
v/c Ratio	0.61	0.31		0.01	0.75	0.78		0.01			0.97	0.89
Control Delay	22.6	20.3		38.0	53.4	38.3		24.4			43.4	12.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.1
Total Delay	22.6	20.3		38.0	53.4	38.3		24.4			43.4	12.1
LOS	С	С		D	D	D		С			D	В
Approach Delay		21.7			45.7			24.4			24.3	
Approach LOS		С			D			С			С	
Queue Length 50th (m)	34.2	40.2		0.3	92.9	63.4		1.1			90.9	57.8
Queue Length 95th (m)	44.4	58.1		2.5	#159.3	#128.8		4.4			m64.4	m22.3
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	928	913		290	558	555		544			426	809
Starvation Cap Reductn	0	0		0	0	0		0			0	6
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	0.51	0.31		0.01	0.75	0.78		0.01			0.97	0.81

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 53 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.97

Intersection Signal Delay: 30.4
Intersection Capacity Utilization 105.3%

Intersection LOS: C
ICU Level of Service G

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.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	↑ ↑		*	^	7		↑ 1>		*	1	
Traffic Volume (vph)	169	507	374	276	868	66	265	373	204	109	308	124
Future Volume (vph)	169	507	374	276	868	66	265	373	204	109	308	124
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
	65.0	1000	0.0	110.0	1000	90.0	75.0	1000	0.0	0.0	1000	0.0
Storage Length (m)	1					90.0				0.0		
Storage Lanes	•		0	1		ı	1		0	•		0
Taper Length (m)	25.0	0.05	0.05	25.0	0.05	4.00	25.0	0.05	0.05	25.0	4.00	4.00
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.97	0.97		0.98		0.89	0.98	0.97		0.97	0.98	
Frt		0.936				0.850		0.947			0.957	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	2982	0	1674	3316	1427	1674	3061	0	1537	1617	0
Flt Permitted	0.950			0.950			0.134			0.435		
Satd. Flow (perm)	1566	2982	0	1645	3316	1272	231	3061	0	684	1617	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129				132		92			14	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	53		34	34		53	60		55	55	•••	60
Confl. Bikes (#/hr)	00		12	• •		10	00		16	00		6
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 (%)	5%	3%	2%	1%	2%	6%	1%	2%	1%	10%	2%	5%
Adj. Flow (vph)	169	507	374	276	868	66	265	373	204	10%	308	124
Shared Lane Traffic (%)			314					313	204			124
Lane Group Flow (vph)	169	881	0	276	868	66	265	577	0	109	432	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2	• •	1	2	• •
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	Cl+Ex		Cl+Ex	CI+Ex	
7.	CI+EX	CI+EX		CI+EX	CI+EX	CI+EX	CI+EX	UI+EX		CI+EX	CI+EX	
Detector 1 Channel	0.0	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	0.0	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	
2 3 3 3 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		_			J					•		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	21.0	43.0		30.0	52.0	52.0	23.0	67.0		44.0	44.0	
Total Split (%)	15.0%	30.7%		21.4%	37.1%	37.1%	16.4%	47.9%		31.4%	31.4%	
Maximum Green (s)	14.8	37.0		23.8	46.0	46.0	16.1	60.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	14.8	37.0		23.8	46.0	46.0	60.1	60.1		37.1	37.1	
Actuated g/C Ratio	0.11	0.26		0.17	0.33	0.33	0.43	0.43		0.26	0.26	
v/c Ratio	0.99	1.00		0.97	0.80	0.13	1.00	0.42		0.60	0.99	
Control Delay	135.9	56.5		73.5	37.8	2.2	81.2	5.8		60.8	89.0	
Queue Delay	0.0	16.4		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	135.9	72.9		73.5	37.8	2.2	81.2	5.8		60.8	89.0	
LOS	F	Е		Е	D	Α	F	Α		Е	F	
Approach Delay		83.0			44.0			29.6			83.3	
Approach LOS		F			D			С			F	
Queue Length 50th (m)	36.5	55.7		67.1	116.2	0.0	~46.6	27.6		24.5	107.2	
Queue Length 95th (m)	#84.1	#142.7		m#84.3	m119.7	m0.0	m#97.6	35.4		44.7	#170.3	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	170	883		284	1089	506	265	1366		181	438	
Starvation Cap Reductn	0	45		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.99	1.05		0.97	0.80	0.13	1.00	0.42		0.60	0.99	

Area Type: Other

Cycle Length: 140
Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 57.7 Intersection Capacity Utilization 112.9%

Intersection LOS: E ICU Level of Service H

Analysis Period (min) 15

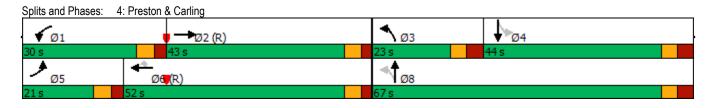
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	LDL K	^		WBK	SBL K	JUN.
Traffic Volume (vph)	254	TT 697	T 884	104	308	323
	254 254	697	884	104	308	323
Future Volume (vph)						
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800 45.0
Storage Length (m)	75.0			25.0	0.0	
Storage Lanes	1			1	1 10 0	1
Taper Length (m)	25.0	0.0=	4.00	4.00	10.0	4.00
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.79	0.98	0.75
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1674	3316	1745	1498	1674	1483
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3316	1745	1181	1647	1117
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				28		262
Link Speed (k/h)		60	60	20	50	202
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)	0.5	7.3	31.1	05	16.5	0.4
Confl. Peds. (#/hr)	65			65	13	81
Confl. Bikes (#/hr)				10		45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%	1%	1%	2%
Adj. Flow (vph)	254	697	884	104	308	323
Shared Lane Traffic (%)						
Lane Group Flow (vph)	254	697	884	104	308	323
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)	Loit	7.0	7.0	rugiit	3.5	11171
Link Offset(m)		0.0	0.0		0.0	
			5.0			
Crosswalk Width(m)		5.0	5.0		5.0	
Two way Left Turn Lane	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
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Type Detector 1 Channel	UI+EX	UI+ĽX	UI+ĽX	OI+EX	UI+ĽX	UI+EX
	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	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6		. 3	
Permitted Phases	•	_	•	6	4	4
	5	2	6	6	4	4
Detector Phase	5		0	0	4	4

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	24.0	101.0	77.0	77.0	39.0	39.0
Total Split (%)	17.1%	72.1%	55.0%	55.0%	27.9%	27.9%
Maximum Green (s)	18.1	95.3	71.3	71.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?				3		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	21.2	98.4	71.3	71.3	29.9	29.9
Actuated g/C Ratio	0.15	0.70	0.51	0.51	0.21	0.21
v/c Ratio	1.00	0.30	1.00	0.17	0.88	0.73
Control Delay	98.1	6.1	63.4	14.1	77.9	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.1	6.1	63.4	14.1	77.9	20.9
LOS	F	Α	Е	В	E	С
Approach Delay		30.7	58.2		48.7	
Approach LOS		С	Е		D	
Queue Length 50th (m)	~76.1	39.4	218.6	9.9	74.4	12.7
Queue Length 95th (m)	m#99.3	m44.9	#304.1	19.8	#113.7	47.1
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	253	2330	888	615	388	463
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	1.00	0.30	1.00	0.17	0.79	0.70
Intersection Summary						

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 62 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 45.7 Intersection Capacity Utilization 105.5%

Intersection LOS: D
ICU Level of Service G

Analysis Period (min) 15

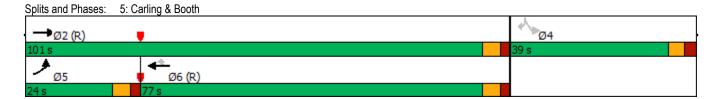
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	∱ %		*	^	7	ሻ	↑ 1≽		ሻ	£	
Traffic Volume (vph)	179	577	374	366	868	66	355	373	204	130	338	124
Future Volume (vph)	179	577	374	366	868	66	355	373	204	130	338	124
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0		•	25.0		•	25.0			25.0		•
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.97	0.97	0.00	0.98	0.00	0.89	0.98	0.97	0.00	0.97	0.98	1.00
Frt	0.07	0.941		0.00		0.850	0.00	0.947		0.07	0.960	
Flt Protected	0.950	0.011		0.950		0.000	0.950	0.017		0.950	0.000	
Satd. Flow (prot)	1610	3005	0	1674	3316	1427	1674	3061	0	1537	1625	0
Flt Permitted	0.950	3003	U	0.950	3310	1721	0.096	3001	U	0.435	1020	U
Satd. Flow (perm)	1566	3005	0	1648	3316	1272	166	3061	0	684	1625	0
Right Turn on Red	1500	3003	Yes	1040	3310	Yes	100	3001	Yes	004	1023	Yes
		103	165			132		92	165		13	165
Satd. Flow (RTOR)					CO	132						
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)	50	7.5	0.4	0.4	11.6		00	11.8			4.7	20
Confl. Peds. (#/hr)	53		34	34		53	60		55	55		60
Confl. Bikes (#/hr)			12			10			16			6
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 (%)	5%	3%	2%	1%	2%	6%	1%	2%	1%	10%	2%	5%
Adj. Flow (vph)	179	577	374	366	868	66	355	373	204	130	338	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	951	0	366	868	66	355	577	0	130	462	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel	J	J/.		J/.	J/.	U/.	J/.	J,		J/.	J/.	
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	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	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		OITEX			OITEX			OITEX			OITEX	
		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	D1			Dret		Darm	nm1			Darre		
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6	^	3	8		4	4	
Permitted Phases	_	^		4	^	6	8	^		4	4	
Detector Phase	5	2		1	6	6	3	8		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	21.0	43.0		30.0	52.0	52.0	23.0	67.0		44.0	44.0	
Total Split (%)	15.0%	30.7%		21.4%	37.1%	37.1%	16.4%	47.9%		31.4%	31.4%	
Maximum Green (s)	14.8	37.0		23.8	46.0	46.0	16.1	60.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	14.8	37.0		23.8	46.0	46.0	60.1	60.1		37.1	37.1	
Actuated g/C Ratio	0.11	0.26		0.17	0.33	0.33	0.43	0.43		0.26	0.26	
v/c Ratio	1.05	1.09		1.29	0.80	0.13	1.45	0.42		0.72	1.05	
Control Delay	147.9	88.8		180.4	38.6	2.1	251.8	6.3		69.9	104.3	
Queue Delay	0.0	2.4		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	147.9	91.2		180.4	38.6	2.1	251.8	6.3		69.9	104.3	
LOS	F	F		F	D	Α	F	Α		Е	F	
Approach Delay		100.1			76.7			99.8			96.8	
Approach LOS		F			Е			F			F	
Queue Length 50th (m)	~47.1	~134.0		~117.4	115.7	0.0	~107.2	28.0		30.3	~125.6	
Queue Length 95th (m)	#91.3	#167.1	r	m#134.5	m119.2	m0.0	m#167.0	35.8		#59.5	#187.3	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	170	869		284	1089	506	244	1366		181	440	
Starvation Cap Reductn	0	16		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.05	1.11		1.29	0.80	0.13	1.45	0.42		0.72	1.05	

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.45 Intersection Signal Delay: 91.8 Intersection Capacity Utilization 125.3%

Intersection LOS: F
ICU Level of Service H

Analysis Period (min) 15

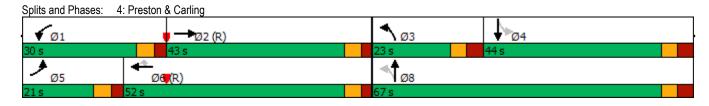
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



	•	→	-	•	-	1
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	EDL K	<u> </u>		WDK	SBL Š	SBK 7
Traffic Volume (vph)	275	TT 697	T 894	104	308	323
Future Volume (vph)	275	697	894	104	308	323
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0	1000	1000	25.0	0.0	45.0
Storage Lanes	1			25.0	1	45.0
	25.0			I	10.0	I
Taper Length (m)		0.05	1.00	1.00		1.00
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00 0.75
Ped Bike Factor	0.95			0.79	0.98	
Frt	0.050			0.850	0.050	0.850
Flt Protected	0.950	2042	1715	1400	0.950	4.400
Satd. Flow (prot)	1674	3316	1745	1498	1674	1483
Flt Permitted	0.950	0010	4= 4=	4404	0.950	4
Satd. Flow (perm)	1583	3316	1745	1181	1647	1117
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				28		262
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1		16.5	
Confl. Peds. (#/hr)	65			65	13	81
Confl. Bikes (#/hr)				10		45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%	1%	1%	2%
Adj. Flow (vph)	275	697	894	104	308	323
Shared Lane Traffic (%)	210	001	004	104	000	020
Lane Group Flow (vph)	275	697	894	104	308	323
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left		L NA	R NA
	Leit			Right		IN INA
Median Width(m)		7.0	7.0		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)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	1.8	6.1	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	CI+Ex	CI+Ex
Detector 1 Channel	JI'LX	OI - LX	OLILA	OI LX	OI · LX	OI'LX
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
Detector 1 Queue (s)						
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	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases				6	4	4
Detector Phase	5	2	6	6	4	4
_ 1.5000		_			•	

	•	→	←	•	-	1
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	24.0	101.0	77.0	77.0	39.0	39.0
Total Split (%)	17.1%	72.1%	55.0%	55.0%	27.9%	27.9%
Maximum Green (s)	18.1	95.3	71.3	71.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?			- 3	- 3		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	21.2	98.4	71.3	71.3	29.9	29.9
Actuated g/C Ratio	0.15	0.70	0.51	0.51	0.21	0.21
v/c Ratio	1.09	0.30	1.01	0.17	0.88	0.73
Control Delay	110.1	6.0	66.1	14.1	77.9	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.1	6.0	66.1	14.1	77.9	20.9
LOS	F	Α	Е	В	Е	С
Approach Delay		35.4	60.7		48.7	
Approach LOS		D	Е		D	
Queue Length 50th (m)	~86.3	42.2	~226.5	9.9	74.4	12.7
Queue Length 95th (m)	m#100.0	m43.5	#309.3	19.8	#113.7	47.1
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	253	2330	888	615	388	463
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	1.09	0.30	1.01	0.17	0.79	0.70
Intersection Summary						

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 62 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09 Intersection Signal Delay: 48.4 Intersection Capacity Utilization 107.3%

Intersection LOS: D
ICU Level of Service G

Analysis Period (min) 15

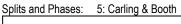
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.





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	•	•	4	†	ţ	4	
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
ane Configurations		7		414	ĵ,		
Traffic Volume (vph)	0	51	44	572	541	75	
Future Volume (vph)	0	51	44	572	541	75	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	
Ped Bike Factor							
-rt		0.865			0.984		
Flt Protected				0.996			
Satd. Flow (prot)	0	1510	0	3273	1703	0	
FIt Permitted				0.996			
Satd. Flow (perm)	0	1510	0	3273	1703	0	
Link Speed (k/h)	30			50	50		
Link Distance (m)	68.0			65.2	71.5		
Travel Time (s)	8.2			4.7	5.1		
Confl. Peds. (#/hr)			46			47	
Confl. Bikes (#/hr)						14	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	2%	2%	3%	3%	2%	
Adj. Flow (vph)	0	51	44	572	541	75	
Shared Lane Traffic (%)							
ane Group Flow (vph)	0	51	0	616	616	0	
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes	
ane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(m)	0.0			0.0	0.0	J .	
Link Offset(m)	0.0			0.0	0.0		
Crosswalk Width(m)	5.0			2.0	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	Stop			Free	Free		
Intersection Summary							
Area Type:	Other						
Control Type: Unsignalized							
Interception Consoity Litilization	n 55 10/			IC	III aval of	Contino D	

Intersection Capacity Utilization 55.4% Analysis Period (min) 15

ICU Level of Service B

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APPENDIX K Transportation Demand Management

TRANSPORTATION DEMAND MANAGEMENT TDM-Supportive Development Design and Infrastructure Checklist

TDM-Supportive Development Design and Infrastructure Checklist:

Non-Residential Developments (office, institutional, retail or industrial)

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

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

	TDM-s	supportive design & infrastructure measures: Non-residential developments	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks (see Official Plan policy 4.3.10)	
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps (see Official Plan policy 4.3.10)	
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and onroad 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: Non-residential developments	Check if completed & add descriptions, explanations or plan/drawing references
	2.	WALKING & CYCLING: END-OF-TRIP FACILITY	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)	
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see Zoning By-law Section 111)	
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see Zoning By-law Section 111)	
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	
	2.2	Secure bicycle parking	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see Zoning By-law Section 111)	
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	
	2.3	Shower & change facilities	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	
	2.4	Bicycle repair station	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	

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

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

TDM-Supportive Development Design and Infrastructure Checklist:

Residential Developments (multi-family or condominium)

Legend The Official Plan or Zoning By-law provides related guidance that must be followed The measure is generally feasible and effective, and in most cases would benefit the development and its users 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	\square
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	
	1.2	Facilities for walking & cycling	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (see Official Plan policy 4.3.3)	
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible (see Official Plan policy 4.3.12)	

	TDM-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 onroad 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	\square
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)	
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see Zoning By-law Section 111)	
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see Zoning By-law Section 111)	
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	
	2.2	Secure bicycle parking	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see Zoning By-law Section 111)	
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multifamily residential developments	
	2.3	Bicycle repair station	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	
	3.	TRANSIT	
	3.1	Customer amenities	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	

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

TRANSPORTATION DEMAND MANAGEMENT **TDM Measures Checklist**

TDM Measures Checklist:

Residential Developments (multi-family, condominium or subdivision)

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

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

т	OM measures: Residential developments	Check if proposed & add descriptions
6.	TDM MARKETING & COMMUNICATION	s
6.1	Multimodal travel information	
BASIC ★ 6.1	 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 L

MMLOS Review

Segment MMLOS Analysis

This section provides a review of the boundary streets Preston Street and Sidney Street, 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 the targets for areas 'within 600m of a rapid transit station.'

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 suggest a target PLOS A for all roadways within 600m of a rapid transit station. 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. Within 600m of a rapid transit station, Exhibit 22 of the MMLOS Guidelines suggest a target BLOS B for roadways with a local cycling route designation (Preston Street), and a target BLOS D for roadways with no cycling route designation (Sidney Street). 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 Preston Street only. Despite having no TLOS target, Preston Street has been evaluated for TLOS, as it currently has transit service. 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 Preston Street only. Within 600m of a rapid transit station, Exhibit 22 of the MMLOS Guidelines suggest a target TkLOS D for arterial roadways with a truck route designation. 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						
Preston Stre	et (east side,	Carling Avenue to Sidr	ney Street)								
2.0m	0m	> 3,000 vpd	No	60 km/h	E						
Preston Stre	Preston Street (west side, Carling Avenue to Sidney Street)										
2.0m	0m	> 3,000 vpd	No	60 km/h	E						
Sidney Stree	t (north side,	west of Preston Street)								
1.8m	0m	≤ 3,000 vpd	No	30 km/h	Α						
Sidney Stree	t (south side,	west of Preston Street	±)								
1.8m	0m	≤ 3,000 vpd	Yes	30 km/h	Α						

^{1.} Operating speed of Preston Street taken as the speed limit plus 10 km/h; operating speed of Sidney Street assumed to be 30 km/h.

Table 2: BLOS Segment Analysis

Road Class	Type of Route	Type of Bikeway	Travel Lanes	Operating Speed	BLOS			
Preston Street (Carling Avenue to Preston Street)								
Arterial	Local Route	Mixed Traffic	3	60 km/h	F			
Sidney Street (v	vest of Carling	Avenue)						
Local	No Route	Mixed Traffic	2	30 km/h	Α			

Table 3: TLOS Segment Analysis

Facility Type	Exposure to Cong	Exposure to Congestion Delay, Friction, and Incidents							
Facility Type	Congestion	ngestion Friction Incident Potential		TLOS					
Preston Street									
Mixed Traffic; Frequent Parking/Driveway Friction	Yes	High	High	F					

Table 4: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
Preston Street		
> 3.7m	1	В

Intersection MMLOS Analysis

The following is a review of the MMLOS of the signalized intersections within the study area, using complete streets principles. All of these intersections have been evaluated using the MMLOS targets for intersections within 600m of a rapid transit station, and are based on existing conditions.

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 suggests a target PLOS A for all roadways within 600m of a rapid transit station. The results of the intersection PLOS analysis are summarized in **Table 5** through **Table 12**.

Exhibit 12 of the MMLOS Guidelines has been used to evaluate the existing BLOS at the intersections listed above. Within 600m of a rapid transit station, Exhibit 22 of the MMLOS Guidelines suggests a target BLOS B for local cycling routes (Sherwood Drive, Preston Street), a target BLOS C for arterial spine routes (Carling Avenue, Booth Street, Prince of Wales Drive), and a target BLOS D for roadways without a Crosstown Bikeway, Local Route, or Spine Route designation (Champagne Avenue, Trillium Pathway, Beech Street, Pamilla Street, Queen Elizabeth Driveway). The results of the intersection BLOS analysis are summarized in **Table 13**.

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 C for roadways with a Transit Priority – Continuous Lanes designation (Carling Avenue), and does not identify a target TLOS for roadways without a Rapid Transit or Transit Priority designation (all others). The TLOS has been evaluated for every approach that is currently used by transit. The results of the intersection TLOS analysis are summarized in **Table 14**.

Exhibit 21 of the MMLOS Guidelines has been used to evaluate the existing TkLOS at the intersections listed above. Within 600m of a rapid transit station, Exhibit 22 of the MMLOS Guidelines identifies a target TkLOS D for arterial truck routes (Carling Avenue, Preston Street, Prince of Wales Drive) and collector truck routes (Booth Street), and no target TkLOS otherwise (Sherwood Drive, Champagne Avenue, Beech Street, Pamilla Street, Queen Elizabeth Driveway). The results of the intersection TkLOS analysis are summarized in **Table 15**.

Table 5: PLOS Intersection Analysis – Carling Avenue/Sherwood Drive

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS	S							
Median > 2.4m in Width	No	72	N/A	0	No	23	No	6
Lanes Crossed (3.5m Lane Width)	5	12	N/A	1 " [8	23	9	1 °
SIGNAL PHASING AND TIMING	•							-
Left Turn Conflict	Protected	0	N/A	0	Permissive	-8	No Left Turn/Prohibited	0
Right Turn Conflict	Permissive or Yield	-5	N/A	0	No Right Turn/Prohibited	0	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	N/A	0	RTOR Allowed	-3	N/A	0
Leading Pedestrian Interval	No	-2	N/A	0	No	-2	No	-2
CORNER RADIUS	•			•				
Parallel Radius	> 25m	-9	N/A	0	No Right Turn	0	> 5m to 10m	-5
Parallel Right Turn Channel	No Right Turn Channel	-4	N/A	0	No Right Turn	0	Conventional without Receiving	0
Perpendicular Radius	> 5m to 10m	-5	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	Conventional without Receiving	0	N/A	0	N/A	0	N/A	0
CROSSING TREATMENT								
Treatment	Zebra Stripe	-4	N/A	0	Zebra Stripe	-4	Zebra Stripe	-4
	PETSI SCORE	40		-		6		-10
1	LOS	E		-		F		F
			DELAY SCORE					
Cycle Length		120		-		140		140
Pedestrian Walk Time		44.6		-		26.9		26.9
	DELAY SCORE	23.7		-		45.7		45.7
	LOS	С		-		E		E
	OVERALL	Ε		-		F		F

Table 6: PLOS Intersection Analysis – Carling Avenue/Champagne Avenue

	<u> </u>		1 9					
CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	88	N/A	0	No	23	No	23
Lanes Crossed (3.5m Lane Width)	4	00	N/A	U	8	23	8	23
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Permissive	-8	N/A	0	Permissive	-8	No Left Turn/Prohibited	0
Right Turn Conflict	Permissive or Yield	-5	N/A	0	No Right Turn/Prohibited	0	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	N/A	0	RTOR Allowed	-3	N/A	0
Leading Pedestrian Interval	No	-2	N/A	0	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 3m to 5m	-4	N/A	0	No Right Turn	0	> 10m to 15m	-6
Parallel Right Turn Channel	No Right Turn Channel	-4	N/A	0	No Right Turn	0	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	N/A	0	Standard	-7	Standard	-7
	PETSI SCORE	55		-		3		-1
	LOS	D		-		F		F
	·		DELAY SCORE		_		_	
Cycle Length		70		-		120		120
Pedestrian Walk Time		16.7		-		7.1		7.1
	DELAY SCORE	20.3		-		53.1		53.1
	LOS	С		•		E		E
	OVERALL	D				F		F

Table 7: PLOS Intersection Analysis – Carling Avenue/Trillium Pathway

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	120	No	120	No	23	No	23
Lanes Crossed (3.5m Lane Width)	1	120	1	120	8	7 23	8	
SIGNAL PHASING AND TIMING	-							
Left Turn Conflict	No Left Turn/Prohibited	0	No Left Turn/Prohibited	0	No Left Turn/Prohibited	0	No Left Turn/Prohibited	0
Right Turn Conflict	No Right Turn/Prohibited	0	No Right Turn/Prohibited	0	No Right Turn/Prohibited	0	No Right Turn/Prohibited	0
Right Turn on Red	N/A	0	N/A	0	N/A	0	N/A	0
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS				•		•		
Parallel Radius	No Right Turn	0	No Right Turn	0	No Right Turn	0	No Right Turn	0
Parallel Right Turn Channel	No Right Turn	0	No Right Turn	0	No Right Turn	0	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	Zebra Stripe	-4	Zebra Stripe	-4	Zebra Stripe	-4	Zebra Stripe	-4
	PETSI SCORE	114	•	114		17		17
	LOS	Α		Α		F		F
			DELAY SCORE	<u> </u>				
Cycle Length		70		70		120		120
Pedestrian Walk Time		24.9		24.9		7.4		7.4
	DELAY SCORE	14.5		14.5		52.8		52.8
	LOS	В		В		E		E
	OVERALL	В		В		F		F

Table 8: PLOS Intersection Analysis – Carling Avenue/Preston Street

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	88	No	55	Yes	15	Yes	15
Lanes Crossed (3.5m Lane Width)	4	00	6	55	9	15	9	15
SIGNAL PHASING AND TIMING	•							
Left Turn Conflict	Protected	0	Protected	0	Permissive	-8	Perm + Prot	-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	> 3m to 5m	-4	> 3m to 5m	-4	> 10m to 15m	-6	> 3m to 5m	-4
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	63		30		-20		-18
	LOS	С		E		F		F
			DELAY SCORE					
Cycle Length		140		140		140		140
Pedestrian Walk Time		18.0		18.0		32.1		8.1
	DELAY SCORE	53.2	_	53.2		41.6		62.1
	LOS	E		E		E		F
	OVERALL	E		Е		F		F

Table 9: PLOS Intersection Analysis - Carling Avenue/Booth Street

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	88	N/A	. 0	Yes	30	No	23
Lanes Crossed (3.5m Lane Width)	4	00	N/A	. 0	8	30	8	23
SIGNAL PHASING AND TIMING								-
Left Turn Conflict	Perm + Prot	-8	N/A	0	Permissive	-8	No Left Turn/Prohibited	0
Right Turn Conflict	Permissive or Yield	-5	N/A	0	No Right Turn/Prohibited	0	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	N/A	0	RTOR Allowed	-3	N/A	0
Leading Pedestrian Interval	No	-2	N/A	0	No	-2	No	-2
CORNER RADIUS	•							
Parallel Radius	> 5m to 10m	-5	N/A	0	No Right Turn	0	> 3m to 5m	-4
Parallel Right Turn Channel	No Right Turn Channel	-4	N/A	0	No Right Turn	0	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	N/A	0	Standard	-7	Standard	-7
-	PETSI SCORE	54		-		10		1
	LOS	D		-		F		F
			DELAY SCORE					
Cycle Length		120		-		130		130
Pedestrian Walk Time		30.3		-		8.0		8.0
	DELAY SCORE	33.5		-		57.2		57.2
	LOS	D		-		E		E
	OVERALL	D		-		F		F

Table 10: PLOS Intersection Analysis - Preston Street/Beech Street

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	00	No	00	No	00	No	405
Lanes Crossed (3.5m Lane Width)	4	88	4	88	4	88	3	105
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	> 5m to 10m	-5						
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	Textured	-4	Textured	-4	Textured	-4	Textured	-4
	PETSI SCORE	57		57		57		74
	LOS	D		D		D		С
			DELAY SCORE					
Cycle Length		90		90		90		90
Pedestrian Walk Time		7.4		7.4		51.5		51.5
	DELAY SCORE	37.9		37.9		8.2		8.2
	LOS	D		D		Α		Α
	OVERALL	D		D		D		С

Table 11: PLOS Intersection Analysis - Preston Street/Pamilla Street

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE	:				
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	00	No	00	No	400	No	105
Lanes Crossed (3.5m Lane Width)	4	88	4	88	2	120	3	105
SIGNAL PHASING AND TIMING						•		
Left Turn Conflict	Permissive	-8	No Left Turn/Prohibited	0	Permissive	-8	Permissive	-8
Right Turn Conflict	No Right Turn/Prohibited	0	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	N/A	0	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS	-			•		•		
Parallel Radius	No Right Turn	0	> 5m to 10m	-5	> 3m to 5m	-4	> 5m to 10m	-5
Parallel Right Turn Channel	No Right Turn	0	No Right Turn Channel	-4	No Right Turn Channel	-4	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	Textured	-4	Textured	-4
	PETSI SCORE	68		62		93		74
	LOS	С		С		Α		С
			DELAY SCOR	E				
Cycle Length		90		90		90		90
Pedestrian Walk Time		7.5		7.5		58.9		58.9
	DELAY SCORE	37.8		37.8		5.4		5.4
	LOS	D		D		Α		Α
	OVERALL	D		D		Α		С

Table 12: PLOS Intersection Analysis – Preston Street/Prince of Wales Drive/Queen Elizabeth Driveway

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	23	No	00	No	72	No	72
Lanes Crossed (3.5m Lane Width)	8	23	4	88	5	7 ′2 [5	12
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Perm + Prot	-8	Permissive	-8	Permissive	-8	Permissive	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Perm + Prot	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 15m to 25m	-8	> 5m to 10m	-5	> 10m to 15m	-6	> 25m	-9
Parallel Right Turn Channel	Conventional with Receiving	-3	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	> 15m to 25m	-8	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	Conventional with Receiving	-3	N/A	0
CROSSING TREATMENT	•				-			
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
	PETSI SCORE	-13		54		26		34
	LOS	F		D		F		E
			DELAY SCORE					•
Cycle Length		130		130		120		120
Pedestrian Walk Time		16.9		55.9		12.5		12.5
	DELAY SCORE	49.2		21.1		48.2		48.2
	LOS	E		С		E		E
	OVERALL	F		D		F		Е

Table 13: BLOS Intersection Analysis

	Accommodation Mixed Traffic Mixed Traffic Mixed Traffic Mixed Traffic Right Turn Lane Characteristics Left Turn Accommodation Right Turn Accommodation Right Turn Accommodation No lane crossed; ≤ 50 km/h Shared through/right turn lane No left turn No left turn No right turn Three lanes crossed; ≥ 50 km/h Mixed Traffic Three lanes crossed; ≥ 50 km/h Mixed Traffic Right Turn Lane Characteristics Left Turn Accommodation Three lanes crossed; ≥ 50 km/h Mixed Traffic							
Approach			Traver Lanes and/or Speed	BLOS				
	onerwood Driv							
North Approach	Mixed Traffic	Characteristics	Shared left turn/right turn lane	Α				
Troiti Approach	WIIXOU TTUINO	Accommodation	No lane crossed; ≤ 50 km/h	В				
Foot Approach	Mixed Troffic		Shared through/right turn lane	Α				
East Approach	Mixed Trailic		No left turn	-				
Wast Approach		Characteristics	No right turn	1				
West Approach	transit)	Accommodation	Three lanes crossed; ≥ 50 km/h	F				
Carling Avenue	/Champagne Av	/enue						
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane is primary lane	Α				
North Approach	Mixed Trailic	Left Turn Accommodation	One lane crossed; ≤ 40 km/h	D				
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane < 50m; turning speed < 25 km/h	D				
East Approach	wiixeu Trailic	Left Turn Accommodation	No left turn	-				
Wast Approach	Curbside Lane (shared with	Right Turn Lane Characteristics	No right turn	-				
West Approach	transit)	Left Turn Accommodation	Three lanes crossed; ≥ 50 km/h	F				
Carling Avenue	/Trillium Pathwa	ay						
North Approach	Mixed-Use Pathway	Right Turn Lane Characteristics Left Turn Accommodation	No lanes for vehicular traffic; cyclists wishing to turn onto Carling Avenue can do so during north-south phase	Α				
South Approach	Mixed-Use Pathway	Right Turn Lane Characteristics Left Turn	No lanes for vehicular traffic; cyclists wishing to turn onto Carling Avenue can	А				
		Accommodation Right Turn Lane	do so during north-south phase No right turn	_				
East Approach	Mixed Traffic	Characteristics Left Turn	No left turn	-				
	Curbside Lane	Accommodation Right Turn Lane Characteristics	No right turn	-				
West Approach	(shared with transit)	Left Turn Accommodation	No left turn	-				

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Carling Avenue		0.110.10.		
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	Α
Попп Арргоасп	Mixed Framic	Left Turn Accommodation	One lane crossed; ≥ 60 km/h	F
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	Α
Court Apprount	Wilkou Tramo	Left Turn Accommodation	Two lanes crossed; ≥ 50 km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	Α
, , , , , , , , , , , , , , , , , , ,		Left Turn Accommodation	Three lanes crossed; ≥ 50 km/h	F
West Approach	Pocket Lane (shared with	Right Turn Lane Characteristics	Right turn lane introduced to the right; lane < 50m, turning speed < 25 km/h	В
ποστητρισαστι	transit)	Left Turn Accommodation	Three lanes crossed; ≥ 50 km/h	F
Carling Avenue	Booth Street			
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane < 50m; turning speed < 25km/h	D
Попп Арргоасп	Wilked Trailic	Left Turn Accommodation	One lane crossed; ≥ 60 km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane < 50m; turning speed < 25 km/h	D
<u>Laot Approach</u>	Wilkou Traino	Left Turn Accommodation	No left turn	-
West Approach	Curbside Lane (shared with	Right Turn Lane Characteristics	No right turn	-
	transit)	Left Turn Accommodation	Three lanes crossed; ≥ 50 km/h	F
Preston Street/E	Beech Street			
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	Α
		Left Turn Accommodation	One lane crossed; ≥ 60 km/h	F
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	Α
Coatti / tppi odoli	mixou mamo	Left Turn Accommodation	One lane crossed; > 60 km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane < 50m; turning speed < 25 km/h	D
	MIXOG TIGINO	Left Turn Accommodation	One lane crossed; 50 km/h	D
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared left turn/through/right turn lane	Α
πουτπρισμοίτ	MINOG HAINO	Left Turn Accommodation	No lanes crossed; ≤ 50 km/h	В

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Preston Street/F				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared left turn/through/right turn lane	Α
North Approach	Wilkeu Hailic	Left Turn Accommodation	No lanes crossed; ≥ 60 km/h	D
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared left turn/through/right turn lane	Α
South Approach	Wilked Traille	Left Turn Accommodation	No lanes crossed; ≥ 60 km/h	D
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared left turn/through/right turn lane	Α
		Left Turn Accommodation	В	
Preston Street/F	Prince of Wales	Drive/Queen E	lizabeth Driveway	
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane > 50m	F
пош Арргоасп	Mixed Trailic	Left Turn Accommodation	One lane crossed; ≥ 60 km/h	F
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared left turn/through/right turn lane	Α
South Approach	Wilkeu Hailic	Left Turn Accommodation	No lanes crossed; ≤ 50 km/h	В
East Approach	Multi-Use	Right Turn Lane Characteristics	No impact on level of traffic stress	Α
East Approach	Pathway	Left Turn Accommodation	Pathway is located to the left of the roadway	Α
West Approach	Curbside	Right Turn Lane Characteristics	Shared through/right turn lane	Α
West Approach	Bike Lane	Left Turn Accommodation	One lane crossed; ≥ 60 km/h	E

Table 14: TLOS Intersection Analysis

Approach	De	elay ⁽¹⁾	TLOS
Approach	AM Peak	PM Peak	TLOS
Carling Avenue/Sherwood	d Drive		
East Approach	7 sec	17 sec	С
West Approach	11 sec	14 sec	С
Carling Avenue/Champag	ne Avenue		
East Approach	2 sec	6 sec	В
West Approach	7 sec	11 sec	О
Carling Avenue/Trillium P	athway		
East Approach	3 sec	8 sec	В
West Approach	2 sec	6 sec	В
Carling Avenue/Preston S	Street		
North Approach	41 sec	91 sec	F
East Approach	55 sec	91 sec	F
West Approach	48 sec	39 sec	F
Carling Avenue/Booth Str	eet		
North Approach	36 sec	43 sec	F
East Approach	23 sec	20 sec	D
West Approach	22 sec	14 sec	D
Preston Street/Beech Stre	eet		
North Approach	6 sec	7 sec	В
South Approach	7 sec	3 sec	В
Preston Street/Pamilla St	reet		
North Approach	5 sec	4 sec	В
South Approach	2 sec	4 sec	В

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

Table 15: TkLOS Intersection Analysis

Table 15: TKLOS Inter	Section Analysis		
Approach	Effective Corner Radius	Number of Receiving Lanes Departing Intersection	TkLOS
Carling Avenue/Sher	wood Drive		
North Approach	< 10m	3	D
East Approach	> 15m	1	С
Carling Avenue/Chan	npagne Avenue		
North Approach	< 10m	3	D
East Approach	< 10m	1	F
Carling Avenue/Prest	ton Street		
North Approach	< 10m	3	D
South Approach	10m to 15m	3	В
East Approach	< 10m	2	D
West Approach	< 10m	2	D
Carling Avenue/Boot	h Street		
North Approach	< 10m	3	D
East Approach	< 10m	1	F
Preston Street/Beech	Street		
North Approach	< 10m	1	F
South Approach	< 10m	1	F
East Approach	< 10m	1	F
West Approach	< 10m	1	F
Preston Street/Pamill	a Street		
North Approach	< 10m	1	F
South Approach	< 10m	1	F
West Approach	< 10m	1	F
Preston Street/Prince	of Wales Drive/Queen Eliz	zabeth Driveway	
North Approach	> 15m	1	С
South Approach	10m to 15m	1	E
East Approach	> 15m	2	Α
West Approach	< 10m	1	F

APPENDIX M

Total Synchro Analysis

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Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations	*	^	ı I	^	7	ኝ	₹
Traffic Volume (vph)	31	849	13	612	143	176	5
Future Volume (vph)	31	849	13	612	143	176	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	50.0	1000	110.0	0.0	10.0
Storage Lanes	1		1		1	1	10.0
Taper Length (m)	25.0		25.0			25.0	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Ped Bike Factor	0.97	0.95	1.00	0.95	0.90	0.96	0.95
Frt	0.97				0.850	0.90	0.850
Flt Protected	0.950		0.950		0.000	0.950	0.000
		2202		2464	1.100		1400
Satd. Flow (prot)	1642	3283	1674	3161	1483	1674	1498
Flt Permitted	0.950	2002	0.333	2404	4000	0.950	1405
Satd. Flow (perm)	1591	3283	587	3161	1328	1615	1425
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)		20		22	143	40	3
Link Speed (k/h)		60		60		40	
Link Distance (m)		196.1		162.9		242.3	
Travel Time (s)		11.8		9.8		21.8	
Confl. Peds. (#/hr)	30				30	30	30
Confl. Bikes (#/hr)					17		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	1%	7%	2%	1%	1%
Adj. Flow (vph)	31	849	13	612	143	176	5
Shared Lane Traffic (%)							
Lane Group Flow (vph)	31	849	13	612	143	176	5
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		7.0		7.0		3.5	
Link Offset(m)		0.0		0.0		0.0	
Crosswalk Width(m)		5.0		10.0		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)	24		14		14	40	14
Number of Detectors	1	2	1	2	1	1	1
Detector Template	Left	Thru	Left	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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
Detector 1 Position(m) Detector 1 Size(m)	6.1	1.8	6.1	1.8	6.1	0.0 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	Prot	NA	Perm	NA	Perm	Perm	Perm
Protected Phases	5	2		6			
Permitted Phases			6		6	4	4
Detector Phase	5	2	6	6	6	4	4
		_		•			

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Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Switch Phase	LDL	LUI	VVDO	VVDI	VVDIX	ODL	ODIN
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.2	33.4	33.4	33.4	33.4	40.1	40.1
Total Split (s)	17.0	78.0	61.0	61.0	61.0	52.0	52.0
Total Split (%)	13.1%	60.0%	46.9%	46.9%	46.9%	40.0%	40.0%
Maximum Green (s)	11.8	71.6	54.6	54.6	54.6	44.9	44.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.5	2.7	2.7	2.7	2.7	3.8	3.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	6.4	6.4	6.4	6.4	7.1	7.1
Lead/Lag		0.4				1.1	7.1
Lead-Lag Optimize?	Lead		Lag	Lag	Lag		
	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s)							
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		12.0	12.0	12.0	12.0	7.0	7.0
Flash Dont Walk (s)		15.0	15.0	15.0	15.0	26.0	26.0
Pedestrian Calls (#/hr)		20	20	20	20	20	20
Act Effct Green (s)	8.0	90.9	82.3	82.3	82.3	25.6	25.6
Actuated g/C Ratio	0.06	0.70	0.63	0.63	0.63	0.20	0.20
v/c Ratio	0.31	0.37	0.04	0.31	0.16	0.56	0.02
Control Delay	65.6	9.6	5.8	5.0	0.7	52.2	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.6	9.6	5.8	5.0	0.7	52.2	27.4
LOS	Е	Α	Α	Α	Α	D	С
Approach Delay		11.5		4.2		51.5	
Approach LOS		В		Α		D	
Queue Length 50th (m)	7.2	47.4	0.5	11.1	0.0	35.0	0.4
Queue Length 95th (m)	16.3	58.8	1.6	15.3	1.3	55.4	3.4
Internal Link Dist (m)		172.1		138.9		218.3	
Turn Bay Length (m)	40.0		50.0		110.0		10.0
Base Capacity (vph)	149	2295	371	2000	892	557	494
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.37	0.04	0.31	0.16	0.32	0.01
	0.21	0.51	0.04	0.01	0.10	0.02	0.01
Intersection Summary							
Area Type:	Other						
Cycle Length: 130							
Actuated Cycle Length: 130							
Offset: 107 (82%), Referenced	to phase 2:	FBT and 6	:WBTU, St	art of Gree	en		
Natural Cycle: 85	to phace 2	LDT and o	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		211		
Control Type: Actuated-Coordin	nated						
Maximum v/c Ratio: 0.56	iatoa						
Intersection Signal Delay: 12.4				In	tersection	I 00. D	
Intersection Capacity Utilization	E0 60/				CU Level of		.
	1 39.0 %			IC	O Level of	i Service d)
Analysis Period (min) 15							
Splits and Phases: 1: Carling	& Sherwoo	od					
_		-					₹
→Ø2 (R) •						5	Ø4 2 s
<i>≱</i> 4 [‡]							23
Ø5 Ø6 ((R)						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^	7	*	^	7	7		7	*		7
Traffic Volume (vph)	103	813	174	180	692	168	62	0	69	89	0	54
Future Volume (vph)	103	813	174	180	692	168	62	0	69	89	0	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		30.0	60.0		25.0	0.0		0.0	20.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		0.95	0.95		0.69	0.96		0.95	0.98		0.96
Frt	0.00		0.850	0.00		0.850	0.00		0.850	0.00		0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3283	1483	1658	3252	1414	1658	0	1483	1658	0	1498
Flt Permitted	0.374	0200		0.325	0202		0.950	•		0.950		
Satd. Flow (perm)	596	3283	1404	542	3252	978	1586	0	1403	1617	0	1443
Right Turn on Red	000	0200	Yes	012	0202	Yes	1000	0	Yes	1017	V	Yes
Satd. Flow (RTOR)			174			168			69			54
Link Speed (k/h)		60	117		60	100		50	00		50	07
Link Distance (m)		162.9			117.5			121.7			178.4	
Travel Time (s)		9.8			7.1			8.8			12.8	
Confl. Peds. (#/hr)	90	9.0	90	90	7.1	90	20	0.0	20	20	12.0	20
Confl. Bikes (#/hr)	30		5	90		4	20		20	20		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 (%)	1.00	3%	2%	2%	4%	7%	2%	2%	2%	2%	2%	1.00
Adj. Flow (vph)	103	813	174	180	692	168	62	0	69	89	0	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	813	174	180	692	168	62	0	69	89	0	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2	1	1		1	1		1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left		Right	Left		Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1		6.1	6.1		6.1
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		6.1	6.1		6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+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)	0.0	28.7	0.0	0.0	28.7		0.0		0.0	0.0		0.0
Detector 2 Size(m)		1.8			1.8							
Detector 2 Type		CI+Ex			CI+Ex							
Detector 2 Channel		OI LX			OI? LX							
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	i Cilil	2	1 61111	1 61111	6	1 61111	1 61111		1 61111	1 61111		i Cilii
Permitted Phases	2	Z	2	6	U	6	8		8	Л		Λ
Detector Phase	2	2	2	6	6	6	8		8	4		4
Detector Friase				0	0	0	0		0	4		4

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0		5.0	10.0		10.0
Minimum Split (s)	15.3	15.3	15.3	25.3	25.3	25.3	24.0		24.0	37.9		37.9
Total Split (s)	92.0	92.0	92.0	92.0	92.0	92.0	38.0		38.0	38.0		38.0
Total Split (%)	70.8%	70.8%	70.8%	70.8%	70.8%	70.8%	29.2%		29.2%	29.2%		29.2%
Maximum Green (s)	86.7	86.7	86.7	86.7	86.7	86.7	32.0		32.0	32.1		32.
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0		3.0	3.3		3.3
All-Red Time (s)	1.6	1.6	1.6	1.6	1.6	1.6	3.0		3.0	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)	5.3	5.3	5.3	5.3	5.3	5.3	6.0		6.0	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
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	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None		None	None		None
Walk Time (s)				10.0	10.0	10.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)				10.0	10.0	10.0	11.0		11.0	25.0		25.0
Pedestrian Calls (#/hr)				20	20	20	20		20	20		20
Act Effct Green (s)	95.5	95.5	95.5	95.5	95.5	95.5	23.2		23.2	23.3		23.3
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.18		0.18	0.18		0.18
v/c Ratio	0.24	0.34	0.16	0.45	0.29	0.22	0.22		0.23	0.31		0.18
Control Delay	5.9	5.0	0.9	7.5	3.2	2.0	43.8		10.5	46.1		11.2
Queue Delay	0.0	0.1	0.0	0.0	0.2	0.0	0.0		0.0	0.0		0.0
Total Delay	5.9	5.1	0.9	7.5	3.3	2.0	43.8		10.5	46.1		11.2
LOS	Α	Α	Α	Α	Α	Α	D		В	D		E
Approach Delay		4.5			3.8			26.2			32.9	
Approach LOS		Α			Α			С			С	
Queue Length 50th (m)	4.7	19.2	1.1	9.3	18.8	2.9	11.6		0.0	16.9		0.0
Queue Length 95th (m)	7.7	22.6	2.6	13.8	22.5	7.9	22.6		10.8	30.5		9.7
Internal Link Dist (m)		138.9			93.5			97.7			154.4	
Turn Bay Length (m)	70.0		30.0	60.0		25.0				20.0		
Base Capacity (vph)	437	2412	1077	397	2389	762	390		397	399		396
Starvation Cap Reductn	0	433	0	0	801	0	0		0	0		(
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		(
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		(
Reduced v/c Ratio	0.24	0.41	0.16	0.45	0.44	0.22	0.16		0.17	0.22		0.14
Intersection Summary												
Area Type:	Other											
Cycle Length: 130												

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 85 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

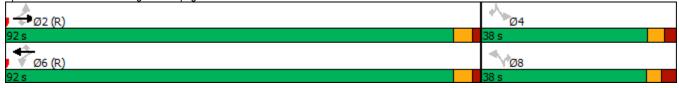
Maximum v/c Ratio: 0.45

Intersection Signal Delay: 7.1
Intersection Capacity Utilization 56.3%

Intersection LOS: A ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Carling & Champagne



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^			^							•
Traffic Volume (vph)	0	968	0	0	1088	0	0	0	0	0	0	0
Future Volume (vph)	0	968	0	0	1088	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3283	0	0	3283	0	0	0	0	0	0	0
Flt Permitted	•			-		-	-					
Satd. Flow (perm)	0	3283	0	0	3283	0	0	0	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		117.5			124.7			157.3			54.9	
Travel Time (s)		7.1			7.5			11.3			4.0	
Confl. Peds. (#/hr)	40		14	14	7.0	40	18	11.0	20	20	1.0	18
Confl. Bikes (#/hr)	10		7			25	10		20	20		17
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 (%)	2%	3%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	968	0	0	1088	0	0	0	0	0	0	0
Shared Lane Traffic (%)	- U	300	•		1000	•	- U	- U	· ·	, ,	•	J
Lane Group Flow (vph)	0	968	0	0	1088	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	LGIL	7.0	rtigrit	Leit	7.0	Trigit	Leit	0.0	ragnt	Leit	0.0	rtigrit
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
()		5.0			5.0			5.0			5.0	
Two way Left Turn Lane	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Headway Factor Turning Speed (k/h)	24	1.09	1.09	24	1.09	1.09	24	1.09	1.09	24	1.09	1.09
Number of Detectors	24	2	14	24	2	14	24		14	24		14
		Thru			Thru							
Detector Template		30.5			30.5							
Leading Detector (m)		0.0			0.0							
Trailing Detector (m)												
Detector 1 Position(m)		0.0			0.0							
Detector 1 Size(m)		1.8			1.8							
Detector 1 Type		CI+Ex			Cl+Ex							
Detector 1 Channel		0.0			0.0							
Detector 1 Extend (s)		0.0			0.0							
Detector 1 Queue (s)		0.0			0.0							
Detector 1 Delay (s)		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			NA							
Protected Phases		2			6							
Permitted Phases												
Detector Phase		2			6							
Switch Phase												
Minimum Initial (s)		10.0			10.0							
Minimum Split (s)		25.1			25.1							
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Lane Group	Ø4	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
FIt Protected		
Satd. Flow (prot)		
FIt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	4	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	35.6	
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Lane Group	EBL EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)	94.0			94.0							
Total Split (%)	72.3%			72.3%							
Maximum Green (s)	88.9			88.9							
Yellow Time (s)	3.7			3.7							
All-Red Time (s)	1.4			1.4							
Lost Time Adjust (s)	0.0			0.0							
Total Lost Time (s)	5.1			5.1							
Lead/Lag	0.1			0.1							
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0			3.0							
Recall Mode	C-Max			C-Max							
Walk Time (s)	15.0			15.0							
	5.0			5.0							
Flash Dont Walk (s)	20			20							
Pedestrian Calls (#/hr)											
Act Effct Green (s)	105.6			105.6							
Actuated g/C Ratio	0.81			0.81							
v/c Ratio	0.36			0.41							
Control Delay	4.5			3.2							
Queue Delay	0.1			0.1							
Total Delay	4.6			3.3							
LOS	Α			Α							
Approach Delay	4.6			3.3							
Approach LOS	A			Α							
Queue Length 50th (m)	34.2			29.4							
Queue Length 95th (m)	41.9			m31.9							
Internal Link Dist (m)	93.5			100.7			133.3			30.9	
Turn Bay Length (m)											
Base Capacity (vph)	2666			2666							
Starvation Cap Reductn	486			469							
Spillback Cap Reductn	180			0							
Storage Cap Reductn	0			0							
Reduced v/c Ratio	0.44			0.50							
Intersection Summary											
	Other										
Cycle Length: 130											
Actuated Cycle Length: 130											
Offset: 59 (45%), Referenced t	o phase 2:EBT and 6:	NBT, Start	of Green								
Natural Cycle: 65											
Control Type: Actuated-Coordin	nated										
Maximum v/c Ratio: 0.41											
Intersection Signal Delay: 3.9			ln:	tersection L	OS: A						
Intersection Capacity Utilization	n 36.0%			U Level of							
Analysis Period (min) 15											
m Volume for 95th percentile	queue is metered by	upstream s	ignal.								
Splits and Phases: 3: Trilliun	n Pathway & Carling										
→ Ø2 (R)	<u> </u>						j.	k _{Ø4}			
94 s							36				
←											
94 s											

Lane Group	Ø4
Total Split (s)	36.0
Total Split (%)	28%
Maximum Green (s)	29.4
Yellow Time (s)	3.0
All-Red Time (s)	3.6
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	∱ 1≽		*	^	7	ሻ	† }		*	1 2	
Traffic Volume (vph)	161	602	233	253	702	102	287	478	308	124	302	131
Future Volume (vph)	161	602	233	253	702	102	287	478	308	124	302	131
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.94	0.97		0.98		0.84	0.98	0.98		1.00	0.98	
Frt		0.958				0.850		0.941			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1595	3049	0	1658	3252	1375	1674	3035	0	1510	1506	0
Flt Permitted	0.950			0.950			0.169			0.354		
Satd. Flow (perm)	1507	3049	0	1623	3252	1153	292	3035	0	561	1506	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42				143		145			17	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	90		41	41		90	60		10	10		60
Confl. Bikes (#/hr)			22			10			36			5
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 (%)	6%	4%	2%	2%	4%	10%	1%	4%	2%	12%	6%	20%
Adj. Flow (vph)	161	602	233	253	702	102	287	478	308	124	302	131
Shared Lane Traffic (%)		002									002	
Lane Group Flow (vph)	161	835	0	253	702	102	287	786	0	124	433	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0	rugiit	2101	7.0	rugiit	_ I I I I	3.5	11101	2101	3.5	1110
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		1	2	1	1	2	• • •	1	2	• •
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	Cl+Ex		Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel	CITLX	OITLX		OITLX	OITLX	OITLX	OITLX	CITLX		OITLX	OITLX	
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	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	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			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	Г,	0.0		Г,	0.0	D.		0.0		Г.	0.0	
Turn Type	Prot	NA 2		Prot 1	NA 6	Perm	pm+pt	NA		Perm	NA	
Protected Phases		- ')		1	6		3	8			4	
D '44! D'	5	2		ļ	U	^		U			•	
Permitted Phases Detector Phase	5	2		1	6	6	8	8		4	4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	24.0	38.0		27.0	41.0	41.0	21.0	65.0		44.0	44.0	
Total Split (%)	18.5%	29.2%		20.8%	31.5%	31.5%	16.2%	50.0%		33.8%	33.8%	
Maximum Green (s)	17.8	32.0		20.8	35.0	35.0	14.1	58.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	16.3	32.0		20.8	36.5	36.5	58.1	58.1		37.1	37.1	
Actuated g/C Ratio	0.13	0.25		0.16	0.28	0.28	0.45	0.45		0.29	0.29	
v/c Ratio	0.81	1.07		0.95	0.77	0.24	1.02	0.55		0.78	0.98	
Control Delay	88.3	83.0		63.1	41.3	9.2	76.1	8.9		74.5	83.1	
Queue Delay	0.0	2.7		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	88.3	85.7		63.1	41.3	9.2	76.1	8.9		74.5	83.1	
LOS	F	F		Е	D	Α	Е	Α		Е	F	
Approach Delay		86.1			43.4			26.9			81.1	
Approach LOS		F			D			С			F	
Queue Length 50th (m)	29.7	~107.0		53.6	90.7	6.0	~47.5	52.5		26.9	98.4	
Queue Length 95th (m)	#63.1	#140.8		m57.8	m90.1	m7.8	#99.7	60.7		#57.8	#160.0	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	218	782		265	913	426	280	1436		160	441	
Starvation Cap Reductn	0	5		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.74	1.07		0.95	0.77	0.24	1.02	0.55		0.78	0.98	

Intersection Summary

Area Type: Other

Cycle Length: 130 Actuated Cycle Length: 130

Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07 Intersection Signal Delay: 55.8 Intersection Capacity Utilization 110.5%

Intersection LOS: E ICU Level of Service H

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	ኝ	^	<u>₩</u>	7	7	<u> </u>
Traffic Volume (vph)	401	726	771	215	240	190
Future Volume (vph)	401	726	771	215	240	190
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0	1000	1000	25.0	0.0	45.0
Storage Lanes	1			20.0	1	1
Taper Length (m)	25.0				10.0	-
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.90	1.00	0.78	0.98	0.79
Frt	U.3 4			0.76	0.30	0.79
Flt Protected	0.950			0.000	0.950	0.000
	1674	3252	1728	1498	1674	1427
Satd. Flow (prot)		3232	1728	1498		1427
Flt Permitted	0.950	2050	1700	1170	0.950	1405
Satd. Flow (perm)	1565	3252	1728	1172	1647	1125
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)		22		60		190
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1	_	16.5	
Confl. Peds. (#/hr)	70			70	14	85
Confl. Bikes (#/hr)				16		23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	1%	1%	6%
Adj. Flow (vph)	401	726	771	215	240	190
Shared Lane Traffic (%)						
Lane Group Flow (vph)	401	726	771	215	240	190
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)		7.0	7.0	J	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)	24	1.03	1.03	1.09	24	1.09
Number of Detectors	1	2	2	14	1	14
Detector Template	Left	Thru	Thru	Right	Left	Right
•	6.1	30.5	30.5	6.1	6.1	6.1
Leading Detector (m)						
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)	6.1	1.8	1.8	6.1	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	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)						
		0.0	0.0			
Turn Type	Prot	0.0		Perm	Perm	Perm
Turn Type Protected Phases	Prot 5	0.0 NA	NA	Perm	Perm	Perm
Protected Phases	Prot 5	0.0				
		0.0 NA	NA	Perm 6 6	Perm 4 4	Perm 4 4

	•	\rightarrow	←	•	-	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	32.0	91.0	59.0	59.0	39.0	39.0
Total Split (%)	24.6%	70.0%	45.4%	45.4%	30.0%	30.0%
Maximum Green (s)	26.1	85.3	53.3	53.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?				J		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	31.9	91.1	53.3	53.3	27.2	27.2
Actuated g/C Ratio	0.25	0.70	0.41	0.41	0.21	0.21
v/c Ratio	0.98	0.32	1.09	0.42	0.70	0.49
Control Delay	68.3	2.8	97.5	22.1	57.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	2.8	97.5	22.1	57.8	9.9
LOS	Е	Α	F	С	Е	Α
Approach Delay		26.1	81.0		36.6	
Approach LOS		С	F		D	
Queue Length 50th (m)	~113.1	14.3	~204.3	25.3	49.7	0.0
Queue Length 95th (m)	m#133.3	m16.7	#272.4	45.4	75.0	17.8
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	411	2279	708	515	418	427
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	0.98	0.32	1.09	0.42	0.57	0.44

,

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 16 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09
Intersection Signal Delay: 49.2

Intersection LOS: D
ICU Level of Service G

Intersection Capacity Utilization 107.5% Analysis Period (min) 15

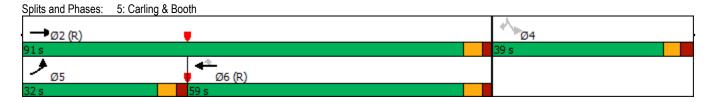
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			ર્ન	7	¥	f)		7	ą.	
Traffic Volume (vph)	43	56	26	37	55	12	28	643	56	18	401	38
Future Volume (vph)	43	56	26	37	55	12	28	643	56	18	401	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	15.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (m)	25.0			20.0			20.0			20.0		
Lane Util. 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
Ped Bike Factor		0.94			0.97	0.89	0.96	0.99		0.98	0.99	
Frt		0.972				0.850		0.988			0.987	
Flt Protected		0.983			0.980		0.950			0.950		
Satd. Flow (prot)	0	1558	0	0	1568	1498	1537	1693	0	1537	1645	0
Flt Permitted		0.865			0.853		0.473			0.304		
Satd. Flow (perm)	0	1336	0	0	1325	1339	738	1693	0	481	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				34		11			12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		101.4			151.8			160.5			163.2	
Travel Time (s)		7.3			10.9			11.6			11.8	
Confl. Peds. (#/hr)	36		40	40		36	50		55	55		50
Confl. Bikes (#/hr)			26			2			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 (%)	9%	4%	4%	25%	2%	1%	10%	3%	3%	10%	6%	5%
Adj. Flow (vph)	43	56	26	37	55	12	28	643	56	18	401	38
Shared Lane Traffic (%)				•				0.0				
Lane Group Flow (vph)	0	125	0	0	92	12	28	699	0	18	439	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			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		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	• • •	1	2	• •
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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		Cl+Ex	Cl+Ex	
Detector 1 Channel	OITLX	OITLX		OITLX	OITLX	OITLX	CITLX	CITLX		OITLX	OITLX	
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	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	28.7	0.0	0.0	28.7		0.0	28.7	
											1.8	
Detector 2 Size(m)		1.8			1.8			1.8				
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)	D	0.0		D	0.0	D	D	0.0		D	0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		_	8	_	_	2		_	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	57.0	57.0		57.0	57.0	
Total Split (%)	28.8%	28.8%		28.8%	28.8%	28.8%	71.3%	71.3%		71.3%	71.3%	
Maximum Green (s)	17.4	17.4		17.4	17.4	17.4	51.5	51.5		51.5	51.5	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped	Ped	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	20	20		20	20	20	20	20		20	20	
Act Effct Green (s)		17.1			17.1	17.1	51.8	51.8		51.8	51.8	
Actuated g/C Ratio		0.21			0.21	0.21	0.65	0.65		0.65	0.65	
v/c Ratio		0.42			0.33	0.04	0.06	0.64		0.06	0.41	
Control Delay		28.9			30.4	2.8	5.5	9.6		5.8	8.0	
Queue Delay		0.0			0.0	0.0	0.0	0.1		0.0	0.0	
Total Delay		28.9			30.4	2.8	5.5	9.7		5.8	8.0	
LOS		С			С	Α	Α	Α		Α	Α	
Approach Delay		28.9			27.2			9.5			7.9	
Approach LOS		С			С			Α			Α	
Queue Length 50th (m)		13.3			11.0	0.0	1.3	50.2		8.0	24.8	
Queue Length 95th (m)		27.3			22.7	1.2	m2.6	40.6		3.0	40.7	
Internal Link Dist (m)		77.4			127.8			136.5			139.2	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		302			288	317	477	1100		311	1069	
Starvation Cap Reductn		0			0	0	0	37		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.41			0.32	0.04	0.06	0.66		0.06	0.41	

Intersection Summary

Area Type: Other

Area Type: Cycle Length: 80

Actuated Cycle Length: 80

Offset: 40 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.0
Intersection Capacity Utilization 81.9%

Intersection LOS: B
ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 6: Preston & Beech



Lane Group		۶	→	•	•	+	4	1	†	/	/	↓	✓
Traffic Volume (ryh)	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (pyh)	Lane Configurations		4						43-			4	
Ideal Flow (ynphp)	Traffic Volume (vph)	1		3	0	0	0	8		46	10		5
Lane UII Factor	Future Volume (vph)	1	0	3	0	0	0	8	679	46	10	495	5
Lane Ulli Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Fit Protected 0.989	Lane Util. 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
Filt Principate	Ped Bike Factor		0.93						0.99			1.00	
Satt Flow (prof)	Frt		0.899						0.992			0.999	
File Permitted	Flt Protected		0.988						0.999			0.999	
File Permitted	Satd. Flow (prot)	0	1470	0	0	0	0	0	1704	0	0	1617	0
Right Turn on Red	Flt Permitted		0.988						0.995			0.987	
Saits Flow (RTOR) 29	Satd. Flow (perm)	0	1453	0	0	0	0	0	1696	0	0	1597	0
Link Speed (k/h)	Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (k/h)	Satd. Flow (RTOR)		29						9			1	
Link Distance (m)			50			50			50			50	
Confl. Pleds. (#hr)			114.6			152.9			73.8			160.5	
Confi. Bikes (#hr)	Travel Time (s)		8.3			11.0			5.3			11.6	
Confi. Bikes (#hr)	()	17		18	18		17	35		45	45		35
Peak Hour Factor													
Heavy Vehicles (%)		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Adj. Flow (vph)													
Shared Lane Traffic (%) Lane Group Flow (yph) 0 4 0 0 0 0 0 0 733 0 0 510 0 0 0 0 0 0 0 0 0													
Lane Group Flow (vph)			-		•	•		-					
Enter Blocked Intersection		0	4	0	0	0	0	0	733	0	0	510	0
Lane Alignment													
Median Width(m) 0.0 0.0 3.5 3.5 Link Offset(m) -2.0 -1.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 Two way Left Turn Lane 1.09 1.00													
Link Offset(m) -2.0 -1.0 0.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.00 1.0		2011		rugiit	Loit		rugin	Lon		rugiit	2010		rugiit
Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane 1.09 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00													
Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09													
Headway Factor			0.0			0.0			0.0			0.0	
Turning Speed (k/h) 24 14 24 24 <td></td> <td>1 09</td>		1 09	1 09	1 09	1 09	1 09	1 09	1 09	1 09	1 09	1 09	1 09	1 09
Number of Detectors			1.00			1.00			1.00			1.00	
Detector Template			2		<u> </u>				2			2	
Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 30.5 Trailing Detector (m) 0.0													
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) 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 Detector 1 Extend (s) 0.0													
Detector 1 Size(m) 6.1 1.8 6.1 1.8 Detector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Channel Cleant of CI+Ex													
Detector 1 Type CI+Ex													
Detector 1 Channel Detector 1 Extend (s) 0.0 <td></td>													
Detector 1 Extend (s) 0.0		OITEX	OITEX					OITEX	OITEX		OITEX	OITEX	
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 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Size(m) 1.8 1.8 1.8 1.8 1.8 Detector 2 Type Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Perm NA Perm NA Perm NA Perm NA Perm NA Perm NA Perm Perm NA	· /												
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 0.0 Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 4 2 6 Detector Phase 4 4 2 2 6 Switch Phase 4 4 2 2 6 6													
Detector 2 Size(m) 1.8 1.8 1.8 Detector 2 Type CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 Switch Phase 4 4 2 2 6 6		0.0						0.0			0.0		
Detector 2 Type CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase 4 4 2 2 6 6													
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase													
Detector 2 Extend (s) 0.0 0.0 Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase 4 4 2 2 6 6			CI+EX						CI+EX			CI+EX	
Turn Type Perm NA Perm NA Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase 4 4 2 2 6 6			0.0						0.0			0.0	
Protected Phases 4 2 6 Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase 4 4 2 2 6 6		D						Dames			Da		
Permitted Phases 4 2 6 Detector Phase 4 4 2 2 6 6 Switch Phase		Perm						Perm			Perm		
Detector Phase 4 4 4 2 2 6 6 6 Switch Phase		,	4					0	2			ь	
Switch Phase			4						^			_	
		4	4					2	2		б	6	
Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 10.0		40.0	40.0					40.0	40.0		40.0	40.0	
Minimum Split (s) 20.5 20.5 28.1 28.1 28.1 28.1	Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	21.0	21.0					59.0	59.0		59.0	59.0	
Total Split (%)	26.3%	26.3%					73.8%	73.8%		73.8%	73.8%	
Maximum Green (s)	15.5	15.5					53.9	53.9		53.9	53.9	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0					18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	8.0	8.0					5.0	5.0		5.0	5.0	
Pedestrian Calls (#/hr)	20	20					20	20		20	20	
Act Effct Green (s)		12.0						69.8			69.8	
Actuated g/C Ratio		0.15						0.87			0.87	
v/c Ratio		0.02						0.50			0.37	
Control Delay		0.0						5.4			2.5	
Queue Delay		0.0						0.0			0.0	
Total Delay		0.0						5.4			2.5	
LOS		Α						Α			Α	
Approach Delay								5.4			2.5	
Approach LOS								Α			Α	
Queue Length 50th (m)		0.0						0.0			0.0	
Queue Length 95th (m)		0.0						77.5			17.6	
Internal Link Dist (m)		90.6			128.9			49.8			136.5	
Turn Bay Length (m)		22.4						4.400			1000	
Base Capacity (vph)		304						1480			1393	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.01						0.50			0.37	
Intersection Summary	OII											
Area Type:	Other											
Cycle Length: 80												
Actuated Cycle Length: 80	4 O.N.	DTII C.	ODTI 04-	4 - (0	_							
Offset: 48 (60%), Referenced	to pnase 2:N	BIL and 6:	SBTL, Sta	rt of Greei	1							
Natural Cycle: 60	inatad											
Control Type: Actuated-Coord	ınated											
Maximum v/c Ratio: 0.50				l	torooctic:-	100.4						
Intersection Signal Delay: 4.2	n 64 20/				tersection		\					
Intersection Capacity Utilization Analysis Period (min) 15	011 04.2%			IC	U Level of	Service C						
, ,												
Splits and Phases: 7: Presto	on & Pamilla											



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			44	
Traffic Volume (vph)	29	1	22	20	5	26	12	641	90	34	488	15
Future Volume (vph)	29	1	22	20	5	26	12	641	90	34	488	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor												
Frt		0.943			0.931			0.984			0.996	
Flt Protected		0.973			0.981			0.999			0.997	
Satd. Flow (prot)	0	1601	0	0	1594	0	0	1701	0	0	1688	0
Flt Permitted		0.973			0.981			0.999			0.997	
Satd. Flow (perm)	0	1601	0	0	1594	0	0	1701	0	0	1688	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.6			154.3			71.5			73.8	
Travel Time (s)		8.2			11.1			5.1			5.3	
Confl. Peds. (#/hr)							28		45	45		28
Confl. Bikes (#/hr)									21			17
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	5%	2%
Adj. Flow (vph)	29	1	22	20	5	26	12	641	90	34	488	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	52	0	0	51	0	0	743	0	0	537	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		-2.0			-2.0			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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 60.0%
Analysis Period (min) 15

ICU Level of Service B

Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			414	ą.	
Traffic Volume (vph)	44	60	39	699	498	30
Future Volume (vph)	44	60	39	699	498	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.922				0.992	
Flt Protected	0.979			0.997		
Satd. Flow (prot)	1575	0	0	3275	1684	0
Flt Permitted	0.979			0.997		
Satd. Flow (perm)	1575	0	0	3275	1684	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			28			28
Confl. Bikes (#/hr)						17
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%
Adj. Flow (vph)	44	60	39	699	498	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	104	0	0	738	528	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5	J		0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	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	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

ICU Level of Service C

Intersection Capacity Utilization 64.2% Analysis Period (min) 15

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	76	4î		7	•	7		4			ની	7
Traffic Volume (vph)	693	286	2	2	213	318	1	4	3	278	4	487
Future Volume (vph)	693	286	2	2	213	318	1	4	3	278	4	487
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Storage Lanes	2		0	1		1	0		0	0		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.97		0.97		0.96			0.94	0.91
Frt		0.999				0.850		0.949				0.850
Flt Protected	0.950			0.950				0.994			0.953	
Satd. Flow (prot)	3185	1760	0	1674	1762	1498	0	1209	0	0	1668	1469
Flt Permitted	0.459			0.583				0.979			0.724	
Satd. Flow (perm)	1519	1760	0	1002	1762	1460	0	1185	0	0	1187	1340
Right Turn on Red			Yes			Yes	-		Yes	•		Yes
Satd. Flow (RTOR)						258		3				358
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		233.9			203.3			76.1			164.5	
Travel Time (s)		14.0			12.2			5.5			11.8	
Confl. Peds. (#/hr)	9	17.0	15	15	12.2	9	25	0.0	24	24	11.0	25
Confl. Bikes (#/hr)	3		3	10		3	20		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 (%)	3%	1%	1%	1%	1.00	1%	1%	50%	25%	1.00	50%	3%
Adj. Flow (vph)	693	286	2	2	213	318	1 /0	4	3	278	4	487
Shared Lane Traffic (%)	093	200	2	2	213	310	l I	4	3	210	4	407
Lane Group Flow (vph)	693	288	0	2	213	318	0	8	0	0	282	487
,	No		No	No	No	No	No		No	~		No
Enter Blocked Intersection	Left	No Left		Left	Left		Left	No Left		No Left	No	
Lane Alignment	Leit		Right	Leit		Right	Leit		Right	Leit	Left	Right
Median Width(m)		7.0 2.0			7.0 0.0			0.0 5.0			3.5 0.0	
Link Offset(m)		5.0										
Crosswalk Width(m)		5.0			10.0			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		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
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	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+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		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			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	35.0	76.0		41.0	41.0	41.0	54.0	54.0		54.0	54.0	35.0
Total Split (%)	26.9%	58.5%		31.5%	31.5%	31.5%	41.5%	41.5%		41.5%	41.5%	26.9%
Maximum Green (s)	28.9	69.9		34.9	34.9	34.9	48.5	48.5		48.5	48.5	28.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	69.9	69.9		39.7	39.7	39.7		48.5			48.5	72.0
Actuated g/C Ratio	0.54	0.54		0.31	0.31	0.31		0.37			0.37	0.55
v/c Ratio	0.62	0.30		0.01	0.40	0.51		0.02			0.64	0.53
Control Delay	20.5	17.7		34.5	39.6	11.6		21.4			28.2	2.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	20.5	17.7		34.5	39.6	11.6		21.4			28.2	2.2
LOS	С	В		С	D	В		С			С	Α
Approach Delay		19.7			22.8			21.4			11.8	
Approach LOS		В			С			С			В	
Queue Length 50th (m)	48.0	36.2		0.3	39.8	10.3		0.7			45.3	9.8
Queue Length 95th (m)	60.7	53.1		2.3	64.0	36.6		3.9			m44.8	m9.4
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	1187	946		305	537	624		443			442	966
Starvation Cap Reductn	0	0		0	0	0		0			0	21
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	0.58	0.30		0.01	0.40	0.51		0.02			0.64	0.52

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 7 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 17.8

Intersection Capacity Utilization 90.6%

Intersection LOS: B
ICU Level of Service E

Analysis Period (min) 15

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



-	•	•	←	•	/
EBT	EBR	WBL	WBT	NBL	NBR
f)			ની	W	
87	0	8	61	0	17
87	0	8	61	0	17
1800	1800	1800	1800	1800	1800
1.00	1.00	1.00	1.00	1.00	1.00
				0.865	
			0.994		
1745	0	0	1735	1510	0
			0.994		
1745	0	0	1735	1510	0
30			30	50	
49.5			68.0	46.2	
5.9			8.2	3.3	
1.00	1.00	1.00	1.00	1.00	1.00
87	0	8	61	0	17
87	0	0	69	17	0
No	No	No	No	No	No
Left	Right	Left	Left	Left	Right
0.0			0.0	3.5	
0.0			0.0	0.0	
0.0			0.0	5.0	
1.09	1.09	1.09	1.09	1.09	1.09
	14	24		24	14
Free			Free	Stop	
Other					
Control Type: Unsignalized Intersection Capacity Utilization 20.5%			IC	III aval of	Canilaa A
	87 87 1800 1.00 1745 1745 30 49.5 5.9 1.00 87 87 No Left 0.0 0.0 0.0 1.09 Free	87 0 1800 1800 1.00 1.00 1745 0 1745 0 1745 0 30 49.5 5.9 1.00 1.00 87 0 87 0 87 Right 0.0 0.0 0.0 1.09 14 Free	87 0 8 87 0 8 87 0 8 1800 1800 1800 1.00 1.00 1.00 1745 0 0 1745 0 0 30 49.5 5.9 1.00 1.00 1.00 87 0 8 87 0 0 No No No No Left Right Left 0.0 0.0 0.0 1.09 1.09 1.09 14 24 Free	87 0 8 61 87 0 8 61 887 0 8 61 1800 1800 1800 1800 1.00 1.00 1.00 1.00	87 0 8 61 0 87 0 8 61 0 1800 1800 1800 1800 1800 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1745 0 0 1735 1510 0.994 1745 0 0 1735 1510 30 30 30 50 49.5 68.0 46.2 3.3 1.00 1.00 1.00 1.00 1.00 87 0 8 61 0 87 0 0 69 17 No No No No No Left Right Left Left Left 0.0 0.0 3.5 0.0 0.0 5.0 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1

Intersection Capacity Utilization 20.5% Analysis Period (min) 15

Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations	*	^	<u> </u>	^	7) T	₹
Traffic Volume (vph)	65	745	13	1449	179	186	7
Future Volume (vph)	65	745	13	1449	179	186	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	50.0	1000	110.0	0.0	10.0
Storage Lanes	1		1		1	1	10.0
Taper Length (m)	25.0		25.0			25.0	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99	0.95	1.00	0.95	0.91	0.99	0.97
Frt	0.99				0.850	0.99	0.850
	0.950		0.950		0.000	0.950	0.000
Fit Protected		2050		2246	1400		1400
Satd. Flow (prot)	1674	3252	1674	3316	1498	1674	1498
Flt Permitted	0.950	2050	0.369	2040	1057	0.950	1454
Satd. Flow (perm)	1658	3252	650	3316	1357	1659	1454
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)		22		22	179	40	3
Link Speed (k/h)		60		60		40	
Link Distance (m)		196.1		162.9		242.3	
Travel Time (s)		11.8		9.8		21.8	
Confl. Peds. (#/hr)	28				28	7	8
Confl. Bikes (#/hr)					5		8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	2%	1%	1%	1%
Adj. Flow (vph)	65	745	13	1449	179	186	7
Shared Lane Traffic (%)							
Lane Group Flow (vph)	65	745	13	1449	179	186	7
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		7.0		7.0		3.5	
Link Offset(m)		0.0		0.0		0.0	
Crosswalk Width(m)		5.0		10.0		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)	24		14		14	40	14
Number of Detectors	1	2	1	2	1	1	1
Detector Template	Left	Thru	Left	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	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)	6.1	1.8	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	O1 - LA	01. LX	ΟΙ· LΛ	- C1 · LΛ	51. LX	Ο1 · LΛ	OI · 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)	0.0	28.7	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		2.2		2.2			
Detector 2 Extend (s)	.	0.0	_	0.0	_	_	_
Turn Type	Prot	NA	Perm	NA	Perm	Perm	Perm
Protected Phases	5	2		6			
Permitted Phases		_	6	_	6	4	4
Detector Phase	5	2	6	6	6	4	4

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Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.2	33.4	33.4	33.4	33.4	40.1	40.1
Total Split (s)	17.0	99.0	82.0	82.0	82.0	41.0	41.0
Total Split (%)	12.1%	70.7%	58.6%	58.6%	58.6%	29.3%	29.3%
Maximum Green (s)	11.8	92.6	75.6	75.6	75.6	33.9	33.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.5	2.7	2.7	2.7	2.7	3.8	3.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	6.4	6.4	6.4	6.4	7.1	7.1
Lead/Lag	Lead		Lag	Lag	Lag		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		12.0	12.0	12.0	12.0	7.0	7.0
Flash Dont Walk (s)		15.0	15.0	15.0	15.0	26.0	26.0
Pedestrian Calls (#/hr)		20	20	20	20	20	20
Act Effct Green (s)	10.3	100.4	87.2	87.2	87.2	26.1	26.1
Actuated g/C Ratio	0.07	0.72	0.62	0.62	0.62	0.19	0.19
v/c Ratio	0.53	0.32	0.03	0.70	0.20	0.60	0.03
Control Delay	77.4	8.6	5.8	10.7	1.1	59.1	33.3
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	77.4	8.6	5.8	10.9	1.1	59.1	33.3
LOS	Е	Α	Α	В	Α	Е	С
Approach Delay		14.1		9.8		58.2	
Approach LOS		В		Α		Е	
Queue Length 50th (m)	16.2	40.0	0.6	91.9	0.4	41.2	8.0
Queue Length 95th (m)	30.2	49.7	m1.4	135.8	3.3	63.3	4.6
Internal Link Dist (m)		172.1		138.9		218.3	
Turn Bay Length (m)	40.0		50.0		110.0		10.0
Base Capacity (vph)	145	2331	404	2065	912	401	354
Starvation Cap Reductn	0	0	0	78	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.32	0.03	0.73	0.20	0.46	0.02

Intersection Summary

Other

Area Type: Cycle Length: 140 Actuated Cycle Length: 140

Offset: 7 (5%), Referenced to phase 2:EBT and 6:WBTU, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

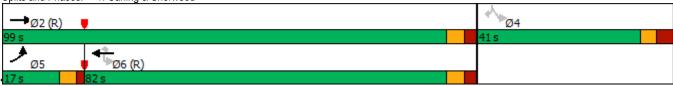
Maximum v/c Ratio: 0.70 Intersection Signal Delay: 14.6

Intersection LOS: B ICU Level of Service D

Intersection Capacity Utilization 76.8% Analysis Period (min) 15

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





	٠	→	•	•	+	•	4	†	/	/	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ř	^	7	*	^	7	ř		7	7		7
Traffic Volume (vph)	55	775	26	27	1300	71	97	0	110	146	0	199
Future Volume (vph)	55	775	26	27	1300	71	97	0	110	146	0	199
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		30.0	60.0		25.0	0.0		0.0	20.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.95	0.96		0.74	0.95		0.94	0.97		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1409	3283	1483	1658	3316	1498	1658	0	1483	1674	0	1498
Flt Permitted	0.178			0.340			0.950			0.950		
Satd. Flow (perm)	264	3283	1415	571	3316	1106	1580	0	1398	1630	0	1440
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			24			34			110			54
Link Speed (k/h)		60			60	• •		50			50	
Link Distance (m)		162.9			117.5			121.7			178.4	
Travel Time (s)		9.8			7.1			8.8			12.8	
Confl. Peds. (#/hr)	70	0.0	70	70		70	20	0.0	20	20		20
Confl. Bikes (#/hr)	. •		5			4						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 (%)	20%	3%	2%	2%	2%	1%	2%	2%	2%	1%	2%	1%
Adj. Flow (vph)	55	775	26	27	1300	71	97	0	110	146	0	199
Shared Lane Traffic (%)	00	110		_,	1000	•	01		110	110	•	100
Lane Group Flow (vph)	55	775	26	27	1300	71	97	0	110	146	0	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)	Lon	7.0	11171	_101	7.0	rugiit	_101	3.5	11101	_ 107.	3.5	1117
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	1	1	2	1	1		1	1		1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left		Right	Left		Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1		6.1	6.1		6.1
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		6.1	6.1		6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex
Detector 1 Channel	OITEX	OITEX	OITEX	OI LX	OI LX	OITEX	OIILX		OITEX	OI LX		OI · LX
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		0.0	0.0		0.0
Detector 2 Size(m)		1.8			1.8							
Detector 2 Type		CI+Ex			CI+Ex							
Detector 2 Channel		CITEX			CITEX							
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	Femil	2	FEIIII	FEIIII	1NA 6	FEIIII	Fellii		Fellii	FEIIII		Femi
Permitted Phases	2	Z	2	6	U	6	0		8	4		1
	2	2	2	6	6	6	8		8	4		4
Detector Phase	Z	2	2	0	0	0	ð		ð	4		4

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0		5.0	10.0		10.0
Minimum Split (s)	15.3	15.3	15.3	25.3	25.3	25.3	24.0		24.0	37.9		37.9
Total Split (s)	95.0	95.0	95.0	95.0	95.0	95.0	45.0		45.0	45.0		45.0
Total Split (%)	67.9%	67.9%	67.9%	67.9%	67.9%	67.9%	32.1%		32.1%	32.1%		32.1%
Maximum Green (s)	89.7	89.7	89.7	89.7	89.7	89.7	39.0		39.0	39.1		39.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0		3.0	3.3		3.3
All-Red Time (s)	1.6	1.6	1.6	1.6	1.6	1.6	3.0		3.0	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)	5.3	5.3	5.3	5.3	5.3	5.3	6.0		6.0	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
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	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None		None	None		None
Walk Time (s)				10.0	10.0	10.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)				10.0	10.0	10.0	11.0		11.0	25.0		25.0
Pedestrian Calls (#/hr)				20	20	20	20		20	20		20
Act Effct Green (s)	104.1	104.1	104.1	104.1	104.1	104.1	24.6		24.6	24.7		24.7
Actuated g/C Ratio	0.74	0.74	0.74	0.74	0.74	0.74	0.18		0.18	0.18		0.18
v/c Ratio	0.28	0.32	0.02	0.06	0.53	0.09	0.35		0.33	0.51		0.67
Control Delay	12.0	7.1	2.3	2.8	3.2	1.8	51.8		10.2	56.6		48.6
Queue Delay	0.0	0.1	0.0	0.0	0.4	0.0	0.0		0.0	0.0		0.0
Total Delay	12.0	7.2	2.3	2.8	3.6	1.8	51.8		10.2	56.6		48.6
LOS	В	Α	Α	Α	Α	Α	D		В	Е		D
Approach Delay		7.4			3.5			29.7			52.0	
Approach LOS		Α			Α			С			D	
Queue Length 50th (m)	3.0	22.0	0.3	1.0	25.5	0.7	20.5		0.0	31.8		32.6
Queue Length 95th (m)	17.7	32.7	m1.5	m1.9	28.4	2.0	35.6		14.0	51.0		56.4
Internal Link Dist (m)		138.9			93.5			97.7			154.4	
Turn Bay Length (m)	70.0		30.0	60.0		25.0				20.0		
Base Capacity (vph)	196	2441	1058	424	2466	831	440		468	455		441
Starvation Cap Reductn	0	590	0	0	599	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	115	0	0		0	0		1
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.28	0.42	0.02	0.06	0.70	0.09	0.22		0.24	0.32		0.45

Other

Area Type: Cycle Length: 140 Actuated Cycle Length: 140

Offset: 5 (4%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 12.6 Intersection Capacity Utilization 78.6%

Intersection LOS: B ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Carling & Champagne



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^			^							
Traffic Volume (vph)	0	1081	0	0	1442	0	0	0	0	0	0	0
Future Volume (vph)	0	1081	0	0	1442	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3283	0	0	3316	0	0	0	0	0	0	0
Flt Permitted				-				-	-	-	-	_
Satd. Flow (perm)	0	3283	0	0	3316	0	0	0	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		117.5			124.7			157.3			54.9	
Travel Time (s)		7.1			7.5			11.3			4.0	
Confl. Peds. (#/hr)	35				7.0	35	25	11.0	35	35	1.0	25
Confl. Bikes (#/hr)	00		11			10	20		13	00		34
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 (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	1081	0	0	1442	0	0	0	0	0	0	0
Shared Lane Traffic (%)	•	1001	•		1772	•	<u> </u>				- U	J
Lane Group Flow (vph)	0	1081	0	0	1442	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	LEIL	7.0	rtigrit	Leit	7.0	Trigit	Leit	0.0	Tagni	Leit	0.0	rtigrit
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		5.0			5.0			5.0			5.0	
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	1.09	1.09	24	1.09	1.09	24	1.03	1.09	24	1.09	1.09
Number of Detectors	24	2	14	24	2	14	24		14	24		14
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5							
Trailing Detector (m)		0.0			0.0							
Detector 1 Position(m)		0.0			0.0							
		1.8			1.8							
Detector 1 Size(m)												
Detector 1 Type		CI+Ex			Cl+Ex							
Detector 1 Channel		0.0			0.0							
Detector 1 Extend (s)		0.0			0.0							
Detector 1 Queue (s)		0.0			0.0							
Detector 1 Delay (s)		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		2.2			2.2							
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA			NA							
Protected Phases		2			6							
Permitted Phases												
Detector Phase		2			6							
Switch Phase												
Minimum Initial (s)		10.0			10.0							
Minimum Split (s)		25.1			25.1							

Lane Group	Ø4	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
FIt Protected		
Satd. Flow (prot)		
FIt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	4	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	35.6	
- F - (-)		

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Lane Group	EBL EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)	104.0			104.0							
Total Split (%)	74.3%			74.3%							
Maximum Green (s)	98.9			98.9							
Yellow Time (s)	3.7			3.7							
All-Red Time (s)	1.4			1.4							
Lost Time Adjust (s)	0.0			0.0							
Total Lost Time (s)	5.1			5.1							
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0			3.0							
Recall Mode	C-Max			C-Max							
Walk Time (s)	15.0			15.0							
Flash Dont Walk (s)	5.0			5.0							
Pedestrian Calls (#/hr)	20			20							
Act Effct Green (s)	115.6			115.6							
Actuated g/C Ratio	0.83			0.83							
v/c Ratio	0.40			0.53							
Control Delay	4.3			2.2							
Queue Delay	0.1			0.1							
Total Delay	4.5			2.4							
LOS	4.5 A			Α.4							
Approach Delay	4.5			2.4							
Approach LOS	4.5 A			2. 4 A							
Queue Length 50th (m)	38.1			27.8							
	45.7			m27.4							
Queue Length 95th (m) Internal Link Dist (m)	93.5			100.7			133.3			30.9	
	93.3			100.7			133.3			30.9	
Turn Bay Length (m)	2710			2737							
Base Capacity (vph)											
Starvation Cap Reducts	585 264			367 0							
Spillback Cap Reductn											
Storage Cap Reductn	0.54			0 01							
Reduced v/c Ratio	0.51			0.61							
Intersection Summary	0.0										
	Other										
Cycle Length: 140											
Actuated Cycle Length: 140	14 O.FDT	NAIDT OL-	4 - (0								
Offset: 108 (77%), Referenced	i to phase Z:EBT and t	i.wB1, Stai	t of Green								
Natural Cycle: 80											
Control Type: Actuated-Coordi	nated										
Maximum v/c Ratio: 0.53					00.4						
Intersection Signal Delay: 3.3	10.00/			rsection L							
Intersection Capacity Utilization	n 46.3%		ICU	Level of	Service A						
Analysis Period (min) 15 m Volume for 95th percentile	augua is matarad by	unetroom e	ianal								
	•	upsireain s	igilal.								
Splits and Phases: 3: Trillium	m Pathway & Carling										
→ Ø2 (R)							l	₹k _{Ø4}			
104 s								36 s			
←							T				
Ø6 (R)											
104 s											

Lane Group	Ø4
Total Split (s)	36.0
Total Split (%)	26%
Maximum Green (s)	29.4
Yellow Time (s)	3.0
All-Red Time (s)	3.6
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ħβ		7	44	7	7	ተ ኈ		7	1≽	
Traffic Volume (vph)	174	604	374	366	962	66	353	371	204	105	336	127
Future Volume (vph)	174	604	374	366	962	66	353	371	204	105	336	127
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98	0.97		0.98		0.89	0.98	0.97		0.97	0.98	
Frt		0.943				0.850		0.947			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3014	0	1674	3316	1427	1674	3061	0	1537	1622	0
Flt Permitted	0.950			0.950			0.094			0.436		
Satd. Flow (perm)	1571	3014	0	1649	3316	1272	163	3061	0	686	1622	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		93				132		93			13	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	53		34	34		53	60		55	55		60
Confl. Bikes (#/hr)			12			10			16			6
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 (%)	5%	3%	2%	1%	2%	6%	1%	2%	1%	10%	2%	5%
Adj. Flow (vph)	174	604	374	366	962	66	353	371	204	105	336	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	978	0	366	962	66	353	575	0	105	463	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	
2.00												

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	21.0	43.0		30.0	52.0	52.0	23.0	67.0		44.0	44.0	
Total Split (%)	15.0%	30.7%		21.4%	37.1%	37.1%	16.4%	47.9%		31.4%	31.4%	
Maximum Green (s)	14.8	37.0		23.8	46.0	46.0	16.1	60.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	14.8	37.0		23.8	46.0	46.0	60.1	60.1		37.1	37.1	
Actuated g/C Ratio	0.11	0.26		0.17	0.33	0.33	0.43	0.43		0.26	0.26	
v/c Ratio	1.02	1.13		1.29	0.88	0.13	1.45	0.42		0.58	1.05	
Control Delay	141.8	102.9		177.2	40.7	2.1	251.1	6.2		59.3	105.6	
Queue Delay	0.0	0.1		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	141.8	103.0		177.2	40.7	2.1	251.1	6.2		59.3	105.6	
LOS	F	F		F	D	Α	F	Α		Е	F	
Approach Delay		108.8			74.7			99.4			97.1	
Approach LOS		F			Е			F			F	
Queue Length 50th (m)	~40.9	~143.5		~117.3	133.2	0.0	~106.7	27.7		23.3	~126.3	
Queue Length 95th (m)	#88.5	#175.0	l	m#120.3	m124.3	m0.0	m#166.0	35.4		42.9	#188.0	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	170	864		284	1089	506	243	1367		181	439	
Starvation Cap Reductn	0	17		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.02	1.15		1.29	0.88	0.13	1.45	0.42		0.58	1.05	

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

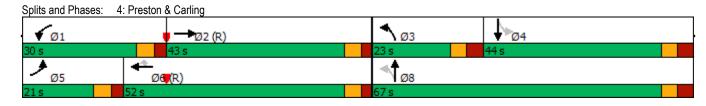
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.45 Intersection Signal Delay: 93.2 Intersection Capacity Utilization 126.0%

Intersection LOS: F
ICU Level of Service H

Analysis Period (min) 15

- Volume exceeds capacity, queue is theoretically infinite.
- Queue shown is maximum after two cycles.
- # 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.



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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	ሻ	^	<u> </u>	7	<u> </u>	<u> </u>
Traffic Volume (vph)	255	724	987	104	308	324
Future Volume (vph)	255	724	987	104	308	324
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0	1000	1000	25.0	0.0	45.0
Storage Lanes	1			1	1	1
Taper Length (m)	25.0				10.0	-
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.30	1.00	0.79	0.98	0.75
Frt	0.53			0.79	0.30	0.75
Flt Protected	0.950			0.030	0.950	0.000
	1674	3316	1745	1498	1674	1483
Satd. Flow (prot)		3310	1745	1498		1483
Flt Permitted	0.950	2240	1715	1101	0.950	1117
Satd. Flow (perm)	1594	3316	1745	1181	1647	1117
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)		22	^^	25		263
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1		16.5	
Confl. Peds. (#/hr)	65			65	13	81
Confl. Bikes (#/hr)				10		45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%	1%	1%	2%
Adj. Flow (vph)	255	724	987	104	308	324
Shared Lane Traffic (%)						
Lane Group Flow (vph)	255	724	987	104	308	324
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)		7.0	7.0	J	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		•	2.0			
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	1.00	1.00	14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1
	0.0	0.0	0.0	0.1	0.0	0.1
Trailing Detector (m)						
Detector 1 Position(m)	0.0 6.1	0.0 1.8	0.0 1.8	0.0 6.1	0.0 6.1	0.0 6.1
Detector 1 Size(m)						
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
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	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases				6	4	4
Detector Phase	5	2	6	6	4	4
	_	_	•	•	•	•

Switch Phase Minimum Initial (s) 5.0 10.0 39.0 <th< th=""><th></th><th>•</th><th>-</th><th>•</th><th>•</th><th>-</th><th>4</th></th<>		•	-	•	•	-	4
Minimum Initial (s) 5.0 10.0 37 37 39.0 30.0 30.0 30.0	Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s) 10.9 15.7 29.7 29.7 39.0 39.0 Total Split (s) 24.0 101.0 77.0 77.0 39.0 39.0 Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 3.7 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Lost Time Adjust (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 <t< td=""><td>Switch Phase</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Switch Phase						
Minimum Split (s) 10.9 15.7 29.7 29.7 39.0 39.0 Total Split (s) 24.0 101.0 77.0 77.0 39.0 39.0 Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 3.7 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Iotal Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lead Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max None None None None <t< td=""><td>Minimum Initial (s)</td><td>5.0</td><td>10.0</td><td>10.0</td><td>10.0</td><td>10.0</td><td>10.0</td></t<>	Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Total Split (s) 24.0 101.0 77.0 77.0 39.0 39.0 Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 2.2 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lead Lag Optimize? Vehicle Extension (s) 3.0	Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (%) 17.1% 72.1% 55.0% 55.0% 27.9% 27.9% Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 3.7 3.7 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 <td>Total Split (s)</td> <td>24.0</td> <td>101.0</td> <td>77.0</td> <td>77.0</td> <td>39.0</td> <td>39.0</td>	Total Split (s)	24.0	101.0	77.0	77.0	39.0	39.0
Maximum Green (s) 18.1 95.3 71.3 71.3 33.0 33.0 Yellow Time (s) 3.7 3.7 3.7 3.7 3.7 3.3 3.3 All-Red Time (s) 2.2 2.0 2.0 2.0 2.7 2.7 Lost Time Adjust (s) 0.0	Total Split (%)	17.1%	72.1%	55.0%	55.0%	27.9%	27.9%
All-Red Time (s) Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Maximum Green (s)	18.1	95.3	71.3	71.3	33.0	33.0
All-Red Time (s) Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None C-Max C-Max C-Max None		2.2	2.0	2.0	2.0	2.7	2.7
Total Lost Time (s) 5.9 5.7 5.7 5.7 6.0 6.0 Lead/Lag Lead Lag Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.0</td> <td></td>						0.0	
Lead/Lag Lead Lag Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0					5.7	6.0	
Lead-Lag Optimize? Vehicle Extension (s) 3.0							
Vehicle Extension (s) 3.0 7.0 7.0 1.0 3.0					- 5		
Recall Mode None C-Max C-Max C-Max None None Walk Time (s) 13.0 13.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effet Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.01 0.31 1.11 0.17 0.88 0.73 Control Delay 86.9 6.6 98.8 14.7 77.9 20.8 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.9 6.6 98.8 14.7 77.9 20.8 LOS F A F B E C Approach LOS C F D D Queue Length 50th (m) ~75.8 49.3	• .	3.0	3.0	3.0	3.0	3.0	3.0
Walk Time (s) 13.0 13.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.01 0.31 1.11 0.17 0.88 0.73 Control Delay 86.9 6.6 98.8 14.7 77.9 20.8 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.9 6.6 98.8 14.7 77.9 20.8 LOS F A F B E C Approach Delay 27.5 90.7 48.6 A Approach LOS C F D D Queue Length 50th (m) ~75.8 49.3 ~287.1 10.3 74.4 12.7 Queue Length 95th (m) m#85.3							
Flash Dont Walk (s) 11.0 11.0 26.0 26.0 Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.21 0.21 0.21 v/c Ratio 1.01 0.31 1.11 0.17 0.88 0.73 Control Delay 86.9 6.6 98.8 14.7 77.9 20.8 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.9 6.6 98.8 14.7 77.9 20.8 LOS F A F B E C Approach Delay 27.5 90.7 48.6 A A A B E C Approach LOS C F D D D A A A B E C C F							
Pedestrian Calls (#/hr) 20 20 20 20 Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.01 0.31 1.11 0.17 0.88 0.73 Control Delay 86.9 6.6 98.8 14.7 77.9 20.8 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.9 6.6 98.8 14.7 77.9 20.8 LOS F A F B E C Approach Delay 27.5 90.7 48.6 A6.6 Approach LOS C F D D Queue Length 50th (m) ~75.8 49.3 ~287.1 10.3 74.4 12.7 Queue Length 95th (m) m#85.3 m48.6 #359.6 20.3 #113.7 47.2	,				11.0	26.0	26.0
Act Effct Green (s) 21.2 98.4 71.3 71.3 29.9 29.9 Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.01 0.31 1.11 0.17 0.88 0.73 Control Delay 86.9 6.6 98.8 14.7 77.9 20.8 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.9 6.6 98.8 14.7 77.9 20.8 LOS F A F B E C Approach Delay 27.5 90.7 48.6 48.6 Approach LOS C F D D Queue Length 50th (m) ~75.8 49.3 ~287.1 10.3 74.4 12.7 Queue Length 95th (m) m#85.3 m48.6 #359.6 20.3 #113.7 47.2 Internal Link Dist (m) 96.9 494.9 205.0 45.0 Base Capacity (vph) 253 2330 888 613 388	()			20		20	
Actuated g/C Ratio 0.15 0.70 0.51 0.51 0.21 0.21 v/c Ratio 1.01 0.31 1.11 0.17 0.88 0.73 Control Delay 86.9 6.6 98.8 14.7 77.9 20.8 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.9 6.6 98.8 14.7 77.9 20.8 LOS F A F B E C Approach Delay 27.5 90.7 48.6 A8.6 A9.3 ~287.1 10.3 74.4 12.7 A7.2 A1.0 A1.0 A1.0 A1.0 A1.0 A1.0	. ,	21.2	98.4				29.9
v/c Ratio 1.01 0.31 1.11 0.17 0.88 0.73 Control Delay 86.9 6.6 98.8 14.7 77.9 20.8 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.9 6.6 98.8 14.7 77.9 20.8 LOS F A F B E C Approach Delay 27.5 90.7 48.6 A6.6 Approach LOS C F D D Queue Length 50th (m) ~75.8 49.3 ~287.1 10.3 74.4 12.7 Queue Length 95th (m) m#85.3 m48.6 #359.6 20.3 #113.7 47.2 Internal Link Dist (m) 96.9 494.9 205.0 45.0 Base Capacity (vph) 253 2330 888 613 388 464 Starvation Cap Reductn 0 0 0 0 0 0 Storage Cap Reduc	()						0.21
Control Delay 86.9 6.6 98.8 14.7 77.9 20.8 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 86.9 6.6 98.8 14.7 77.9 20.8 LOS F A F B E C Approach Delay 27.5 90.7 48.6 A A A B E C Approach LOS C F D D D C F D D C F D D C F D D C F A 12.7 Queue Length 50th (m) 75.8 49.3 ~287.1 10.3 74.4 12.7 Queue Length 95th (m) m#85.3 m48.6 #359.6 20.3 #113.7 47.2 Internal Link Dist (m) 96.9 494.9 205.0 25.0 45.0 A 45.0 A A A 46.4 A A	v/c Ratio						0.73
Queue Delay 0.0 <th< td=""><td>Control Delay</td><td></td><td>6.6</td><td>98.8</td><td>14.7</td><td>77.9</td><td>20.8</td></th<>	Control Delay		6.6	98.8	14.7	77.9	20.8
Total Delay 86.9 6.6 98.8 14.7 77.9 20.8 LOS F A F B E C Approach Delay 27.5 90.7 48.6 Approach LOS C F D Queue Length 50th (m) ~75.8 49.3 ~287.1 10.3 74.4 12.7 Queue Length 95th (m) m#85.3 m48.6 #359.6 20.3 #113.7 47.2 Internal Link Dist (m) 96.9 494.9 205.0 25.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 464 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			0.0		0.0	0.0	0.0
LOS F A F B E C Approach Delay 27.5 90.7 48.6 Approach LOS C F D Queue Length 50th (m) ~75.8 49.3 ~287.1 10.3 74.4 12.7 Queue Length 95th (m) m#85.3 m48.6 #359.6 20.3 #113.7 47.2 Internal Link Dist (m) 96.9 494.9 205.0 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 464 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		86.9		98.8		77.9	
Approach Delay 27.5 90.7 48.6 Approach LOS C F D Queue Length 50th (m) ~75.8 49.3 ~287.1 10.3 74.4 12.7 Queue Length 95th (m) m#85.3 m48.6 #359.6 20.3 #113.7 47.2 Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 464 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	LOS						
Approach LOS C F D Queue Length 50th (m) ~75.8 49.3 ~287.1 10.3 74.4 12.7 Queue Length 95th (m) m#85.3 m48.6 #359.6 20.3 #113.7 47.2 Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 464 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							
Queue Length 50th (m) ~75.8 49.3 ~287.1 10.3 74.4 12.7 Queue Length 95th (m) m#85.3 m48.6 #359.6 20.3 #113.7 47.2 Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 464 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				F		D	
Queue Length 95th (m) m#85.3 m48.6 #359.6 20.3 #113.7 47.2 Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 464 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		~75.8		~287.1	10.3		12.7
Internal Link Dist (m) 96.9 494.9 205.0 Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 464 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 O	• ,	m#85.3	m48.6		20.3	#113.7	47.2
Turn Bay Length (m) 75.0 25.0 45.0 Base Capacity (vph) 253 2330 888 613 388 464 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	• ,						
Base Capacity (vph) 253 2330 888 613 388 464 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		75.0			25.0		45.0
Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0			2330	888	613	388	464
Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0			0	0		0	
Storage Cap Reductn 0 0 0 0 0		0	0	0	0	0	0
		0	0	0	0	0	0
	Reduced v/c Ratio	1.01	0.31	1.11	0.17	0.79	0.70

Area Type: Other

Cycle Length: 140 Actuated Cycle Length: 140

Offset: 62 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11 Intersection Signal Delay: 58.0 Intersection Capacity Utilization 111.3%

Intersection LOS: E
ICU Level of Service H

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

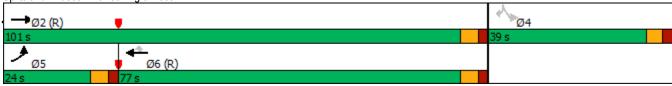
Queue shown is maximum after two cycles.

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: 5: Carling & Booth



	۶	→	•	•	—	4	1	†	/	/	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			ની	7	ř	f.		7	ĵ.	
Traffic Volume (vph)	29	41	34	42	121	31	82	463	57	17	487	54
Future Volume (vph)	29	41	34	42	121	31	82	463	57	17	487	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	15.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (m)	25.0			20.0			20.0			20.0		
Lane Util. 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
Ped Bike Factor		0.93			0.97	0.84	0.97	0.98		0.94	0.99	
Frt		0.956			0.0.	0.850	0.0.	0.984			0.985	
Flt Protected		0.986			0.987		0.950			0.950		
Satd. Flow (prot)	0	1584	0	0	1739	1498	1674	1676	0	1674	1670	0
Flt Permitted		0.875	•		0.904		0.413		•	0.426		•
Satd. Flow (perm)	0	1374	0	0	1553	1261	703	1676	0	709	1670	0
Right Turn on Red	· ·	107 1	Yes	V	1000	Yes	700	1070	Yes	100	1070	Yes
Satd. Flow (RTOR)		24	100			31		16	100		14	100
Link Speed (k/h)		50			50	01		50			50	
Link Distance (m)		101.4			151.8			160.5			163.2	
Travel Time (s)		7.3			10.9			11.6			11.8	
Confl. Peds. (#/hr)	40	1.5	46	46	10.5	40	52	11.0	80	80	11.0	52
Confl. Bikes (#/hr)	40		2	+0		20	JZ		11	00		18
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	1.00	1.00	1.00	1.00	1.00	1.00	3%	1.00	1.00	4%	2%
Adj. Flow (vph)	29	41	34	42	121	31	82	463	57	170	487	54
Shared Lane Traffic (%)	29	41	J 4	42	121	31	02	403	31	17	407	34
Lane Group Flow (vph)	0	104	0	0	163	31	82	520	0	17	541	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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		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	0.0	
Detector 1 Queue (s)	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	
Detector 2 Position(m)	0.0	28.7		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			CI+Ex			CI+Ex	
Detector 2 Channel		OIILX			OIILX			OITEX			OIILX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	reiiil	1NA 4		1 61111	NA 8	ı elili	i eiiii	2		i Cilli	1NA 6	
Permitted Phases	1	4		8	0	8	2	2		6	U	
Detector Phase	4	4		8	8	8	2	2		6	6	
Detector Friase	4	4		0	0	0		Z		O	0	

PM Peak Hour											2028 Tota	al Traffi
	•	-	•	•	•	•	4	†	/	-	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	67.0	67.0		67.0	67.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%	25.6%	74.4%	74.4%		74.4%	74.4%	
Maximum Green (s)	17.4	17.4		17.4	17.4	17.4	61.5	61.5		61.5	61.5	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped	Ped	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	20	20		20	20	20	20	20		20	20	
Act Effct Green (s)		17.1			17.1	17.1	61.8	61.8		61.8	61.8	
Actuated g/C Ratio		0.19			0.19	0.19	0.69	0.69		0.69	0.69	
v/c Ratio		0.37			0.55	0.12	0.17	0.45		0.03	0.47	
Control Delay		28.8			41.1	12.2	2.5	4.6		4.8	8.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		28.8			41.1	12.2	2.5	4.6		4.8	8.0	
LOS		С			D	В	Α	Α		Α	Α	
Approach Delay		28.8			36.5			4.3			7.9	
Approach LOS		С			D			А			Α	
Queue Length 50th (m)		11.1			23.7	0.0	2.6	33.8		8.0	33.4	
Queue Length 95th (m)		24.5			41.6	6.6	0.5	1.8		2.6	52.2	
Internal Link Dist (m)		77.4			127.8			136.5			139.2	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		285			300	268	482	1156		486	1151	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.36			0.54	0.12	0.17	0.45		0.03	0.47	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 43 (48%), Reference	ed to phase 2:N	BTL and 6	:SBTL, Sta	art of Gree	n							
Natural Cycle: 60												
Control Type: Actuated-Cod	ordinated											
Maximum v/c Ratio: 0.55												
Internacion Cianal Delevi 4	4 7			1		L 00. D						

Intersection Signal Delay: 11.7
Intersection Capacity Utilization 86.1%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service E

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4						44			44	
Traffic Volume (vph)	4	2	10	0	0	0	8	559	27	6	560	15
Future Volume (vph)	4	2	10	0	0	0	8	559	27	6	560	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor		0.92						0.99			1.00	
Frt		0.916						0.994			0.997	
Flt Protected		0.988						0.999			0.999	
Satd. Flow (prot)	0	1494	0	0	0	0	0	1709	0	0	1717	0
Flt Permitted		0.988						0.993			0.995	
Satd. Flow (perm)	0	1466	0	0	0	0	0	1698	0	0	1710	0
Right Turn on Red		1400	Yes	<u> </u>	- U	Yes	•	1000	Yes		1710	Yes
Satd. Flow (RTOR)		10	163			163		7	163		4	163
		50			50			50			50	
Link Speed (k/h) Link Distance (m)		114.6			152.9			73.8			160.5	
Travel Time (s)		8.3			11.0			5.3			11.6	
\ ,	25	0.3	27	27	11.0	O.E.	46	5.3	47	47	11.0	46
Confl. Peds. (#/hr)	25			21		25	40			47		
Confl. Bikes (#/hr)	4.00	4.00	1	4.00	4.00	3	4.00	4.00	21	4.00	4.00	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%	1%	1%	2%	2%	2%	1%	3%	1%	1%	3%	1%
Adj. Flow (vph)	4	2	10	0	0	0	8	559	27	6	560	15
Shared Lane Traffic (%)			•									
Lane Group Flow (vph)	0	16	0	0	0	0	0	594	0	0	581	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		-2.0			-1.0			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	
Detector Template	Left	Thru					Left	Thru		Left	Thru	
Leading Detector (m)	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	
Detector 1 Position(m)	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	
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						28.7			28.7	
Detector 2 Size(m)		1.8						1.8			1.8	
Detector 2 Type		CI+Ex						CI+Ex			CI+Ex	
Detector 2 Channel		V/\						V/.			V/.	
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases	1 01111	4					1 01111	2		i Gilli	6	
Permitted Phases	4	7					2			6	U	
Detector Phase	4	4					2	2		6	6	
Switch Phase	4	4								Ö	Ö	
	40.0	10.0					10.0	10.0		10.0	10.0	
Minimum Initial (s)	10.0	10.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)	21.0	21.0					69.0	69.0		69.0	69.0	
Total Split (%)	23.3%	23.3%					76.7%	76.7%		76.7%	76.7%	
Maximum Green (s)	15.5	15.5					63.9	63.9		63.9	63.9	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0					18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	8.0	8.0					5.0	5.0		5.0	5.0	
		20						20				
Pedestrian Calls (#/hr)	20						20	75.6		20	20	
Act Effct Green (s)		12.0									75.6	
Actuated g/C Ratio		0.13						0.84			0.84	
v/c Ratio		0.08						0.42			0.40	
Control Delay		21.9						4.8			3.6	
Queue Delay		0.0						0.0			0.0	
Total Delay		21.9						4.8			3.6	
LOS		С						Α			Α	
Approach Delay		21.9						4.8			3.6	
Approach LOS		С						Α			Α	
Queue Length 50th (m)		0.9						25.5			20.6	
Queue Length 95th (m)		5.8						52.2			32.4	
Internal Link Dist (m)		90.6			128.9			49.8			136.5	
Turn Bay Length (m)												
Base Capacity (vph)		260						1428			1437	
Starvation Cap Reductn		0						0			84	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.06						0.42			0.43	
Intersection Summary		0.00						0.12			0.10	
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 27 (30%), Referenced	to phase 2:N	RTI and 6	SRTI Sta	rt of Greer	1							
Natural Cycle: 55	10 prid30 2.14	DIL ana o.	ODTE, Ola	it or order	1							
Control Type: Actuated-Coord	dinated											
Maximum v/c Ratio: 0.42	iliateu											
				اسا		I OC. A						
Intersection Signal Delay: 4.4					tersection)					
Intersection Capacity Utilization	JII 37.8%			IC	U Level of	Service E						
Analysis Period (min) 15												
Splits and Phases: 7: Prest	ton & Pamilla											
ø2 (R)				_					12	73.4		
1 102 (K)										דש		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			€			4			4	
Traffic Volume (vph)	19	4	17	22	2	17	22	513	48	22	598	5
Future Volume (vph)	19	4	17	22	2	17	22	513	48	22	598	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor												
Frt		0.943			0.944			0.989			0.999	
Flt Protected		0.977			0.974			0.998			0.998	
Satd. Flow (prot)	0	1608	0	0	1605	0	0	1708	0	0	1724	0
FIt Permitted		0.977			0.974			0.998			0.998	
Satd. Flow (perm)	0	1608	0	0	1605	0	0	1708	0	0	1724	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.6			154.3			71.5			73.8	
Travel Time (s)		8.2			11.1			5.1			5.3	
Confl. Peds. (#/hr)							46		47	47		46
Confl. Bikes (#/hr)									21			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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Adj. Flow (vph)	19	4	17	22	2	17	22	513	48	22	598	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	41	0	0	583	0	0	625	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0	Ţ,		0.0	, i		0.0	, i		0.0	J
Link Offset(m)		-2.0			-2.0			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
Sign Control		Stop			Stop			Free			Free	

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 52.6%
Analysis Period (min) 15

ICU Level of Service A

Synchro 10 Report J.Audia, Novatech

	۶	\rightarrow	4	†	ļ	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			414	f.	
Traffic Volume (vph)	26	35	51	557	533	68
Future Volume (vph)	26	35	51	557	533	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.923				0.985	
Flt Protected	0.979			0.996		
Satd. Flow (prot)	1577	0	0	3273	1704	0
Flt Permitted	0.979			0.996		
Satd. Flow (perm)	1577	0	0	3273	1704	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			46			47
Confl. Bikes (#/hr)						14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	3%	3%	2%
Adj. Flow (vph)	26	35	51	557	533	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	0	608	601	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	J .
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	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	Stop		_,	Free	Free	- 1
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

ICU Level of Service C

Control Type: Unsignalized Intersection Capacity Utilization 66.0% Analysis Period (min) 15

Synchro 10 Report J.Audia, Novatech

		٠	→	•	•	+	•	1	†	~	/	+	-√
Traffic Volume (vph)	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	Lane Configurations	16.5%	î,		7	•	7		43-			ની	7
Ideal Flow (ynhph)				4			432	5		1	415		
Ideal Flow (yrubpi)	Future Volume (vph)	472	280	4	2	416	432	5	2	1	415	0	646
Storage Length (m) 55.0		1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Lanes	Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Taper Length (m)		2		0	1		1	0		0	0		
Lane Util. Factor	Taper Length (m)	25.0			25.0			25.0			25.0		
Fit Protected 0.998 0.950 0.950 0.970 0.950 0.950 0.970 0.950 0.970 0.950 0.950 0.970 0.950 0.950 0.970 0.950 0.	Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fil Principated 0.950 0.	Ped Bike Factor		1.00		0.89		0.93		0.93			0.81	0.77
Sata Flow (pront) 3185 1754 0 1674 1762 1498 0 1637 0 0 1674 1483	Frt		0.998				0.850		0.983				0.850
FILP Emitted 0.225 0.586 0.581 0.752 Static Flow (perm) 754 1754 0 917 1762 1397 0 1373 0 0 0 177 1144 Right Turn on Red Yes Yes 164 1 1 88 Static Flow (FRTOR) 1 1 1 164 1 1 88 Static Flow (FRTOR) 1 1 1 164 1 1 164 1 1 164 1	Flt Protected	0.950			0.950				0.970			0.950	
Satis Flow (perm) 754 1754 0 917 1762 1397 0 1373 0 0 1077 1144	Satd. Flow (prot)		1754	0		1762	1498	0		0	0	1674	1483
Right Turn on Red	Flt Permitted	0.225			0.586				0.851			0.752	
Satt Flow (RTOR)		754	1754		917	1762	1397	0	1373		0	1077	
Link Speed (k/h)	Right Turn on Red			Yes			Yes			Yes			
Link Distance (m)	Satd. Flow (RTOR)						164						88
Travel Time (S)	Link Speed (k/h)					60							
Conf. Peds. (#hr)	Link Distance (m)		233.9			203.3			76.1			164.5	
Peak Hour Factor	Travel Time (s)		14.0			12.2			5.5			11.8	
Heavy Vehicles (%)	Confl. Peds. (#/hr)	35		62	62		35	73		65	65		73
Adj. Flow (vph)	Peak Hour Factor	1.00	1.00		1.00		1.00		1.00	1.00	1.00	1.00	
Shared Lane Traffic (%) Lane Group Flow (vph) 472 284 0 2 416 432 0 8 0 0 415 646 Enter Blocked Intersection No No No No No No No	Heavy Vehicles (%)	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%
Lane Group Flow (vph)	Adj. Flow (vph)	472	280	4	2	416	432	5	2	1	415	0	646
Enter Blocked Intersection No No No No No No No	Shared Lane Traffic (%)												
Left Left Left Right Left Right Left Right Left Right Left Left Right Right Left Right Right Redian Width(m) 7.0	Lane Group Flow (vph)	472	284	0	2	416	432	0	8	0	0	415	646
Median Width(m) 7.0 7.0 0.0 5.0 0.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 5.0 5.0 Crosswalk Width(m) 5.0 5.0 5.0 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09	Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Link Offset(m) 2.0 0.0 5.0	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Troops	Median Width(m)		7.0			7.0			0.0			3.5	
Two way Left Turn Lane Headway Factor 1.09	Link Offset(m)					0.0			5.0			0.0	
Headway Factor 1.09	Crosswalk Width(m)		5.0			10.0			5.0			5.0	
Turning Speed (k/h) 24	Two way Left Turn Lane												
Number of Detectors	Headway Factor		1.09	1.09		1.09			1.09	1.09		1.09	1.09
Detector Template	Turning Speed (k/h)	24		14	24		14	24		14	24		14
Leading Detector (m) 6.1 30.5 6.1 30.0 0	Number of Detectors		2		1	2	1		2		1	2	1
Trailing Detector (m) 0.0	Detector Template				Left		Right						Right
Detector 1 Position(m) 0.0	Leading Detector (m)							6.1					
Detector 1 Size(m)													
Detector 1 Type CI+Ex	Detector 1 Position(m)	0.0				0.0							0.0
Detector 1 Channel Detector 1 Extend (s) 0.0													
Detector 1 Extend (s) 0.0		CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	CI+Ex
Detector 1 Queue (s) 0.0													
Detector 1 Delay (s) 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 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 pm+pt NA Perm NA Perm NA Perm NA Perm NA Perm NA pm+ov Perm NA pm+ov Permitted Phases 5 2 6 6 8 4 4 4 Detector Phase 5 2 6 6 8 8 4 4 5	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 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 0.0 Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+ov Protected Phases 5 2 6 8 4 4 5 Permitted Phases 2 6 6 8 8 4 4 5 Detector Phase 5 2 6 6 8 8 4 4 5	Detector 1 Delay (s)	0.0			0.0		0.0	0.0			0.0		0.0
Detector 2 Type CI+Ex	Detector 2 Position(m)												
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA Perm NA pm+ov Protected Phases 5 2 6 8 4 5 Permitted Phases 2 6 6 8 4 4 4 Detector Phase 5 2 6 6 8 8 4 4 5	Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+ov NA Perm NA Perm NA Perm NA Perm NA Perm NA NA Perm NA NA NA <t< td=""><td>Detector 2 Type</td><td></td><td>CI+Ex</td><td></td><td></td><td>CI+Ex</td><td></td><td></td><td>CI+Ex</td><td></td><td></td><td>CI+Ex</td><td></td></t<>	Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+ov Protected Phases 5 2 6 8 4 5 Permitted Phases 2 6 6 8 4 4 4 Detector Phase 5 2 6 6 8 8 4 4 5	Detector 2 Channel												
Protected Phases 5 2 6 8 4 5 Permitted Phases 2 6 6 8 4 4 4 Detector Phase 5 2 6 6 8 8 4 4 5	Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Permitted Phases 2 6 6 8 4 4 Detector Phase 5 2 6 6 8 8 4 4 5	Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Detector Phase 5 2 6 6 6 8 8 4 4 5	Protected Phases		2			6			8			4	
Detector Phase 5 2 6 6 6 8 8 4 4 5	Permitted Phases	2			6		6	8			4		4
	Detector Phase	5	2		6	6			8			4	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	37.0	79.0		42.0	42.0	42.0	61.0	61.0		61.0	61.0	37.0
Total Split (%)	26.4%	56.4%		30.0%	30.0%	30.0%	43.6%	43.6%		43.6%	43.6%	26.4%
Maximum Green (s)	30.9	72.9		35.9	35.9	35.9	55.5	55.5		55.5	55.5	30.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	72.9	72.9		44.6	44.6	44.6		55.5			55.5	77.1
Actuated g/C Ratio	0.52	0.52		0.32	0.32	0.32		0.40			0.40	0.55
v/c Ratio	0.61	0.31		0.01	0.74	0.78		0.01			0.97	0.89
Control Delay	22.5	20.3		38.0	53.2	38.1		24.4			43.9	12.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.1
Total Delay	22.5	20.3		38.0	53.2	38.1		24.4			43.9	12.1
LOS	С	С		D	D	D		С			D	В
Approach Delay		21.7			45.5			24.4			24.5	
Approach LOS		С			D			С			С	
Queue Length 50th (m)	33.9	40.2		0.3	92.6	63.3		1.1			93.0	57.6
Queue Length 95th (m)	44.1	58.1		2.5	#159.3	#128.6		4.4			m63.9	m21.4
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	929	913		291	560	556		544			426	809
Starvation Cap Reductn	0	0		0	0	0		0			0	6
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	0.51	0.31		0.01	0.74	0.78		0.01			0.97	0.80

Other Area Type:

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 53 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.97 Intersection Signal Delay: 30.4 Intersection Capacity Utilization 105.1%

Intersection LOS: C ICU Level of Service G

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: 10: Prince of Wales/Queen Elizabeth & Preston



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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	¥	
Traffic Volume (vph)	47	0	18	101	0	14
Future Volume (vph)	47	0	18	101	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.992		
Satd. Flow (prot)	1745	0	0	1731	1510	0
Flt Permitted				0.992		
Satd. Flow (perm)	1745	0	0	1731	1510	0
Link Speed (k/h)	30			30	50	
Link Distance (m)	49.5			68.0	48.5	
Travel Time (s)	5.9			8.2	3.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	47	0	18	101	0	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	119	14	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	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						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

Intersection Capacity Utilization 23.3% Analysis Period (min) 15 ICU Level of Service A

Synchro 10 Report J.Audia, Novatech

Bane Group		۶	→	F	•	•	-	4
Lane Configurations	Lane Group	FBI	FBT	WBU	WBT	WBR	SBI	SBR
Traffic Volume (vph)								
Future Volume (vph)								
Ideal Flow (yphpl)								
Storage Length (m)								
Storage Lanes			1000		1000			
Taper Length (m)								
Lane Util. Factor				-				1
Ped Bike Factor			0.05		0.05	1.00		1.00
Fit Protected 0.950 0.950 0.950 0.950 Satd. Flow (prot) 1642 3283 1674 3161 1483 1674 1498 Flt Permitted 0.950 0.358 0.950 0.950 Satd. Flow (perm) 1590 3283 631 3161 1328 1615 1425 (Flght Turn on Red 145 3281 145 145 145 145 145 145 145 145 145 14			0.95	1.00	0.95			
Fit Protected		0.97					0.90	
Satd. Flow (prot) 1642 3283 1674 3161 1483 1674 1498 FIF Permitted 0.950 0.358 0.950		0.050		0.050		0.000	0.050	0.000
Fit Permitted			2002		2464	1400		1.400
Satd. Flow (perm) 1590 3283 631 3161 1328 1615 1425 Right Turn on Red Yes Yes Yes Satd. Flow (RTOR) 145 3 Link Speed (k/h) 60 60 40 Link Distance (m) 196.1 162.9 242.3 Travel Time (s) 11.8 9.8 21.8 Confl. Peds. (#/hr) 30 30 30 30 Confl. Bikes (#/hr) 30 17 17 3 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 3% 3% 1% 7% 2% 1% 117 5 Shared Lane Traffic (%) 31 774 13 591 145 177 5 Shared Lane Traffic (%) 31 774 13 591 145 177 5 Shared Lane Traffic (%) 31 774 13 591 145 177 5 Shared Lane Traffic (%) 31 774 13 591 145 177 5 Shared Lane Traffic (%) 31 774 13 591 145 177 5 Shared Lane Traffic (%) 31 774 13 591 145 177 5 Shared Lane Traffic (%) 31 774 13 591 145 177 5 Shared Lane Traffic (%) 31 774 13 591 145 177 5 Shared Lane Traffic (%) 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	,, ,		3283		3101	1483		1490
Right Turn on Red Yes Yes Satd. Flow (RTOR) 145 3 3 3 3 3 3 3 3 3			2002		2404	4000		1405
Satd. Flow (RTOR) 145 3 Link Speed (k/h) 60 60 40 Link Distance (m) 196.1 162.9 242.3 Travel Time (s) 11.8 9.8 21.8 Confl. Peds. (#/hr) 30 30 30 30 Confl. Peds. (#/hr) 100 1.00		1590	3283	631	3161		1615	
Link Speed (k/h)								
Link Distance (m) 196.1 162.9 242.3 Travel Time (s) 11.8 9.8 21.8 Confl. Peds. (#hrr) 30 30 30 30 Confl. Bikes (#hrr) 17 3 30 30 30 Peak Hour Factor 1.00 No					^^	145	4.0	3
Travel Time (s)								
Confi. Peds. (#/hr) 30 30 30 30 Confi. Bikes (#/hr) 17 3 Peak Hour Factor 1.00 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% No No <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Confl. Bikes (#/hr)			11.8		9.8			
Peak Hour Factor		30					30	
Heavy Vehicles (%) 3% 3% 1% 7% 2% 1% 1% Adj. Flow (vph) 31 774 13 591 145 177 5 5 5 5 5 6 6 6 4 4 4 4 4 4 4								
Adj. Flow (vph) 31 774 13 591 145 177 5 Shared Lane Traffic (%) Lane Group Flow (vph) 31 774 13 591 145 177 5 Enter Blocked Intersection No								
Shared Lane Traffic (%) Lane Group Flow (vph) 31 774 13 591 145 177 5								
Lane Group Flow (vph) 31 774 13 591 145 177 5 Enter Blocked Intersection No No <t< td=""><td></td><td>31</td><td>774</td><td>13</td><td>591</td><td>145</td><td>177</td><td>5</td></t<>		31	774	13	591	145	177	5
Enter Blocked Intersection								
Lane Alignment Left Left R NA Left Right L NA R NA Median Width(m) 7.0 7.0 3.5 Link Offset(m) 0.0 0.0 0.0 0.0 Crosswalk Width(m) 5.0 10.0 5.0 1.09 Two way Left Turn Lane 1.09	Lane Group Flow (vph)		774		591		177	
Median Width(m) 7.0 7.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane 1.09 <td></td> <td>No</td> <td></td> <td></td> <td>No</td> <td></td> <td></td> <td></td>		No			No			
Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Lane Alignment	Left		R NA	Left	Right		R NA
Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane 1.09 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Median Width(m)							
Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane 1.09 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			0.0		0.0		0.0	
Two way Left Turn Lane Headway Factor 1.09			5.0		10.0		5.0	
Headway Factor 1.09								
Turning Speed (k/h) 24 14 14 40 14 Number of Detectors 1 2 1 2 1 1 1 Detector Template Left Thru Left Thru Right Left Right Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 6.1 6.1 Trailing Detector (m) 0.0 </td <td></td> <td>1.09</td> <td>1.09</td> <td>1.09</td> <td>1.09</td> <td>1.09</td> <td>1.09</td> <td>1.09</td>		1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors 1 2 1 2 1 1 1 Detector Template Left Thru Left Thru Right Left Right Leading Detector (m) 6.1 30.5 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 <								
Detector Template			2		2			
Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 6.1 6.1 Trailing Detector (m) 0.0				Left		Right		Right
Trailing Detector (m) 0.0	•							
Detector 1 Position(m) 0.0								
Detector 1 Size(m) 6.1 1.8 6.1 1.8 6.1 6.1 6.1 Detector 1 Type CI+Ex								
Detector 1 Type CI+Ex								
Detector 1 Channel Detector 1 Extend (s) 0.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Detector 1 Extend (s) 0.0		O1 · LA	OI. LA	ΟΙ· LΛ	- C1 · LΛ	51. LX	Ο1 · LΛ	OI. LX
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	. ,							
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 Prot NA Perm NA Perm Perm Protected Phases 5 2 6 6 4 4								
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 Perm Perm <td< td=""><td></td><td>0.0</td><td></td><td>0.0</td><td></td><td>0.0</td><td>0.0</td><td>0.0</td></td<>		0.0		0.0		0.0	0.0	0.0
Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA Perm NA Perm Perm Protected Phases 5 2 6 6 4 4 Permitted Phases 6 6 4 4								
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA Perm NA Perm Perm <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA Perm NA Perm Perm <td></td> <td></td> <td>UI+EX</td> <td></td> <td>CI+EX</td> <td></td> <td></td> <td></td>			UI+EX		CI+EX			
Turn TypeProtNAPermNAPermPermPermProtected Phases526Permitted Phases6644			0.0		0.0			
Protected Phases 5 2 6 Permitted Phases 6 4 4		D1		D		De	D	D
Permitted Phases 6 4 4				Perm		Perm	Perm	Perm
		5	2	_	6	_		4
Detector Phase 5 2 6 6 6 4 4								
	Detector Phase	5	2	6	6	6	4	4

c Ratio		٠	→	F	←	•	\	1
witch Phase infimum Initial (s)	Lane Group	FBI	FRT	WRII	WRT	WBR	SBI	SBR
inimum Initial (s)		LUL	LUI	1100	1101	TYDIX	JDL	ODIN
inimum Split (s) 10.2 33.4 33.4 33.4 40.1 40.1 total Split (s) 17.0 78.0 61.0 61.0 61.0 52.0 52.0 total Split (%) 13.1% 60.0% 46.9% 46.9% 40.0% 40.0% aximum Green (s) 11.8 71.6 54.6 54.6 54.6 44.9 44.9 sellow Time (s) 3.7 3.7 3.7 3.7 3.7 3.7 3.3 3.3 sellow Time (s) 1.5 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 3.8 3.8 total machine (s) 5.2 64.4 6.4 6.4 6.4 7.1 7.1 total Lost Time (s) 5.2 6.4 6.4 6.4 6.4 7.1 7.1 total Lost Time (s) 5.2 64.6 64.6 64.6 4 7.1 7.1 total Lost Time (s) 5.2 64.6 64.6 64.6 4 7.1 7.1 total Lost Time (s) 5.2 64.6 64.6 64.6 4 7.1 7.1 total Lost Time (s) 5.2 64.8 64.6 64.6 4 7.1 7.1 total Lost Time (s) 5.2 64.9 64.6 64.6 64.7 7.1 7.1 total Lost Time (s) 5.2 64.0 64.6 64.0 7.1 7.1 total Lost Time (s) 5.2 64.0 64.0 64.0 7.1 7.1 total Lost Time (s) 5.2 64.0 64.0 64.0 7.0 7.0 7.0 total Lost Time (s) 5.2 64.0 64.0 64.0 7.0 7.0 7.0 total Lost Time (s) 5.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0		5.0	10.0	10.0	10.0	10.0	10.0	10.0
tal Split (s) 17.0 78.0 61.0 61.0 61.0 52.0 52.0 tal Split (%) 13.1% 60.0% 46.9% 46.9% 46.9% 40.0% 40								
atal Split (%)								
aximum Green (s) 11.8 71.6 54.6 54.6 54.6 44.9 44.9 ellow Time (s) 3.7 3.7 3.7 3.7 3.7 3.7 3.3 3.3 3.3 ellow Time (s) 1.5 2.7 2.7 2.7 2.7 2.7 2.7 2.7 3.8 3.8 3.8 est Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.0 1								
ellow Time (s)								
I-Red Time (s) 1.5 2.7 2.7 2.7 2.7 2.7 3.8 3.8 sta Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0								
ast Time Adjust (s)								
total Lost Time (s)								
add/Lag								
paid-Lag Optimize? phicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0			0.4				1.1	1.1
ehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.		Lead		Lag	Lag	Lag		
None C-Max C-Max C-Max C-Max C-Max None None Recall Mine (s) 12.0 12.0 12.0 12.0 12.0 7.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0
Talk Time (s) ash Dont Walk (s) 12.0 15.0 15.0 15.0 15.0 15.0 26.0 26.0 26.0 26.0 26.0 26.0 26.0 27.0 28.0 29.0 20.0 2								
ash Dont Walk (s)		None						
edestrian Calls (#/hr) 20 20 20 20 20 20 20 20 20 20 20 20 Et Effc Green (s) 8.0 90.9 82.2 82.2 82.2 25.6 25.6 25.6 26.6 Cattated g/C Ratio 0.06 0.70 0.63 0.63 0.63 0.20 0.20 0.20 0.6 Ratio 0.31 0.34 0.03 0.30 0.16 0.56 0.02 0.01 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0								
tet Effct Green (s) 8.0 90.9 82.2 82.2 82.2 25.6 25.6 tutueted g/C Ratio 0.06 0.70 0.63 0.63 0.63 0.20 0.20 or tall to g/C Ratio 0.31 0.34 0.03 0.30 0.16 0.56 0.02 or tall to g/C Ratio 0.31 0.34 0.03 0.30 0.16 0.56 0.02 or tall to g/C Ratio 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.								
ctuated g/C Ratio								
c Ratio								
## Control Delay 65.6 9.2 5.8 5.2 0.8 52.3 27.4 ## Useue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 ## Dolay 65.6 9.2 5.8 5.2 0.8 52.3 27.4 ## Dolay 65.6 9.2 5.8 5.2 0.8 52.3 27.4 ## Dolay 11.4 4.3 51.6 ## Doproach Delay 11.4 4.3 51.6 ## Doproach LOS B	Actuated g/C Ratio							
ueue Delay	v/c Ratio							
Stall Delay	Control Delay							
DS	Queue Delay							
11.4	Total Delay							
Deproach LOS B A D D Deproach LOS Deproach	LOS	Е		Α		Α		С
ueue Length 50th (m) 7.2 42.0 0.5 11.1 0.0 35.2 0.4 ueue Length 95th (m) 16.3 52.5 1.6 15.4 1.3 55.6 3.4 ternal Link Dist (m) 172.1 138.9 218.3 urn Bay Length (m) 40.0 50.0 110.0 10.0 ase Capacity (vph) 149 2294 399 1999 893 557 494 tarvation Cap Reductn 0 0 0 0 0 0 0 0 iorage Cap Reductn 0 0 0 0 0 0 0 0 0 iorage Cap Reductn 0 0 0 0 0 0 0 0 0 iorage Cap Reductn 0 0 0 0 0 0 0 0 0 iorage Cap Reductn 0 0 0 0 0 0 0 0 0 iorage Cap Reductn 0 0.21 0.34 0.03 0.30 0.16 0.32 0.01 tersection Summary rea Type: Other ycle Length: 130 ffset: 107 (82%), Referenced to phase 2:EBT and 6:WBTU, Start of Green atural Cycle: 85 ontrol Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 Intersection LOS: B tersection Capacity Utilization 59.6% ICU Level of Service B halysis Period (min) 15	Approach Delay		11.4					
ueue Length 50th (m) 7.2 42.0 0.5 11.1 0.0 35.2 0.4 ueue Length 95th (m) 16.3 52.5 1.6 15.4 1.3 55.6 3.4 ternal Link Dist (m) 172.1 138.9 218.3 urn Bay Length (m) 40.0 50.0 110.0 10.0 ase Capacity (vph) 149 2294 399 1999 893 557 494 tarvation Cap Reductn 0 0 0 0 0 0 0 0 iorage Cap Reductn 0 0 0 0 0 0 0 0 0 iorage Cap Reductn 0 0 0 0 0 0 0 0 0 iorage Cap Reductn 0 0 0 0 0 0 0 0 0 iorage Cap Reductn 0 0 0 0 0 0 0 0 0 iorage Cap Reductn 0 0.21 0.34 0.03 0.30 0.16 0.32 0.01 tersection Summary rea Type: Other ycle Length: 130 ffset: 107 (82%), Referenced to phase 2:EBT and 6:WBTU, Start of Green atural Cycle: 85 ontrol Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 Intersection LOS: B tersection Capacity Utilization 59.6% ICU Level of Service B halysis Period (min) 15	Approach LOS		В		Α		D	
ueue Length 95th (m) 16.3 52.5 1.6 15.4 1.3 55.6 3.4 ternal Link Dist (m) 172.1 138.9 218.3 um Bay Length (m) 40.0 50.0 110.0 10.0 ase Capacity (vph) 149 2294 399 1999 893 557 494 tarvation Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Queue Length 50th (m)	7.2	42.0	0.5	11.1	0.0	35.2	0.4
ternal Link Dist (m)	Queue Length 95th (m)						55.6	3.4
Sum Bay Length (m)	Internal Link Dist (m)							
ase Capacity (vph) 149 2294 399 1999 893 557 494 tarvation Cap Reductn 0 0 0 0 0 0 0 0 pillback Cap Reductn 0 0 0 0 0 0 0 0 0 torage Cap Reductn 0 0 0 0 0 0 0 0 0 torage Cap Reductn 0 0 0 0 0 0 0 0 0 torage Cap Reductn 0 0.21 0.34 0.03 0.30 0.16 0.32 0.01 tersection Summary rea Type: Other ycle Length: 130 ctuated Cycle Length: 130 ffset: 107 (82%), Referenced to phase 2:EBT and 6:WBTU, Start of Green tersection Signal Delay: 12.6 tersection Capacity Utilization 59.6% nalysis Period (min) 15 Dilits and Phases: 1: Carling & Sherwood	Turn Bay Length (m)	40.0		50.0		110.0		10.0
### Addition Cap Reductin	Base Capacity (vph)		2294		1999		557	
Dillback Cap Reductn								
tersection Summary The a Type: Other Othe								~
rea Type: Other ycle Length: 130 ctuated Cycle Length: 130 ffset: 107 (82%), Referenced to phase 2:EBT and 6:WBTU, Start of Green atural Cycle: 85 control Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 Intersection LOS: B tersection Capacity Utilization 59.6% ICU Level of Service B allysis Period (min) 15 Dilts and Phases: 1: Carling & Sherwood								
tersection Summary rea Type: Other ycle Length: 130 ctuated Cycle Length: 130 ffset: 107 (82%), Referenced to phase 2:EBT and 6:WBTU, Start of Green atural Cycle: 85 control Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 Intersection LOS: B tersection Capacity Utilization 59.6% ICU Level of Service B nalysis Period (min) 15 chits and Phases: 1: Carling & Sherwood								
rea Type: Other ycle Length: 130 ctuated Cycle Length: 130 ffset: 107 (82%), Referenced to phase 2:EBT and 6:WBTU, Start of Green atural Cycle: 85 ontrol Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 tersection Capacity Utilization 59.6% nalysis Period (min) 15 blits and Phases: 1: Carling & Sherwood		0.21	0.07	0.00	0.00	0.10	0.02	0.01
ycle Length: 130 ctuated Cycle Length: 130 ffset: 107 (82%), Referenced to phase 2:EBT and 6:WBTU, Start of Green atural Cycle: 85 control Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 tersection Capacity Utilization 59.6% nalysis Period (min) 15 lits and Phases: 1: Carling & Sherwood	ntersection Summary							
ycle Length: 130 ctuated Cycle Length: 130 ffset: 107 (82%), Referenced to phase 2:EBT and 6:WBTU, Start of Green atural Cycle: 85 control Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6	Area Type:	Other						
ffset: 107 (82%), Referenced to phase 2:EBT and 6:WBTU, Start of Green atural Cycle: 85 control Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 tersection Capacity Utilization 59.6% ICU Level of Service B nalysis Period (min) 15 Dilits and Phases: 1: Carling & Sherwood	Cycle Length: 130							
atural Cycle: 85 control Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 tersection Capacity Utilization 59.6% ICU Level of Service B nalysis Period (min) 15 Dilits and Phases: 1: Carling & Sherwood	Actuated Cycle Length: 130							
atural Cycle: 85 control Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 tersection Capacity Utilization 59.6% ICU Level of Service B nalysis Period (min) 15 Dilits and Phases: 1: Carling & Sherwood	Offset: 107 (82%), Referenced	to phase 2:1	EBT and 6	:WBTU, S	tart of Gree	en		
ontrol Type: Actuated-Coordinated aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 tersection Capacity Utilization 59.6% nalysis Period (min) 15 Dilits and Phases: 1: Carling & Sherwood	Natural Cycle: 85			•				
aximum v/c Ratio: 0.56 tersection Signal Delay: 12.6 Intersection LOS: B ICU Level of Service B		inated						
tersection Signal Delay: 12.6 Intersection LOS: B tersection Capacity Utilization 59.6% ICU Level of Service B nalysis Period (min) 15 plits and Phases: 1: Carling & Sherwood #### ### ##########################								
tersection Capacity Utilization 59.6% ICU Level of Service B halysis Period (min) 15 blits and Phases: 1: Carling & Sherwood ### Ø2 (R) 8 s ### \$52 s		}			In	tersection	LOS: B	
nalysis Period (min) 15 plits and Phases: 1: Carling & Sherwood #### Ø2 (R) 8 s ### 52 s								}
→ Ø2 (R)	Analysis Period (min) 15	55.570			10	2 201010	. 551 1100 L	
8 s	Splits and Phases: 1: Carlin	g & Sherwoo	od					
8 s	→ α2 (p)							04
j 44	70 -							
Ø5 🕴 Ø6 (R)	/os ∮ 4 ⁴						5	2 S
	Ø5 🕴 🕪 Ø6	(R)						

	۶	→	•	•	+	•	4	†	/	/	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	^	7	*	^	7	7		7	*		7
Traffic Volume (vph)	103	728	174	180	666	168	62	0	69	89	0	54
Future Volume (vph)	103	728	174	180	666	168	62	0	69	89	0	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		30.0	60.0		25.0	0.0		0.0	20.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		0.95	0.95		0.69	0.96		0.95	0.98		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3283	1483	1658	3252	1414	1658	0	1483	1658	0	1498
Flt Permitted	0.386			0.359			0.950			0.950		
Satd. Flow (perm)	612	3283	1404	593	3252	978	1586	0	1403	1617	0	1443
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174			168			69			54
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		162.9			117.5			121.7			178.4	
Travel Time (s)		9.8			7.1			8.8			12.8	
Confl. Peds. (#/hr)	90		90	90		90	20		20	20		20
Confl. Bikes (#/hr)			5			4						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%	2%	2%	4%	7%	2%	2%	2%	2%	2%	1%
Adj. Flow (vph)	103	728	174	180	666	168	62	0	69	89	0	54
Shared Lane Traffic (%)						, , ,		-			_	
Lane Group Flow (vph)	103	728	174	180	666	168	62	0	69	89	0	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2	1	1		1	1		1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left		Right	Left		Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1		6.1	6.1		6.1
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		6.1	6.1		6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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							
Detector 2 Size(m)		1.8			1.8							
Detector 2 Type		CI+Ex			CI+Ex							
Detector 2 Channel		J. LA			∪ ∟ ∧							
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	. •	2	. 5	. 5	6	. 3	. 5		. 5	. 3		. 01111
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	2	2	2	6	6	6	8		8	4		4
_ 3,00,01 1 11000		_	_	0	0	0	0		0	7		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0		5.0	10.0		10.0
Minimum Split (s)	15.3	15.3	15.3	25.3	25.3	25.3	24.0		24.0	37.9		37.9
Total Split (s)	92.0	92.0	92.0	92.0	92.0	92.0	38.0		38.0	38.0		38.0
Total Split (%)	70.8%	70.8%	70.8%	70.8%	70.8%	70.8%	29.2%		29.2%	29.2%		29.2%
Maximum Green (s)	86.7	86.7	86.7	86.7	86.7	86.7	32.0		32.0	32.1		32.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0		3.0	3.3		3.3
All-Red Time (s)	1.6	1.6	1.6	1.6	1.6	1.6	3.0		3.0	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)	5.3	5.3	5.3	5.3	5.3	5.3	6.0		6.0	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
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	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None		None	None		None
Walk Time (s)				10.0	10.0	10.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)				10.0	10.0	10.0	11.0		11.0	25.0		25.0
Pedestrian Calls (#/hr)				20	20	20	20		20	20		20
Act Effct Green (s)	95.5	95.5	95.5	95.5	95.5	95.5	23.2		23.2	23.3		23.3
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.18		0.18	0.18		0.18
v/c Ratio	0.23	0.30	0.16	0.41	0.28	0.22	0.22		0.23	0.31		0.18
Control Delay	6.3	5.2	1.2	6.3	3.2	2.1	43.8		10.5	46.1		11.2
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0		0.0	0.0		0.0
Total Delay	6.3	5.2	1.2	6.3	3.3	2.1	43.8		10.5	46.1		11.2
LOS	Α	Α	Α	Α	Α	Α	D		В	D		Е
Approach Delay		4.6			3.7			26.2			32.9	
Approach LOS		Α			Α			С			С	
Queue Length 50th (m)	4.9	18.4	1.4	9.3	18.1	2.8	11.6		0.0	16.9		0.0
Queue Length 95th (m)	8.2	21.9	3.2	13.8	21.8	8.0	22.6		10.8	30.5		9.7
Internal Link Dist (m)		138.9			93.5			97.7			154.4	
Turn Bay Length (m)	70.0		30.0	60.0		25.0				20.0		
Base Capacity (vph)	449	2412	1077	435	2389	762	390		397	399		396
Starvation Cap Reductn	0	0	0	0	825	0	0		0	0		(
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		(
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		(
Reduced v/c Ratio	0.23	0.30	0.16	0.41	0.43	0.22	0.16		0.17	0.22		0.14
Intersection Summary												
Area Type:	Other											
Cycle Langth: 130												

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 85 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

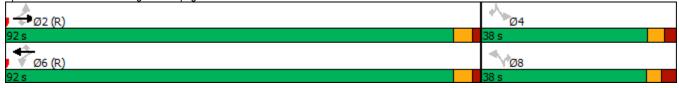
Maximum v/c Ratio: 0.41

Intersection Signal Delay: 7.2
Intersection Capacity Utilization 55.2%

Intersection LOS: A ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Carling & Champagne



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^			^							
Traffic Volume (vph)	0	877	0	0	1050	0	0	0	0	0	0	0
Future Volume (vph)	0	877	0	0	1050	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3283	0	0	3283	0	0	0	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	3283	0	0	3283	0	0	0	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		117.5			124.7			157.3			54.9	
Travel Time (s)		7.1			7.5			11.3			4.0	
Confl. Peds. (#/hr)	40		14	14		40	18		20	20		18
Confl. Bikes (#/hr)			7			25						17
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 (%)	2%	3%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	877	0	0	1050	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	877	0	0	1050	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			0.0			0.0	
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		2			2							
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5							
Trailing Detector (m)		0.0			0.0							
Detector 1 Position(m)		0.0			0.0							
Detector 1 Size(m)		1.8			1.8							
Detector 1 Type		CI+Ex			CI+Ex							
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0							
Detector 1 Queue (s)		0.0			0.0							
Detector 1 Delay (s)		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			NA							
Protected Phases		2			6							
Permitted Phases		0			^							
Detector Phase		2			6							
Switch Phase		10.0			10.0							
Minimum Initial (s)		10.0			10.0							
Minimum Split (s)		25.1			25.1							

Lane Group	Ø4		
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot) Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (k/h)			
Number of Detectors			
Detector Template			
Leading Detector (m)			
Trailing Detector (m)			
Detector 1 Position(m)			
Detector 1 Size(m)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(m)			
Detector 2 Size(m)			
Detector 2 Type Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	4		
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0		
Minimum Split (s)	35.6		

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Lane Group	EBL EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)	94.0			94.0							
Total Split (%)	72.3%			72.3%							
Maximum Green (s)	88.9			88.9							
Yellow Time (s)	3.7			3.7							
All-Red Time (s)	1.4			1.4							
Lost Time Adjust (s)	0.0			0.0							
Total Lost Time (s)	5.1			5.1							
Lead/Lag	0.1			0.1							
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0			3.0							
Recall Mode	C-Max			C-Max							
Walk Time (s)	15.0			15.0							
	5.0			5.0							
Flash Dont Walk (s)											
Pedestrian Calls (#/hr)	20			20							
Act Effet Green (s)	105.6			105.6							
Actuated g/C Ratio	0.81			0.81							
v/c Ratio	0.33			0.39							
Control Delay	4.3			3.2							
Queue Delay	0.1			0.1							
Total Delay	4.4			3.3							
LOS	Α			Α							
Approach Delay	4.4			3.3							
Approach LOS	Α			Α							
Queue Length 50th (m)	31.3			28.2							
Queue Length 95th (m)	38.8			m30.7							
Internal Link Dist (m)	93.5			100.7			133.3			30.9	
Turn Bay Length (m)											
Base Capacity (vph)	2666			2666							
Starvation Cap Reductn	602			481							
Spillback Cap Reductn	81			0							
Storage Cap Reductn	0			0							
Reduced v/c Ratio	0.42			0.48							
Intersection Summary											
	Other										
Cycle Length: 130											
Actuated Cycle Length: 130											
Offset: 59 (45%), Referenced t	o phase 2:EBT and 6:	NBT. Start	of Green								
Natural Cycle: 65		,									
Control Type: Actuated-Coordi	nated										
Maximum v/c Ratio: 0.39	natou										
Intersection Signal Delay: 3.8			ln:	tersection L	ΩS· Δ						
Intersection Capacity Utilization	n 3/1 0%			U Level of							
Analysis Period (min) 15	11 34.3 /0		10	O LEVELOI	Del AICE Y						
m Volume for 95th percentile	queue is metered by	ıpstream s	ignal.								
Splits and Phases: 3: Trillium	n Pathway & Carling										
	James, a carming						i	k _{Ø4}			
J → Ø2 (R) 94 s							36				
←											
94 s											

Lane Group	Ø4
Total Split (s)	36.0
Total Split (%)	28%
Maximum Green (s)	29.4
Yellow Time (s)	3.0
All-Red Time (s)	3.6
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	♦ %		, N	44	7	7	↑ β		7	f)	
Traffic Volume (vph)	163	545	233	253	676	103	287	480	308	136	311	131
Future Volume (vph)	163	545	233	253	676	103	287	480	308	136	311	131
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.94	0.97		0.98		0.84	0.98	0.98		1.00	0.98	
Frt		0.955				0.850		0.941			0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1595	3035	0	1658	3252	1375	1674	3035	0	1510	1509	0
Flt Permitted	0.950			0.950			0.158			0.354		
Satd. Flow (perm)	1504	3035	0	1620	3252	1153	273	3035	0	561	1509	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49				143		144			16	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	90		41	41		90	60		10	10		60
Confl. Bikes (#/hr)			22			10			36			5
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 (%)	6%	4%	2%	2%	4%	10%	1%	4%	2%	12%	6%	20%
Adj. Flow (vph)	163	545	233	253	676	103	287	480	308	136	311	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	778	0	253	676	103	287	788	0	136	442	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0	<u> </u>		7.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	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	
Detector 1 Queue (s)	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	
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		J			J. LA			J. LA			J. LA	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6	. 5	3	8		. 5	4	
Permitted Phases		_				6	8			4	•	
Detector Phase	5	2		1	6	6	3	8		4	4	
_ 5100101 1 11000		L			0	0	0	0		7	Т	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	24.0	38.0		27.0	41.0	41.0	21.0	65.0		44.0	44.0	
Total Split (%)	18.5%	29.2%		20.8%	31.5%	31.5%	16.2%	50.0%		33.8%	33.8%	
Maximum Green (s)	17.8	32.0		20.8	35.0	35.0	14.1	58.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	16.4	32.0		20.8	36.4	36.4	58.1	58.1		37.1	37.1	
Actuated g/C Ratio	0.13	0.25		0.16	0.28	0.28	0.45	0.45		0.29	0.29	
v/c Ratio	0.81	0.99		0.95	0.74	0.24	1.05	0.55		0.85	1.00	
Control Delay	88.6	61.5		65.3	41.0	9.3	85.0	8.9		85.5	87.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	88.6	61.5		65.3	41.0	9.3	85.0	8.9		85.5	87.7	
LOS	F	Е		Е	D	Α	F	Α		F	F	
Approach Delay		66.2			43.8			29.2			87.2	
Approach LOS		Е			D			С			F	
Queue Length 50th (m)	30.1	50.3		54.3	87.1	6.1	~50.6	52.6		30.4	101.6	
Queue Length 95th (m)	#64.4	#125.4		m#63.6	m89.3	m8.9	#102.7	61.1		#65.2	#165.2	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	218	784		265	911	425	273	1436		160	442	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.75	0.99		0.95	0.74	0.24	1.05	0.55		0.85	1.00	

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

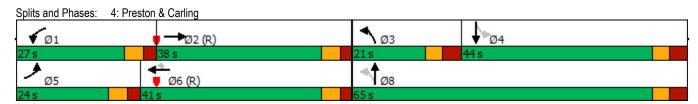
Maximum v/c Ratio: 1.05

Intersection Signal Delay: 52.2
Intersection Capacity Utilization 108.9%

Intersection LOS: D ICU Level of Service G

Analysis Period (min) 15

- Volume exceeds capacity, queue is theoretically infinite.
 - Queue shown is maximum after two cycles.
- # 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.



	•	→	←	•	\	4
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	ሻ	^	<u> </u>	7	7	<u>∪DIC</u>
Traffic Volume (vph)	401	673	742	215	240	190
Future Volume (vph)	401	673	742	215	240	190
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0	1000	1000	25.0	0.0	45.0
Storage Lanes	1			1	1	1
Taper Length (m)	25.0				10.0	-
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93	0.30	1.00	0.78	0.98	0.79
Frt	0.53			0.850	0.30	0.79
Flt Protected	0.950			0.030	0.950	0.000
	1674	3252	1728	1498	1674	1427
Satd. Flow (prot)		3232	1728	1498		1427
Flt Permitted	0.950	2050	1700	1170	0.950	1405
Satd. Flow (perm)	1561	3252	1728	1172	1647	1125
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				62		190
Link Speed (k/h)		60	60		50	
Link Distance (m)		120.9	518.9		229.0	
Travel Time (s)		7.3	31.1	_	16.5	
Confl. Peds. (#/hr)	70			70	14	85
Confl. Bikes (#/hr)				16		23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	1%	1%	6%
Adj. Flow (vph)	401	673	742	215	240	190
Shared Lane Traffic (%)						
Lane Group Flow (vph)	401	673	742	215	240	190
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	L NA	R NA
Median Width(m)		7.0	7.0		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		•	2.0			
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	1.00	1.00	14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	6.1	30.5	30.5	6.1	6.1	6.1
	0.0	0.0	0.0	0.1	0.0	0.1
Trailing Detector (m)						
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	1.8	6.1	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	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases				6	4	4
Detector Phase	5	2	6	6	4	4
- 5.55(0) 1 11000	•	_		_		

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	32.0	91.0	59.0	59.0	39.0	39.0
Total Split (%)	24.6%	70.0%	45.4%	45.4%	30.0%	30.0%
Maximum Green (s)	26.1	85.3	53.3	53.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?				J		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	31.9	91.1	53.3	53.3	27.2	27.2
Actuated g/C Ratio	0.25	0.70	0.41	0.41	0.21	0.21
v/c Ratio	0.98	0.30	1.05	0.42	0.70	0.49
Control Delay	71.5	2.7	84.7	21.8	57.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.5	2.7	84.7	21.8	57.8	9.9
LOS	Е	Α	F	С	Е	Α
Approach Delay		28.4	70.6		36.6	
Approach LOS		С	Е		D	
Queue Length 50th (m)	~114.0	12.0	~190.1	24.9	49.7	0.0
Queue Length 95th (m)	m#139.3	m15.3	#257.7	44.9	75.0	17.8
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	411	2279	708	517	418	427
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	0.98	0.30	1.05	0.42	0.57	0.44

,

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 16 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05 Intersection Signal Delay: 46.2

Intersection Capacity Utilization 105.9%

Intersection LOS: D
ICU Level of Service G

Analysis Period (min) 15

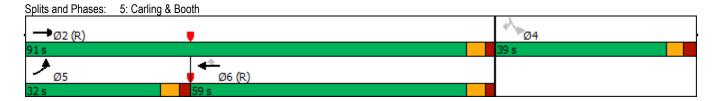
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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.



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		₩			र्स	7	7	ĵ.		¥	ĵ.	
Traffic Volume (vph)	43	56	26	38	55	12	28	666	61	18	407	38
Future Volume (vph)	43	56	26	38	55	12	28	666	61	18	407	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	15.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (m)	25.0			20.0			20.0			20.0		
Lane Util. 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
Ped Bike Factor		0.94			0.97	0.89	0.96	0.99		0.98	0.99	
Frt		0.972				0.850		0.987			0.987	
Flt Protected		0.983			0.980		0.950			0.950		
Satd. Flow (prot)	0	1558	0	0	1566	1498	1537	1690	0	1537	1645	0
Flt Permitted		0.865			0.853		0.468			0.287		
Satd. Flow (perm)	0	1336	0	0	1322	1339	730	1690	0	454	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				34		12			12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		101.4			151.8			160.5			163.2	
Travel Time (s)		7.3			10.9			11.6			11.8	
Confl. Peds. (#/hr)	36		40	40		36	50		55	55		50
Confl. Bikes (#/hr)			26			2			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 (%)	9%	4%	4%	25%	2%	1%	10%	3%	3%	10%	6%	5%
Adj. Flow (vph)	43	56	26	38	55	12	28	666	61	18	407	38
Shared Lane Traffic (%)						· -			•			
Lane Group Flow (vph)	0	125	0	0	93	12	28	727	0	18	445	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			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	• • •	1	2	1	1	2		1	2	• •
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	1.8	6.1	6.1	1.8		6.1	1.8	
	CI+Ex	CI+Ex		CI+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel	CITLX	OITEX		OITEX	CITLX	CITLX	CITLX	OITEX		CITLX	OITLX	
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	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	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			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	Da :	0.0		D	0.0	D	D	0.0		D	0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		_	8	_	_	2		_	6	
Permitted Phases	4			8	^	8	2			6	^	
Detector Phase	4	4		8	8	8	2	2		6	6	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	57.0	57.0		57.0	57.0	
Total Split (%)	28.8%	28.8%		28.8%	28.8%	28.8%	71.3%	71.3%		71.3%	71.3%	
Maximum Green (s)	17.4	17.4		17.4	17.4	17.4	51.5	51.5		51.5	51.5	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped	Ped	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	20	20		20	20	20	20	20		20	20	
Act Effct Green (s)		17.1			17.1	17.1	51.8	51.8		51.8	51.8	
Actuated g/C Ratio		0.21			0.21	0.21	0.65	0.65		0.65	0.65	
v/c Ratio		0.42			0.33	0.04	0.06	0.66		0.06	0.42	
Control Delay		28.9			30.5	2.8	5.8	10.2		5.9	8.0	
Queue Delay		0.0			0.0	0.0	0.0	0.1		0.0	0.0	
Total Delay		28.9			30.5	2.8	5.8	10.3		5.9	8.0	
LOS		С			С	Α	Α	В		Α	Α	
Approach Delay		28.9			27.3			10.2			8.0	
Approach LOS		С			С			В			Α	
Queue Length 50th (m)		13.3			11.1	0.0	1.3	53.7		8.0	25.4	
Queue Length 95th (m)		27.3			22.8	1.2	m2.7	45.2		3.0	41.4	
Internal Link Dist (m)		77.4			127.8			136.5			139.2	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		302			287	317	472	1098		294	1069	
Starvation Cap Reductn		0			0	0	0	32		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.41			0.32	0.04	0.06	0.68		0.06	0.42	

Area Type: Other

Area Type: Cycle Length: 80

Actuated Cycle Length: 80

Offset: 40 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 12.3
Intersection Capacity Utilization 83.5%

Intersection LOS: B
ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 6: Preston & Beech



	۶	→	•	•	+	4	1	†	/	/	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		₩						- 43→			44	
Traffic Volume (vph)	1	0	3	0	0	0	8	708	46	10	503	5
Future Volume (vph)	1	0	3	0	0	0	8	708	46	10	503	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor		0.93						0.99			1.00	
Frt		0.899						0.992			0.999	
Flt Protected		0.988						0.999			0.999	
Satd. Flow (prot)	0	1470	0	0	0	0	0	1704	0	0	1617	0
Flt Permitted		0.988						0.995			0.987	
Satd. Flow (perm)	0	1453	0	0	0	0	0	1697	0	0	1597	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29						9			1	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		114.6			152.9			73.8			160.5	
Travel Time (s)		8.3			11.0			5.3			11.6	
Confl. Peds. (#/hr)	17		18	18		17	35		45	45		35
Confl. Bikes (#/hr)			8			• • •			21			17
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%	1%	1%	2%	2%	2%	1%	3%	1%	1%	10%	1%
Adj. Flow (vph)	1	0	3	0	0	0	8	708	46	10	503	5
Shared Lane Traffic (%)	•							700			000	
Lane Group Flow (vph)	0	4	0	0	0	0	0	762	0	0	518	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Lon	0.0	rtigrit	Loit	0.0	rtigrit	LOIL	3.5	rtigrit	LOIL	3.5	rtigitt
Link Offset(m)		-2.0			-1.0			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	1.03	24	1.00	14	24	1.00	14	24	1.00	1.03
Number of Detectors	1	2	17	27		17	1	2	17	1	2	17
Detector Template	Left	Thru					Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5					6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0					0.0	0.0		0.1	0.0	
Detector 1 Position(m)	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	
Detector 1 Type	Cl+Ex	CI+Ex					Cl+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel	CI+EX	CI+EX					CI+EX	UI+EX		CI+EX	CI+EX	
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		
Detector 1 Queue (s)	0.0							0.0			0.0	
Detector 1 Delay (s)	0.0	0.0					0.0			0.0	0.0	
Detector 2 Position(m)		28.7						28.7			28.7	
Detector 2 Size(m)		1.8						1.8			1.8	
Detector 2 Type		CI+Ex						CI+Ex			CI+Ex	
Detector 2 Channel		0.0						0.0			0.0	
Detector 2 Extend (s)		0.0					_	0.0		-	0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		
Detector Phase	4	4					2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	21.0	21.0					59.0	59.0		59.0	59.0	
Total Split (%)	26.3%	26.3%					73.8%	73.8%		73.8%	73.8%	
Maximum Green (s)	15.5	15.5					53.9	53.9		53.9	53.9	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0					18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	8.0	8.0					5.0	5.0		5.0	5.0	
Pedestrian Calls (#/hr)	20	20					20	20		20	20	
Act Effct Green (s)		12.0						69.8			69.8	
Actuated g/C Ratio		0.15						0.87			0.87	
v/c Ratio		0.02						0.51			0.37	
Control Delay		0.0						5.7			2.5	
Queue Delay		0.0						0.0			0.0	
Total Delay		0.0						5.7			2.5	
LOS		Α						Α			Α	
Approach Delay								5.7			2.5	
Approach LOS								Α			Α	
Queue Length 50th (m)		0.0						0.0			0.0	
Queue Length 95th (m)		0.0						83.3			17.9	
Internal Link Dist (m)		90.6			128.9			49.8			136.5	
Turn Bay Length (m)												
Base Capacity (vph)		304						1481			1393	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.01						0.51			0.37	
Intersection Summary												
Area Type:	Other											
Cycle Length: 80												
Actuated Cycle Length: 80												
Offset: 48 (60%), Referenced	to phase 2:N	BTL and 6:	SBTL, Sta	rt of Gree	n							
Natural Cycle: 60												
Control Type: Actuated-Coord	linated											
Maximum v/c Ratio: 0.51												
Intersection Signal Delay: 4.4					tersection I							
Intersection Capacity Utilization	on 65.9%			IC	U Level of	Service C						
Analysis Period (min) 15												
Splits and Phases: 7: Prest	on & Pamilla											
									- 4			

Ø2 (R)

59 s

21 s

96 (R)

59 s

Lane Group Lane Configurations	EBL 49	EBT	EBR									
Lane Configurations	49			WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Connigurations	49	- 4			4			4			4	
Traffic Volume (vph)		1	33	20	5	26	14	650	90	37	493	15
Future Volume (vph)	49	1	33	20	5	26	14	650	90	37	493	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor												
Frt		0.946			0.931			0.984			0.996	
Flt Protected		0.971			0.981			0.999			0.997	
Satd. Flow (prot)	0	1603	0	0	1594	0	0	1701	0	0	1688	0
FIt Permitted		0.971			0.981			0.999			0.997	
Satd. Flow (perm)	0	1603	0	0	1594	0	0	1701	0	0	1688	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.6			154.3			71.5			73.8	
Travel Time (s)		8.2			11.1			5.1			5.3	
Confl. Peds. (#/hr)							28		45	45		28
Confl. Bikes (#/hr)									21			17
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	5%	2%
Adj. Flow (vph)	49	1	33	20	5	26	14	650	90	37	493	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	0	0	51	0	0	754	0	0	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		-2.0			-2.0			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
Sign Control		Stop			Stop			Free			Free	

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 64.2%
Analysis Period (min) 15

ICU Level of Service C

Synchro 10 Report J.Audia, Novatech

	•	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			414	£	
Traffic Volume (vph)	53	70	43	701	509	33
Future Volume (vph)	53	70	43	701	509	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.923				0.992	
Flt Protected	0.979			0.997		
Satd. Flow (prot)	1577	0	0	3275	1685	0
FIt Permitted	0.979			0.997		
Satd. Flow (perm)	1577	0	0	3275	1685	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			28			28
Confl. Bikes (#/hr)						17
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%
Adj. Flow (vph)	53	70	43	701	509	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	0	0	744	542	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5	Ĭ		0.0	0.0	, in the second
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	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	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

Control Type: Unsignalized Intersection Capacity Utilization 68.8% Analysis Period (min) 15

ICU Level of Service C

Synchro 10 Report J.Audia, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	44	4î		7	^	7		- €			सी	7
Traffic Volume (vph)	694	286	2	2	213	319	1	4	3	281	4	493
Future Volume (vph)	694	286	2	2	213	319	1	4	3	281	4	493
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Storage Lanes	2		0	1		1	0		0	0		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.97		0.97		0.96			0.94	0.91
Frt		0.999				0.850		0.949				0.850
Flt Protected	0.950			0.950				0.994			0.953	
Satd. Flow (prot)	3185	1760	0	1674	1762	1498	0	1209	0	0	1668	1469
FIt Permitted	0.459			0.583				0.979			0.724	
Satd. Flow (perm)	1519	1760	0	1002	1762	1460	0	1185	0	0	1187	1340
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						259		3				358
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		233.9			203.3			76.1			164.5	
Travel Time (s)		14.0			12.2			5.5			11.8	
Confl. Peds. (#/hr)	9		15	15		9	25		24	24		25
Confl. Bikes (#/hr)			3						1			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 (%)	3%	1%	1%	1%	1%	1%	1%	50%	25%	1%	50%	3%
Adj. Flow (vph)	694	286	2	2	213	319	1	4	3	281	4	493
Shared Lane Traffic (%)												
Lane Group Flow (vph)	694	288	0	2	213	319	0	8	0	0	285	493
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0	_		7.0			0.0			3.5	
Link Offset(m)		2.0			0.0			5.0			0.0	
Crosswalk Width(m)		5.0			10.0			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	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
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	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	CI+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		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	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		. 31111	6	. 31111	. 51111	8		. 5	4	5
Permitted Phases	2	_		6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
20.0001 1 11000				- 0		0	0	U		7	7	- 3

	•	→	\rightarrow	•	←	•	4	†	/	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	35.0	76.0		41.0	41.0	41.0	54.0	54.0		54.0	54.0	35.0
Total Split (%)	26.9%	58.5%		31.5%	31.5%	31.5%	41.5%	41.5%		41.5%	41.5%	26.9%
Maximum Green (s)	28.9	69.9		34.9	34.9	34.9	48.5	48.5		48.5	48.5	28.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	69.9	69.9		39.7	39.7	39.7		48.5			48.5	72.0
Actuated g/C Ratio	0.54	0.54		0.31	0.31	0.31		0.37			0.37	0.55
v/c Ratio	0.62	0.30		0.01	0.40	0.51		0.02			0.64	0.53
Control Delay	20.5	17.7		34.5	39.6	11.6		21.4			28.4	2.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	20.5	17.7		34.5	39.6	11.6		21.4			28.4	2.4
LOS	С	В		С	D	В		С			С	Α
Approach Delay		19.7			22.8			21.4			11.9	
Approach LOS		В			С			С			В	
Queue Length 50th (m)	48.1	36.2		0.3	39.8	10.3		0.7			45.7	10.1
Queue Length 95th (m)	60.8	53.1		2.3	64.0	36.8		3.9			m46.7	m10.5
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	1187	946		305	537	625		443			442	966
Starvation Cap Reductn	0	0		0	0	0		0			0	21
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	0.58	0.30		0.01	0.40	0.51		0.02			0.64	0.52

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 7 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 17.8
Intersection Capacity Utilization 91.0%

Intersection LOS: B
ICU Level of Service E

Analysis Period (min) 15

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



	-	•	•	←	•	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	¥	
Traffic Volume (vph)	106	0	8	68	0	17
Future Volume (vph)	106	0	8	68	0	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.995		
Satd. Flow (prot)	1745	0	0	1736	1510	0
Flt Permitted				0.995		
Satd. Flow (perm)	1745	0	0	1736	1510	0
Link Speed (k/h)	30			30	50	
Link Distance (m)	49.5			68.0	46.2	
Travel Time (s)	5.9			8.2	3.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	106	0	8	68	0	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	106	0	0	76	17	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	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						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 20.8%			IC	U Level of	Service A

Intersection Capacity Utilization 20.8% Analysis Period (min) 15

Lane Alignment Left Left R NA Left Right L NA R NA Median Width(m) 7.0 7.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane 1.09 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) 24 14 14 40 14 Number of Detectors 1 2 1 2 1 1 1		۶	-	F	•	•	-	4
Lane Configurations	Lane Group	FBI	FRT	WRU	WRT	WRR	SBI	SBR
Traffic Volume (vph) 65 713 13 1305 181 188 7 Inture Volume (vph) 65 713 13 1305 181 188 7 Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 1800 180								
Future Volume (vph)								
Ideal Flow (vphpt)								
Storage Length (m)	· · · · · · · · · · · · · · · · · · ·							
Storage Lanes			1000		1000			
Tape Length (m) 25.0 25.0 25.0 25.0 Lane Util. Factor 1.00 0.95 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.950 0.950 0.850 0.850 1.00 1.00 1.00 1.00 0.850 0.850 0.850 1.00 1.00 1.00 1.00 0.950 0.850 0.950 0.850 1.10 1.498 1674 1.498 1674 1.498 1674 1.498 1674 1.498 1674 1.498 1674 1.498 1674 1.498 1674 1.498 1674 1.498								
Lane Util. Factor				-			-	1
Ped Bike Factor 0.99			0.05		0.05	1.00		1.00
Fit Protected			0.95	1.00	0.95			
Fit Protected		0.55					0.99	
Satd. Flow (prot) 1674 3252 1674 3316 1498 1674 1498		0.050		0.050		0.000	0.050	0.030
Fit Permitted 0.950 0.381 0.950 Satd. Flow (perm) 1654 3252 671 3316 1357 1659 1454 Satd. Flow (RTOR) 1811 3 3 Link Speed (k/h) 60 60 60 40 Link Distance (m) 196.1 162.9 242.3 Travel Time (s) 11.8 9.8 21.8 Confl. Peds. (#/hr) 28 28 7 8 Confl. Bikes (#/hr) 5 8 28 7 8 Confl. Bikes (#/hr) 65 11.0 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 1 4 4 1 1 2 2 1 1 1 1 Shared Lane Traffic (%) Lane Group Flow (vph) 65 713 13 1305 181 188 7 Enter Blocked Intersection No Lane Alignment Left Left R NA Left Right L NA R NA Median Width(m) 7.0 7.0 3.5 Two way Left Turn Lane Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09			2252		2216	1/00		1/00
Satd. Flow (perm) 1654 3252 671 3316 1357 1659 1454	,, ,		3232		3310	1490		1430
Right Turn on Red Yes Yes Satd. Flow (RTOR) 181 3 3 3 3 3 3 3 3 3			2050		2240	1257		1151
Satid. Flow (RTOR)		1054	3232	0/1	3310		1009	
Link Speed (k/h) 60 60 40 Link Distance (m) 196.1 162.9 242.3 Travel Time (s) 11.8 9.8 21.8 Confl. Peds. (#/hr) 28 28 7 8 Confl. Bikes (#/hr) 5 8 8 8 Peak Hour Factor 1.00 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Link Distance (m) 196.1 162.9 242.3 Travel Time (s) 11.8 9.8 21.8 Confl. Peds. (#/hr) 28 28 7 8 Confl. Bikes (#/hr) 5 8 8 28 7 8 Peak Hour Factor 1.00			00		00	181	40	3
Travel Time (s)								
Confl. Peds. (#/hr) 28 28 7 8 Confl. Bikes (#/hr) 5 8 Peak Hour Factor 1.00 No <								
Confl. Bikes (#/hr)			11.8		9.8	00		^
Peak Hour Factor 1.00 No No<		28					7	
Heavy Vehicles (%)			4.22				4.22	
Adj. Flow (vph) 65 713 13 1305 181 188 7 Shared Lane Traffic (%) Lane Group Flow (vph) 65 713 13 1305 181 188 7 Enter Blocked Intersection No								
Shared Lane Traffic (%) Lane Group Flow (vph) 65 713 13 1305 181 188 7								
Lane Group Flow (vph)		65	713	13	1305	181	188	7
Enter Blocked Intersection No No <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>								
Lane Alignment	,							
Median Width(m) 7.0 7.0 3.5 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane 1.09 <td>Enter Blocked Intersection</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Enter Blocked Intersection							
Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane 1.09 1.00 1.00 1.00 1.00	Lane Alignment	Left		RNA		Right		RNA
Crosswalk Width(m) 5.0 10.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 </td <td>Median Width(m)</td> <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 1.09 1.09 Turning Speed (k/h) 24 14 14 40 14 Number of Detectors 1 2 1 2 1 1 1 1 Detector Template Left Thru Left Thru Right Left Right Leading Detector (m) 6.1 30.5 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) 6.1 1.8 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 CI+Ex Detector 1 Channel 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 Size(m) 1.8 1.8 Detector 2 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 Prot NA Perm NA Perm Perm Perm Perm Protected Phases Fermitted Phases 6 6 6 4 4	Link Offset(m)							
Headway Factor 1.09	Crosswalk Width(m)		5.0		10.0		5.0	
Headway Factor 1.09	Two way Left Turn Lane							
Turning Speed (k/h) 24 14 14 40 14 Number of Detectors 1 2 1 2 1 1 1 Detector Template Left Thru Left Thru Right Left Right Leading Detector (m) 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 0.0 Detector 1 Position(m) 0.0	Headway Factor		1.09	1.09	1.09		1.09	1.09
Number of Detectors 1 2 1 2 1 6 1 1 8 1 8	Turning Speed (k/h)							
Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 6.1 6.1 Trailing Detector (m) 0.0	Number of Detectors		2		2			
Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 6.1 6.1 Trailing Detector (m) 0.0	Detector Template	Left	Thru	Left	Thru	Right	Left	Right
Trailing Detector (m) 0.0	•							
Detector 1 Position(m) 0.0								
Detector 1 Size(m) 6.1 1.8 6.1 1.8 6.1 6.1 6.1 Detector 1 Type CI+Ex								
Detector 1 Type CI+Ex								
Detector 1 Channel Detector 1 Extend (s) 0.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Detector 1 Extend (s) 0.0		O1 · LA	OI. LA	ΟΙ· LΛ	- C1 · LΛ	51. LX	01. LA	OI. LX
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	. ,							
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 Prot NA Perm NA Perm Perm Permitted Phases 5 2 6 6 4 4								
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 Perm Turn Type Prot NA Perm NA Perm Perm Protected Phases 5 2 6 6 4 4		0.0		0.0		0.0	0.0	0.0
Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA Perm NA Perm Perm Protected Phases 5 2 6 6 4 4								
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA Perm NA Perm Perm <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA Perm NA Perm Perm <td></td> <td></td> <td>UI+EX</td> <td></td> <td>CI+EX</td> <td></td> <td></td> <td></td>			UI+EX		CI+EX			
Turn TypeProtNAPermNAPermPermPermProtected Phases526Permitted Phases6644			0.0		0.0			
Protected Phases 5 2 6 Permitted Phases 6 4 4		D1		D		De	D	D
Permitted Phases 6 4 4				Perm		Perm	Perm	Perm
		5	2	_	6	_		4
Detector Phase 5 2 6 6 6 4 4								
	Detector Phase	5	2	6	6	6	4	4

	•	-	F	←	•	-	4
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.2	33.4	33.4	33.4	33.4	40.1	40.1
Total Split (s)	17.0	99.0	82.0	82.0	82.0	41.0	41.0
Total Split (%)	12.1%	70.7%	58.6%	58.6%	58.6%	29.3%	29.3%
Maximum Green (s)	11.8	92.6	75.6	75.6	75.6	33.9	33.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	1.5	2.7	2.7	2.7	2.7	3.8	3.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	6.4	6.4	6.4	6.4	7.1	7.1
Lead/Lag	Lead		Lag	Lag	Lag		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		12.0	12.0	12.0	12.0	7.0	7.0
Flash Dont Walk (s)		15.0	15.0	15.0	15.0	26.0	26.0
Pedestrian Calls (#/hr)		20	20	20	20	20	20
Act Effct Green (s)	10.3	100.3	87.2	87.2	87.2	26.2	26.2
Actuated g/C Ratio	0.07	0.72	0.62	0.62	0.62	0.19	0.19
v/c Ratio	0.53	0.31	0.03	0.63	0.20	0.61	0.03
Control Delay	77.4	8.5	6.3	10.0	1.3	59.3	33.3
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	77.4	8.5	6.3	10.1	1.3	59.3	33.3
LOS	Е	Α	Α	В	Α	Е	С
Approach Delay		14.2		9.0		58.4	
Approach LOS		В		Α		Е	
Queue Length 50th (m)	16.2	37.8	0.7	68.8	2.2	41.6	8.0
Queue Length 95th (m)	30.2	47.1	m1.6	107.5	4.2	63.9	4.6
Internal Link Dist (m)		172.1		138.9		218.3	
Turn Bay Length (m)	40.0		50.0		110.0		10.0
Base Capacity (vph)	145	2330	417	2064	913	401	354
Starvation Cap Reductn	0	0	0	87	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.31	0.03	0.66	0.20	0.47	0.02

Other

Area Type: Cycle Length: 140 Actuated Cycle Length: 140

Offset: 7 (5%), Referenced to phase 2:EBT and 6:WBTU, Start of Green

Natural Cycle: 95

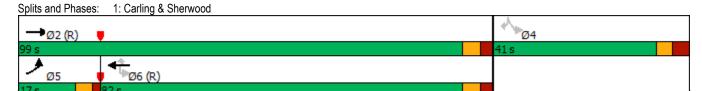
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63 Intersection Signal Delay: 14.5 Intersection Capacity Utilization 72.7%

Intersection LOS: B ICU Level of Service C

Analysis Period (min) 15

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



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	^	7	ች	^	7	ች		7	ች		7
Traffic Volume (vph)	55	742	26	27	1166	71	97	0	110	146	0	199
Future Volume (vph)	55	742	26	27	1166	71	97	0	110	146	0	199
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		30.0	60.0		25.0	0.0		0.0	20.0		0.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	25.0		•	25.0		•	25.0		•	25.0		•
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.00	0.95	0.96	0.00	0.74	0.95	1.00	0.94	0.97	1.00	0.96
Frt			0.850	0.00		0.850	0.00		0.850	0.07		0.850
Flt Protected	0.950		0.000	0.950		0.000	0.950		0.000	0.950		0.000
Satd. Flow (prot)	1409	3283	1483	1658	3316	1498	1658	0	1483	1674	0	1498
Flt Permitted	0.212	0200	1400	0.354	0010	1430	0.950	0	1400	0.950	U	1430
Satd. Flow (perm)	314	3283	1415	592	3316	1106	1580	0	1398	1630	0	1440
Right Turn on Red	J 1 1	3203	Yes	332	3310	Yes	1000	U	Yes	1000	U	Yes
Satd. Flow (RTOR)			25			38			110			72
Link Speed (k/h)		60	20		60	30		50	110		50	12
Link Distance (m)		162.9			117.5			121.7			178.4	
		9.8			7.1			8.8			12.8	
Travel Time (s) Confl. Peds. (#/hr)	70	9.0	70	70	7.1	70	20	0.0	20	20	12.0	20
()	70		70 5	70		4	20		20	20		1
Confl. Bikes (#/hr)	1.00	1.00	-	1.00	1.00		1.00	1.00	1.00	1.00	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 (%)	20%	3%	2%	2%	2%	1%	2%	2%	2%	1%	2%	1%
Adj. Flow (vph) Shared Lane Traffic (%)	55	742	26	27	1166	71	97	0	110	146	0	199
Lane Group Flow (vph)	55	742	26	27	1166	71	97	0	110	146	0	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2	1	1		1	1		1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left		Right	Left		Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1		6.1	6.1		6.1
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		6.1	6.1		6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	CI+Ex	CI+Ex		Cl+Ex	CI+Ex		CI+Ex
Detector 1 Channel	OITEX	OITEX	OIILX	OITEX	OITEX	OITEX	OITEX		OITEX	OITEX		OITEX
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		0.0	0.0		0.0
()		1.8			1.8							
Detector 2 Size(m)												
Detector 2 Type		CI+Ex			CI+Ex							
Detector 2 Channel		0.0			0.0							
Detector 2 Extend (s)		0.0	ρ.	_	0.0	ρ.	D.		_	D.		D
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases		2	_	_	6							
Permitted Phases Detector Phase	2	2	2	6 6	6	6	8		8	4		4
				C	C	6	8		8	1		4

	۶	→	•	•	+	•	1	†	~	/	Ţ	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0		5.0	10.0		10.0
Minimum Split (s)	15.3	15.3	15.3	25.3	25.3	25.3	24.0		24.0	37.9		37.9
Total Split (s)	95.0	95.0	95.0	95.0	95.0	95.0	45.0		45.0	45.0		45.0
Total Split (%)	67.9%	67.9%	67.9%	67.9%	67.9%	67.9%	32.1%		32.1%	32.1%		32.1%
Maximum Green (s)	89.7	89.7	89.7	89.7	89.7	89.7	39.0		39.0	39.1		39.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0		3.0	3.3		3.3
All-Red Time (s)	1.6	1.6	1.6	1.6	1.6	1.6	3.0		3.0	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)	5.3	5.3	5.3	5.3	5.3	5.3	6.0		6.0	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
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	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None		None	None		None
Walk Time (s)				10.0	10.0	10.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)				10.0	10.0	10.0	11.0		11.0	25.0		25.0
Pedestrian Calls (#/hr)				20	20	20	20		20	20		20
Act Effct Green (s)	104.3	104.3	104.3	104.3	104.3	104.3	24.4		24.4	24.5		24.5
Actuated g/C Ratio	0.74	0.74	0.74	0.74	0.74	0.74	0.17		0.17	0.18		0.18
v/c Ratio	0.24	0.30	0.02	0.06	0.47	0.09	0.35		0.33	0.51		0.64
Control Delay	10.1	7.2	2.5	3.0	3.2	1.8	52.0		10.2	56.9		41.8
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0		0.0	0.0		0.0
Total Delay	10.1	7.2	2.5	3.0	3.5	1.8	52.0		10.2	56.9		41.8
LOS	В	Α	Α	Α	Α	Α	D		В	Е		D
Approach Delay		7.3			3.4			29.8			48.2	
Approach LOS		Α			Α			С			D	
Queue Length 50th (m)	3.1	21.8	0.4	1.1	24.4	0.7	20.5		0.0	31.8		28.3
Queue Length 95th (m)	16.6	33.0	m1.5	m2.2	27.2	2.0	35.6		14.0	51.0		51.6
Internal Link Dist (m)		138.9			93.5			97.7			154.4	
Turn Bay Length (m)	70.0		30.0	60.0		25.0				20.0		
Base Capacity (vph)	234	2446	1061	441	2471	833	440		468	455		454
Starvation Cap Reductn	0	0	0	0	602	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	45	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.24	0.30	0.02	0.06	0.62	0.09	0.22		0.24	0.32		0.44

Other

Area Type: Cycle Length: 140 Actuated Cycle Length: 140

Offset: 5 (4%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

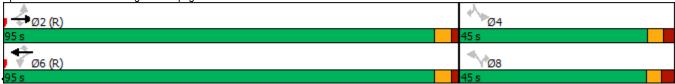
Intersection Signal Delay: 12.5 Intersection Capacity Utilization 74.7%

Intersection LOS: B ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Carling & Champagne



	•	→	•	•	←	4	4	†	<i>></i>	/	 	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		^			^							
Traffic Volume (vph)	0	1038	0	0	1298	0	0	0	0	0	0	0
Future Volume (vph)	0	1038	0	0	1298	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3283	0	0	3316	0	0	0	0	0	0	0
Flt Permitted												_
Satd. Flow (perm)	0	3283	0	0	3316	0	0	0	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		117.5			124.7			157.3			54.9	
Travel Time (s)		7.1			7.5			11.3			4.0	
Confl. Peds. (#/hr)	35				7.0	35	25	11.0	35	35	1.0	25
Confl. Bikes (#/hr)	00		11			10	20		13	00		34
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 (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	1038	0	0	1298	0	0	0	0	0	0	0
Shared Lane Traffic (%)	•	1000	•		1230	•	· ·				- U	J
Lane Group Flow (vph)	0	1038	0	0	1298	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Leit	7.0	rtigrit	Leit	7.0	Trigit	Leit	0.0	Tagni	Leit	0.0	rtigrit
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		5.0			5.0			5.0			5.0	
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	1.09	1.09	24	1.09	1.09	24	1.03	1.09	24	1.09	1.09
Number of Detectors	24	2	14	24	2	14	24		14	24		14
Detector Template		Thru			Thru							
Leading Detector (m)		30.5			30.5							
Trailing Detector (m)		0.0			0.0							
Detector 1 Position(m)		0.0			0.0							
		1.8			1.8							
Detector 1 Size(m)												
Detector 1 Type		CI+Ex			Cl+Ex							
Detector 1 Channel		0.0			0.0							
Detector 1 Extend (s)		0.0			0.0							
Detector 1 Queue (s)		0.0			0.0							
Detector 1 Delay (s)		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		2.2			2.2							
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA			NA							
Protected Phases		2			6							
Permitted Phases												
Detector Phase		2			6							
Switch Phase												
Minimum Initial (s)		10.0			10.0							
Minimum Split (s)		25.1			25.1							

Lane Group	Ø4	
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
FIt Protected		
Satd. Flow (prot)		
FIt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	4	
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	35.6	
- F - (-)		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)		104.0			104.0							
Total Split (%)		74.3%			74.3%							
Maximum Green (s)		98.9			98.9							
Yellow Time (s)		3.7			3.7							
All-Red Time (s)		1.4			1.4							
Lost Time Adjust (s)		0.0			0.0							
Total Lost Time (s)		5.1			5.1							
Lead/Lag					<u> </u>							
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0							
Recall Mode		C-Max			C-Max							
Walk Time (s)		15.0			15.0							
Flash Dont Walk (s)		5.0			5.0							
Pedestrian Calls (#/hr)		20			20							
Act Effct Green (s)		115.6			115.6							
Actuated g/C Ratio		0.83			0.83							
v/c Ratio		0.38			0.47							
Control Delay		4.2			2.2							
Queue Delay		0.1			0.1							
Total Delay		4.3			2.3							
LOS		4.5 A			2.5 A							
Approach Delay		4.3			2.3							
Approach LOS		4.5 A			2.5 A							
Queue Length 50th (m)		34.7			26.3							
Queue Length 95th (m)		42.7			m25.6							
Internal Link Dist (m)		93.5			100.7			133.3			30.9	
Turn Bay Length (m)		30.0			100.7			100.0			30.3	
Base Capacity (vph)		2710			2737							
Starvation Cap Reductn		632			413							
Spillback Cap Reductn		243			0							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.50			0.56							
Intersection Summary		0.50			0.50							
	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 108 (77%), Referenced	to phase 2:El	3T and 6:	WBT, Star	t of Green								
Natural Cycle: 70												
Control Type: Actuated-Coordin	nated											
Maximum v/c Ratio: 0.47												
Intersection Signal Delay: 3.2				In	tersection	LOS: A						
Intersection Capacity Utilization	า 42.1%			IC	U Level of	Service A						
Analysis Period (min) 15												
m Volume for 95th percentile	queue is met	ered by u	pstream si	gnal.								
Splits and Phases: 3: Trillium	n Pathway & (Carling										
J → Ø2 (R)									#1 _{Ø4}			
104 s									36 s			
4— Ø6 (b)												
06 (R)												

Lane Group	Ø4
Total Split (s)	36.0
Total Split (%)	26%
Maximum Green (s)	29.4
Yellow Time (s)	3.0
All-Red Time (s)	3.6
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ħβ		7	44	7	7	∱ β		7	1≽	
Traffic Volume (vph)	181	577	374	366	867	71	353	378	204	112	341	127
Future Volume (vph)	181	577	374	366	867	71	353	378	204	112	341	127
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	110.0		90.0	75.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.97	0.97		0.98		0.89	0.98	0.97		0.97	0.98	
Frt		0.941				0.850		0.947			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3005	0	1674	3316	1427	1674	3062	0	1537	1623	0
FIt Permitted	0.950			0.950			0.091			0.433		
Satd. Flow (perm)	1566	3005	0	1648	3316	1272	157	3062	0	681	1623	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		103				132		90			13	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.7			193.9			164.5			65.2	
Travel Time (s)		7.5			11.6			11.8			4.7	
Confl. Peds. (#/hr)	53		34	34		53	60		55	55		60
Confl. Bikes (#/hr)			12			10			16			6
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 (%)	5%	3%	2%	1%	2%	6%	1%	2%	1%	10%	2%	5%
Adj. Flow (vph)	181	577	374	366	867	71	353	378	204	112	341	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	951	0	366	867	71	353	582	0	112	468	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	Right	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			7.0			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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	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	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	
Detector 1 Queue (s)	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	
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	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases					-	6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	
		_								•		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.2	30.0		11.2	30.0	30.0	11.9	43.9		43.9	43.9	
Total Split (s)	21.0	43.0		30.0	52.0	52.0	23.0	67.0		44.0	44.0	
Total Split (%)	15.0%	30.7%		21.4%	37.1%	37.1%	16.4%	47.9%		31.4%	31.4%	
Maximum Green (s)	14.8	37.0		23.8	46.0	46.0	16.1	60.1		37.1	37.1	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.5	2.3		2.5	2.3	2.3	3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.0		6.2	6.0	6.0	6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		17.0			17.0	17.0		30.0		30.0	30.0	
Pedestrian Calls (#/hr)		20			20	20		20		20	20	
Act Effct Green (s)	14.8	37.0		23.8	46.0	46.0	60.1	60.1		37.1	37.1	
Actuated g/C Ratio	0.11	0.26		0.17	0.33	0.33	0.43	0.43		0.26	0.26	
v/c Ratio	1.06	1.09		1.29	0.80	0.14	1.46	0.43		0.62	1.07	
Control Delay	150.7	88.7		180.3	38.6	2.4	256.5	6.4		62.3	108.8	
Queue Delay	0.0	2.4		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	150.7	91.1		180.3	38.6	2.4	256.5	6.4		62.3	108.8	
LOS	F	F		F	D	Α	F	Α		Е	F	
Approach Delay		100.7			76.4			100.8			99.8	
Approach LOS		F			Е			F			F	
Queue Length 50th (m)	~48.1	~134.2		~117.4	115.4	0.0	~107.4	28.6		25.3	~128.9	
Queue Length 95th (m)	#92.4	#167.0	r	m#134.4	m118.7	m0.0	m#167.0	36.3		46.1	#190.7	
Internal Link Dist (m)		100.7			169.9			140.5			41.2	
Turn Bay Length (m)	65.0			110.0		90.0	75.0					
Base Capacity (vph)	170	869		284	1089	506	241	1365		180	439	
Starvation Cap Reductn	0	16		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.06	1.11		1.29	0.80	0.14	1.46	0.43		0.62	1.07	

Area Type: Other

Cycle Length: 140
Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

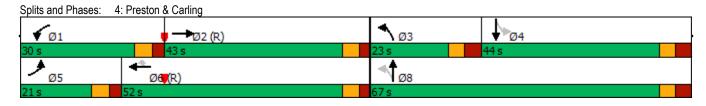
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.46 Intersection Signal Delay: 92.5 Intersection Capacity Utilization 125.2%

Intersection LOS: F
ICU Level of Service H

Analysis Period (min) 15

- Volume exceeds capacity, queue is theoretically infinite.
 - Queue shown is maximum after two cycles.
- # 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.



Satd. Flow (perm) 1583 3316 1745 1181 1647 1117 1117 1117 1117 1117 1117 1117 1117 1117 1117 1117 1117 1117 1117 1117 1117 1117 11117 11117 1117		•	-	•	•	-	4
Lane Configurations	Lane Group	FRI	FRT	WRT	WRR	SRI	SRR
Traffic Volume (vph)							
Future Volume (vph)							
Ideal Flow (vphpi)							
Storage Length (m)							
Storage Lanes			1900	1800			
Taper Length (m)							
Lane Util. Factor					1		1
Ped Bike Factor			0.0=	4.00	4.00		4.00
Fit Protected 0.950 0.950 0.950 Fit Protected 0.950 0.950 Satd. Flow (prot) 1674 3316 1745 1498 1674 1483 Fit Permitted 0.950 0.950 Satd. Flow (perm) 1583 3316 1745 1181 1647 1117 (Right Turn on Red 768 1670 1670 1670 1670 1670 1670 1670 1670			0.95	1.00			
Fit Protected 0.950		0.95				0.98	
Satd. Flow (prot) 1674 3316 1745 1498 1674 1483					0.850		0.850
Fit Permitted							
Satd. Flow (perm) 1583 3316 1745 1181 1647 1117 1181 1047 1117 1181 1	. ,		3316	1745	1498		1483
Right Turn on Red Yes Yes Satd. Flow (RTOR) 28 263 2	Flt Permitted						
Satd. Flow (RTOR) 60	Satd. Flow (perm)	1583	3316	1745	1181	1647	
Link Speed (k/h) 60 60 50 Link Distance (m) 120.9 518.9 229.0 Travel Time (s) 7.3 31.1 16.5 Confl. Peds. (#/hr) 65 65 13 81 Confl. Bikes (#/hr) 10 45 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 1% 2% 2% 1% 1% 1% 2% Adj. Flow (vph) 255 699 897 104 308 324 Shared Lane Traffic (%) Lane Group Flow (vph) 255 699 897 104 308 324 Enter Blocked Intersection No No No No No No No Lane Alignment Left Left Left Right L NA R NA Median Width(m) 7.0 7.0 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 Headway Factor 1.09 1.09 1.09 1.09 1.09 1.09 1.09 Turning Speed (k/h) 24 14 24 14 Number of Detectors 1 2 2 2 1 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 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 Position(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 Channel Detector 1 Channel Detector 1 Channel Detector 1 Channel Detector 2 Position(m) 28.7 28.7 Detector 2 Type Cl+Ex Cl+Ex Cl+Ex Detector 2 Detector 2 Extend (s) 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Protocted Phases 6 4 4	Right Turn on Red				Yes		
Link Speed (k/h) 60 60 50 Link Distance (m) 120.9 518.9 229.0 Travel Time (s) 7.3 31.1 16.5 Confl. Peds. (#/hr) 65 65 13 81 Confl. Bikes (#/hr) 10 45 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 1% 2% 2% 1% 1% 1% 2% 24 Adj. Flow (vph) 255 699 897 104 308 324 Shared Lane Traffic (%) Lane Group Flow (vph) 255 699 897 104 308 324 Enter Blocked Intersection No No No No No No No Lane Alignment Left Left Left Right L NA R NA Median Width(m) 7.0 7.0 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 1.09 Turning Speed (k/h) 24 14 24 14 Number of Detectors 1 2 2 1 1 1 Detector Template Left Thru Thru Right Left Right Leding Detector (m) 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 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) 6.1 1.8 1.8 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 Detector 1 Channel Detector 1 Channel Detector 1 Channel Detector 2 Extend (s) 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 CI+Ex Detector 2 Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 Detector 2 Protected Phases 6 4 4	Satd. Flow (RTOR)				28		263
Link Distance (m) 120.9 518.9 229.0			60	60		50	
Travel Time (s) 7.3 31.1 16.5 Confl. Peds. (#/hr) 65 65 13 81 Confl. Bikes (#/hr) 10 45 45 Peak Hour Factor 1.00							
Confl. Peds. (#/hr) 65 65 13 81 Confl. Bikes (#/hr) 10 45 Peak Hour Factor 1.00 <							
Confl. Bikes (#/hr)		65	7.0	51.1	65		81
Peak Hour Factor		- 00				10	
Heavy Vehicles (%)		1.00	1.00	1.00		1.00	
Adj. Flow (vph)							
Shared Lane Traffic (%) Lane Group Flow (vph) 255 699 897 104 308 324							
Lane Group Flow (vph) 255 699 897 104 308 324		255	699	897	104	308	324
Enter Blocked Intersection No No <th< td=""><td></td><td>055</td><td>200</td><td>207</td><td>404</td><td>000</td><td>004</td></th<>		055	200	207	404	000	004
Left Left Left Right L NA R NA	,						
Median Width(m) 7.0 7.0 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) 24 14 24 14 Number of Detectors 1 2 2 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 6.1 30.5 30.5 6.1 6.1 6.1 Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Leading Detector (m) 0.0							
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) 24 14 24 14 Number of Detectors 1 2 2 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 6.1 30.5 30.5 6.1 6.1 6.1 Leading Detector (m) 0.0		Left			Right		RNA
Crosswalk Width(m) 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 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) 24 14 24 14 Number of Detectors 1 2 2 1 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 6.1 30.5 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) 6.1 1.8 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 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 CI+Ex Detector 2 Size(m) 1.8 1.8 Detector 2 Size(m) 1.8 1.8 Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Prot NA NA Perm Perm Perm Protected Phases 5 2 6 Permitted Phases	Link Offset(m)						
Headway Factor	Crosswalk Width(m)		5.0	5.0		5.0	
Headway Factor	Two way Left Turn Lane						
Turning Speed (k/h) Number of Detectors 1 2 2 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 6.1 30.5 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) Detector 1 Size(m) 6.1 1.8 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) Detector 1 Queue (s) Detector 1 Delay (s) Detector 2 Position(m) 28.7 28.7 Detector 2 Size(m) 1.8 1.8 Detector 2 Type CI+Ex CI+Ex CI+Ex Detector 2 Size(m) Detector 2 Extend (s) Detector 2 Foroit NA NA Perm	1.09	1.09	1.09	1.09	1.09	1.09	
Number of Detectors 1 2 2 1 1 1 Detector Template Left Thru Thru Right Left Right Leading Detector (m) 6.1 30.5 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) 6.1 1.8 1.8 6.1 6.1 6.1 Detector 1 Type CI+Ex							
Detector Template			2	2			
Leading Detector (m) 6.1 30.5 30.5 6.1 6.1 6.1 Trailing Detector (m) 0.0					-		
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) 6.1 1.8 1.8 6.1 6.1 6.1 Detector 1 Type CI+Ex							
Detector 1 Size(m) 6.1 1.8 1.8 6.1 6.1 6.1 Detector 1 Type CI+Ex	` ,						
Detector 1 Type CI+Ex							
Detector 1 Channel Detector 1 Extend (s) 0.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Detector 1 Extend (s) 0.0		Cl+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 Detector 1 Delay (s) 0.0 0.0 0.0 0.0 0.0 0.0 Detector 2 Position(m) 28.7 29.7 28.7 28.7 29.7							
Detector 1 Delay (s) 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 Prot NA NA Perm Perm Perm Protected Phases 5 2 6 6 4 4	Detector 1 Queue (s)						
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 Prot NA NA Perm Perm Protected Phases 5 2 6 6 4 4	Detector 1 Delay (s)	0.0	0.0		0.0	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 Prot NA NA Perm Perm Protected Phases 5 2 6 4 4 Permitted Phases 6 4 4	Detector 2 Position(m)		28.7	28.7			
Detector 2 Type CI+Ex CI+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA NA Perm Perm Perm Protected Phases 5 2 6 4 4	Detector 2 Size(m)		1.8	1.8			
Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA NA Perm Perm Perm Protected Phases 5 2 6 6 4 4	Detector 2 Type						
Detector 2 Extend (s) 0.0 0.0 Turn Type Prot NA NA Perm Perm Perm Protected Phases 5 2 6 4 4			. <u>-</u> ~				
Turn TypeProtNANAPermPermPermProtected Phases526Permitted Phases644			0.0	0.0			
Protected Phases 5 2 6 Permitted Phases 6 4 4		Prot			Perm	Perm	Perm
Permitted Phases 6 4 4					1 61111	1 61111	1 51111
		5		0	•	A	4
Detector Phase 5 2 6 6 4 4		_	_				
	Detector Phase	5	2	6	6	4	4

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.9	15.7	29.7	29.7	39.0	39.0
Total Split (s)	24.0	101.0	77.0	77.0	39.0	39.0
Total Split (%)	17.1%	72.1%	55.0%	55.0%	27.9%	27.9%
Maximum Green (s)	18.1	95.3	71.3	71.3	33.0	33.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.2	2.0	2.0	2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.7	5.7	5.7	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?			<u> </u>			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			13.0	13.0	7.0	7.0
Flash Dont Walk (s)			11.0	11.0	26.0	26.0
Pedestrian Calls (#/hr)			20	20	20	20
Act Effct Green (s)	21.2	98.4	71.3	71.3	29.9	29.9
Actuated g/C Ratio	0.15	0.70	0.51	0.51	0.21	0.21
v/c Ratio	1.01	0.30	1.01	0.17	0.88	0.73
Control Delay	89.3	6.2	67.0	14.1	77.9	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.3	6.2	67.0	14.1	77.9	20.8
LOS	F	Α	Е	В	Е	С
Approach Delay		28.4	61.5		48.6	
Approach LOS		С	Е		D	
Queue Length 50th (m)	~75.7	43.9	~229.6	9.9	74.4	12.7
Queue Length 95th (m)	m#88.8	m45.0	#310.9	19.8	#113.7	47.2
Internal Link Dist (m)		96.9	494.9		205.0	
Turn Bay Length (m)	75.0			25.0		45.0
Base Capacity (vph)	253	2330	888	615	388	464
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	1.01	0.30	1.01	0.17	0.79	0.70
						- · · · ·

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 62 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01 Intersection Signal Delay: 46.1

Intersection Capacity Utilization 106.3%

Intersection LOS: D
ICU Level of Service G

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

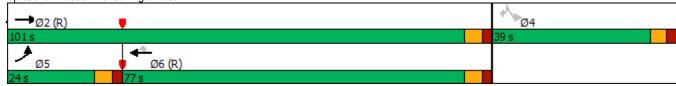
Queue shown is maximum after two cycles.

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: 5: Carling & Booth



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			ર્ન	7	ř	ĵ,		7	ĵ.	
Traffic Volume (vph)	29	41	34	47	121	31	82	477	60	17	508	54
Future Volume (vph)	29	41	34	47	121	31	82	477	60	17	508	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	15.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (m)	25.0			20.0			20.0			20.0		
Lane Util. 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
Ped Bike Factor		0.93			0.97	0.84	0.97	0.98		0.95	0.99	,,,,,,
Frt		0.956			0.0.	0.850	0.0.	0.983		0.00	0.986	
Flt Protected		0.986			0.986	0.000	0.950	0.000		0.950	0.000	
Satd. Flow (prot)	0	1584	0	0	1738	1498	1674	1674	0	1674	1673	0
Flt Permitted	•	0.874	•	•	0.894	1100	0.399	1011		0.415	1010	•
Satd. Flow (perm)	0	1373	0	0	1533	1261	680	1674	0	692	1673	0
Right Turn on Red	U	1070	Yes	U	1000	Yes	000	1014	Yes	002	1070	Yes
Satd. Flow (RTOR)		24	100			31		16	100		13	100
Link Speed (k/h)		50			50	31		50			50	
Link Distance (m)		101.4			151.8			160.5			163.2	
Travel Time (s)		7.3			10.9			11.6			11.8	
Confl. Peds. (#/hr)	40	1.3	46	46	10.9	40	52	11.0	80	80	11.0	52
Confl. Bikes (#/hr)	40		2	40		20	52		11	00		18
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
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	3%	1.00	1.00	4%	2%
Heavy Vehicles (%)	29	41	34		121		82			170		
Adj. Flow (vph)	29	41	34	47	IZI	31	02	477	60	17	508	54
Shared Lane Traffic (%)	0	101	٥	٥	100	24	82	F27	٥	17	FCO	0
Lane Group Flow (vph)	0	104	0	0	168	31		537	0	17	562	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			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
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	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		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	
Detector 1 Position(m)	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	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		Cl+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		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	
Detector 1 Delay (s)	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			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	Perm	NA		Perm	NA	
Protected Phases		4		2	8	*****	2	2		*****	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
_ 5.55(6) 1 11000	•						_	_				

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	67.0	67.0		67.0	67.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%	25.6%	74.4%	74.4%		74.4%	74.4%	
Maximum Green (s)	17.4	17.4		17.4	17.4	17.4	61.5	61.5		61.5	61.5	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped	Ped	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	20	20		20	20	20	20	20		20	20	
Act Effct Green (s)		17.2			17.2	17.2	61.7	61.7		61.7	61.7	
Actuated g/C Ratio		0.19			0.19	0.19	0.69	0.69		0.69	0.69	
v/c Ratio		0.37			0.58	0.12	0.18	0.47		0.04	0.49	
Control Delay		28.7			41.9	12.2	2.5	4.8		4.9	8.3	
Queue Delay		0.0			0.0	0.0	0.0	0.1		0.0	0.0	
Total Delay		28.7			41.9	12.2	2.5	4.9		4.9	8.3	
LOS		С			D	В	Α	Α		Α	А	
Approach Delay		28.7			37.2			4.6			8.2	
Approach LOS		С			D			Α			Α	
Queue Length 50th (m)		11.1			24.6	0.0	2.6	35.5		8.0	35.3	
Queue Length 95th (m)		24.5			43.0	6.6	0.5	1.7		2.6	55.1	
Internal Link Dist (m)		77.4			127.8			136.5			139.2	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		284			296	268	466	1153		474	1151	
Starvation Cap Reductn		0			0	0	0	98		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.37			0.57	0.12	0.18	0.51		0.04	0.49	
Intersection Summary												

Area Type: Other

Area Type: Cycle Length: 90

Actuated Cycle Length: 90

Offset: 43 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

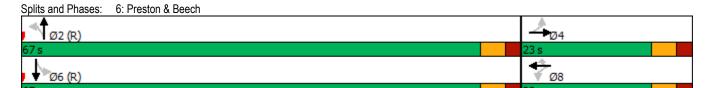
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58
Intersection Signal Delay: 12.0

Intersection Capacity Utilization 87.2%

Intersection LOS: B
ICU Level of Service E

Analysis Period (min) 15



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4						4			4	
Traffic Volume (vph)	4	2	10	0	0	0	8	576	27	6	576	15
Future Volume (vph)	4	2	10	0	0	0	8	576	27	6	576	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor		0.92						0.99			1.00	
Frt		0.916						0.994			0.997	
Flt Protected		0.988						0.999			0.999	
Satd. Flow (prot)	0	1494	0	0	0	0	0	1709	0	0	1717	0
Flt Permitted		0.988						0.993			0.995	
Satd. Flow (perm)	0	1466	0	0	0	0	0	1698	0	0	1710	0
Right Turn on Red		1100	Yes			Yes		1000	Yes		1710	Yes
Satd. Flow (RTOR)		10	163			163		6	163		4	163
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		114.6			152.9			73.8			160.5	
Travel Time (s)		8.3			11.0			5.3			11.6	
()	25	0.3	27	27	11.0	25	46	5.3	47	47	11.0	46
Confl. Peds. (#/hr)	25			21		25	40			47		
Confl. Bikes (#/hr)	4.00	4.00	1	4.00	4.00	3	4.00	4.00	21	4.00	4.00	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%	1%	1%	2%	2%	2%	1%	3%	1%	1%	3%	1%
Adj. Flow (vph)	4	2	10	0	0	0	8	576	27	6	576	15
Shared Lane Traffic (%)			_	_	_	_	_		_	_	_	
Lane Group Flow (vph)	0	16	0	0	0	0	0	611	0	0	597	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.5			3.5	
Link Offset(m)		-2.0			-1.0			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	
Detector Template	Left	Thru					Left	Thru		Left	Thru	
Leading Detector (m)	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	
Detector 1 Position(m)	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	
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)	0.0	28.7					0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8						1.8			1.8	
Detector 2 Type		CI+Ex						CI+Ex			CI+Ex	
Detector 2 Channel		OI LX						OI LX			OI · LX	
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases	1-61111	4					i eiiii	2		1 61111	6	
Permitted Phases	4	4					2			6	Ö	
		1						0			6	
Detector Phase	4	4					2	2		6	Ö	
Switch Phase	40.0	40.0					40.0	40.0		40.0	40.0	
Minimum Initial (s)	10.0	10.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Total Split (s)	21.0	21.0					69.0	69.0		69.0	69.0	
Total Split (%)	23.3%	23.3%					76.7%	76.7%		76.7%	76.7%	
Maximum Green (s)	15.5	15.5					63.9	63.9		63.9	63.9	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0					18.0	18.0		18.0	18.0	
Flash Dont Walk (s)	8.0	8.0					5.0	5.0		5.0	5.0	
Pedestrian Calls (#/hr)	20	20					20	20		20	20	
Act Effct Green (s)	20	12.0					20	75.6		20	75.6	
Actuated g/C Ratio		0.13						0.84			0.84	
v/c Ratio		0.13						0.43			0.42	
Control Delay		21.9						4.9			3.6	
Queue Delay		0.0						0.0			0.0	
Total Delay		21.9						4.9			3.6	
LOS		21.9 C						4.9 A			3.0 A	
Approach Delay		21.9						4.9			3.6	
Approach LOS		21.9 C						4.9 A			3.0 A	
Queue Length 50th (m)		0.9						26.8			21.4	
Queue Length 95th (m)		5.8						54.6			32.8	
Internal Link Dist (m)		90.6			128.9			49.8			136.5	
Turn Bay Length (m)		90.0			120.9			43.0			130.3	
Base Capacity (vph)		260						1428			1437	
Starvation Cap Reductn											69	
		0						0			09	
Spillback Cap Reductn											0	
Storage Cap Reductn		0						0 43				
Reduced v/c Ratio		0.06						0.43			0.44	
Intersection Summary	Other											
Area Type: Cycle Length: 90	Other											
Actuated Cycle Length: 90												
Offset: 27 (30%), Reference	d to phase 2·N	RTI and 6	SRTI Sta	rt of Gree	n							
Natural Cycle: 55	a to priase 2.14	DIL and 0.	ODTE, Ola	it or oreer	ı I							
Control Type: Actuated-Coor	rdinated											
Maximum v/c Ratio: 0.43	ullateu											
Intersection Signal Delay: 4.5	<u> </u>			In	tersection I	OC: 1						
Intersection Capacity Utilizat					U Level of		•					
Analysis Period (min) 15	1011 30.0 %			IC	O Level Of	Service E						
, ,												
Splits and Phases: 7: Pres	ston & Pamilla											
√ ¶ø2 (R)									4	Ø 4		

	۶	→	*	•	←	•	4	†	/	/	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			€			4			44	
Traffic Volume (vph)	34	4	25	22	2	17	37	515	48	23	581	5
Future Volume (vph)	34	4	25	22	2	17	37	515	48	23	581	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. 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
Ped Bike Factor												
Frt		0.946			0.944			0.989			0.999	
Flt Protected		0.974			0.974			0.997			0.998	
Satd. Flow (prot)	0	1608	0	0	1605	0	0	1706	0	0	1724	0
FIt Permitted		0.974			0.974			0.997			0.998	
Satd. Flow (perm)	0	1608	0	0	1605	0	0	1706	0	0	1724	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		113.6			154.3			71.5			73.8	
Travel Time (s)		8.2			11.1			5.1			5.3	
Confl. Peds. (#/hr)							46		47	47		46
Confl. Bikes (#/hr)									21			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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Adj. Flow (vph)	34	4	25	22	2	17	37	515	48	23	581	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	41	0	0	600	0	0	609	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		-2.0			-2.0			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
Sign Control		Stop			Stop			Free			Free	

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 59.1%
Analysis Period (min) 15

ICU Level of Service B

	٠	•	4	†	ļ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			41∱	f)	
Traffic Volume (vph)	28	39	56	572	541	79
Future Volume (vph)	28	39	56	572	541	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.921				0.983	
Flt Protected	0.980			0.996		
Satd. Flow (prot)	1575	0	0	3273	1701	0
FIt Permitted	0.980			0.996		
Satd. Flow (perm)	1575	0	0	3273	1701	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	68.0			65.2	71.5	
Travel Time (s)	8.2			4.7	5.1	
Confl. Peds. (#/hr)			46			47
Confl. Bikes (#/hr)						14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	3%	3%	2%
Adj. Flow (vph)	28	39	56	572	541	79
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	0	628	620	0
Enter Blocked Intersection	No	No	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			2.0	5.0	
Two way Left Turn Lane	0.0				0.0	
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14	24	1.00	1.00	14
Sign Control	Stop			Free	Free	
	Сюр			1100	1100	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

Control Type: Unsignalized Intersection Capacity Utilization 68.2% Analysis Period (min) 15

ICU Level of Service C

Lane Configurations		۶	→	•	•	+	•	1	†	/	/	+	-√
Traffic Volume (vph)	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	Lane Configurations	76	ĵ.		7	•	7		43-			ની	7
				4			434	5		1	416		649
	Future Volume (vph)	477	280	4	2	416	434	5	2	1	416	0	649
Storage Length (m) 550		1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Lanes 2	Storage Length (m)	55.0		0.0	30.0		25.0	0.0		0.0	0.0		0.0
Taper Length (m)	Storage Lanes	2		0	1		1	0		0	0		1
Ped Bike Factor	Taper Length (m)	25.0			25.0			25.0			25.0		
Fit	Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit Profected 0.950 0.95	Ped Bike Factor		1.00		0.89		0.93		0.93			0.81	0.77
Satt Flow (prort) 3185 1754 0	Frt		0.998				0.850		0.983				0.850
Fit Permitted 0.224 0.586 0.881 0.752 1.752 1.754 0.917 1.752 1.397 0.1374 0.0 0.1077 1.14	Flt Protected	0.950			0.950				0.970			0.950	
Satd Flow (perm) 751 1754 0 917 1762 1397 0 1374 0 0 1077 114 Right Turn on Red	Satd. Flow (prot)		1754	0		1762	1498	0		0	0	1674	1483
Right Turn on Red Yes	Flt Permitted	0.224			0.586				0.851			0.752	
Satd. Flow (RTOR)		751	1754		917	1762	1397	0	1374		0	1077	1144
Link Speed (k/h)	Right Turn on Red			Yes						Yes			Yes
Link Distance (m)	Satd. Flow (RTOR)		•				165						88
Travel Time (s)	Link Speed (k/h)					60							
Confi. Peds. (#hr) 35	Link Distance (m)												
Peak Hour Factor	Travel Time (s)		14.0			12.2			5.5			11.8	
Heavy Vehicles (%)	Confl. Peds. (#/hr)	35		62	62		35	73		65	65		73
Adj. Flow (vph)	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
Shared Lane Traffic (%) Lane Group Flow (yph) 477 284 0 2 416 434 0 8 0 0 416 64	Heavy Vehicles (%)	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%
Lane Group Flow (vph)	Adj. Flow (vph)	477	280	4	2	416	434	5	2	1	416	0	649
Enter Blocked Intersection No No No No No No No													
Left Left Left Right Right Left Left Right Right Left Left Right Rig	Lane Group Flow (vph)	477	284	0	2	416	434	0	8	0	0	416	649
Median Width(m) 7.0 7.0 0.0 3.5	Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Link Offset(m) 2.0 0.0 5.0 0.0 Crosswalk Width(m) 5.0 10.0 10.0 5.0 5.0 5.0 5.0 Two way Left Turn Lane Headway Factor 1.09	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Crosswalk Width(m) S.0 10.0 S.0 S.0 S.0 Two way Left Turn Lane Headway Factor 1.09 1.00	Median Width(m)		7.0			7.0			0.0			3.5	
Two way Left Turn Lane Headway Factor 1.09	Link Offset(m)					0.0			5.0			0.0	
Headway Factor	Crosswalk Width(m)		5.0			10.0			5.0			5.0	
Turning Speed (k/h) 24 14 24 14 24 14 24 14 24 15 24 15 2 15 2	Two way Left Turn Lane												
Number of Detectors 1 2 1 3 1	Headway Factor		1.09	1.09		1.09			1.09	1.09		1.09	1.09
Detector Template	Turning Speed (k/h)	24		14	24		14	24		14	24		14
Leading Detector (m) 6.1 30.5 6.1 0.0	Number of Detectors		2		1	2	1		2		1	2	1
Trailing Detector (m) 0.0	Detector Template				Left		Right						Right
Detector 1 Position(m) 0.0	Leading Detector (m)							6.1					6.1
Detector 1 Size(m)													0.0
Detector 1 Type	Detector 1 Position(m)	0.0				0.0							0.0
Detector 1 Channel Detector 1 Extend (s) 0.0	Detector 1 Size(m)												6.1
Detector 1 Extend (s) 0.0	Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Queue (s) 0.0	Detector 1 Channel												
Detector 1 Delay (s) 0.0 Turn Type pm+pt NA Perm NA Perm Perm NA Per	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 2 Position(m) 28.7 28.7 28.7 Detector 2 Size(m) 1.8 1.8 1.8 Detector 2 Type Cl+Ex Cl+Ex Cl+Ex Detector 2 Channel Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type pm+pt NA Perm NA <td>Detector 1 Queue (s)</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td>	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 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 pm+pt NA Perm	Detector 1 Delay (s)	0.0			0.0		0.0	0.0			0.0		0.0
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 pm+pt NA Perm NA	Detector 2 Position(m)												
Detector 2 Channel 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Turn Type pm+pt NA Perm NA <td>Detector 2 Size(m)</td> <td></td> <td>1.8</td> <td></td> <td></td> <td>1.8</td> <td></td> <td></td> <td>1.8</td> <td></td> <td></td> <td>1.8</td> <td></td>	Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+pt NA Perm	Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Turn Type pm+pt NA Perm NA Perm NA Perm NA Perm NA pm+o	Detector 2 Channel												
	Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Protected Phases 5 2 6 8 4	Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
	Protected Phases		2			6			8			4	5
	Permitted Phases	2			6		6	8			4		4
	Detector Phase	5	2		6	6			8			4	5
Switch Phase													

	•	→	•	•	←	•	4	†	/	/	ļ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.1	32.1		32.1	32.1	32.1	29.5	29.5		29.5	29.5	11.1
Total Split (s)	37.0	79.0		42.0	42.0	42.0	61.0	61.0		61.0	61.0	37.0
Total Split (%)	26.4%	56.4%		30.0%	30.0%	30.0%	43.6%	43.6%		43.6%	43.6%	26.4%
Maximum Green (s)	30.9	72.9		35.9	35.9	35.9	55.5	55.5		55.5	55.5	30.9
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.7
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	2.2	2.2		2.2	2.2	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		5.5			5.5	6.1
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
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	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	None
Walk Time (s)		7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)		19.0		19.0	19.0	19.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		20		20	20	20	20	20		20	20	
Act Effct Green (s)	72.9	72.9		44.4	44.4	44.4		55.5			55.5	77.3
Actuated g/C Ratio	0.52	0.52		0.32	0.32	0.32		0.40			0.40	0.55
v/c Ratio	0.61	0.31		0.01	0.75	0.78		0.01			0.98	0.90
Control Delay	22.6	20.3		38.0	53.5	38.5		24.4			44.1	12.1
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.1
Total Delay	22.6	20.3		38.0	53.5	38.5		24.4			44.1	12.2
LOS	С	С		D	D	D		С			D	В
Approach Delay		21.8			45.8			24.4			24.7	
Approach LOS		С			D			С			С	
Queue Length 50th (m)	34.3	40.2		0.3	93.2	63.9		1.1			93.5	58.0
Queue Length 95th (m)	44.6	58.1		2.5	#159.3	#129.3		4.4			m64.7	m22.3
Internal Link Dist (m)		209.9			179.3			52.1			140.5	
Turn Bay Length (m)	55.0			30.0		25.0						
Base Capacity (vph)	928	913		290	558	555		545			426	809
Starvation Cap Reductn	0	0		0	0	0		0			0	6
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	0.51	0.31		0.01	0.75	0.78		0.01			0.98	0.81

Other Area Type:

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 53 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98

Intersection Signal Delay: 30.5

Intersection Capacity Utilization 105.3%

Intersection LOS: C

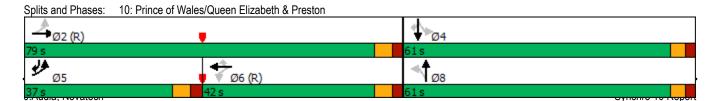
ICU Level of Service G

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.



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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			ર્ન	W	
Traffic Volume (vph)	53	0	18	117	0	14
Future Volume (vph)	53	0	18	117	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.993		
Satd. Flow (prot)	1745	0	0	1733	1510	0
Flt Permitted				0.993		
Satd. Flow (perm)	1745	0	0	1733	1510	0
Link Speed (k/h)	30			30	50	
Link Distance (m)	49.5			68.0	48.5	
Travel Time (s)	5.9			8.2	3.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	53	0	18	117	0	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	0	0	135	14	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	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						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

Intersection Capacity Utilization 24.2% Analysis Period (min) 15 ICU Level of Service A