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39 Years

# 1040 Somerset Street West

## Transportation Impact Assessment

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# 1040 Somerset Street West

# Transportation Impact Assessment

Prepared By:

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

Submitted: December 18, 2020
Revised: February 19, 2021
Revised: May 4, 2021
Revised: July 14, 2021

Novatech File: 112191
Ref: R-2020-143

NOVATECH
Engineers, Planners & Landscape Architects

July 14, 2021

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

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

Dear Sir:

**Reference:** **1040 Somerset Street West**
**Revised Transportation Impact Assessment Report**
**Novatech File No. 112191**

We are pleased to submit the following Revised Transportation Impact Assessment report in support of a Site Plan Control application for the above address. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

A TIA report was submitted in December 2020 and revised in February 2021 and May 2021 in support of a Site Plan Control application for the above address. This revised TIA report was prepared in order to address comments received from the City in June 2021.

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

Yours truly,

**NOVATECH**

Rochelle Fortier, B.Eng.
E.I.T. | Transportation/Traffic



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

# 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 licensed[1] or registered[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☑ or transportation planning ☐.

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

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Infrastructure Services and Community Sustainability
Planning and Growth Management
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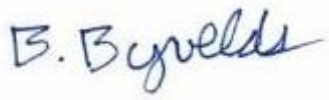
Dated at ____Ottawa_____ this __14 __ day of ___ _____July_ _____, 2021.
(City)

Name: _____Brad Byvelds, P.Eng._____
(Please Print)

Professional Title: _____Project Coordinator, Transportation/Traffic_____



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

| **Office Contact Information (Please Print)** | |
|---|---|
| Address: | 240 Michael Cowpland Drive, Suite 200 |
| City / Postal Code: | Ottawa, ON, K2M 1P6 |
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## EXECUTIVE SUMMARY

This revised Transportation Impact Assessment (TIA) report has been prepared in support of a Site Plan Control application for 1040 Somerset Street West.

The subject site is surrounded by the following:

- Somerset Street West and single detached dwellings converted for ground floor commercial uses to the north;
- The O-Train Trillium Line transit corridor to the east;
- A meditation centre and an auto repair shop to the south; and
- Breezehill Avenue and a dollar store to the west.

The subject site is located in the southeast corner of the Somerset Street West/Breezehill Avenue intersection. The site is currently occupied by a one storey building with a crossfit gym and a charity technology store. Access to the existing development is located approximately 8m from the northern property line/Somerset Street West right-of-way. It is also noted that Devonshire Public School is located on the west side of Breezehill Avenue, south of the subject site.

The proposed development consists of a 30-storey mixed-use building and will provide 268 units, 141 $m^2$ of commercial/retail floor space, and 191 underground parking spaces. Vehicular access is proposed via Breezehill Avenue near the southern limits of the subject site. The subject site is currently zoned TM[2121]H(100)-h, which permits the proposed development. Full build out of the site is anticipated by 2025.

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

*Development Design & Parking*

- Pedestrian connectivity will be provided to Somerset Street West and Breezehill Avenue. A paved pedestrian plaza is proposed fronting the site onto Somerset Street West, with steps merging into the sidewalk along Somerset Street West. Unit pavers are proposed along the Breezehill Avenue frontage, creating a wide boulevard with planters near the main building entrance. A clear width of 3m will be provided between the planters and the Breezehill Avenue curbline.
- The minimum vehicular and bicycle parking requirements of the ZBL will be met.
- OC Transpo bus stops are located at the Somerset Street West/Bayswater Avenue intersection, within a 150m walk of the development. The Bayview LRT station is also located within a 500m walk of the development.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.
- The proposed development will be served by a new vehicular access to Breezehill Avenue. This access will serve the underground parking. The existing site access will be closed as part of this application.
- The fire route for the proposed development will be located curbside.
- A garbage room is proposed to the north of the access to the underground parking. Garbage collection will occur curbside on Breezehill Avenue.

*Boundary Streets*

- Somerset Street West meets the target BLOS, TLOS, and TkLOS but does not meet the target PLOS. Based on the PLOS criteria, the target PLOS A is unachievable along roadways that carry greater than 3,000 AADT and have an operating speed of 60km/hr. Without a reduction in speed or a decrease in AADT, a maximum PLOS C can be achieved with a 2.0m sidewalk and 2.0m boulevard. This is identified for the City's consideration.
- Breezehill Avenue meets the target BLOS but does not meet the target PLOS. To achieve the target PLOS A, either a 1.8m sidewalk with a 2.0m wide boulevard or a 2.0m sidewalk with a minimum 0.5m wide boulevard would be required. Unit pavers are proposed along the Breezehill Avenue frontage, creating a wide boulevard with planters near the main building entrance. A clear width of 3m will be provided between the planters and the Breezehill Avenue curbline.

*Access Intersection Design*

- The existing access on-site is to be closed and the depressed curb and sidewalk is to be replaced with full height curb and sidewalk in accordance with City standards.
- The proposed access will be located approximately 35m south of Somerset Street West, measured from the nearest edge of the access to the Somerset Street West ROW. The access will have a width of approximately 6m.
- The width and location of the access adheres to the requirements of the *Private Approach By-Law* and *Zoning By-Law.*
- A waiver to the City's *Private Approach By-Law* is required for the grade of the underground parking ramp. A grade of 2% for a distance of 9m within the property is unachievable due to the layout of the underground parking garage, a maximum recommended grade differential of 10%, and headroom requirements at the base of the ramp. The proposed 6% grade for a distance of 6m within the building is sufficient for a passenger vehicle to stop entirely within the private property with both tires on the 6% grade and have appropriate sight lines to the sidewalk. Bollards will be provided along the parking ramp for a distance of approximately 4m outside the building in order to further differentiate the pedestrian and vehicular streams of traffic. This will allow a vehicle to encroach to the back of sidewalk within the right-of-way, which slopes in the direction of the roadway, improving sightlines for vehicles departing the parking garage.

*Transportation Demand Management*

- The additional vehicle trips at either signalized intersection within the study area due to the target transit modal share not being met would result in an increase of 1.9% or less to the overall intersection traffic volumes.
- Should the development only meet the Ottawa West or Ottawa Inner Area modal shares, the additional trips generated by the development are anticipated have a minimal impact on the Auto LOS within the study area.
- To encourage travel by sustainable modes, the proponent agrees to provide 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; and
    - Provide a multimodal travel option information package to new residents.

*Neighborhood Traffic Management*

- The majority of the traffic being generated by the proposed development is expected to arrive/depart to the north towards Somerset Street West.
- The added traffic generated by the proposed development is not anticipated to have a significant impact on the existing vehicular operations along Breezehill Avenue south of the site and will not change the classification of Breezehill Avenue from a local road to a collector.
- Based on the 2025 and 2030 total traffic projections, Breezehill Avenue will have sufficient lane capacity to accommodate the additional traffic generated by the site.

*Transit*

- The proposed redevelopment is anticipated to generate 83 transit trips (19 in, 64 out) during the AM peak hour, and 75 transit trips (47 in, 28 out) during the PM peak hour.
- The additional trips generated by the development are not anticipated to result in increased service for Route 11 at stop #8039 or #8027.
- No capacity deficiencies are anticipated for Line 1 or Line 2 at Bayview Station.

*Intersection MMLOS Analysis*

- The Somerset Street West/Bayswater Avenue intersection does not meet the target PLOS, BLOS, or TkLOS but meets the target TLOS and Auto LOS.
    - A reduction in the pedestrian walking distance on the north, east, and west approaches would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required.
    - The right turn criteria on the east and westbound approaches and left turn criteria on the north approach do not meet the target BLOS C. Bike lanes on all approaches would improve the BLOS to the target BLOS C. A further review of the Ontario Traffic Manual (OTM) Book 18 Desirable Cycling Facility Pre-selection Nomograph has been conducted. Based on an operating speed of 50km/hr and an AADT between 7,000-8,000, consideration should be given to bike lanes on Bayswater Avenue and Somerset Street West which would achieve the target BLOS C. Removal of the right turn lane on the east and westbound approaches would also improve the BLOS along Somerset Street West to the target BLOS C. This is identified for the City's consideration.
    - Increased radii on the all corners of the intersection would improve the TkLOS but would have a negative impact on the PLOS.
- The Somerset Street West/Preston Street intersection does not meet the target PLOS, BLOS, TLOS, or TkLOS but meets the target Auto LOS.
    - A reduction in the pedestrian walking distance on the south approach would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required.
    - The left turn criteria on all approaches does not meet the target BLOS. A reduction in the operating speed to 40km/h or bike lanes on all approaches would improve the BLOS to the target BLOS C. Based on AADT of 8,000-9,000vph and a speed of 50km/h, the OTM Nomograph suggests that consideration should be given to bike lanes on Preston Street and Somerset Street West which would achieve the target BLOS C.
    - The delay on the west approach in the AM peak is in excess of 40 seconds and does not meet the target TLOS D. All other approaches in the AM and PM peak period meets the target TLOS D. The target TLOS D can not be achieved without

removal of the advanced walk phases for pedestrians or an increase in the cycle length. Removal of the advanced walk phases would have a negative impact on the PLOS. As signals are coordinated in the area, an increased cycle length would result in an increased cycle length at other intersections within the area and may result in negative impacts on the Auto LOS at other signals.

- Increased radii on the all corners of the intersection would improve the TkLOS but would have a negative impact on the PLOS.

*Assessment of Safety and Operations*

- The sight distance east of Breezehill Avenue for vehicles to turn northbound left on Somerset Street West is limited by the vertical curve of the bridge over the O-Train Corridor and is further obstructed by the concrete end treatment of the guiderail. The guiderail and concrete end treatment are to be cut back as part of the proposed development, but the ISD will continue to be limited by the overpass.
- Traffic signal control is recommended at the Somerset Street/Breezehill Avenue intersection to address the inadequate intersection sight distance.
- The proposed traffic control signal will provide a new north-south crossing, providing improved pedestrian connectivity between Hintonburg Place and Breezehill Avenue as well as the Multi-Use Pathway on the east side of the Trillium O-Train line.
- A westbound left turn lane is recommended at the Somerset Street West/Breezehill Avenue intersection.

*Total Intersection Operations*

- Under 2025 and 2030 total traffic conditions, all intersections are projected to operate with acceptable conditions.
- With traffic signalization, a maximum queue of 45m is expected for the eastbound approach and a maximum queue of 55m is expected for the westbound approach of the Somerset Street West/Breezehill intersection. A maximum queue of 65m is expected for the westbound approach of the Somerset Street West/Bayswater Avenue intersection. Sufficient storage is available for the projected queue length as the spacing between the Bayswater Avenue and proposed Breezehill Avenue stop bars is approximately 85m.
- The analysis shows that the signalized intersection of Somerset Street West/Breezehill Avenue is anticipated to operate with acceptable conditions.
- Although anticipated to operate with a LOS E in the AM peak given the current signal timing plan, the Somerset Street West/Preston Street intersection could benefit from adjusted signal timing. Reassigning 5 seconds from the north/south movements to the east/west would improve the v/c ratio to a 0.88, or LOS D. This is identified for the City's consideration.
- Should the development not meet the target modal shares, the Somerset Street West/Preston Street intersection is anticipated to operate with a LOS F in the AM peak given the current signal timing plan. With adjusted signal timing a v/c ratio of 0.89 (LOS D) is anticipated. All other study area intersections are anticipated to operate with acceptable conditions.

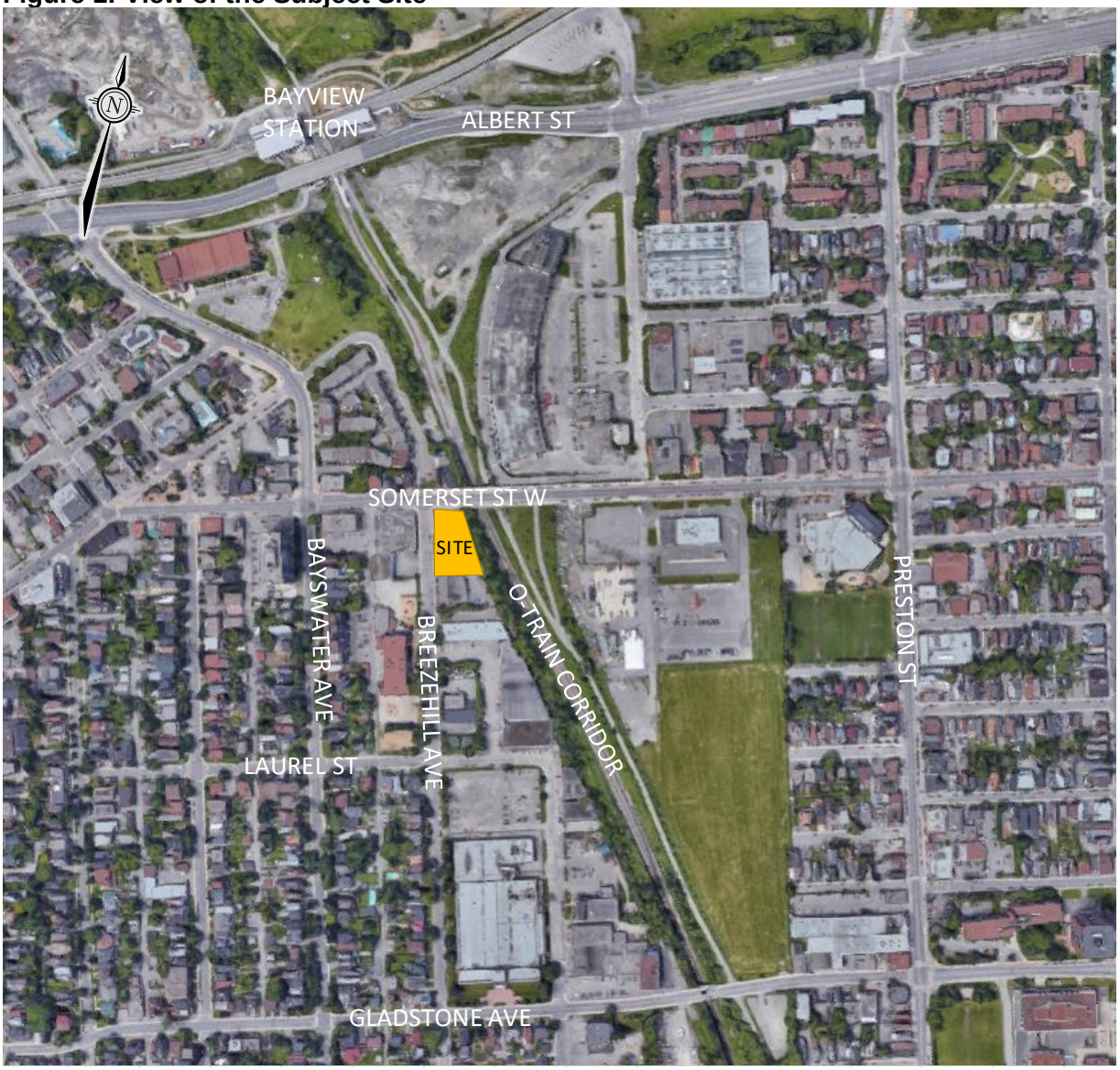
## 1.0 INTRODUCTION

This revised Transportation Impact Assessment (TIA) report has been prepared in support of a Site Plan Control application for 1040 Somerset Street West.

The subject site is located in the southeast corner of the Somerset Street West/Breezehill Avenue intersection. The site is currently occupied by a one storey building with a crossfit gym and a charity technology store. Access to the existing development is located approximately 8m from the northern property line/Somerset Street West right-of-way.

The location and surrounding context of the subject site are shown in **Figure 1.**

**Figure 1: View of the Subject Site**




A CTS was written in 2013 by Novatech in support of a Zoning By-Law amendment for the subject site.

The subject site is surrounded by the following:

- Somerset Street West and single detached dwellings converted for ground floor commercial uses to the north;
- The O-Train Trillium Line transit corridor to the east;
- A meditation centre and an auto repair shop to the south; and
- Breezehill Avenue and a dollar store to the west.

It is also noted that Devonshire Public School is located on the west side of Breezehill Avenue, south of the subject site.

## 2.0 PROPOSED DEVELOPMENT

The subject site is currently zoned TM[2121]H(100)-h, which permits the proposed development. The proposed development consists of a 30-storey mixed-use building and will provide 268 units, 141 $m^2$ of commercial/retail floor space, and 189 underground parking spaces. Vehicular access is proposed via Breezehill Avenue near the southern limits of the subject site.

Full build out of the site is anticipated by 2025.

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

## 3.0 SCREENING

### 3.1 Screening Form

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

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

- Location Trigger – The development is located in a Transit-Oriented Development (TOD) Zone (Bayview Station) and a Design Priority Area (Somerset Traditional Mainstreet); further assessment is required based on this trigger.

- Safety Trigger – Vertical curvature on Somerset Street West limits sightlines at Breezehill Avenue; further assessment is required based on this trigger.

The proposed development satisfies all three triggers for completing a TIA. A copy of the TIA screening form is included in **Appendix B**.

## 4.0 SCOPING

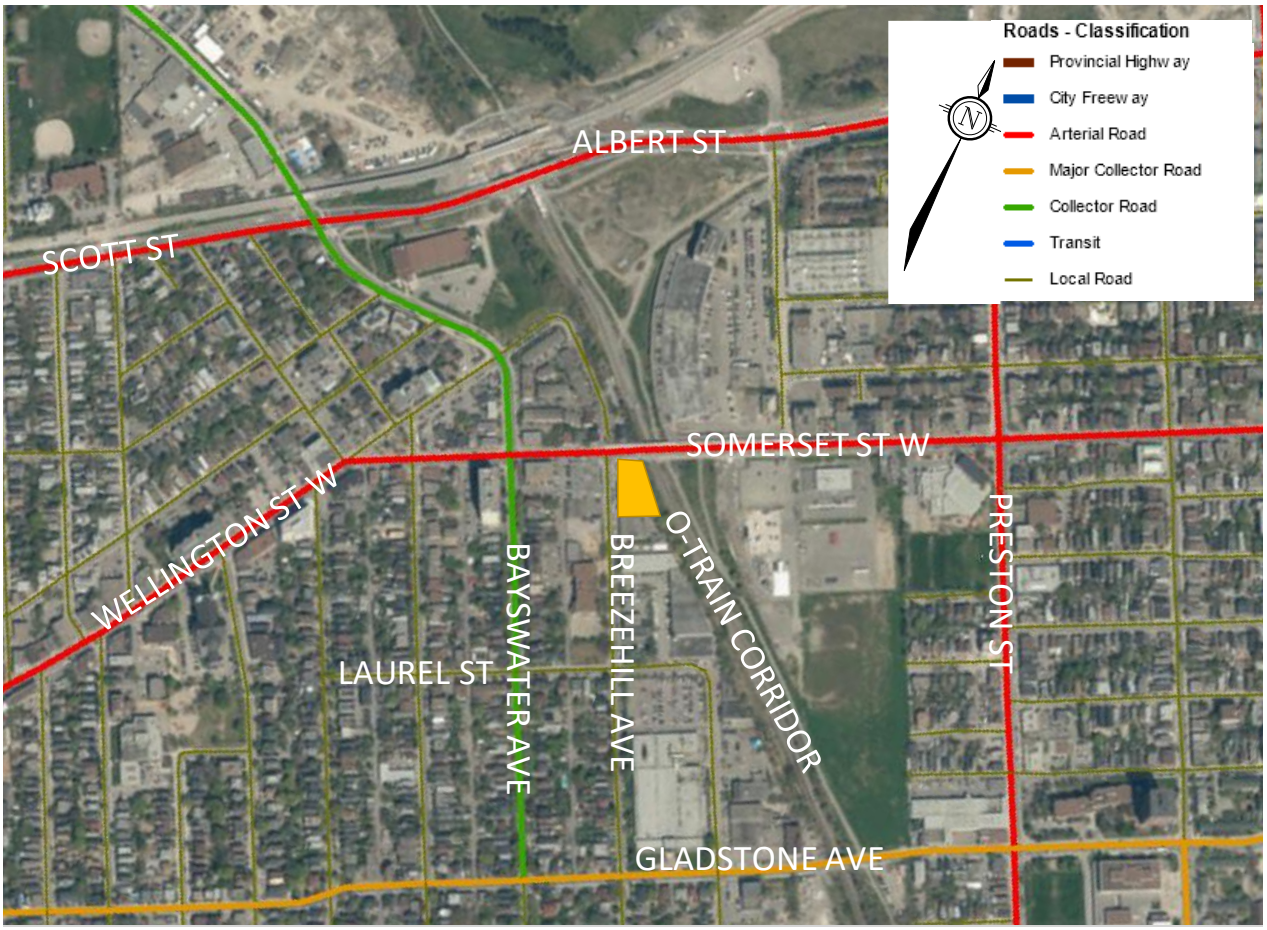
### 4.1 Existing Conditions

This section provides a review of existing conditions in the vicinity of the subject site including: roadways, intersections, driveways, pedestrian and cycling facilities, transit, area traffic management measures, traffic volumes, and collision records.

### 4.1.1 Roadways

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

**Figure 2: Roadway Network**




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

Somerset Street West is an arterial roadway that runs on an east-west alignment between Queen Elizabeth Drive and Wellington Street West. Somerset Street West has a two-lane urban cross-section and designed parking lanes on both sides of the roadway. Somerset Street West is a designated truck route between Wellington Street West and Elgin Street, with a regulatory speed limit of 50km/h. A short curb-side loading zone is provided on the north side of Somerset Street West, across from the subject site. A speed survey conducted in February 2021 indicates that the 85$^{th}$ percentile motor vehicle operating speed along Somerset Street West at Breezehill Avenue is 52km/h.

Bayswater Avenue is a collector road with a two-lane urban cross-section that runs on a north-south alignment between Wellington Street West and Carling Avenue. On-street parking is permitted on the west side of Bayswater Avenue south of Somerset Street West. Bayswater Avenue has a regulatory speed of 50km/h and is a designated truck route north of Somerset

Street West. North of the Wellington Street West/Hintonburg Place intersection, Bayswater Avenue continues as Bayview Station Road.

Breezehill Avenue is a local road with a two-lane urban cross-section that runs on a north-south alignment commencing at Somerset Street West and terminating in a dead-end south of Gladstone Avenue. Breezehill Avenue has a posted speed of 40km/h. On-street parking is permitted along the east side of Breezehill Avenue for approximately 70m south of Somerset Street West. On-street parking is permitted on the west side of Breezehill Avenue on weekends. A school bus loading zone is located on the west side of Breezehill Avenue south of the subject site, adjacent to the Devonshire Public School.

Preston Street is an arterial road with a two-lane urban cross-section that runs on a north-south alignment between Prince of Wales Drive/Queen Elizabeth Drive and Albert Street. Designated parking lanes are provided on the east side along sections of Preston Street north of Somerset Street West and on both sides along sections south of Somerset Street West. Preston Street is designated as an urban truck route with a speed limit of 50km/h.

Laurel Street is a local road with a two-lane cross-section that runs on an east-west alignment between Irving Avenue and Loretta Avenue. Laurel Street has a speed limit of 40km/h. On-street parking is permitted on both sides of Laurel Street between Breezehill Avenue and Bayswater Avenue.

Gladstone Avenue is a major collector road with a two-lane urban cross-section that runs on an east-west alignment between Parkdale Avenue and Cartier Street. On street parking is permitted on the south side of Gladstone Avenue on weekends between 3:00PM-9:00AM and on weekdays between 5:30PM-7:00AM. Designated on street parking is provided east of Preston Street. Gladstone Avenue has a posted speed limit of 40km/h.

### 4.1.2 Intersections

*Somerset Street West/Bayswater Avenue*

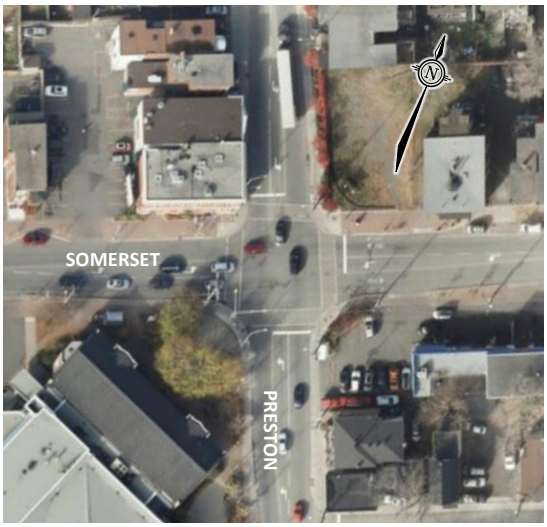
- Signalized intersection
- Eastbound/Westbound: one shared through/left turn lane, one dedicated right turn lane
- Northbound: one shared approach lane
- Southbound: one left turn lane, one shared through/right turn lane
- Textured crosswalks on all approaches

*Somerset Street West/Breezehill Avenue*

- Unsignalized intersection, with stop control on Breezehill Avenue and free flow on Somerset Street West
- One lane on all approaches
- An overpass over the O-Train corridor is located immediately east of the intersection
- Textured crosswalk on the south approach

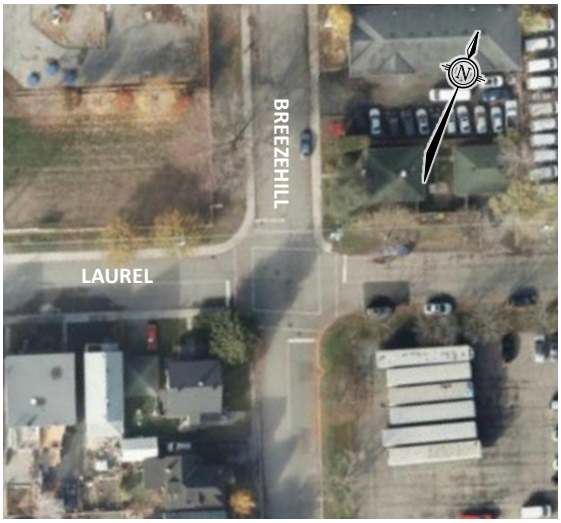

*Somerset Street West/Preston Street*

- Signalized intersection
- All approaches: one left turn lane, one shared through/right turn lane
- All approaches have no right turn on red restrictions, weekdays from 7AM-7PM
- Textured crosswalks on all approaches




*Laurel Street/Breezehill Avenue*

- Unsignalized intersection, with all way stop control
- One lane on all approaches
- Textured pedestrian crossing on the west approach, standard crossings on all other approaches



*Gladstone Avenue/Breezehill Avenue*

- Unsignalized intersection, with stop control on Breezehill Avenue and free flow on Gladstone Avenue
- One lane on all approaches
- Standard crosswalks on the north and south approaches


### 4.1.3 Driveways

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

*Breezehill Avenue, east side*

- Two driveways to the auto repair shop at 53 Breezehill Avenue
- One driveway to the businesses at 73 Breezehill Avenue
- One laneway serving the businesses at 35 Laurel Street
- One driveway to the residence at 99 Breezehill Avenue
- One driveway to the business at 103 Breezehill Avenue
- One driveway to the collision center at 111 Breezehill Avenue

*Breezehill Avenue, west side*

- One driveway to the businesses at 1050 Somerset Street West
- One driveway to the Devonshire Public School at 100 Breezehill Avenue

*Somerset Street West, south side*

- One public lane serving the businesses at 1050&1066 Somerset Street West, providing connectivity to Laurel Street

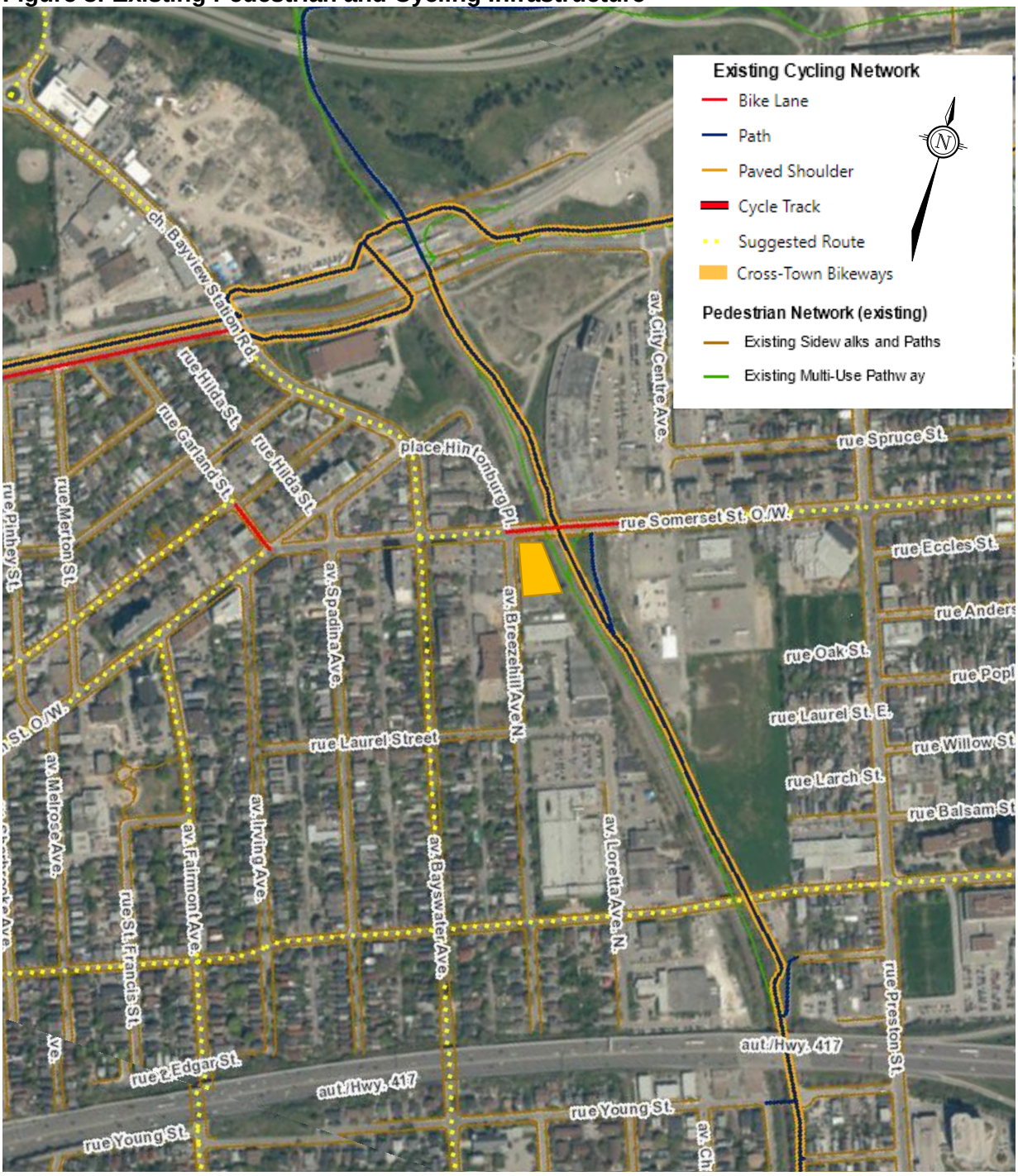
*Somerset Street West, north side*

- One driveway to the residence at 1057 Somerset Street West
- One driveway to the residence with ground floor restaurant at 1055 Somerset Street West
- One driveway to the building at 1053 Somerset Street West

### 4.1.4 Pedestrian and Cycling Facilities

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

**Figure 3: Existing Pedestrian and Cycling Infrastructure**




The City of Ottawa's 2013 Cycling Plan identifies Somerset Street West and Gladstone Avenue as Spine Routes in the Ultimate Cycling Network. Bayswater Avenue and Preston Street are identified as Local Routes, while the Trillium Pathway along the O-Train corridor is identified as Cross-Town Bikeway 6.

Within the vicinity of the subject site, bike lanes are provided on Somerset Street West for the extent of the overpass over the O-Train corridor. The Trillium Pathway, a Multi-Use Pathway (MUP), is provided along the O-Train corridor, with a connection at the Somerset Street West overpass. The Ottawa Cycling Plan notes as a Phase 1 project (2014-2019) Gladstone Avenue is to have shared use lanes from Preston Street to Parkdale Avenue.

Sidewalks are provided along both sides of all study area roadways, with the exception of the east side of Breezehill Avenue between Gladstone Avenue and Laurel Street, and on both sides of Laurel Street east of Breezehill Avenue. Textured crosswalks are provided at Someserset Street West/Breezehill Avenue, Somerset Street West/Bayswater Avenue, Somerset Street West/Preston Street, and Laurel Street/Breezehill Avenue, as described in Section 4.1.2.

### 4.1.5 Transit

The nearest transit stops to the subject site are located at the Somerset Street West/Bayswater Avenue intersection. Additionally, Bayview Station is located within a 600m radius of the subject site and can be accessed via the Trillium Pathway which runs along the O-Train corridor. Access to the Trillium Pathway is provided via the Somerset Street West overpass over the O-Train corridor, approximately 65m east of Breezehill Avenue. Bayview Station can be found at an approximately 385m walk north of the overpass.

An aerial depicting the nearest transit stops can be found in **Figure 4**. The location of the nearest OC Transpo transit stops, and the route(s) serviced at each stop is summarized in **Table 1**. OC Transpo Route information is included in **Appendix C.**

**Figure 4: OC Transpo Transit Stops**

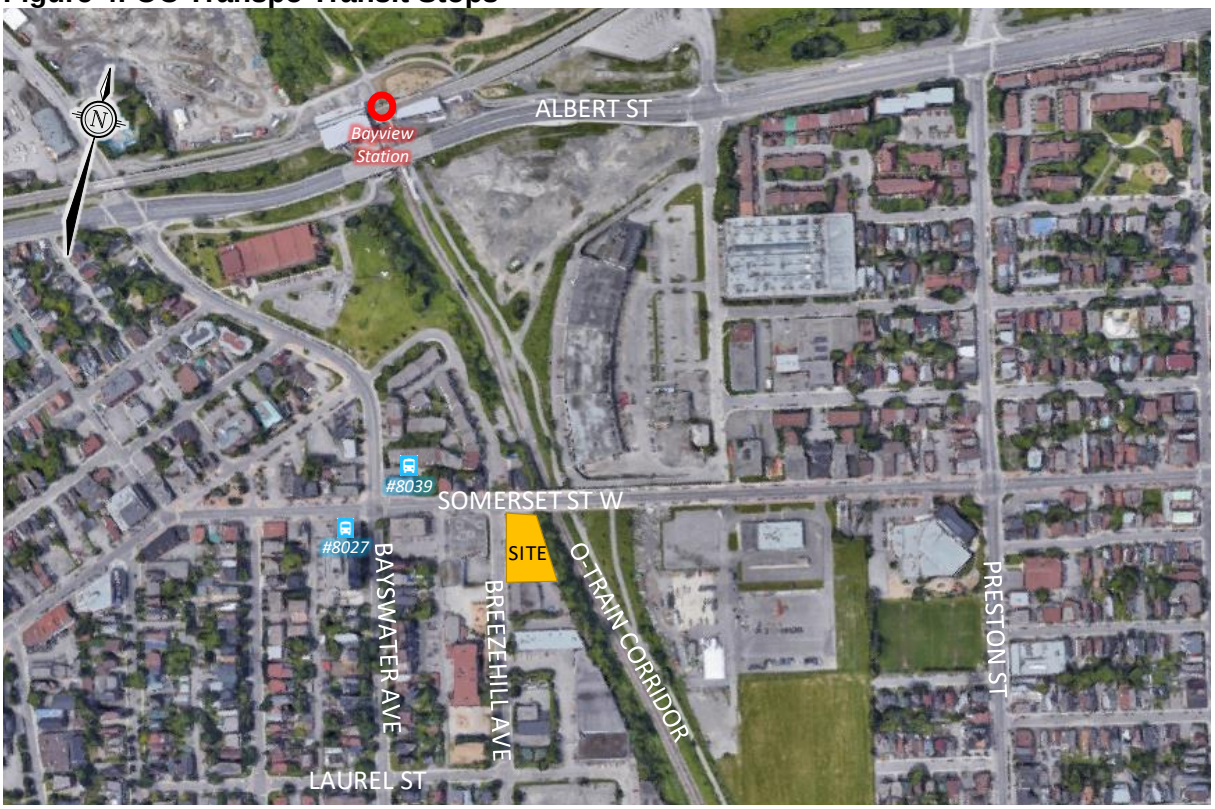


**Table 1: OC Transpo Transit Stops**

| OC Transpo Stop | Location | Route(s) Serviced |
|---|---|---|
| #8039 | North side of Somerset Street West, east of Bayswater Avenue | 11 |
| #8027 | South side of Somerset Street West, west of Bayswater Avenue | 11 |
| Bayview Station | Approximately 200m east of the Albert Street/Scott Street/Bayview Station Road intersection | 1, 2, 16, 61, 63, 66, 75, |

OC Transpo Route 11 travels from Lincoln Fields and Bayshore Station to Parliament Station. It operates seven days a week, with all day service.

Bayview Station connects both O-Train lines. Line 2, the Trillium Line, runs south to Carleton Station. Line 1, the Confederation Line, runs east towards Blair and west to Tunney's Pasture. The full length of O-Train Line 2 is currently closed for construction of the Trillium Line Expansion as described in Section 4.2 below, and Line 2 buses are operating in place of the train. The closure began in May 2020 and is expected to be in place for approximately 2 years.

A screenshot of the OC Transpo network map within the vicinity of the subject site can be found in **Appendix C**. Route 11 travels east/west along Somerset Street West within the vicinity of the subject site, while route 85 travels north/south along Preston Street. Replacement buses for Line 2 currently use Preston Street, Albert Street, Bayswater Avenue, and Somerset Street West.

### 4.1.6 Existing Area Traffic Management Measures

Speed humps are provided on Breezehill Avenue between Laurel Street and Somerset Street West. Centerline flex posts are located along Breezehill Avenue south of Laurel Street and on Bayswater Avenue between Somerset Street West and Gladstone Avenue. Blue flex posts are provided adjacent to the bike lanes on the Somerset Street West overpass east of Breezehill Avenue.

### 4.1.7 Existing Traffic Volumes

Weekday traffic counts were obtained from the City of Ottawa at available intersections. A weekday traffic count was obtained from the *951 Gladstone & 145 Loretta North TIA* (2019) at the Breezehill Avenue/Laurel Street intersection. The available weekday traffic counts were completed on the following dates:

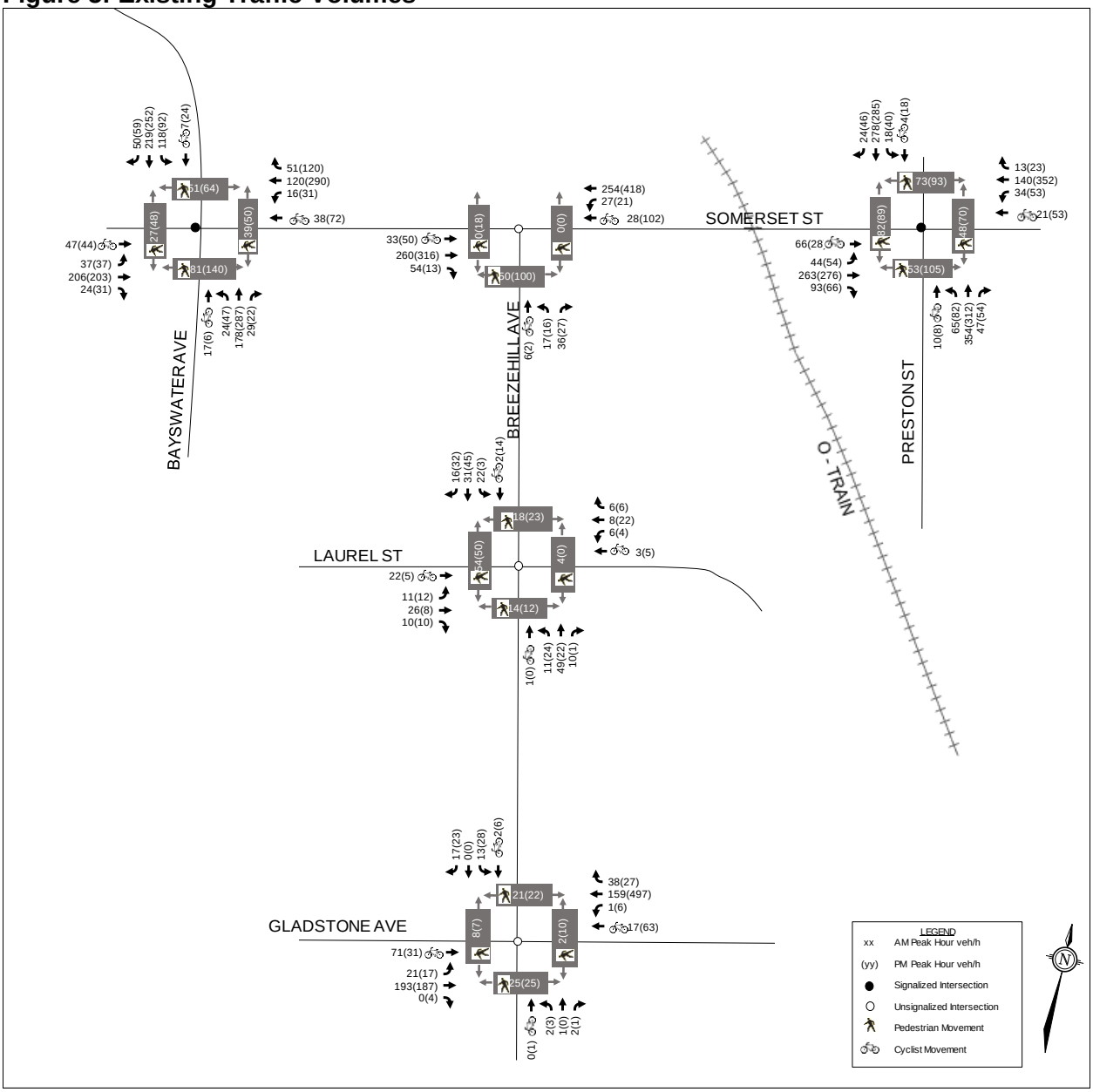
- Somerset Street West/Bayswater Avenue — September 7, 2016 (Wednesday)
- Somerset Street West/Breezehill Avenue — August 13, 2015 (Thursday)
- Somerset Street West/Breezehill Avenue — March 29, 2012 (Thursday)
- Somerset Street West/Preston Street — June 20, 2017 (Tuesday)
- Breezehill Avenue/Gladstone Avenue — July 18, 2018 (Wednesday)
- Breezehill Avenue/Laurel Street — April 23, 2019 (Tuesday)

The Devonshire Public School is located at 100 Breezehill Avenue, approximately 120m south of the Somerset Street West/Breezehill Avenue intersection. The turning movements collected at this intersection in August 2015 do not reflect school traffic. For this reason, turning movements

from the March 2012 traffic count at Somerset Street West/Breezehill Avenue were used to reflect typical weekday traffic along Breezehill Avenue during school operations. Through movements from the August 2015 count were used to reflect typical weekday traffic along Somerset Street West.

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

**Figure 5: Existing Traffic Volumes**



### 4.1.8 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 intersection. Copies of the collision summary report are included in **Appendix E**.

The collision data has been evaluated to determine if there are any identifiable collision patterns. The following summarizes the number of collisions at each intersection from January 1, 2014 to December 31, 2018.

**Table 2: Reported Collisions**

| Intersection | Impact Types | | | | | Total Number of Collisions |
|---|---|---|---|---|---|---|
| | Angle | Sideswipe | Rear End | Turning Movement | SMV/ Other | |
| Somerset Street West/Breezehill Avenue | 1 | - | - | - | - | **1** |
| Breezehill Avenue/Gladstone Avenue | 2 | - | - | 1 | - | **3** |
| Somerset Street West/Bayswater Avenue | 1 | 1 | 2 | 4 | 8 | **16** |
| Preston Street/Somerset Street West | 2 | 5 | 8 | 7 | 3 | **25** |

Somerset Street West/Breezehill Avenue
One angle collision was reported at the Somerset Street West/Breezehill Avenue intersection over the course of the last five years. The collision occurred between a northbound left turning and eastbound through vehicle.

Breezehill Avenue/Gladstone Avenue
Three collisions were reported at the Breezehill Avenue/Gladstone Avenue intersection over the course of the last five years. Two of the collisions were angle collisions with southbound vehicles failing to observe the right of way, while the other collision was an eastbound left turning vehicle colliding with a westbound through vehicle.

Somerset Street West/Bayswater Avenue
Sixteen collisions were reported at the Somerset Street West/Bayswater Avenue intersection over the course of the last five years. Of these, there were four turning movement impacts, two rear ends, one angle impact, one sideswipe, and eight collisions were classified as single vehicle or 'other'.

Of the eight single vehicle or other collisions, four involved pedestrians. Two southbound right turning vehicles struck pedestrians, one northbound left turning vehicle struck a pedestrian, and one eastbound right turning vehicle struck a pedestrian. No fatalities were reported.

Preston Street/Somerset Street West
Twenty-five collisions were reported at the Preston Street/Somerset Street West intersection over the course of the last five years. Of these, there were eight rear end collisions, seven turning movement impacts, five sideswipes, three single vehicle/other collisions, and two angle impacts.

Of the eight rear end collisions, five occurred on the westbound approach, and one each on the north, south, and east approaches. All resulted in property damage only.

Of the seven turning movement impacts, three involved cyclists. Two vehicles were turning westbound right and collided with westbound through cyclists, while the other was turning westbound left and collided with an eastbound cyclist . No fatalities were reported.

## 4.2 Planned Conditions

### 4.2.1 Planned Infrastructure Projects

The City's 2013 Transportation Master Plan identifies Somerset Street from Wellington Street West to Bank Street as a Transit Priority Corridor with transit signal priority and queue jump lanes at select intersections. This project is included as part of the Affordable Network.

The southern Trillium Line expansion will extend the service to the Airport and to Riverside South and is expected to be complete by 2022. As part of the Trillium Line South extension, a new station is proposed at Gladstone Avenue/Preston Street. The Confederation Line extensions (west and east) will extend Line 1 to Trim Station in the east and to Moodie Station/Baseline Station in the west. The eastern expansion is expected by 2024, while the western expansion is expected to be complete by 2025. A map showing the Confederation Line and Trillium Line extensions is included as **Figure 6**.

### 4.2.2 Other Development

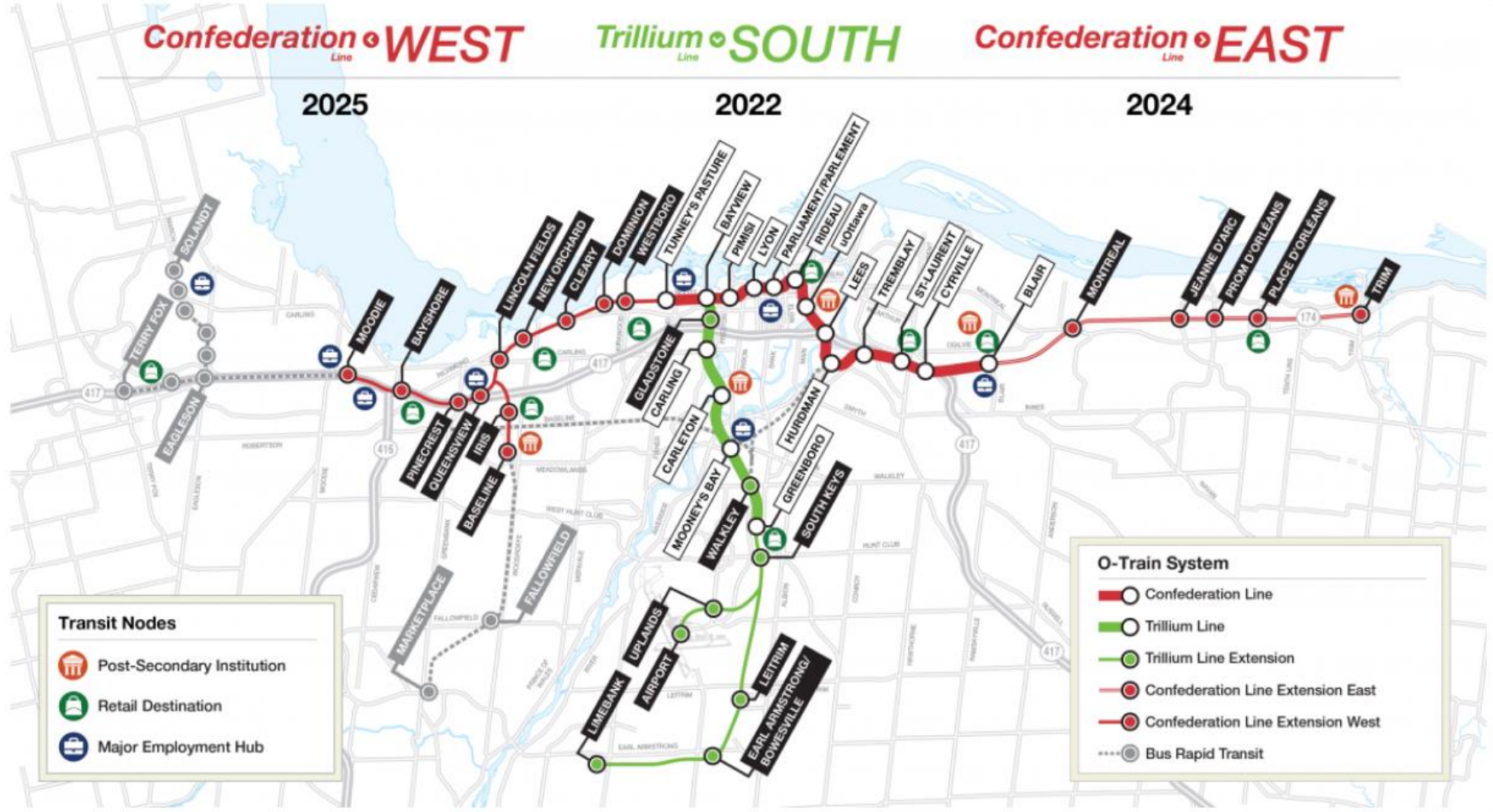
A review of the City's Development Application Search Tool has been conducted to identify any developments in the vicinity of the subject site that are being constructed, are approved, or are in the approval process. Other developments in the area are described as follows:

*1050 Somerset Street West*
A mixed-use development is planned with a total of 197 condominium units, 7 townhouse units, 466m$^2$ of commercial/retail floor space and 2,424m$^2$ of office space over 23 storeys. A TIS was written in 2012 in support of this development. Vehicular access is proposed via the laneway to the west of the site. It is understood that this development will not proceed until after 1040 Somerset Street West is occupied.

*145 Loretta Avenue & 951 Gladstone Avenue*
An Official Plan and Zoning By-Law Amendment was filed in support of a mixed-use development with office, retail and residential uses in three high-rise rowers at 30, 35, and 41 storeys in height. A total of 745 residential units, 206,480 square feet of office and 17,894 square feet of retail space is proposed. A TIA report was written in 2019 in support of this development. Access is proposed along Loretta Avenue North. Full buildout is anticipated by 2023.

*989 Somerset Street West & 158 Spruce Street*
A Site Plan Control application has been filed for a 12-storey mixed use building with a total of 127 residential units and 1,409m$^2$ of retail. A Transportation Overview was written in 2014 in support of this development. The site's vehicular connection is proposed via Spruce Street, and all site generated traffic is expected to use City Center Avenue to access the site.

**Figure 6: Confederation Line and Trillium Line Extensions**



*979 Wellington Street West*
An Official Plan Amendment has been filed for a 6-storey podium with a 17-storey tower that includes 283 residential dwellings and 12,618 square feet of ground floor commercial. A TIA was written in 2020 in support of this development. The sites vehicular access will be from Armstrong Street.

Other developments within the study area that were listed on the City's Development Application tool but did not have transportation reports include:

- 975 Gladstone Avenue
- 27 O'Meara Street
- 52 Garland Street

### 4.3 Study Area and Time Periods

A boundary street review will be conducted for Somerset Street West and Breezehill Avenue. The study area intersections include the proposed access as well as the signalized intersections of Somerset Street West/Preston Street and Somerset Street West/Bayswater Avenue, and the unsignalized intersections of Somerset Street West/Breezehill Avenue, Breezehill Avenue/Laurel Street, and Breezehill Avenue/Gladstone Avenue.

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 2025 buildout year and the 2030 five-year horizon.

### 4.4 Exemptions Review

This module reviews possible exemptions from the final TIA, as outlined in the City's TIA Guidelines. The applicable exemptions for this site are shown in **Table 3**.

**Table 3: TIA Exemptions**

| Module | Element | Exemption Criteria | Exemption Applies |
|---|---|---|---|
| **Design Review Component** | | | |
| **4.1** Development Design | *4.1.2* Circulation and Access | • Only required for site plans | Not Exempt |
| | *4.1.3* New Street Networks | • Only required for plans of subdivision | Exempt |
| **4.2** Parking | *4.2.1* Parking Supply | • Only required for site plans | Not Exempt |
| | *4.2.2* Spillover Parking | • Only required for site plans where parking supply is 15% below unconstrained demand | Exempt |
| **Network Impact Component** | | | |
| **4.5** Transportation Demand Management | *All elements* | • Not required for non-residential site plans expected to have fewer than 60 employees and/or students on location at any given time | Not Exempt |
| **4.6** Neighbourhood Traffic Management | *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 |

| Module | Element | Exemption Criteria | Exemption Applies |
|---|---|---|---|
| **4.8** Network Concept | *All elements* | • Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning | Exempt |

As the proposed number of parking spaces will adhere to the requirements of the City's Zoning By-Law, a review of the Spillover Parking Module is exempt from the analysis.

As the proposed development is permitted under the established zoning, the Network Concept Module is exempt from the analysis.

## 5.0 FORECASTING

### 5.1 Development-Generated Traffic

#### 5.1.1 Trip Generation

The site is currently occupied by a one storey building with a footprint of approximately 800m$^2$ with a CrossFit gym and a charity technology store. Trips generated by the existing uses were estimated using the peak hour rates identified in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10$^{th}$ Edition. Land Use Code 492 (Health/Fitness Club) and Land Use Code 820 for Shopping Center were used. As the technology store does not open until 10AM, no trips were assumed to be generated by this use in the AM peak hour.

The proposed development consists of a 30-storey mixed-use building and will provide 268 units with 141 m$^2$ of commercial/retail floor space. Trips generated by the proposed residential uses during the weekday AM and PM peak hours have been estimated using the relevant recommended rates outlined in the 2009 TRANS *Trip Generation Manual*. The vehicle trip generation rates, taken from Table 6.3 of the TRANS report, correspond to High-Rise Apartments (10+ Floors) in the Urban Area. The vehicle trip generation using the aforementioned rates have been converted to person trips using the assumed modal shares in the in Table 3.13 of the TRANS report. The directional split between inbound and outbound trips are based on the blended splits presented in Table 3.17 of the TRANS report.

Trips generated by the proposed commercial component have been estimated using land code 820 for Shopping Center in the ITE *Trip Generation Manual*, 10$^{th}$ Edition. Person trips were calculated using and ITE Trip to Person Trip factor of 1.28, consistent with the TIA guidelines.

Estimates of the person trips generated by the existing and proposed development are summarized in **Table 4**.

**Table 4: Person Trip Generation**

| Land Use | Units/ GFA | AM Peak (PPH) | | | PM Peak (PPH) | | |
|---|---|---|---|---|---|---|---|
| | | IN | OUT | TOT | IN | OUT | TOT |
| ***Existing Development*** | | | | | | | |
| Health/Fitness Club | 4,250 ft² | 4 | 4 | 8 | 10 | 9 | 19 |
| Commercial | 4,250 ft² | 0 | 0 | 0 | 10 | 10 | 20 |
| **Total** | | **4** | **4** | **8** | **20** | **19** | **29** |
| ***Proposed Redevelopment*** | | | | | | | |
| High-Rise Apartments | 268 units | 41 | 132 | 173 | 111 | 70 | 181 |
| Commercial | 1,520 ft² | 1 | 0 | 1 | 4 | 4 | 8 |
| **Total** | | **42** | **132** | **174** | **115** | **74** | **189** |
| **Difference** | | **38** | **128** | **166** | **95** | **55** | **160** |

Based on the previous table, the proposed redevelopment is anticipated to generate an additional 166 person trips in the AM peak hour and 160 person trips in the PM peak hour.

The 2011 TRANS O-D Survey Report indicates that the proposed development is located on the border of the Ottawa West and the Ottawa Inner Area districts. As the subject site is also located within 600m of the Bayview LRT Station, the site is also located within a Transit-Oriented Development (TOD) Zone. In TOD Zones, the transit share is assumed to increase significantly compared to the TRANS O-D district.

A comparison of the assumed modal shares for a TOD zone and the modal shares for the Ottawa Inner Area is presented in **Table 5**. The modal shares for the TRANS districts are based on all observed trips from/within the district during the AM peak and to/within the district during the PM peak.

**Table 5: Modal Share by District/Zone**

| Travel Mode | TOD Zone | Ottawa West | Ottawa Inner Area |
|---|---|---|---|
| Auto Driver | 15% | 45% | 35% |
| Auto Passenger | 5% | 10% | 10% |
| Transit | 65% | 20% | 20% |
| Bicycle | 5 | 10 | 5 |
| Walk | 10 | 15 | 30 |

As the Ottawa Inner Area and Ottawa West have a higher non-auto modal share compared to the TOD zone, the TOD modal shares have been adjusted to reflect a lower transit modal share and higher non-auto modal share. A full breakdown of the projected person trips by modal share are shown in **Table 6**.

**Table 6: Person Trips by Modal Share**

| Travel Mode | Modal Share | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|---|
| | | IN | OUT | TOT | IN | OUT | TOT |
| ***Existing Development*** | | | | | | | |
| *Health/Fitness Club Person Trips* | | 4 | 4 | 8 | 10 | 9 | 19 |
| Auto Driver | 15% | 1 | 1 | 2 | 1 | 1 | 2 |
| Auto Passenger | 5% | 0 | 0 | 0 | 1 | 1 | 2 |
| Transit | 50% | 2 | 2 | 4 | 5 | 4 | 9 |
| Bicycle | 10% | 0 | 0 | 0 | 1 | 1 | 2 |
| Walk | 20% | 1 | 1 | 2 | 2 | 2 | 4 |
| *Commercial Person Trips* | | 0 | 0 | 0 | 10 | 10 | 20 |
| Auto Driver | 15% | 0 | 0 | 0 | 1 | 1 | 2 |
| Auto Passenger | 5% | 0 | 0 | 0 | 1 | 1 | 2 |
| Transit | 50% | 0 | 0 | 0 | 5 | 5 | 10 |
| Bicycle | 10% | 0 | 0 | 0 | 1 | 1 | 2 |
| Walk | 20% | 0 | 0 | 0 | 2 | 2 | 4 |
| **Auto Driver (Total)** | | **1** | **1** | **2** | **2** | **2** | **4** |
| **Auto Passenger (Total)** | | **0** | **0** | **0** | **2** | **2** | **4** |
| **Transit (Total)** | | **2** | **2** | **4** | **10** | **9** | **19** |
| **Bicycle (Total)** | | **0** | **0** | **0** | **2** | **2** | **4** |
| **Walk (Total)** | | **1** | **1** | **2** | **4** | **4** | **8** |
| ***Proposed Redevelopment*** | | | | | | | |
| *High-Rise Apartment Person Trips* | | 41 | 132 | 173 | 111 | 70 | 181 |
| Auto Driver | 15% | 6 | 20 | 26 | 17 | 11 | 28 |
| Auto Passenger | 5% | 3 | 6 | 9 | 6 | 3 | 9 |
| Transit | 50% | 20 | 66 | 86 | 55 | 35 | 90 |
| Bicycle | 10% | 4 | 13 | 17 | 11 | 7 | 18 |
| Walk | 20% | 8 | 27 | 35 | 22 | 14 | 36 |
| *Commercial Person Trips* | | 1 | 0 | 1 | 4 | 4 | 8 |
| Auto Driver | 15% | 0 | 0 | 0 | 1 | 1 | 2 |
| Auto Passenger | 5% | 0 | 0 | 0 | 0 | 0 | 0 |
| Transit | 50% | 1 | 0 | 1 | 2 | 2 | 4 |
| Bicycle | 10% | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk | 20% | 0 | 0 | 0 | 1 | 1 | 2 |
| **Auto Driver (Total)** | | **6** | **20** | **26** | **18** | **12** | **30** |
| **Auto Passenger (Total)** | | **3** | **6** | **9** | **6** | **3** | **9** |
| **Transit (Total)** | | **21** | **66** | **87** | **57** | **37** | **94** |
| **Bicycle (Total)** | | **4** | **13** | **17** | **11** | **7** | **18** |
| **Walk (Total)** | | **8** | **27** | **35** | **23** | **15** | **38** |
| **Auto Driver (Difference)** | | **5** | **19** | **24** | **16** | **10** | **26** |
| **Auto Passenger (Difference)** | | **3** | **6** | **9** | **4** | **1** | **5** |
| **Transit (Difference)** | | **19** | **64** | **83** | **47** | **28** | **75** |
| **Bicycle (Difference)** | | **4** | **13** | **17** | **9** | **5** | **14** |
| **Walk (Difference)** | | **7** | **26** | **33** | **19** | **11** | **30** |

Based on the previous table, the proposed redevelopment is anticipated to generate an additional 24 vehicle trips during the AM peak hour and 26 vehicle trips during the PM peak hour.

The commercial land use is expected 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, and pass-by trips are made as intermediate stops on the way to another destination. However, as the retail development is only anticipated to generate one vehicle trip during the AM peak hour and eight vehicle trips during the PM peak hour, pass-by trips are anticipated to be minimal. The analysis presented in this study assumes that all trips generated by the retail development are primary trips.

Due to the nature of the proposed land uses of the development, it is possible that some of the total volume of site-generated trips will be internally captured within the site (i.e., tenants from the apartments that frequent the commercial component). However, in the interest of making a conservative estimate of the likely traffic impact associated with the development, the possibility of traffic being internally captured has been ignored. The analysis presented in this study assumes that all trips generated by the proposed development are 'external' trips.

### 5.1.2 Trip Distribution

The distribution of traffic generated by the existing and proposed development has been assumed to be consistent with the distribution outlined in the 2013 CTS. The trip distribution is based observed traffic patterns at the study area intersections. The residential trip distribution is based on all trips departing in the AM and arriving in the PM, while the commercial trip distribution is based on the prevailing off-peak hour traffic patterns. The assumed trip distribution is summarized as follows:

*Residential*
- 15% to/from the south via Breezehill Avenue
- 35% to/from the west via Somerset Street West
- 50% to/from the east via Somerset Street West

*Commercial*
- 15% to/from the south via Breezehill Avenue
- 45% to/from the west via Somerset Street West
- 40% to/from the east via Somerset Street West

## 5.2 Background Traffic

### 5.2.1 General Background Growth Rate

The 2019 *951 Gladstone Avenue and 145 Loretta Avenue North TIA* utilized no background growth rate for Somerset Street West, Gladstone Avenue, Preston Street, Breezehill Avenue, or Laurel Street.

The 2013 CTS for the subject site identified that traffic volumes along the study area roadways were decreasing, based on a review of historic counts, but applied a nominal 1% background growth rate in the interest of ensuring a conservative analysis of future operating conditions within the study area.

A review of the City of Ottawa's Long-Range Transportation Model has been conducted to determine an appropriate background growth rate for the area roadways.

**Table 7: Long-Range Transportation Model Summary**

| Roadway Segment | 2011 Traffic Volumes | 2031 Traffic Volumes | Growth per Annum |
|---|---|---|---|
| Somerset Street West – Between Breezehill Avenue and Preston Street | 565 | 665 | 0.8% |
| Preston Street – North of Somerset Street West | 1018 | 1047 | 0.1% |
| Preston Street – South of Somerset Street West | 868 | 918 | 0.3% |
| Gladstone Avenue – Between Bayswater Avenue and Preston Street | 251 | 418 | 3.3% |
| Bayswater Avenue – Between Somerset Street West and Laurel Street | 474 | 474 | 0.0% |
| Bayswater Avenue – Between Somerset Street West and Bayview Station Road | 386 | 485 | 1.3% |

Traffic counts obtained for the 2013 CTS were compared against newer traffic counts obtained for this study. Historically, based on the traffic counts, the AADT on Gladstone Avenue grew 1.5% per year, while no growth was found on Preston Street.

The City's intersection traffic growth rate figures suggest that the Somerset Street West/Bayswater Avenue has historically grown 0.2% to 2% per year from 2000 to 2016. The figures also suggest that the Somerset Street West/Preston Street and Gladstone Avenue/Preston Street intersections have grown -2% to 0.2% per year.

For the purposes of this analysis, a 1% per annum growth rate will be applied to traffic along Somerset Street West and Bayswater Avenue. A 1.5% annual growth rate will be applied to traffic along Gladstone Avenue. No growth rate will be applied to traffic along Preston Street, Breezehill Avenue, or Laurel Street.

### 5.2.2 Other Area Development

Traffic generated by the developments at 979 Wellington Street West and 145 Loretta Avenue & 951 Gladstone Avenue were added to the 2025 background traffic volumes. Traffic generated by the development at 1050 Somerset Street West was added to the 2030 background traffic volumes. As no traffic reports were required in support of the development at 975 Gladstone, 27 O'Meara Street, and 52 Garland Street, traffic generated by this development is anticipated to be negligible. Traffic generated by the development at 989 Somerset Street West & 158 Spruce Street are not anticipated to utilize the study area intersections.

Relevant excerpts from other area developments are included in **Appendix F**.

Existing site traffic, proposed site traffic, and net site traffic are shown in **Figures 7**, **8**, and **9**, respectively. Background traffic volumes for the 2025 buildout and 2030 five-year horizon are shown in **Figures 11** and **12**. Total traffic volumes for the 2025 buildout and 2030 five-year horizon year are shown in **Figures 13** and **14**.

**Figure 7: Existing Site Traffic**

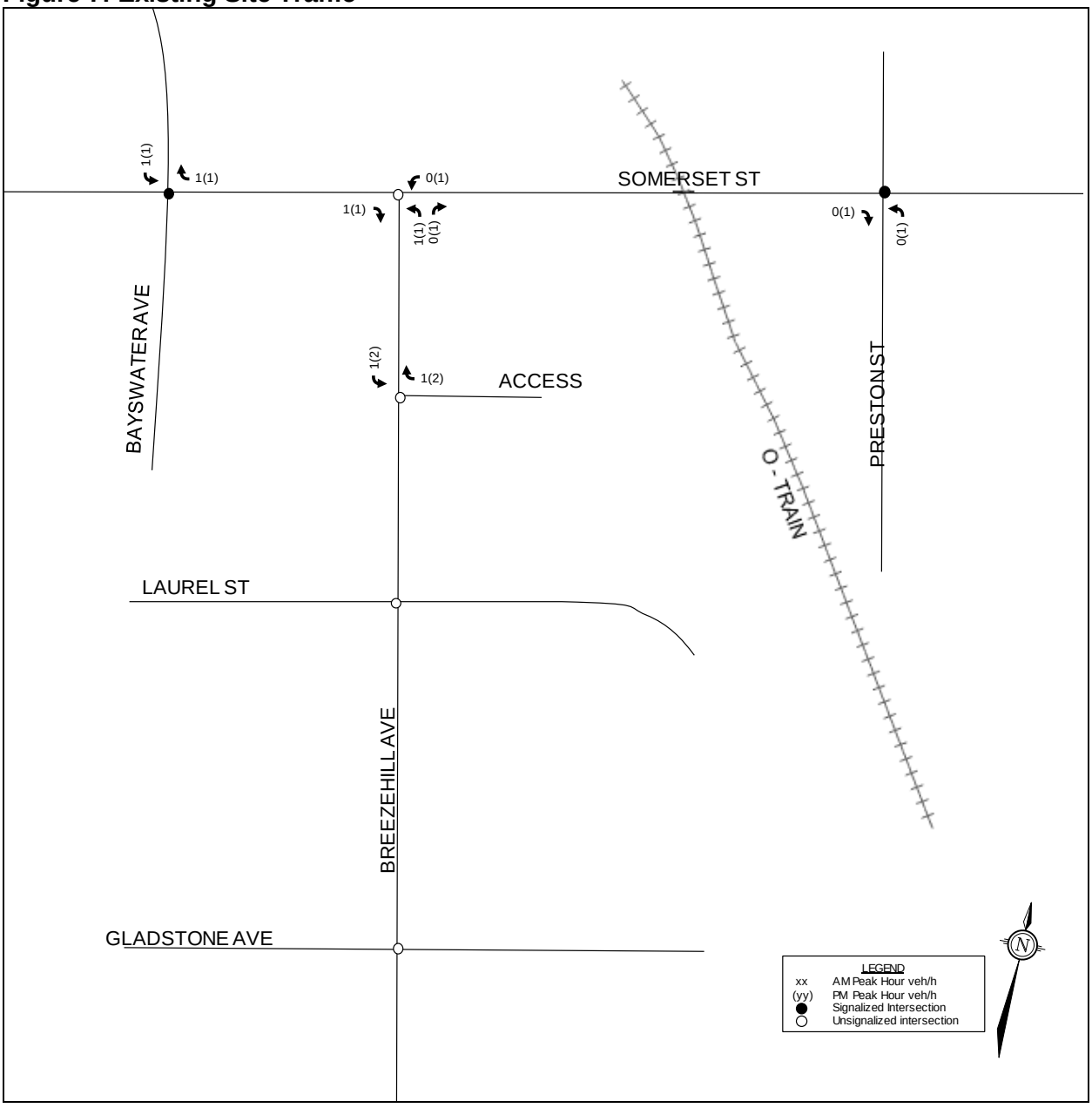


**Figure 8: Proposed Site Traffic**

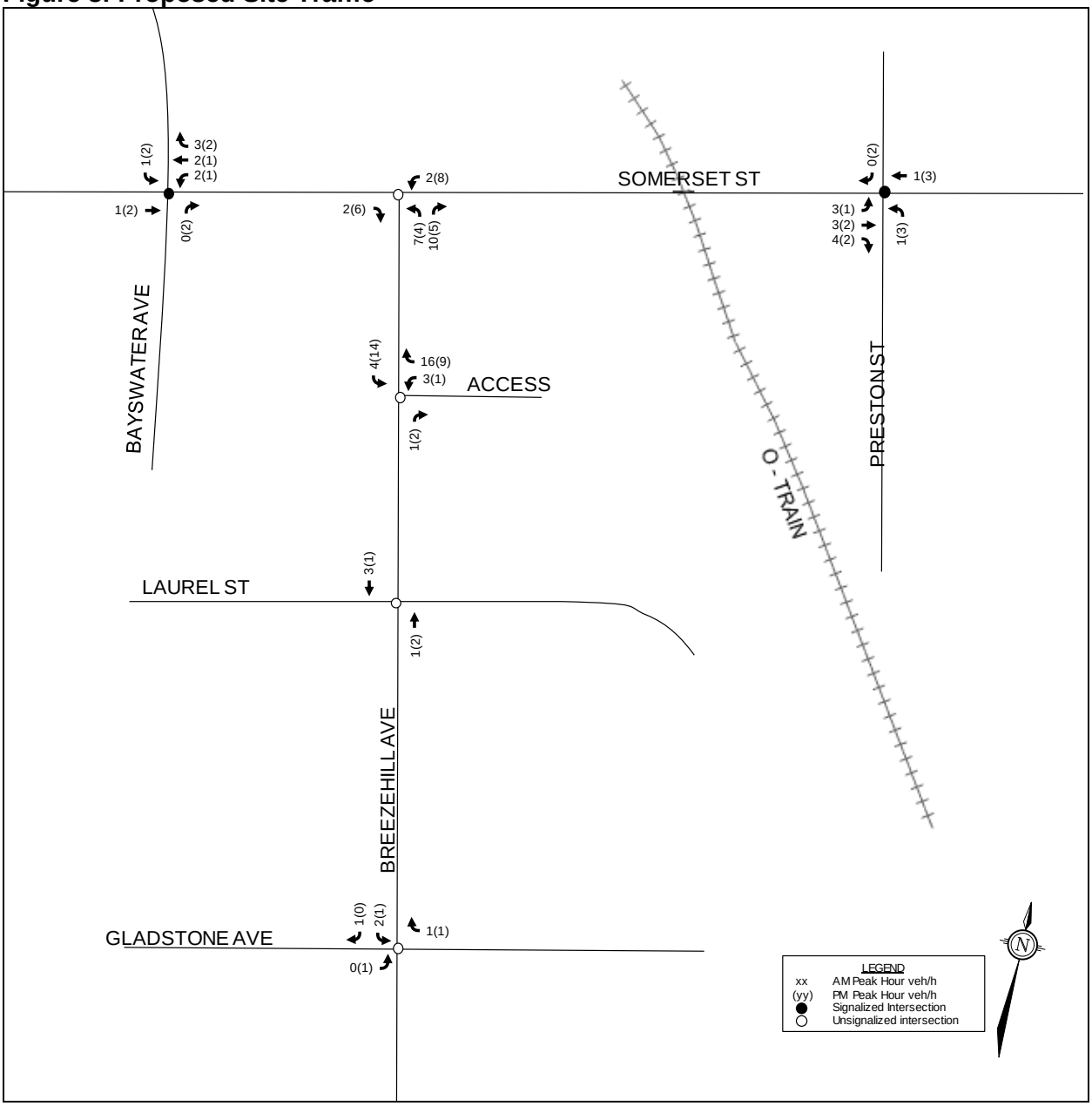


**Figure 9: Net Site Traffic**

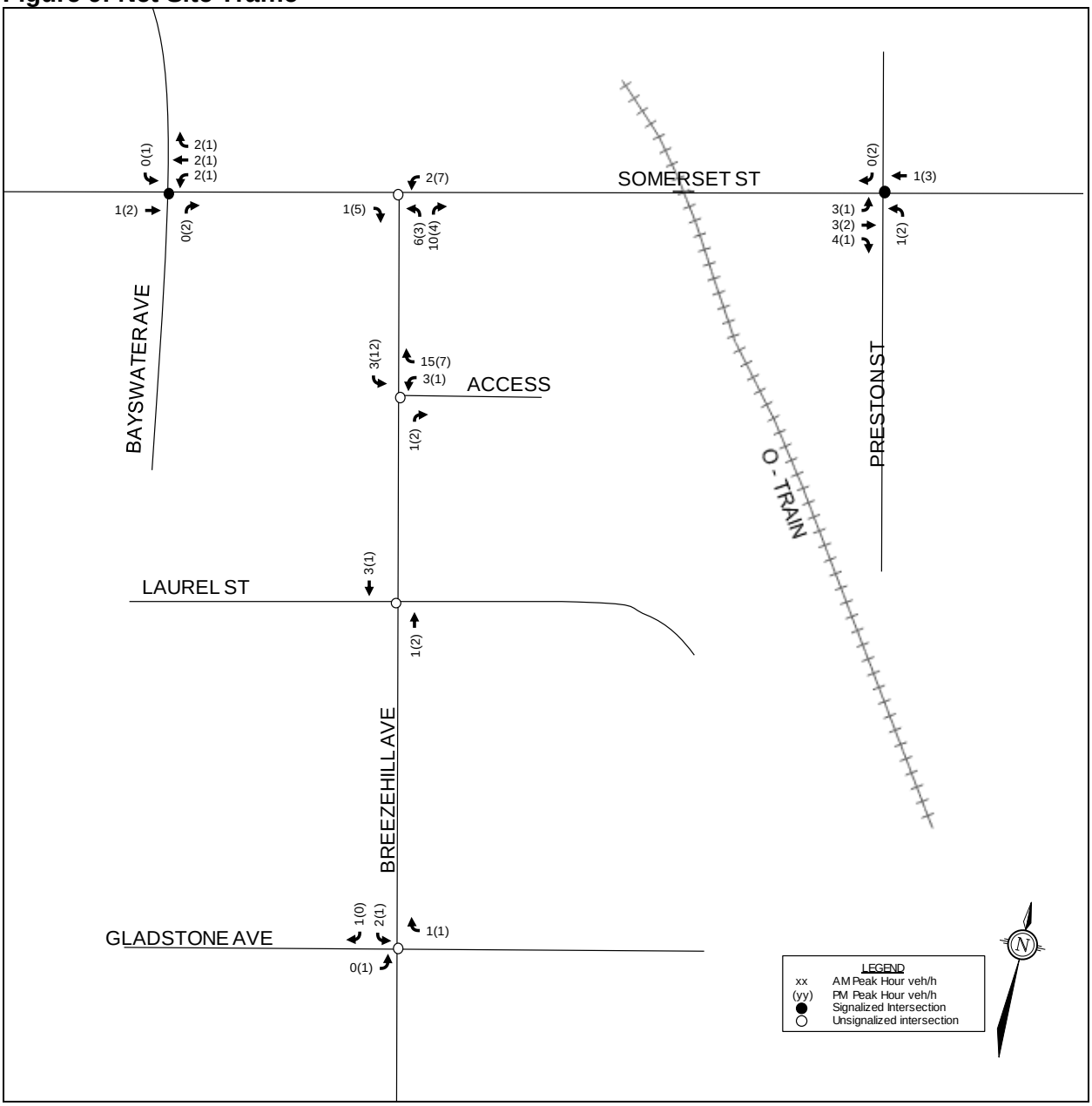


**Figure 10: 2025 Background Traffic**

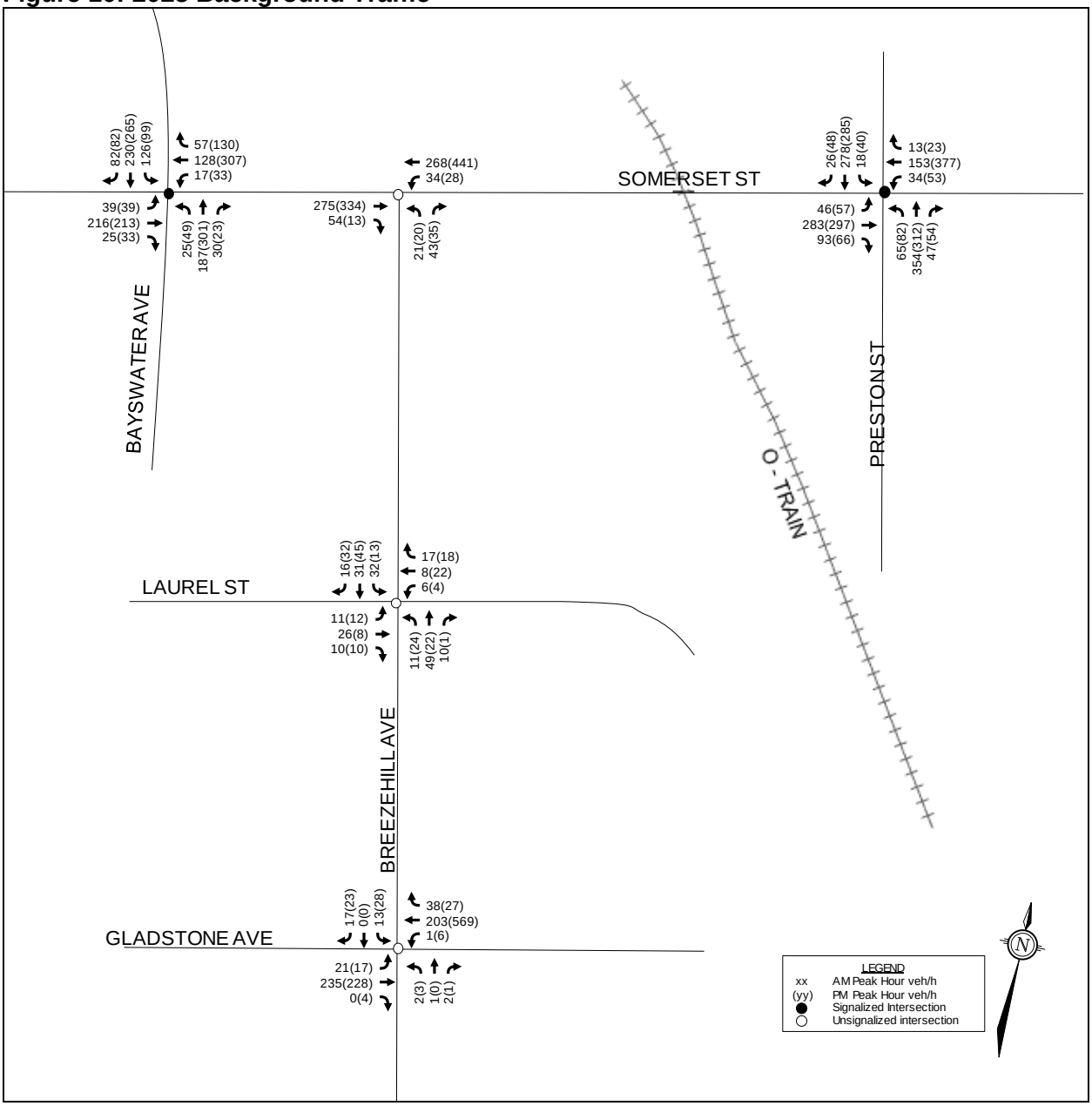


**Figure 11: 2030 Background Traffic**

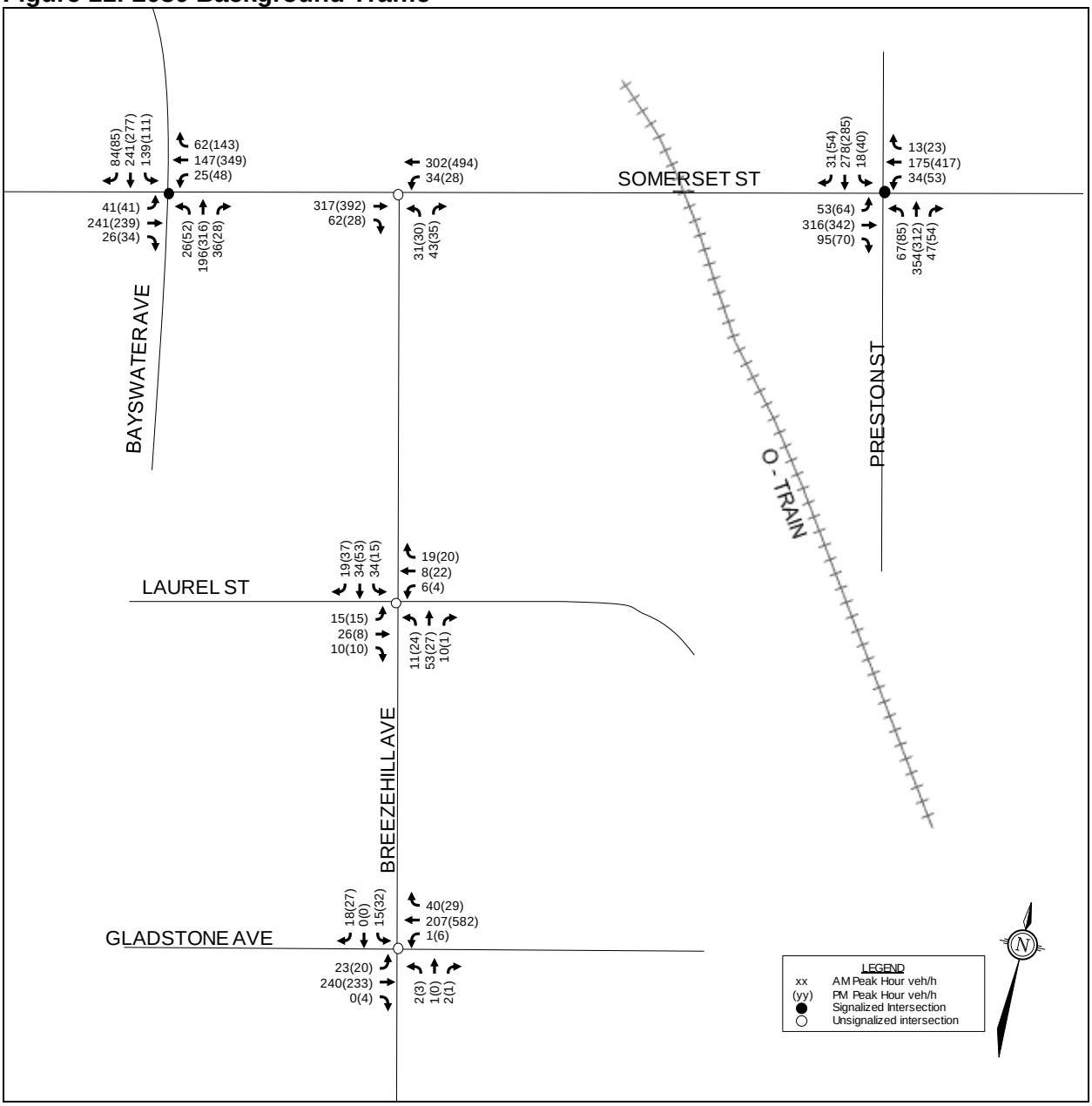


**Figure 12: 2025 Total Traffic**

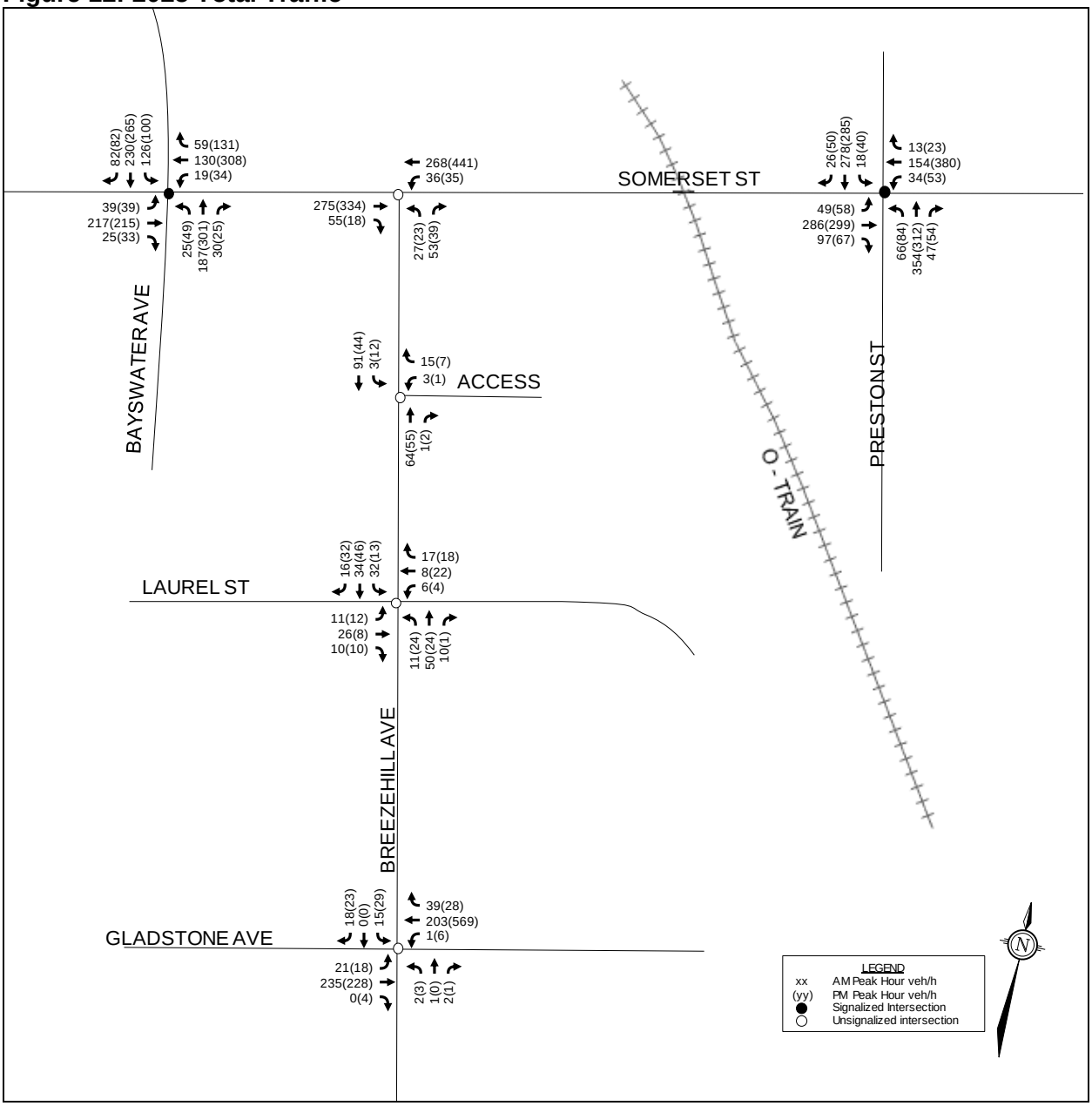
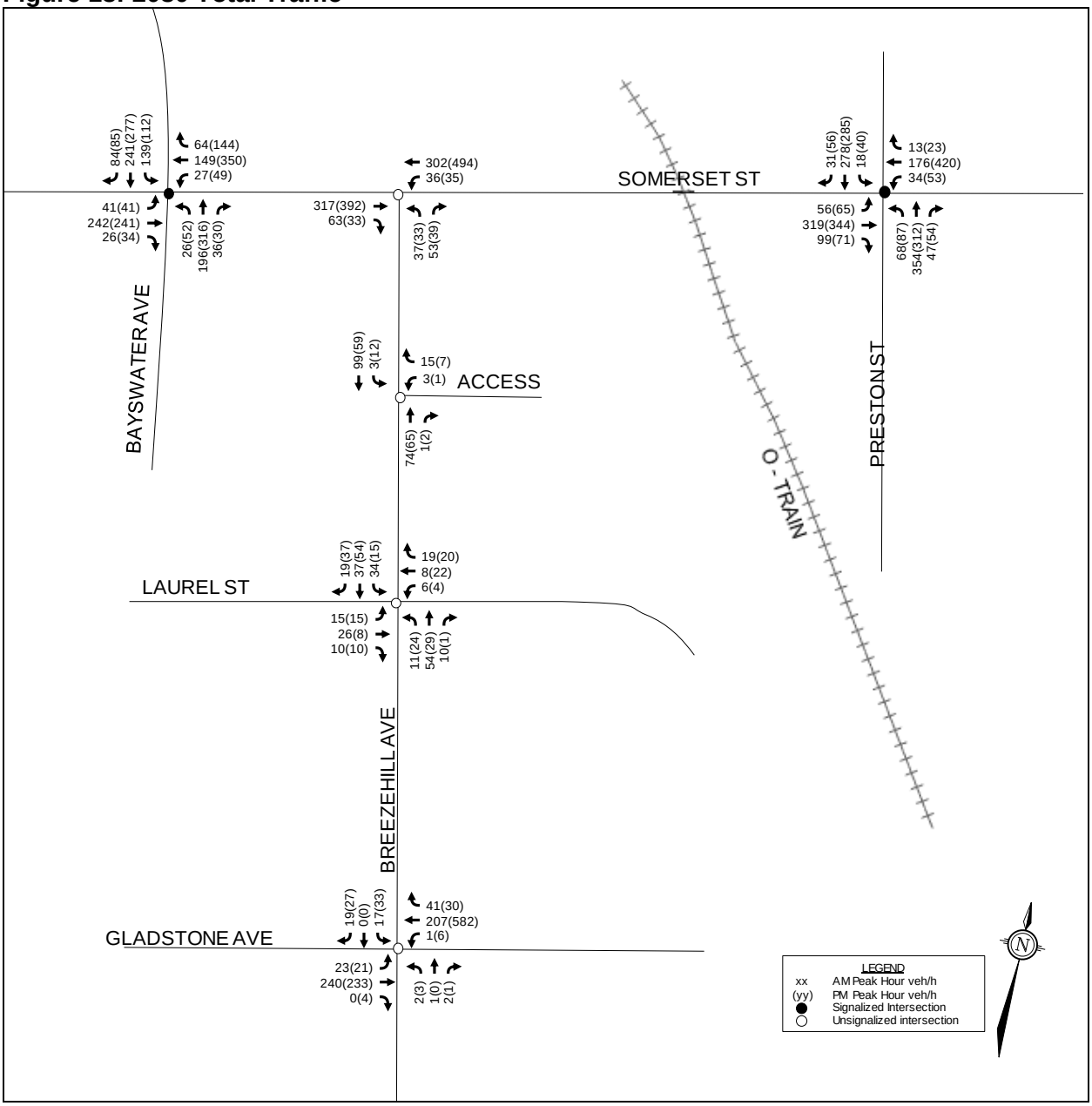


**Figure 13: 2030 Total Traffic**



## 5.3 Demand Rationalization

A review of the background intersection operations has been conducted to determine if and when the projected background traffic will exceed the capacity within the study area. The intersection parameters used in the analysis are consistent with the TIA guidelines (saturated flow rate: 1800 vphpl, PHF: 1.0). Intersection lane arrangements are consistent with the existing conditions described in Section 4.1. Intersection signal timing plans were obtained from the City, and are included in **Appendix D**. Detailed Synchro Reports are included in **Appendix J**.

### 5.3.1 2025 Background Intersection Operations

Intersection capacity analysis has been completed for the 2025 background traffic conditions. The results of the analysis are summarized in **Table 8** for the weekday AM and PM peak hours.

**Table 8: 2025 Background Intersection Operations**

| Intersection | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| | Max. v/c or delay | LOS | Mvmt | Max. v/c or delay | LOS | Mvmt |
| Somerset Street West/Bayswater Avenue | 0.43 | A | EBT/L SBT/R | 0.60 | A | NB |
| Somerset Street West/Preston Street | 0.91 | E | EBT/R | 0.77 | C | WBT/R |
| Somerset Street West/Breezehill Avenue | 13 sec. | B | NB | 16 sec. | C | NB |
| Breezehill Avenue/Laurel Street | 8 sec. | A | SB | 8 sec. | A | NB |
| Breezehill Avenue/Gladstone Avenue | 12 sec. | B | NB | 20 sec. | C | SB |

All intersections within the study area are anticipated to operate with acceptable conditions under 2025 background traffic conditions.

### 5.3.2 2030 Background Intersection Operations

Intersection capacity analysis has been completed for the 2030 background traffic conditions. The results of the analysis are summarized in **Table 9** for the weekday AM and PM peak hours.

**Table 9: 2030 Background Intersection Operations**

| Intersection | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| | Max. v/c or delay | LOS | Mvmt | Max. v/c or delay | LOS | Mvmt |
| Somerset Street West/Bayswater Avenue | 0.48 | A | EBT/L | 0.64 | B | NB |
| Somerset Street West/Preston Street | 0.99 | E | EBT/R | 0.84 | D | EB/WB |

| Intersection | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| | Max. v/c or delay | LOS | Mvmt | Max. v/c or delay | LOS | Mvmt |
| Somerset Street West/Breezehill Avenue | 15 sec. | C | NB | 20 sec. | C | NB |
| Breezehill Avenue/Laurel Street | 8 sec. | A | SB | 8 sec. | A | NB |
| Breezehill Avenue/Gladstone Avenue | 12 sec. | B | NB | 20 sec. | C | SB |

All intersections within the study area are anticipated to operate with acceptable conditions under 2030 background traffic conditions.

## 6.0 ANALYSIS

### 6.1 Development Design

#### 6.1.1 Design for Sustainable Modes

Pedestrian connectivity will be provided to Somerset Street West and Breezehill Avenue. A paved pedestrian plaza is proposed fronting the site onto Somerset Street West, with steps merging into the sidewalk along Somerset Street West. Unit pavers are proposed along the Breezehill Avenue frontage, creating a wide boulevard with planters near the main building entrance. A clear width of 3m will be provided between the planters and the Breezehill Avenue curbline.

The proposed bicycle parking will exceed the minimum requirements of the City's Zoning By-law. A total of 86 bicycle parking stalls will be provided in the at-grade bicycle storage room, with 195 additional bicycle parking spaces available in the underground parking garage. Additionally, four outdoor bicycle parking spaces will be provided adjacent to the northwest corner of the larger three-tree planter shown on the landscape plan.

The nearest bus stops to the subject site are described in Section 4.1.5. OC Transpo's service design guideline for peak period service is to provide service within a five minute (400m) walk of the home, school and work location of 95% of urban residents. OC Transpo bus stops are located at the Somerset Street West/Bayswater Avenue intersection, within a 150m walk of the development. The Bayview LRT station is also located within a 500m walk of the development.

A review of the Transportation Demand Management (TDM) – Supportive Development Design and Infrastructure checklist has been conducted, and is included in **Appendix G**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met. Measures proposed for this site that go above and beyond the basic requirements include:

- Locating the building close to the street, and not locating parking areas between the street and building entrances;
- Locating building entrances in order to minimize walking distances to sidewalks and transit stops/stations;
- Locating the building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort;

- Ensuring safe, direct and attractive walking routes from building entrances to nearby transit stops;
- Ensuring walking routes to transit stops are secure, visible, lighted, shaded, and wind-protected wherever possible; and
- Providing secure bicycle parking spaces equivalent to at least the number of units.

### 6.1.2 Circulation and Access

The proposed development will be served by a new vehicular access to Breezehill Avenue. This access will serve the underground parking. The existing site access will be closed as part of this application.

The fire route for the proposed development will be located curbside.

A garbage room is proposed to the north of the access to the underground parking. Garbage collection will occur curbside on Breezehill Avenue.

## 6.2 Parking

The subject site is located in Area Z on Schedule 1A of the City of Ottawa's Zoning By-Law (ZBL). Urban Exception 2121 also applies to the subject site. Minimum vehicular and bicycle parking rates for the proposed development are identified in the ZBL and summarized in the following table.

**Table 10: Parking Requirements**

| Land Use | Rate | GFA/units | Requirement |
|---|---|---|---|
| *Vehicle Parking* | | | |
| Apartment | Resident: none required<br>Visitor: 0.083 spaces per dwelling unit in excess of 12[1] | 268 | Resident: 0<br>Visitor: 21 |
| Retail | None required | 141m$^2$ | 0 |
| | | **Total** | **136** |
| *Bicycle Parking* | | | |
| Apartment | 1 space per dwelling unit[1] | 268 | 268 |
| Retail | 1 space per 250m$^2$ of GFA | 141m$^2$ | 0 |

1. Urban Exception 2121

A total of 177 parking spaces will be provided on seven levels of underground parking. A total of 86 bicycle parking stalls will be provided in the at-grade bicycle storage room, with 195 additional bicycle parking spaces available in the underground parking garage and four outdoor bicycle racks. The minimum vehicular and bicycle parking requirements of the ZBL will be met.

As the proposed development is also located within 600m of a rapid transit station, the number of vehicle parking spaces provided for a use must not exceed the maximum limits set out in Section 103 of the City's ZBL. Based on the ZBL, a maximum of 1.75 parking spaces are permitted per unit (combined total of resident and visitor), equating to a maximum of 469 on-site parking spaces.

The proposed 177 vehicular parking spaces adhere to the maximum requirements of the City's ZBL.

### 6.3 Boundary Streets

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

Schedule 'B' of the City of Ottawa's Official Plan indicates that Somerset Street West is a Traditional Mainstreet while Breezehill Avenue is located within the General Urban Area. Additionally, the subject site is within 300m of a school (Devonshire Public School) and within 600m of a rapid transit station (Bayview Station).

Targets for the Pedestrian Level of Service (PLOS), Bicycle Level of Service (BLOS), Transit Level of Service (TLOS), and Truck Level of Service (TkLOS) for the study area roadways are based on the targets for roadways within 600m of a rapid transit station and within 300m of a school, as identified in Exhibit 22 of the MMLOS guidelines.

A summary of the results of the segment MMLOS analysis for the boundary roadways is provided in the following table. Detailed segment MMLOS calculations can be found in **Appendix H**.

**Table 11: Segment MMLOS Summary**

| Segment | PLOS | BLOS | TLOS | TkLOS |
|---|---|---|---|---|
| Somerset Street West | D | C | D | B |
| **Target** | **A** | **C** | **D** | **D** |
| Breezehill Avenue | E | B | - | - |
| **Target** | **A** | **D** | **-** | **-** |

Somerset Street West does not currently meet the target PLOS A. Based on the PLOS criteria, the target PLOS A is unachievable along roadways that carry greater than 3,000 AADT and have an operating speed of 60km/hr. Without a reduction in speed or a decrease in AADT, a maximum PLOS C can be achieved with a 2.0m sidewalk and 2.0m boulevard. This is identified for the City's consideration.

Breezehill Avenue does not currently meet the target PLOS A. To achieve the PLOS A, either a 1.8m sidewalk with a 2.0m wide boulevard or a 2.0m sidewalk with a minimum 0.5m wide boulevard would be required. Unit pavers are proposed along the Breezehill Avenue frontage, creating a wide boulevard with planters near the main building entrance. A clear width of 3m will be provided between the planters and the Breezehill Avenue curbline.

### 6.4 Access Intersections Design

The existing access on-site is to be closed and the depressed curb and sidewalk is to be replaced with full height curb and sidewalk in accordance with City standards.

The proposed access will be located approximately 35m south of Somerset Street West, measured from the nearest edge of the access to the Somerset Street West ROW. The access will have a width of approximately 6m.

Section 25 (c) of the City of Ottawa's *Private Approach By-Law* identifies a requirement for two-way accesses to have a width no greater than 9m, as measured at the street line. The *Zoning By-Law* which identifies a minimum width requirement of 6m and a maximum width requirement of 6.7m for parking garages. The proposed driveway width satisfies these requirements.

A review of the suggested minimum corner clearances to accesses at major intersections from the Transport Association of Canada (TAC) *Geometric Design Guide for Canadian Roads* was conducted. For an arterial road intersecting with local road, with either stop control or traffic signal control at the cross road, a minimum clearance of 15m (from nearest edge to nearest edge) is suggested between the intersection and any access. Based on the proposed spacing of the access, this minimum requirement is satisfied.

Section 25 (p) of the *Private Approach By-Law* identifies a requirement to provide a minimum spacing of 3m between the nearest edge of the private approach and the property line, as measured at the street line. The access to the underground parking is located approximately 6m from the southern property line, thereby meeting this requirement.

Section 25 (u) of the *Private Approach By-Law* requires a maximum ramp grade of 2% for a distance of 9m within the property, for an underground parking garage serving more than 50 parking spaces. The access will have a grade of 6% for the first 6m within the building, transitioning to a 15% slope to the underground parking garage. From the face of the building, the sidewalk slopes towards the roadway. A grade of 2% for a distance of 9m within the property is unachievable due to the layout of the underground parking garage, a maximum recommended grade differential of 10%, and headroom requirements at the base of the ramp. As such, a waiver to the City's *Private Approach By-Law* is required for the grade of the underground parking ramp. The Transportation Association of Canada (TAC) Geometric Design Guidelines Section 8.9.11 identifies a maximum recommended downgrade of 7% for low volume driveways on local roadways. The proposed maximum 6% ramp grade for a distance of 6m within the building meets TAC recommendations.

The Transportation Association of Canada (TAC) *Geometric Design Guidelines for Canadian Roads* provide vehicle characteristics for various design vehicles. Based on TAC, passenger vehicles have a wheel base of 3.2m and a front bumper overhang of 1.1m. Based on the foregoing vehicle characteristics, the proposed 6% grade for a distance of 6m within the building is sufficient for a passenger vehicle to stop entirely within the private property with both tires on the 6% grade and have appropriate sight lines to the sidewalk. Bollards will be provided along the parking ramp for a distance of approximately 4m outside the building in order to further differentiate the pedestrian and vehicular streams of traffic. This will allow a vehicle to encroach to the back of sidewalk within the right-of-way, which slopes in the direction of the roadway, improving sightlines for vehicles departing the parking garage.

Breezehill Avenue does not have any horizontal or vertical curvature that obstructs sight lines in the vicinity of the subject site. TAC indicates that 90% of all passenger car driver eye heights exceed 1.08m and this height is appropriate for design. The landscape plan indicates that planters are proposed to the north of the vehicular access. Korean Boxwood (shrubs) with a 400mm height and Shademaster Honeylocust (trees) with a 60mm diameter are proposed in the planter boxes.

The trees will have a tall straight trunk and will not represent an obstruction to sightlines. The shrubs are low to the ground and will not obstruct sightlines. No other obstructions are existing or proposed that will hinder sightlines at the proposed access.

For a design speed of 50km/h (10km/h above the posted speed limit), TAC suggests an intersection sight distance of 95m for vehicles turning right (looking left) from the access. Sight lines looking right are limited by the proximity to the Somerset Street West/Breezehill Avenue intersection. **Figure 14** shows the available sightlines in plan view for vehicles exiting the parking garage and waiting behind the sidewalk. **Figure 15** shows the available sight distance in profile view for a vehicle stopped fully on the parking garage ramp and for a vehicle encroaching into the right-of-way but stopped behind the sidewalk.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# 1040 SOMERSET

## AVAILABLE SIGHTLINES FROM PARKING GARAGE

| SCALE | | |
|---|---|---|
| 1:1000 | | |
| DATE | JOB | FIGURE |
| APR 2021 | 112191 | 14 |

FIGURE #1

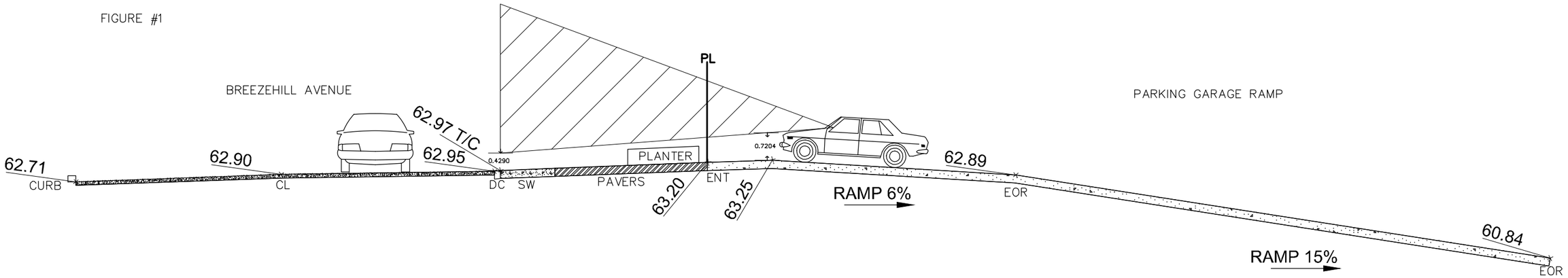


FIGURE #2

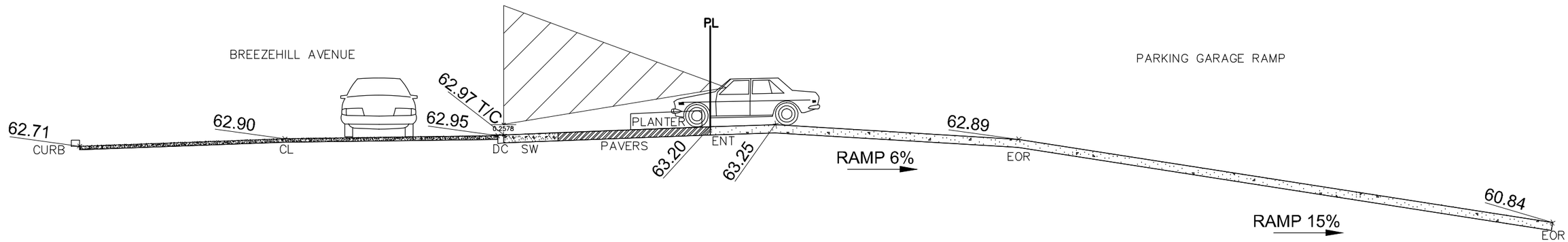


TABLE 2.4.1: DESIGN DIMENSIONS FOR PASSENGER CAR

| | DIMENSIONS (m) |
|---|---|
| LENGTH | 5.6 |
| FRONT OVERHANG | 1.1 |
| REAR OVERHANG | 1.3 |
| WHEELBASE | 3.2 |
| MINIMUM TURNING RADIUS | 6.3 |
| WIDTH | 2.0 |


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# 1040 SOMERSET STREET WAY

## SIGHT DISTANCE

SCALE 1:100 (0 1 2 3 4)
DATE JULY 2021
JOB 112191
FIGURE 15

## 6.5 Transportation Demand Management

### 6.5.1 Context for TDM

The development will consist of 268 residential units and approximately 141m$^2$ of commercial space. The tenant for the commercial development is not known at this time. The residential unit breakdown is summarized in the following table.

**Table 12: Residential Unit Breakdown**

| Unit Type | Number of Units |
|---|---|
| Studio | 2 |
| One Bedroom | 82 |
| One Bedroom + Den | 66 |
| Two Bedroom | 112 |
| Two Bedroom + Den | 2 |
| Three Bedroom | 2 |

### 6.5.2 Need and Opportunity

The proposed development is located within TOD Zone as it is within a 600m walking distance of the Bayview LRT station. As described in Section 5.1, the target 15% auto driver, 5% auto passenger, 50% transit, 30% bike/walk modal shares for the proposed development are based on the City's TOD zone modal shares and have been adjusted to reflect a higher non-auto modal share associated with the Ottawa West and Ottawa Inner Area.

Using the 2011 TRANS O-D Survey Report, the typical residential commuter pattern in the Ottawa West and Ottawa Inner Area is represented by all observed trips from/within the district during the AM peak hour and all observed trips to/within the district in the PM peak hour. Based TRANS O-D Survey Report data, typical residential modal shares in the Ottawa Inner Area equate to approximately 35% auto driver, 10% passenger, 20% transit, 35% non-auto. Typical residential modal shares in the Ottawa West Area equate to approximately 45% auto driver, 10% passenger, 20% transit, and 25% non-auto.

The TOD modal shares represent an increased transit modal share and a reduced auto/passenger modal share compared to the Ottawa West and Ottawa Inner Area.

Should the development only meet the Ottawa Inner Area modal shares, the development is anticipated to generate an additional 35 and 36 vehicle trips two-way during the AM and PM peak hours. Based on the trip distribution presented above, this translates to:

- an additional 18 trips added to the Somerset Street West/Preston Street intersection in the AM and PM peak hours.
- an additional 12 and 13 trips added to the Somerset Street West/Bayswater Avenue intersection in the AM and PM peak hours.
- an additional 5 trips added to the Breezehill Avenue/Gladstone Avenue intersection in the AM and PM peak hours.

Should the development only meet to Ottawa West Area modal shares, the development is anticipated to generate an additional 52 and 55 vehicle trips two-way during the AM and PM peak hours. Based on the trip distribution presented above, this translates to:

- an additional 26 and 28 trips added to the Somerset Street West/Preston Street intersection in the AM and PM peak hours.
- an additional 18 and 19 trips added to the Somerset Street West/Bayswater Avenue intersection in the AM and PM peak hours.
- an additional 8 trips added to the Breezehill Avenue/Gladstone Avenue intersection in the AM and PM peak hours.

Based on the latest intersection counts, total intersection volumes are:

- Somerset Street West/Preston Street:1375vph in the AM and 1645vph in the PM
- Somerset Street West/Bayswater Avenue: 1070vph in the AM and 1470vph in the PM
- Breezehill Avenue/Gladstone Avenue: 445 in the AM and 795 in the PM.

The additional vehicle trips at either signalized intersection due to the target transit modal share not being met would result in an increase of 1.9% or less to the overall intersection traffic volumes.

Should the development only meet the Ottawa West or Ottawa Inner Area modal shares, the additional trips generated by the development are anticipated have a minimal impact on the Auto LOS within the study area. The additional traffic would not impact the PLOS and BLOS along Somerset Street West or Breezehill Avenue, based on the criteria presented in Section 6.3 above.

Further sensitivity analysis has been conducted in Section 6.8.3.3 to qualify the impact to the study area intersections should the redevelopment not meet the target mode shares.

### 6.5.3 TDM Program

The proposed development conforms to the City's TDM initiatives by providing easy access to the local pedestrian, bicycle and transit systems as outlined in Section 5.1.

A review of the TDM – Measures checklist was conducted and can be found in **Appendix G**. To encourage travel by sustainable modes, the proponent agrees to provide 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; and
- Provide a multimodal travel option information package to new residents.

## 6.6 Neighborhood Traffic Management

Based on projected 2030 total traffic projections, a two-way total of 189 vehicles will use Breezehill Avenue north of the site during the AM peak hour and 140 vehicles during the PM peak hour. A two-way total of 178 vehicles will use Breezehill Avenue south of the site during the AM peak hour

and 170 vehicles during the PM peak hour. The TIA guidelines identify an Area Traffic Management (ATM) threshold of 120 vehicles during the peak hour for a local roadway.

The AM peak directional traffic volume along Breezehill Avenue is approximately 100 vehicles (southbound) while the PM peak directional traffic volume is approximately 105 vehicles (southbound). The lane capacity along Breezehill Avenue is estimated at 400 vehicles per hour per lane based on the City's TRANS Long Range Transportation Model. Based on the foregoing, the v/c ratio is 0.25 during the AM peak hour and 0.26 during the PM peak hour.

The majority of the traffic being generated by the proposed development is expected to arrive/depart to the north towards Somerset Street West. Based on the foregoing, the added traffic generated by the proposed development is not anticipated to have a significant impact on the existing vehicular operations along Breezehill Avenue south of the site and will not change the classification of Breezehill Avenue from a local road to a collector. Based on the 2025 and 2030 total traffic projections, Breezehill Avenue will have sufficient lane capacity to accommodate the additional traffic generated by the site.

Speed humps are currently provided on Breezehill Avenue, south of the subject site and north of Laurel Street. Centreline flexposts are provided on Breezehill Avenue between Laurel Street and Gladstone Avenue. School Area warning signs are provided on Breezehill Avenue north and south of the Devonshire Public School and along Laurel Street, east and west of Breezehill Avenue. In addition to the School Area warning signs, School Speed Zone warning signs could be considered to establish a reduced speed limit in proximity to the school.

### 6.7 Transit

Based on the trip generation presented in Section 5.1, the proposed redevelopment is anticipated to generate 83 transit trips (19 in, 64 out) during the AM peak hour, and 75 transit trips (47 in, 28 out) during the PM peak hour.

The 2011 TRANS O-D Survey Report indicates that the proposed development is located on the border of the Ottawa West and the Ottawa Inner Area districts. The distribution of transit trips to and from the development has been estimated based on origin-destination data from the TRANS O-D Survey Report. The top destinations of trips from the Ottawa West and Ottawa Inner Area districts within the AM peak period include the Ottawa West, Ottawa Inner Area, Merivale, Bayshore-Cedarview, and Alta Vista districts. The destinations of trips from the Ottawa West and Ottawa Inner Area districts to all TRANS O-D districts during the AM peak period were used to develop the following transit distribution:

- 30% to/from the east via Route 11
- 10% to/from the west via Route 11
- 35% to/from the east via Line 1
- 5% to/from the west via Line 1
- 20% to/from the south via Line 2

Winter 2020 (January 5$^{th}$ to March 7$^{th}$) transit utilization data within the study area was obtained from OC Transpo and is included in **Appendix C**. This period is the last 'normal' ridership period before COVID-19 related impacts began. Peak period (06:00-09:00, 15:00-18:00) boarding, alighting, and average bus load at departure information was received for OC Transpo Bus Stops

#8039 and #8027. PM Peak hour fare gate activity for Bayview Station was also received, however average train load at departure information was unavailable.

For the purposes of this analysis AM peak hour fare gate activity at Bayview Station is assumed to be the inverse of the PM peak hour data received from OC Transpo. The distribution of existing transit trips at Bayview Station is assumed to be consistent with the transit distribution presented above.

Existing and projected boarding and alighting information is summarized in **Table 13**.

The development is anticipated to add 6 and 14 trips alighting Route 11 at bus stop #8039 during the AM and PM peak hours. As Route 11 currently runs on 15-minute intervals during the AM and PM peak hours, this equates to approximately 2 to 4 trips alighting per bus. Based on the data received from OC Transpo, the existing average bus load at departure for Route 11 at stop #8039 is approximately 13 and 21 people during the AM and PM peak hours. The additional trips generated by the development are not anticipated to result in increased service for Route 11 at stop #8039.

**Table 13: Projected Transit Utilization**

| Bus Stop | Route | Boarding[1] | | | Alighting[1] | | |
|---|---|---|---|---|---|---|---|
| | | Existing | Site | Total | Existing | Site | Total |
| AM Peak hour | | | | | | | |
| Bayview Station | Line 1 EB | 168 | 23 | 191 | 14 | 1 | 15 |
| | Line 1 WB | 24 | 3 | 27 | 96 | 6 | 107 |
| | Line 2 | 96 | 13 | 109 | 55 | 4 | 62 |
| #8039 | 11 | 2 | 6 | 8 | 1 | 6 | 7 |
| #8027 | 11 | 7 | 19 | 26 | 1 | 2 | 3 |
| PM Peak Hour | | | | | | | |
| Bayview Station | Line 1 EB | 96 | 10 | 106 | 24 | 2 | 26 |
| | Line 1 WB | 14 | 1 | 15 | 168 | 17 | 185 |
| | Line 2 | 55 | 6 | 61 | 96 | 9 | 105 |
| #8039 | 11 | 4 | 3 | 7 | 7 | 14 | 21 |
| #8027 | 11 | 4 | 8 | 12 | 3 | 5 | 8 |

The development is anticipated to add 8 and 19 trips boarding Route 11 at bus stop #8027 during the AM and PM peak hours respectively. As Route 11 currently runs on 15-minute intervals during the AM and PM peak hours, this equates to approximately 2 to 5 trips boarding per bus. Based on the data received from OC Transpo, the existing average bus load at departure is approximately 14 and 15 people during the AM and PM peak hours. The additional trips generated by the development are not anticipated to result in an increased service for Route 11 at stop #8027.

The development is anticipated to add 24 trips (23 boarding, 1 alighting) during the AM peak hour and 12 trips (10 boarding, 2 alighting) during the PM peak hour to O-Train Line 1 Eastbound. The development is anticipated to add approximately 9 trips (3 boarding, 6 alighting) during the AM peak hour and 18 trips (1 boarding, 17 alighting) during the PM peak hour to O-Train Line 1 Westbound. Average load at departure information for Line 1 at Bayview Station was unavailable. However, based on OC Transpo service schedules, Line 1 stops at Bayview Station on four-minute headways during peak hours. This equates to approximately 14-15 trains with a capacity of 600 people in each direction during the peak hours. Based on the foregoing, no capacity deficiencies are anticipated for Line 1 at Bayview Station.

The development is anticipated to add 17 trips (13 boarding, 4 alighting) during the AM peak hour and 15 trips (6 boarding, 9 alighting) during the PM peak hour to O-Train Line 2. Average load at departure information for Line 2 at Bayview Station was unavailable. However, based on OC Transpo service schedules, Line 2 stops at Bayview Station on six- to seven-minute headways during peak hours. This equates to approximately 8-10 trains with a capacity of 600 people in each direction during the peak hours. Based on the foregoing, no capacity deficiencies are anticipated for Line 2 at Bayview Station.

Based on analysis presented later in Section 6.8.3, as a result of the new proposed signal at Somerset Street West/Breezehill Avenue, the maximum delay experienced by vehicles travelling eastbound along Somerset Street West at Breezehill Avenue will be 7 seconds, while the maximum delay experienced by vehicles travelling westbound will be 12 seconds. The additional delay caused by the proposed signal is not anticipated to significantly impede transit operations at Somerset Street West/Breezehill Avenue.

## 6.8 Intersection Design

### 6.8.1 Existing Intersection MMLOS Analysis

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

Schedule 'B' of the City of Ottawa's Official Plan indicates that Somerset Street West is a Traditional Mainstreet, the Somerset Street West/Breezehill Avenue intersection is located within the General Urban Area while the Somerset Street West/Preston Street intersection is located a Mixed-Use Center. Both intersections are also within 600m of a rapid transit station.

Target PLOS, BLOS, TLOS, TkLOS, and Auto LOS for the study area intersections are based on targets for areas within 600m of rapid transit, as identified in Exhibit 22 of the MMLOS guidelines.

A summary of the results of the MMLOS analysis for the signalized intersections is provided in the following table. Detailed MMLOS calculations can be found in **Appendix H**.

**Table 14: Intersection MMLOS Summary**

| Intersection | PLOS | BLOS | TLOS | TkLOS | Auto LOS |
|---|---|---|---|---|---|
| Somerset Street West/Bayswater Avenue | D | D | C | F | B |
| Somerset Street West/Preston Street | D | D | F | F | E |
| **Target** | **A** | **C** | **D** | **D** | **E** |

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

- Neither intersection meets the target PLOS A;
- Neither intersection meets the target BLOS C;
- The Somerset Street West/Bayswater Avenue intersection meets the target TLOS D;

- The Somerset Street West/Preston Street Avenue does not meet the target TLOS D;
- Neither intersection meets the target TkLOS D; and
- Both intersections meet the target Auto LOS E.

*Somerset Street West/Bayswater Avenue*
The Somerset Street West/Bayswater Avenue intersection does not meet the target PLOS, BLOS, or TkLOS but meets the target TLOS and Auto LOS.

A reduction in the pedestrian walking distance on the north, east, and west approaches would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required.

The right turn criteria on the east and westbound approaches and left turn criteria on the north approach do not meet the target BLOS C. Bike lanes on all approaches would improve the BLOS to the target BLOS C. A further review of the Ontario Traffic Manual (OTM) Book 18 Desirable Cycling Facility Pre-selection Nomograph has been conducted. Based on an operating speed of 50km/hr and an AADT between 7,000-8,000, consideration should be given to bike lanes on Bayswater Avenue and Somerset Street West which would achieve the target BLOS C. Removal of the right turn lane on the east and westbound approaches would also improve the BLOS along Somerset Street West to the target BLOS C. This is identified for the City's consideration.

Increased radii on the all corners of the intersection would improve the TkLOS but would have a negative impact on the PLOS.

*Somerset Street West/Preston Street*
The Somerset Street West/Preston Street intersection does not meet the target PLOS, BLOS, TLOS, or TkLOS but meets the target Auto LOS.

A reduction in the pedestrian walking distance on the south approach would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required.

The left turn criteria on all approaches does not meet the target BLOS. A reduction in the operating speed to 40km/h or bike lanes on all approaches would improve the BLOS to the target BLOS C. Based on AADT of 8,000-9,000vph and a speed of 50km/h, the OTM Nomograph suggests that consideration should be given to bike lanes on Preston Street and Somerset Street West which would achieve the target BLOS C.

The delay on the east approach in the AM peak is in excess of 40 seconds and does not meet the target TLOS D. All other approaches in the AM and PM peak period meets the target TLOS D. The target TLOS D can not be achieved without removal of the advanced walk phases for pedestrians or an increase in the cycle length. Removal of the advanced walk phases would have a negative impact on the PLOS. As signals are coordinated in the area, an increased cycle length would result in an increased cycle length at other intersections within the area and may result in negative impacts on the Auto LOS at other signals.

Increased radii on the all corners of the intersection would improve the TkLOS but would have a negative impact on the PLOS.

### 6.8.2 Assessment of Safety and Operations

*Sight Distance*
A comprehensive appraisal of sight distances was completed for the intersection of Somerset Street West at Breezehill Avenue, using the relevant standards and guidelines presented in the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads.*

A speed survey conducted in February 2021 indicates that the 85$^{th}$ percentile motor vehicle operating speed along Somerset Street West at Breezehill Avenue is 52km/h. The results of the speed survey can be found in **Appendix D**. The following table indicates the required sight distances for a design speed of 50km/h.

Table **15: Required Sight Distances**

| Sight Distance | | Requirement |
|---|---|---|
| Stopping Sight Distance (SSD) | | 65m |
| Intersection Sight Distance (ISD) | Left Turn from Stop | 105m |
| | Right Turn from Stop | 95m |

Based on field measurements, the required 65m of stopping sight distance is available on the east and west approaches to the Somerset Street West/Breezehill Avenue intersection.

Based on field measurements, there is adequate sight distance west of Breezehill Avenue for vehicles to turn right. The sight distance east of Breezehill Avenue for vehicles to turn left is limited by the vertical curve of the bridge over the O-Train Corridor and is further obstructed by the concrete end treatment of the guiderail. An ISD of 75m is available for a vehicle stopped in advance of the concrete end treatment (i.e., looking through the guiderail), and approximately 50m is available for a vehicle stopped at the concrete end treatment. The guiderail and concrete end treatment are to be cut back as part of the proposed development, but the ISD for vehicles turning left from Breezehill Avenue onto Somerset Street will continue to be limited by the overpass.

It is noted that recent collision records do not indicate that there is an existing issue at this intersection. A total of two collisions were reported at the intersection in 8 years of collision data (2008-2010 per the CTS and 2014-2018 per the data in Section 4.1.8) and neither of these collisions were between a northbound left turning vehicle and a westbound vehicle. However, the City Councillor and community have previously expressed safety concerns with this intersection.

Based on comments received from City staff, potential mitigations to this intersection include:

1. The restriction of the northbound left movement through a channelized island on Breezehill Avenue.
2. A wa-13 intersection warning sign on the westbound approach.
3. The provision of a raised south crosswalk at Somerset Street West and Breezehill Avenue to slightly increase the eye-height of drivers as they encroach over the south crosswalk to make the northbound left maneuver.
4. Traffic signal control.

Option 1 would likely result in an additional 35 vehicles per hour along Laurel Street and Bayswater Avenue and while there would likely be sufficient lane capacity to accommodate the

added traffic, extra precautions may be required at the crosswalk on the west leg of the Laurel/Breezehill Avenue intersection as it is heavily used by children walking to the Devonshire Community Public School. This option was discussed as part of the 2013 CTS/TIS and not carried forward due to the potential impacts to the school.

Option 2 will increase driver awareness on the westbound approach. However, the intersection sight distance for vehicles turning left from Breezehill Avenue onto Somerset Street will continue to be deficient.

Option 3 may slightly improve sight lines if drivers encroach onto the sidewalk, however it is not anticipated to achieve the TAC requirement. Vehicles encroaching into the crosswalk will introduce additional pedestrian/vehicle conflicts, will impede pedestrian flow on Somerset Street, and may result in a lower level of comfort for pedestrians.

Option 4 may be used to safely and efficiently alternate the right-of-way when visibility is inadequate. The traffic control signal warrant at the Somerset Street West/Breezehill Avenue was reviewed according to the procedure outlined in the *Ontario Traffic Manual* Book 12. Traffic signal justifications are provided in **Appendix I**. Based on the results of the warrant analysis, signals are not warranted under total traffic conditions. The Somerset Street/Breezehill Avenue and Somerset Street/Bayswater Avenue intersections will be spaced approximately 85m apart, measured from stop bar to stop bar. While it is noted that the spacing between the proposed intersection and the Somerset Street/Bayswater Avenue intersection does not meet OTM standards, Somerset Street West has other signals spaced at similar distances. To the east, Somerset/Empress and Somerset/Arthur are spaced approximately 75m apart, and Somerset/Booth and Somerset/Rochester are spaced 100m apart. Both of these examples are located within 1km of the Somerset/Breezehill intersection. A review of queue lengths anticipated at both signals is included in Section 6.8.3. Sufficient storage is available for the projected queue lengths as the spacing between the Bayswater Avenue and proposed Breezehill Avenue stop bars is approximately 85m. Based on the analysis, the projected westbound queue length is anticipated to be 40m-55m. Based on field measurements, the required stopping sight distance is met for a vehicle approaching the back of a westbound queue of 40m-55m.

Based on the foregoing, traffic signal control is recommended at the Somerset Street/Breezehill Avenue intersection to address the inadequate intersection sight distance. Traffic signal control will also provide a new north-south pedestrian crossing, providing improved pedestrian connectivity between Hintonburg Place and Breezehill Avenue as well as the Multi-Use Pathway on the east side of the Trillium O-Train Line.

*Turn Lane Requirements*

A review of MTO left turn lane storage graphs for the 2025 build-out and 2030 horizon year has been conducted and is included in **Appendix I.** It was found that no left turn lane is warranted under 2025 background or total traffic conditions. The 2030 background and total traffic volumes meet the MTO warrant criteria for a dedicated westbound left turn lane on Somerset Street West at Breezehill Avenue.

The City has indicated the installation of a traffic control signal at Somerset Street West/Breezehill Avenue must include a dedicated westbound left turn lane.

The westbound approach currently consists of 2.5m sidewalks, 1m inner boulevards, 1.8m bike lanes, and two 3.7m general travel lanes. Pedestrian lighting is located in the inner boulevards on either side of the overpass.

A functional design of the Somerset Street West/Breezehill Avenue intersection (including signals and a westbound left turn lane) has been included in **Appendix K**. An RMA will be submitted under separate cover.

### 6.8.3 Total Intersection Operations

A review of the total intersection operations has been conducted to determine if and when the projected total traffic will exceed the capacity within the study area. The intersection parameters used in the analysis are consistent with the TIA guidelines (saturated flow rate: 1800 vphpl, PHF: 1.0).

The Somerset Street West/Breezehill Avenue intersection has been modeled per existing conditions (unsignalized) as well as with traffic signals and a westbound left turn lane.

#### 6.8.3.1 2025 Total Intersection Operations

Intersection capacity analysis has been completed for the 2025 total traffic conditions. The results of the analysis are summarized in **Table 16** for the weekday AM and PM peak hours.

**Table 16: 2025 Total Intersection Operations**

| Intersection | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| | Max. v/c or delay | LOS | Mvmt | Max. v/c or delay | LOS | Mvmt |
| Somerset Street West/Bayswater Avenue | 0.44 | A | SBT/R | 0.60 | A | NB |
| Somerset Street West/Preston Street | 0.93 | E | EBT/R | 0.77 | C | WBT/R |
| Somerset Street West/Breezehill Avenue[1] | 14 sec. | B | NB | 16 sec. | C | NB |
| Breezehill Avenue/Laurel Street | 8 sec. | A | SB | 8 sec. | A | NB |
| Breezehill Avenue/Gladstone Avenue | 12 sec. | B | NB | 20 sec. | C | SB |
| Breezehill Avenue/Site Access | 9 sec. | A | WB | 9 sec. | A | WB |
| Somerset Street West/Breezehill Avenue[2] | 0.36 | A | NB | 0.41 | A | WB |

1. Unsignalized intersection
2. Signalized intersection

With the addition of site traffic, all intersections are projected to operate with acceptable conditions. With traffic signalization, a maximum queue of 45m is expected for the eastbound approach and a maximum queue of 55m is expected for the westbound approach of the Somerset Street West/Breezehill intersection. A maximum queue of 65m is expected for the westbound approach of the Somerset Street West/Bayswater Avenue intersection. Sufficient storage is

available for the projected queue length as the spacing between the Bayswater Avenue and proposed Breezehill Avenue stop bars is approximately 85m. As a result of the new signal, the maximum delay experienced by vehicles travelling eastbound along Somerset Street West at Breezehill Avenue will be 8 seconds, while the maximum delay experienced by vehicles travelling westbound will be 13 seconds.

The analysis shows that the signalized intersection of Somerset Street West/Breezehill Avenue is anticipated to operate with acceptable conditions.

#### 6.8.3.2 2030 Total Intersection Operations

Intersection capacity analysis has been completed for the 2030 total traffic conditions. The results of the analysis are summarized in **Table 17** for the weekday AM and PM peak hours.

**Table 17: 2030 Total Intersection Operations**

| Intersection | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| | Max. v/c or delay | LOS | Mvmt | Max. v/c or delay | LOS | Mvmt |
| Somerset Street West/Bayswater Avenue | 0.48 | A | EBT/L | 0.65 | B | NB |
| Somerset Street West/Preston Street | **1.01** | **F** | **EBT/R** | 0.85 | D | EB/WB |
| Somerset Street West/Breezehill Avenue[1] | 15 sec. | C | NB | 21 sec. | C | NB |
| Breezehill Avenue/Laurel Street | 8 sec. | A | SB | 8 sec. | A | NB |
| Breezehill Avenue/Gladstone Avenue | 12 sec. | B | NB | 20 sec. | C | SB |
| Breezehill Avenue/Site Access | 9 sec. | A | WB | 9 sec. | A | WB |
| Somerset Street West/Breezehill Avenue[2] | 0.36 | A | NB | 0.43 | A | WB |

1. Unsignalized intersection
2. Signalized intersection

The Somerset Street West/Preston Street intersection is projected to operate with a LOS F in the AM peak hour. Reassigning 5 seconds from the north/south movements to the east/west would improve the v/c ratio to a 0.82, or LOS D. This is identified for the City's consideration.

Under 2030 total traffic conditions, all other intersections are projected to operate with acceptable conditions. Minor increases in queue lengths and delays are anticipated from 2025 total conditions.

#### 6.8.3.3 Sensitivity Analysis

An analysis of 2030 total traffic using the Ottawa West Area modal shares was conducted in order to qualify the impact to the study area intersections should the redevelopment not meet the target mode shares. Typical residential modal shares in the Ottawa West Area equate to approximately 45% auto driver, 10% passenger, 20% transit, and 25% non-auto.

Should the redevelopment only meet to Ottawa West Area modal shares, the redevelopment is anticipated to generate an additional 52 vehicle trips during the AM peak hour and 55 vehicle trips during the PM peak hour compared to the target modal shares.

Intersection capacity analysis has been completed for the 2030 total traffic conditions. The results of the analysis are summarized in **Table 17** for the weekday AM and PM peak hours.

**Table 18: 2030 Total Intersection Operations – Sensitivity Analysis**

| Intersection | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| | Max. v/c or delay | LOS | Mvmt | Max. v/c or delay | LOS | Mvmt |
| Somerset Street West/Bayswater Avenue | 0.48 | A | EBT/L | 0.65 | B | NB |
| Somerset Street West/Preston Street | 1.05 | F | EBT/R | 0.87 | D | EBT/R |
| Somerset Street West/Breezehill Avenue[1] | 18 sec. | C | NB | 25 sec. | C | NB |
| Breezehill Avenue/Laurel Street | 8 sec. | A | SB | 8 sec. | A | NB |
| Breezehill Avenue/Gladstone Avenue | 13 sec. | B | NB | 21 sec. | C | SB |
| Breezehill Avenue/Site Access | 9 sec. | A | WB | 9 sec. | A | WB |
| Somerset Street West/Breezehill Avenue[2] | 0.49 | A | NB | 0.43 | A | WB |

1. Unsignalized intersection
2. Signalized intersection

Should the development not meet the target modal shares, the Somerset Street West/Preston Street intersection is anticipated to operate with a LOS F in the AM peak given the current signal timing plan. With adjusted signal timing as identified in Section 6.8.3.2, a v/c ratio of 0.85 (LOS D) is anticipated.

All other study area intersections are anticipated to operate with acceptable conditions. Minor increases in queue lengths and delays are anticipated from the 2030 total traffic analysis with the target modal shares.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

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

*Development Design & Parking*

- Pedestrian connectivity will be provided to Somerset Street West and Breezehill Avenue. A paved pedestrian plaza is proposed fronting the site onto Somerset Street West, with steps merging into the sidewalk along Somerset Street West. Unit pavers are proposed along the Breezehill Avenue frontage, creating a wide boulevard with planters near the main building entrance. A clear width of 3m will be provided between the planters and the Breezehill Avenue curbline.

- The minimum vehicular and bicycle parking requirements of the ZBL will be met.
- OC Transpo bus stops are located at the Somerset Street West/Bayswater Avenue intersection, within a 150m walk of the development. The Bayview LRT station is also located within a 500m walk of the development.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.
- The proposed development will be served by a new vehicular access to Breezehill Avenue. This access will serve the underground parking. The existing site access will be closed as part of this application.
- The fire route for the proposed development will be located curbside.
- A garbage room is proposed to the north of the access to the underground parking. Garbage collection will occur curbside on Breezehill Avenue.

*Boundary Streets*

- Somerset Street West meets the target BLOS, TLOS, and TkLOS but does not meet the target PLOS. Based on the PLOS criteria, the target PLOS A is unachievable along roadways that carry greater than 3,000 AADT and have an operating speed of 60km/hr. Without a reduction in speed or a decrease in AADT, a maximum PLOS C can be achieved with a 2.0m sidewalk and 2.0m boulevard. This is identified for the City's consideration.
- Breezehill Avenue meets the target BLOS but does not meet the target PLOS. To achieve the target PLOS A, either a 1.8m sidewalk with a 2.0m wide boulevard or a 2.0m sidewalk with a minimum 0.5m wide boulevard would be required. Unit pavers are proposed along the Breezehill Avenue frontage, creating a wide boulevard with planters near the main building entrance. A clear width of 3m will be provided between the planters and the Breezehill Avenue curbline.

*Access Intersection Design*

- The existing access on-site is to be closed and the depressed curb and sidewalk is to be replaced with full height curb and sidewalk in accordance with City standards.
- The proposed access will be located approximately 35m south of Somerset Street West, measured from the nearest edge of the access to the Somerset Street West ROW. The access will have a width of approximately 6m.
- The width and location of the access adheres to the requirements of the *Private Approach By-Law* and *Zoning By-Law.*
- A waiver to the City's *Private Approach By-Law* is required for the grade of the underground parking ramp. A grade of 2% for a distance of 9m within the property is unachievable due to the layout of the underground parking garage, a maximum recommended grade differential of 10%, and headroom requirements at the base of the ramp. The proposed 6% grade for a distance of 6m within the building is sufficient for a passenger vehicle to stop entirely within the private property with both tires on the 6% grade and have appropriate sight lines to the sidewalk. Bollards will be provided along the parking ramp for a distance of approximately 4m outside the building in order to further differentiate the pedestrian and vehicular streams of traffic. This will allow a vehicle to encroach to the back of sidewalk within the right-of-way, which slopes in the direction of the roadway, improving sightlines for vehicles departing the parking garage.

*Transportation Demand Management*

- The additional vehicle trips at either signalized intersection within the study area due to the target transit modal share not being met would result in an increase of 1.9% or less to the overall intersection traffic volumes.
- Should the development only meet the Ottawa West or Ottawa Inner Area modal shares, the additional trips generated by the development are anticipated have a minimal impact on the Auto LOS within the study area.
- To encourage travel by sustainable modes, the proponent agrees to provide 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; and
    - Provide a multimodal travel option information package to new residents.

*Neighborhood Traffic Management*

- The majority of the traffic being generated by the proposed development is expected to arrive/depart to the north towards Somerset Street West.
- The added traffic generated by the proposed development is not anticipated to have a significant impact on the existing vehicular operations along Breezehill Avenue south of the site and will not change the classification of Breezehill Avenue from a local road to a collector.
- Based on the 2025 and 2030 total traffic projections, Breezehill Avenue will have sufficient lane capacity to accommodate the additional traffic generated by the site.

*Transit*

- The proposed redevelopment is anticipated to generate 83 transit trips (19 in, 64 out) during the AM peak hour, and 75 transit trips (47 in, 28 out) during the PM peak hour.
- The additional trips generated by the development are not anticipated to result in increased service for Route 11 at stop #8039 or #8027.
- No capacity deficiencies are anticipated for Line 1 or Line 2 at Bayview Station.

*Intersection MMLOS Analysis*

- The Somerset Street West/Bayswater Avenue intersection does not meet the target PLOS, BLOS, or TkLOS but meets the target TLOS and Auto LOS.
    - A reduction in the pedestrian walking distance on the north, east, and west approaches would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required.
    - The right turn criteria on the east and westbound approaches and left turn criteria on the north approach do not meet the target BLOS C. Bike lanes on all approaches would improve the BLOS to the target BLOS C. A further review of the Ontario Traffic Manual (OTM) Book 18 Desirable Cycling Facility Pre-selection Nomograph has been conducted. Based on an operating speed of 50km/hr and an AADT between 7,000-8,000, consideration should be given to bike lanes on Bayswater Avenue and Somerset Street West which would achieve the target BLOS C. Removal of the right turn lane on the east and westbound approaches would also improve the BLOS along Somerset Street West to the target BLOS C. This is identified for the City's consideration.

  - Increased radii on the all corners of the intersection would improve the TkLOS but would have a negative impact on the PLOS.
- The Somerset Street West/Preston Street intersection does not meet the target PLOS, BLOS, TLOS, or TkLOS but meets the target Auto LOS.
  - A reduction in the pedestrian walking distance on the south approach would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required.
  - The left turn criteria on all approaches does not meet the target BLOS. A reduction in the operating speed to 40km/h or bike lanes on all approaches would improve the BLOS to the target BLOS C. Based on AADT of 8,000-9,000vph and a speed of 50km/h, the OTM Nomograph suggests that consideration should be given to bike lanes on Preston Street and Somerset Street West which would achieve the target BLOS C.
  - The delay on the west approach in the AM peak is in excess of 40 seconds and does not meet the target TLOS D. All other approaches in the AM and PM peak period meets the target TLOS D. The target TLOS D can not be achieved without removal of the advanced walk phases for pedestrians or an increase in the cycle length. Removal of the advanced walk phases would have a negative impact on the PLOS. As signals are coordinated in the area, an increased cycle length would result in an increased cycle length at other intersections within the area and may result in negative impacts on the Auto LOS at other signals.
  - Increased radii on the all corners of the intersection would improve the TkLOS but would have a negative impact on the PLOS.

*Assessment of Safety and Operations*

- The sight distance east of Breezehill Avenue for vehicles to turn northbound left on Somerset Street West is limited by the vertical curve of the bridge over the O-Train Corridor and is further obstructed by the concrete end treatment of the guiderail. The guiderail and concrete end treatment are to be cut back as part of the proposed development, but the ISD will continue to be limited by the overpass.
- Traffic signal control is recommended at the Somerset Street/Breezehill Avenue intersection to address the inadequate intersection sight distance.
- The proposed traffic control signal will provide a new north-south crossing, providing improved pedestrian connectivity between Hintonburg Place and Breezehill Avenue as well as the Multi-Use Pathway on the east side of the Trillium O-Train line.
- A westbound left turn lane is recommended at the Somerset Street West/Breezehill Avenue intersection.

*Total Intersection Operations*

- Under 2025 and 2030 total traffic conditions, all intersections are projected to operate with acceptable conditions.
- With traffic signalization, a maximum queue of 45m is expected for the eastbound approach and a maximum queue of 55m is expected for the westbound approach of the Somerset Street West/Breezehill intersection. A maximum queue of 65m is expected for the westbound approach of the Somerset Street West/Bayswater Avenue intersection. Sufficient storage is available for the projected queue length as the spacing between the Bayswater Avenue and proposed Breezehill Avenue stop bars is approximately 85m.
- The analysis shows that the signalized intersection of Somerset Street West/Breezehill Avenue is anticipated to operate with acceptable conditions.

- Although anticipated to operate with a LOS E in the AM peak given the current signal timing plan, the Somerset Street West/Preston Street intersection could benefit from adjusted signal timing. Reassigning 5 seconds from the north/south movements to the east/west would improve the v/c ratio to a 0.88, or LOS D. This is identified for the City's consideration.
- Should the development not meet the target modal shares, the Somerset Street West/Preston Street intersection is anticipated to operate with a LOS F in the AM peak given the current signal timing plan. With adjusted signal timing a v/c ratio of 0.89 (LOS D) is anticipated. All other study area intersections are anticipated to operate with acceptable conditions.

**NOVATECH**

Prepared by:

Rochelle Fortier, B.Eng.
E.I.T. | Transportation/Traffic

Reviewed by:


Brad Byvelds, P.Eng
Project Coordinator | Transportation/Traffic

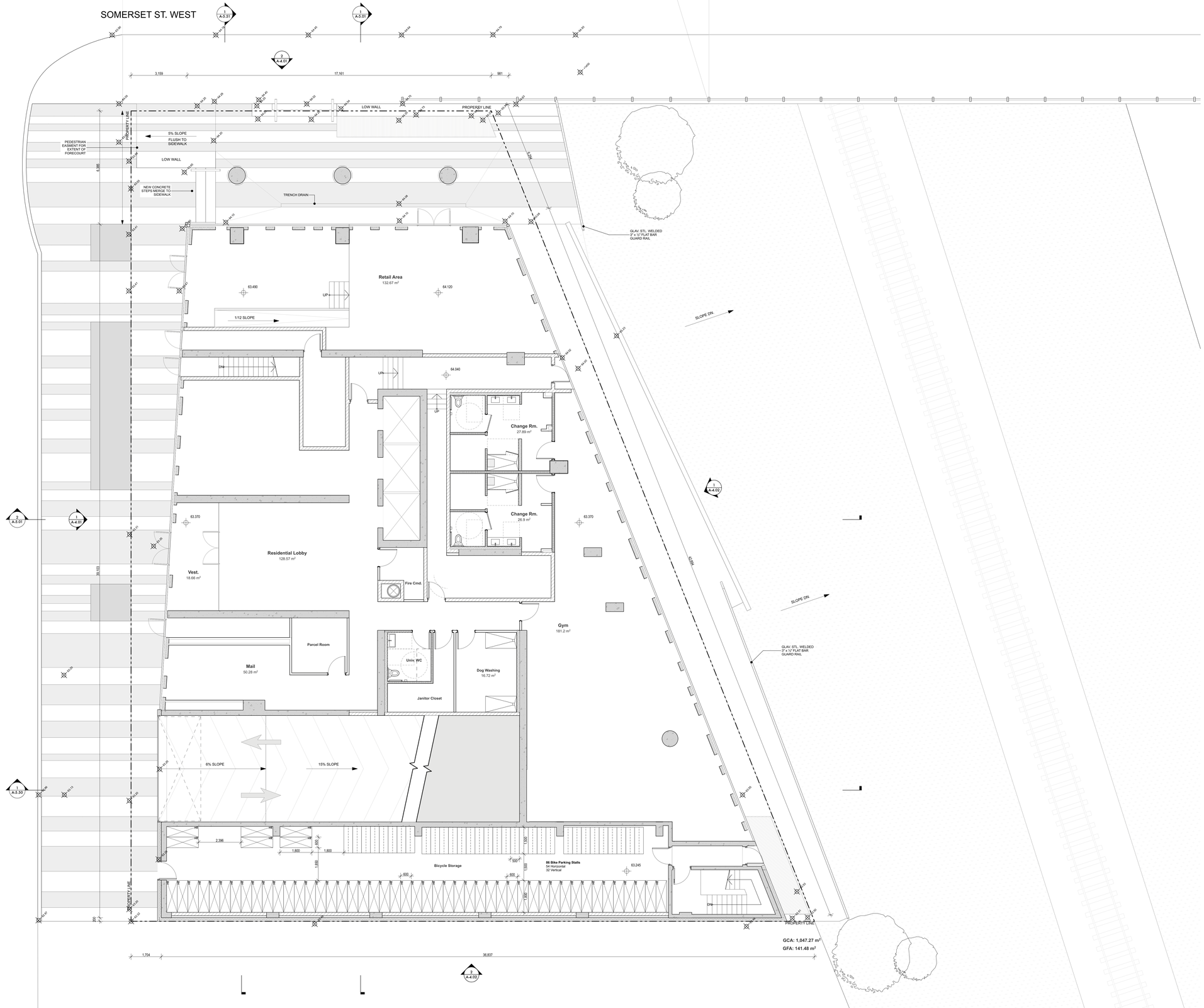
# APPENDIX A

Site Plan

| NO | ISSUANCE | DATE |
|---|---|---|
| 1 | - | - |

SOMERSET ST. WEST

BREEZEHILL AVE. NORTH




aA
architectsAlliance
205 - 317 Adelaide Street West
Toronto, ON M5V 1P9 Canada
t 416 593 6500
f 416 593 4911
info@architectsalliance.com
www.architectsalliance.com

**1040 SOMERSET ST**

**1040 Somerset St. West**
**Ottawa ON K1Y 4L3**

Ground Floor

21062

1:75

2021-03-30

**A-2.06**

# APPENDIX B

TIA Screening Form

# City of Ottawa 2017 TIA Guidelines Screening Form

## 1. Description of Proposed Development

| | |
|---|---|
| Municipal Address | **1040 Somerset Street W** |
| Description of Location | **Southeast corner of Somerset St W/Breezehill Ave N** |
| Land Use Classification | **Residential with ground floor commercial** |
| Development Size (units) | **268 units** |
| Development Size ($m^2$) | **141 $m^2$ of ground floor commercial** |
| Number of Accesses and Locations | **One access to Breezehill Avenue** |
| Phase of Development | **1** |
| Buildout Year | **2025** |

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

## 2. Trip Generation Trigger

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

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

** 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, the Trip Generation Trigger is satisfied.**

## 3. Location Triggers

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

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

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

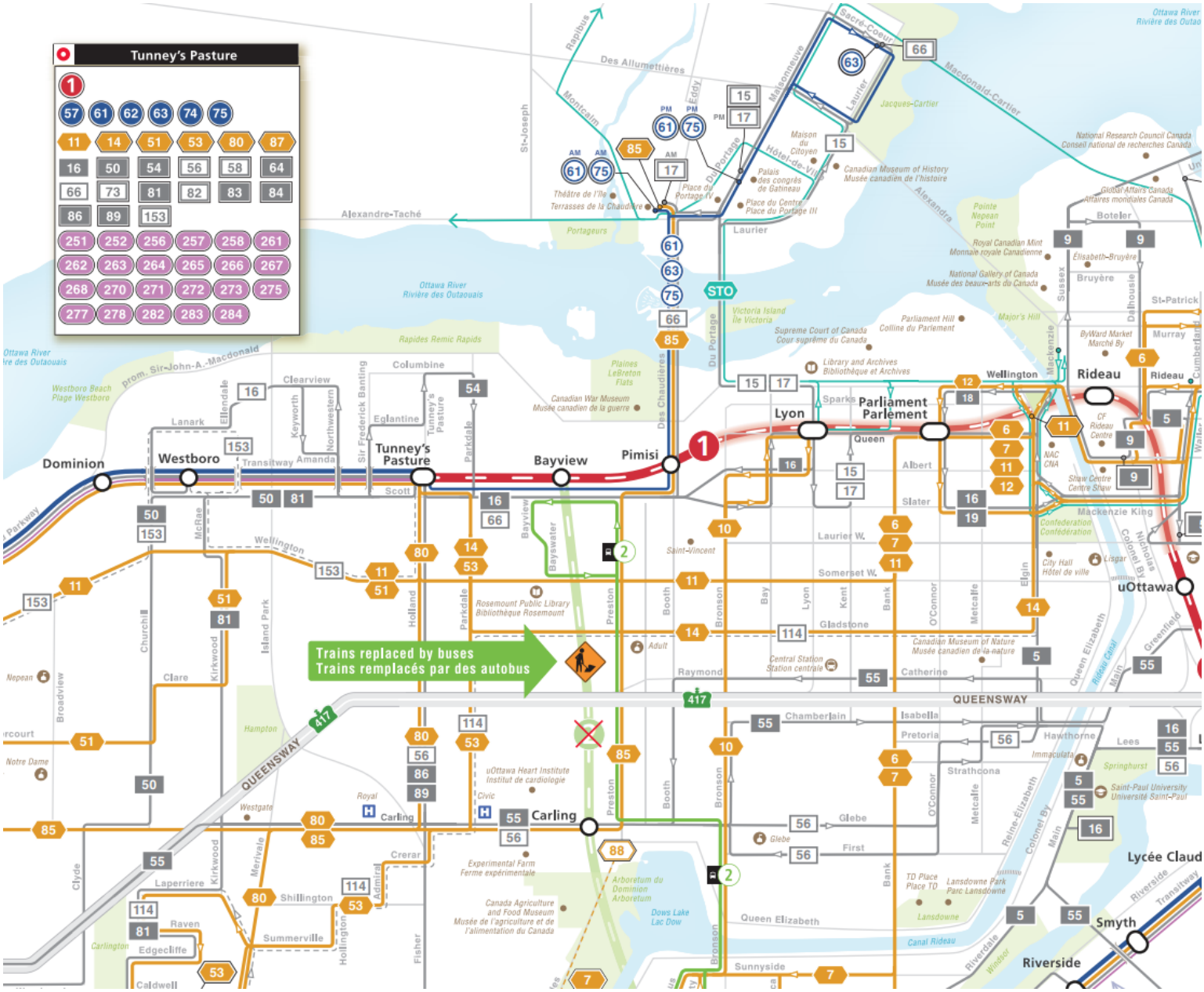
## 5. Summary

| | Yes | No |
|---|---|---|
| Does the development satisfy the Trip Generation Trigger? | X | |
| Does the development satisfy the Location Trigger? | X | |
| Does the development satisfy the Safety Trigger? | X | |

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

# APPENDIX C

OC Transpo System Information


Tunney's Pasture
1
57 61 62 63 74 75
11 14 51 53 80 87
16 50 54 56 58 64
66 73 81 82 83 84
86 89 153
251 252 256 257 258 261
262 263 264 265 266 267
268 270 271 272 273 275
277 278 282 283 284
Trains replaced by buses
Trains remplacés par des autobus
QUEENSWAY
417
Dominion
Westboro
Tunney's Pasture
Bayview
Pimisi
Lyon
Parliament
Parlement
Rideau
uOttawa
Carling
Smyth
Riverside
Lycée Claud
Alexandre-Taché
Ottawa River
Rivière des Outaouais
STO

# 11

*Fréquent*

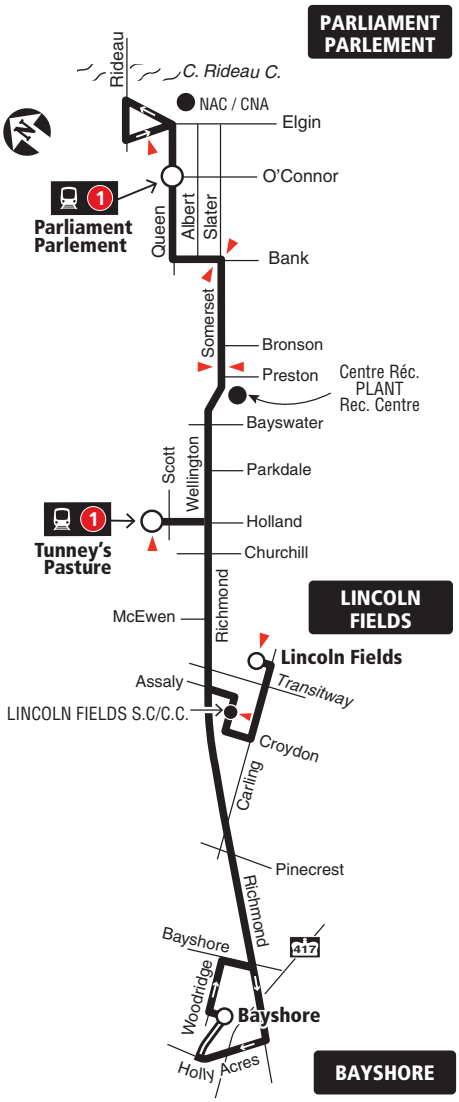
## LINCOLN FIELDS
## BAYSHORE

## PARLIAMENT
## PARLEMENT

**7 days a week / 7 jours par semaine**

All day service

Service toute la journée




Transitway & Station

Timepoint / Heures de passage

2019.07

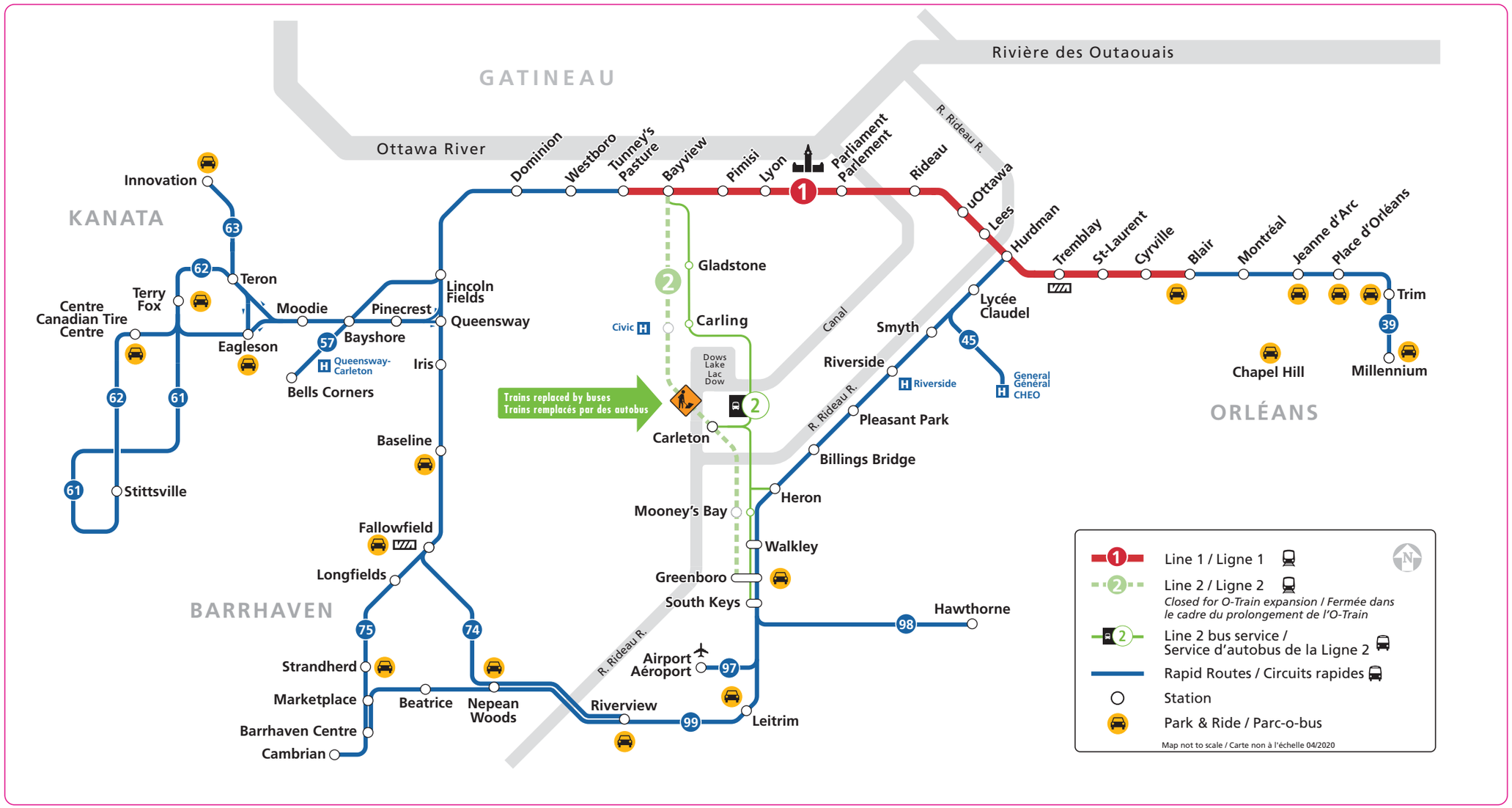
**Future route after O-Train Line 1 is open**
**Trajet du circuit après l'ouverture de la Ligne 1 de l'O-Train**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité..... **613-741-2478**

OC Transpo

**INFO 613-741-4390**
**octranspo.com**


GATINEAU
Rivière des Outaouais
Ottawa River
R. Rideau R.
KANATA
BARRHAVEN
ORLÉANS
Canal
R. Rideau R.
R. Rideau R.
Innovation
Teron
Terry Fox
Centre Canadian Tire Centre
Moodie
Eagleson
Pinecrest
Bayshore
Queensway-Carleton
Bells Corners
Lincoln Fields
Queensway
Iris
Baseline
Stittsville
Fallowfield
Longfields
Strandherd
Marketplace
Barrhaven Centre
Cambrian
Beatrice
Nepean Woods
Dominion
Westboro
Tunney's Pasture
Bayview
Pimisi
Lyon
Parliament Parlement
Rideau
uOttawa
Lees
Hurdman
Tremblay
St-Laurent
Cyrville
Blair
Montréal
Jeanne d'Arc
Place d'Orléans
Trim
Millennium
Chapel Hill
Gladstone
Carling
Civic
Dows Lake Lac Dow
Trains replaced by buses
Trains remplacés par des autobus
Carleton
Mooney's Bay
Lycée Claudel
Smyth
Riverside
General Général CHEO
Pleasant Park
Billings Bridge
Heron
Walkley
Greenboro
South Keys
Hawthorne
Airport Aéroport
Riverview
Leitrim
Line 1 / Ligne 1
Line 2 / Ligne 2
Closed for O-Train expansion / Fermée dans le cadre du prolongement de l'O-Train
Line 2 bus service / Service d'autobus de la Ligne 2
Rapid Routes / Circuits rapides
Station
Park & Ride / Parc-o-bus
Map not to scale / Carte non à l'échelle 04/2020

# APPENDIX D

Traffic Count and Signal Timing Data

NOVATECH
ENGINEERING
CONSULTANTS LTD.
ENGINEERS & PLANNERS
Suite 200
240 Michael Cowpland Drive
Kanata ON, K2M 1P6

1139

Weather: 3C, Overcast
Serial Number: TDC-12-1614
Collected By: H.Donald, H.Lu
Notes: Thursday

File Name : 20120329 - Somerset&Breezehill
Site Code : 11115214
Start Date : 3/29/2012
Page No : 1

**Groups Printed- Cars - LGV - HGV**

| | Breezehill Avenue N Northbound | | | Somerset Street Westbound | | | Somerset Street Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Left | Thru | App. Total | Thru | Right | App. Total | Int. Total |
| 07:00 | 0 | 3 | 3 | 0 | 8 | 8 | 24 | 1 | 25 | 36 |
| 07:15 | 2 | 1 | 3 | 1 | 17 | 18 | 29 | 6 | 35 | 56 |
| 07:30 | 4 | 5 | 9 | 7 | 31 | 38 | 29 | 4 | 33 | 80 |
| 07:45 | 3 | 2 | 5 | 4 | 28 | 32 | 52 | 3 | 55 | 92 |
| Total | 9 | 11 | 20 | 12 | 84 | 96 | 134 | 14 | 148 | 264 |
| 08:00 | 2 | 6 | 8 | 8 | 39 | 47 | 64 | 14 | 78 | 133 |
| 08:15 | 5 | 14 | 19 | 9 | 28 | 37 | 71 | 19 | 90 | 146 |
| 08:30 | 8 | 9 | 17 | 6 | 43 | 49 | 70 | 14 | 84 | 150 |
| 08:45 | 2 | 7 | 9 | 4 | 31 | 35 | 80 | 7 | 87 | 131 |
| Total | 17 | 36 | 53 | 27 | 141 | 168 | 285 | 54 | 339 | 560 |
| 09:00 | 3 | 4 | 7 | 4 | 38 | 42 | 41 | 3 | 44 | 93 |
| 09:15 | 6 | 2 | 8 | 3 | 37 | 40 | 55 | 7 | 62 | 110 |
| 09:30 | 5 | 2 | 7 | 3 | 45 | 48 | 63 | 2 | 65 | 120 |
| 09:45 | 2 | 2 | 4 | 1 | 53 | 54 | 43 | 4 | 47 | 105 |
| Total | 16 | 10 | 26 | 11 | 173 | 184 | 202 | 16 | 218 | 428 |
| 11:00 | 0 | 0 | 0 | 1 | 9 | 10 | 0 | 0 | 0 | 10 |
| 11:15 | 0 | 3 | 3 | 2 | 9 | 11 | 0 | 0 | 0 | 14 |
| 11:30 | 2 | 9 | 11 | 8 | 53 | 61 | 65 | 3 | 68 | 140 |
| 11:45 | 2 | 5 | 7 | 3 | 37 | 40 | 58 | 3 | 61 | 108 |
| Total | 4 | 17 | 21 | 14 | 108 | 122 | 123 | 6 | 129 | 272 |
| 12:00 | 6 | 7 | 13 | 8 | 55 | 63 | 53 | 4 | 57 | 133 |
| 12:15 | 5 | 4 | 9 | 3 | 55 | 58 | 44 | 8 | 52 | 119 |
| 12:30 | 4 | 4 | 8 | 4 | 46 | 50 | 58 | 4 | 62 | 120 |
| 12:45 | 3 | 4 | 7 | 6 | 51 | 57 | 61 | 4 | 65 | 129 |
| Total | 18 | 19 | 37 | 21 | 207 | 228 | 216 | 20 | 236 | 501 |
| 13:00 | 3 | 3 | 6 | 5 | 39 | 44 | 55 | 4 | 59 | 109 |
| 13:15 | 8 | 5 | 13 | 5 | 43 | 48 | 57 | 6 | 63 | 124 |
| Total | 11 | 8 | 19 | 10 | 82 | 92 | 112 | 10 | 122 | 233 |
| 14:30 | 0 | 2 | 2 | 0 | 7 | 7 | 0 | 0 | 0 | 9 |
| 14:45 | 0 | 3 | 3 | 0 | 10 | 10 | 0 | 0 | 0 | 13 |
| Total | 0 | 5 | 5 | 0 | 17 | 17 | 0 | 0 | 0 | 22 |
| 15:00 | 10 | 20 | 30 | 3 | 58 | 61 | 58 | 11 | 69 | 160 |
| 15:15 | 8 | 5 | 13 | 5 | 61 | 66 | 65 | 1 | 66 | 145 |
| 15:30 | 2 | 4 | 6 | 3 | 63 | 66 | 66 | 3 | 69 | 141 |
| 15:45 | 1 | 5 | 6 | 3 | 72 | 75 | 60 | 0 | 60 | 141 |
| Total | 21 | 34 | 55 | 14 | 254 | 268 | 249 | 15 | 264 | 587 |
| 16:00 | 2 | 7 | 9 | 2 | 77 | 79 | 61 | 1 | 62 | 150 |
| 16:15 | 1 | 2 | 3 | 2 | 82 | 84 | 45 | 5 | 50 | 137 |
| 16:30 | 1 | 5 | 6 | 5 | 87 | 92 | 66 | 0 | 66 | 164 |
| 16:45 | 2 | 10 | 12 | 9 | 91 | 100 | 67 | 5 | 72 | 184 |
| Total | 6 | 24 | 30 | 18 | 337 | 355 | 239 | 11 | 250 | 635 |

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240 Michael Cowpland Drive
Kanata ON, K2M 1P6

Weather: 3C, Overcast
Serial Number: TDC-12-1614
Collected By: H.Donald, H.Lu
Notes: Thursday

File Name : 20120329 - Somerset&Breezehill
Site Code : 11115214
Start Date : 3/29/2012


**Groups Printed- Cars - LGV - HGV**

| | Breezehill Avenue N Northbound | | | Somerset Street Westbound | | | Somerset Street Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Left | Thru | App. Total | Thru | Right | App. Total | Int. Total |
| 17:00 | 9 | 5 | 14 | 6 | 99 | 105 | 49 | 4 | 53 | 172 |
| 17:15 | 4 | 7 | 11 | 1 | 70 | 71 | 80 | 4 | 84 | 166 |
| 17:30 | 4 | 5 | 9 | 8 | 52 | 60 | 59 | 1 | 60 | 129 |
| 17:45 | 2 | 3 | 5 | 4 | 57 | 61 | 58 | 2 | 60 | 126 |
| Total | 19 | 20 | 39 | 19 | 278 | 297 | 246 | 11 | 257 | 593 |
| | | | | | | | | | | |
| Grand Total | 121 | 184 | 305 | 146 | 1681 | 1827 | 1806 | 157 | 1963 | 4095 |
| Apprch % | 39.7 | 60.3 | | 8 | 92 | | 92 | 8 | | |
| Total % | 3 | 4.5 | 7.4 | 3.6 | 41.1 | 44.6 | 44.1 | 3.8 | 47.9 | |
| Cars | 121 | 163 | 284 | 133 | 1531 | 1664 | 1806 | 157 | 1963 | 3911 |
| % Cars | 100 | 88.6 | 93.1 | 91.1 | 91.1 | 91.1 | 100 | 100 | 100 | 95.5 |
| LGV | 0 | 18 | 18 | 11 | 118 | 129 | 0 | 0 | 0 | 147 |
| % LGV | 0 | 9.8 | 5.9 | 7.5 | 7 | 7.1 | 0 | 0 | 0 | 3.6 |
| HGV | 0 | 3 | 3 | 2 | 32 | 34 | 0 | 0 | 0 | 37 |
| % HGV | 0 | 1.6 | 1 | 1.4 | 1.9 | 1.9 | 0 | 0 | 0 | 0.9 |

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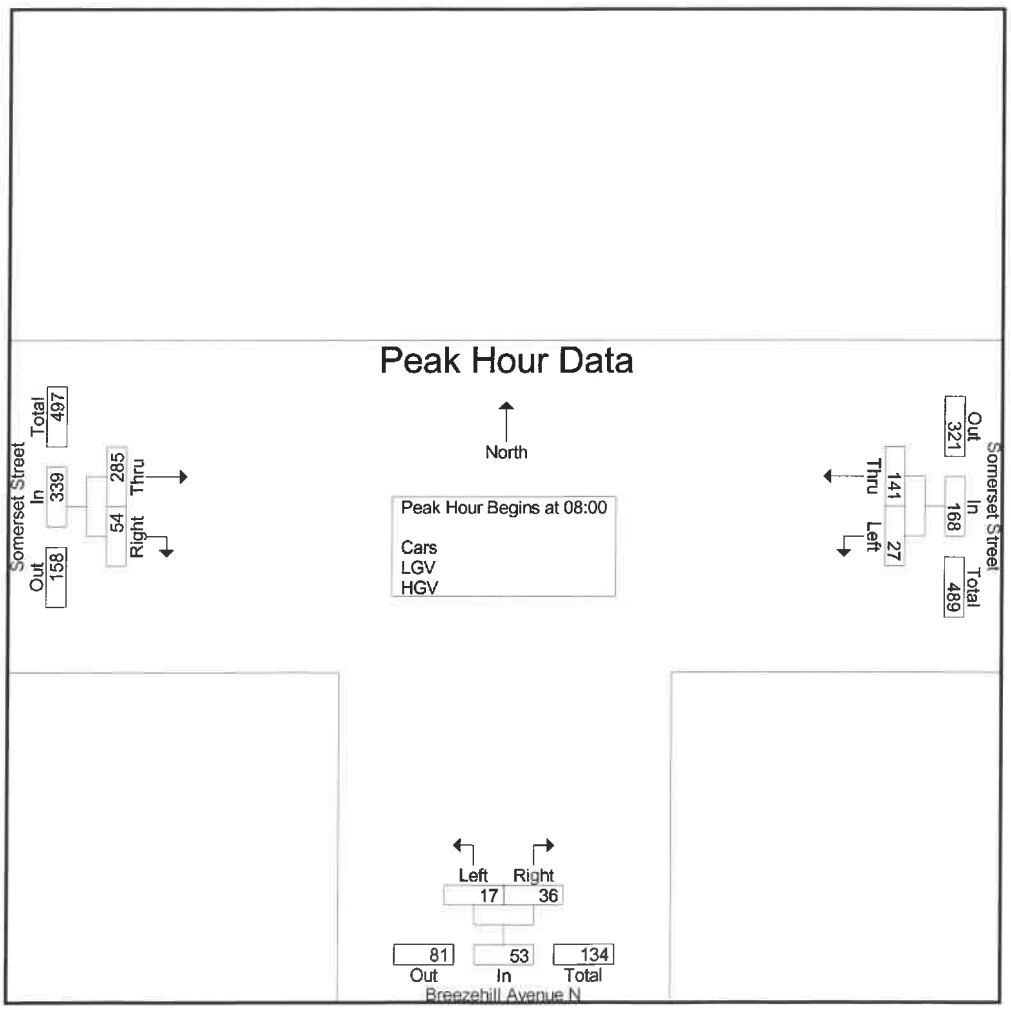
Weather: 3C, Overcast
Serial Number: TDC-12-1614
Collected By: H.Donald, H.Lu
Notes: Thursday

File Name : 20120329 - Somerset&Breezehill
Site Code : 11115214
Start Date : 3/29/2012


| | Breezehill Avenue N Northbound | | | Somerset Street Westbound | | | Somerset Street Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Left | Thru | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 09:45 - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 | | | | | | | | | | |
| 08:00 | 2 | 6 | 8 | 8 | 39 | 47 | 64 | 14 | 78 | 133 |
| 08:15 | 5 | **14** | **19** | **9** | 28 | 37 | 71 | **19** | **90** | **146** |
| 08:30 | **8** | 9 | 17 | 6 | **43** | **49** | 70 | 14 | 84 | **150** |
| 08:45 | 2 | 7 | 9 | 4 | 31 | 35 | **80** | 7 | 87 | 131 |
| Total Volume | 17 | 36 | 53 | 27 | 141 | 168 | 285 | 54 | 339 | 560 |
| % App. Total | 32.1 | 67.9 | | 16.1 | 83.9 | | 84.1 | 15.9 | | |
| PHF | .531 | .643 | .697 | .750 | .820 | .857 | .891 | .711 | .942 | .933 |



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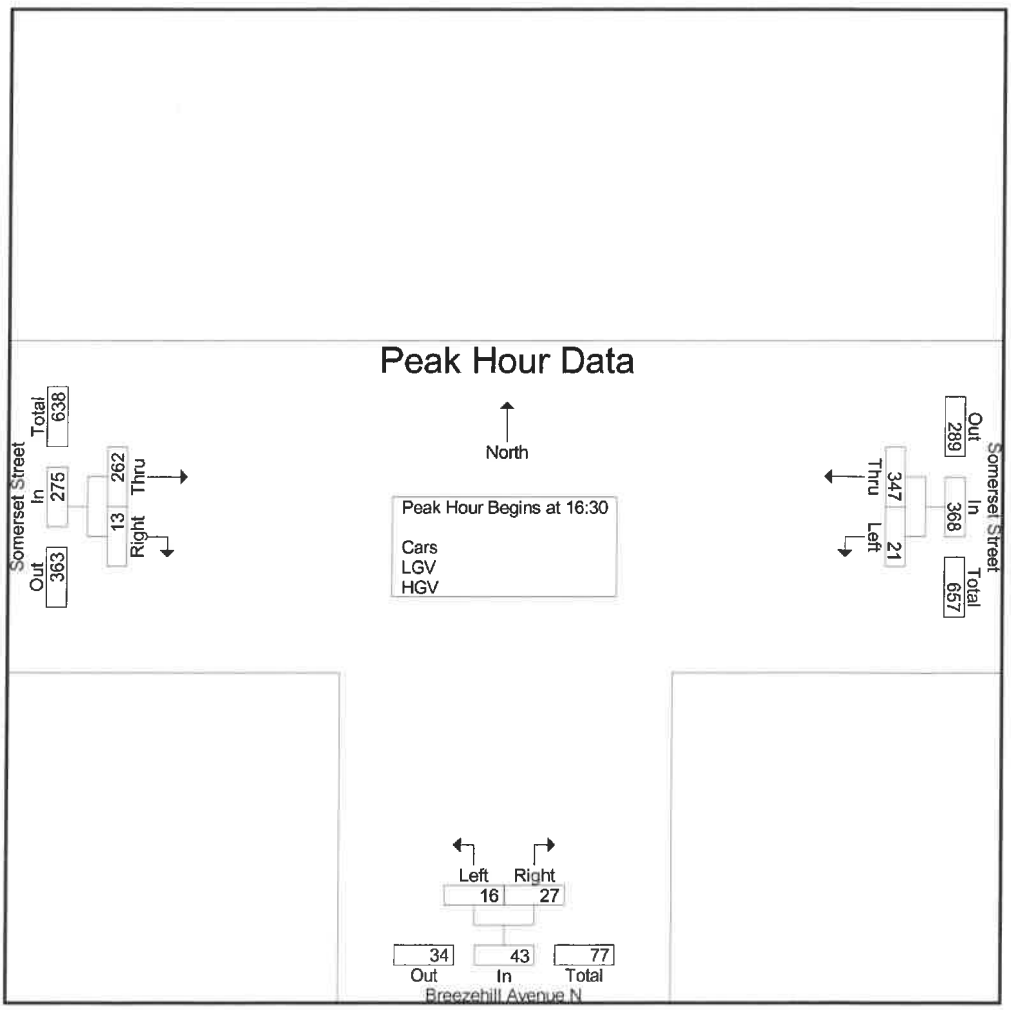
Weather: 3C, Overcast
Serial Number: TDC-12-1614
Collected By: H.Donald, H.Lu
Notes: Thursday

File Name : 20120329 - Somerset&Breezehill
Site Code : 11115214
Start Date : 3/29/2012
Page No : 6

| | Breezehill Avenue N Northbound | | | Somerset Street Westbound | | | Somerset Street Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Left | Thru | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 14:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:30 | | | | | | | | | | |
| 16:30 | 1 | 5 | 6 | 5 | 87 | 92 | 66 | 0 | 66 | 164 |
| 16:45 | 2 | **10** | 12 | **9** | 91 | 100 | 67 | **5** | 72 | **184** |
| 17:00 | **9** | 5 | **14** | 6 | **99** | **105** | 49 | 4 | 53 | 172 |
| 17:15 | 4 | 7 | 11 | 1 | 70 | 71 | **80** | 4 | **84** | 166 |
| Total Volume | 16 | 27 | 43 | 21 | 347 | 368 | 262 | 13 | 275 | 686 |
| % App. Total | 37.2 | 62.8 | | 5.7 | 94.3 | | 95.3 | 4.7 | | |
| PHF | .444 | .675 | .768 | .583 | .876 | .876 | .819 | .650 | .818 | .932 |



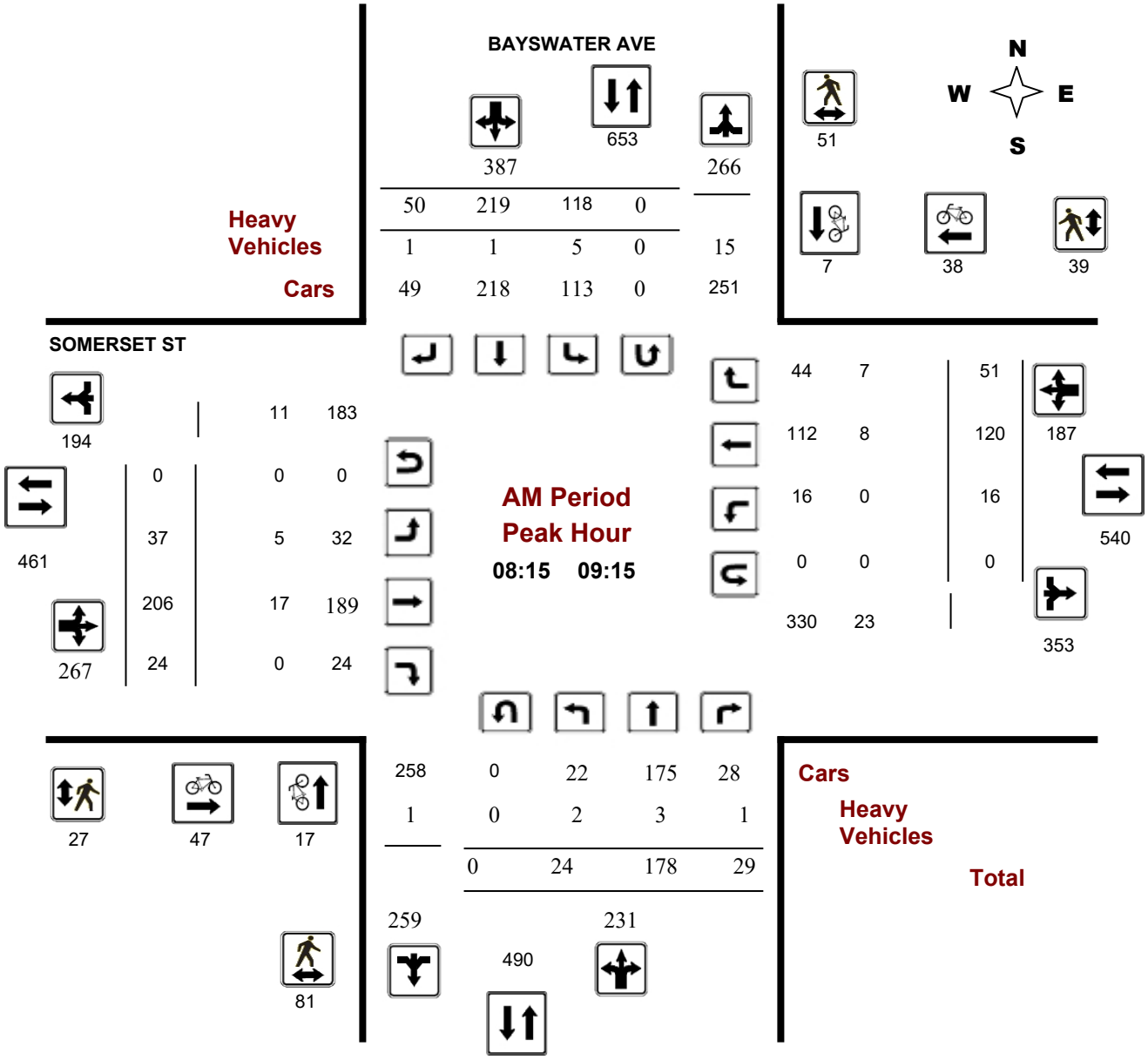
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## BAYSWATER AVE @ SOMERSET ST

**Survey Date:** Wednesday, September 07, 2016 **WO No:** 36276

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




**Comments**

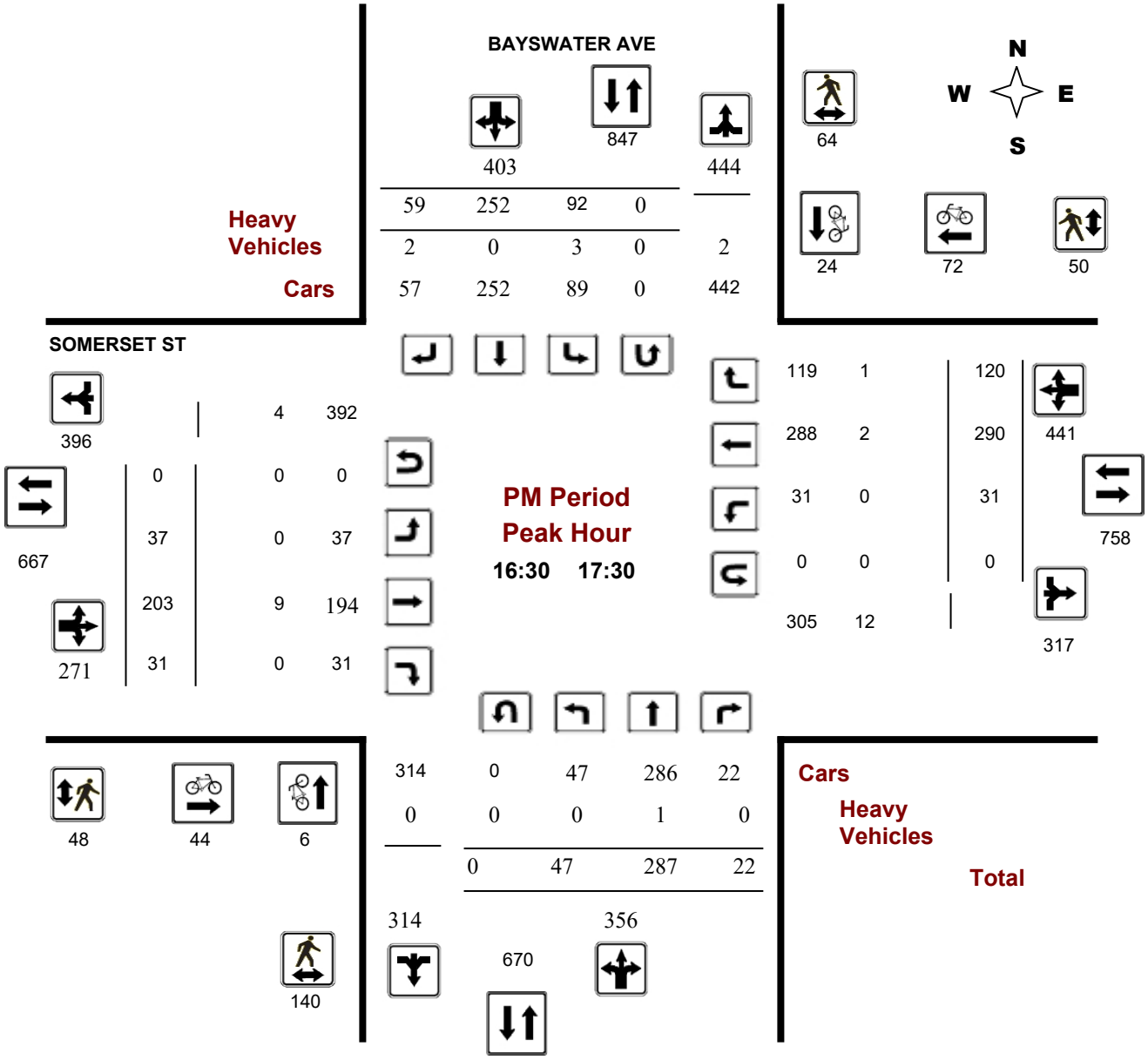
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## BAYSWATER AVE @ SOMERSET ST

**Survey Date:** Wednesday, September 07, 2016 **WO No:** 36276

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




**Comments**

# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

## BAYSWATER AVE @ SOMERSET ST

**Survey Date:** Wednesday, September 07, 2016 **WO No:** 36276

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

## Full Study Summary (8 HR Standard)

**Survey Date:** Wednesday, September 07, 2016

**Total Observed U-Turns**

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

**AADT Factor**

1.00

| | BAYSWATER AVE | | | | | | | | | SOMERSET ST | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northbound | | | | Southbound | | | | | Eastbound | | | | Westbound | | | | | |
| Period | LT | ST | RT | **NB TOT** | LT | ST | RT | **SB TOT** | **STR TOT** | LT | ST | RT | **EB TOT** | LT | ST | RT | **WB TOT** | **STR TOT** | **Grand Total** |
| 07:00 08:00 | 22 | 99 | 14 | **135** | 70 | 198 | 34 | **302** | **437** | 22 | 150 | 17 | **189** | 2 | 89 | 33 | **124** | **313** | **750** |
| 08:00 09:00 | 23 | 168 | 26 | **217** | 120 | 217 | 45 | **382** | **599** | 45 | 201 | 30 | **276** | 16 | 114 | 54 | **184** | **460** | **1059** |
| 09:00 10:00 | 23 | 106 | 23 | **152** | 88 | 152 | 40 | **280** | **432** | 24 | 184 | 30 | **238** | 12 | 151 | 44 | **207** | **445** | **877** |
| 11:30 12:30 | 31 | 101 | 16 | **148** | 112 | 107 | 61 | **280** | **428** | 22 | 221 | 24 | **267** | 18 | 233 | 75 | **326** | **593** | **1021** |
| 12:30 13:30 | 34 | 93 | 11 | **138** | 84 | 112 | 52 | **248** | **386** | 30 | 206 | 21 | **257** | 17 | 223 | 71 | **311** | **568** | **954** |
| 15:00 16:00 | 34 | 315 | 16 | **365** | 85 | 180 | 54 | **319** | **684** | 25 | 182 | 20 | **227** | 21 | 216 | 94 | **331** | **558** | **1242** |
| 16:00 17:00 | 49 | 328 | 16 | **393** | 97 | 219 | 48 | **364** | **757** | 32 | 222 | 33 | **287** | 24 | 260 | 111 | **395** | **682** | **1439** |
| 17:00 18:00 | 43 | 224 | 26 | **293** | 72 | 208 | 58 | **338** | **631** | 31 | 191 | 25 | **247** | 43 | 280 | 101 | **424** | **671** | **1302** |
| **Sub Total** | 259 | 1434 | 148 | **1841** | 728 | 1393 | 392 | **2513** | **4354** | 231 | 1557 | 200 | **1988** | 153 | 1566 | 583 | **2302** | **4290** | **8644** |
| **U Turns** | 0 | | | **0** | 0 | | | **0** | **0** | **0** | | | **0** | 0 | | | **0** | **0** | **0** |
| **Total** | 259 | 1434 | 148 | **1841** | 728 | 1393 | 392 | **2513** | **4354** | 231 | 1557 | 200 | **1988** | 153 | 1566 | 583 | **2302** | **4290** | **8644** |
| **EQ 12Hr** | 360 | 1993 | 206 | **2559** | 1012 | 1936 | 545 | **3493** | **6052** | 321 | 2164 | 278 | **2763** | 213 | 2177 | 810 | **3200** | **5963** | **12015** |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | | **1.39** | | | | | |
| **AVG 12Hr** | 360 | 1993 | 206 | **2559** | 1012 | 1936 | 545 | **3493** | **6052** | 321 | 2164 | 278 | **2763** | 213 | 2177 | 810 | **3200** | **5963** | **12015** |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | | **1.00** | | | | | |
| **AVG 24Hr** | 472 | 2611 | 270 | **3353** | 1326 | 2536 | 714 | **4576** | **7929** | 421 | 2835 | 364 | **3620** | 279 | 2852 | 1061 | **4192** | **7812** | **15741** |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | | **1.31** | | | | | |

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

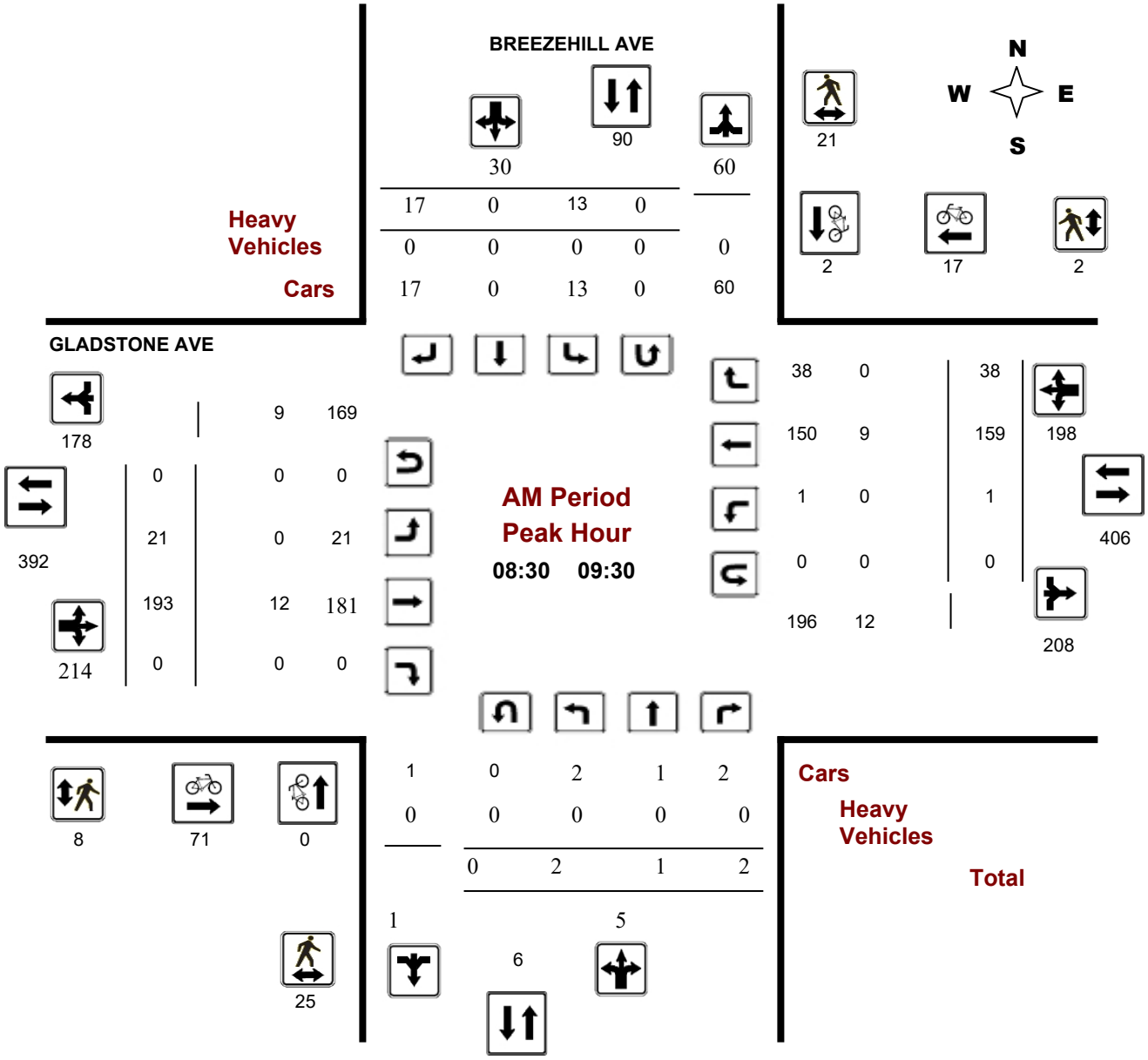
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## BREEZEHILL AVE @ GLADSTONE AVE

**Survey Date:** Wednesday, July 18, 2018 **WO No:** 37971

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




**Comments**

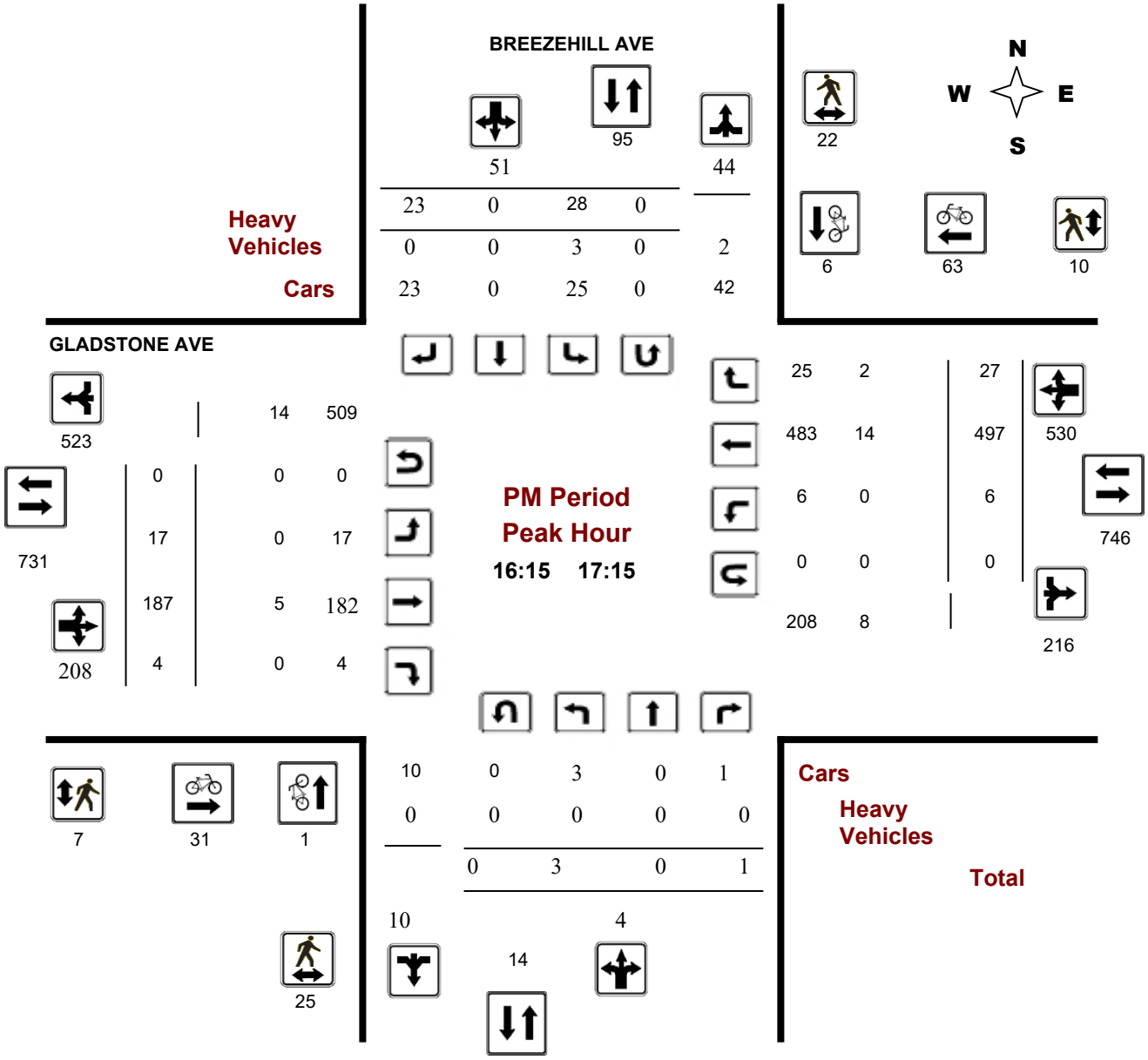
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## BREEZEHILL AVE @ GLADSTONE AVE

**Survey Date:** Wednesday, July 18, 2018 **WO No:** 37971

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




**Comments**

# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

## BREEZEHILL AVE @ GLADSTONE AVE

**Survey Date:** Wednesday, July 18, 2018 **WO No:** 37971

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

## Full Study Summary (8 HR Standard)

**Survey Date:** Wednesday, July 18, 2018

**Total Observed U-Turns**

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

**AADT Factor**

.90

| | BREEZEHILL AVE | | | | | | | | | GLADSTONE AVE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northbound | | | | Southbound | | | | | Eastbound | | | | Westbound | | | | | |
| Period | LT | ST | RT | **NB TOT** | LT | ST | RT | **SB TOT** | **STR TOT** | LT | ST | RT | **EB TOT** | LT | ST | RT | **WB TOT** | **STR TOT** | **Grand Total** |
| 07:00 08:00 | 0 | 1 | 2 | **3** | 8 | 1 | 10 | **19** | **22** | 17 | 132 | 0 | **149** | 0 | 101 | 16 | **117** | **266** | **288** |
| 08:00 09:00 | 1 | 1 | 3 | **5** | 10 | 0 | 20 | **30** | **35** | 23 | 202 | 0 | **225** | 1 | 156 | 27 | **184** | **409** | **444** |
| 09:00 10:00 | 3 | 1 | 1 | **5** | 22 | 0 | 20 | **42** | **47** | 24 | 157 | 0 | **181** | 2 | 143 | 32 | **177** | **358** | **405** |
| 11:30 12:30 | 5 | 0 | 2 | **7** | 24 | 0 | 21 | **45** | **52** | 20 | 166 | 5 | **191** | 2 | 168 | 20 | **190** | **381** | **433** |
| 12:30 13:30 | 1 | 2 | 3 | **6** | 17 | 2 | 15 | **34** | **40** | 13 | 157 | 1 | **171** | 2 | 175 | 9 | **186** | **357** | **397** |
| 15:00 16:00 | 4 | 3 | 3 | **10** | 18 | 0 | 20 | **38** | **48** | 8 | 164 | 1 | **173** | 0 | 347 | 16 | **363** | **536** | **584** |
| 16:00 17:00 | 1 | 0 | 1 | **2** | 25 | 0 | 24 | **49** | **51** | 17 | 199 | 5 | **221** | 3 | 478 | 24 | **505** | **726** | **777** |
| 17:00 18:00 | 5 | 0 | 3 | **8** | 16 | 1 | 14 | **31** | **39** | 6 | 157 | 3 | **166** | 6 | 441 | 14 | **461** | **627** | **666** |
| **Sub Total** | 20 | 8 | 18 | **46** | 140 | 4 | 144 | **288** | **334** | 128 | 1334 | 15 | **1477** | 16 | 2009 | 158 | **2183** | **3660** | **3994** |
| **U Turns** | 0 | | | **0** | 0 | | | **0** | **0** | **0** | | | **0** | 0 | | | **0** | **0** | **0** |
| **Total** | 20 | 8 | 18 | **46** | 140 | 4 | 144 | **288** | **334** | 128 | 1334 | 15 | **1477** | 16 | 2009 | 158 | **2183** | **3660** | **3994** |
| **EQ 12Hr** | 28 | 11 | 25 | **64** | 195 | 6 | 200 | **401** | **465** | 178 | 1854 | 21 | **2053** | 22 | 2793 | 220 | **3035** | **5088** | **5553** |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | | **1.39** | | | | | |
| **AVG 12Hr** | 25 | 10 | 22 | **57** | 176 | 5 | 180 | **361** | **418** | 160 | 1669 | 19 | **1848** | 20 | 2514 | 198 | **2732** | **4580** | **4998** |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | | **.90** | | | | | |
| **AVG 24Hr** | 33 | 13 | 29 | **75** | 231 | 7 | 236 | **474** | **549** | 210 | 2186 | 25 | **2421** | 26 | 3293 | 259 | **3578** | **5999** | **6548** |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | | **1.31** | | | | | |

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

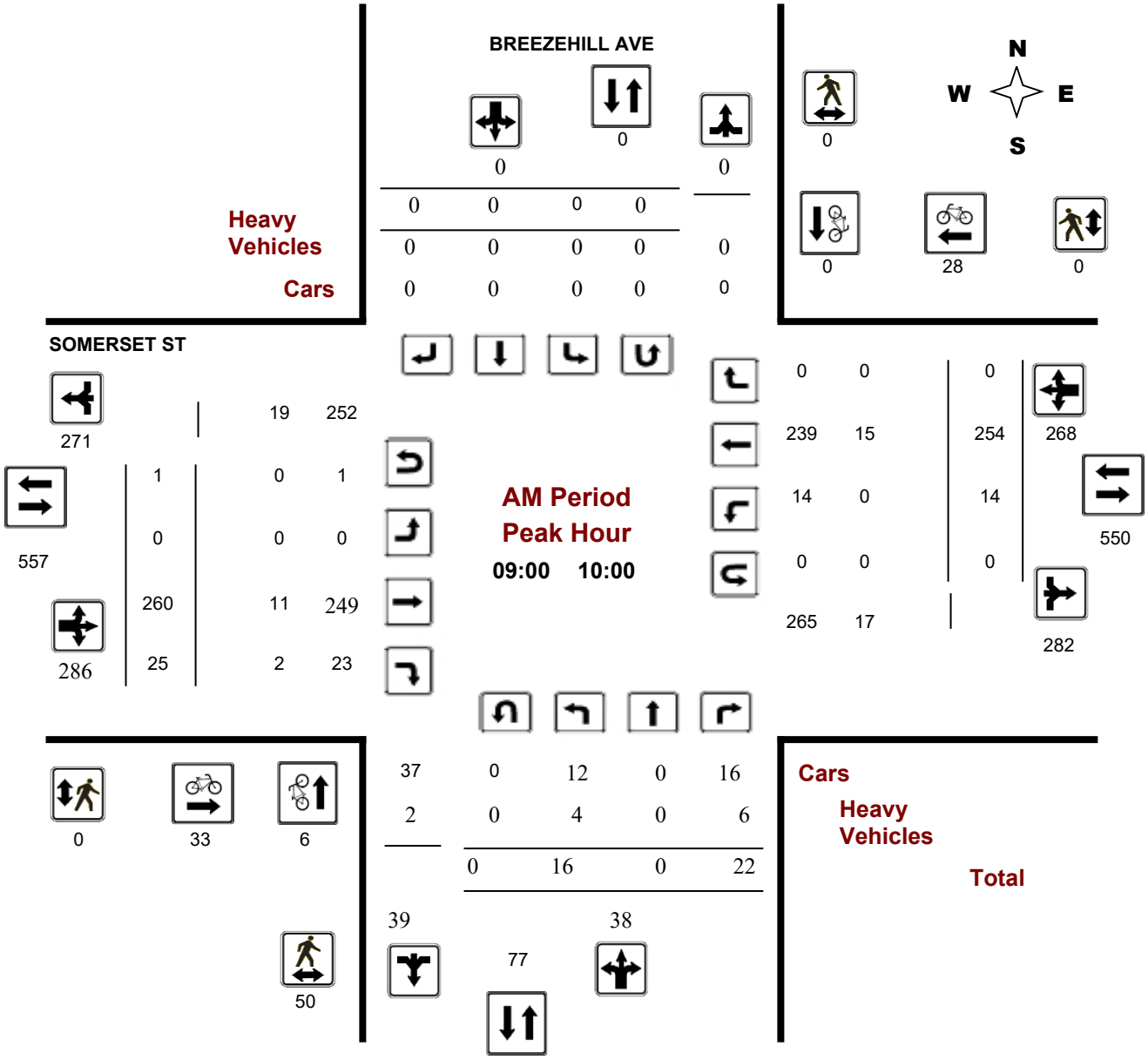
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## BREEZEHILL AVE @ SOMERSET ST

**Survey Date:** Thursday, August 13, 2015 **WO No:** 35301

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




**Comments**

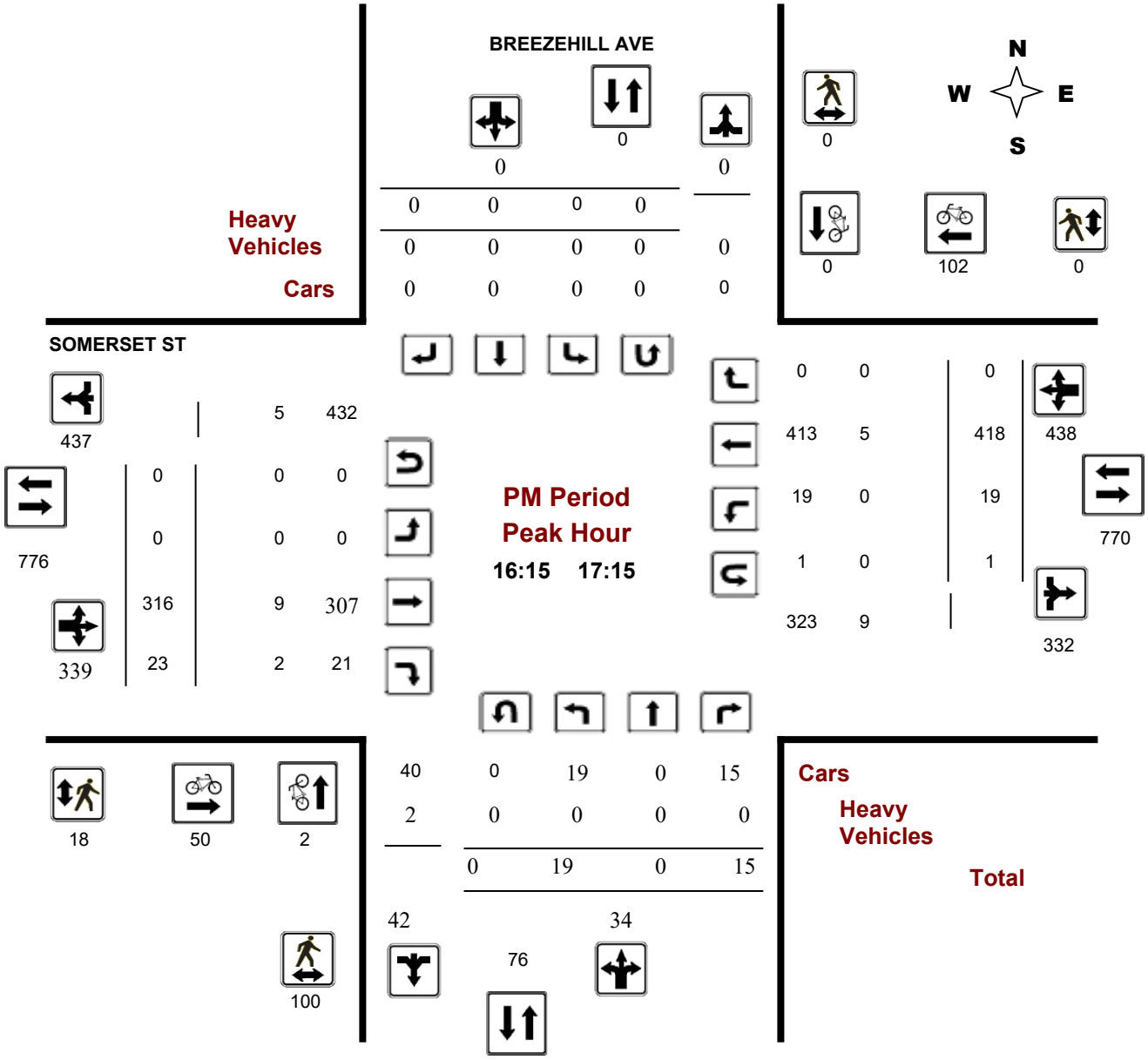
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## BREEZEHILL AVE @ SOMERSET ST

**Survey Date:** Thursday, August 13, 2015 **WO No:** 35301

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




**Comments**

# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

## BREEZEHILL AVE @ SOMERSET ST

**Survey Date:** Thursday, August 13, 2015 **WO No:** 35301

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

## Full Study Summary (8 HR Standard)

**Survey Date:** Thursday, August 13, 2015

**Total Observed U-Turns**

Northbound: 0 Southbound: 0

Eastbound: 4 Westbound: 2

**AADT Factor**

.90

| | BREEZEHILL AVE | | | | | | | | SOMERSET ST | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | | |
| Period | LT | ST | RT | NB TOT | LT | ST | RT | SB TOT | STR TOT | LT | ST | RT | EB TOT | LT | ST | RT | WB TOT | STR TOT | Grand Total |
| 07:00 08:00 | 6 | 0 | 15 | **21** | 0 | 0 | 0 | **0** | **21** | 0 | 171 | 13 | **184** | 10 | 145 | 0 | **155** | **339** | **360** |
| 08:00 09:00 | 13 | 0 | 24 | **37** | 0 | 0 | 0 | **0** | **37** | 0 | 275 | 17 | **292** | 15 | 188 | 0 | **203** | **495** | **532** |
| 09:00 10:00 | 16 | 0 | 22 | **38** | 0 | 0 | 0 | **0** | **38** | 0 | 260 | 25 | **285** | 14 | 254 | 0 | **268** | **553** | **591** |
| 11:30 12:30 | 25 | 0 | 25 | **50** | 0 | 0 | 0 | **0** | **50** | 0 | 309 | 17 | **326** | 25 | 293 | 0 | **318** | **644** | **694** |
| 12:30 13:30 | 16 | 0 | 15 | **31** | 0 | 0 | 0 | **0** | **31** | 0 | 265 | 26 | **291** | 15 | 288 | 0 | **303** | **594** | **625** |
| 15:00 16:00 | 25 | 0 | 18 | **43** | 0 | 0 | 0 | **0** | **43** | 0 | 250 | 15 | **265** | 16 | 331 | 0 | **347** | **612** | **655** |
| 16:00 17:00 | 13 | 0 | 19 | **32** | 0 | 0 | 0 | **0** | **32** | 0 | 311 | 21 | **332** | 22 | 422 | 0 | **444** | **776** | **808** |
| 17:00 18:00 | 18 | 0 | 17 | **35** | 0 | 0 | 0 | **0** | **35** | 0 | 296 | 13 | **309** | 19 | 408 | 0 | **427** | **736** | **771** |
| **Sub Total** | 132 | 0 | 155 | **287** | 0 | 0 | 0 | **0** | **287** | 0 | 2137 | 147 | **2284** | 136 | 2329 | 0 | **2465** | **4749** | **5036** |
| **U Turns** | 0 | | | **0** | 0 | | | **0** | **0** | **4** | | | **4** | 2 | | | **2** | **6** | **6** |
| **Total** | 132 | 0 | 155 | **287** | 0 | 0 | 0 | **0** | **287** | 4 | 2137 | 147 | **2288** | 138 | 2329 | 0 | **2467** | **4755** | **5042** |
| **EQ 12Hr** | 183 | 0 | 215 | **398** | 0 | 0 | 0 | **0** | **398** | 6 | 2970 | 204 | **3180** | 192 | 3237 | 0 | **3429** | **6609** | **7007** |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | | **1.39** | | | | | |
| **AVG 12Hr** | 165 | 0 | 194 | **359** | 0 | 0 | 0 | **0** | **359** | 5 | 2673 | 184 | **2862** | 173 | 2913 | 0 | **3086** | **5948** | **6307** |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | | **.90** | | | | | |
| **AVG 24Hr** | 216 | 0 | 254 | **470** | 0 | 0 | 0 | **0** | **470** | 7 | 3502 | 241 | **3750** | 227 | 3816 | 0 | **4043** | **7793** | **8263** |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | | **1.31** | | | | | |

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

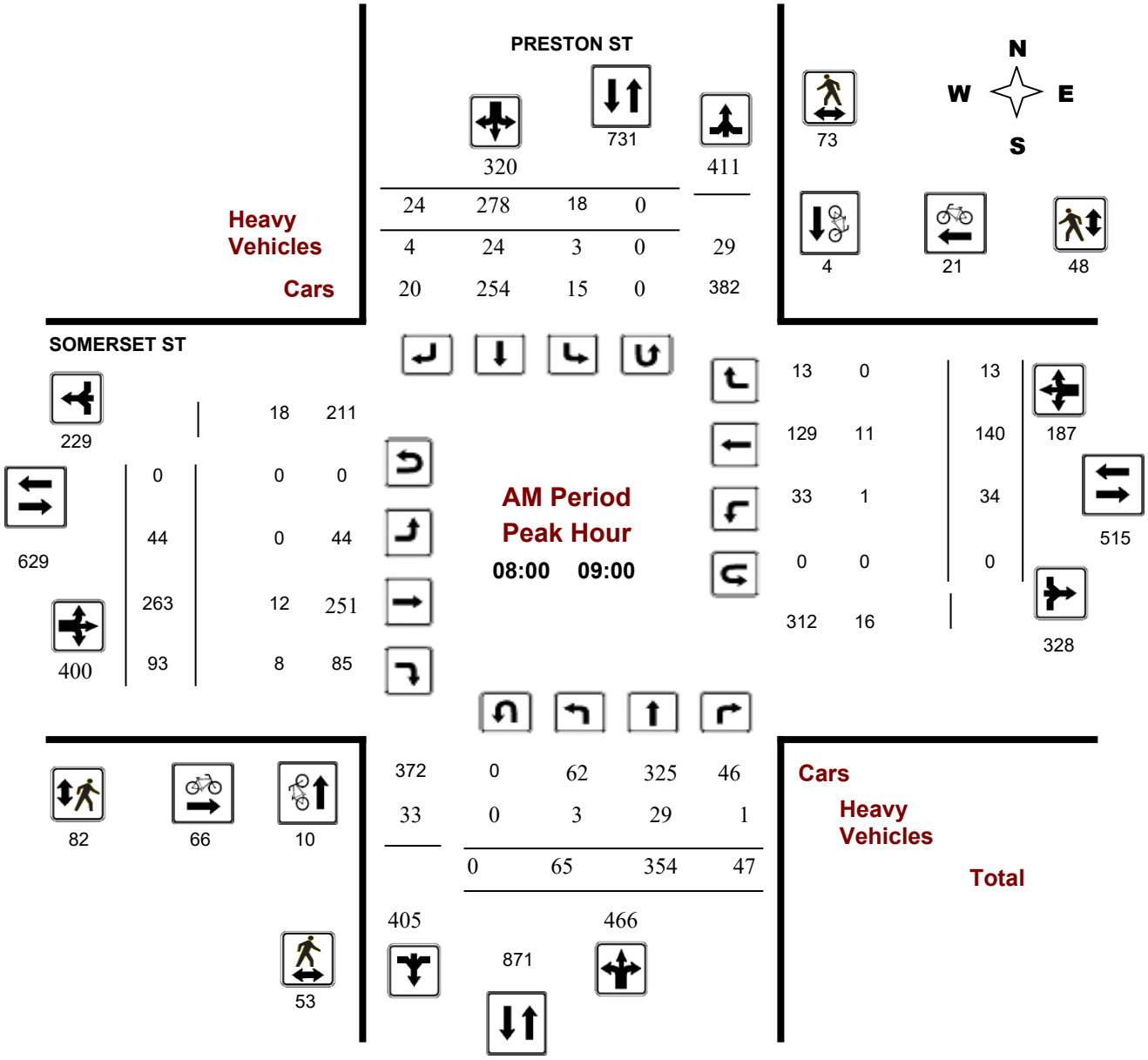
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## PRESTON ST @ SOMERSET ST

**Survey Date:** Tuesday, June 20, 2017
**Start Time:** 07:00

**WO No:** 37133
**Device:** Miovision




**Comments**

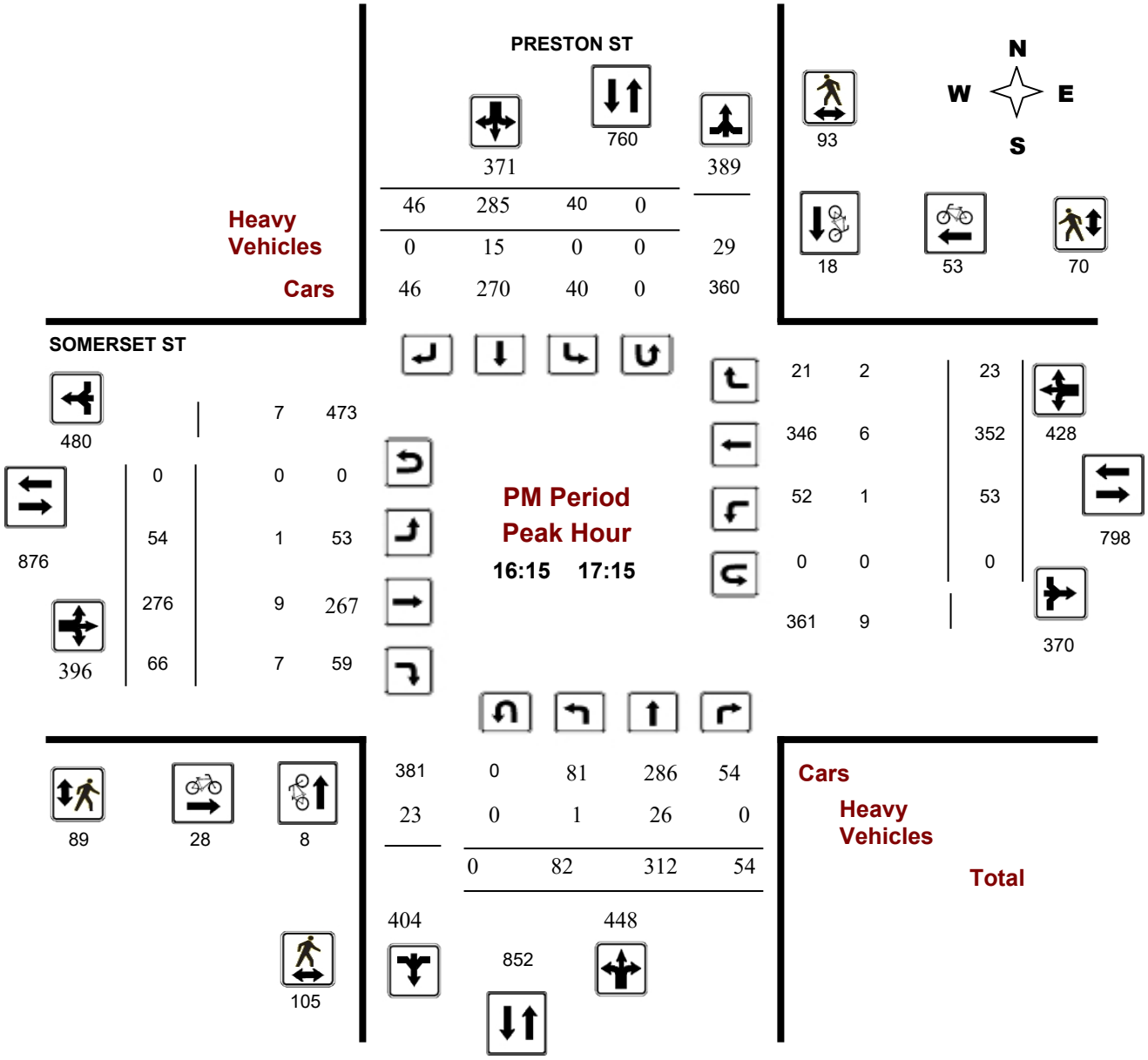
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## PRESTON ST @ SOMERSET ST

**Survey Date:** Tuesday, June 20, 2017
**Start Time:** 07:00

**WO No:** 37133
**Device:** Miovision




**Comments**

# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

## PRESTON ST @ SOMERSET ST

**Survey Date:** Tuesday, June 20, 2017 **WO No:** 37133

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

## Full Study Summary (8 HR Standard)

**Survey Date:** Tuesday, June 20, 2017

**Total Observed U-Turns**

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

**AADT Factor**

.90

| | PRESTON ST | | | | | | | | | SOMERSET ST | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northbound | | | | Southbound | | | | | Eastbound | | | | Westbound | | | | | |
| Period | LT | ST | RT | **NB TOT** | LT | ST | RT | **SB TOT** | **STR TOT** | LT | ST | RT | **EB TOT** | LT | ST | RT | **WB TOT** | **STR TOT** | **Grand Total** |
| 07:00 08:00 | 39 | 260 | 51 | **350** | 18 | 315 | 20 | **353** | **703** | 29 | 164 | 73 | **266** | 35 | 97 | 11 | **143** | **409** | **1112** |
| 08:00 09:00 | 65 | 354 | 47 | **466** | 18 | 278 | 24 | **320** | **786** | 44 | 263 | 93 | **400** | 34 | 140 | 13 | **187** | **587** | **1373** |
| 09:00 10:00 | 52 | 239 | 51 | **342** | 22 | 328 | 38 | **388** | **730** | 38 | 196 | 85 | **319** | 31 | 146 | 13 | **190** | **509** | **1239** |
| 11:30 12:30 | 68 | 221 | 54 | **343** | 24 | 222 | 37 | **283** | **626** | 45 | 212 | 74 | **331** | 43 | 181 | 26 | **250** | **581** | **1207** |
| 12:30 13:30 | 62 | 236 | 39 | **337** | 19 | 233 | 44 | **296** | **633** | 48 | 216 | 93 | **357** | 70 | 213 | 24 | **307** | **664** | **1297** |
| 15:00 16:00 | 79 | 342 | 54 | **475** | 39 | 263 | 41 | **343** | **818** | 55 | 246 | 81 | **382** | 46 | 273 | 24 | **343** | **725** | **1543** |
| 16:00 17:00 | 77 | 323 | 56 | **456** | 49 | 282 | 46 | **377** | **833** | 40 | 268 | 64 | **372** | 57 | 346 | 19 | **422** | **794** | **1627** |
| 17:00 18:00 | 85 | 310 | 54 | **449** | 15 | 256 | 40 | **311** | **760** | 55 | 282 | 88 | **425** | 51 | 333 | 33 | **417** | **842** | **1602** |
| **Sub Total** | 527 | 2285 | 406 | **3218** | 204 | 2177 | 290 | **2671** | **5889** | 354 | 1847 | 651 | **2852** | 367 | 1729 | 163 | **2259** | **5111** | **11000** |
| **U Turns** | 0 | | | **0** | 0 | | | **0** | **0** | **0** | | | **0** | 0 | | | **0** | **0** | **0** |
| **Total** | 527 | 2285 | 406 | **3218** | 204 | 2177 | 290 | **2671** | **5889** | 354 | 1847 | 651 | **2852** | 367 | 1729 | 163 | **2259** | **5111** | **11000** |
| **EQ 12Hr** | 733 | 3176 | 564 | **4473** | 284 | 3026 | 403 | **3713** | **8186** | 492 | 2567 | 905 | **3964** | 510 | 2403 | 227 | **3140** | **7104** | **15290** |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | | **1.39** | | | | | |
| **AVG 12Hr** | 660 | 2858 | 508 | **4026** | 256 | 2723 | 363 | **3342** | **7368** | 443 | 2310 | 814 | **3567** | 459 | 2163 | 204 | **2826** | **6393** | **13761** |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | | **.90** | | | | | |
| **AVG 24Hr** | 865 | 3744 | 665 | **5274** | 335 | 3567 | 476 | **4378** | **9652** | 580 | 3026 | 1066 | **4672** | 601 | 2834 | 267 | **3702** | **8374** | **18026** |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | | **1.31** | | | | | |

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

# Traffic Signal Timing

*City of Ottawa, Transportation Services Department*

**Traffic Signal Operations Unit**

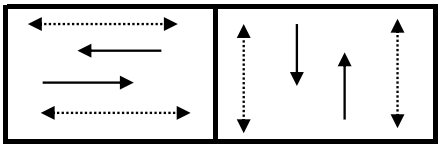
| | | | | | |
|---|---|---|---|---|---|
| **Intersection:** | ***Main:*** | Somerset | ***Side:*** | Bayswater | |
| **Controller:** | **ATC 3** | | | **TSD:** | **5018** |
| **Author:** | Matthew Anderson | | | **Date:** | 04-Nov-20 |

## Existing Timing Plans†

| | **Plan** | | | | | **Ped Minimum Time** | | |
|---|---|---|---|---|---|---|---|---|
| | **AM Peak** 1 | **Off Peak** 2 | **PM Peak** 3 | **Night** 4 | **Weekend** 5 | ***Walk*** | ***DW*** | ***A+R*** |
| **Cycle** | 70 | 60 | 75 | 60 | 65 | | | |
| **Offset** | 19 | 38 | 63 | 40 | 38 | | | |
| EB Thru | 35 | 31 | 40 | 31 | 35 | 17 | 8 | 3.3+2.2 |
| WB Thru | 35 | 31 | 40 | 31 | 35 | 17 | 8 | 3.3+2.2 |
| NB Thru | 35 | 29 | 35 | 29 | 30 | 13 | 10 | 3.3+2.6 |
| SB Thru | 35 | 29 | 35 | 29 | 30 | 13 | 10 | 3.3+2.6 |

## Phasing Sequence‡

**Plans: All**



## Schedule

**Weekday**

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

**Saturday**

| Time | Plan |
|---|---|
| 0:15 | 4 |
| 6:30 | 2 |
| 9:00 | 5 |
| 18:30 | 2 |
| 22:30 | 4 |

**Sunday**

| Time | Plan |
|---|---|
| 0:15 | 4 |
| 6:30 | 2 |
| 9:00 | 5 |
| 18:00 | 2 |
| 22:30 | 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 $58.78 ($52.02 + HST)

# Traffic Signal Timing

*City of Ottawa, Transportation Services Department*

**Traffic Signal Operations Unit**

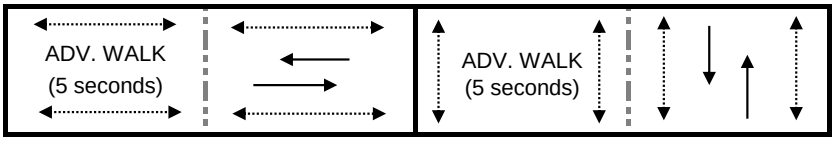
| | | | | | |
|---|---|---|---|---|---|
| **Intersection:** | ***Main:*** | Somerset | ***Side:*** | Preston |
| **Controller:** | **ATC 3** | | **TSD:** | **5079** |
| **Author:** | Matthew Anderson | | **Date:** | 2020-11-04 |

## Existing Timing Plans†

| | **Plan** | | | | | **Ped Minimum Time** | | |
|---|---|---|---|---|---|---|---|---|
| | **AM Peak** 1 | **Off Peak** 2 | **PM Peak** 3 | **Night** 4 | **Weekend** 5 | ***Walk*** | ***DW*** | ***A+R*** |
| **Cycle** | 70 | 70 | 70 | 60 | 65 | | | |
| **Offset** | 37 | 33 | 32 | 28 | 28 | | | |
| EB Thru | 31 | 34 | 34 | 30 | 31 | 7 | 12 | 3.3+2.3 |
| WB Thru | 31 | 34 | 34 | 30 | 31 | 7 | 12 | 3.3+2.3 |
| NB Thru | 39 | 36 | 36 | 30 | 34 | 7 | 14 | 3.3+2.4 |
| SB Thru | 39 | 36 | 36 | 30 | 34 | 7 | 14 | 3.3+2.4 |

## Phasing Sequence‡

**Plan: All**




**Notes:** 1) Right turn is prohibited on Redin all directions, weekdays between 700-1900

## Schedule

**Weekday**

| Time | Plan |
|---|---|
| 0:15 | 4 |
| 6:00 | 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

‡: 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 $58.78 ($52.02 + HST)

# Spot Speed Survey Histogram

Glossary of Relevant Spot Speed Survey Terms

## Somerset Street West between Bayswater Avenue & Breezehill Avenue North

Immediately west of Breezehill Avenue North

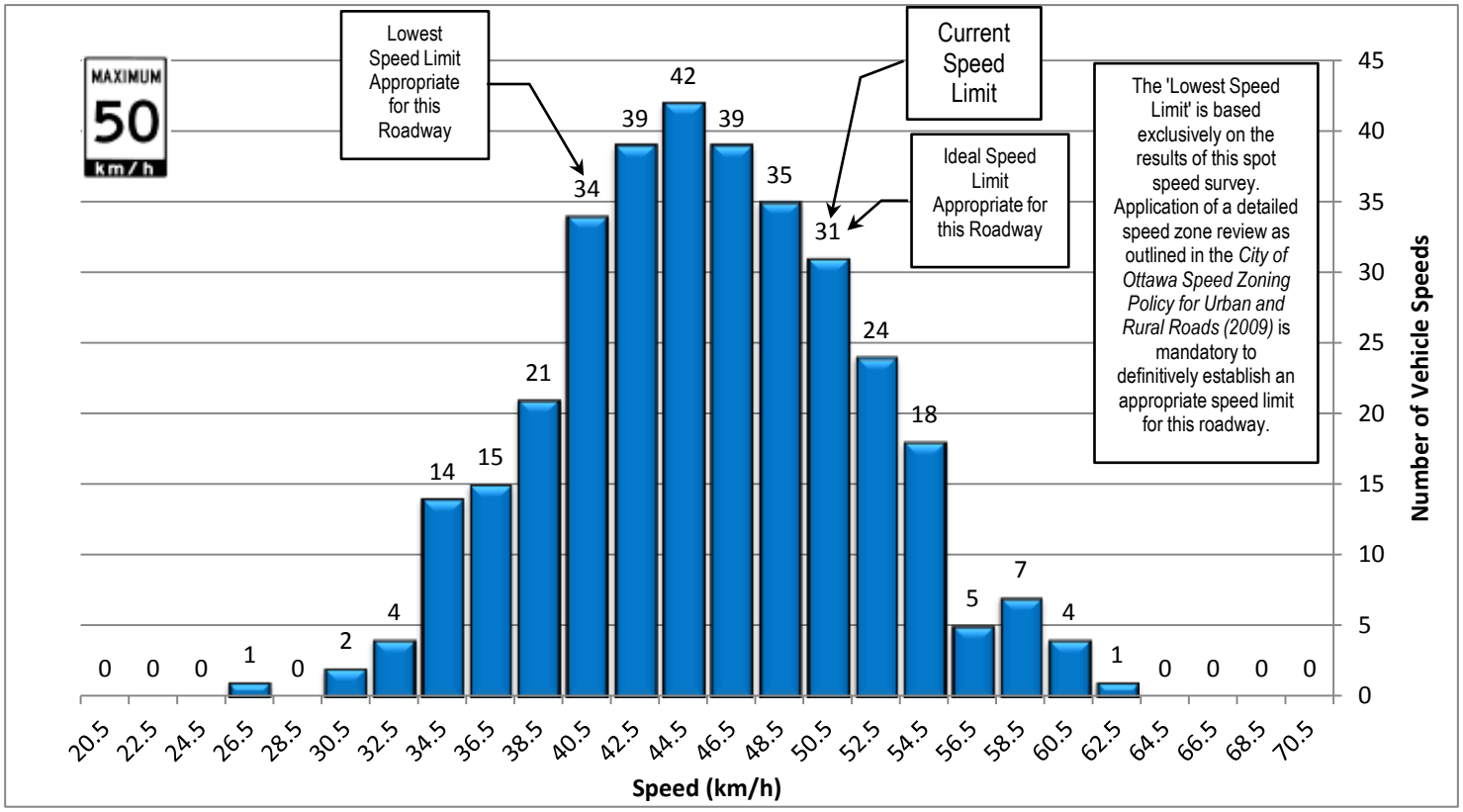
**Hintonburg** **Ward: 15** **Ottawa**

**Wednesday** 10 February 2021 **Road Surface:** Asphalt **Road Condition:** Dry

**Weather:** Overcast **Survey Hours:** 0930-1130

**Notes:** One westbound driver completed a U-turn in extremely close proximity to a westbound OCTranspo bus.

## Spot Speed Survey Histogram - All Vehicles - Combined Directions




### Glossary of Relevant Spot Speed Survey Terms

**Mean Speed:** The average speed, calculated as the sum of all speeds divided by the number of speed observations.

**Median Speed** The speed that equally divides the distribution of spot speeds; 50 % of observed speeds are higher than the median; 50 % of the observed speeds are lower than the median.

**Mode:** The number that occurs most frequently in a series of numbers.

**Pace Speed:** The 16 km/h (typically, 15 km/h) increment in speeds that encompass the highest portion of observed speeds; often, the pace speed range is the mean speed plus/minus 8 km/h.

**85th percentile Speed:** The speed at or below which 85 % of a sample of free-flowing vehicles is travelling (based on the results of a spot speed survey). The 85th percentile speed is typically used as a baseline for establishing the speed limit.

# Spot Speed Survey Summary

Including Estimated Driver Compliance and
Recommended Speed Limits

## Somerset Street West between Bayswater Avenue & Breezehill Avenue North

Immediately west of Breezehill Avenue North

**Hintonburg** **Ward: 15** **Ottawa**

**Wednesday** 10 February 2021 **Road Surface:** Asphalt **Road Condition:** Dry

**Weather:** Overcast **Survey Hours:** 0930-1130

**Notes:** One westbound driver completed a U-turn in extremely close proximity to a westbound OCTranspo bus.

### Spot Speed Survey Summaries for All Vehicle Types

| Westbound | |
|---|---|
| Total Number of All Vehicles | 149 |
| Average (Mean) Speed | 47 km/h |
| 85th Percentile Speed | 53 km/h |
| 95th Percentile Speed | 57 km/h |
| Upper Limit Pace Speed Range | 54 km/h |
| Driver Compliance with Speed Limit | 71 % |

**Speed Limit**
**50**
**km/h**

| Eastbound | |
|---|---|
| Total Number of All Vehicles | 187 |
| Average (Mean) Speed | 44 km/h |
| 85th Percentile Speed | 51 km/h |
| 95th Percentile Speed | 55 km/h |
| Upper Limit Pace Speed Range | 52 km/h |
| Driver Compliance with Speed Limit | 83 % |

| Spot Speed Summary - Combined Both Directions | |
|---|---|
| Total Number of All Vehicles | 336 |
| Average (Mean) Speed | 45 km/h |
| 85th Percentile Speed | 52 km/h |
| 95th Percentile Speed | 56 km/h |
| Upper Limit Pace Speed Range | 54 km/h |
| Driver Compliance with Speed Limit | 78% |

**Arterial Roadway**

| Additional Survey Details | |
|---|---|
| Highest vehicle speed in summary | 62 km/h |
| Slowest vehicle speed in summary | 26 km/h |
| Speed Differential | 36 km/h |
| Fastest Speed Observed * | 62 km/h |

* The **FASTEST** speed observed is **NOT** included in the summary if it is > than the **HIGHEST** vehicle speed in the summary. It is included for information only.

### Heavy Vehicle Spot Speed Survey Summary

| | |
|---|---|
| Total Number of Heavy Vehicles * | 57 |
| Average (Mean) Speed | 41 km/h |
| 85th Percentile Speed | 46 km/h |
| Driver Compliance with Speed Limit | 95% |

**Trucks** 26 

**Buses** 30 

**School Buses** 1 

* N/A if the total number of heavy vehicles < 6.

* If the total number of heavy vehicles is < 30, this value is insufficient for a valid statistical sample.

### Estimated Driver Compliance

with an increase or decrease in the posted speed limit.

**Current Speed Limit**

| Speed Limit | Compliance |
|---|---|
| 30 km/h | 1% |
| 40 km/h | 22% |
| 50 km/h | 78% |
| 60 km/h | 99% |
| 70 km/h | 100% |
| 80 km/h | 100% |
| 90 km/h | 100% |
| 100 km/h | 100% |

### City of Ottawa Speed Zoning Policy for Urban and Rural Roads (2009)

| | |
|---|---|
| Based **exclusively** on the results of this spot speed survey and using the criteria set forth in the *City of Ottawa Speed Zoning Policy for Urban and Rural Roads (2009)* , the ideal speed limit for this roadway is: | 50 km/h |
| The lowest speed limit appropriate for this roadway shall not differ from the 85th percentile speed by more than 13 km/h. In this case, the lowest speed limit must not be lower than: | 40 km/h |

# Spot Speed Survey Histogram

Glossary of Relevant Spot Speed Survey Terms

## Somerset Street West between Bayswater Avenue & Breezehill Avenue North

Immediately west of Breezehill Avenue North

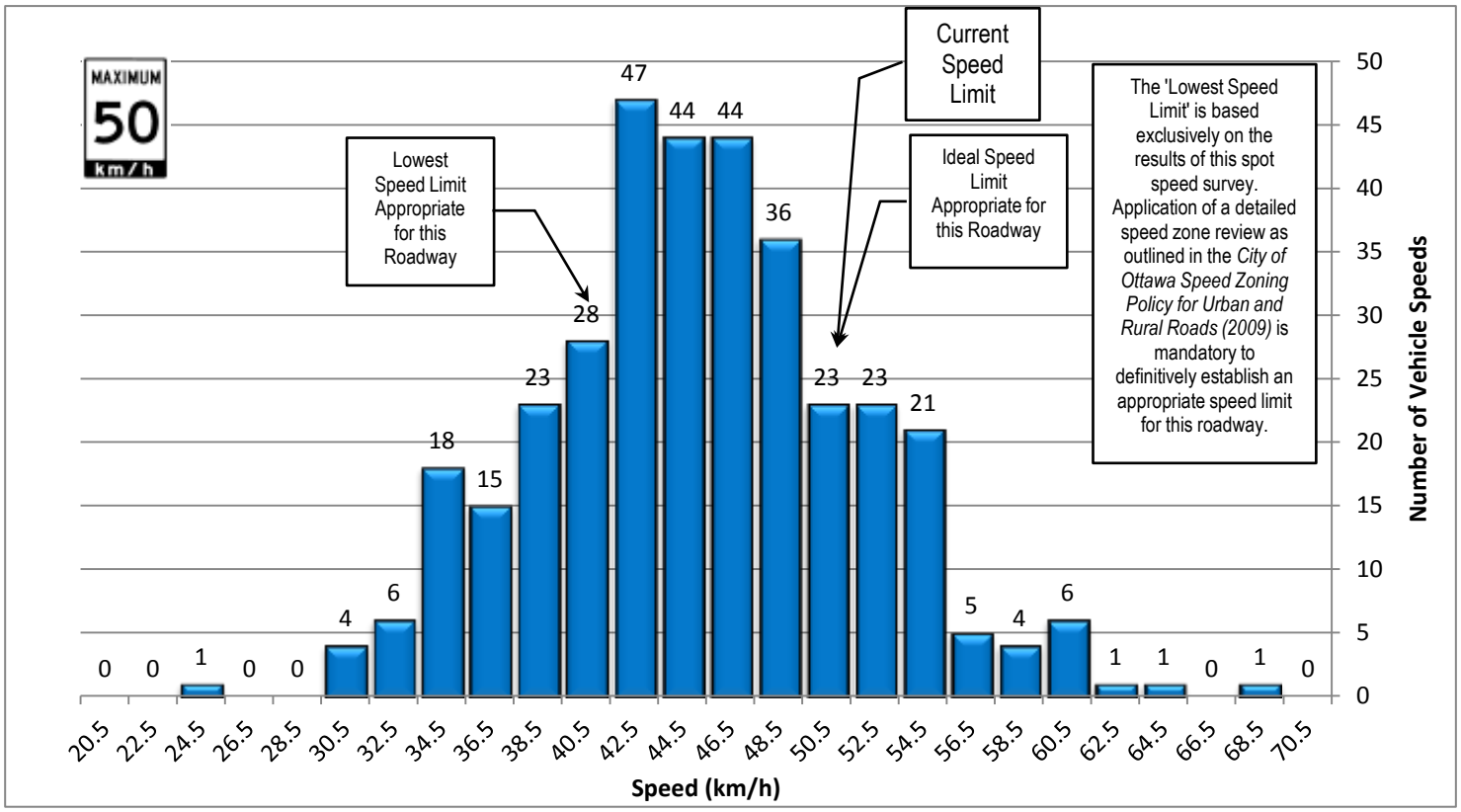
**Hintonburg** **Ward: 15** **Ottawa**

**Monday** 8 February 2021 **Road Surface:** Asphalt **Road Condition:** Dry

**Weather:** Partly Cloudy **Survey Hours:** 1400-1600

**Notes:** Adult school crossing guard assisted pedestrians crossing Bayswater Avenue North 1445H - 1530H

## Spot Speed Survey Histogram - All Vehicles - Combined Directions




### Glossary of Relevant Spot Speed Survey Terms

| | |
|---|---|
| **Mean Speed:** | The average speed, calculated as the sum of all speeds divided by the number of speed observations. |
| **Median Speed** | The speed that equally divides the distribution of spot speeds; 50 % of observed speeds are higher than the median; 50 % of the observed speeds are lower than the median. |
| **Mode:** | The number that occurs most frequently in a series of numbers. |
| **Pace Speed:** | The 16 km/h (typically, 15 km/h) increment in speeds that encompass the highest portion of observed speeds; often, the pace speed range is the mean speed plus/minus 8 km/h. |
| **85th percentile Speed:** | The speed at or below which 85 % of a sample of free-flowing vehicles is travelling (based on the results of a spot speed survey). The 85th percentile speed is typically used as a baseline for establishing the speed limit. |

# Spot Speed Survey Summary

Including Estimated Driver Compliance and
Recommended Speed Limits

## Somerset Street West between Bayswater Avenue & Breezehill Avenue North

Immediately west of Breezehill Avenue North

**Hintonburg** **Ward: 15** **Ottawa**

**Monday** 8 February 2021 **Road Surface:** Asphalt **Road Condition:** Dry

**Weather:** Partly Cloudy **Survey Hours:** 1400-1600

**Notes:** Adult school crossing guard assisted pedestrians crossing Bayswater Avenue North 1445H - 1530H

### Spot Speed Survey Summaries for All Vehicle Types

| Westbound | |
|---|---|
| Total Number of All Vehicles | 158 |
| Average (Mean) Speed | 46 km/h |
| 85th Percentile Speed | 53 km/h |
| 95th Percentile Speed | 56 km/h |
| Upper Limit Pace Speed Range | 54 km/h |
| Driver Compliance with Speed Limit | 76 % |

**Speed Limit**
**50**
**km/h**

| Eastbound | |
|---|---|
| Total Number of All Vehicles | 193 |
| Average (Mean) Speed | 44 km/h |
| 85th Percentile Speed | 52 km/h |
| 95th Percentile Speed | 56 km/h |
| Upper Limit Pace Speed Range | 54 km/h |
| Driver Compliance with Speed Limit | 81 % |

| Spot Speed Summary - Combined Both Directions | |
|---|---|
| Total Number of All Vehicles | 351 |
| Average (Mean) Speed | 45 km/h |
| 85th Percentile Speed | 52 km/h |
| 95th Percentile Speed | 56 km/h |
| Upper Limit Pace Speed Range | 54 km/h |
| Driver Compliance with Speed Limit | 79% |

**Arterial Roadway**

| Additional Survey Details | |
|---|---|
| Highest vehicle speed in summary | 68 km/h |
| Slowest vehicle speed in summary | 24 km/h |
| Speed Differential | 44 km/h |
| Fastest Speed Observed * | 68 km/h |

* The **FASTEST** speed observed is **NOT** included in the summary if it is > than the **HIGHEST** vehicle speed in the summary. It is included for information only.

### Heavy Vehicle Spot Speed Survey Summary

| | |
|---|---|
| Total Number of Heavy Vehicles * | 42 |
| Average (Mean) Speed | 39 km/h |
| 85th Percentile Speed | 44 km/h |
| Driver Compliance with Speed Limit | 99% |

**Trucks** 15 

**Buses** 26 

**School Buses** 1 

* N/A if the total number of heavy vehicles < 6.

* If the total number of heavy vehicles is < 30, this value is insufficient for a valid statistical sample.

### Estimated Driver Compliance

with an increase or decrease in the posted speed limit.

**Current Speed Limit**

| Speed Limit | Compliance |
|---|---|
| 30 km/h | 1% |
| 40 km/h | 23% |
| 50 km/h | 79% |
| 60 km/h | 98% |
| 70 km/h | 100% |
| 80 km/h | 100% |
| 90 km/h | 100% |
| 100 km/h | 100% |

### City of Ottawa Speed Zoning Policy for Urban and Rural Roads (2009)

| | |
|---|---|
| Based **exclusively** on the results of this spot speed survey and using the criteria set forth in the *City of Ottawa Speed Zoning Policy for Urban and Rural Roads (2009)* , the ideal speed limit for this roadway is: | 50 km/h |
| The lowest speed limit appropriate for this roadway shall not differ from the 85th percentile speed by more than 13 km/h. In this case, the lowest speed limit must not be lower than: | 40 km/h |

# APPENDIX E

Collision Records

# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2014 **To:** December 31, 2018

**Location:** BAYSWATER AVE @ SOMERSET ST

**Traffic Control:** Traffic signal **Total Collisions:** 16

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|---|---|---|---|---|---|---|---|---|---|
| 2014-Feb-14, Fri,15:15 | Snow | SMV other | Non-fatal injury | Wet | South | Turning right | Automobile, station wagon | Pedestrian | 1 |
| 2014-May-30, Fri,08:59 | Clear | Turning movement | P.D. only | Dry | North | Turning left | Passenger van | Other motor vehicle | 0 |
| | | | | | South | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2014-Jul-13, Sun,23:03 | Clear | Angle | Non-fatal injury | Dry | West | Going ahead | Pick-up truck | Other motor vehicle | 0 |
| | | | | | South | Turning left | Pick-up truck | Other motor vehicle | |
| 2014-Sep-24, Wed,14:07 | Clear | SMV other | Non-fatal injury | Dry | North | Turning left | Automobile, station wagon | Pedestrian | 1 |
| 2014-Oct-03, Fri,19:46 | 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 | |
| 2015-Mar-22, Sun,14:11 | Clear | SMV other | Non-fatal injury | Dry | South | Turning right | Pick-up truck | Pedestrian | 1 |
| 2015-Oct-18, Sun,17:57 | Clear | Other | P.D. only | Dry | North | Reversing | Pick-up truck | Other motor vehicle | 0 |
| | | | | | South | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2016-Apr-06, Wed,19:49 | Snow | SMV other | P.D. only | Loose snow | East | Turning left | Automobile, station wagon | Curb | 0 |
| 2016-Aug-27, Sat,11:09 | Clear | Sideswipe | P.D. only | Dry | West | Pulling away from shoulder or curb | Pick-up truck | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Municipal transit bus | Other motor vehicle | |
| 2016-Dec-18, Sun,17:41 | Snow | Other | P.D. only | Loose snow | East | Reversing | Construction equipment | Other motor vehicle | 0 |
| | | | | | East | Turning right | Automobile, station wagon | Other motor vehicle | |
| 2016-Dec-20, Tue,19:05 | Clear | Turning movement | P.D. only | Slush | South | Turning left | Pick-up truck | Other motor vehicle | 0 |
| | | | | | North | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2017-Feb-15, Wed,10:15 | Snow | Rear end | P.D. only | Loose snow | North | Going ahead | Pick-up truck | Other motor vehicle | 0 |
| | | | | | North | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2017-Oct-30, Mon,07:36 | Rain | SMV other | Non-fatal injury | Wet | East | Turning right | Pick-up truck | Pedestrian | 1 |
| 2017-Dec-27, Wed,11:04 | Clear | Turning movement | P.D. only | Ice | North | Turning left | Pick-up truck | Other motor vehicle | 0 |
| | | | | | South | Going ahead | Automobile, station wagon | Other motor vehicle | |

# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2014 **To:** December 31, 2018

**Location:** BAYSWATER AVE @ SOMERSET ST

**Traffic Control:** Traffic signal **Total Collisions:** 16

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|---|---|---|---|---|---|---|---|---|---|
| 2018-May-10, Thu,11:14 | Clear | SMV other | P.D. only | Dry | East | Turning right | Truck - open | Pole (utility, power) | 0 |
| 2018-Dec-04, Tue,18:28 | 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 | |

**Location:** BREEZEHILL AVE @ GLADSTONE AVE

**Traffic Control:** Stop sign **Total Collisions:** 3

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|---|---|---|---|---|---|---|---|---|---|
| 2014-Aug-11, Mon,16:00 | Clear | Angle | P.D. only | Dry | South | Turning left | Pick-up truck | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Motorcycle | Other motor vehicle | |
| 2016-Dec-07, Wed,15:25 | Clear | Turning movement | Non-fatal injury | Wet | East | Turning left | Pick-up truck | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Passenger van | Other motor vehicle | |
| 2018-Jun-28, Thu,16:27 | Clear | Angle | P.D. only | Dry | South | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |

**Location:** BREEZEHILL AVE @ SOMERSET ST

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

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|---|---|---|---|---|---|---|---|---|---|
| 2015-Dec-14, Mon,16:00 | Clear | Angle | Non-fatal injury | Dry | North | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |

**Location:** PRESTON ST @ SOMERSET ST

**Traffic Control:** Traffic signal **Total Collisions:** 25

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|---|---|---|---|---|---|---|---|---|---|
| 2014-Apr-12, Sat,14:24 | Clear | Turning movement | Non-fatal injury | Dry | West | Turning left | Automobile, station wagon | Cyclist | 0 |
| | | | | | East | Going ahead | Bicycle | Other motor vehicle | |

# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2014 **To:** December 31, 2018

**Location:** PRESTON ST @ SOMERSET ST

**Traffic Control:** Traffic signal **Total Collisions:** 25

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|---|---|---|---|---|---|---|---|---|---|
| 2014-Aug-06, Wed,07:52 | Clear | Angle | Non-fatal injury | Dry | East | Going ahead | Bicycle | Other motor vehicle | 0 |
| | | | | | North | Going ahead | Automobile, station wagon | Cyclist | |
| 2014-Dec-22, Mon,17:00 | Clear | Rear end | P.D. only | Dry | West | Going ahead | Pick-up truck | Other motor vehicle | 0 |
| | | | | | West | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2015-Feb-08, Sun,13:40 | Snow | Rear end | P.D. only | Slush | West | Unknown | Unknown | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2015-Mar-16, Mon,13:30 | Clear | Rear end | P.D. only | Dry | East | Unknown | Unknown | Other motor vehicle | 0 |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2015-Mar-31, Tue,15:15 | Clear | Sideswipe | P.D. only | Dry | South | Unknown | Unknown | Other motor vehicle | 0 |
| | | | | | South | Turning right | Pick-up truck | Other motor vehicle | |
| 2015-Apr-08, Wed,16:47 | Clear | Turning movement | Non-fatal injury | Dry | West | Turning right | Automobile, station wagon | Cyclist | 0 |
| | | | | | West | Going ahead | Bicycle | Other motor vehicle | |
| 2015-Jul-28, Tue,08:30 | Clear | Rear end | P.D. only | Dry | West | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Turning right | Automobile, station wagon | Other motor vehicle | |
| 2015-Sep-15, Tue,18:35 | Clear | Sideswipe | P.D. only | Dry | North | Unknown | Unknown | Other motor vehicle | 0 |
| | | | | | North | Turning left | Automobile, station wagon | Other motor vehicle | |
| 2015-Sep-23, Wed,16:11 | Clear | Rear end | P.D. only | Dry | West | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Stopped | Tow truck | Other motor vehicle | |
| 2015-Oct-01, Thu,17:28 | Clear | SMV other | Non-fatal injury | Dry | West | Turning right | Automobile, station wagon | Pedestrian | 1 |
| 2015-Oct-24, Sat,23:53 | Rain | Turning movement | P.D. only | Wet | North | Turning right | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | North | Going ahead | Municipal transit bus | Other motor vehicle | |
| 2015-Oct-30, Fri,11:41 | Clear | Turning movement | Non-fatal injury | Dry | West | Going ahead | Bicycle | Other motor vehicle | 0 |
| | | | | | West | Turning right | Automobile, station wagon | Cyclist | |

# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2014 **To:** December 31, 2018

**Location:** PRESTON ST @ SOMERSET ST

**Traffic Control:** Traffic signal **Total Collisions:** 25

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|---|---|---|---|---|---|---|---|---|---|
| 2016-Feb-17, Wed,16:42 | Snow | Angle | P.D. only | Slush | West | Turning right | Pick-up truck | Other motor vehicle | 0 |
| | | | | | South | Turning left | Automobile, station wagon | Other motor vehicle | |
| 2016-Apr-05, Tue,15:07 | 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 | |
| 2016-Jun-10, Fri,07:50 | Clear | SMV other | Non-fatal injury | Dry | East | Going ahead | Bicycle | Other | 0 |
| 2016-Jun-26, Sun,13:58 | Clear | Sideswipe | Non-fatal injury | Dry | West | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Motorcycle | Other motor vehicle | |
| 2016-Jul-09, Sat,20:32 | Rain | Rear end | P.D. only | Wet | South | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2016-Dec-07, Wed,14:15 | Clear | Rear end | P.D. only | Dry | North | Going ahead | Pick-up truck | Other motor vehicle | 0 |
| | | | | | North | Turning right | Automobile, station wagon | Other motor vehicle | |
| 2017-Sep-28, Thu,17:00 | Clear | Sideswipe | P.D. only | Dry | West | Stopped | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2017-Oct-05, Thu,17:53 | Clear | Turning movement | Non-fatal injury | Dry | West | Turning right | Automobile, station wagon | Cyclist | 0 |
| | | | | | West | Going ahead | Bicycle | Other motor vehicle | |
| 2017-Nov-28, Tue,17:54 | Clear | SMV other | P.D. only | Dry | West | Going ahead | Unknown | Pole (utility, power) | 0 |
| 2018-Jun-19, Tue,16:36 | Clear | Sideswipe | P.D. only | Dry | North | Overtaking | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | North | Stopped | Pick-up truck | Other motor vehicle | |
| 2018-Aug-17, Fri,16:29 | Clear | Turning movement | Non-fatal injury | Dry | North | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-Oct-25, Thu,16:59 | Clear | Turning movement | P.D. only | Dry | North | Turning right | Unknown | Other motor vehicle | 0 |
| | | | | | South | Turning left | Automobile, station wagon | Other motor vehicle | |

# APPENDIX F

Excerpts from Other Study Area Developments

| Module | Element | Explanation | Exempt/Required |
|---|---|---|---|
| **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 | Required |
| **4.8 Network Concept** | | Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning | Required |

# 5 Development-Generated Travel Demand

## 5.1 Trip Generation and Mode Shares

This TIA has been prepared using the vehicle and person trip rates for the residential components using the TRANS Trip Generation Study Report (2009) and person trip rates for general office and the vehicle trip rates for the retail components using the ITE Trip Generation Manual (10th Edition). To estimate person trip generation for the retail component, a factor of 1.28 has been applied to the ITE rates. Table 5 summarizes the person trip rates for the proposed land uses.

*Table 5: Trip Generation Person Trip Rates*

| Dwelling Type | Land Use Code | Peak Hour | Vehicle Trip Rate | Person Trip Rates |
|---|---|---|---|---|
| **High-rise condominiums (3+ floors)** | 232 (TRANS) | AM | - | 1.03 |
| | | PM | - | 0.85 |
| **General Office (Dense Multi-Use)** | 710 | AM | - | 1.51 |
| | | PM | - | 1.57 |
| **Shopping Centre (Dense Multi-Use)** | 820 | AM | 2.41 | 3.08 |
| | | PM | 4.92 | 6.3 |

Using the above Person Trip rates, the total person trip generation has been estimates. Table 6 below illustrates the total person trip generation by dwelling type.

*Table 6: Total Person Trip Generation*

| Land Use | Units / GFA | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| **High-rise condominiums** | 745 | 116 | 368 | 484 | 314 | 193 | 507 |
| **General Office** | 206,480 | 243 | 40 | 283 | 47 | 244 | 291 |
| **Shopping Centre** | 17,894 | 128 | 78 | 206 | 94 | 101 | 195 |
| **Total Person Trips** | | **487** | **486** | **973** | **455** | **538** | **993** |

As the proposed development is within a transit-oriented development zone, TOD mode shares will be applied for the development and are summarized in Table 7.

*Table 7: TOD Mode Share*

| Travel Mode | Mode Share |
|---|---|
| **Auto Driver** | 15% |
| **Auto Passenger** | 5% |
| **Transit** | 65% |
| **Non-Auto** | 15% |
| **Total** | 100% |

Internal capture rates from the ITE Trip Generation Handbook 3rd Edition assigned to the development for the office and retail components for mixed-use developments. The rates summarized in Table 8 represent the percentage of trips to/from the retail or office uses based on the residential component.

*Table 8: Internal Capture Rates*

| Land Use | AM | | PM | |
|---|---|---|---|---|
| | In | Out | Total | In |
| **General Office** | 3% | 1% | 57% | 2% |
| **Shopping Centre** | 17% | 14% | 10% | 26% |

Using the above mode shares, person trip rates, and the internal capture rates the person trips by mode have been projected. Table 9 summarizes the trip generation by mode.

*Table 9: Trip Generation by Mode*

| Travel Mode | Mode Share | In | Out | Total | In | Out | Total |
|---|---|---|---|---|---|---|---|
| **Auto Driver** | 15% | 69 | 71 | 141 | 67 | 77 | 144 |
| **Auto Passenger** | 5% | 23 | 23 | 47 | 22 | 26 | 48 |
| **Transit** | 65% | 302 | 309 | 611 | 290 | 333 | 623 |
| **Non-Auto Modes** | 15% | 69 | 71 | 141 | 67 | 77 | 144 |
| **Internal Capture** | | 5 | -29 | -11 | -40 | -36 | -31 |
| **Total** | 100% | 465 | 475 | 940 | 446 | 512 | 958 |

As shown above, 141 AM and 144 PM peak hour two-way vehicle trips are projected as a result of the proposed development.

## 5.2 Trip Distribution

To understand the travel patterns of the subject development the OD Survey has been reviewed to determine the existing travel patterns. Table 10 below summarizes the distribution.

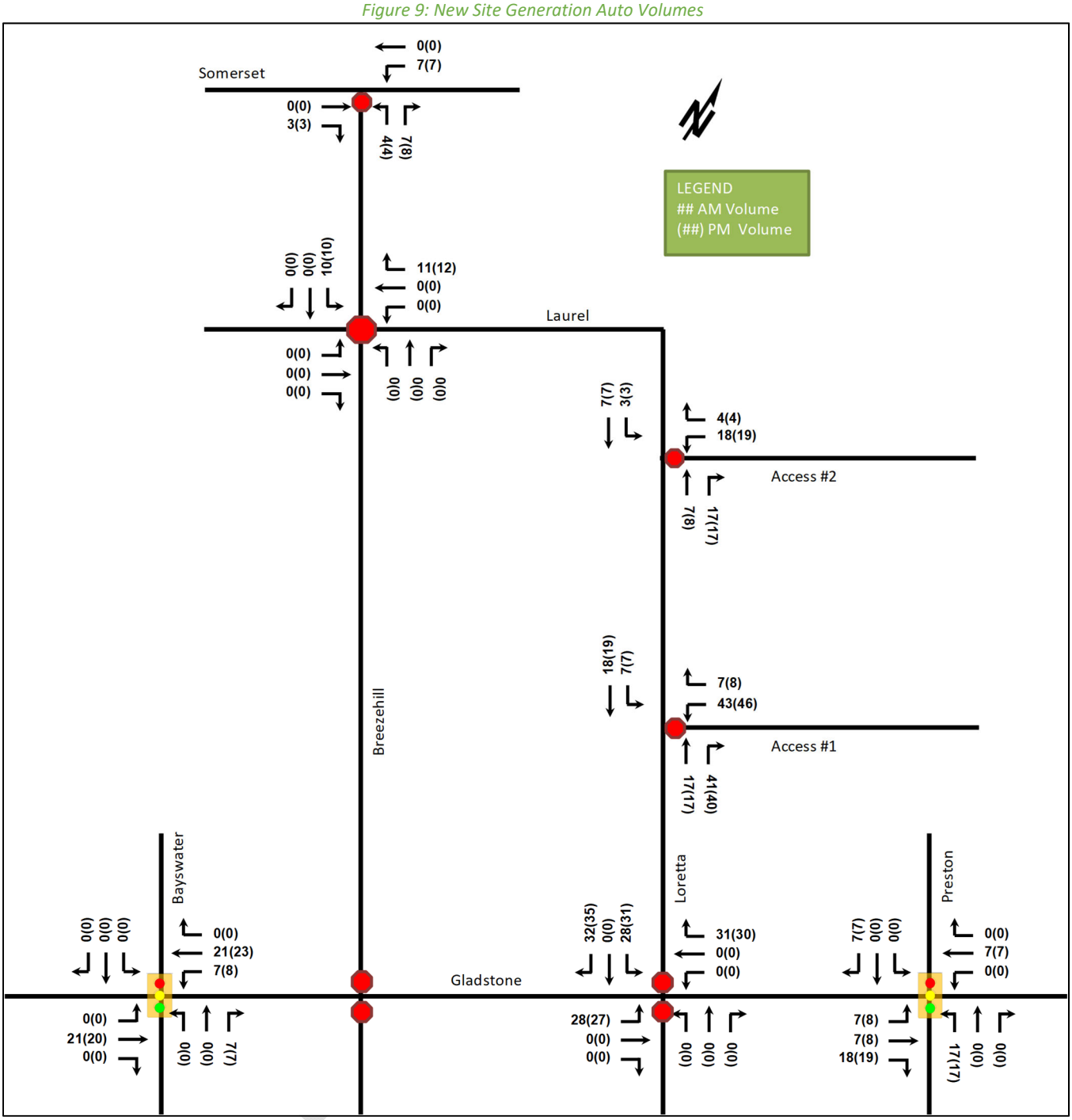
*Table 10: OD Survey Existing Mode Share – Ottawa Inner*

| To/From | Percent of Trips |
|---|---|
| **North** | 20% |
| **South** | 35% |
| **East** | 25% |
| **West** | 20% |
| **Total** | 100% |

## 5.3 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the Study Area road network and are illustrated in Figure 9.

*Figure 9: New Site Generation Auto Volumes*




# 6 Background Network Travel Demands

## 6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3.1. Beyond the opening of the Trillium LRT Gladstone Station, no addition network changes have been included the preparation of this TIA.

## 3.3 Other Planned Developments

### *3.3.1 288 Booth Street*

A residential/commercial development is currently proposed at 288 Booth Street, which is located approximately 750m east of the subject site. This development is to consist of a 7-storey condominium tower containing 54 residential units and 219m$^2$ of commercial space.

### *3.3.2 347-357 Booth Street*

A residential development is currently proposed for 347-357 Booth Street, located on the east side of the Booth Street/Poplar Street intersection. This development shall consist of four multi-attached dwelling blocks containing 20 residential units.

### *3.3.3 Impact of Other Planned Developments*

No form of traffic impact analysis was completed in support of either of the aforementioned developments, as the scope of the proposed development of both sites is below the 75-unit threshold that would typically require the production of a traffic study to support a Site Plan application. Therefore, it is concluded that the nominal 1% growth rate applied to the background traffic volumes will be sufficient to account for the traffic likely to be generated by the above developments.

## 3.4 Trip Generation

Trips generated by the proposed development have been estimated using relevant peak hour rates identified in the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 8th Edition*.

The trip generation surveys compiled in the *ITE Trip Generation Manual* only record vehicle trips, and the sites surveyed are typically located in suburban locations in the United States where non-auto modes of transportation typically have a modal share of 10% or less. For urban infill developments in downtown locations such as Somerset Street, where multiple modes of transportation are readily available, it is considered good practice to express projected trip generation volumes in terms of person trips, instead of vehicle trips. To convert ITE vehicle trip rates to person trip rates, two adjustment factors have been applied:

- Vehicle occupancy factor: **1.23** (taken from the TRANS 2005 O-D Survey Report)
- Non-auto usage factor: **1.1** (non-auto trips not counted in ITE surveys, assumed 10%)

Combining the two factors gives an overall vehicle trip to person trip adjustment factor of approximately 1.35. The conversion of vehicle trips into person trips for each distinct land use is shown in Table 2.

**Table 2: Person Trips**

| Land Use | ITE Vehicle Trips | | | Person Trips | |
|---|---|---|---|---|---|
| | AM Peak | PM Peak | | AM Peak | PM Peak |
| Residential Condominium/ Townhouse | 88 vph[1] 17 in, 71 out | 104 vph 64 in, 40 out | x 1.35 → | 119 pph[2] 24 in, 95 out | 140 pph 86 in, 54 out |
| Commercial Office | 64 vph 56 in, 8 out | 108 vph 18 in, 90 out | | 86 pph 75 in, 11 out | 146 pph 24 in, 122 out |
| Specialty Retail | 8 vph 4 in, 4 out | 34 vph 15 in, 19 out | | 11 pph 6 in, 5 out | 45 pph 20 in, 25 out |
| | | | **Total** | **216 pph 105 in, 111 out** | **331 pph 130 in, 201 out** |

1. vph = Vehicle Per Hour
2. pph = Persons Per Hour

The number of car trips that the site will generate has been estimated by categorizing the person trips by modal share. The auto-driver trip shares are based on observed percentages in the *2005 Trans O-D Survey Report* that are specific to the region referred to as the Ottawa West District. An auto modal share of 40% is assumed for trips generated by the proposed commercial retail, based on observed trips from the TRANS O-D survey having an origin and destination within the Ottawa West District, as it is considered unlikely that specialty retail would generate a significant volume of trips with an origin destination beyond the Ottawa West district. An auto modal share of 55% is assumed for trips generated by the proposed residential units and commercial office space based on all observed trips within the Ottawa West District, including those with an origin or destination beyond that area.

A full breakdown of the projected number of trips by modal share is shown in Table 3.

**Table 3: Site-Generated Trips by Modal Share**

| Travel Mode | Modal Share | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| *Proposed Residential Condominium/Townhouse* | | | | | | | |
| Total Person Trips | | 24 | 95 | 119 | 86 | 54 | 140 |
| **Auto Driver** | **55%** | **14** | **52** | **66** | **47** | **30** | **77** |
| Auto Passenger | 10% | 2 | 9 | 11 | 8 | 5 | 13 |
| Transit | 25% | 6 | 24 | 30 | 22 | 14 | 36 |
| Non-Auto | 10% | 2 | 10 | 12 | 9 | 5 | 14 |
| *Proposed Commercial Office* | | | | | | | |
| Total Person Trips | | 75 | 11 | 86 | 24 | 122 | 146 |
| **Auto Driver** | **55%** | **41** | **6** | **47** | **13** | **67** | **80** |
| Auto Passenger | 10% | 7 | 1 | 8 | 2 | 12 | 14 |
| Transit | 25% | 19 | 3 | 22 | 6 | 31 | 37 |

| Travel Mode | Modal Share | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| Non-Auto | 10% | 8 | 1 | 9 | 3 | 12 | 15 |
| *Proposed Specialty Retail* | | | | | | | |
| Total Person Trips | | 6 | 5 | 11 | 20 | 25 | 45 |
| **Auto Driver** | **40%** | **2** | **2** | **4** | **8** | **10** | **18** |
| Auto Passenger | 10% | 1 | 0 | 1 | 2 | 2 | 4 |
| Transit | 10% | 1 | 1 | 2 | 2 | 3 | 5 |
| Non-Auto | 40% | 2 | 2 | 4 | 8 | 10 | 18 |
| *Total Proposed* | | | | | | | |
| Total Person Trips | | 105 | 111 | 216 | 130 | 201 | 331 |
| **Auto Driver** | | **57** | **60** | **117** | **68** | **107** | **175** |
| Auto Passenger | | 10 | 10 | 20 | 12 | 19 | 31 |
| Transit | | 26 | 28 | 54 | 30 | 48 | 78 |
| Non-Auto | | 12 | 13 | 25 | 20 | 27 | 47 |

The specialty retail land use is the only component of the proposed development that is likely to generate a significant proportion of vehicular pass-by trips. However, due to the small volume of total vehicular trips that the specialty retail land use is likely to generate (<20vph), no adjustment has been made to account for pass-by trips. All traffic generated by the proposed development is conservatively assumed to consist of primary (i.e. new) trips only.

## 3.5 Trip Distribution

### *3.5.1 Vehicular Trips*

The distribution of residential trips is based on observed traffic patterns at the study area intersections. Specifically, the distribution of all trips departing the site is based on the prevailing AM peak hour traffic patterns, and the distribution of all trips arriving at the site is based on the prevailing PM peak hour traffic patterns. The distribution of trips generated by the proposed residential units is summarized as follows:

- 6% to/from the south via Breezehill Avenue,
- 5% to/from the west via Laurel Street,
- 35% to/from the west via Somerset Street,
- 50% to/from the east via Somerset Street,
- 4% to/from the east via Laurel Street.

The distribution of office trips is also based on observed traffic patterns at the study area intersections. Specifically, the distribution of all trips departing the site is based on the prevailing PM peak hour traffic patterns, and the distribution of all trips arriving at the site is based on the prevailing AM peak hour traffic patterns. The distribution of trips generated by the proposed offices is summarized as follows:

- 7% to/from the south via Breezehill Avenue,
- 6% to/from the west via Laurel Street,
- 50% to/from the west via Somerset Street,
- 35% to/from the east via Somerset Street,
- 2% to/from the east via Laurel Street.

The distribution of retail trips is based on the prevailing off-peak hour traffic patterns. The assumed distribution of trips generated by the proposed specialty retail is summarized as follows:

- 7% to/from the south via Breezehill Avenue,
- 4% to/from the west via Laurel Street,
- 45% to/from the west via Somerset Street,
- 40% to/from the east via Somerset Street,
- 4% to/from the east via Laurel Street.

The site-generated vehicular trip volumes for the weekday AM and PM peak hours are shown in Figure 10. Total traffic volumes for 2016 and 2021 have been calculated by adding the projected site-generated traffic to the background traffic projections, and are shown in Figures 11 and 12.

### *3.5.2 Transit Trips*

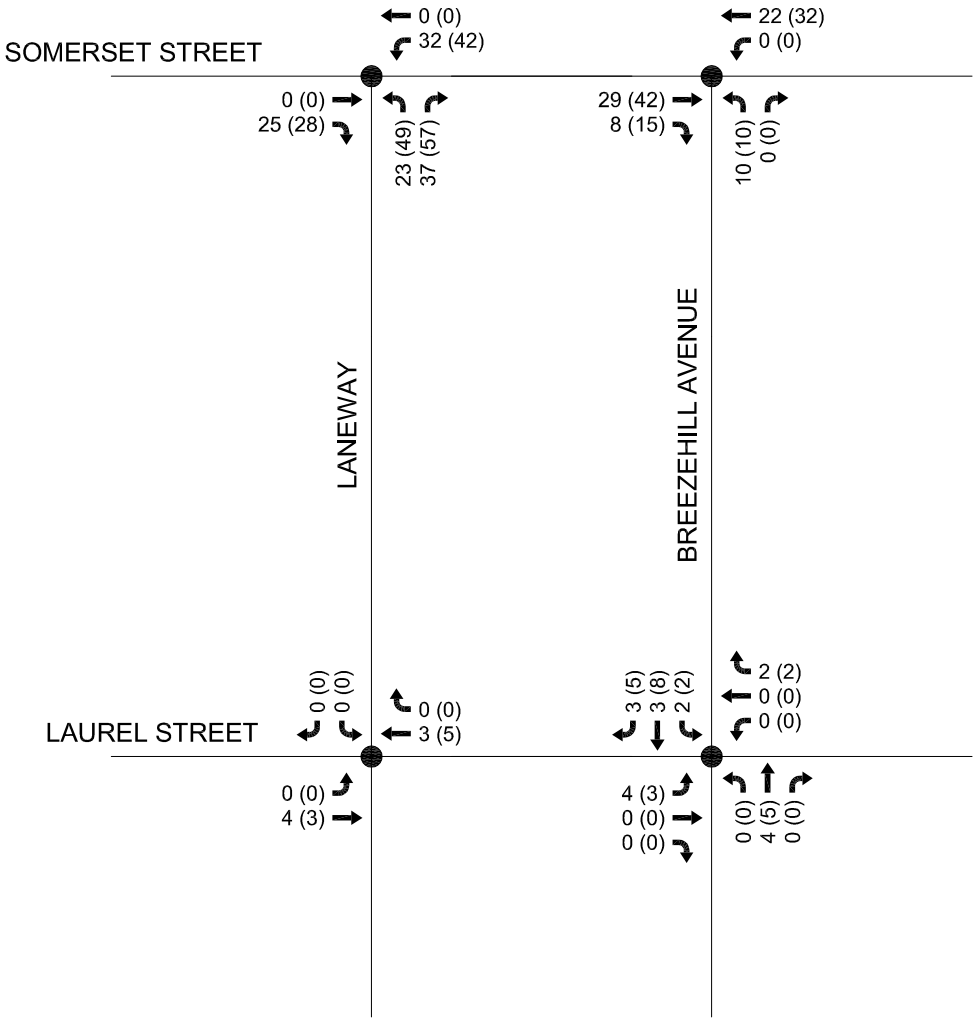
The distribution of transit trips to and from the proposed development has been derived from the data presented in Exhibits 6-2 and 6-3 of the *2005 Trans O-D Survey Report*, which are included in this report as Appendix F.

The top origins/destinations for all arriving and departing trips generated within the Ottawa West Area are summarized in Table 4.

**Table 4: Top Origins/Destinations of Ottawa West Area Trips**

| | Origin of Arrivals | % Trips | Destination of Departures | % Trips |
|---|---|---|---|---|
| **AM Peak Hour** | Ottawa West | 26% | Ottawa West | 32% |
| | Merivale | 13% | Ottawa Centre | 13% |
| | Bayshore/Cedarview | 13% | Merivale | 12% |
| | Ottawa Inner Area | 7% | Ottawa Inner Area | 11% |
| **PM Peak Hour** | Ottawa West | 38% | Ottawa West | 32% |
| | Merivale | 11% | Bayshore/Cedarview | 12% |
| | Bayshore/Cedarview | 11% | Merivale | 12% |
| | Ottawa Inner Area | 10% | Ottawa Inner Area | 8% |

The data presented in Table 4 indicates that approximately 30% of all trips generated by the Ottawa West Area in the AM and PM peak hours have an origin or destination within the Ottawa West Area. The top origins and destinations for all external trips generated by the Ottawa West Area are Merivale, Ottawa Centre, Ottawa Inner Area and Bayshore/Cedarview regions.




LEGEND

- Unsignalized Intersection
- Signalized Intersection
- xx VPH AM Peak Hour
- (xx) VPH PM Peak Hour

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# 1050 SOMERSET STREET

## SITE TRAFFIC

OCT 2012 111152 FIGURE 10

# 5 Development-Generated Travel Demand

## 5.1 Trip Generation and Mode Shares

This TIA has been prepared using the vehicle and person trip rates for the residential component using the TRANS Trip Generation Study Report (2009) and for the commercial component using the converted person trip values of the average vehicle trip rate from the ITE Trip Generation Manual 10th Edition (2017). Table 9 summarizes the person trip rates for the proposed land use.

*Table 9: Trip Generation Person Trip Rates*

| Dwelling Type | Land Use Code | Peak Hour | Vehicle Trip Rate | Person Trip Rates |
|---|---|---|---|---|
| **High-rise Apartments** | 222 (TRANS) | AM | 0.24 | 0.65 |
| | | PM | 0.27 | 0.68 |
| **Shopping Centre** | 820 (ITE) | AM | 0.94 | 1.20 |
| | | PM | 3.81 | 4.88 |

Using the above Person Trip rates, the total person trip generation has been estimated. Table 10 below illustrates the total person trip generation for the proposed land uses.

*Table 10: Total Person Trip Generation*

| Land Use | Units / GFA | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| **High-rise Apartments** | 283 | 44 | 140 | 184 | 119 | 73 | 192 |
| **Shopping Centre** | 13,618 | 10 | 6 | 16 | 32 | 34 | 66 |

Using the most recent National Capital Region Origin-Destination survey (OD Survey), the existing mode shares for Ottawa West have been determined and compared to various modes share breakdowns identified by City Staff as potential interpretations of the data. Table 11 summarizes these modal shares.

*Table 11: Mode Shares*

| Travel Mode | Ottawa West (average) | Ottawa West (AM from/within) | Ottawa West (PM to/within) | Proposed w/in 600m Rapid Transit |
|---|---|---|---|---|
| **Auto Driver** | 50% | 45% | 45% | 30% |
| **Auto Passenger** | 15% | 10% | 15% | 10% |
| **Transit** | 20% | 25% | 15% | 35% |
| **Cycling** | 5% | 5% | 5% | 5% |
| **Walking** | 10% | 15% | 20% | 20% |
| **Total** | 100% | 100% | 100% | 100% |

Internal capture rates from the ITE Trip Generation Handbook 3rd Edition have been assigned to the development for the retail component for mixed-use developments. The rates summarized in Table 12 represent the percentage of trips to/from the retail use based on the residential component.

*Table 12: Internal Capture Rates*

| Land Use | AM | | PM | |
|---|---|---|---|---|
| | In | Out | In | Out |
| **Residential to/from Shopping Centre** | 17% | 14% | 10% | 26% |

Using the above proposed mode share targets for the site given transit context and person trip rates, and accounting for internal capture, the person trips by mode have been projected. Table 13 summarizes the trip generation by mode.

*Table 13: Trip Generation by Mode*

| Travel Mode | Mode Share | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| **Auto Driver** | 30% | 15 | 44 | 59 | 45 | 30 | 74 |
| **Auto Passenger** | 10% | 5 | 15 | 19 | 15 | 10 | 24 |
| **Transit** | 35% | 18 | 51 | 69 | 52 | 35 | 86 |
| **Cycling** | 5% | 2 | 7 | 10 | 7 | 5 | 13 |
| **Walking** | 20% | 11 | 29 | 40 | 30 | 20 | 49 |
| **Internal Capture** | (varies) | -2 | -1 | -3 | -3 | -9 | -12 |
| **Total** | **100%** | **52** | **146** | **198** | **148** | **99** | **246** |

As shown above, 59 AM and 74 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

## 5.2 Trip Distribution

To understand the travel patterns of the subject development the OD Survey has been reviewed to determine the travel for the residential component patterns were applied based on the build-out of Ottawa West. Table 14 below summarizes the distributions.

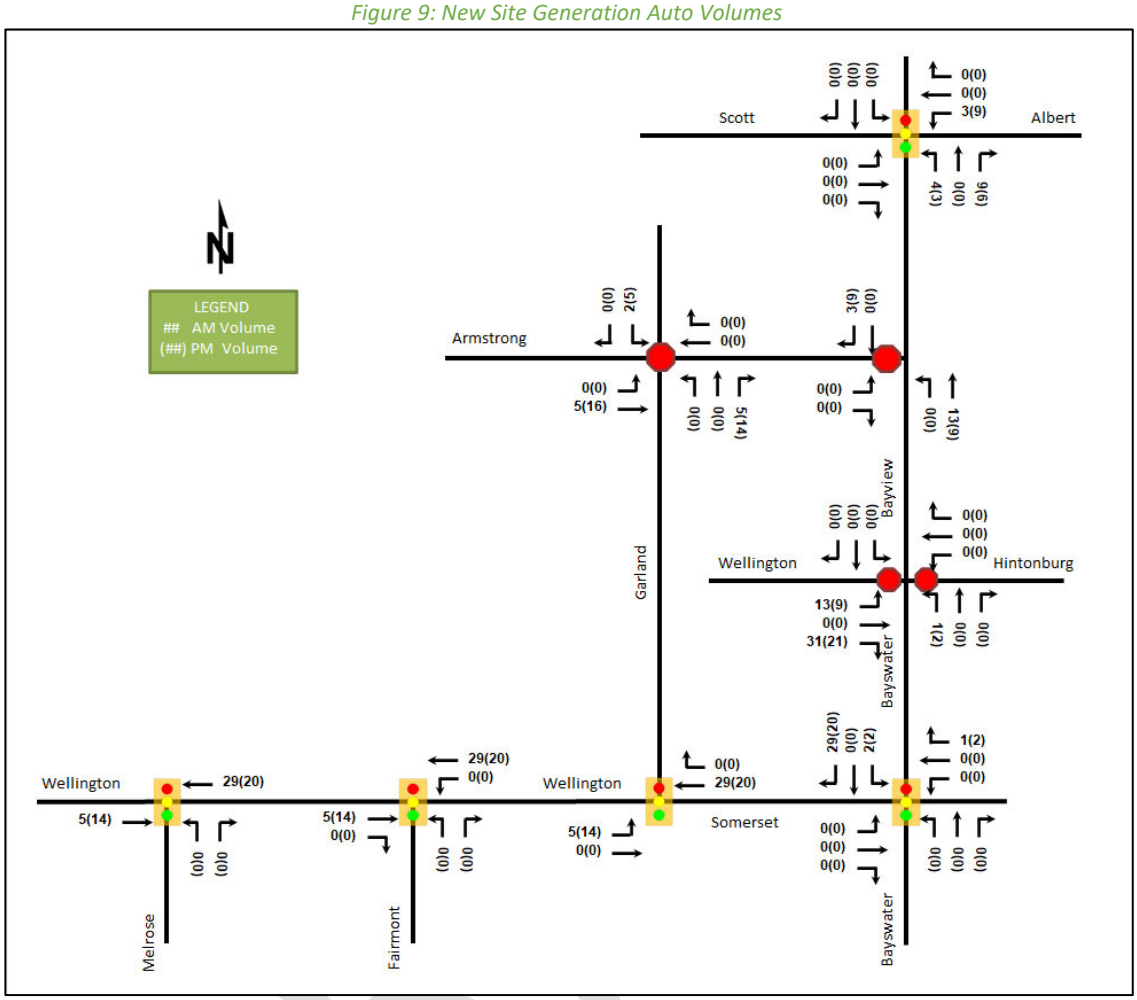
*Table 14: OD Survey Distribution – Ottawa West*

| To/From | Residential % of Trips | Via |
|---|---|---|
| **North** | 5% | Albert |
| **South** | 30% | Armstrong/Wellington/417 |
| **East** | 30% | 15% Albert, 5% Somerset, 10% Armstrong/Wellington/417 |
| **West** | 35% | 10% Scott, 25% Armstrong/Wellington/417 |
| **Total** | 100% | - |

## 5.3 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the Study Area road network. Figure 9 illustrates the new site generated volumes.

*Figure 9: New Site Generation Auto Volumes*




# 6 Background Network Travel Demands

## 6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3. None of the listed modifications are considered to have any notable impact on the study area traffic volumes and travel patterns.

## 6.2 Background Growth

A review of the background projections from the City's TRANS Regional Model for the 2011 and 2031 horizons was completed to determine the background growth for each of the study area roadways. Table 15 summarizes the results of the model, and the projections are provided in Appendix E.

*Table 15: TRANS Regional Model Projections – Study Area Growth Rates*

| Street | Direction Growth Percentage | |
|---|---|---|
| | Eastbound | Westbound |
| Scott/Albert | -1.28% | 1.81% |
| Armstrong | No volumes shown | |
| Wellington | 2.49% | 2.12% |
| Somerset | 1.49% | -0.44% |

# APPENDIX G

TDM Checklists

# TDM-Supportive Development Design and Infrastructure Checklist:
*Residential Developments (multi-family or condominium)*

***Legend***

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

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

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

| | | TDM-supportive design & infrastructure measures: *Residential developments* | Check if completed & add descriptions, explanations or plan/drawing references |
|---|---|---|---|
| | **2.** | **WALKING & CYCLING: END-OF-TRIP FACILITIES** | |
| | **2.1** | **Bicycle parking** | |
| REQUIRED | 2.1.1 | Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)* | ✓ |
| REQUIRED | 2.1.2 | Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)* | ✓ |
| REQUIRED | 2.1.3 | Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)* | ✓ |
| BASIC | 2.1.4 | Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists | ☐ |
| | **2.2** | **Secure bicycle parking** | |
| REQUIRED | 2.2.1 | Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)* | ✓ |
| BETTER | 2.2.2 | Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments | ✓ |
| | **2.3** | **Bicycle repair station** | |
| BETTER | 2.3.1 | Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided) | ☐ |
| | **3.** | **TRANSIT** | |
| | **3.1** | **Customer amenities** | |
| BASIC | 3.1.1 | Provide shelters, lighting and benches at any on-site transit stops | ☐ |
| BASIC | 3.1.2 | Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter | ☐ |
| BETTER | 3.1.3 | Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building | ☐ |

| | | TDM-supportive design & infrastructure measures: *Residential developments* | Check if completed & add descriptions, explanations or plan/drawing references |
|---|---|---|---|
| | **4.** | **RIDESHARING** | |
| | **4.1** | **Pick-up & drop-off facilities** | |
| BASIC | 4.1.1 | Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones | ☐ |
| | **5.** | **CARSHARING & BIKESHARING** | |
| | **5.1** | **Carshare parking spaces** | |
| BETTER | 5.1.1 | Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)* | ☐ |
| | **5.2** | **Bikeshare station location** | |
| BETTER | 5.2.1 | Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection | ☐ |
| | **6.** | **PARKING** | |
| | **6.1** | **Number of parking spaces** | |
| REQUIRED | 6.1.1 | Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for | ✓ |
| BASIC | 6.1.2 | Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking | ☐ |
| BASIC | 6.1.3 | Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)* | ☐ |
| BETTER | 6.1.4 | Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)* | ☐ |
| | **6.2** | **Separate long-term & short-term parking areas** | |
| BETTER | 6.2.1 | Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa) | ☐ |

# TDM Measures Checklist:
*Residential Developments (multi-family, condominium or subdivision)*

***Legend***

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

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

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

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

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

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

# APPENDIX H

MMLOS Calculations

## 1.0 SEGMENT MMLOS

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

Schedule 'B' of the City of Ottawa's Official Plan indicates that Somerset Street West is a Traditional Mainstreet while Breezehill Avenue is located within the General Urban Area. Additionally, the subject site is within 300m of a school (Devonshire Public School) and within 600m of a rapid transit station (Bayview Station).

Targets for the Pedestrian Level of Service (PLOS), Bicycle Level of Service (BLOS), Transit Level of Service (TLOS), Truck Level of Service (TkLOS) and Vehicular Level of Service (Auto LOS) for the study area roadways are based on the targets for roadways within 600m of a rapid transit station and within 300m of a school, as identified in Exhibit 22 of the MMLOS guidelines.

### 1.1 Pedestrian Level of Service (PLOS)

Exhibit 4 of the MMLOS guidelines has been used to evaluate the segment PLOS of the boundary streets. Exhibit 22 of the MMLOS guidelines suggest a target PLOS A for all road classes. The results of the segment PLOS analysis are summarized in **Table 1**.

**Table 1: PLOS Segment Analysis**

| Sidewalk Width | Boulevard Width | Avg. Daily Curb Lane Traffic Volume | Presence of On-Street Parking | Operating Speed [1] | Segment PLOS |
|---|---|---|---|---|---|
| **Somerset Street West (north side)** | | | | | |
| >2m | 1m | > 3000 vpd | No | 60 km/h | D |
| **Somerset Street West (south side)** | | | | | |
| >2m | 1m | > 3000 vpd | No | 60 km/h | D |
| **Breezehill Avenue (east side)** | | | | | |
| 1.5m | 0m | < 3000 vpd | Yes | 50 km/h | E |
| **Breezehill Avenue (west side)** | | | | | |
| 1.5m | 0m | < 3000 vpd | No | 50 km/h | E |

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

### 1.2 Bicycle Level of Service (BLOS)

Exhibit 11 of the MMLOS guidelines has been used to evaluate the segment BLOS of the boundary streets. Exhibit 22 of the MMLOS guidelines suggest a target BLOS C for a Spine Route on an arterial roadway and a target BLOS D for local roads with no cycling designation. The results of the segment BLOS analysis are summarized in **Table 2**.

**Table 2: BLOS Segment Analysis**

| Road Class | Bike Route | Type of Bikeway | Travel Lanes (Per Direction) | Operating Speed | Segment BLOS |
|---|---|---|---|---|---|
| **Somerset Street West** | | | | | |
| Arterial | Spine | 1.8m Bike Lane | 1 | 60 km/h | C |
| **Breezehill Avenue** | | | | | |
| Local | No Designation | Mixed Traffic | 1 | 50 km/h | B |

### 1.3 Transit Level of Service (TLOS)

Exhibit 15 of the MMLOS guidelines has been used to evaluate the segment TLOS of the boundary streets. Exhibit 22 of the MMLOS guidelines suggest a target TLOS of D for a transit priority corridor with isolated measures. No TLOS target is suggested in Exhibit 22 of the MMLOS guidelines for Breezehill Avenue and, as such, it has not been evaluated. The results of the segment TLOS analysis are summarized in **Table 3**.

**Table 3: TLOS Segment Analysis**

| Facility Type | Level/Exposure to Congestion Delay, Friction and Incidents | | | Segment TLOS |
|---|---|---|---|---|
| | Congestion | Friction | Incident Potential | |
| **Somerset Street West** | | | | |
| Mixed Traffic | Yes | Moderate | Moderate | D |

### 1.4 Truck Level of Service (TkLOS)

Exhibit 20 of the MMLOS guidelines has been used to evaluate the segment TkLOS of the boundary roadways. Exhibit 22 of the MMLOS guidelines suggest a target TkLOS D for truck routes on arterial roadway. No target TkLOS target is suggested in Exhibit 22 of the MMLOS guidelines for Breezehill Avenue and, as such, it has not been evaluated. The results of the segment TkLOS analysis are summarized in **Table 4**.

**Table 4: TkLOS Segment Analysis**

| Curb Lane Width | Number of Travel Lanes per Direction | Segment TkLOS |
|---|---|---|
| **Somerset Street West** | | |
| > 3.7m | 1 | B |

## 2.0 INTERSECTION MMLOS

This section provides a review of the study area intersections using the complete streets principles.

Intersection analysis has been completed for the signalized intersections within the study area:

a) Somerset Street West/Bayswater Avenue
b) Somerset Street West/Preston Street

Schedule 'B' of the City of Ottawa's Official Plan indicates that Somerset Street West is a Traditional Mainstreet, the Somerset Street West/Breezehill Avenue intersection is located within the General Urban Area while the Somerset Street West/Preston Street intersection is located a Mixed-Use Center. Both intersections are also within 600m of a rapid transit station.

The MMLOS guidelines produced by IBI Group in October 2015 were used to evaluate the LOS of all study area intersections for each mode of transportation.

Target PLOS, BLOS, TLOS, TkLOS, and Auto LOS for the study area intersections are based on targets for areas within 600m of rapid transit, as identified in Exhibit 22 of the MMLOS guidelines.

### 2.1 Pedestrian Level of Service (PLOS)

Exhibit 5 of the Addendum to the MMLOS guidelines has been used to evaluate the existing PLOS at the study area intersections. 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 provided in **Tables 6** and **7.**

## Table 5: PLOS Intersection Analysis – Somerset Street West/Bayswater Avenue

| Criteria | North Approach | | South Approach | | East Approach | | West Approach | |
|---|---|---|---|---|---|---|---|---|
| **Somerset Street West/Bayswater Avenue** | | | | | | | | |
| **PETSI SCORE** | | | | | | | | |
| *CROSSING DISTANCE CONDITIONS* | | | | | | | | |
| Median > 2.4m in Width | No | 88 | No | 105 | No | 88 | No | 88 |
| Lanes Crossed (3.5m Lane Width) | 4 | | 3 | | 4 | | 4 | |
| *SIGNAL PHASING AND TIMING* | | | | | | | | |
| Left Turn Conflict | Permissive | -8 | Permissive | -8 | Permissive | -8 | Permissive | -8 |
| Right Turn Conflict | Permissive or Yield | -5 | Permissive or Yield | -5 | Permissive or Yield | -5 | Permissive or Yield | -5 |
| Right Turn on Red | RTOR Allowed | -3 | RTOR Allowed | -3 | RTOR Allowed | -3 | RTOR Allowed | -3 |
| Leading Pedestrian Interval | No | -2 | No | -2 | No | -2 | No | -2 |
| *CORNER RADIUS* | | | | | | | | |
| Parallel Radius | > 5m to 10m | -5 | > 3m to 5m | -4 | > 5m to 10m | -5 | > 5m to 10m | -5 |
| Parallel Right Turn Channel | No Right Turn Channel | -4 | 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 | Textured | -4 | Textured | -4 | Textured | -4 | Textured | -4 |
| **PETSI SCORE** | | **57** | | **75** | | **57** | | **57** |
| **LOS** | | **D** | | **B** | | **D** | | **D** |
| **DELAY SCORE** | | | | | | | | |
| Cycle Length | | 75 | | 75 | | 70 | | 70 |
| Pedestrian Walk Time | | 19.1 | | 19.1 | | 21.5 | | 21.5 |
| **DELAY SCORE** | | **20.8** | | **20.8** | | **16.8** | | **16.8** |
| **LOS** | | **C** | | **C** | | **B** | | **B** |
| **OVERALL** | | **D** | | **C** | | **D** | | **D** |

## Table 6: PLOS Intersection Analysis – Somerset Street West/Preston Street

| Criteria | North Approach | | South Approach | | East Approach | | West Approach | |
|---|---|---|---|---|---|---|---|---|
| **Somerset Street West/Preston Street** | | | | | | | | |
| **PETSI SCORE** | | | | | | | | |
| *CROSSING DISTANCE CONDITIONS* | | | | | | | | |
| Median > 2.4m in Width | No | 88 | No | 72 | No | 88 | No | 88 |
| Lanes Crossed (3.5m Lane Width) | 4 | | 5 | | 4 | | 4 | |
| *SIGNAL PHASING AND TIMING* | | | | | | | | |
| Left Turn Conflict | Permissive | -8 | Permissive | -8 | Permissive | -8 | Permissive | -8 |
| Right Turn Conflict | Permissive or Yield | -5 | Permissive or Yield | -5 | Permissive or Yield | -5 | Permissive or Yield | -5 |
| Right Turn on Red | RTOR Prohibited | 0 | RTOR Prohibited | 0 | RTOR Prohibited | 0 | RTOR Prohibited | 0 |
| Leading Pedestrian Interval | Yes | 0 | Yes | 0 | Yes | 0 | Yes | 0 |
| *CORNER RADIUS* | | | | | | | | |
| Parallel Radius | > 5m to 10m | -5 | > 10m to 15m | -6 | > 10m to 15m | -6 | > 5m to 10m | -5 |
| Parallel Right Turn Channel | No Right Turn Channel | -4 | 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 | Textured | -4 | Textured | -4 | Textured | -4 | Textured | -4 |
| **PETSI SCORE** | | **62** | | **45** | | **61** | | **62** |
| **LOS** | | **C** | | **D** | | **C** | | **C** |
| **DELAY SCORE** | | | | | | | | |
| Cycle Length | | 70 | | 70 | | 70 | | 70 |
| Pedestrian Walk Time | | 16.3 | | 16.3 | | 13.4 | | 13.4 |
| **DELAY SCORE** | | **20.6** | | **20.6** | | **22.9** | | **22.9** |
| **LOS** | | **C** | | **C** | | **C** | | **C** |
| **OVERALL** | | **C** | | **D** | | **C** | | **C** |

## 2.2 Bicycle Level of Service (BLOS)

Exhibit 12 of the MMLOS guidelines has been used to evaluate the existing BLOS at the study area intersections. Exhibit 22 of the MMLOS guidelines suggests a target BLOS C for Spine Routes along Arterial roads. The results of the intersection BLOS analysis are summarized in **Table 8**.

**Table 7: BLOS Intersection Analysis**

| Approach | Bikeway Facility Type | Criteria | Travel Lanes and/or Speed | BLOS |
|---|---|---|---|---|
| **Somerset Street West/Bayswater Avenue** | | | | |
| North Approach | Mixed Traffic | Right Turn Lane Characteristics | No impact to LTS | A |
| | | Left Turn Accommodation | One lane crossed, 50km/h | D |
| South Approach | Mixed Traffic | Right Turn Lane Characteristics | No impact to LTS | A |
| | | Left Turn Accommodation | No lanes crossed, 50km/h | B |
| East Approach | Mixed Traffic | Right Turn Lane Characteristics | Right turn lane 25m to 50m long | D |
| | | Left Turn Accommodation | No lanes crossed, 50km/h | B |
| West Approach | Mixed Traffic | Right Turn Lane Characteristics | Right turn lane 25m to 50m long | D |
| | | Left Turn Accommodation | No lanes crossed, 50km/h | B |
| **Somerset Street West/Preston Street** | | | | |
| North Approach | Mixed Traffic | Right Turn Lane Characteristics | No impact to LTS | A |
| | | Left Turn Accommodation | 1 lane crossed; 50 km/h | D |
| South Approach | Mixed Traffic | Right Turn Lane Characteristics | No impact to LTS | A |
| | | Left Turn Accommodation | 1 lane crossed; 50 km/h | D |
| East Approach | Mixed Traffic | Right Turn Lane Characteristics | No impact to LTS | A |
| | | Left Turn Accommodation | 1 lane crossed; 50 km/h | D |
| West Approach | Mixed Traffic | Right Turn Lane Characteristics | No impact to LTS | A |
| | | Left Turn Accommodation | 1 lane crossed; 50 km/h | D |

## 2.3 Transit Level of Service (TLOS)

Exhibit 16 of the MMLOS guidelines has been used to evaluate the existing TLOS the study area intersections. Exhibit 22 of the MMLOS guidelines suggests a target TLOS D for Transit Priority Corridors with isolated measures (Somerset Street West). No other roadways within the study area have a transit priority designation. The results of the intersection TLOS analysis are summarized in **Table 9**.

**Table 8: TLOS Intersection Analysis**

| Approach | Delay[1] | | TLOS |
|---|---|---|---|
| | AM Peak | PM Peak | |
| **Somerset Street West/Bayswater Avenue** | | | |
| East | 5 sec. | 11 sec. | C |
| West | 10 sec. | 12 sec. | C |
| **Somerset Street West/Preston Street** | | | |
| North | 24 sec. | 30 sec. | D |
| South | 34 sec. | 37 sec. | D |
| East | 23 sec. | 34 sec. | D |
| West | 58 sec. | 33 sec. | F |

1. Delay based on outputs from Synchro analysis

## 2.4 Truck Level of Service (TkLOS)

Exhibit 21 of the MMLOS guidelines has been used to evaluate the existing TkLOS at the study area intersections. Exhibit 22 of the MMLOS guidelines suggests a target TkLOS D for Truck Routes along arterial roads. The results of the intersection TkLOS analysis are summarized in **Table 10**.

**Table 9: TkLOS Intersection Analysis**

| Approach | Effective Corner Radius | Number of Receiving Lanes on Departure from Intersection | LOS |
|---|---|---|---|
| **Somerset Street West/Bayswater Avenue** | | | |
| North | 10m to 15m | 1 | E |
| South | 10m to 15m | 1 | E |
| East | 10m to 15m | 1 | E |
| West | < 10m | 1 | F |
| **Somerset Street West/Preston Street** | | | |
| North | < 10m | 1 | F |
| South | 10m to 15m | 1 | E |
| East | < 10m | 1 | F |
| West | 10m to 15m | 1 | E |

## 2.5 Vehicular Level of Service (Auto LOS)

Exhibit 22 of the MMLOS guidelines suggests a target Auto LOS E for all roadways within 600m of rapid transit.

Intersection capacity analysis has been completed for the existing traffic conditions. The intersection parameters used in the analysis are consistent with the City's TIA guidelines (saturation flow rate: 1800 vphpl, PHF: 0.9). The results of the analysis are summarized in **Table 11** for signalized intersections and **Table 12** for unsignalized intersections for the weekday AM and PM peak hours. Detailed reports are included in **Appendix I**.

**Table 10: Auto LOS Signalized Intersection Analysis – Existing Traffic**

| Intersection | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| | Max. v/c | LOS | Mvmt | Max. v/c | LOS | Mvmt |
| *Existing Traffic* | | | | | | |
| Somerset Street West/Bayswater Avenue | 0.66 | B | SBT/R | 0.92 | E | NB |
| Somerset Street West/Preston Street | 0.96 | E | EBT/R | 0.85 | D | NBT/R |

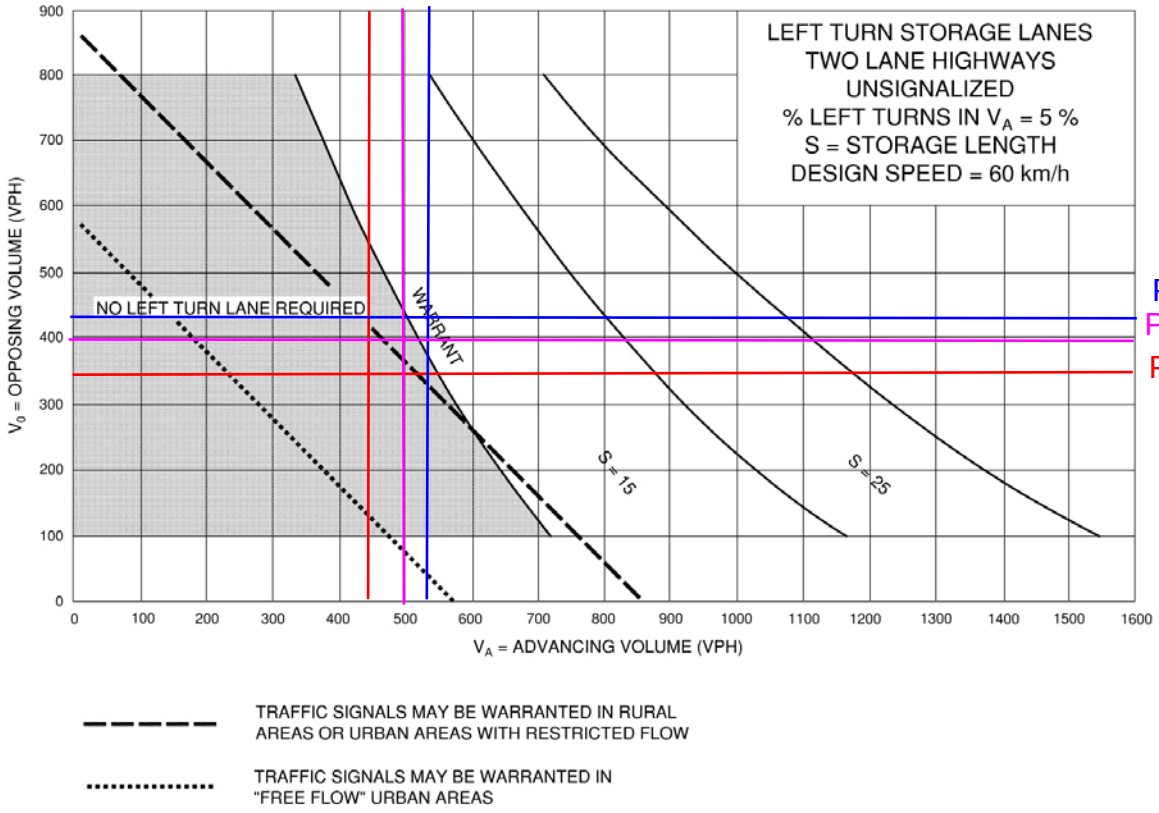
**Table 11: Auto LOS Unsignalized Intersection Analysis – Existing Traffic**

| Intersection | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| | Max. delay | LOS | Mvmt | Max. delay | LOS | Mvmt |
| *Existing Traffic* | | | | | | |
| Somerset Street West/Breezehill Avenue | 13 sec. | B | NB | 16 sec. | C | NB |
| Breezehill Avenue/Laurel Street | 8 sec. | A | EB/NB/ SB | 8 sec. | A | NB |
| Breezehill Avenue/Gladstone Avenue | 12 sec. | B | NB | 19 sec. | C | SB |

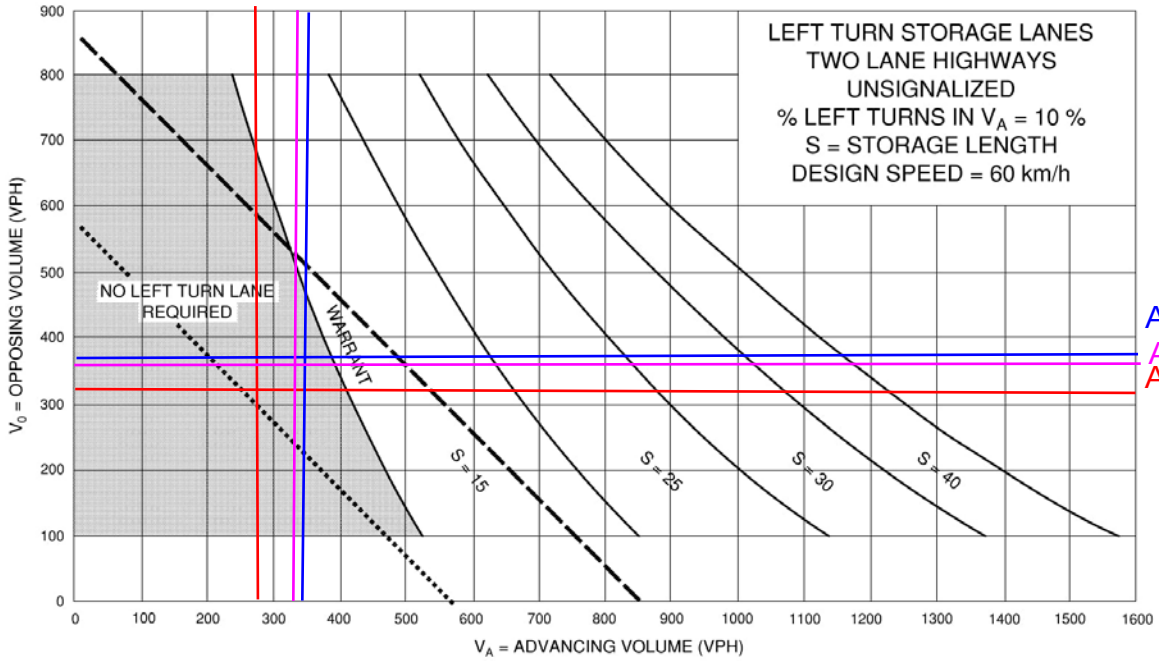
# APPENDIX I

Left Turn Lane Graphs and Signal Warrants

**Exhibit 9A-6**

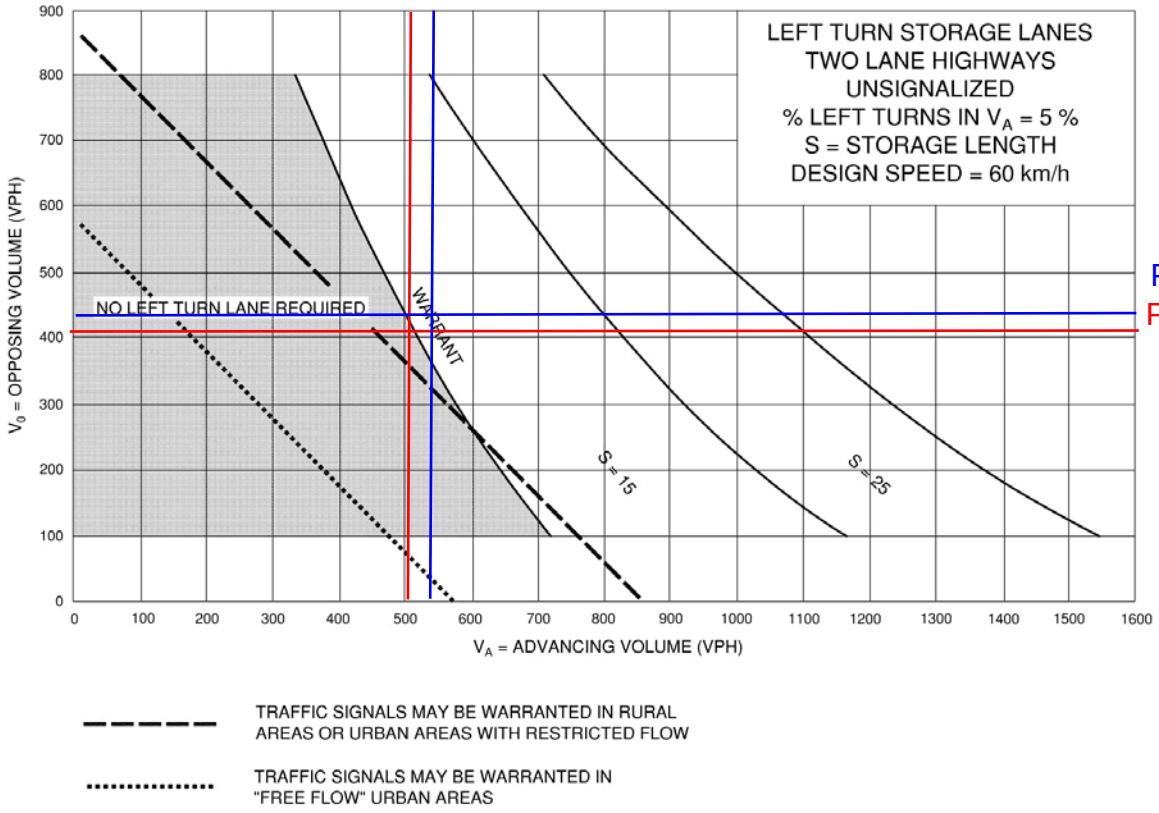



PM, 2030 BG
PM, 2025 BG
PM, Existing

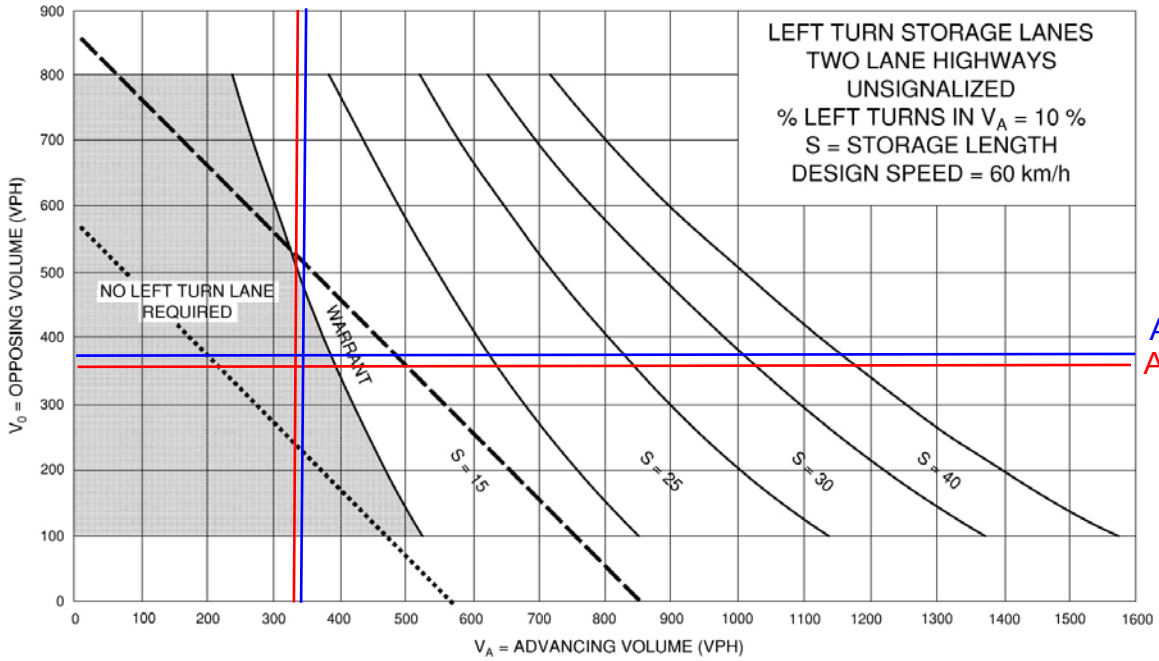



AM, 2030 BG
AM, 2025 BG
AM, Existing

**Exhibit 9A-6**




PM, 2030 Total
PM, 2025 Total




AM, 2030 Total
AM, 2025 Total

NOVATECH
Engineers, Planners & Landscape Architects

# TRAFFIC SIGNAL JUSTIFICATION
# USING PROJECTED VOLUMES

**LOCATION:** Somerset **at** Breezehill

**YEAR:** 2030 total volumes

| JUSTIFICATION | DESCRIPTION | MINIMUM REQUIREMENT | | COMPLIANCE | | |
|---|---|---|---|---|---|---|
| | | FREE FLOW | RESTRICTED FLOW | SECTIONAL | | ENTIRE % (2) |
| | | OPERATING SPEED ≥ 70KM/H | OPERATING SPEED < 70 KM/H | NUMERICAL | PERCENT | |
| **1. MINIMUM VEHICULAR WARRANT** | A. Vehicle volume, all approaches (average hour) | 480<br>600 (2 or more lane approach | 720<br>900 (2 or more lane approach | 459 | 64% | 16% |
| | B. Vehicle volume along minor street (average hour) | 120<br>180 (tee intersection) | 170<br>255 (tee intersection) | 41 | 16% | |
| **2. DELAY TO CROSS TRAFFIC** | A. Vehicle volume along major street (average hour) | 480<br>600 (2 or more lane approach) | 720<br>900 (2 or more lane approach | 418 | 58% | 23% |
| | B (1). Combined vehicle and pedestrian volume crossing the major street (average hour) | 50 | 75 | 18 | 23% | |

**NOTES**

1) For definition of crossing volume refer to the Ontario Traffic Manual Book 12, Section 4.5 (Nov. 2007).
2) The lowest sectional percentage governs the entire Justification.
3) Average hourly volumes estimated from peak hour volumes, AHV = PM / 2 or AHV = (AM + PM) / 4.

# APPENDIX J

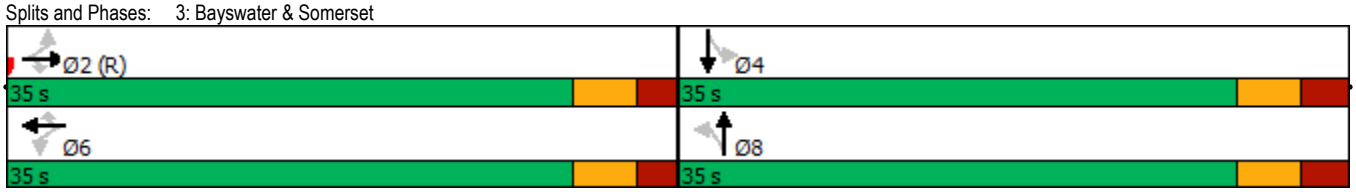
Synchro Reports

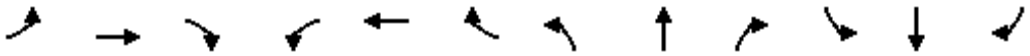
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 37 | 206 | 24 | 16 | 120 | 51 | 24 | 178 | 29 | 118 | 219 | 50 |
| Future Volume (vph) | 37 | 206 | 24 | 16 | 120 | 51 | 24 | 178 | 29 | 118 | 219 | 50 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.83 | | 0.99 | 0.88 | | 0.99 | | 0.96 | 0.99 | |
| Frt | | | 0.850 | | | 0.850 | | 0.983 | | | 0.972 | |
| Flt Protected | | 0.992 | | | 0.994 | | | 0.995 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1492 | 1517 | 0 | 1530 | 1357 | 0 | 1712 | 0 | 1662 | 1713 | 0 |
| Flt Permitted | | 0.944 | | | 0.956 | | | 0.916 | | 0.510 | | |
| Satd. Flow (perm) | 0 | 1407 | 1262 | 0 | 1458 | 1193 | 0 | 1572 | 0 | 858 | 1713 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 45 | | | 57 | | 13 | | | 20 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 51 | | 81 | 81 | | 51 | 27 | | 39 | 39 | | 27 |
| Confl. Bikes (#/hr) | | | 47 | | | 38 | | | 17 | | | 7 |
| 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 (%) | 14% | 8% | 2% | 2% | 7% | 14% | 8% | 2% | 3% | 4% | 2% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 41 | 229 | 27 | 18 | 133 | 57 | 27 | 198 | 32 | 131 | 243 | 56 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 270 | 27 | 0 | 151 | 57 | 0 | 257 | 0 | 131 | 299 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Maximum Green (s) | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 70 | 70 | 70 | 40 | 40 | 40 | 30 | 30 | | 20 | 20 | |
| Act Effct Green (s) | | 40.8 | 40.8 | | 40.8 | 40.8 | | 17.8 | | 17.8 | 17.8 | |
| Actuated g/C Ratio | | 0.58 | 0.58 | | 0.58 | 0.58 | | 0.25 | | 0.25 | 0.25 | |
| v/c Ratio | | 0.33 | 0.04 | | 0.18 | 0.08 | | 0.63 | | 0.60 | 0.66 | |
| Control Delay | | 10.5 | 2.0 | | 6.3 | 1.5 | | 27.9 | | 33.3 | 28.2 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 10.5 | 2.0 | | 6.3 | 1.5 | | 27.9 | | 33.3 | 28.2 | |
| LOS | | B | A | | A | A | | C | | C | C | |
| Approach Delay | | 9.8 | | | 5.0 | | | 27.9 | | | 29.7 | |
| Approach LOS | | A | | | A | | | C | | | C | |
| 90th %ile Green (s) | 33.9 | 33.9 | 33.9 | 33.9 | 33.9 | 33.9 | 24.7 | 24.7 | | 24.7 | 24.7 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 70th %ile Green (s) | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 23.0 | 23.0 | | 23.0 | 23.0 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Ped | Ped | | Hold | Hold | |
| 50th %ile Green (s) | 41.6 | 41.6 | 41.6 | 41.6 | 41.6 | 41.6 | 17.0 | 17.0 | | 17.0 | 17.0 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 30th %ile Green (s) | 44.4 | 44.4 | 44.4 | 44.4 | 44.4 | 44.4 | 14.2 | 14.2 | | 14.2 | 14.2 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 10th %ile Green (s) | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 10.2 | 10.2 | | 10.2 | 10.2 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| Stops (vph) | | 129 | 3 | | 59 | 9 | | 183 | | 97 | 211 | |
| Fuel Used(l) | | 7 | 0 | | 3 | 1 | | 12 | | 6 | 13 | |
| CO Emissions (g/hr) | | 129 | 6 | | 63 | 15 | | 227 | | 120 | 251 | |
| NOx Emissions (g/hr) | | 25 | 1 | | 12 | 3 | | 44 | | 23 | 48 | |
| VOC Emissions (g/hr) | | 30 | 1 | | 15 | 3 | | 52 | | 28 | 58 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 15.8 | 0.0 | | 3.4 | 0.0 | | 28.8 | | 15.3 | 33.3 | |
| Queue Length 95th (m) | | 37.8 | 2.2 | | 21.5 | m2.0 | | 43.1 | | 27.5 | 48.5 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 819 | 753 | | 849 | 718 | | 661 | | 356 | 723 | |
| 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 | | 0.33 | 0.04 | | 0.18 | 0.08 | | 0.39 | | 0.37 | 0.41 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 19 (27%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.66 | | | |
| Intersection Signal Delay: 20.0 | | Intersection LOS: C | |
| Intersection Capacity Utilization 73.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 3: Bayswater & Somerset





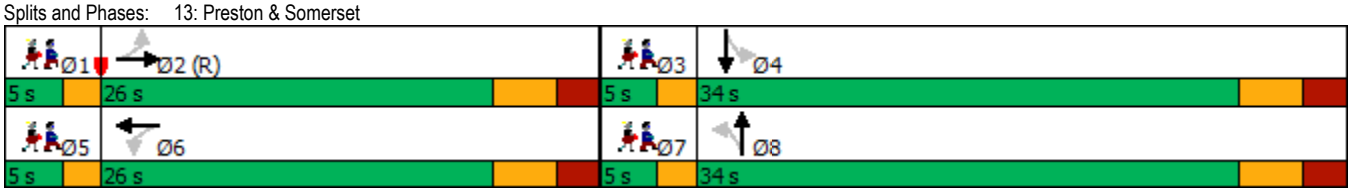
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 44 | 263 | 93 | 34 | 140 | 13 | 65 | 354 | 47 | 18 | 278 | 24 |
| Future Volume (vph) | 44 | 263 | 93 | 34 | 140 | 13 | 65 | 354 | 47 | 18 | 278 | 24 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.89 | 0.95 | | 0.96 | 0.99 | | 0.97 | 0.99 | | 0.97 | 0.99 | |
| Frt | | 0.961 | | | 0.988 | | | 0.982 | | | 0.988 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1410 | 0 | 1679 | 1484 | 0 | 1647 | 1480 | 0 | 1503 | 1467 | 0 |
| Flt Permitted | 0.650 | | | 0.313 | | | 0.454 | | | 0.320 | | |
| Satd. Flow (perm) | 1037 | 1410 | 0 | 529 | 1484 | 0 | 763 | 1480 | 0 | 489 | 1467 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 73 | | 53 | 53 | | 73 | 32 | | 48 | 48 | | 32 |
| Confl. Bikes (#/hr) | | | 66 | | | 21 | | | 10 | | | 4 |
| 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% | 5% | 9% | 3% | 8% | 2% | 5% | 8% | 2% | 15% | 9% | 17% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 49 | 292 | 103 | 38 | 156 | 14 | 72 | 393 | 52 | 20 | 309 | 27 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 49 | 395 | 0 | 38 | 170 | 0 | 72 | 445 | 0 | 20 | 336 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | 34.0 | 34.0 | | 34.0 | 34.0 | |
| Total Split (%) | 37.1% | 37.1% | | 37.1% | 37.1% | | 48.6% | 48.6% | | 48.6% | 48.6% | |
| Maximum Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |

| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 40 | 40 | | 60 | 60 | | 35 | 35 | | 25 | 25 | |
| Act Effct Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 24.9 | 24.9 | | 24.9 | 24.9 | |
| Actuated g/C Ratio | 0.29 | 0.29 | | 0.29 | 0.29 | | 0.36 | 0.36 | | 0.36 | 0.36 | |
| v/c Ratio | 0.16 | 0.96 | | 0.25 | 0.39 | | 0.27 | 0.85 | | 0.11 | 0.64 | |
| Control Delay | 20.8 | 62.8 | | 24.0 | 23.2 | | 17.5 | 36.4 | | 15.3 | 24.5 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 20.8 | 62.8 | | 24.0 | 23.2 | | 17.5 | 36.4 | | 15.3 | 24.5 | |
| LOS | C | E | | C | C | | B | D | | B | C | |
| Approach Delay | | 58.1 | | | 23.3 | | | 33.7 | | | 24.0 | |
| Approach LOS | | E | | | C | | | C | | | C | |
| 90th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 50th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 27.1 | 27.1 | | 27.1 | 27.1 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 23.1 | 23.1 | | 23.1 | 23.1 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 17.8 | 17.8 | | 17.8 | 17.8 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 34 | 288 | | 28 | 120 | | 43 | 343 | | 13 | 239 | |
| Fuel Used(l) | 3 | 38 | | 2 | 7 | | 3 | 27 | | 1 | 14 | |
| CO Emissions (g/hr) | 61 | 714 | | 29 | 127 | | 60 | 511 | | 13 | 263 | |
| NOx Emissions (g/hr) | 12 | 138 | | 6 | 25 | | 12 | 99 | | 2 | 51 | |
| VOC Emissions (g/hr) | 14 | 165 | | 7 | 29 | | 14 | 118 | | 3 | 61 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 4.6 | 42.4 | | 3.8 | 17.7 | | 6.2 | 49.6 | | 1.6 | 33.9 | |
| Queue Length 95th (m) | 13.5 | #99.7 | | 11.4 | 33.5 | | 14.7 | #90.9 | | 5.8 | 56.7 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 302 | 410 | | 154 | 432 | | 308 | 598 | | 197 | 593 | |
| 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 | 0.16 | 0.96 | | 0.25 | 0.39 | | 0.23 | 0.74 | | 0.10 | 0.57 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 37 (53%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 75 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.96 | | | |
| Intersection Signal Delay: 37.1 | | Intersection LOS: D | |
| Intersection Capacity Utilization 80.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

Splits and Phases: 13: Preston & Somerset



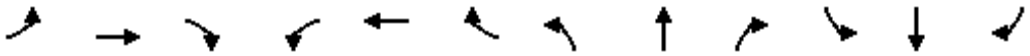
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 4.2 | 3.0 | 4.2 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 8.2 | 3.0 | 8.2 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 13.5 | 3.0 | 13.5 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 260 | 54 | 27 | 254 | 17 | 36 |
| Future Volume (Veh/h) | 260 | 54 | 27 | 254 | 17 | 36 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 289 | 60 | 30 | 282 | 19 | 40 |
| Pedestrians | | | | | 50 | |
| Lane Width (m) | | | | | 3.7 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 4 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.96 | | 0.96 | 0.96 |
| vC, conflicting volume | | | 399 | | 711 | 369 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 356 | | 680 | 325 |
| tC, single (s) | | | 4.1 | | 6.6 | 6.5 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.7 | 3.5 |
| p0 queue free % | | | 97 | | 94 | 93 |
| cM capacity (veh/h) | | | 1108 | | 343 | 610 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 349 | 312 | 59 |
| Volume Left | 0 | 30 | 19 |
| Volume Right | 60 | 0 | 40 |
| cSH | 1700 | 1108 | 488 |
| Volume to Capacity | 0.21 | 0.03 | 0.12 |
| Queue Length 95th (m) | 0.0 | 0.6 | 3.1 |
| Control Delay (s) | 0.0 | 1.0 | 13.4 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 1.0 | 13.4 |
| Approach LOS | | | B |

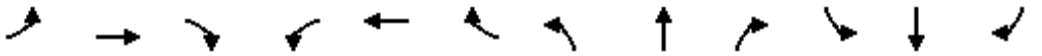
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.6 | | |
| Intersection Capacity Utilization | 47.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 11 | 26 | 10 | 6 | 8 | 6 | 11 | 49 | 10 | 22 | 31 | 16 |
| Future Volume (vph) | 11 | 26 | 10 | 6 | 8 | 6 | 11 | 49 | 10 | 22 | 31 | 16 |
| 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 |
| Hourly flow rate (vph) | 12 | 29 | 11 | 7 | 9 | 7 | 12 | 54 | 11 | 24 | 34 | 18 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 52 | 23 | 77 | 76 |
| Volume Left (vph) | 12 | 7 | 12 | 24 |
| Volume Right (vph) | 11 | 7 | 11 | 18 |
| Hadj (s) | -0.05 | -0.09 | -0.02 | -0.04 |
| Departure Headway (s) | 4.2 | 4.2 | 4.1 | 4.1 |
| Degree Utilization, x | 0.06 | 0.03 | 0.09 | 0.09 |
| Capacity (veh/h) | 822 | 820 | 846 | 857 |
| Control Delay (s) | 7.5 | 7.3 | 7.5 | 7.5 |
| Approach Delay (s) | 7.5 | 7.3 | 7.5 | 7.5 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | 7.5 | | | |
| Level of Service | A | | | |
| Intersection Capacity Utilization | 27.0% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 193 | 0 | 1 | 159 | 38 | 2 | 1 | 2 | 13 | 0 | 17 |
| Future Volume (Veh/h) | 21 | 193 | 0 | 1 | 159 | 38 | 2 | 1 | 2 | 13 | 0 | 17 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 23 | 214 | 0 | 1 | 177 | 42 | 2 | 1 | 2 | 14 | 0 | 19 |
| Pedestrians | | 8 | | | 2 | | | 25 | | | 21 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 0 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 240 | | | 239 | | | 512 | 527 | 241 | 486 | 506 | 227 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 240 | | | 239 | | | 512 | 527 | 241 | 486 | 506 | 227 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 100 | 100 | 100 | 97 | 100 | 98 |
| cM capacity (veh/h) | 1303 | | | 1299 | | | 429 | 430 | 779 | 459 | 442 | 792 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 237 | 220 | 5 | 33 |
| Volume Left | 23 | 1 | 2 | 14 |
| Volume Right | 0 | 42 | 2 | 19 |
| cSH | 1303 | 1299 | 523 | 606 |
| Volume to Capacity | 0.02 | 0.00 | 0.01 | 0.05 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.2 | 1.3 |
| Control Delay (s) | 0.9 | 0.0 | 11.9 | 11.3 |
| Lane LOS | A | A | B | B |
| Approach Delay (s) | 0.9 | 0.0 | 11.9 | 11.3 |
| Approach LOS | | | B | B |

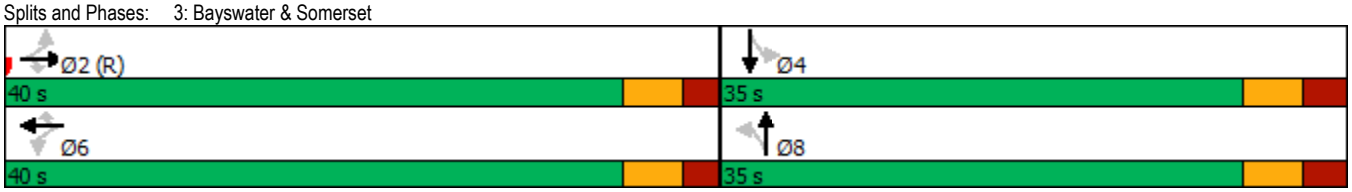
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.3 | | | |
| Intersection Capacity Utilization | 39.3% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

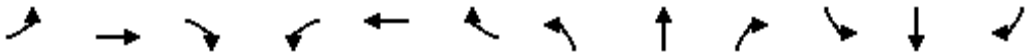
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 37 | 203 | 31 | 31 | 290 | 120 | 47 | 287 | 22 | 92 | 252 | 59 |
| Future Volume (vph) | 37 | 203 | 31 | 31 | 290 | 120 | 47 | 287 | 22 | 92 | 252 | 59 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.75 | | 0.99 | 0.83 | | 0.99 | | 0.96 | 0.98 | |
| Frt | | | 0.850 | | | 0.850 | | 0.992 | | | 0.971 | |
| Flt Protected | | 0.992 | | | 0.995 | | | 0.993 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1567 | 1517 | 0 | 1598 | 1517 | 0 | 1746 | 0 | 1679 | 1690 | 0 |
| Flt Permitted | | 0.911 | | | 0.954 | | | 0.791 | | 0.399 | | |
| Satd. Flow (perm) | 0 | 1427 | 1132 | 0 | 1511 | 1264 | 0 | 1383 | 0 | 678 | 1690 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 42 | | | 133 | | 5 | | | 18 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 64 | | 140 | 140 | | 64 | 48 | | 50 | 50 | | 48 |
| Confl. Bikes (#/hr) | | | 44 | | | 72 | | | 6 | | | 24 |
| 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% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% | 3% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 41 | 226 | 34 | 34 | 322 | 133 | 52 | 319 | 24 | 102 | 280 | 66 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 267 | 34 | 0 | 356 | 133 | 0 | 395 | 0 | 102 | 346 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 46.7% | 46.7% | | 46.7% | 46.7% | |
| Maximum Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 100 | 100 | 100 | 50 | 50 | 50 | 40 | 40 | | 30 | 30 | |
| Act Effct Green (s) | | 40.4 | 40.4 | | 40.4 | 40.4 | | 23.2 | | 23.2 | 23.2 | |
| Actuated g/C Ratio | | 0.54 | 0.54 | | 0.54 | 0.54 | | 0.31 | | 0.31 | 0.31 | |
| v/c Ratio | | 0.35 | 0.05 | | 0.44 | 0.18 | | 0.92 | | 0.49 | 0.65 | |
| Control Delay | | 12.8 | 3.5 | | 14.0 | 3.0 | | 51.7 | | 28.0 | 26.4 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 12.8 | 3.5 | | 14.0 | 3.0 | | 51.7 | | 28.0 | 26.4 | |
| LOS | | B | A | | B | A | | D | | C | C | |
| Approach Delay | | 11.8 | | | 11.0 | | | 51.7 | | | 26.8 | |
| Approach LOS | | B | | | B | | | D | | | C | |
| 90th %ile Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Max | Max | | Hold | Hold | |
| 70th %ile Green (s) | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 26.9 | 26.9 | | 26.9 | 26.9 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 39.8 | 39.8 | 39.8 | 39.8 | 39.8 | 39.8 | 23.8 | 23.8 | | 23.8 | 23.8 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 43.1 | 43.1 | 43.1 | 43.1 | 43.1 | 43.1 | 20.5 | 20.5 | | 20.5 | 20.5 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 15.5 | 15.5 | | 15.5 | 15.5 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| Stops (vph) | | 138 | 5 | | 195 | 14 | | 320 | | 71 | 241 | |
| Fuel Used(l) | | 7 | 0 | | 11 | 2 | | 26 | | 5 | 15 | |
| CO Emissions (g/hr) | | 139 | 9 | | 207 | 34 | | 487 | | 85 | 281 | |
| NOx Emissions (g/hr) | | 27 | 2 | | 40 | 7 | | 94 | | 16 | 54 | |
| VOC Emissions (g/hr) | | 32 | 2 | | 48 | 8 | | 112 | | 20 | 65 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 20.3 | 0.0 | | 28.8 | 0.0 | | 52.1 | | 11.5 | 39.1 | |
| Queue Length 95th (m) | | 41.7 | 3.7 | | 56.7 | 8.4 | | #86.7 | | 23.1 | 57.7 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 769 | 629 | | 814 | 742 | | 539 | | 263 | 666 | |
| 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 | | 0.35 | 0.05 | | 0.44 | 0.18 | | 0.73 | | 0.39 | 0.52 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 75 | | | |
| Actuated Cycle Length: 75 | | | |
| Offset: 63 (84%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.92 | | | |
| Intersection Signal Delay: 25.3 | | Intersection LOS: C | |
| Intersection Capacity Utilization 98.3% | | 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. | | | |

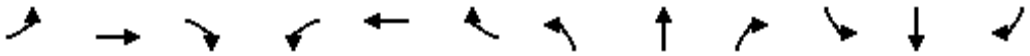
Splits and Phases: 3: Bayswater & Somerset





| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 54 | 276 | 66 | 53 | 352 | 23 | 82 | 312 | 54 | 40 | 285 | 46 |
| Future Volume (vph) | 54 | 276 | 66 | 53 | 352 | 23 | 82 | 312 | 54 | 40 | 285 | 46 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.95 | | 0.91 | 0.99 | | 0.92 | 0.98 | | 0.95 | 0.97 | |
| Frt | | 0.971 | | | 0.991 | | | 0.978 | | | 0.979 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1453 | 0 | 1695 | 1561 | 0 | 1695 | 1464 | 0 | 1695 | 1495 | 0 |
| Flt Permitted | 0.331 | | | 0.379 | | | 0.391 | | | 0.339 | | |
| Satd. Flow (perm) | 547 | 1453 | 0 | 613 | 1561 | 0 | 644 | 1464 | 0 | 572 | 1495 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 93 | | 105 | 105 | | 93 | 89 | | 70 | 70 | | 89 |
| Confl. Bikes (#/hr) | | | 28 | | | 53 | | | 8 | | | 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 (%) | 2% | 3% | 11% | 2% | 2% | 9% | 2% | 8% | 2% | 2% | 5% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 60 | 307 | 73 | 59 | 391 | 26 | 91 | 347 | 60 | 44 | 317 | 51 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 60 | 380 | 0 | 59 | 417 | 0 | 91 | 407 | 0 | 44 | 368 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 44.3% | 44.3% | | 44.3% | 44.3% | |
| Maximum Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |

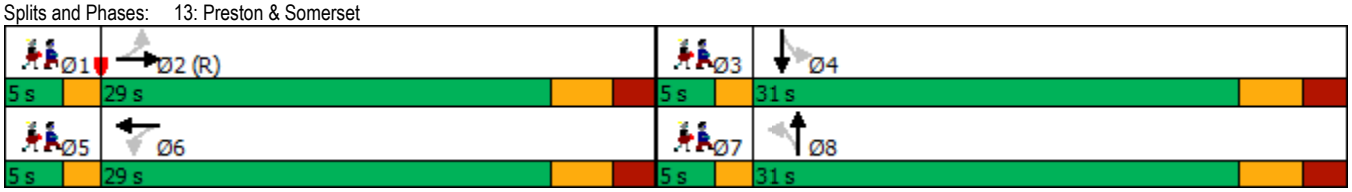
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| Lane Util. Factor | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 90 | 90 | | 75 | 75 | | 55 | 55 | | 75 | 75 | |
| Act Effct Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 22.9 | 22.9 | | 22.9 | 22.9 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | 0.33 | 0.33 | | 0.33 | 0.33 | | 0.33 | 0.33 | |
| v/c Ratio | 0.33 | 0.78 | | 0.29 | 0.80 | | 0.43 | 0.85 | | 0.24 | 0.75 | |
| Control Delay | 23.7 | 34.9 | | 21.9 | 35.3 | | 24.8 | 40.0 | | 19.7 | 31.4 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 23.7 | 34.9 | | 21.9 | 35.3 | | 24.8 | 40.0 | | 19.7 | 31.4 | |
| LOS | C | C | | C | D | | C | D | | B | C | |
| Approach Delay | | 33.4 | | | 33.6 | | | 37.2 | | | 30.2 | |
| Approach LOS | | C | | | C | | | D | | | C | |
| 90th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 50th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 30th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.7 | 21.7 | | 21.7 | 21.7 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 16.7 | 16.7 | | 16.7 | 16.7 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 41 | 286 | | 41 | 315 | | 63 | 315 | | 30 | 283 | |
| Fuel Used(l) | 4 | 30 | | 2 | 21 | | 5 | 26 | | 2 | 18 | |
| CO Emissions (g/hr) | 77 | 553 | | 43 | 385 | | 88 | 487 | | 31 | 330 | |
| NOx Emissions (g/hr) | 15 | 107 | | 8 | 74 | | 17 | 94 | | 6 | 64 | |
| VOC Emissions (g/hr) | 18 | 128 | | 10 | 89 | | 20 | 112 | | 7 | 76 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 5.8 | 44.2 | | 5.6 | 48.8 | | 8.7 | 46.1 | | 3.9 | 39.9 | |
| Queue Length 95th (m) | 15.5 | #85.4 | | 14.8 | #92.3 | | 21.0 | #88.3 | | 11.2 | 68.2 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 182 | 485 | | 204 | 521 | | 232 | 529 | | 206 | 540 | |
| 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 | 0.33 | 0.78 | | 0.29 | 0.80 | | 0.39 | 0.77 | | 0.21 | 0.68 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 32 (46%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.85 | | | |
| Intersection Signal Delay: 33.8 | | Intersection LOS: C | |
| Intersection Capacity Utilization 78.4% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

Splits and Phases: 13: Preston & Somerset



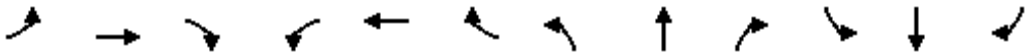
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 6.6 | 3.0 | 6.6 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 11.6 | 3.0 | 11.6 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 316 | 13 | 21 | 418 | 16 | 27 |
| Future Volume (Veh/h) | 316 | 13 | 21 | 418 | 16 | 27 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 351 | 14 | 23 | 464 | 18 | 30 |
| Pedestrians | 18 | | | | 100 | |
| Lane Width (m) | 3.7 | | | | 3.7 | |
| Walking Speed (m/s) | 1.2 | | | | 1.2 | |
| Percent Blockage | 2 | | | | 9 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.93 | | 0.93 | 0.93 |
| vC, conflicting volume | | | 465 | | 986 | 458 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 384 | | 946 | 376 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 98 | | 92 | 95 |
| cM capacity (veh/h) | | | 996 | | 237 | 568 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 365 | 487 | 48 |
| Volume Left | 0 | 23 | 18 |
| Volume Right | 14 | 0 | 30 |
| cSH | 1700 | 996 | 373 |
| Volume to Capacity | 0.21 | 0.02 | 0.13 |
| Queue Length 95th (m) | 0.0 | 0.5 | 3.3 |
| Control Delay (s) | 0.0 | 0.7 | 16.1 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 0.7 | 16.1 |
| Approach LOS | | | C |

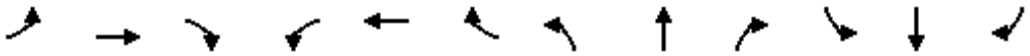
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 51.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 12 | 8 | 10 | 4 | 22 | 6 | 24 | 22 | 1 | 3 | 45 | 32 |
| Future Volume (vph) | 12 | 8 | 10 | 4 | 22 | 6 | 24 | 22 | 1 | 3 | 45 | 32 |
| 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 |
| Hourly flow rate (vph) | 13 | 9 | 11 | 4 | 24 | 7 | 27 | 24 | 1 | 3 | 50 | 36 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 33 | 35 | 52 | 89 |
| Volume Left (vph) | 13 | 4 | 27 | 3 |
| Volume Right (vph) | 11 | 7 | 1 | 36 |
| Hadj (s) | -0.09 | -0.06 | 0.13 | -0.20 |
| Departure Headway (s) | 4.1 | 4.2 | 4.3 | 3.9 |
| Degree Utilization, x | 0.04 | 0.04 | 0.06 | 0.10 |
| Capacity (veh/h) | 834 | 831 | 819 | 902 |
| Control Delay (s) | 7.3 | 7.3 | 7.5 | 7.3 |
| Approach Delay (s) | 7.3 | 7.3 | 7.5 | 7.3 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | | 7.4 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | | 27.4% | ICU Level of Service |
| Analysis Period (min) | | | 15 | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 17 | 187 | 4 | 6 | 497 | 27 | 3 | 0 | 1 | 28 | 0 | 23 |
| Future Volume (Veh/h) | 17 | 187 | 4 | 6 | 497 | 27 | 3 | 0 | 1 | 28 | 0 | 23 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 19 | 208 | 4 | 7 | 552 | 30 | 3 | 0 | 1 | 31 | 0 | 26 |
| Pedestrians | | 7 | | | 10 | | | 25 | | | 22 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 1 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 604 | | | 237 | | | 887 | 891 | 245 | 862 | 878 | 596 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 604 | | | 237 | | | 887 | 891 | 245 | 862 | 878 | 596 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.2 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.6 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 99 | 100 | 100 | 87 | 100 | 95 |
| cM capacity (veh/h) | 955 | | | 1302 | | | 232 | 264 | 770 | 245 | 268 | 491 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 231 | 589 | 4 | 57 |
| Volume Left | 19 | 7 | 3 | 31 |
| Volume Right | 4 | 30 | 1 | 26 |
| cSH | 955 | 1302 | 281 | 318 |
| Volume to Capacity | 0.02 | 0.01 | 0.01 | 0.18 |
| Queue Length 95th (m) | 0.5 | 0.1 | 0.3 | 4.9 |
| Control Delay (s) | 0.9 | 0.2 | 18.0 | 18.8 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.9 | 0.2 | 18.0 | 18.8 |
| Approach LOS | | | C | C |

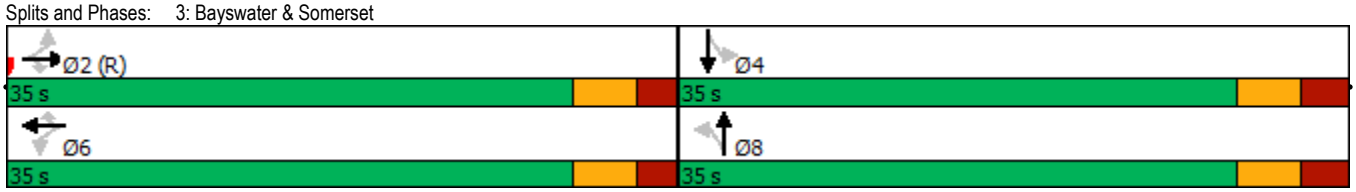
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.6 | | | |
| Intersection Capacity Utilization | 43.8% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 39 | 230 | 25 | 24 | 141 | 59 | 25 | 187 | 34 | 131 | 230 | 53 |
| Future Volume (vph) | 39 | 230 | 25 | 24 | 141 | 59 | 25 | 187 | 34 | 131 | 230 | 53 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.83 | | 0.99 | 0.88 | | 0.98 | | 0.96 | 0.99 | |
| Frt | | | 0.850 | | | 0.850 | | 0.981 | | | 0.972 | |
| Flt Protected | | 0.993 | | | 0.993 | | | 0.995 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1494 | 1517 | 0 | 1531 | 1357 | 0 | 1707 | 0 | 1662 | 1713 | 0 |
| Flt Permitted | | 0.945 | | | 0.942 | | | 0.939 | | 0.519 | | |
| Satd. Flow (perm) | 0 | 1410 | 1262 | 0 | 1436 | 1193 | 0 | 1606 | 0 | 873 | 1713 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 45 | | | 59 | | 14 | | | 20 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 51 | | 81 | 81 | | 51 | 27 | | 39 | 39 | | 27 |
| Confl. Bikes (#/hr) | | | 47 | | | 38 | | | 17 | | | 7 |
| 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 (%) | 14% | 8% | 2% | 2% | 7% | 14% | 8% | 2% | 3% | 4% | 2% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 39 | 230 | 25 | 24 | 141 | 59 | 25 | 187 | 34 | 131 | 230 | 53 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 269 | 25 | 0 | 165 | 59 | 0 | 246 | 0 | 131 | 283 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Maximum Green (s) | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 70 | 70 | 70 | 40 | 40 | 40 | 30 | 30 | | 20 | 20 | |
| Act Effct Green (s) | | 41.3 | 41.3 | | 41.3 | 41.3 | | 17.3 | | 17.3 | 17.3 | |
| Actuated g/C Ratio | | 0.59 | 0.59 | | 0.59 | 0.59 | | 0.25 | | 0.25 | 0.25 | |
| v/c Ratio | | 0.32 | 0.03 | | 0.20 | 0.08 | | 0.60 | | 0.61 | 0.65 | |
| Control Delay | | 10.1 | 1.7 | | 6.1 | 1.4 | | 27.3 | | 34.2 | 27.9 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 10.1 | 1.7 | | 6.1 | 1.4 | | 27.3 | | 34.2 | 27.9 | |
| LOS | | B | A | | A | A | | C | | C | C | |
| Approach Delay | | 9.4 | | | 4.8 | | | 27.3 | | | 29.9 | |
| Approach LOS | | A | | | A | | | C | | | C | |
| 90th %ile Green (s) | 34.9 | 34.9 | 34.9 | 34.9 | 34.9 | 34.9 | 23.7 | 23.7 | | 23.7 | 23.7 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 70th %ile Green (s) | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 23.0 | 23.0 | | 23.0 | 23.0 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Ped | Ped | | Hold | Hold | |
| 50th %ile Green (s) | 42.3 | 42.3 | 42.3 | 42.3 | 42.3 | 42.3 | 16.3 | 16.3 | | 16.3 | 16.3 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 30th %ile Green (s) | 45.0 | 45.0 | 45.0 | 45.0 | 45.0 | 45.0 | 13.6 | 13.6 | | 13.6 | 13.6 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 10th %ile Green (s) | 48.6 | 48.6 | 48.6 | 48.6 | 48.6 | 48.6 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Min | Min | | Min | Min | |
| Stops (vph) | | 140 | 2 | | 71 | 9 | | 192 | | 109 | 220 | |
| Fuel Used(l) | | 8 | 0 | | 4 | 1 | | 13 | | 7 | 14 | |
| CO Emissions (g/hr) | | 140 | 5 | | 76 | 16 | | 238 | | 136 | 262 | |
| NOx Emissions (g/hr) | | 27 | 1 | | 15 | 3 | | 46 | | 26 | 51 | |
| VOC Emissions (g/hr) | | 32 | 1 | | 17 | 4 | | 55 | | 31 | 60 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 15.3 | 0.0 | | 3.4 | 0.0 | | 27.4 | | 15.5 | 31.4 | |
| Queue Length 95th (m) | | 36.2 | 2.0 | | 21.0 | m1.3 | | 41.8 | | 28.0 | 46.7 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 831 | 762 | | 846 | 727 | | 675 | | 362 | 723 | |
| 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 | | 0.32 | 0.03 | | 0.20 | 0.08 | | 0.36 | | 0.36 | 0.39 | |

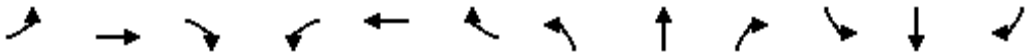
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 19 (27%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.65 | | | |
| Intersection Signal Delay: 19.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization 96.7% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 3: Bayswater & Somerset



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 53 | 301 | 95 | 34 | 167 | 13 | 67 | 354 | 47 | 18 | 278 | 31 |
| Future Volume (vph) | 53 | 301 | 95 | 34 | 167 | 13 | 67 | 354 | 47 | 18 | 278 | 31 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.90 | 0.95 | | 0.96 | 0.99 | | 0.97 | 0.99 | | 0.96 | 0.99 | |
| Frt | | 0.964 | | | 0.989 | | | 0.982 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1422 | 0 | 1679 | 1487 | 0 | 1647 | 1480 | 0 | 1503 | 1458 | 0 |
| Flt Permitted | 0.644 | | | 0.311 | | | 0.476 | | | 0.354 | | |
| Satd. Flow (perm) | 1029 | 1422 | 0 | 525 | 1487 | 0 | 798 | 1480 | 0 | 538 | 1458 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 73 | | 53 | 53 | | 73 | 32 | | 48 | 48 | | 32 |
| Confl. Bikes (#/hr) | | | 66 | | | 21 | | | 10 | | | 4 |
| 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% | 5% | 9% | 3% | 8% | 2% | 5% | 8% | 2% | 15% | 9% | 17% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 53 | 301 | 95 | 34 | 167 | 13 | 67 | 354 | 47 | 18 | 278 | 31 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 53 | 396 | 0 | 34 | 180 | 0 | 67 | 401 | 0 | 18 | 309 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | 34.0 | 34.0 | | 34.0 | 34.0 | |
| Total Split (%) | 37.1% | 37.1% | | 37.1% | 37.1% | | 48.6% | 48.6% | | 48.6% | 48.6% | |
| Maximum Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |

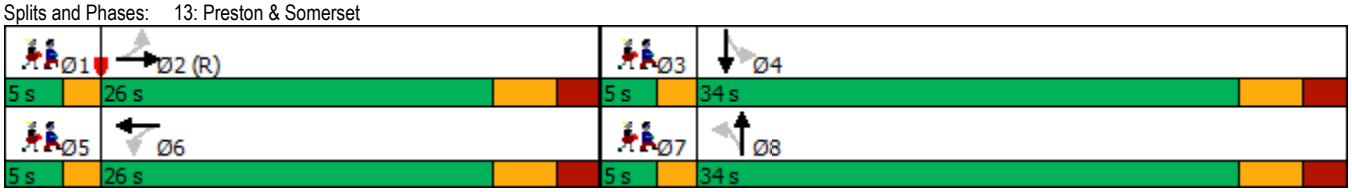
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| Lane Util. Factor | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 40 | 40 | | 60 | 60 | | 35 | 35 | | 25 | 25 | |
| Act Effct Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 23.4 | 23.4 | | 23.4 | 23.4 | |
| Actuated g/C Ratio | 0.29 | 0.29 | | 0.29 | 0.29 | | 0.33 | 0.33 | | 0.33 | 0.33 | |
| v/c Ratio | 0.18 | 0.96 | | 0.22 | 0.42 | | 0.25 | 0.81 | | 0.10 | 0.63 | |
| Control Delay | 20.5 | 60.8 | | 23.4 | 23.6 | | 17.7 | 34.3 | | 15.2 | 25.2 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 20.5 | 60.8 | | 23.4 | 23.6 | | 17.7 | 34.3 | | 15.2 | 25.2 | |
| LOS | C | E | | C | C | | B | C | | B | C | |
| Approach Delay | | 56.1 | | | 23.6 | | | 31.9 | | | 24.6 | |
| Approach LOS | | E | | | C | | | C | | | C | |
| 90th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 70th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 27.8 | 27.8 | | 27.8 | 27.8 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 24.3 | 24.3 | | 24.3 | 24.3 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 20.9 | 20.9 | | 20.9 | 20.9 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 15.7 | 15.7 | | 15.7 | 15.7 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 42 | 324 | | 29 | 141 | | 46 | 348 | | 13 | 245 | |
| Fuel Used(l) | 4 | 42 | | 2 | 8 | | 3 | 27 | | 1 | 15 | |
| CO Emissions (g/hr) | 74 | 785 | | 29 | 150 | | 63 | 502 | | 13 | 272 | |
| NOx Emissions (g/hr) | 14 | 151 | | 6 | 29 | | 12 | 97 | | 2 | 53 | |
| VOC Emissions (g/hr) | 17 | 181 | | 7 | 35 | | 15 | 116 | | 3 | 63 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 5.0 | 42.2 | | 3.4 | 18.9 | | 6.1 | 46.1 | | 1.6 | 32.8 | |
| Queue Length 95th (m) | 14.0 | #99.0 | | 10.4 | 35.2 | | 13.7 | 70.6 | | 5.2 | 51.3 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 299 | 414 | | 153 | 433 | | 322 | 598 | | 217 | 589 | |
| 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 | 0.18 | 0.96 | | 0.22 | 0.42 | | 0.21 | 0.67 | | 0.08 | 0.52 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 37 (53%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.96 | | | |
| Intersection Signal Delay: 36.5 | | Intersection LOS: D | |
| Intersection Capacity Utilization 82.4% | | 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. | | | |

Splits and Phases: 13: Preston & Somerset



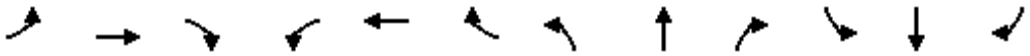
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.5 | 3.0 | 3.5 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 7.0 | 3.0 | 7.0 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 10.4 | 3.0 | 10.4 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 15.6 | 3.0 | 15.6 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 302 | 62 | 34 | 289 | 31 | 43 |
| Future Volume (Veh/h) | 302 | 62 | 34 | 289 | 31 | 43 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 302 | 62 | 34 | 289 | 31 | 43 |
| Pedestrians | | | | | 50 | |
| Lane Width (m) | | | | | 3.7 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 4 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.95 | | 0.95 | 0.95 |
| vC, conflicting volume | | | 414 | | 740 | 383 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 353 | | 697 | 320 |
| tC, single (s) | | | 4.1 | | 6.6 | 6.5 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.7 | 3.5 |
| p0 queue free % | | | 97 | | 91 | 93 |
| cM capacity (veh/h) | | | 1093 | | 329 | 604 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 364 | 323 | 74 |
| Volume Left | 0 | 34 | 31 |
| Volume Right | 62 | 0 | 43 |
| cSH | 1700 | 1093 | 447 |
| Volume to Capacity | 0.21 | 0.03 | 0.17 |
| Queue Length 95th (m) | 0.0 | 0.7 | 4.5 |
| Control Delay (s) | 0.0 | 1.2 | 14.6 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 1.2 | 14.6 |
| Approach LOS | | | B |

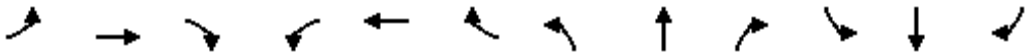
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.9 | | |
| Intersection Capacity Utilization | 54.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 53 | 10 | 34 | 34 | 19 |
| Future Volume (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 53 | 10 | 34 | 34 | 19 |
| 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 |
| Hourly flow rate (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 53 | 10 | 34 | 34 | 19 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 51 | 33 | 74 | 87 |
| Volume Left (vph) | 15 | 6 | 11 | 34 |
| Volume Right (vph) | 10 | 19 | 10 | 19 |
| Hadj (s) | -0.02 | -0.28 | -0.02 | -0.02 |
| Departure Headway (s) | 4.3 | 4.0 | 4.2 | 4.1 |
| Degree Utilization, x | 0.06 | 0.04 | 0.09 | 0.10 |
| Capacity (veh/h) | 809 | 852 | 837 | 847 |
| Control Delay (s) | 7.5 | 7.2 | 7.5 | 7.6 |
| Approach Delay (s) | 7.5 | 7.2 | 7.5 | 7.6 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | | 7.5 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | | 27.9% | ICU Level of Service |
| Analysis Period (min) | | | 15 | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 23 | 235 | 0 | 1 | 203 | 40 | 2 | 1 | 2 | 15 | 0 | 18 |
| Future Volume (Veh/h) | 23 | 235 | 0 | 1 | 203 | 40 | 2 | 1 | 2 | 15 | 0 | 18 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 23 | 235 | 0 | 1 | 203 | 40 | 2 | 1 | 2 | 15 | 0 | 18 |
| Pedestrians | | 8 | | | 2 | | | 25 | | | 21 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 0 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 264 | | | 260 | | | 557 | 572 | 262 | 532 | 552 | 252 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 264 | | | 260 | | | 557 | 572 | 262 | 532 | 552 | 252 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 100 | 100 | 100 | 96 | 100 | 98 |
| cM capacity (veh/h) | 1277 | | | 1277 | | | 400 | 406 | 759 | 428 | 416 | 767 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 258 | 244 | 5 | 33 |
| Volume Left | 23 | 1 | 2 | 15 |
| Volume Right | 0 | 40 | 2 | 18 |
| cSH | 1277 | 1277 | 495 | 564 |
| Volume to Capacity | 0.02 | 0.00 | 0.01 | 0.06 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.2 | 1.4 |
| Control Delay (s) | 0.9 | 0.0 | 12.3 | 11.8 |
| Lane LOS | A | A | B | B |
| Approach Delay (s) | 0.9 | 0.0 | 12.3 | 11.8 |
| Approach LOS | | | B | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.3 | | | |
| Intersection Capacity Utilization | 43.5% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 39 | 229 | 33 | 47 | 335 | 135 | 49 | 302 | 27 | 105 | 265 | 62 |
| Future Volume (vph) | 39 | 229 | 33 | 47 | 335 | 135 | 49 | 302 | 27 | 105 | 265 | 62 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.75 | | 0.98 | 0.83 | | 0.99 | | 0.96 | 0.98 | |
| Frt | | | 0.850 | | | 0.850 | | 0.990 | | | 0.972 | |
| Flt Protected | | 0.993 | | | 0.994 | | | 0.994 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1568 | 1517 | 0 | 1596 | 1517 | 0 | 1743 | 0 | 1679 | 1692 | 0 |
| Flt Permitted | | 0.912 | | | 0.935 | | | 0.820 | | 0.405 | | |
| Satd. Flow (perm) | 0 | 1430 | 1132 | 0 | 1476 | 1264 | 0 | 1429 | 0 | 687 | 1692 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 42 | | | 135 | | 6 | | | 18 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 64 | | 140 | 140 | | 64 | 48 | | 50 | 50 | | 48 |
| Confl. Bikes (#/hr) | | | 44 | | | 72 | | | 6 | | | 24 |
| 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% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% | 3% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 39 | 229 | 33 | 47 | 335 | 135 | 49 | 302 | 27 | 105 | 265 | 62 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 268 | 33 | 0 | 382 | 135 | 0 | 378 | 0 | 105 | 327 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 46.7% | 46.7% | | 46.7% | 46.7% | |
| Maximum Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |

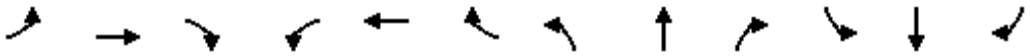
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 100 | 100 | 100 | 50 | 50 | 50 | 40 | 40 | | 30 | 30 | |
| Act Effct Green (s) | | 41.1 | 41.1 | | 41.1 | 41.1 | | 22.5 | | 22.5 | 22.5 | |
| Actuated g/C Ratio | | 0.55 | 0.55 | | 0.55 | 0.55 | | 0.30 | | 0.30 | 0.30 | |
| v/c Ratio | | 0.34 | 0.05 | | 0.47 | 0.18 | | 0.87 | | 0.51 | 0.63 | |
| Control Delay | | 12.5 | 3.4 | | 14.3 | 3.0 | | 44.8 | | 29.4 | 26.1 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 12.5 | 3.4 | | 14.3 | 3.0 | | 44.8 | | 29.4 | 26.1 | |
| LOS | | B | A | | B | A | | D | | C | C | |
| Approach Delay | | 11.5 | | | 11.4 | | | 44.8 | | | 26.9 | |
| Approach LOS | | B | | | B | | | D | | | C | |
| 90th %ile Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Max | Max | | Hold | Hold | |
| 70th %ile Green (s) | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 26.1 | 26.1 | | 26.1 | 26.1 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 40.6 | 40.6 | 40.6 | 40.6 | 40.6 | 40.6 | 23.0 | 23.0 | | 23.0 | 23.0 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 44.0 | 44.0 | 44.0 | 44.0 | 44.0 | 44.0 | 19.6 | 19.6 | | 19.6 | 19.6 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 48.8 | 48.8 | 48.8 | 48.8 | 48.8 | 48.8 | 14.8 | 14.8 | | 14.8 | 14.8 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| Stops (vph) | | 151 | 5 | | 236 | 16 | | 341 | | 83 | 252 | |
| Fuel Used(l) | | 8 | 0 | | 13 | 2 | | 26 | | 5 | 16 | |
| CO Emissions (g/hr) | | 153 | 9 | | 250 | 38 | | 480 | | 100 | 293 | |
| NOx Emissions (g/hr) | | 29 | 2 | | 48 | 7 | | 93 | | 19 | 57 | |
| VOC Emissions (g/hr) | | 35 | 2 | | 58 | 9 | | 111 | | 23 | 68 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 19.8 | 0.0 | | 30.9 | 0.0 | | 49.1 | | 12.0 | 36.9 | |
| Queue Length 95th (m) | | 41.9 | 3.5 | | 63.0 | 8.4 | | 72.2 | | 23.8 | 54.0 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 783 | 639 | | 808 | 753 | | 558 | | 266 | 667 | |
| 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 | | 0.34 | 0.05 | | 0.47 | 0.18 | | 0.68 | | 0.39 | 0.49 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 75 | | | |
| Actuated Cycle Length: 75 | | | |
| Offset: 63 (84%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.87 | | | |
| Intersection Signal Delay: 23.3 | | Intersection LOS: C | |
| Intersection Capacity Utilization 102.3% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3: Bayswater & Somerset

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 64 | 326 | 70 | 53 | 398 | 23 | 85 | 312 | 54 | 40 | 285 | 54 |
| Future Volume (vph) | 64 | 326 | 70 | 53 | 398 | 23 | 85 | 312 | 54 | 40 | 285 | 54 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.96 | | 0.91 | 0.99 | | 0.92 | 0.98 | | 0.94 | 0.97 | |
| Frt | | 0.973 | | | 0.992 | | | 0.978 | | | 0.976 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1463 | 0 | 1695 | 1567 | 0 | 1695 | 1464 | 0 | 1695 | 1485 | 0 |
| Flt Permitted | 0.326 | | | 0.358 | | | 0.417 | | | 0.379 | | |
| Satd. Flow (perm) | 539 | 1463 | 0 | 582 | 1567 | 0 | 683 | 1464 | 0 | 635 | 1485 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 93 | | 105 | 105 | | 93 | 89 | | 70 | 70 | | 89 |
| Confl. Bikes (#/hr) | | | 28 | | | 53 | | | 8 | | | 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 (%) | 2% | 3% | 11% | 2% | 2% | 9% | 2% | 8% | 2% | 2% | 5% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 64 | 326 | 70 | 53 | 398 | 23 | 85 | 312 | 54 | 40 | 285 | 54 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 64 | 396 | 0 | 53 | 421 | 0 | 85 | 366 | 0 | 40 | 339 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 44.3% | 44.3% | | 44.3% | 44.3% | |
| Maximum Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |

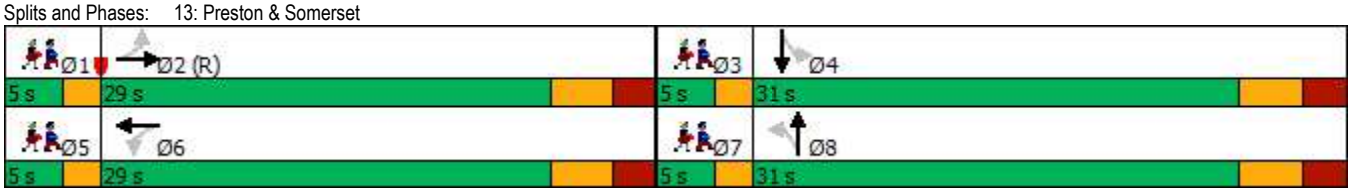
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| Lane Util. Factor | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 90 | 90 | | 75 | 75 | | 55 | 55 | | 75 | 75 | |
| Act Effct Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.8 | 21.8 | | 21.8 | 21.8 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | 0.33 | 0.33 | | 0.31 | 0.31 | | 0.31 | 0.31 | |
| v/c Ratio | 0.36 | 0.81 | | 0.27 | 0.80 | | 0.40 | 0.80 | | 0.20 | 0.74 | |
| Control Delay | 24.6 | 36.9 | | 21.8 | 35.6 | | 23.9 | 36.1 | | 19.0 | 31.2 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 24.6 | 36.9 | | 21.8 | 35.6 | | 23.9 | 36.1 | | 19.0 | 31.2 | |
| LOS | C | D | | C | D | | C | D | | B | C | |
| Approach Delay | | 35.2 | | | 34.0 | | | 33.8 | | | 29.9 | |
| Approach LOS | | D | | | C | | | C | | | C | |
| 90th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 50th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 22.7 | 22.7 | | 22.7 | 22.7 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Hold | Hold | | Ped | Ped | |
| 10th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 14.5 | 14.5 | | 14.5 | 14.5 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 51 | 332 | | 41 | 353 | | 63 | 320 | | 30 | 289 | |
| Fuel Used(l) | 5 | 35 | | 2 | 23 | | 5 | 25 | | 2 | 18 | |
| CO Emissions (g/hr) | 93 | 652 | | 43 | 434 | | 89 | 469 | | 31 | 336 | |
| NOx Emissions (g/hr) | 18 | 126 | | 8 | 84 | | 17 | 90 | | 6 | 65 | |
| VOC Emissions (g/hr) | 21 | 150 | | 10 | 100 | | 21 | 108 | | 7 | 78 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 6.2 | 46.5 | | 5.0 | 49.4 | | 8.5 | 42.6 | | 3.7 | 38.3 | |
| Queue Length 95th (m) | 16.5 | #90.2 | | 13.7 | #93.5 | | 19.2 | #69.4 | | 10.2 | 61.6 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 180 | 489 | | 194 | 523 | | 246 | 529 | | 229 | 536 | |
| 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 | 0.36 | 0.81 | | 0.27 | 0.80 | | 0.35 | 0.69 | | 0.17 | 0.63 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 32 (46%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 33.4 | | Intersection LOS: C | |
| Intersection Capacity Utilization 80.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

Splits and Phases: 13: Preston & Somerset



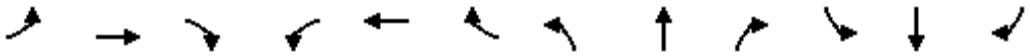
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 5.6 | 3.0 | 5.6 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 7.3 | 3.0 | 7.3 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 13.8 | 3.0 | 13.8 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 374 | 28 | 28 | 471 | 30 | 35 |
| Future Volume (Veh/h) | 374 | 28 | 28 | 471 | 30 | 35 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 374 | 28 | 28 | 471 | 30 | 35 |
| Pedestrians | 18 | | | | 100 | |
| Lane Width (m) | 3.7 | | | | 3.7 | |
| Walking Speed (m/s) | 1.2 | | | | 1.2 | |
| Percent Blockage | 2 | | | | 9 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.92 | | 0.92 | 0.92 |
| vC, conflicting volume | | | 502 | | 1033 | 488 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 420 | | 995 | 405 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 97 | | 86 | 94 |
| cM capacity (veh/h) | | | 963 | | 219 | 546 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 402 | 499 | 65 |
| Volume Left | 0 | 28 | 30 |
| Volume Right | 28 | 0 | 35 |
| cSH | 1700 | 963 | 323 |
| Volume to Capacity | 0.24 | 0.03 | 0.20 |
| Queue Length 95th (m) | 0.0 | 0.7 | 5.6 |
| Control Delay (s) | 0.0 | 0.8 | 18.9 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 0.8 | 18.9 |
| Approach LOS | | | C |

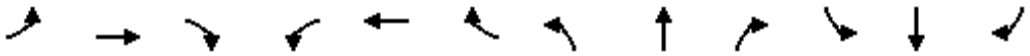
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.7 | | |
| Intersection Capacity Utilization | 61.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 27 | 1 | 15 | 53 | 37 |
| Future Volume (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 27 | 1 | 15 | 53 | 37 |
| 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 |
| Hourly flow rate (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 27 | 1 | 15 | 53 | 37 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 33 | 46 | 52 | 105 |
| Volume Left (vph) | 15 | 4 | 24 | 15 |
| Volume Right (vph) | 10 | 20 | 1 | 37 |
| Hadj (s) | -0.06 | -0.21 | 0.11 | -0.15 |
| Departure Headway (s) | 4.2 | 4.1 | 4.3 | 4.0 |
| Degree Utilization, x | 0.04 | 0.05 | 0.06 | 0.12 |
| Capacity (veh/h) | 814 | 848 | 811 | 883 |
| Control Delay (s) | 7.4 | 7.3 | 7.6 | 7.5 |
| Approach Delay (s) | 7.4 | 7.3 | 7.6 | 7.5 |
| Approach LOS | A | A | A | A |

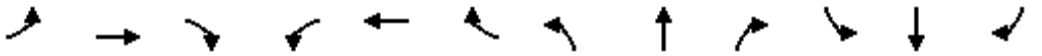
| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | | 7.5 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | | 27.9% | ICU Level of Service |
| Analysis Period (min) | | | 15 | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 20 | 228 | 4 | 6 | 569 | 29 | 3 | 0 | 1 | 32 | 0 | 27 |
| Future Volume (Veh/h) | 20 | 228 | 4 | 6 | 569 | 29 | 3 | 0 | 1 | 32 | 0 | 27 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 20 | 228 | 4 | 6 | 569 | 29 | 3 | 0 | 1 | 32 | 0 | 27 |
| Pedestrians | | 7 | | | 10 | | | 25 | | | 22 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 1 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 620 | | | 257 | | | 924 | 927 | 265 | 898 | 914 | 612 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 620 | | | 257 | | | 924 | 927 | 265 | 898 | 914 | 612 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.2 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.6 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 99 | 100 | 100 | 86 | 100 | 94 |
| cM capacity (veh/h) | 942 | | | 1280 | | | 218 | 251 | 751 | 232 | 255 | 481 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 252 | 604 | 4 | 59 |
| Volume Left | 20 | 6 | 3 | 32 |
| Volume Right | 4 | 29 | 1 | 27 |
| cSH | 942 | 1280 | 265 | 303 |
| Volume to Capacity | 0.02 | 0.00 | 0.02 | 0.19 |
| Queue Length 95th (m) | 0.5 | 0.1 | 0.3 | 5.4 |
| Control Delay (s) | 0.9 | 0.1 | 18.8 | 19.7 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.9 | 0.1 | 18.8 | 19.7 |
| Approach LOS | | | C | C |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.7 | | | |
| Intersection Capacity Utilization | 47.9% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

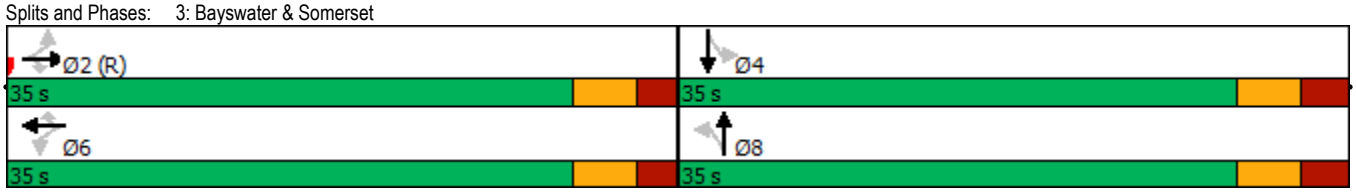


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 41 | 241 | 26 | 25 | 147 | 61 | 26 | 196 | 36 | 137 | 241 | 55 |
| Future Volume (vph) | 41 | 241 | 26 | 25 | 147 | 61 | 26 | 196 | 36 | 137 | 241 | 55 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.83 | | 0.99 | 0.88 | | 0.98 | | 0.96 | 0.99 | |
| Frt | | | 0.850 | | | 0.850 | | 0.981 | | | 0.972 | |
| Flt Protected | | 0.993 | | | 0.993 | | | 0.995 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1494 | 1517 | 0 | 1531 | 1357 | 0 | 1707 | 0 | 1662 | 1713 | 0 |
| Flt Permitted | | 0.943 | | | 0.939 | | | 0.929 | | 0.506 | | |
| Satd. Flow (perm) | 0 | 1407 | 1262 | 0 | 1432 | 1193 | 0 | 1589 | 0 | 852 | 1713 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 45 | | | 61 | | 14 | | | 20 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 51 | | 81 | 81 | | 51 | 27 | | 39 | 39 | | 27 |
| Confl. Bikes (#/hr) | | | 47 | | | 38 | | | 17 | | | 7 |
| 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 (%) | 14% | 8% | 2% | 2% | 7% | 14% | 8% | 2% | 3% | 4% | 2% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 41 | 241 | 26 | 25 | 147 | 61 | 26 | 196 | 36 | 137 | 241 | 55 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 282 | 26 | 0 | 172 | 61 | 0 | 258 | 0 | 137 | 296 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Maximum Green (s) | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 70 | 70 | 70 | 40 | 40 | 40 | 30 | 30 | | 20 | 20 | |
| Act Effct Green (s) | | 40.9 | 40.9 | | 40.9 | 40.9 | | 17.7 | | 17.7 | 17.7 | |
| Actuated g/C Ratio | | 0.58 | 0.58 | | 0.58 | 0.58 | | 0.25 | | 0.25 | 0.25 | |
| v/c Ratio | | 0.34 | 0.03 | | 0.21 | 0.08 | | 0.63 | | 0.64 | 0.66 | |
| Control Delay | | 10.6 | 1.8 | | 6.3 | 1.4 | | 27.7 | | 35.6 | 28.1 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 10.6 | 1.8 | | 6.3 | 1.4 | | 27.7 | | 35.6 | 28.1 | |
| LOS | | B | A | | A | A | | C | | D | C | |
| Approach Delay | | 9.9 | | | 5.0 | | | 27.7 | | | 30.5 | |
| Approach LOS | | A | | | A | | | C | | | C | |
| 90th %ile Green (s) | 34.1 | 34.1 | 34.1 | 34.1 | 34.1 | 34.1 | 24.5 | 24.5 | | 24.5 | 24.5 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 70th %ile Green (s) | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 23.0 | 23.0 | | 23.0 | 23.0 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Ped | Ped | | Hold | Hold | |
| 50th %ile Green (s) | 41.7 | 41.7 | 41.7 | 41.7 | 41.7 | 41.7 | 16.9 | 16.9 | | 16.9 | 16.9 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 30th %ile Green (s) | 44.5 | 44.5 | 44.5 | 44.5 | 44.5 | 44.5 | 14.1 | 14.1 | | 14.1 | 14.1 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 10th %ile Green (s) | 48.5 | 48.5 | 48.5 | 48.5 | 48.5 | 48.5 | 10.1 | 10.1 | | 10.1 | 10.1 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| Stops (vph) | | 151 | 3 | | 74 | 10 | | 204 | | 116 | 233 | |
| Fuel Used(l) | | 8 | 0 | | 4 | 1 | | 14 | | 8 | 15 | |
| CO Emissions (g/hr) | | 150 | 6 | | 80 | 17 | | 252 | | 146 | 276 | |
| NOx Emissions (g/hr) | | 29 | 1 | | 15 | 3 | | 49 | | 28 | 53 | |
| VOC Emissions (g/hr) | | 35 | 1 | | 18 | 4 | | 58 | | 34 | 64 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 16.6 | 0.0 | | 3.6 | 0.0 | | 28.8 | | 16.2 | 32.9 | |
| Queue Length 95th (m) | | 39.4 | 2.1 | | 24.2 | m1.8 | | 43.1 | | 29.2 | 48.2 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 821 | 755 | | 836 | 722 | | 668 | | 354 | 723 | |
| 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 | | 0.34 | 0.03 | | 0.21 | 0.08 | | 0.39 | | 0.39 | 0.41 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 19 (27%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.66 | | | |
| Intersection Signal Delay: 19.9 | | Intersection LOS: B | |
| Intersection Capacity Utilization 97.2% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 3: Bayswater & Somerset



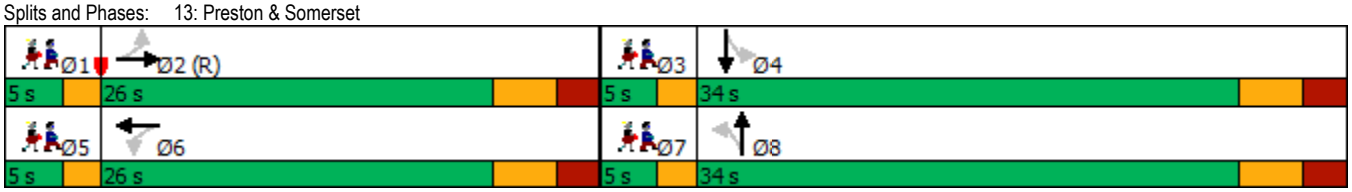
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 53 | 314 | 95 | 34 | 174 | 13 | 67 | 354 | 47 | 18 | 278 | 31 |
| Future Volume (vph) | 53 | 314 | 95 | 34 | 174 | 13 | 67 | 354 | 47 | 18 | 278 | 31 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.90 | 0.96 | | 0.96 | 0.99 | | 0.97 | 0.99 | | 0.96 | 0.99 | |
| Frt | | 0.965 | | | 0.990 | | | 0.982 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1426 | 0 | 1679 | 1489 | 0 | 1647 | 1480 | 0 | 1503 | 1458 | 0 |
| Flt Permitted | 0.635 | | | 0.292 | | | 0.476 | | | 0.354 | | |
| Satd. Flow (perm) | 1016 | 1426 | 0 | 494 | 1489 | 0 | 798 | 1480 | 0 | 538 | 1458 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 73 | | 53 | 53 | | 73 | 32 | | 48 | 48 | | 32 |
| Confl. Bikes (#/hr) | | | 66 | | | 21 | | | 10 | | | 4 |
| 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% | 5% | 9% | 3% | 8% | 2% | 5% | 8% | 2% | 15% | 9% | 17% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 53 | 314 | 95 | 34 | 174 | 13 | 67 | 354 | 47 | 18 | 278 | 31 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 53 | 409 | 0 | 34 | 187 | 0 | 67 | 401 | 0 | 18 | 309 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | 34.0 | 34.0 | | 34.0 | 34.0 | |
| Total Split (%) | 37.1% | 37.1% | | 37.1% | 37.1% | | 48.6% | 48.6% | | 48.6% | 48.6% | |
| Maximum Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |

| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 40 | 40 | | 60 | 60 | | 35 | 35 | | 25 | 25 | |
| Act Effct Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 23.4 | 23.4 | | 23.4 | 23.4 | |
| Actuated g/C Ratio | 0.29 | 0.29 | | 0.29 | 0.29 | | 0.33 | 0.33 | | 0.33 | 0.33 | |
| v/c Ratio | 0.18 | 0.99 | | 0.24 | 0.43 | | 0.25 | 0.81 | | 0.10 | 0.63 | |
| Control Delay | 20.9 | 67.5 | | 24.1 | 23.9 | | 17.7 | 34.3 | | 15.2 | 25.2 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 20.9 | 67.5 | | 24.1 | 23.9 | | 17.7 | 34.3 | | 15.2 | 25.2 | |
| LOS | C | E | | C | C | | B | C | | B | C | |
| Approach Delay | | 62.1 | | | 23.9 | | | 31.9 | | | 24.6 | |
| Approach LOS | | E | | | C | | | C | | | C | |
| 90th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 70th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 27.8 | 27.8 | | 27.8 | 27.8 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 24.3 | 24.3 | | 24.3 | 24.3 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 20.9 | 20.9 | | 20.9 | 20.9 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 15.7 | 15.7 | | 15.7 | 15.7 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 42 | 333 | | 29 | 148 | | 46 | 348 | | 13 | 245 | |
| Fuel Used(l) | 4 | 46 | | 2 | 8 | | 3 | 27 | | 1 | 15 | |
| CO Emissions (g/hr) | 74 | 849 | | 30 | 158 | | 63 | 502 | | 13 | 272 | |
| NOx Emissions (g/hr) | 14 | 164 | | 6 | 30 | | 12 | 97 | | 2 | 53 | |
| VOC Emissions (g/hr) | 17 | 196 | | 7 | 36 | | 15 | 116 | | 3 | 63 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 5.0 | 43.5 | | 3.4 | 19.7 | | 6.1 | 46.1 | | 1.6 | 32.8 | |
| Queue Length 95th (m) | 14.1 | #103.8 | | 10.6 | 36.5 | | 13.7 | 70.6 | | 5.2 | 51.3 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 296 | 415 | | 143 | 433 | | 322 | 598 | | 217 | 589 | |
| 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 | 0.18 | 0.99 | | 0.24 | 0.43 | | 0.21 | 0.67 | | 0.08 | 0.52 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 37 (53%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 70 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.99 | | | |
| Intersection Signal Delay: 38.6 | | Intersection LOS: D | |
| Intersection Capacity Utilization 83.1% | | 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. | | | |

Splits and Phases: 13: Preston & Somerset



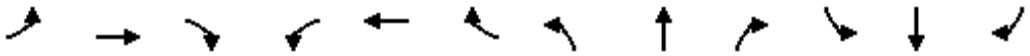
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.5 | 3.0 | 3.5 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 7.0 | 3.0 | 7.0 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 10.4 | 3.0 | 10.4 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 15.6 | 3.0 | 15.6 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 315 | 62 | 34 | 301 | 31 | 43 |
| Future Volume (Veh/h) | 315 | 62 | 34 | 301 | 31 | 43 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 315 | 62 | 34 | 301 | 31 | 43 |
| Pedestrians | | | | | 50 | |
| Lane Width (m) | | | | | 3.7 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 4 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.94 | | 0.94 | 0.94 |
| vC, conflicting volume | | | 427 | | 765 | 396 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 359 | | 719 | 327 |
| tC, single (s) | | | 4.1 | | 6.6 | 6.5 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.7 | 3.5 |
| p0 queue free % | | | 97 | | 90 | 93 |
| cM capacity (veh/h) | | | 1080 | | 317 | 595 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 377 | 335 | 74 |
| Volume Left | 0 | 34 | 31 |
| Volume Right | 62 | 0 | 43 |
| cSH | 1700 | 1080 | 435 |
| Volume to Capacity | 0.22 | 0.03 | 0.17 |
| Queue Length 95th (m) | 0.0 | 0.7 | 4.6 |
| Control Delay (s) | 0.0 | 1.1 | 15.0 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 1.1 | 15.0 |
| Approach LOS | | | B |

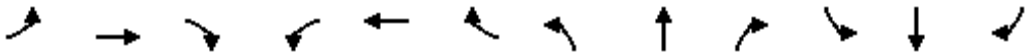
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.9 | | |
| Intersection Capacity Utilization | 55.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 53 | 10 | 34 | 34 | 19 |
| Future Volume (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 53 | 10 | 34 | 34 | 19 |
| 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 |
| Hourly flow rate (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 53 | 10 | 34 | 34 | 19 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 51 | 33 | 74 | 87 |
| Volume Left (vph) | 15 | 6 | 11 | 34 |
| Volume Right (vph) | 10 | 19 | 10 | 19 |
| Hadj (s) | -0.02 | -0.28 | -0.02 | -0.02 |
| Departure Headway (s) | 4.3 | 4.0 | 4.2 | 4.1 |
| Degree Utilization, x | 0.06 | 0.04 | 0.09 | 0.10 |
| Capacity (veh/h) | 809 | 852 | 837 | 847 |
| Control Delay (s) | 7.5 | 7.2 | 7.5 | 7.6 |
| Approach Delay (s) | 7.5 | 7.2 | 7.5 | 7.6 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | | 7.5 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | | 27.9% | ICU Level of Service |
| Analysis Period (min) | | | 15 | |

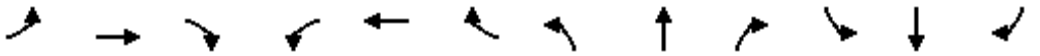


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 23 | 240 | 0 | 1 | 207 | 40 | 2 | 1 | 2 | 15 | 0 | 18 |
| Future Volume (Veh/h) | 23 | 240 | 0 | 1 | 207 | 40 | 2 | 1 | 2 | 15 | 0 | 18 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 23 | 240 | 0 | 1 | 207 | 40 | 2 | 1 | 2 | 15 | 0 | 18 |
| Pedestrians | | 8 | | | 2 | | | 25 | | | 21 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 0 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 268 | | | 265 | | | 566 | 581 | 267 | 540 | 561 | 256 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 268 | | | 265 | | | 566 | 581 | 267 | 540 | 561 | 256 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 99 | 100 | 100 | 96 | 100 | 98 |
| cM capacity (veh/h) | 1272 | | | 1271 | | | 395 | 401 | 754 | 422 | 412 | 763 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 263 | 248 | 5 | 33 |
| Volume Left | 23 | 1 | 2 | 15 |
| Volume Right | 0 | 40 | 2 | 18 |
| cSH | 1272 | 1271 | 489 | 558 |
| Volume to Capacity | 0.02 | 0.00 | 0.01 | 0.06 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.2 | 1.4 |
| Control Delay (s) | 0.8 | 0.0 | 12.4 | 11.9 |
| Lane LOS | A | A | B | B |
| Approach Delay (s) | 0.8 | 0.0 | 12.4 | 11.9 |
| Approach LOS | | | B | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.2 | | | |
| Intersection Capacity Utilization | 43.8% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

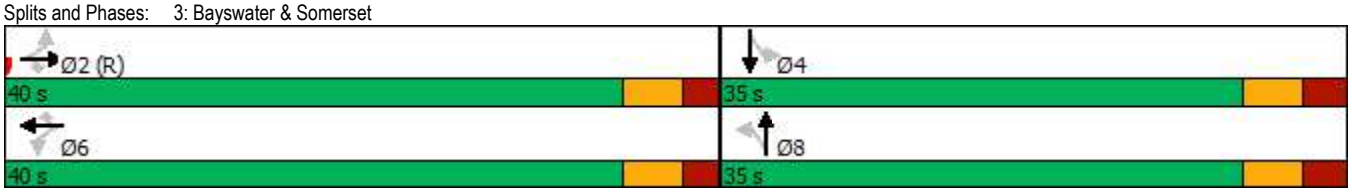
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 41 | 239 | 34 | 48 | 349 | 141 | 52 | 316 | 28 | 109 | 277 | 65 |
| Future Volume (vph) | 41 | 239 | 34 | 48 | 349 | 141 | 52 | 316 | 28 | 109 | 277 | 65 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.75 | | 0.98 | 0.83 | | 0.99 | | 0.96 | 0.98 | |
| Frt | | | 0.850 | | | 0.850 | | 0.990 | | | 0.971 | |
| Flt Protected | | 0.993 | | | 0.994 | | | 0.993 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1568 | 1517 | 0 | 1596 | 1517 | 0 | 1741 | 0 | 1679 | 1691 | 0 |
| Flt Permitted | | 0.908 | | | 0.934 | | | 0.799 | | 0.398 | | |
| Satd. Flow (perm) | 0 | 1424 | 1132 | 0 | 1475 | 1264 | 0 | 1393 | 0 | 676 | 1691 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 42 | | | 141 | | 6 | | | 18 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 64 | | 140 | 140 | | 64 | 48 | | 50 | 50 | | 48 |
| Confl. Bikes (#/hr) | | | 44 | | | 72 | | | 6 | | | 24 |
| 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% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% | 3% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 41 | 239 | 34 | 48 | 349 | 141 | 52 | 316 | 28 | 109 | 277 | 65 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 280 | 34 | 0 | 397 | 141 | 0 | 396 | 0 | 109 | 342 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 46.7% | 46.7% | | 46.7% | 46.7% | |
| Maximum Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 100 | 100 | 100 | 50 | 50 | 50 | 40 | 40 | | 30 | 30 | |
| Act Effct Green (s) | | 40.4 | 40.4 | | 40.4 | 40.4 | | 23.2 | | 23.2 | 23.2 | |
| Actuated g/C Ratio | | 0.54 | 0.54 | | 0.54 | 0.54 | | 0.31 | | 0.31 | 0.31 | |
| v/c Ratio | | 0.37 | 0.05 | | 0.50 | 0.19 | | 0.91 | | 0.52 | 0.64 | |
| Control Delay | | 13.1 | 3.5 | | 15.1 | 3.0 | | 50.3 | | 29.6 | 26.1 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 13.1 | 3.5 | | 15.1 | 3.0 | | 50.3 | | 29.6 | 26.1 | |
| LOS | | B | A | | B | A | | D | | C | C | |
| Approach Delay | | 12.0 | | | 11.9 | | | 50.3 | | | 26.9 | |
| Approach LOS | | B | | | B | | | D | | | C | |
| 90th %ile Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Max | Max | | Hold | Hold | |
| 70th %ile Green (s) | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 | 26.9 | 26.9 | | 26.9 | 26.9 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 39.7 | 39.7 | 39.7 | 39.7 | 39.7 | 39.7 | 23.9 | 23.9 | | 23.9 | 23.9 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 43.1 | 43.1 | 43.1 | 43.1 | 43.1 | 43.1 | 20.5 | 20.5 | | 20.5 | 20.5 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 48.1 | 15.5 | 15.5 | | 15.5 | 15.5 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| Stops (vph) | | 163 | 6 | | 256 | 16 | | 356 | | 87 | 264 | |
| Fuel Used(l) | | 9 | 1 | | 14 | 2 | | 29 | | 6 | 16 | |
| CO Emissions (g/hr) | | 164 | 10 | | 269 | 40 | | 534 | | 104 | 307 | |
| NOx Emissions (g/hr) | | 32 | 2 | | 52 | 8 | | 103 | | 20 | 59 | |
| VOC Emissions (g/hr) | | 38 | 2 | | 62 | 9 | | 123 | | 24 | 71 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 21.6 | 0.0 | | 33.7 | 0.0 | | 51.7 | | 12.4 | 38.4 | |
| Queue Length 95th (m) | | 44.0 | 3.7 | | 66.1 | 8.5 | | #86.2 | | 24.8 | 57.0 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 767 | 629 | | 794 | 746 | | 544 | | 262 | 667 | |
| 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 | | 0.37 | 0.05 | | 0.50 | 0.19 | | 0.73 | | 0.42 | 0.51 | |

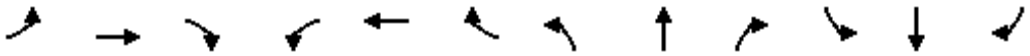
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 75 | | | |
| Actuated Cycle Length: 75 | | | |
| Offset: 63 (84%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.91 | | | |
| Intersection Signal Delay: 24.9 | | Intersection LOS: C | |
| Intersection Capacity Utilization 105.0% | | 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. | | | |

Splits and Phases: 3: Bayswater & Somerset



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 64 | 340 | 70 | 53 | 415 | 23 | 85 | 312 | 54 | 40 | 285 | 54 |
| Future Volume (vph) | 64 | 340 | 70 | 53 | 415 | 23 | 85 | 312 | 54 | 40 | 285 | 54 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.96 | | 0.91 | 0.99 | | 0.92 | 0.98 | | 0.94 | 0.97 | |
| Frt | | 0.974 | | | 0.992 | | | 0.978 | | | 0.976 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1467 | 0 | 1695 | 1568 | 0 | 1695 | 1464 | 0 | 1695 | 1485 | 0 |
| Flt Permitted | 0.304 | | | 0.340 | | | 0.417 | | | 0.379 | | |
| Satd. Flow (perm) | 504 | 1467 | 0 | 555 | 1568 | 0 | 683 | 1464 | 0 | 635 | 1485 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 93 | | 105 | 105 | | 93 | 89 | | 70 | 70 | | 89 |
| Confl. Bikes (#/hr) | | | 28 | | | 53 | | | 8 | | | 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 (%) | 2% | 3% | 11% | 2% | 2% | 9% | 2% | 8% | 2% | 2% | 5% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 64 | 340 | 70 | 53 | 415 | 23 | 85 | 312 | 54 | 40 | 285 | 54 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 64 | 410 | 0 | 53 | 438 | 0 | 85 | 366 | 0 | 40 | 339 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 44.3% | 44.3% | | 44.3% | 44.3% | |
| Maximum Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |

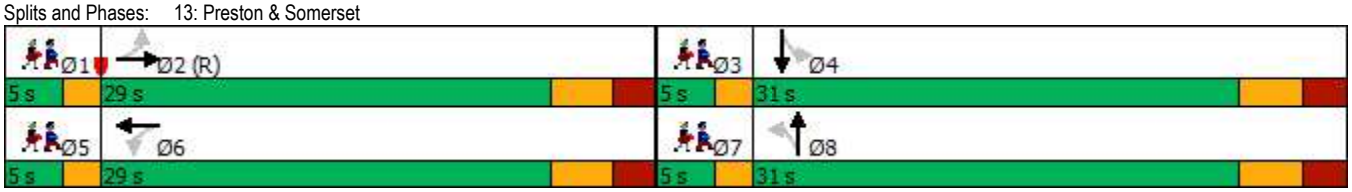
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| Lane Util. Factor | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 90 | 90 | | 75 | 75 | | 55 | 55 | | 75 | 75 | |
| Act Effct Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.8 | 21.8 | | 21.8 | 21.8 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | 0.33 | 0.33 | | 0.31 | 0.31 | | 0.31 | 0.31 | |
| v/c Ratio | 0.38 | 0.84 | | 0.29 | 0.84 | | 0.40 | 0.80 | | 0.20 | 0.74 | |
| Control Delay | 25.9 | 39.3 | | 22.3 | 38.2 | | 23.9 | 36.1 | | 19.0 | 31.2 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 25.9 | 39.3 | | 22.3 | 38.2 | | 23.9 | 36.1 | | 19.0 | 31.2 | |
| LOS | C | D | | C | D | | C | D | | B | C | |
| Approach Delay | | 37.5 | | | 36.5 | | | 33.8 | | | 29.9 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| 90th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 50th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 22.7 | 22.7 | | 22.7 | 22.7 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Hold | Hold | | Ped | Ped | |
| 10th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 14.5 | 14.5 | | 14.5 | 14.5 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 52 | 345 | | 41 | 368 | | 63 | 320 | | 30 | 289 | |
| Fuel Used(l) | 5 | 37 | | 2 | 25 | | 5 | 25 | | 2 | 18 | |
| CO Emissions (g/hr) | 95 | 690 | | 43 | 468 | | 89 | 469 | | 31 | 336 | |
| NOx Emissions (g/hr) | 18 | 133 | | 8 | 90 | | 17 | 90 | | 6 | 65 | |
| VOC Emissions (g/hr) | 22 | 159 | | 10 | 108 | | 21 | 108 | | 7 | 78 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 6.3 | 48.8 | | 5.0 | 52.1 | | 8.5 | 42.6 | | 3.7 | 38.3 | |
| Queue Length 95th (m) | 17.0 | #94.5 | | 13.9 | #99.0 | | 19.2 | #69.4 | | 10.2 | 61.6 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 168 | 490 | | 185 | 524 | | 246 | 529 | | 229 | 536 | |
| 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 | 0.38 | 0.84 | | 0.29 | 0.84 | | 0.35 | 0.69 | | 0.17 | 0.63 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 32 (46%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.84 | | | |
| Intersection Signal Delay: 34.7 | | Intersection LOS: C | |
| Intersection Capacity Utilization 81.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

Splits and Phases: 13: Preston & Somerset



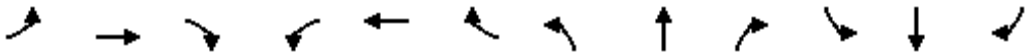
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 5.6 | 3.0 | 5.6 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 7.3 | 3.0 | 7.3 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 13.8 | 3.0 | 13.8 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 390 | 28 | 28 | 492 | 30 | 35 |
| Future Volume (Veh/h) | 390 | 28 | 28 | 492 | 30 | 35 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 390 | 28 | 28 | 492 | 30 | 35 |
| Pedestrians | 18 | | | | 100 | |
| Lane Width (m) | 3.7 | | | | 3.7 | |
| Walking Speed (m/s) | 1.2 | | | | 1.2 | |
| Percent Blockage | 2 | | | | 9 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.91 | | 0.91 | 0.91 |
| vC, conflicting volume | | | 518 | | 1070 | 504 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 427 | | 1030 | 411 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 97 | | 85 | 93 |
| cM capacity (veh/h) | | | 948 | | 207 | 536 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 418 | 520 | 65 |
| Volume Left | 0 | 28 | 30 |
| Volume Right | 28 | 0 | 35 |
| cSH | 1700 | 948 | 309 |
| Volume to Capacity | 0.25 | 0.03 | 0.21 |
| Queue Length 95th (m) | 0.0 | 0.7 | 5.9 |
| Control Delay (s) | 0.0 | 0.8 | 19.7 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 0.8 | 19.7 |
| Approach LOS | | | C |

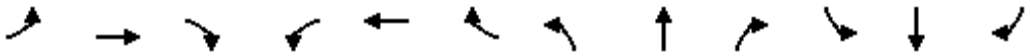
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.7 | | |
| Intersection Capacity Utilization | 62.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 27 | 1 | 15 | 53 | 37 |
| Future Volume (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 27 | 1 | 15 | 53 | 37 |
| 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 |
| Hourly flow rate (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 27 | 1 | 15 | 53 | 37 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 33 | 46 | 52 | 105 |
| Volume Left (vph) | 15 | 4 | 24 | 15 |
| Volume Right (vph) | 10 | 20 | 1 | 37 |
| Hadj (s) | -0.06 | -0.21 | 0.11 | -0.15 |
| Departure Headway (s) | 4.2 | 4.1 | 4.3 | 4.0 |
| Degree Utilization, x | 0.04 | 0.05 | 0.06 | 0.12 |
| Capacity (veh/h) | 814 | 848 | 811 | 883 |
| Control Delay (s) | 7.4 | 7.3 | 7.6 | 7.5 |
| Approach Delay (s) | 7.4 | 7.3 | 7.6 | 7.5 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | | 7.5 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | | 27.9% | ICU Level of Service |
| Analysis Period (min) | | | 15 | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 20 | 233 | 4 | 6 | 582 | 29 | 3 | 0 | 1 | 32 | 0 | 27 |
| Future Volume (Veh/h) | 20 | 233 | 4 | 6 | 582 | 29 | 3 | 0 | 1 | 32 | 0 | 27 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 20 | 233 | 4 | 6 | 582 | 29 | 3 | 0 | 1 | 32 | 0 | 27 |
| Pedestrians | | 7 | | | 10 | | | 25 | | | 22 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 1 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 633 | | | 262 | | | 942 | 945 | 270 | 916 | 932 | 626 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 633 | | | 262 | | | 942 | 945 | 270 | 916 | 932 | 626 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.2 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.6 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 99 | 100 | 100 | 86 | 100 | 94 |
| cM capacity (veh/h) | 932 | | | 1274 | | | 212 | 245 | 746 | 225 | 249 | 472 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 257 | 617 | 4 | 59 |
| Volume Left | 20 | 6 | 3 | 32 |
| Volume Right | 4 | 29 | 1 | 27 |
| cSH | 932 | 1274 | 258 | 296 |
| Volume to Capacity | 0.02 | 0.00 | 0.02 | 0.20 |
| Queue Length 95th (m) | 0.5 | 0.1 | 0.4 | 5.5 |
| Control Delay (s) | 0.9 | 0.1 | 19.2 | 20.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.9 | 0.1 | 19.2 | 20.2 |
| Approach LOS | | | C | C |

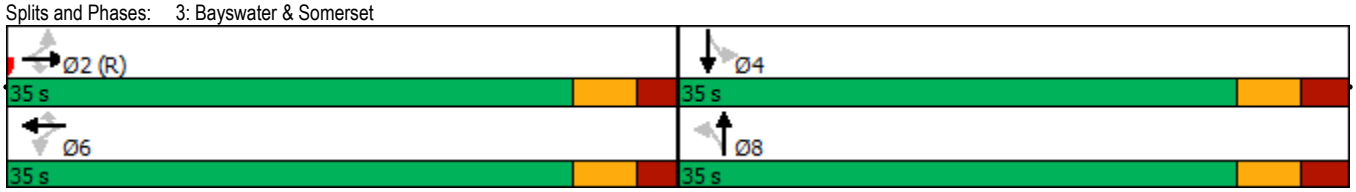
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.7 | | | |
| Intersection Capacity Utilization | 48.7% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 39 | 217 | 25 | 19 | 130 | 59 | 25 | 187 | 30 | 124 | 230 | 82 |
| Future Volume (vph) | 39 | 217 | 25 | 19 | 130 | 59 | 25 | 187 | 30 | 124 | 230 | 82 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.82 | | 0.99 | 0.87 | | 0.98 | | 0.95 | 0.98 | |
| Frt | | | 0.850 | | | 0.850 | | 0.983 | | | 0.961 | |
| Flt Protected | | 0.992 | | | 0.994 | | | 0.995 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1492 | 1517 | 0 | 1531 | 1357 | 0 | 1710 | 0 | 1662 | 1678 | 0 |
| Flt Permitted | | 0.945 | | | 0.953 | | | 0.916 | | 0.535 | | |
| Satd. Flow (perm) | 0 | 1406 | 1242 | 0 | 1451 | 1175 | 0 | 1568 | 0 | 890 | 1678 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 45 | | | 59 | | 12 | | | 31 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 61 | | 91 | 91 | | 61 | 37 | | 49 | 49 | | 37 |
| Confl. Bikes (#/hr) | | | 47 | | | 38 | | | 17 | | | 7 |
| 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 (%) | 14% | 8% | 2% | 2% | 7% | 14% | 8% | 2% | 3% | 4% | 2% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 39 | 217 | 25 | 19 | 130 | 59 | 25 | 187 | 30 | 124 | 230 | 82 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 256 | 25 | 0 | 149 | 59 | 0 | 242 | 0 | 124 | 312 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Maximum Green (s) | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 75 | 75 | 75 | 45 | 45 | 45 | 35 | 35 | | 25 | 25 | |
| Act Effct Green (s) | | 40.5 | 40.5 | | 40.5 | 40.5 | | 18.1 | | 18.1 | 18.1 | |
| Actuated g/C Ratio | | 0.58 | 0.58 | | 0.58 | 0.58 | | 0.26 | | 0.26 | 0.26 | |
| v/c Ratio | | 0.32 | 0.03 | | 0.18 | 0.08 | | 0.58 | | 0.54 | 0.68 | |
| Control Delay | | 10.6 | 1.8 | | 6.5 | 1.7 | | 26.1 | | 29.6 | 27.8 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 10.6 | 1.8 | | 6.5 | 1.7 | | 26.1 | | 29.6 | 27.8 | |
| LOS | | B | A | | A | A | | C | | C | C | |
| Approach Delay | | 9.8 | | | 5.1 | | | 26.1 | | | 28.3 | |
| Approach LOS | | A | | | A | | | C | | | C | |
| 90th %ile Green (s) | 33.1 | 33.1 | 33.1 | 33.1 | 33.1 | 33.1 | 25.5 | 25.5 | | 25.5 | 25.5 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 70th %ile Green (s) | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 23.0 | 23.0 | | 23.0 | 23.0 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Ped | Ped | | Hold | Hold | |
| 50th %ile Green (s) | 41.2 | 41.2 | 41.2 | 41.2 | 41.2 | 41.2 | 17.4 | 17.4 | | 17.4 | 17.4 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 30th %ile Green (s) | 44.1 | 44.1 | 44.1 | 44.1 | 44.1 | 44.1 | 14.5 | 14.5 | | 14.5 | 14.5 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 10th %ile Green (s) | 48.3 | 48.3 | 48.3 | 48.3 | 48.3 | 48.3 | 10.3 | 10.3 | | 10.3 | 10.3 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| Stops (vph) | | 136 | 3 | | 66 | 12 | | 188 | | 101 | 238 | |
| Fuel Used(l) | | 7 | 0 | | 4 | 1 | | 12 | | 6 | 15 | |
| CO Emissions (g/hr) | | 136 | 6 | | 70 | 18 | | 230 | | 120 | 286 | |
| NOx Emissions (g/hr) | | 26 | 1 | | 14 | 3 | | 44 | | 23 | 55 | |
| VOC Emissions (g/hr) | | 31 | 1 | | 16 | 4 | | 53 | | 28 | 66 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 15.1 | 0.0 | | 3.2 | 0.0 | | 26.6 | | 14.2 | 33.5 | |
| Queue Length 95th (m) | | 36.6 | 2.1 | | 23.9 | m3.0 | | 39.8 | | 25.2 | 48.7 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 812 | 736 | | 838 | 704 | | 658 | | 369 | 715 | |
| 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 | | 0.32 | 0.03 | | 0.18 | 0.08 | | 0.37 | | 0.34 | 0.44 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 19 (27%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.68 | | | |
| Intersection Signal Delay: 19.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization 98.0% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 3: Bayswater & Somerset



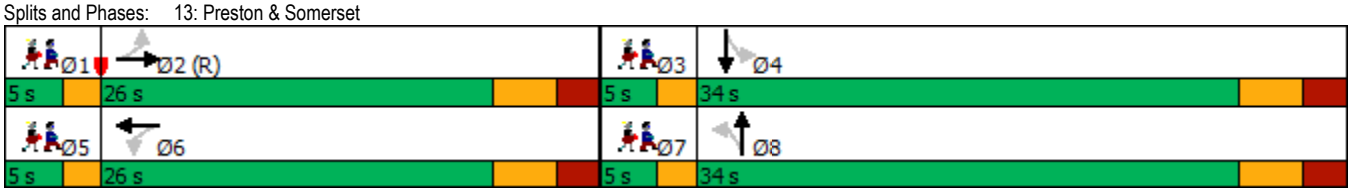
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 49 | 286 | 97 | 34 | 154 | 13 | 66 | 354 | 47 | 18 | 278 | 26 |
| Future Volume (vph) | 49 | 286 | 97 | 34 | 154 | 13 | 66 | 354 | 47 | 18 | 278 | 26 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.88 | 0.95 | | 0.95 | 0.99 | | 0.96 | 0.99 | | 0.95 | 0.99 | |
| Frt | | 0.962 | | | 0.988 | | | 0.982 | | | 0.987 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1408 | 0 | 1679 | 1482 | 0 | 1647 | 1478 | 0 | 1503 | 1462 | 0 |
| Flt Permitted | 0.651 | | | 0.330 | | | 0.482 | | | 0.354 | | |
| Satd. Flow (perm) | 1021 | 1408 | 0 | 552 | 1482 | 0 | 800 | 1478 | 0 | 534 | 1462 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 83 | | 63 | 63 | | 83 | 42 | | 58 | 58 | | 42 |
| Confl. Bikes (#/hr) | | | 66 | | | 21 | | | 10 | | | 4 |
| 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% | 5% | 9% | 3% | 8% | 2% | 5% | 8% | 2% | 15% | 9% | 17% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 49 | 286 | 97 | 34 | 154 | 13 | 66 | 354 | 47 | 18 | 278 | 26 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 49 | 383 | 0 | 34 | 167 | 0 | 66 | 401 | 0 | 18 | 304 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | 34.0 | 34.0 | | 34.0 | 34.0 | |
| Total Split (%) | 37.1% | 37.1% | | 37.1% | 37.1% | | 48.6% | 48.6% | | 48.6% | 48.6% | |
| Maximum Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |

| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 45 | 45 | | 65 | 65 | | 40 | 40 | | 30 | 30 | |
| Act Effct Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 23.4 | 23.4 | | 23.4 | 23.4 | |
| Actuated g/C Ratio | 0.29 | 0.29 | | 0.29 | 0.29 | | 0.33 | 0.33 | | 0.33 | 0.33 | |
| v/c Ratio | 0.16 | 0.93 | | 0.21 | 0.39 | | 0.25 | 0.81 | | 0.10 | 0.62 | |
| Control Delay | 21.0 | 57.0 | | 22.9 | 23.1 | | 17.6 | 34.3 | | 15.2 | 24.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 21.0 | 57.0 | | 22.9 | 23.1 | | 17.6 | 34.3 | | 15.2 | 24.7 | |
| LOS | C | E | | C | C | | B | C | | B | C | |
| Approach Delay | | 52.9 | | | 23.0 | | | 31.9 | | | 24.2 | |
| Approach LOS | | D | | | C | | | C | | | C | |
| 90th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 70th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 27.9 | 27.9 | | 27.9 | 27.9 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 24.3 | 24.3 | | 24.3 | 24.3 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 20.9 | 20.9 | | 20.9 | 20.9 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 15.7 | 15.7 | | 15.7 | 15.7 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 39 | 311 | | 29 | 130 | | 45 | 348 | | 13 | 239 | |
| Fuel Used(l) | 4 | 40 | | 2 | 7 | | 3 | 27 | | 1 | 14 | |
| CO Emissions (g/hr) | 69 | 737 | | 29 | 138 | | 62 | 502 | | 13 | 265 | |
| NOx Emissions (g/hr) | 13 | 142 | | 6 | 27 | | 12 | 97 | | 2 | 51 | |
| VOC Emissions (g/hr) | 16 | 170 | | 7 | 32 | | 14 | 116 | | 3 | 61 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 4.6 | 41.0 | | 3.3 | 17.3 | | 6.1 | 46.2 | | 1.6 | 32.2 | |
| Queue Length 95th (m) | 13.9 | #97.0 | | 10.3 | 32.8 | | 13.5 | 70.6 | | 5.2 | 50.4 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 297 | 410 | | 160 | 431 | | 323 | 597 | | 215 | 591 | |
| 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 | 0.16 | 0.93 | | 0.21 | 0.39 | | 0.20 | 0.67 | | 0.08 | 0.51 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 37 (53%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.93 | | | |
| Intersection Signal Delay: 35.3 | | Intersection LOS: D | |
| Intersection Capacity Utilization 82.0% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

Splits and Phases: 13: Preston & Somerset



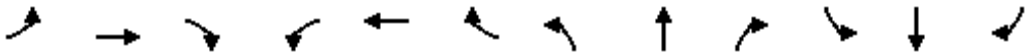
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.4 | 3.0 | 3.4 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 7.0 | 3.0 | 7.0 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 10.4 | 3.0 | 10.4 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 15.6 | 3.0 | 15.6 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 275 | 55 | 36 | 268 | 27 | 53 |
| Future Volume (Veh/h) | 275 | 55 | 36 | 268 | 27 | 53 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 275 | 55 | 36 | 268 | 27 | 53 |
| Pedestrians | | | | | 100 | |
| Lane Width (m) | | | | | 3.7 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 9 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.97 | | 0.97 | 0.97 |
| vC, conflicting volume | | | 430 | | 742 | 402 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 402 | | 722 | 373 |
| tC, single (s) | | | 4.1 | | 6.6 | 6.5 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.7 | 3.5 |
| p0 queue free % | | | 97 | | 91 | 90 |
| cM capacity (veh/h) | | | 1031 | | 311 | 553 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 330 | 304 | 80 |
| Volume Left | 0 | 36 | 27 |
| Volume Right | 55 | 0 | 53 |
| cSH | 1700 | 1031 | 438 |
| Volume to Capacity | 0.19 | 0.03 | 0.18 |
| Queue Length 95th (m) | 0.0 | 0.8 | 5.0 |
| Control Delay (s) | 0.0 | 1.3 | 15.1 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 1.3 | 15.1 |
| Approach LOS | | | C |

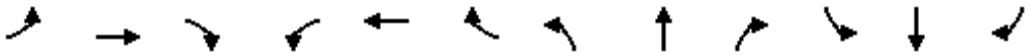
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.3 | | |
| Intersection Capacity Utilization | 51.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 54 | 10 | 34 | 37 | 19 |
| Future Volume (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 54 | 10 | 34 | 37 | 19 |
| 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 |
| Hourly flow rate (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 54 | 10 | 34 | 37 | 19 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 51 | 33 | 75 | 90 |
| Volume Left (vph) | 15 | 6 | 11 | 34 |
| Volume Right (vph) | 10 | 19 | 10 | 19 |
| Hadj (s) | -0.02 | -0.28 | -0.02 | -0.02 |
| Departure Headway (s) | 4.3 | 4.0 | 4.2 | 4.1 |
| Degree Utilization, x | 0.06 | 0.04 | 0.09 | 0.10 |
| Capacity (veh/h) | 807 | 849 | 836 | 846 |
| Control Delay (s) | 7.5 | 7.2 | 7.5 | 7.6 |
| Approach Delay (s) | 7.5 | 7.2 | 7.5 | 7.6 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | | 7.5 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | | 29.0% | ICU Level of Service |
| Analysis Period (min) | | | 15 | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 23 | 235 | 0 | 1 | 203 | 41 | 2 | 1 | 2 | 17 | 0 | 19 |
| Future Volume (Veh/h) | 23 | 235 | 0 | 1 | 203 | 41 | 2 | 1 | 2 | 17 | 0 | 19 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 23 | 235 | 0 | 1 | 203 | 41 | 2 | 1 | 2 | 17 | 0 | 19 |
| Pedestrians | | 8 | | | 2 | | | 25 | | | 21 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 0 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 265 | | | 260 | | | 558 | 573 | 262 | 532 | 552 | 252 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 265 | | | 260 | | | 558 | 573 | 262 | 532 | 552 | 252 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 99 | 100 | 100 | 96 | 100 | 98 |
| cM capacity (veh/h) | 1276 | | | 1277 | | | 399 | 405 | 759 | 428 | 416 | 767 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 258 | 245 | 5 | 36 |
| Volume Left | 23 | 1 | 2 | 17 |
| Volume Right | 0 | 41 | 2 | 19 |
| cSH | 1276 | 1277 | 494 | 558 |
| Volume to Capacity | 0.02 | 0.00 | 0.01 | 0.06 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.2 | 1.6 |
| Control Delay (s) | 0.9 | 0.0 | 12.4 | 11.9 |
| Lane LOS | A | A | B | B |
| Approach Delay (s) | 0.9 | 0.0 | 12.4 | 11.9 |
| Approach LOS | | | B | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.3 | | | |
| Intersection Capacity Utilization | 43.7% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 3 | 15 | 64 | 1 | 3 | 91 |
| Future Volume (Veh/h) | 3 | 15 | 64 | 1 | 3 | 91 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 3 | 15 | 64 | 1 | 3 | 91 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 162 | 64 | | | 65 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 162 | 64 | | | 65 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 98 | | | 100 | |
| cM capacity (veh/h) | 828 | 1000 | | | 1537 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 18 | 65 | 94 |
| Volume Left | 3 | 0 | 3 |
| Volume Right | 15 | 1 | 0 |
| cSH | 966 | 1700 | 1537 |
| Volume to Capacity | 0.02 | 0.04 | 0.00 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.0 |
| Control Delay (s) | 8.8 | 0.0 | 0.2 |
| Lane LOS | A | | A |
| Approach Delay (s) | 8.8 | 0.0 | 0.2 |
| Approach LOS | A | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 17.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 275 | 55 | 36 | 268 | 27 | 53 |
| Future Volume (vph) | 275 | 55 | 36 | 268 | 27 | 53 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 0.96 | | | 0.99 | 0.89 | |
| Frt | 0.977 | | | | 0.911 | |
| Flt Protected | | | | 0.994 | 0.983 | |
| Satd. Flow (prot) | 1471 | 0 | 0 | 1543 | 1068 | 0 |
| Flt Permitted | | | | 0.939 | 0.983 | |
| Satd. Flow (perm) | 1471 | 0 | 0 | 1438 | 1033 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 22 | | | | 53 | |
| Link Speed (k/h) | 50 | | | 50 | 40 | |
| Link Distance (m) | 108.9 | | | 435.9 | 109.2 | |
| Travel Time (s) | 7.8 | | | 31.4 | 9.8 | |
| Confl. Peds. (#/hr) | | 100 | 100 | | 50 | 50 |
| Confl. Bikes (#/hr) | | 33 | | | | 6 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles (%) | 4% | 8% | 2% | 6% | 25% | 27% |
| Parking (#/hr) | 0 | | | 0 | 0 | |
| Adj. Flow (vph) | 275 | 55 | 36 | 268 | 27 | 53 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 330 | 0 | 0 | 304 | 80 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.7 | | | 3.7 | 3.7 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.9 | | | 4.9 | 4.9 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.21 | 1.06 | 1.06 | 1.21 | 1.21 | 1.06 |
| Turning Speed (k/h) | | 14 | 24 | | 24 | 14 |
| Number of Detectors | 2 | | 1 | 2 | 1 | |
| Detector Template | Thru | | Left | Thru | Left | |
| Leading Detector (m) | 30.5 | | 6.1 | 30.5 | 6.1 | |
| Trailing Detector (m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 1.8 | | 6.1 | 1.8 | 6.1 | |
| Detector 1 Type | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 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 | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | Perm | NA | Perm | |
| Protected Phases | 2 | | | 6 | | |
| Permitted Phases | | | 6 | | 8 | |
| Detector Phase | 2 | | 6 | 6 | 8 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | |
| Minimum Split (s) | 23.3 | | 25.3 | 25.3 | 25.3 | |
| Total Split (s) | 42.0 | | 42.0 | 42.0 | 28.0 | |
| Total Split (%) | 60.0% | | 60.0% | 60.0% | 40.0% | |
| Maximum Green (s) | 36.7 | | 36.7 | 36.7 | 22.7 | |
| Yellow Time (s) | 3.3 | | 3.3 | 3.3 | 3.3 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |

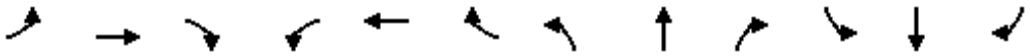
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Total Lost Time (s) | 5.3 | | | 5.3 | 5.3 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | C-Max | | C-Max | C-Max | None | |
| Walk Time (s) | 7.0 | | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | | 13.0 | 13.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 60 | | 60 | 60 | 30 | |
| Act Effct Green (s) | 50.3 | | | 50.3 | 13.2 | |
| Actuated g/C Ratio | 0.72 | | | 0.72 | 0.19 | |
| v/c Ratio | 0.31 | | | 0.29 | 0.34 | |
| Control Delay | 7.6 | | | 13.8 | 14.6 | |
| Queue Delay | 0.0 | | | 0.0 | 0.0 | |
| Total Delay | 7.6 | | | 13.8 | 14.6 | |
| LOS | A | | | B | B | |
| Approach Delay | 7.6 | | | 13.8 | 14.6 | |
| Approach LOS | A | | | B | B | |
| 90th %ile Green (s) | 41.4 | | 41.4 | 41.4 | 18.0 | |
| 90th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 70th %ile Green (s) | 41.4 | | 41.4 | 41.4 | 18.0 | |
| 70th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 50th %ile Green (s) | 49.4 | | 49.4 | 49.4 | 10.0 | |
| 50th %ile Term Code | Coord | | Coord | Coord | Min | |
| 30th %ile Green (s) | 49.4 | | 49.4 | 49.4 | 10.0 | |
| 30th %ile Term Code | Coord | | Coord | Coord | Min | |
| 10th %ile Green (s) | 64.7 | | 64.7 | 64.7 | 0.0 | |
| 10th %ile Term Code | Coord | | Coord | Coord | Skip | |
| Stops (vph) | 143 | | | 204 | 32 | |
| Fuel Used(l) | 9 | | | 20 | 2 | |
| CO Emissions (g/hr) | 159 | | | 379 | 42 | |
| NOx Emissions (g/hr) | 31 | | | 73 | 8 | |
| VOC Emissions (g/hr) | 37 | | | 87 | 10 | |
| Dilemma Vehicles (#) | 0 | | | 0 | 0 | |
| Queue Length 50th (m) | 9.4 | | | 26.7 | 3.2 | |
| Queue Length 95th (m) | 21.1 | | | 54.1 | 12.5 | |
| Internal Link Dist (m) | 84.9 | | | 411.9 | 85.2 | |
| Turn Bay Length (m) | | | | | | |
| Base Capacity (vph) | 1063 | | | 1033 | 370 | |
| Starvation Cap Reductn | 0 | | | 0 | 0 | |
| Spillback Cap Reductn | 0 | | | 0 | 0 | |
| Storage Cap Reductn | 0 | | | 0 | 0 | |
| Reduced v/c Ratio | 0.31 | | | 0.29 | 0.22 | |

**Intersection Summary**

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 30 (43%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 63.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Breezehill & Somerset

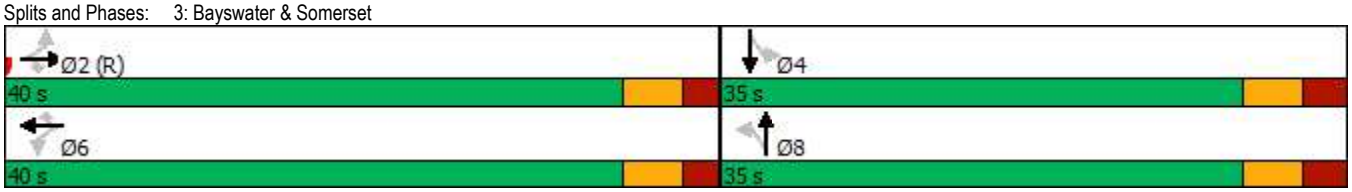
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 39 | 215 | 33 | 34 | 308 | 131 | 49 | 301 | 25 | 98 | 265 | 82 |
| Future Volume (vph) | 39 | 215 | 33 | 34 | 308 | 131 | 49 | 301 | 25 | 98 | 265 | 82 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.73 | | 0.98 | 0.82 | | 0.99 | | 0.95 | 0.97 | |
| Frt | | | 0.850 | | | 0.850 | | 0.991 | | | 0.965 | |
| Flt Protected | | 0.992 | | | 0.995 | | | 0.994 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1567 | 1517 | 0 | 1598 | 1517 | 0 | 1743 | 0 | 1679 | 1664 | 0 |
| Flt Permitted | | 0.914 | | | 0.954 | | | 0.782 | | 0.408 | | |
| Satd. Flow (perm) | 0 | 1430 | 1110 | 0 | 1508 | 1243 | 0 | 1362 | 0 | 686 | 1664 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 42 | | | 131 | | 6 | | | 24 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 74 | | 150 | 150 | | 74 | 58 | | 60 | 60 | | 58 |
| Confl. Bikes (#/hr) | | | 44 | | | 72 | | | 6 | | | 24 |
| 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% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% | 3% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 39 | 215 | 33 | 34 | 308 | 131 | 49 | 301 | 25 | 98 | 265 | 82 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 254 | 33 | 0 | 342 | 131 | 0 | 375 | 0 | 98 | 347 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 46.7% | 46.7% | | 46.7% | 46.7% | |
| Maximum Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 105 | 105 | 105 | 55 | 55 | 55 | 45 | 45 | | 35 | 35 | |
| Act Effct Green (s) | | 41.1 | 41.1 | | 41.1 | 41.1 | | 22.5 | | 22.5 | 22.5 | |
| Actuated g/C Ratio | | 0.55 | 0.55 | | 0.55 | 0.55 | | 0.30 | | 0.30 | 0.30 | |
| v/c Ratio | | 0.32 | 0.05 | | 0.41 | 0.18 | | 0.91 | | 0.48 | 0.67 | |
| Control Delay | | 12.2 | 3.4 | | 13.3 | 3.0 | | 51.2 | | 28.1 | 27.4 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 12.2 | 3.4 | | 13.3 | 3.0 | | 51.2 | | 28.1 | 27.4 | |
| LOS | | B | A | | B | A | | D | | C | C | |
| Approach Delay | | 11.2 | | | 10.4 | | | 51.2 | | | 27.6 | |
| Approach LOS | | B | | | B | | | D | | | C | |
| 90th %ile Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Max | Max | | Hold | Hold | |
| 70th %ile Green (s) | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 26.0 | 26.0 | | 26.0 | 26.0 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 40.6 | 40.6 | 40.6 | 40.6 | 40.6 | 40.6 | 23.0 | 23.0 | | 23.0 | 23.0 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Ped | Ped | | Hold | Hold | |
| 30th %ile Green (s) | 44.0 | 44.0 | 44.0 | 44.0 | 44.0 | 44.0 | 19.6 | 19.6 | | 19.6 | 19.6 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 48.9 | 48.9 | 48.9 | 48.9 | 48.9 | 48.9 | 14.7 | 14.7 | | 14.7 | 14.7 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| Stops (vph) | | 143 | 5 | | 202 | 16 | | 341 | | 76 | 269 | |
| Fuel Used(l) | | 8 | 0 | | 12 | 2 | | 27 | | 5 | 17 | |
| CO Emissions (g/hr) | | 144 | 9 | | 215 | 38 | | 511 | | 91 | 318 | |
| NOx Emissions (g/hr) | | 28 | 2 | | 42 | 7 | | 99 | | 18 | 61 | |
| VOC Emissions (g/hr) | | 33 | 2 | | 50 | 9 | | 118 | | 21 | 73 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 18.5 | 0.0 | | 26.5 | 0.0 | | 49.4 | | 11.1 | 39.2 | |
| Queue Length 95th (m) | | 39.4 | 3.5 | | 54.2 | 8.3 | | #74.6 | | 22.1 | 57.4 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 783 | 627 | | 826 | 740 | | 532 | | 266 | 660 | |
| 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 | | 0.32 | 0.05 | | 0.41 | 0.18 | | 0.70 | | 0.37 | 0.53 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 75 | | | |
| Actuated Cycle Length: 75 | | | |
| Offset: 63 (84%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.91 | | | |
| Intersection Signal Delay: 25.1 | | Intersection LOS: C | |
| Intersection Capacity Utilization 103.2% | | 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. | | | |

Splits and Phases: 3: Bayswater & Somerset



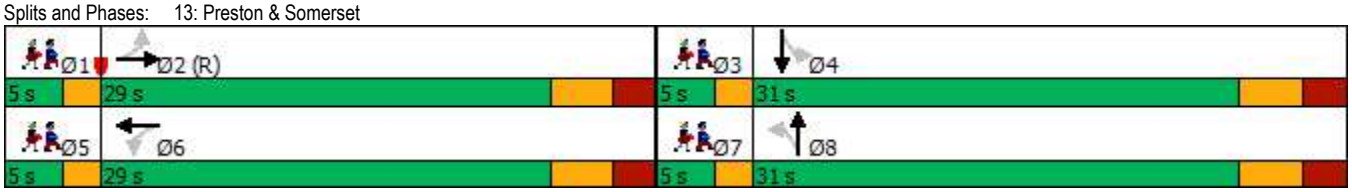
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 58 | 299 | 67 | 53 | 380 | 23 | 84 | 312 | 54 | 40 | 285 | 50 |
| Future Volume (vph) | 58 | 299 | 67 | 53 | 380 | 23 | 84 | 312 | 54 | 40 | 285 | 50 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.91 | 0.95 | | 0.89 | 0.99 | | 0.91 | 0.98 | | 0.93 | 0.97 | |
| Frt | | 0.973 | | | 0.991 | | | 0.978 | | | 0.978 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1455 | 0 | 1695 | 1562 | 0 | 1695 | 1461 | 0 | 1695 | 1487 | 0 |
| Flt Permitted | 0.349 | | | 0.397 | | | 0.422 | | | 0.379 | | |
| Satd. Flow (perm) | 569 | 1455 | 0 | 633 | 1562 | 0 | 683 | 1461 | 0 | 629 | 1487 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 103 | | 115 | 115 | | 103 | 99 | | 80 | 80 | | 99 |
| Confl. Bikes (#/hr) | | | 28 | | | 53 | | | 8 | | | 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 (%) | 2% | 3% | 11% | 2% | 2% | 9% | 2% | 8% | 2% | 2% | 5% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 58 | 299 | 67 | 53 | 380 | 23 | 84 | 312 | 54 | 40 | 285 | 50 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 58 | 366 | 0 | 53 | 403 | 0 | 84 | 366 | 0 | 40 | 335 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 44.3% | 44.3% | | 44.3% | 44.3% | |
| Maximum Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |

| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 95 | 95 | | 80 | 80 | | 60 | 60 | | 80 | 80 | |
| Act Effct Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.8 | 21.8 | | 21.8 | 21.8 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | 0.33 | 0.33 | | 0.31 | 0.31 | | 0.31 | 0.31 | |
| v/c Ratio | 0.31 | 0.75 | | 0.25 | 0.77 | | 0.40 | 0.81 | | 0.21 | 0.73 | |
| Control Delay | 22.7 | 32.8 | | 20.9 | 33.2 | | 23.7 | 36.3 | | 19.0 | 30.6 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 22.7 | 32.8 | | 20.9 | 33.2 | | 23.7 | 36.3 | | 19.0 | 30.6 | |
| LOS | C | C | | C | C | | C | D | | B | C | |
| Approach Delay | | 31.4 | | | 31.8 | | | 33.9 | | | 29.4 | |
| Approach LOS | | C | | | C | | | C | | | C | |
| 90th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 50th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 22.7 | 22.7 | | 22.7 | 22.7 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Hold | Hold | | Ped | Ped | |
| 10th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 14.6 | 14.6 | | 14.6 | 14.6 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 46 | 305 | | 39 | 339 | | 63 | 320 | | 30 | 285 | |
| Fuel Used(l) | 4 | 31 | | 2 | 22 | | 5 | 25 | | 2 | 18 | |
| CO Emissions (g/hr) | 83 | 581 | | 41 | 402 | | 88 | 469 | | 31 | 329 | |
| NOx Emissions (g/hr) | 16 | 112 | | 8 | 78 | | 17 | 91 | | 6 | 64 | |
| VOC Emissions (g/hr) | 19 | 134 | | 9 | 93 | | 20 | 108 | | 7 | 76 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 5.5 | 41.9 | | 5.0 | 46.6 | | 8.4 | 42.6 | | 3.7 | 37.7 | |
| Queue Length 95th (m) | 14.9 | #80.8 | | 13.4 | #87.8 | | 18.9 | #69.7 | | 10.2 | 60.8 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 190 | 486 | | 211 | 522 | | 246 | 528 | | 227 | 537 | |
| 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 | 0.31 | 0.75 | | 0.25 | 0.77 | | 0.34 | 0.69 | | 0.18 | 0.62 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 32 (46%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 31.7 | | Intersection LOS: C | |
| Intersection Capacity Utilization 80.0% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

Splits and Phases: 13: Preston & Somerset



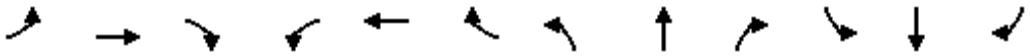
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 5.6 | 3.0 | 5.6 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 7.3 | 3.0 | 7.3 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 13.7 | 3.0 | 13.7 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 334 | 18 | 35 | 441 | 23 | 39 |
| Future Volume (Veh/h) | 334 | 18 | 35 | 441 | 23 | 39 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 334 | 18 | 35 | 441 | 23 | 39 |
| Pedestrians | 18 | | | | 140 | |
| Lane Width (m) | 3.7 | | | | 3.7 | |
| Walking Speed (m/s) | 1.2 | | | | 1.2 | |
| Percent Blockage | 2 | | | | 12 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.94 | | 0.94 | 0.94 |
| vC, conflicting volume | | | 492 | | 1012 | 483 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 424 | | 979 | 415 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 96 | | 89 | 93 |
| cM capacity (veh/h) | | | 936 | | 217 | 526 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 352 | 476 | 62 |
| Volume Left | 0 | 35 | 23 |
| Volume Right | 18 | 0 | 39 |
| cSH | 1700 | 936 | 344 |
| Volume to Capacity | 0.21 | 0.04 | 0.18 |
| Queue Length 95th (m) | 0.0 | 0.9 | 4.9 |
| Control Delay (s) | 0.0 | 1.1 | 17.8 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 1.1 | 17.8 |
| Approach LOS | | | C |

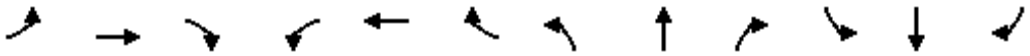
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.8 | | |
| Intersection Capacity Utilization | 60.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 29 | 1 | 15 | 54 | 37 |
| Future Volume (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 29 | 1 | 15 | 54 | 37 |
| 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 |
| Hourly flow rate (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 29 | 1 | 15 | 54 | 37 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 33 | 46 | 54 | 106 |
| Volume Left (vph) | 15 | 4 | 24 | 15 |
| Volume Right (vph) | 10 | 20 | 1 | 37 |
| Hadj (s) | -0.06 | -0.21 | 0.11 | -0.15 |
| Departure Headway (s) | 4.2 | 4.1 | 4.3 | 4.0 |
| Degree Utilization, x | 0.04 | 0.05 | 0.06 | 0.12 |
| Capacity (veh/h) | 812 | 846 | 811 | 882 |
| Control Delay (s) | 7.4 | 7.3 | 7.6 | 7.5 |
| Approach Delay (s) | 7.4 | 7.3 | 7.6 | 7.5 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | | 7.5 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | | 29.0% | ICU Level of Service |
| Analysis Period (min) | | | 15 | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 228 | 4 | 6 | 569 | 30 | 3 | 0 | 1 | 33 | 0 | 27 |
| Future Volume (Veh/h) | 21 | 228 | 4 | 6 | 569 | 30 | 3 | 0 | 1 | 33 | 0 | 27 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 21 | 228 | 4 | 6 | 569 | 30 | 3 | 0 | 1 | 33 | 0 | 27 |
| Pedestrians | | 7 | | | 10 | | | 25 | | | 22 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 1 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 621 | | | 257 | | | 927 | 930 | 265 | 901 | 917 | 613 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 621 | | | 257 | | | 927 | 930 | 265 | 901 | 917 | 613 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.2 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.6 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 99 | 100 | 100 | 86 | 100 | 94 |
| cM capacity (veh/h) | 942 | | | 1280 | | | 217 | 250 | 751 | 230 | 254 | 480 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 253 | 605 | 4 | 60 |
| Volume Left | 21 | 6 | 3 | 33 |
| Volume Right | 4 | 30 | 1 | 27 |
| cSH | 942 | 1280 | 264 | 301 |
| Volume to Capacity | 0.02 | 0.00 | 0.02 | 0.20 |
| Queue Length 95th (m) | 0.5 | 0.1 | 0.4 | 5.5 |
| Control Delay (s) | 1.0 | 0.1 | 18.9 | 19.9 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 1.0 | 0.1 | 18.9 | 19.9 |
| Approach LOS | | | C | C |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.7 | | | |
| Intersection Capacity Utilization | 47.9% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1 | 7 | 65 | 2 | 12 | 59 |
| Future Volume (Veh/h) | 1 | 7 | 65 | 2 | 12 | 59 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 1 | 7 | 65 | 2 | 12 | 59 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 149 | 66 | | | 67 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 149 | 66 | | | 67 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 99 | | | 99 | |
| cM capacity (veh/h) | 836 | 998 | | | 1535 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 8 | 67 | 71 |
| Volume Left | 1 | 0 | 12 |
| Volume Right | 7 | 2 | 0 |
| cSH | 974 | 1700 | 1535 |
| Volume to Capacity | 0.01 | 0.04 | 0.01 |
| Queue Length 95th (m) | 0.2 | 0.0 | 0.2 |
| Control Delay (s) | 8.7 | 0.0 | 1.3 |
| Lane LOS | A | | A |
| Approach Delay (s) | 8.7 | 0.0 | 1.3 |
| Approach LOS | A | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 20.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 334 | 18 | 35 | 441 | 23 | 39 |
| Future Volume (vph) | 334 | 18 | 35 | 441 | 23 | 39 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 0.98 | | | 0.99 | 0.89 | |
| Frt | 0.993 | | | | 0.915 | |
| Flt Protected | | | | 0.996 | 0.982 | |
| Satd. Flow (prot) | 1555 | 0 | 0 | 1599 | 1336 | 0 |
| Flt Permitted | | | | 0.960 | 0.982 | |
| Satd. Flow (perm) | 1555 | 0 | 0 | 1524 | 1288 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 6 | | | | 39 | |
| Link Speed (k/h) | 50 | | | 50 | 40 | |
| Link Distance (m) | 108.9 | | | 435.9 | 109.2 | |
| Travel Time (s) | 7.8 | | | 31.4 | 9.8 | |
| Confl. Peds. (#/hr) | | 140 | 140 | | 50 | 50 |
| Confl. Bikes (#/hr) | | 50 | | | | 2 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 2% |
| Parking (#/hr) | 0 | | | 0 | 0 | |
| Adj. Flow (vph) | 334 | 18 | 35 | 441 | 23 | 39 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 352 | 0 | 0 | 476 | 62 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.7 | | | 3.7 | 3.7 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.9 | | | 4.9 | 4.9 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.21 | 1.06 | 1.06 | 1.21 | 1.21 | 1.06 |
| Turning Speed (k/h) | | 14 | 24 | | 24 | 14 |
| Number of Detectors | 2 | | 1 | 2 | 1 | |
| Detector Template | Thru | | Left | Thru | Left | |
| Leading Detector (m) | 30.5 | | 6.1 | 30.5 | 6.1 | |
| Trailing Detector (m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 1.8 | | 6.1 | 1.8 | 6.1 | |
| Detector 1 Type | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 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 | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | Perm | NA | Perm | |
| Protected Phases | 2 | | | 6 | | |
| Permitted Phases | | | 6 | | 8 | |
| Detector Phase | 2 | | 6 | 6 | 8 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | |
| Minimum Split (s) | 23.5 | | 25.3 | 25.3 | 25.3 | |
| Total Split (s) | 44.7 | | 44.7 | 44.7 | 25.3 | |
| Total Split (%) | 63.9% | | 63.9% | 63.9% | 36.1% | |
| Maximum Green (s) | 39.2 | | 39.4 | 39.4 | 20.0 | |
| Yellow Time (s) | 3.5 | | 3.3 | 3.3 | 3.3 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Total Lost Time (s) | 5.5 | | | 5.3 | 5.3 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | C-Max | | C-Max | C-Max | None | |
| Walk Time (s) | 7.0 | | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | | 13.0 | 13.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 80 | | 80 | 80 | 30 | |
| Act Effct Green (s) | 54.3 | | | 54.4 | 13.2 | |
| Actuated g/C Ratio | 0.78 | | | 0.78 | 0.19 | |
| v/c Ratio | 0.29 | | | 0.40 | 0.23 | |
| Control Delay | 5.9 | | | 4.2 | 13.3 | |
| Queue Delay | 0.3 | | | 0.0 | 0.0 | |
| Total Delay | 6.2 | | | 4.2 | 13.3 | |
| LOS | A | | | A | B | |
| Approach Delay | 6.2 | | | 4.2 | 13.3 | |
| Approach LOS | A | | | A | B | |
| 90th %ile Green (s) | 41.2 | | 41.4 | 41.4 | 18.0 | |
| 90th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 70th %ile Green (s) | 41.2 | | 41.4 | 41.4 | 18.0 | |
| 70th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 50th %ile Green (s) | 49.2 | | 49.4 | 49.4 | 10.0 | |
| 50th %ile Term Code | Coord | | Coord | Coord | Min | |
| 30th %ile Green (s) | 64.5 | | 64.7 | 64.7 | 0.0 | |
| 30th %ile Term Code | Coord | | Coord | Coord | Skip | |
| 10th %ile Green (s) | 64.5 | | 64.7 | 64.7 | 0.0 | |
| 10th %ile Term Code | Coord | | Coord | Coord | Skip | |
| Stops (vph) | 123 | | | 201 | 27 | |
| Fuel Used(l) | 8 | | | 26 | 2 | |
| CO Emissions (g/hr) | 149 | | | 479 | 32 | |
| NOx Emissions (g/hr) | 29 | | | 92 | 6 | |
| VOC Emissions (g/hr) | 34 | | | 110 | 7 | |
| Dilemma Vehicles (#) | 0 | | | 0 | 0 | |
| Queue Length 50th (m) | 13.9 | | | 6.6 | 2.7 | |
| Queue Length 95th (m) | 36.6 | | | m15.4 | 10.7 | |
| Internal Link Dist (m) | 84.9 | | | 411.9 | 85.2 | |
| Turn Bay Length (m) | | | | | | |
| Base Capacity (vph) | 1208 | | | 1185 | 395 | |
| Starvation Cap Reductn | 349 | | | 0 | 0 | |
| Spillback Cap Reductn | 0 | | | 0 | 0 | |
| Storage Cap Reductn | 0 | | | 0 | 0 | |
| Reduced v/c Ratio | 0.41 | | | 0.40 | 0.16 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 26 (37%), Referenced to phase 2:EBT and 6:WBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.40 | | | |
| Intersection Signal Delay: 5.6 | | Intersection LOS: A | |
| Intersection Capacity Utilization 73.8% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

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

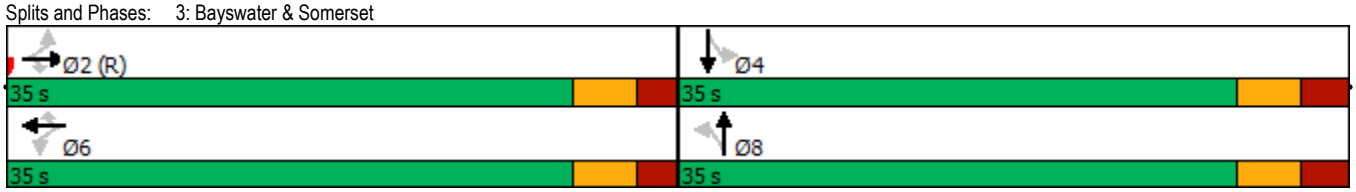
Splits and Phases: 1: Breezehill & Somerset

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 41 | 242 | 26 | 27 | 149 | 64 | 26 | 196 | 36 | 137 | 241 | 84 |
| Future Volume (vph) | 41 | 242 | 26 | 27 | 149 | 64 | 26 | 196 | 36 | 137 | 241 | 84 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.82 | | 0.99 | 0.87 | | 0.98 | | 0.95 | 0.98 | |
| Frt | | | 0.850 | | | 0.850 | | 0.981 | | | 0.961 | |
| Flt Protected | | 0.993 | | | 0.992 | | | 0.995 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1494 | 1517 | 0 | 1530 | 1357 | 0 | 1703 | 0 | 1662 | 1679 | 0 |
| Flt Permitted | | 0.942 | | | 0.934 | | | 0.902 | | 0.517 | | |
| Satd. Flow (perm) | 0 | 1404 | 1242 | 0 | 1422 | 1175 | 0 | 1539 | 0 | 861 | 1679 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 45 | | | 64 | | 14 | | | 31 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 61 | | 91 | 91 | | 61 | 37 | | 49 | 49 | | 37 |
| Confl. Bikes (#/hr) | | | 47 | | | 38 | | | 17 | | | 7 |
| 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 (%) | 14% | 8% | 2% | 2% | 7% | 14% | 8% | 2% | 3% | 4% | 2% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 41 | 242 | 26 | 27 | 149 | 64 | 26 | 196 | 36 | 137 | 241 | 84 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 283 | 26 | 0 | 176 | 64 | 0 | 258 | 0 | 137 | 325 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Maximum Green (s) | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 75 | 75 | 75 | 45 | 45 | 45 | 35 | 35 | | 25 | 25 | |
| Act Effct Green (s) | | 40.0 | 40.0 | | 40.0 | 40.0 | | 18.6 | | 18.6 | 18.6 | |
| Actuated g/C Ratio | | 0.57 | 0.57 | | 0.57 | 0.57 | | 0.27 | | 0.27 | 0.27 | |
| v/c Ratio | | 0.35 | 0.04 | | 0.22 | 0.09 | | 0.62 | | 0.60 | 0.70 | |
| Control Delay | | 11.3 | 2.0 | | 7.0 | 1.7 | | 26.8 | | 32.4 | 28.1 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 11.3 | 2.0 | | 7.0 | 1.7 | | 26.8 | | 32.4 | 28.1 | |
| LOS | | B | A | | A | A | | C | | C | C | |
| Approach Delay | | 10.5 | | | 5.6 | | | 26.8 | | | 29.3 | |
| Approach LOS | | B | | | A | | | C | | | C | |
| 90th %ile Green (s) | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 26.1 | 26.1 | | 26.1 | 26.1 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 70th %ile Green (s) | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 23.0 | 23.0 | | 23.0 | 23.0 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Ped | Ped | | Hold | Hold | |
| 50th %ile Green (s) | 40.6 | 40.6 | 40.6 | 40.6 | 40.6 | 40.6 | 18.0 | 18.0 | | 18.0 | 18.0 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 30th %ile Green (s) | 43.6 | 43.6 | 43.6 | 43.6 | 43.6 | 43.6 | 15.0 | 15.0 | | 15.0 | 15.0 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 10th %ile Green (s) | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 10.7 | 10.7 | | 10.7 | 10.7 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| Stops (vph) | | 157 | 3 | | 81 | 12 | | 200 | | 114 | 249 | |
| Fuel Used(l) | | 8 | 0 | | 5 | 1 | | 13 | | 7 | 16 | |
| CO Emissions (g/hr) | | 156 | 6 | | 85 | 19 | | 247 | | 139 | 300 | |
| NOx Emissions (g/hr) | | 30 | 1 | | 16 | 4 | | 48 | | 27 | 58 | |
| VOC Emissions (g/hr) | | 36 | 1 | | 20 | 4 | | 57 | | 32 | 69 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 17.6 | 0.0 | | 3.9 | 0.0 | | 28.3 | | 15.8 | 34.9 | |
| Queue Length 95th (m) | | 41.7 | 2.2 | | 29.7 | m3.2 | | 41.8 | | 27.9 | 50.4 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 803 | 729 | | 813 | 699 | | 647 | | 357 | 716 | |
| 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 | | 0.35 | 0.04 | | 0.22 | 0.09 | | 0.40 | | 0.38 | 0.45 | |

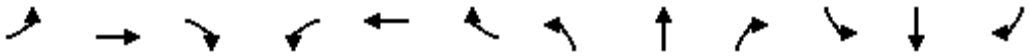
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 19 (27%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.70 | | | |
| Intersection Signal Delay: 19.7 | | Intersection LOS: B | |
| Intersection Capacity Utilization 98.7% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 3: Bayswater & Somerset



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 56 | 319 | 99 | 34 | 176 | 13 | 68 | 354 | 47 | 18 | 278 | 31 |
| Future Volume (vph) | 56 | 319 | 99 | 34 | 176 | 13 | 68 | 354 | 47 | 18 | 278 | 31 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.88 | 0.95 | | 0.95 | 0.99 | | 0.96 | 0.99 | | 0.95 | 0.99 | |
| Frt | | 0.964 | | | 0.990 | | | 0.982 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1417 | 0 | 1679 | 1487 | 0 | 1647 | 1478 | 0 | 1503 | 1456 | 0 |
| Flt Permitted | 0.632 | | | 0.279 | | | 0.476 | | | 0.354 | | |
| Satd. Flow (perm) | 996 | 1417 | 0 | 469 | 1487 | 0 | 790 | 1478 | 0 | 534 | 1456 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 83 | | 63 | 63 | | 83 | 42 | | 58 | 58 | | 42 |
| Confl. Bikes (#/hr) | | | 66 | | | 21 | | | 10 | | | 4 |
| 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% | 5% | 9% | 3% | 8% | 2% | 5% | 8% | 2% | 15% | 9% | 17% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 56 | 319 | 99 | 34 | 176 | 13 | 68 | 354 | 47 | 18 | 278 | 31 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 56 | 418 | 0 | 34 | 189 | 0 | 68 | 401 | 0 | 18 | 309 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | 34.0 | 34.0 | | 34.0 | 34.0 | |
| Total Split (%) | 37.1% | 37.1% | | 37.1% | 37.1% | | 48.6% | 48.6% | | 48.6% | 48.6% | |
| Maximum Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |

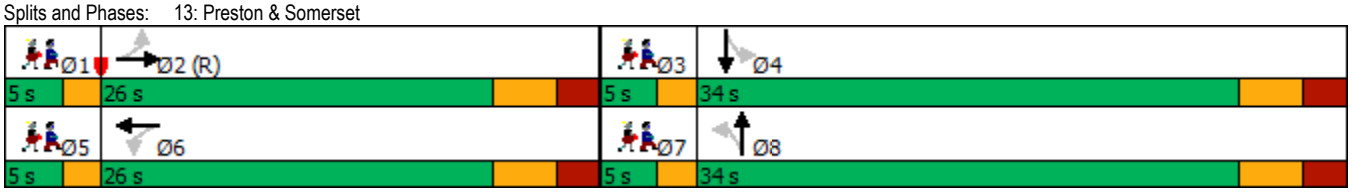
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| Lane Util. Factor | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 45 | 45 | | 65 | 65 | | 40 | 40 | | 30 | 30 | |
| Act Effct Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 23.4 | 23.4 | | 23.4 | 23.4 | |
| Actuated g/C Ratio | 0.29 | 0.29 | | 0.29 | 0.29 | | 0.33 | 0.33 | | 0.33 | 0.33 | |
| v/c Ratio | 0.19 | 1.01 | | 0.25 | 0.44 | | 0.26 | 0.81 | | 0.10 | 0.63 | |
| Control Delay | 21.7 | 75.2 | | 24.8 | 24.0 | | 17.9 | 34.3 | | 15.2 | 25.2 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 21.7 | 75.2 | | 24.8 | 24.0 | | 17.9 | 34.3 | | 15.2 | 25.2 | |
| LOS | C | E | | C | C | | B | C | | B | C | |
| Approach Delay | | 68.9 | | | 24.1 | | | 31.9 | | | 24.6 | |
| Approach LOS | | E | | | C | | | C | | | C | |
| 90th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 70th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 27.9 | 27.9 | | 27.9 | 27.9 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 24.3 | 24.3 | | 24.3 | 24.3 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 20.9 | 20.9 | | 20.9 | 20.9 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 15.7 | 15.7 | | 15.7 | 15.7 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 45 | 337 | | 29 | 149 | | 46 | 348 | | 13 | 245 | |
| Fuel Used(l) | 4 | 49 | | 2 | 9 | | 3 | 27 | | 1 | 15 | |
| CO Emissions (g/hr) | 79 | 912 | | 30 | 159 | | 64 | 502 | | 13 | 272 | |
| NOx Emissions (g/hr) | 15 | 176 | | 6 | 31 | | 12 | 97 | | 2 | 53 | |
| VOC Emissions (g/hr) | 18 | 210 | | 7 | 37 | | 15 | 116 | | 3 | 63 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 5.3 | ~45.7 | | 3.4 | 19.9 | | 6.2 | 46.2 | | 1.6 | 32.9 | |
| Queue Length 95th (m) | 15.7 | #109.0 | | 10.7 | 36.9 | | 13.8 | 70.6 | | 5.2 | 51.4 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 290 | 412 | | 136 | 433 | | 319 | 597 | | 215 | 588 | |
| 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 | 0.19 | 1.01 | | 0.25 | 0.44 | | 0.21 | 0.67 | | 0.08 | 0.53 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 37 (53%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 70 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.01 | | | |
| Intersection Signal Delay: 40.9 | | Intersection LOS: D | |
| Intersection Capacity Utilization 83.9% | | ICU Level of Service E | |
| 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: 13: Preston & Somerset



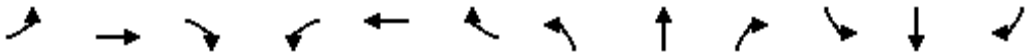
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.4 | 3.0 | 3.4 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 7.0 | 3.0 | 7.0 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 10.4 | 3.0 | 10.4 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 15.6 | 3.0 | 15.6 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 317 | 63 | 36 | 302 | 37 | 53 |
| Future Volume (Veh/h) | 317 | 63 | 36 | 302 | 37 | 53 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 317 | 63 | 36 | 302 | 37 | 53 |
| Pedestrians | | | | | 100 | |
| Lane Width (m) | | | | | 3.7 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 9 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.94 | | 0.94 | 0.94 |
| vC, conflicting volume | | | 480 | | 822 | 448 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 410 | | 776 | 377 |
| tC, single (s) | | | 4.1 | | 6.6 | 6.5 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.7 | 3.5 |
| p0 queue free % | | | 96 | | 87 | 90 |
| cM capacity (veh/h) | | | 983 | | 276 | 529 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 380 | 338 | 90 |
| Volume Left | 0 | 36 | 37 |
| Volume Right | 63 | 0 | 53 |
| cSH | 1700 | 983 | 384 |
| Volume to Capacity | 0.22 | 0.04 | 0.23 |
| Queue Length 95th (m) | 0.0 | 0.9 | 6.8 |
| Control Delay (s) | 0.0 | 1.3 | 17.2 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 1.3 | 17.2 |
| Approach LOS | | | C |

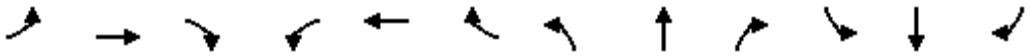
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 57.1% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 54 | 10 | 34 | 37 | 19 |
| Future Volume (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 54 | 10 | 34 | 37 | 19 |
| 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 |
| Hourly flow rate (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 54 | 10 | 34 | 37 | 19 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 51 | 33 | 75 | 90 |
| Volume Left (vph) | 15 | 6 | 11 | 34 |
| Volume Right (vph) | 10 | 19 | 10 | 19 |
| Hadj (s) | -0.02 | -0.28 | -0.02 | -0.02 |
| Departure Headway (s) | 4.3 | 4.0 | 4.2 | 4.1 |
| Degree Utilization, x | 0.06 | 0.04 | 0.09 | 0.10 |
| Capacity (veh/h) | 807 | 849 | 836 | 846 |
| Control Delay (s) | 7.5 | 7.2 | 7.5 | 7.6 |
| Approach Delay (s) | 7.5 | 7.2 | 7.5 | 7.6 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | | 7.5 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | | 29.0% | ICU Level of Service |
| Analysis Period (min) | | | 15 | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 23 | 240 | 0 | 1 | 207 | 41 | 2 | 1 | 2 | 17 | 0 | 19 |
| Future Volume (Veh/h) | 23 | 240 | 0 | 1 | 207 | 41 | 2 | 1 | 2 | 17 | 0 | 19 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 23 | 240 | 0 | 1 | 207 | 41 | 2 | 1 | 2 | 17 | 0 | 19 |
| Pedestrians | | 8 | | | 2 | | | 25 | | | 21 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 0 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 269 | | | 265 | | | 568 | 582 | 267 | 541 | 562 | 256 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 269 | | | 265 | | | 568 | 582 | 267 | 541 | 562 | 256 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 99 | 100 | 100 | 96 | 100 | 98 |
| cM capacity (veh/h) | 1271 | | | 1271 | | | 393 | 400 | 754 | 422 | 411 | 763 |

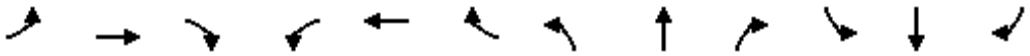
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 263 | 249 | 5 | 36 |
| Volume Left | 23 | 1 | 2 | 17 |
| Volume Right | 0 | 41 | 2 | 19 |
| cSH | 1271 | 1271 | 488 | 552 |
| Volume to Capacity | 0.02 | 0.00 | 0.01 | 0.07 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.2 | 1.6 |
| Control Delay (s) | 0.8 | 0.0 | 12.4 | 12.0 |
| Lane LOS | A | A | B | B |
| Approach Delay (s) | 0.8 | 0.0 | 12.4 | 12.0 |
| Approach LOS | | | B | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.3 | | | |
| Intersection Capacity Utilization | 44.0% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 3 | 15 | 74 | 1 | 3 | 99 |
| Future Volume (Veh/h) | 3 | 15 | 74 | 1 | 3 | 99 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 3 | 15 | 74 | 1 | 3 | 99 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 180 | 74 | | | 75 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 180 | 74 | | | 75 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 98 | | | 100 | |
| cM capacity (veh/h) | 808 | 987 | | | 1524 | |

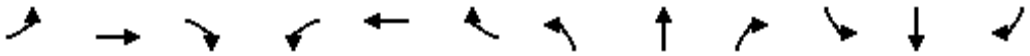
| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 18 | 75 | 102 |
| Volume Left | 3 | 0 | 3 |
| Volume Right | 15 | 1 | 0 |
| cSH | 952 | 1700 | 1524 |
| Volume to Capacity | 0.02 | 0.04 | 0.00 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.0 |
| Control Delay (s) | 8.9 | 0.0 | 0.2 |
| Lane LOS | A | | A |
| Approach Delay (s) | 8.9 | 0.0 | 0.2 |
| Approach LOS | A | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.9 | | |
| Intersection Capacity Utilization | 18.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 56 | 319 | 99 | 34 | 176 | 13 | 68 | 354 | 47 | 18 | 278 | 31 |
| Future Volume (vph) | 56 | 319 | 99 | 34 | 176 | 13 | 68 | 354 | 47 | 18 | 278 | 31 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.88 | 0.95 | | 0.95 | 0.99 | | 0.96 | 0.99 | | 0.95 | 0.99 | |
| Frt | | 0.964 | | | 0.990 | | | 0.982 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1422 | 0 | 1679 | 1488 | 0 | 1647 | 1477 | 0 | 1503 | 1456 | 0 |
| Flt Permitted | 0.639 | | | 0.357 | | | 0.458 | | | 0.327 | | |
| Satd. Flow (perm) | 1006 | 1422 | 0 | 598 | 1488 | 0 | 761 | 1477 | 0 | 494 | 1456 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 83 | | 63 | 63 | | 83 | 42 | | 58 | 58 | | 42 |
| Confl. Bikes (#/hr) | | | 66 | | | 21 | | | 10 | | | 4 |
| 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% | 5% | 9% | 3% | 8% | 2% | 5% | 8% | 2% | 15% | 9% | 17% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 56 | 319 | 99 | 34 | 176 | 13 | 68 | 354 | 47 | 18 | 278 | 31 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 56 | 418 | 0 | 34 | 189 | 0 | 68 | 401 | 0 | 18 | 309 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 31.0 | 31.0 | | 31.0 | 31.0 | | 29.0 | 29.0 | | 29.0 | 29.0 | |
| Total Split (%) | 44.3% | 44.3% | | 44.3% | 44.3% | | 41.4% | 41.4% | | 41.4% | 41.4% | |
| Maximum Green (s) | 25.4 | 25.4 | | 25.4 | 25.4 | | 23.3 | 23.3 | | 23.3 | 23.3 | |

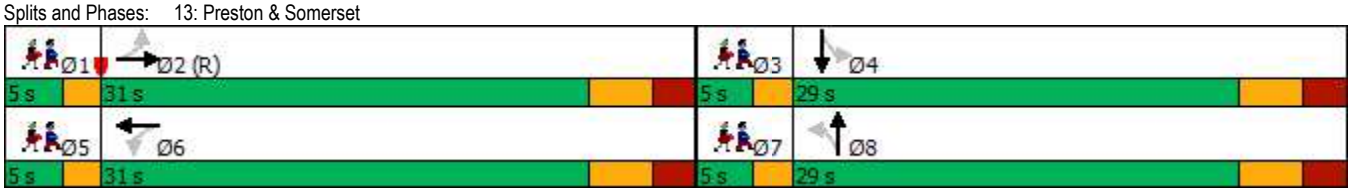
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| Lane Util. Factor | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 45 | 45 | | 65 | 65 | | 40 | 40 | | 30 | 30 | |
| Act Effct Green (s) | 25.4 | 25.4 | | 25.4 | 25.4 | | 21.6 | 21.6 | | 21.6 | 21.6 | |
| Actuated g/C Ratio | 0.36 | 0.36 | | 0.36 | 0.36 | | 0.31 | 0.31 | | 0.31 | 0.31 | |
| v/c Ratio | 0.15 | 0.81 | | 0.16 | 0.35 | | 0.29 | 0.88 | | 0.12 | 0.69 | |
| Control Delay | 15.2 | 32.8 | | 17.5 | 18.6 | | 21.3 | 45.1 | | 18.7 | 29.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 15.2 | 32.8 | | 17.5 | 18.6 | | 21.3 | 45.1 | | 18.7 | 29.7 | |
| LOS | B | C | | B | B | | C | D | | B | C | |
| Approach Delay | | 30.7 | | | 18.4 | | | 41.7 | | | 29.1 | |
| Approach LOS | | C | | | B | | | D | | | C | |
| 90th %ile Green (s) | 25.4 | 25.4 | | 25.4 | 25.4 | | 23.3 | 23.3 | | 23.3 | 23.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 25.4 | 25.4 | | 25.4 | 25.4 | | 23.3 | 23.3 | | 23.3 | 23.3 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 50th %ile Green (s) | 25.4 | 25.4 | | 25.4 | 25.4 | | 23.3 | 23.3 | | 23.3 | 23.3 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 30th %ile Green (s) | 25.4 | 25.4 | | 25.4 | 25.4 | | 21.6 | 21.6 | | 21.6 | 21.6 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 25.4 | 25.4 | | 25.4 | 25.4 | | 16.7 | 16.7 | | 16.7 | 16.7 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 37 | 330 | | 24 | 134 | | 50 | 345 | | 15 | 263 | |
| Fuel Used(l) | 4 | 35 | | 1 | 7 | | 4 | 30 | | 1 | 16 | |
| CO Emissions (g/hr) | 71 | 656 | | 24 | 139 | | 69 | 563 | | 14 | 299 | |
| NOx Emissions (g/hr) | 14 | 127 | | 5 | 27 | | 13 | 109 | | 3 | 58 | |
| VOC Emissions (g/hr) | 16 | 151 | | 6 | 32 | | 16 | 130 | | 3 | 69 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 4.9 | 41.3 | | 2.9 | 17.7 | | 6.4 | 47.4 | | 1.6 | 33.7 | |
| Queue Length 95th (m) | 12.4 | #91.3 | | 9.0 | 32.7 | | 15.9 | #91.3 | | 6.0 | 58.5 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 365 | 515 | | 216 | 539 | | 253 | 491 | | 164 | 484 | |
| 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 | 0.15 | 0.81 | | 0.16 | 0.35 | | 0.27 | 0.82 | | 0.11 | 0.64 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 37 (53%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 70 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.88 | | | |
| Intersection Signal Delay: 32.0 | | Intersection LOS: C | |
| Intersection Capacity Utilization 83.9% | | 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. | | | |

Splits and Phases: 13: Preston & Somerset



| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 4.7 | 3.0 | 4.7 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 9.6 | 3.0 | 9.6 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 | | | | |

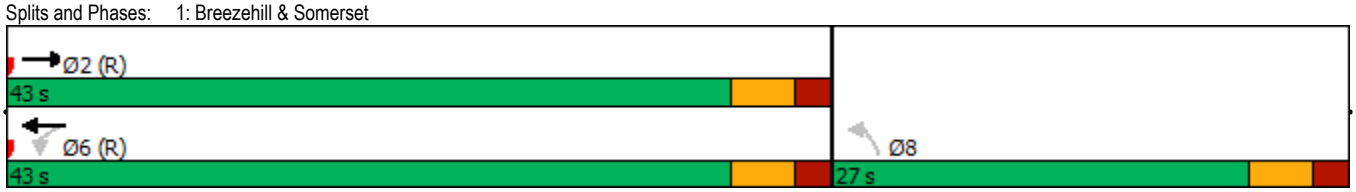
| Intersection Summary |
|---|

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 317 | 63 | 36 | 302 | 37 | 53 |
| Future Volume (vph) | 317 | 63 | 36 | 302 | 37 | 53 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | | 0.0 | 15.0 | | 0.0 | 0.0 |
| Storage Lanes | | 0 | 0 | | 1 | 0 |
| Taper Length (m) | | | 45.0 | | 30.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 0.96 | | | 0.99 | 0.89 | |
| Frt | 0.978 | | | | 0.920 | |
| Flt Protected | | | | 0.995 | 0.980 | |
| Satd. Flow (prot) | 1473 | 0 | 0 | 1544 | 1087 | 0 |
| Flt Permitted | | | | 0.939 | 0.980 | |
| Satd. Flow (perm) | 1473 | 0 | 0 | 1441 | 1043 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 22 | | | | 53 | |
| Link Speed (k/h) | 50 | | | 50 | 40 | |
| Link Distance (m) | 108.9 | | | 435.9 | 109.2 | |
| Travel Time (s) | 7.8 | | | 31.4 | 9.8 | |
| Confl. Peds. (#/hr) | | 100 | 100 | | 50 | 50 |
| Confl. Bikes (#/hr) | | 33 | | | | 6 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles (%) | 4% | 8% | 2% | 6% | 25% | 27% |
| Parking (#/hr) | 0 | | | 0 | 0 | |
| Adj. Flow (vph) | 317 | 63 | 36 | 302 | 37 | 53 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 380 | 0 | 0 | 338 | 90 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.7 | | | 3.7 | 3.7 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.9 | | | 4.9 | 4.9 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.21 | 1.06 | 1.06 | 1.21 | 1.21 | 1.06 |
| Turning Speed (k/h) | | 14 | 24 | | 24 | 14 |
| Number of Detectors | 2 | | 1 | 2 | 1 | |
| Detector Template | Thru | | Left | Thru | Left | |
| Leading Detector (m) | 30.5 | | 6.1 | 30.5 | 6.1 | |
| Trailing Detector (m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 1.8 | | 6.1 | 1.8 | 6.1 | |
| Detector 1 Type | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 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 | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | Perm | NA | Perm | |
| Protected Phases | 2 | | | 6 | | |
| Permitted Phases | | | 6 | | 8 | |
| Detector Phase | 2 | | 6 | 6 | 8 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | |
| Minimum Split (s) | 23.3 | | 25.3 | 25.3 | 25.3 | |
| Total Split (s) | 43.0 | | 43.0 | 43.0 | 27.0 | |
| Total Split (%) | 61.4% | | 61.4% | 61.4% | 38.6% | |
| Maximum Green (s) | 37.7 | | 37.7 | 37.7 | 21.7 | |

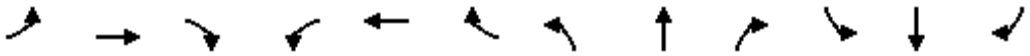
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | | 3.3 | 3.3 | 3.3 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.3 | | | 5.3 | 5.3 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | C-Max | | C-Max | C-Max | None | |
| Walk Time (s) | 7.0 | | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | | 13.0 | 13.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 60 | | 60 | 60 | 30 | |
| Act Effct Green (s) | 50.3 | | | 50.3 | 13.2 | |
| Actuated g/C Ratio | 0.72 | | | 0.72 | 0.19 | |
| v/c Ratio | 0.36 | | | 0.33 | 0.38 | |
| Control Delay | 8.2 | | | 14.5 | 16.2 | |
| Queue Delay | 0.3 | | | 0.0 | 0.0 | |
| Total Delay | 8.5 | | | 14.5 | 16.2 | |
| LOS | A | | | B | B | |
| Approach Delay | 8.5 | | | 14.5 | 16.2 | |
| Approach LOS | A | | | B | B | |
| 90th %ile Green (s) | 41.4 | | 41.4 | 41.4 | 18.0 | |
| 90th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 70th %ile Green (s) | 41.4 | | 41.4 | 41.4 | 18.0 | |
| 70th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 50th %ile Green (s) | 49.4 | | 49.4 | 49.4 | 10.0 | |
| 50th %ile Term Code | Coord | | Coord | Coord | Min | |
| 30th %ile Green (s) | 49.4 | | 49.4 | 49.4 | 10.0 | |
| 30th %ile Term Code | Coord | | Coord | Coord | Min | |
| 10th %ile Green (s) | 64.7 | | 64.7 | 64.7 | 0.0 | |
| 10th %ile Term Code | Coord | | Coord | Coord | Skip | |
| Stops (vph) | 185 | | | 229 | 37 | |
| Fuel Used(l) | 10 | | | 23 | 3 | |
| CO Emissions (g/hr) | 195 | | | 426 | 50 | |
| NOx Emissions (g/hr) | 38 | | | 82 | 10 | |
| VOC Emissions (g/hr) | 45 | | | 98 | 12 | |
| Dilemma Vehicles (#) | 0 | | | 0 | 0 | |
| Queue Length 50th (m) | 19.9 | | | 29.2 | 4.4 | |
| Queue Length 95th (m) | 22.8 | | | 61.6 | 14.4 | |
| Internal Link Dist (m) | 84.9 | | | 411.9 | 85.2 | |
| Turn Bay Length (m) | | | | | | |
| Base Capacity (vph) | 1065 | | | 1035 | 359 | |
| Starvation Cap Reductn | 251 | | | 0 | 0 | |
| Spillback Cap Reductn | 0 | | | 0 | 0 | |
| Storage Cap Reductn | 0 | | | 0 | 0 | |
| Reduced v/c Ratio | 0.47 | | | 0.33 | 0.25 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 30 (43%), Referenced to phase 2:EBT and 6:WBTL, Start of Green | | | |
| Natural Cycle: 55 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.38 | | | |
| Intersection Signal Delay: 11.8 | | Intersection LOS: B | |
| Intersection Capacity Utilization 68.5% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Breezehill & Somerset



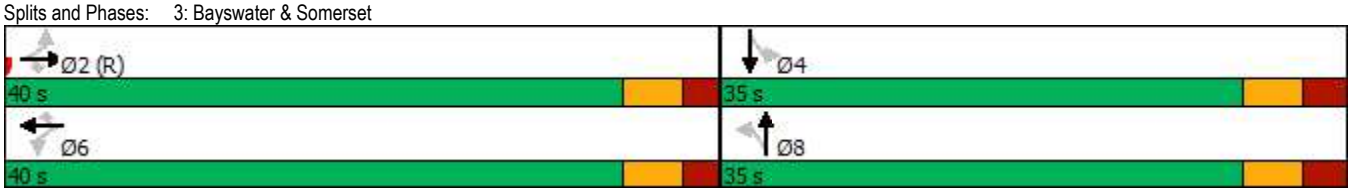
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 41 | 241 | 31 | 49 | 350 | 144 | 52 | 316 | 30 | 110 | 277 | 85 |
| Future Volume (vph) | 41 | 241 | 31 | 49 | 350 | 144 | 52 | 316 | 30 | 110 | 277 | 85 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.73 | | 0.98 | 0.82 | | 0.98 | | 0.95 | 0.97 | |
| Frt | | | 0.850 | | | 0.850 | | 0.990 | | | 0.965 | |
| Flt Protected | | 0.993 | | | 0.994 | | | 0.994 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1568 | 1517 | 0 | 1596 | 1517 | 0 | 1740 | 0 | 1679 | 1664 | 0 |
| Flt Permitted | | 0.908 | | | 0.932 | | | 0.766 | | 0.397 | | |
| Satd. Flow (perm) | 0 | 1422 | 1110 | 0 | 1470 | 1243 | 0 | 1332 | 0 | 670 | 1664 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 42 | | | 144 | | 6 | | | 24 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 74 | | 150 | 150 | | 74 | 58 | | 60 | 60 | | 58 |
| Confl. Bikes (#/hr) | | | 44 | | | 72 | | | 6 | | | 24 |
| 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% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% | 3% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 41 | 241 | 31 | 49 | 350 | 144 | 52 | 316 | 30 | 110 | 277 | 85 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 282 | 31 | 0 | 399 | 144 | 0 | 398 | 0 | 110 | 362 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 46.7% | 46.7% | | 46.7% | 46.7% | |
| Maximum Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 105 | 105 | 105 | 55 | 55 | 55 | 45 | 45 | | 35 | 35 | |
| Act Effct Green (s) | | 40.3 | 40.3 | | 40.3 | 40.3 | | 23.3 | | 23.3 | 23.3 | |
| Actuated g/C Ratio | | 0.54 | 0.54 | | 0.54 | 0.54 | | 0.31 | | 0.31 | 0.31 | |
| v/c Ratio | | 0.37 | 0.05 | | 0.51 | 0.20 | | 0.95 | | 0.53 | 0.68 | |
| Control Delay | | 13.2 | 3.2 | | 15.3 | 3.0 | | 59.0 | | 29.8 | 27.1 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 13.2 | 3.2 | | 15.3 | 3.0 | | 59.0 | | 29.8 | 27.1 | |
| LOS | | B | A | | B | A | | E | | C | C | |
| Approach Delay | | 12.2 | | | 12.0 | | | 59.0 | | | 27.8 | |
| Approach LOS | | B | | | B | | | E | | | C | |
| 90th %ile Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 27.1 | 27.1 | | 27.1 | 27.1 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 39.6 | 39.6 | 39.6 | 39.6 | 39.6 | 39.6 | 24.0 | 24.0 | | 24.0 | 24.0 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 43.0 | 43.0 | 43.0 | 43.0 | 43.0 | 43.0 | 20.6 | 20.6 | | 20.6 | 20.6 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 48.0 | 48.0 | 48.0 | 48.0 | 48.0 | 48.0 | 15.6 | 15.6 | | 15.6 | 15.6 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| Stops (vph) | | 164 | 5 | | 258 | 16 | | 360 | | 88 | 281 | |
| Fuel Used(l) | | 9 | 0 | | 15 | 2 | | 32 | | 6 | 18 | |
| CO Emissions (g/hr) | | 166 | 8 | | 272 | 41 | | 587 | | 106 | 331 | |
| NOx Emissions (g/hr) | | 32 | 2 | | 52 | 8 | | 113 | | 20 | 64 | |
| VOC Emissions (g/hr) | | 38 | 2 | | 63 | 9 | | 135 | | 24 | 76 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 21.8 | 0.0 | | 34.0 | 0.0 | | 53.0 | | 12.5 | 40.7 | |
| Queue Length 95th (m) | | 44.4 | 3.3 | | 66.7 | 8.7 | | #90.6 | | 25.3 | 60.5 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 764 | 616 | | 790 | 734 | | 520 | | 259 | 660 | |
| 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 | | 0.37 | 0.05 | | 0.51 | 0.20 | | 0.77 | | 0.42 | 0.55 | |

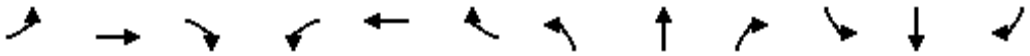
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 75 | | | |
| Actuated Cycle Length: 75 | | | |
| Offset: 63 (84%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.95 | | | |
| Intersection Signal Delay: 27.2 | | Intersection LOS: C | |
| Intersection Capacity Utilization 106.9% | | 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. | | | |

Splits and Phases: 3: Bayswater & Somerset



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 65 | 344 | 71 | 53 | 420 | 23 | 87 | 312 | 54 | 40 | 285 | 56 |
| Future Volume (vph) | 65 | 344 | 71 | 53 | 420 | 23 | 87 | 312 | 54 | 40 | 285 | 56 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.92 | 0.96 | | 0.91 | 0.99 | | 0.91 | 0.98 | | 0.93 | 0.97 | |
| Frt | | 0.974 | | | 0.992 | | | 0.978 | | | 0.975 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1463 | 0 | 1695 | 1566 | 0 | 1695 | 1461 | 0 | 1695 | 1479 | 0 |
| Flt Permitted | 0.298 | | | 0.334 | | | 0.414 | | | 0.379 | | |
| Satd. Flow (perm) | 491 | 1463 | 0 | 541 | 1566 | 0 | 671 | 1461 | 0 | 629 | 1479 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 103 | | 115 | 115 | | 103 | 99 | | 80 | 80 | | 99 |
| Confl. Bikes (#/hr) | | | 28 | | | 53 | | | 8 | | | 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 (%) | 2% | 3% | 11% | 2% | 2% | 9% | 2% | 8% | 2% | 2% | 5% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 65 | 344 | 71 | 53 | 420 | 23 | 87 | 312 | 54 | 40 | 285 | 56 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 65 | 415 | 0 | 53 | 443 | 0 | 87 | 366 | 0 | 40 | 341 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 44.3% | 44.3% | | 44.3% | 44.3% | |
| Maximum Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |

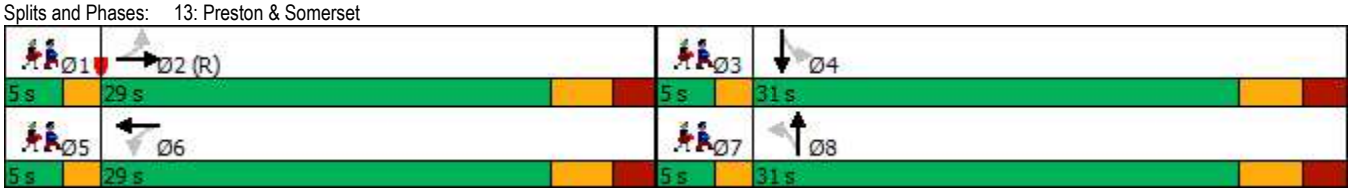
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| Lane Util. Factor | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 95 | 95 | | 80 | 80 | | 60 | 60 | | 80 | 80 | |
| Act Effct Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.8 | 21.8 | | 21.8 | 21.8 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | 0.33 | 0.33 | | 0.31 | 0.31 | | 0.31 | 0.31 | |
| v/c Ratio | 0.40 | 0.85 | | 0.29 | 0.85 | | 0.42 | 0.81 | | 0.21 | 0.74 | |
| Control Delay | 26.7 | 40.5 | | 22.7 | 39.3 | | 24.5 | 36.3 | | 19.0 | 31.6 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 26.7 | 40.5 | | 22.7 | 39.3 | | 24.5 | 36.3 | | 19.0 | 31.6 | |
| LOS | C | D | | C | D | | C | D | | B | C | |
| Approach Delay | | 38.7 | | | 37.5 | | | 34.0 | | | 30.3 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| 90th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 50th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 22.7 | 22.7 | | 22.7 | 22.7 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Hold | Hold | | Ped | Ped | |
| 10th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 14.6 | 14.6 | | 14.6 | 14.6 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 53 | 349 | | 41 | 373 | | 66 | 320 | | 30 | 292 | |
| Fuel Used(l) | 5 | 38 | | 2 | 26 | | 5 | 25 | | 2 | 18 | |
| CO Emissions (g/hr) | 97 | 706 | | 43 | 481 | | 93 | 469 | | 31 | 341 | |
| NOx Emissions (g/hr) | 19 | 136 | | 8 | 93 | | 18 | 91 | | 6 | 66 | |
| VOC Emissions (g/hr) | 22 | 163 | | 10 | 111 | | 21 | 108 | | 7 | 79 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 6.4 | 49.6 | | 5.1 | 53.0 | | 8.7 | 42.6 | | 3.7 | 38.6 | |
| Queue Length 95th (m) | 17.5 | #96.4 | | 14.0 | #100.5 | | 19.7 | #69.7 | | 10.2 | 62.3 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 164 | 489 | | 180 | 523 | | 242 | 528 | | 227 | 534 | |
| 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 | 0.40 | 0.85 | | 0.29 | 0.85 | | 0.36 | 0.69 | | 0.18 | 0.64 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 32 (46%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.85 | | | |
| Intersection Signal Delay: 35.4 | | Intersection LOS: D | |
| Intersection Capacity Utilization 82.2% | | 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. | | | |

Splits and Phases: 13: Preston & Somerset



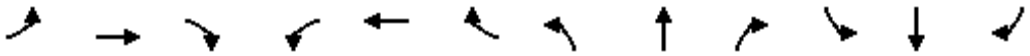
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 5.6 | 3.0 | 5.6 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 7.3 | 3.0 | 7.3 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 13.7 | 3.0 | 13.7 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 392 | 33 | 35 | 494 | 33 | 39 |
| Future Volume (Veh/h) | 392 | 33 | 35 | 494 | 33 | 39 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 392 | 33 | 35 | 494 | 33 | 39 |
| Pedestrians | 18 | | | | 140 | |
| Lane Width (m) | 3.7 | | | | 3.7 | |
| Walking Speed (m/s) | 1.2 | | | | 1.2 | |
| Percent Blockage | 2 | | | | 12 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.91 | | 0.91 | 0.91 |
| vC, conflicting volume | | | 565 | | 1130 | 548 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 476 | | 1095 | 458 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 96 | | 82 | 92 |
| cM capacity (veh/h) | | | 873 | | 179 | 485 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 425 | 529 | 72 |
| Volume Left | 0 | 35 | 33 |
| Volume Right | 33 | 0 | 39 |
| cSH | 1700 | 873 | 272 |
| Volume to Capacity | 0.25 | 0.04 | 0.26 |
| Queue Length 95th (m) | 0.0 | 1.0 | 7.9 |
| Control Delay (s) | 0.0 | 1.1 | 22.9 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 1.1 | 22.9 |
| Approach LOS | | | C |

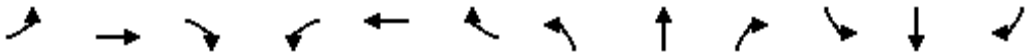
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.2 | | |
| Intersection Capacity Utilization | 68.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 29 | 1 | 15 | 54 | 37 |
| Future Volume (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 29 | 1 | 15 | 54 | 37 |
| 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 |
| Hourly flow rate (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 29 | 1 | 15 | 54 | 37 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 33 | 46 | 54 | 106 |
| Volume Left (vph) | 15 | 4 | 24 | 15 |
| Volume Right (vph) | 10 | 20 | 1 | 37 |
| Hadj (s) | -0.06 | -0.21 | 0.11 | -0.15 |
| Departure Headway (s) | 4.2 | 4.1 | 4.3 | 4.0 |
| Degree Utilization, x | 0.04 | 0.05 | 0.06 | 0.12 |
| Capacity (veh/h) | 812 | 846 | 811 | 882 |
| Control Delay (s) | 7.4 | 7.3 | 7.6 | 7.5 |
| Approach Delay (s) | 7.4 | 7.3 | 7.6 | 7.5 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | | 7.5 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | | 29.0% | ICU Level of Service |
| Analysis Period (min) | | | 15 | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 21 | 233 | 4 | 6 | 582 | 30 | 3 | 0 | 1 | 33 | 0 | 27 |
| Future Volume (Veh/h) | 21 | 233 | 4 | 6 | 582 | 30 | 3 | 0 | 1 | 33 | 0 | 27 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 21 | 233 | 4 | 6 | 582 | 30 | 3 | 0 | 1 | 33 | 0 | 27 |
| Pedestrians | | 7 | | | 10 | | | 25 | | | 22 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 1 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 634 | | | 262 | | | 945 | 948 | 270 | 919 | 935 | 626 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 634 | | | 262 | | | 945 | 948 | 270 | 919 | 935 | 626 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.2 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.6 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 99 | 100 | 100 | 85 | 100 | 94 |
| cM capacity (veh/h) | 931 | | | 1274 | | | 211 | 244 | 746 | 224 | 248 | 472 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 258 | 618 | 4 | 60 |
| Volume Left | 21 | 6 | 3 | 33 |
| Volume Right | 4 | 30 | 1 | 27 |
| cSH | 931 | 1274 | 257 | 293 |
| Volume to Capacity | 0.02 | 0.00 | 0.02 | 0.20 |
| Queue Length 95th (m) | 0.5 | 0.1 | 0.4 | 5.7 |
| Control Delay (s) | 0.9 | 0.1 | 19.2 | 20.4 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.9 | 0.1 | 19.2 | 20.4 |
| Approach LOS | | | C | C |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.7 | | | |
| Intersection Capacity Utilization | 48.7% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1 | 7 | 65 | 2 | 12 | 59 |
| Future Volume (Veh/h) | 1 | 7 | 65 | 2 | 12 | 59 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 1 | 7 | 65 | 2 | 12 | 59 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 149 | 66 | | | 67 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 149 | 66 | | | 67 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 99 | | | 99 | |
| cM capacity (veh/h) | 836 | 998 | | | 1535 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 8 | 67 | 71 |
| Volume Left | 1 | 0 | 12 |
| Volume Right | 7 | 2 | 0 |
| cSH | 974 | 1700 | 1535 |
| Volume to Capacity | 0.01 | 0.04 | 0.01 |
| Queue Length 95th (m) | 0.2 | 0.0 | 0.2 |
| Control Delay (s) | 8.7 | 0.0 | 1.3 |
| Lane LOS | A | | A |
| Approach Delay (s) | 8.7 | 0.0 | 1.3 |
| Approach LOS | A | | |

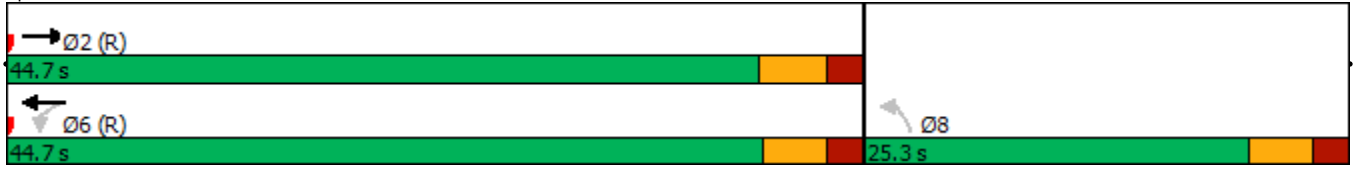
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 20.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 392 | 33 | 35 | 494 | 33 | 39 |
| Future Volume (vph) | 392 | 33 | 35 | 494 | 33 | 39 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | | 0.0 | 15.0 | | 0.0 | 0.0 |
| Storage Lanes | | 0 | 0 | | 1 | 0 |
| Taper Length (m) | | | 45.0 | | 30.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 0.98 | | | 0.99 | 0.89 | |
| Frt | 0.990 | | | | 0.927 | |
| Flt Protected | | | | 0.997 | 0.978 | |
| Satd. Flow (prot) | 1538 | 0 | 0 | 1601 | 1363 | 0 |
| Flt Permitted | | | | 0.958 | 0.978 | |
| Satd. Flow (perm) | 1538 | 0 | 0 | 1525 | 1302 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 10 | | | | 39 | |
| Link Speed (k/h) | 50 | | | 50 | 40 | |
| Link Distance (m) | 108.9 | | | 435.9 | 109.2 | |
| Travel Time (s) | 7.8 | | | 31.4 | 9.8 | |
| Confl. Peds. (#/hr) | | 140 | 140 | | 50 | 50 |
| Confl. Bikes (#/hr) | | 50 | | | | 2 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 2% |
| Parking (#/hr) | 0 | | | 0 | 0 | |
| Adj. Flow (vph) | 392 | 33 | 35 | 494 | 33 | 39 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 425 | 0 | 0 | 529 | 72 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.7 | | | 3.7 | 3.7 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.9 | | | 4.9 | 4.9 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.21 | 1.06 | 1.06 | 1.21 | 1.21 | 1.06 |
| Turning Speed (k/h) | | 14 | 24 | | 24 | 14 |
| Number of Detectors | 2 | | 1 | 2 | 1 | |
| Detector Template | Thru | | Left | Thru | Left | |
| Leading Detector (m) | 30.5 | | 6.1 | 30.5 | 6.1 | |
| Trailing Detector (m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 1.8 | | 6.1 | 1.8 | 6.1 | |
| Detector 1 Type | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 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 | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | Perm | NA | Perm | |
| Protected Phases | 2 | | | 6 | | |
| Permitted Phases | | | 6 | | 8 | |
| Detector Phase | 2 | | 6 | 6 | 8 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | |
| Minimum Split (s) | 23.5 | | 25.3 | 25.3 | 25.3 | |
| Total Split (s) | 44.7 | | 44.7 | 44.7 | 25.3 | |
| Total Split (%) | 63.9% | | 63.9% | 63.9% | 36.1% | |
| Maximum Green (s) | 39.2 | | 39.4 | 39.4 | 20.0 | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.5 | | 3.3 | 3.3 | 3.3 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.5 | | | 5.3 | 5.3 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | C-Max | | C-Max | C-Max | None | |
| Walk Time (s) | 7.0 | | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | | 13.0 | 13.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 80 | | 80 | 80 | 30 | |
| Act Effct Green (s) | 50.2 | | | 50.3 | 13.2 | |
| Actuated g/C Ratio | 0.72 | | | 0.72 | 0.19 | |
| v/c Ratio | 0.38 | | | 0.48 | 0.26 | |
| Control Delay | 7.3 | | | 5.1 | 14.8 | |
| Queue Delay | 0.5 | | | 0.0 | 0.0 | |
| Total Delay | 7.8 | | | 5.1 | 14.8 | |
| LOS | A | | | A | B | |
| Approach Delay | 7.8 | | | 5.1 | 14.8 | |
| Approach LOS | A | | | A | B | |
| 90th %ile Green (s) | 41.2 | | 41.4 | 41.4 | 18.0 | |
| 90th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 70th %ile Green (s) | 41.2 | | 41.4 | 41.4 | 18.0 | |
| 70th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 50th %ile Green (s) | 49.2 | | 49.4 | 49.4 | 10.0 | |
| 50th %ile Term Code | Coord | | Coord | Coord | Min | |
| 30th %ile Green (s) | 49.2 | | 49.4 | 49.4 | 10.0 | |
| 30th %ile Term Code | Coord | | Coord | Coord | Min | |
| 10th %ile Green (s) | 64.5 | | 64.7 | 64.7 | 0.0 | |
| 10th %ile Term Code | Coord | | Coord | Coord | Skip | |
| Stops (vph) | 179 | | | 247 | 33 | |
| Fuel Used(l) | 11 | | | 30 | 2 | |
| CO Emissions (g/hr) | 201 | | | 549 | 40 | |
| NOx Emissions (g/hr) | 39 | | | 106 | 8 | |
| VOC Emissions (g/hr) | 46 | | | 127 | 9 | |
| Dilemma Vehicles (#) | 0 | | | 0 | 0 | |
| Queue Length 50th (m) | 17.7 | | | 7.2 | 3.9 | |
| Queue Length 95th (m) | 46.5 | | | m16.0 | 12.4 | |
| Internal Link Dist (m) | 84.9 | | | 411.9 | 85.2 | |
| Turn Bay Length (m) | | | | | | |
| Base Capacity (vph) | 1104 | | | 1096 | 399 | |
| Starvation Cap Reductn | 317 | | | 0 | 0 | |
| Spillback Cap Reductn | 0 | | | 0 | 0 | |
| Storage Cap Reductn | 0 | | | 0 | 0 | |
| Reduced v/c Ratio | 0.54 | | | 0.48 | 0.18 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 26 (37%), Referenced to phase 2:EBT and 6:WBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.48 | | | |
| Intersection Signal Delay: 6.9 | | Intersection LOS: A | |
| Intersection Capacity Utilization 80.4% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 1: Breezehill & Somerset

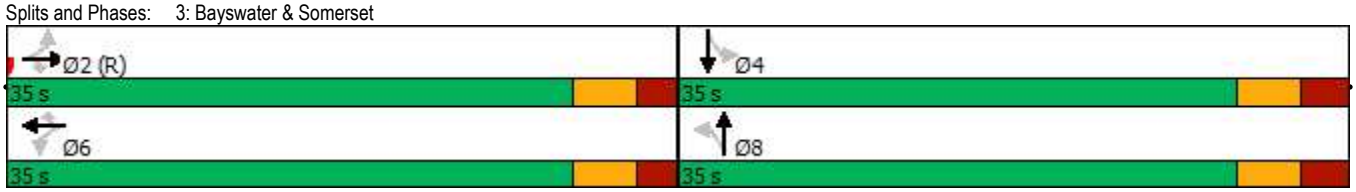


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 41 | 243 | 26 | 31 | 153 | 70 | 26 | 196 | 38 | 141 | 241 | 84 |
| Future Volume (vph) | 41 | 243 | 26 | 31 | 153 | 70 | 26 | 196 | 38 | 141 | 241 | 84 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.82 | | 0.99 | 0.87 | | 0.98 | | 0.95 | 0.98 | |
| Frt | | | 0.850 | | | 0.850 | | 0.980 | | | 0.961 | |
| Flt Protected | | 0.993 | | | 0.992 | | | 0.995 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1494 | 1517 | 0 | 1531 | 1357 | 0 | 1700 | 0 | 1662 | 1679 | 0 |
| Flt Permitted | | 0.941 | | | 0.924 | | | 0.902 | | 0.514 | | |
| Satd. Flow (perm) | 0 | 1402 | 1242 | 0 | 1406 | 1175 | 0 | 1536 | 0 | 857 | 1679 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 45 | | | 70 | | 15 | | | 31 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 61 | | 91 | 91 | | 61 | 37 | | 49 | 49 | | 37 |
| Confl. Bikes (#/hr) | | | 47 | | | 38 | | | 17 | | | 7 |
| 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 (%) | 14% | 8% | 2% | 2% | 7% | 14% | 8% | 2% | 3% | 4% | 2% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 41 | 243 | 26 | 31 | 153 | 70 | 26 | 196 | 38 | 141 | 241 | 84 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 284 | 26 | 0 | 184 | 70 | 0 | 260 | 0 | 141 | 325 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Maximum Green (s) | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 75 | 75 | 75 | 45 | 45 | 45 | 35 | 35 | | 25 | 25 | |
| Act Effct Green (s) | | 40.0 | 40.0 | | 40.0 | 40.0 | | 18.6 | | 18.6 | 18.6 | |
| Actuated g/C Ratio | | 0.57 | 0.57 | | 0.57 | 0.57 | | 0.27 | | 0.27 | 0.27 | |
| v/c Ratio | | 0.35 | 0.04 | | 0.23 | 0.10 | | 0.62 | | 0.62 | 0.70 | |
| Control Delay | | 11.3 | 2.0 | | 7.3 | 1.7 | | 26.9 | | 33.5 | 28.1 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 11.3 | 2.0 | | 7.3 | 1.7 | | 26.9 | | 33.5 | 28.1 | |
| LOS | | B | A | | A | A | | C | | C | C | |
| Approach Delay | | 10.5 | | | 5.7 | | | 26.9 | | | 29.7 | |
| Approach LOS | | B | | | A | | | C | | | C | |
| 90th %ile Green (s) | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 26.1 | 26.1 | | 26.1 | 26.1 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 70th %ile Green (s) | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 23.0 | 23.0 | | 23.0 | 23.0 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Ped | Ped | | Hold | Hold | |
| 50th %ile Green (s) | 40.6 | 40.6 | 40.6 | 40.6 | 40.6 | 40.6 | 18.0 | 18.0 | | 18.0 | 18.0 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 30th %ile Green (s) | 43.6 | 43.6 | 43.6 | 43.6 | 43.6 | 43.6 | 15.0 | 15.0 | | 15.0 | 15.0 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| 10th %ile Green (s) | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 10.7 | 10.7 | | 10.7 | 10.7 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Hold | Hold | | Gap | Gap | |
| Stops (vph) | | 158 | 3 | | 88 | 12 | | 201 | | 117 | 249 | |
| Fuel Used(l) | | 8 | 0 | | 5 | 1 | | 13 | | 8 | 16 | |
| CO Emissions (g/hr) | | 156 | 6 | | 91 | 20 | | 249 | | 145 | 300 | |
| NOx Emissions (g/hr) | | 30 | 1 | | 18 | 4 | | 48 | | 28 | 58 | |
| VOC Emissions (g/hr) | | 36 | 1 | | 21 | 5 | | 58 | | 33 | 69 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 17.6 | 0.0 | | 4.4 | 0.0 | | 28.4 | | 16.4 | 34.9 | |
| Queue Length 95th (m) | | 41.9 | 2.2 | | 30.4 | m3.5 | | 42.2 | | 28.7 | 50.4 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 802 | 729 | | 804 | 702 | | 647 | | 356 | 716 | |
| 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 | | 0.35 | 0.04 | | 0.23 | 0.10 | | 0.40 | | 0.40 | 0.45 | |

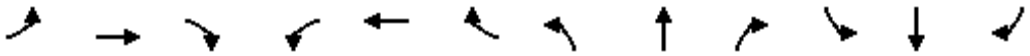
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 19 (27%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.70 | | | |
| Intersection Signal Delay: 19.8 | | Intersection LOS: B | |
| Intersection Capacity Utilization 98.7% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 3: Bayswater & Somerset



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 62 | 325 | 107 | 34 | 178 | 13 | 71 | 354 | 47 | 18 | 278 | 34 |
| Future Volume (vph) | 62 | 325 | 107 | 34 | 178 | 13 | 71 | 354 | 47 | 18 | 278 | 34 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.88 | 0.95 | | 0.95 | 0.99 | | 0.96 | 0.99 | | 0.95 | 0.99 | |
| Frt | | 0.963 | | | 0.990 | | | 0.982 | | | 0.984 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1412 | 0 | 1679 | 1487 | 0 | 1647 | 1478 | 0 | 1503 | 1452 | 0 |
| Flt Permitted | 0.628 | | | 0.259 | | | 0.471 | | | 0.354 | | |
| Satd. Flow (perm) | 990 | 1412 | 0 | 436 | 1487 | 0 | 782 | 1478 | 0 | 534 | 1452 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 83 | | 63 | 63 | | 83 | 42 | | 58 | 58 | | 42 |
| Confl. Bikes (#/hr) | | | 66 | | | 21 | | | 10 | | | 4 |
| 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% | 5% | 9% | 3% | 8% | 2% | 5% | 8% | 2% | 15% | 9% | 17% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 62 | 325 | 107 | 34 | 178 | 13 | 71 | 354 | 47 | 18 | 278 | 34 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 62 | 432 | 0 | 34 | 191 | 0 | 71 | 401 | 0 | 18 | 312 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | 34.0 | 34.0 | | 34.0 | 34.0 | |
| Total Split (%) | 37.1% | 37.1% | | 37.1% | 37.1% | | 48.6% | 48.6% | | 48.6% | 48.6% | |
| Maximum Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |

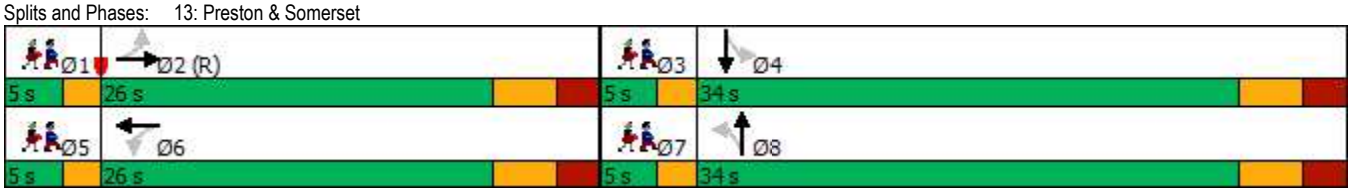
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| Lane Util. Factor | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 45 | 45 | | 65 | 65 | | 40 | 40 | | 30 | 30 | |
| Act Effct Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 23.4 | 23.4 | | 23.4 | 23.4 | |
| Actuated g/C Ratio | 0.29 | 0.29 | | 0.29 | 0.29 | | 0.33 | 0.33 | | 0.33 | 0.33 | |
| v/c Ratio | 0.22 | 1.05 | | 0.27 | 0.44 | | 0.27 | 0.81 | | 0.10 | 0.64 | |
| Control Delay | 21.8 | 85.3 | | 25.8 | 24.1 | | 18.2 | 34.3 | | 15.2 | 25.5 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 21.8 | 85.3 | | 25.8 | 24.1 | | 18.2 | 34.3 | | 15.2 | 25.5 | |
| LOS | C | F | | C | C | | B | C | | B | C | |
| Approach Delay | | 77.3 | | | 24.3 | | | 31.9 | | | 24.9 | |
| Approach LOS | | E | | | C | | | C | | | C | |
| 90th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 28.3 | 28.3 | | 28.3 | 28.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 70th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 27.9 | 27.9 | | 27.9 | 27.9 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 24.3 | 24.3 | | 24.3 | 24.3 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 20.9 | 20.9 | | 20.9 | 20.9 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 20.4 | 20.4 | | 20.4 | 20.4 | | 15.7 | 15.7 | | 15.7 | 15.7 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 49 | 347 | | 31 | 151 | | 48 | 348 | | 13 | 249 | |
| Fuel Used(l) | 5 | 54 | | 2 | 9 | | 4 | 27 | | 1 | 15 | |
| CO Emissions (g/hr) | 88 | 1005 | | 31 | 162 | | 67 | 502 | | 13 | 277 | |
| NOx Emissions (g/hr) | 17 | 194 | | 6 | 31 | | 13 | 97 | | 2 | 53 | |
| VOC Emissions (g/hr) | 20 | 232 | | 7 | 37 | | 15 | 116 | | 3 | 64 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 5.8 | ~63.1 | | 3.4 | 20.2 | | 6.6 | 46.2 | | 1.6 | 33.4 | |
| Queue Length 95th (m) | 16.8 | #114.0 | | 10.9 | 37.4 | | 14.4 | 70.6 | | 5.2 | 52.1 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 288 | 411 | | 127 | 433 | | 316 | 597 | | 215 | 587 | |
| 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 | 0.22 | 1.05 | | 0.27 | 0.44 | | 0.22 | 0.67 | | 0.08 | 0.53 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 37 (53%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 75 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.05 | | | |
| Intersection Signal Delay: 44.0 | | Intersection LOS: D | |
| Intersection Capacity Utilization 84.8% | | ICU Level of Service E | |
| 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: 13: Preston & Somerset



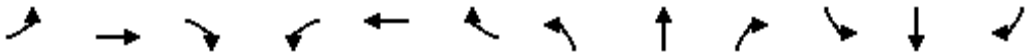
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.4 | 3.0 | 3.4 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 7.0 | 3.0 | 7.0 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 10.4 | 3.0 | 10.4 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 15.6 | 3.0 | 15.6 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 317 | 68 | 44 | 302 | 51 | 73 |
| Future Volume (Veh/h) | 317 | 68 | 44 | 302 | 51 | 73 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 317 | 68 | 44 | 302 | 51 | 73 |
| Pedestrians | | | | | 70 | |
| Lane Width (m) | | | | | 3.7 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 6 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.93 | | 0.93 | 0.93 |
| vC, conflicting volume | | | 455 | | 811 | 421 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 381 | | 762 | 345 |
| tC, single (s) | | | 4.1 | | 6.6 | 6.5 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.7 | 3.5 |
| p0 queue free % | | | 96 | | 82 | 87 |
| cM capacity (veh/h) | | | 1034 | | 287 | 566 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 385 | 346 | 124 |
| Volume Left | 0 | 44 | 51 |
| Volume Right | 68 | 0 | 73 |
| cSH | 1700 | 1034 | 405 |
| Volume to Capacity | 0.23 | 0.04 | 0.31 |
| Queue Length 95th (m) | 0.0 | 1.0 | 9.7 |
| Control Delay (s) | 0.0 | 1.5 | 17.8 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 1.5 | 17.8 |
| Approach LOS | | | C |

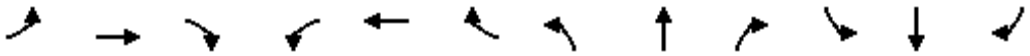
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.2 | | |
| Intersection Capacity Utilization | 59.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 56 | 10 | 34 | 43 | 19 |
| Future Volume (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 56 | 10 | 34 | 43 | 19 |
| 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 |
| Hourly flow rate (vph) | 15 | 26 | 10 | 6 | 8 | 19 | 11 | 56 | 10 | 34 | 43 | 19 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 51 | 33 | 77 | 96 |
| Volume Left (vph) | 15 | 6 | 11 | 34 |
| Volume Right (vph) | 10 | 19 | 10 | 19 |
| Hadj (s) | -0.02 | -0.28 | -0.02 | -0.01 |
| Departure Headway (s) | 4.3 | 4.1 | 4.2 | 4.1 |
| Degree Utilization, x | 0.06 | 0.04 | 0.09 | 0.11 |
| Capacity (veh/h) | 802 | 844 | 835 | 845 |
| Control Delay (s) | 7.6 | 7.2 | 7.6 | 7.7 |
| Approach Delay (s) | 7.6 | 7.2 | 7.6 | 7.7 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | 7.6 | | | |
| Level of Service | A | | | |
| Intersection Capacity Utilization | 29.0% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 24 | 240 | 0 | 1 | 207 | 42 | 2 | 1 | 2 | 21 | 0 | 21 |
| Future Volume (Veh/h) | 24 | 240 | 0 | 1 | 207 | 42 | 2 | 1 | 2 | 21 | 0 | 21 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 24 | 240 | 0 | 1 | 207 | 42 | 2 | 1 | 2 | 21 | 0 | 21 |
| Pedestrians | | 8 | | | 2 | | | 25 | | | 21 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 0 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 270 | | | 265 | | | 572 | 585 | 267 | 544 | 564 | 257 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 270 | | | 265 | | | 572 | 585 | 267 | 544 | 564 | 257 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 99 | 100 | 100 | 95 | 100 | 97 |
| cM capacity (veh/h) | 1270 | | | 1271 | | | 389 | 398 | 754 | 420 | 410 | 762 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 264 | 250 | 5 | 42 |
| Volume Left | 24 | 1 | 2 | 21 |
| Volume Right | 0 | 42 | 2 | 21 |
| cSH | 1270 | 1271 | 485 | 542 |
| Volume to Capacity | 0.02 | 0.00 | 0.01 | 0.08 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.2 | 1.9 |
| Control Delay (s) | 0.9 | 0.0 | 12.5 | 12.2 |
| Lane LOS | A | A | B | B |
| Approach Delay (s) | 0.9 | 0.0 | 12.5 | 12.2 |
| Approach LOS | | | B | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.5 | | | |
| Intersection Capacity Utilization | 45.2% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

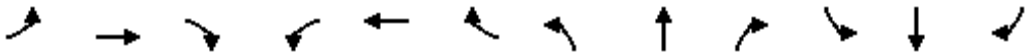
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 9 | 49 | 74 | 3 | 15 | 99 |
| Future Volume (Veh/h) | 9 | 49 | 74 | 3 | 15 | 99 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 9 | 49 | 74 | 3 | 15 | 99 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 204 | 76 | | | 77 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 204 | 76 | | | 77 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 99 | 95 | | | 99 | |
| cM capacity (veh/h) | 776 | 986 | | | 1522 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 58 | 77 | 114 |
| Volume Left | 9 | 0 | 15 |
| Volume Right | 49 | 3 | 0 |
| cSH | 946 | 1700 | 1522 |
| Volume to Capacity | 0.06 | 0.05 | 0.01 |
| Queue Length 95th (m) | 1.5 | 0.0 | 0.2 |
| Control Delay (s) | 9.1 | 0.0 | 1.0 |
| Lane LOS | A | | A |
| Approach Delay (s) | 9.1 | 0.0 | 1.0 |
| Approach LOS | A | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.6 | | |
| Intersection Capacity Utilization | 23.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 62 | 325 | 107 | 34 | 178 | 13 | 71 | 354 | 47 | 18 | 278 | 34 |
| Future Volume (vph) | 62 | 325 | 107 | 34 | 178 | 13 | 71 | 354 | 47 | 18 | 278 | 34 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.88 | 0.95 | | 0.95 | 0.99 | | 0.96 | 0.99 | | 0.96 | 0.99 | |
| Frt | | 0.963 | | | 0.990 | | | 0.982 | | | 0.984 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1418 | 0 | 1679 | 1488 | 0 | 1647 | 1477 | 0 | 1503 | 1452 | 0 |
| Flt Permitted | 0.637 | | | 0.353 | | | 0.450 | | | 0.322 | | |
| Satd. Flow (perm) | 1003 | 1418 | 0 | 593 | 1488 | 0 | 748 | 1477 | 0 | 487 | 1452 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 83 | | 63 | 63 | | 83 | 42 | | 58 | 58 | | 42 |
| Confl. Bikes (#/hr) | | | 66 | | | 21 | | | 10 | | | 4 |
| 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% | 5% | 9% | 3% | 8% | 2% | 5% | 8% | 2% | 15% | 9% | 17% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 62 | 325 | 107 | 34 | 178 | 13 | 71 | 354 | 47 | 18 | 278 | 34 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 62 | 432 | 0 | 34 | 191 | 0 | 71 | 401 | 0 | 18 | 312 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 32.0 | 32.0 | | 32.0 | 32.0 | | 28.0 | 28.0 | | 28.0 | 28.0 | |
| Total Split (%) | 45.7% | 45.7% | | 45.7% | 45.7% | | 40.0% | 40.0% | | 40.0% | 40.0% | |
| Maximum Green (s) | 26.4 | 26.4 | | 26.4 | 26.4 | | 22.3 | 22.3 | | 22.3 | 22.3 | |

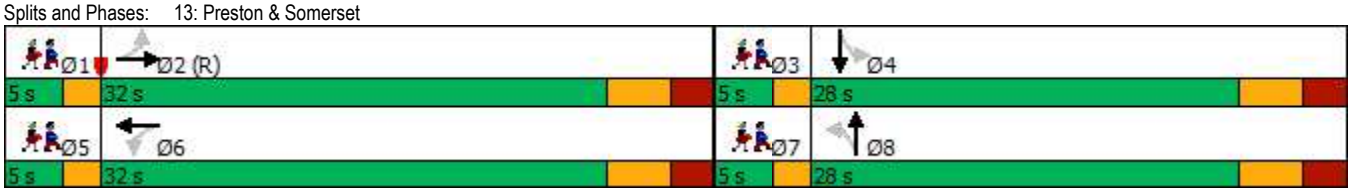
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| Lane Util. Factor | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 45 | 45 | | 65 | 65 | | 40 | 40 | | 30 | 30 | |
| Act Effct Green (s) | 26.4 | 26.4 | | 26.4 | 26.4 | | 21.3 | 21.3 | | 21.3 | 21.3 | |
| Actuated g/C Ratio | 0.38 | 0.38 | | 0.38 | 0.38 | | 0.30 | 0.30 | | 0.30 | 0.30 | |
| v/c Ratio | 0.16 | 0.81 | | 0.15 | 0.34 | | 0.31 | 0.89 | | 0.12 | 0.71 | |
| Control Delay | 14.8 | 31.7 | | 16.7 | 17.8 | | 22.6 | 47.9 | | 19.5 | 31.4 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 14.8 | 31.7 | | 16.7 | 17.8 | | 22.6 | 47.9 | | 19.5 | 31.4 | |
| LOS | B | C | | B | B | | C | D | | B | C | |
| Approach Delay | | 29.6 | | | 17.6 | | | 44.1 | | | 30.8 | |
| Approach LOS | | C | | | B | | | D | | | C | |
| 90th %ile Green (s) | 26.4 | 26.4 | | 26.4 | 26.4 | | 22.3 | 22.3 | | 22.3 | 22.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 26.4 | 26.4 | | 26.4 | 26.4 | | 22.3 | 22.3 | | 22.3 | 22.3 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 50th %ile Green (s) | 26.4 | 26.4 | | 26.4 | 26.4 | | 22.3 | 22.3 | | 22.3 | 22.3 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 30th %ile Green (s) | 26.4 | 26.4 | | 26.4 | 26.4 | | 22.2 | 22.2 | | 22.2 | 22.2 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 26.4 | 26.4 | | 26.4 | 26.4 | | 17.4 | 17.4 | | 17.4 | 17.4 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 41 | 338 | | 24 | 132 | | 54 | 343 | | 15 | 268 | |
| Fuel Used(l) | 4 | 36 | | 1 | 7 | | 4 | 31 | | 1 | 17 | |
| CO Emissions (g/hr) | 78 | 670 | | 24 | 136 | | 74 | 578 | | 15 | 311 | |
| NOx Emissions (g/hr) | 15 | 129 | | 5 | 26 | | 14 | 112 | | 3 | 60 | |
| VOC Emissions (g/hr) | 18 | 154 | | 6 | 31 | | 17 | 133 | | 3 | 72 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 5.3 | 42.6 | | 2.9 | 17.4 | | 6.9 | 48.5 | | 1.6 | 35.0 | |
| Queue Length 95th (m) | 13.4 | #93.1 | | 8.8 | 32.2 | | 17.0 | #94.2 | | 6.1 | #61.9 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 378 | 534 | | 223 | 561 | | 238 | 470 | | 155 | 462 | |
| 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 | 0.16 | 0.81 | | 0.15 | 0.34 | | 0.30 | 0.85 | | 0.12 | 0.68 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 37 (53%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 75 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.89 | | | |
| Intersection Signal Delay: 32.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization 84.8% | | 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. | | | |

Splits and Phases: 13: Preston & Somerset



| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 3.1 | 3.0 | 3.1 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 7.9 | 3.0 | 7.9 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 | | | | |

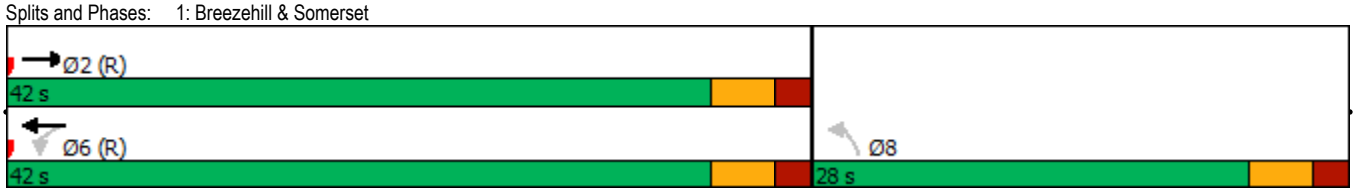
| Intersection Summary |
|---|

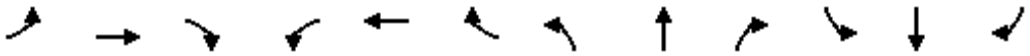
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 317 | 68 | 44 | 302 | 51 | 73 |
| Future Volume (vph) | 317 | 68 | 44 | 302 | 51 | 73 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | | 0.0 | 15.0 | | 0.0 | 0.0 |
| Storage Lanes | | 0 | 0 | | 1 | 0 |
| Taper Length (m) | | | 45.0 | | 30.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 0.98 | | | 0.99 | 0.89 | |
| Frt | 0.976 | | | | 0.921 | |
| Flt Protected | | | | 0.994 | 0.980 | |
| Satd. Flow (prot) | 1490 | 0 | 0 | 1543 | 1088 | 0 |
| Flt Permitted | | | | 0.923 | 0.980 | |
| Satd. Flow (perm) | 1490 | 0 | 0 | 1424 | 1044 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 23 | | | | 73 | |
| Link Speed (k/h) | 50 | | | 50 | 40 | |
| Link Distance (m) | 108.9 | | | 435.9 | 109.2 | |
| Travel Time (s) | 7.8 | | | 31.4 | 9.8 | |
| Confl. Peds. (#/hr) | | 50 | 50 | | 50 | 50 |
| Confl. Bikes (#/hr) | | 33 | | | | 6 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles (%) | 4% | 8% | 2% | 6% | 25% | 27% |
| Parking (#/hr) | 0 | | | 0 | 0 | |
| Adj. Flow (vph) | 317 | 68 | 44 | 302 | 51 | 73 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 385 | 0 | 0 | 346 | 124 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.7 | | | 3.7 | 3.7 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.9 | | | 4.9 | 4.9 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.21 | 1.06 | 1.06 | 1.21 | 1.21 | 1.06 |
| Turning Speed (k/h) | | 14 | 24 | | 24 | 14 |
| Number of Detectors | 2 | | 1 | 2 | 1 | |
| Detector Template | Thru | | Left | Thru | Left | |
| Leading Detector (m) | 30.5 | | 6.1 | 30.5 | 6.1 | |
| Trailing Detector (m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 1.8 | | 6.1 | 1.8 | 6.1 | |
| Detector 1 Type | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 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 | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | Perm | NA | Perm | |
| Protected Phases | 2 | | | 6 | | |
| Permitted Phases | | | 6 | | 8 | |
| Detector Phase | 2 | | 6 | 6 | 8 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | |
| Minimum Split (s) | 23.3 | | 25.3 | 25.3 | 25.3 | |
| Total Split (s) | 42.0 | | 42.0 | 42.0 | 28.0 | |
| Total Split (%) | 60.0% | | 60.0% | 60.0% | 40.0% | |
| Maximum Green (s) | 36.7 | | 36.7 | 36.7 | 22.7 | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | | 3.3 | 3.3 | 3.3 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.3 | | | 5.3 | 5.3 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | C-Max | | C-Max | C-Max | None | |
| Walk Time (s) | 7.0 | | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | | 13.0 | 13.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 30 | | 30 | 30 | 30 | |
| Act Effct Green (s) | 50.3 | | | 50.3 | 13.2 | |
| Actuated g/C Ratio | 0.72 | | | 0.72 | 0.19 | |
| v/c Ratio | 0.36 | | | 0.34 | 0.49 | |
| Control Delay | 8.8 | | | 13.9 | 17.9 | |
| Queue Delay | 0.3 | | | 0.0 | 0.0 | |
| Total Delay | 9.1 | | | 13.9 | 17.9 | |
| LOS | A | | | B | B | |
| Approach Delay | 9.1 | | | 13.9 | 17.9 | |
| Approach LOS | A | | | B | B | |
| 90th %ile Green (s) | 41.4 | | 41.4 | 41.4 | 18.0 | |
| 90th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 70th %ile Green (s) | 41.4 | | 41.4 | 41.4 | 18.0 | |
| 70th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 50th %ile Green (s) | 49.4 | | 49.4 | 49.4 | 10.0 | |
| 50th %ile Term Code | Coord | | Coord | Coord | Min | |
| 30th %ile Green (s) | 49.4 | | 49.4 | 49.4 | 10.0 | |
| 30th %ile Term Code | Coord | | Coord | Coord | Min | |
| 10th %ile Green (s) | 64.7 | | 64.7 | 64.7 | 0.0 | |
| 10th %ile Term Code | Coord | | Coord | Coord | Skip | |
| Stops (vph) | 210 | | | 233 | 53 | |
| Fuel Used(l) | 11 | | | 23 | 4 | |
| CO Emissions (g/hr) | 210 | | | 433 | 73 | |
| NOx Emissions (g/hr) | 41 | | | 84 | 14 | |
| VOC Emissions (g/hr) | 48 | | | 100 | 17 | |
| Dilemma Vehicles (#) | 0 | | | 0 | 0 | |
| Queue Length 50th (m) | 20.5 | | | 29.7 | 6.1 | |
| Queue Length 95th (m) | 25.2 | | | 62.3 | 18.4 | |
| Internal Link Dist (m) | 84.9 | | | 411.9 | 85.2 | |
| Turn Bay Length (m) | | | | | | |
| Base Capacity (vph) | 1077 | | | 1023 | 387 | |
| Starvation Cap Reductn | 260 | | | 0 | 0 | |
| Spillback Cap Reductn | 0 | | | 0 | 0 | |
| Storage Cap Reductn | 0 | | | 0 | 0 | |
| Reduced v/c Ratio | 0.47 | | | 0.34 | 0.32 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 30 (43%), Referenced to phase 2:EBT and 6:WBTL, Start of Green | | | |
| Natural Cycle: 55 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.49 | | | |
| Intersection Signal Delay: 12.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization 69.3% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Breezehill & Somerset



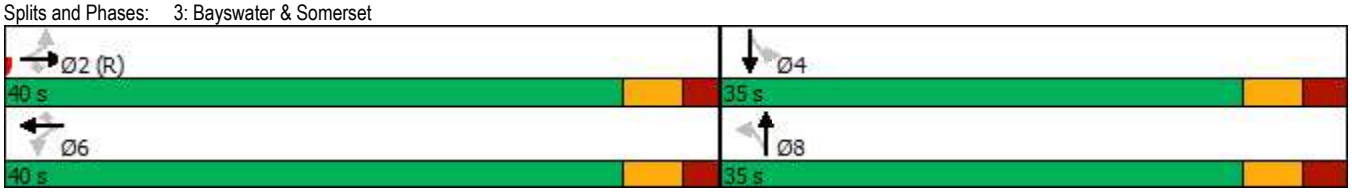


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 41 | 244 | 31 | 51 | 352 | 147 | 52 | 316 | 33 | 118 | 277 | 85 |
| Future Volume (vph) | 41 | 244 | 31 | 51 | 352 | 147 | 52 | 316 | 33 | 118 | 277 | 85 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | | 40.0 | 0.0 | | 45.0 | 0.0 | | 0.0 | 40.0 | | 0.0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.73 | | 0.98 | 0.82 | | 0.98 | | 0.95 | 0.97 | |
| Frt | | | 0.850 | | | 0.850 | | 0.989 | | | 0.965 | |
| Flt Protected | | 0.993 | | | 0.994 | | | 0.994 | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1568 | 1517 | 0 | 1596 | 1517 | 0 | 1737 | 0 | 1679 | 1664 | 0 |
| Flt Permitted | | 0.908 | | | 0.929 | | | 0.769 | | 0.396 | | |
| Satd. Flow (perm) | 0 | 1423 | 1110 | 0 | 1464 | 1243 | 0 | 1335 | 0 | 668 | 1664 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 42 | | | 147 | | 7 | | | 24 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 88.8 | | | 108.9 | | | 142.8 | | | 114.2 | |
| Travel Time (s) | | 6.4 | | | 7.8 | | | 10.3 | | | 8.2 | |
| Confl. Peds. (#/hr) | 74 | | 150 | 150 | | 74 | 58 | | 60 | 60 | | 58 |
| Confl. Bikes (#/hr) | | | 44 | | | 72 | | | 6 | | | 24 |
| 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% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% | 3% |
| Parking (#/hr) | | 0 | | | 0 | | | | | | | |
| Adj. Flow (vph) | 41 | 244 | 31 | 51 | 352 | 147 | 52 | 316 | 33 | 118 | 277 | 85 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 285 | 31 | 0 | 403 | 147 | 0 | 401 | 0 | 118 | 362 | 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 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | 6.1 | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | 6.1 | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 30.5 | 28.9 | 28.9 | | 28.9 | 28.9 | |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 53.3% | 46.7% | 46.7% | | 46.7% | 46.7% | |
| Maximum Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.6 | 2.6 | | 2.6 | 2.6 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.5 | 5.5 | | 5.5 | 5.5 | | 5.9 | | 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 | Max | Max | Max | None | None | | None | None | |
| Walk Time (s) | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Flash Dont Walk (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Pedestrian Calls (#/hr) | 105 | 105 | 105 | 55 | 55 | 55 | 45 | 45 | | 35 | 35 | |
| Act Effct Green (s) | | 40.2 | 40.2 | | 40.2 | 40.2 | | 23.4 | | 23.4 | 23.4 | |
| Actuated g/C Ratio | | 0.54 | 0.54 | | 0.54 | 0.54 | | 0.31 | | 0.31 | 0.31 | |
| v/c Ratio | | 0.37 | 0.05 | | 0.51 | 0.20 | | 0.95 | | 0.57 | 0.68 | |
| Control Delay | | 13.3 | 3.2 | | 15.6 | 3.0 | | 58.3 | | 31.5 | 26.9 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 13.3 | 3.2 | | 15.6 | 3.0 | | 58.3 | | 31.5 | 26.9 | |
| LOS | | B | A | | B | A | | E | | C | C | |
| Approach Delay | | 12.3 | | | 12.2 | | | 58.3 | | | 28.0 | |
| Approach LOS | | B | | | B | | | E | | | C | |
| 90th %ile Green (s) | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 29.1 | 29.1 | | 29.1 | 29.1 | |
| 90th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 36.3 | 27.3 | 27.3 | | 27.3 | 27.3 | |
| 70th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 50th %ile Green (s) | 39.4 | 39.4 | 39.4 | 39.4 | 39.4 | 39.4 | 24.2 | 24.2 | | 24.2 | 24.2 | |
| 50th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 42.8 | 42.8 | 42.8 | 42.8 | 42.8 | 42.8 | 20.8 | 20.8 | | 20.8 | 20.8 | |
| 30th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| 10th %ile Green (s) | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 47.9 | 15.7 | 15.7 | | 15.7 | 15.7 | |
| 10th %ile Term Code | Coord | Coord | Coord | Coord | Coord | Coord | Gap | Gap | | Hold | Hold | |
| Stops (vph) | | 169 | 5 | | 263 | 17 | | 360 | | 95 | 279 | |
| Fuel Used(l) | | 9 | 0 | | 15 | 2 | | 32 | | 6 | 18 | |
| CO Emissions (g/hr) | | 170 | 8 | | 277 | 42 | | 586 | | 117 | 329 | |
| NOx Emissions (g/hr) | | 33 | 2 | | 53 | 8 | | 113 | | 23 | 63 | |
| VOC Emissions (g/hr) | | 39 | 2 | | 64 | 10 | | 135 | | 27 | 76 | |
| Dilemma Vehicles (#) | | 0 | 0 | | 0 | 0 | | 0 | | 0 | 0 | |
| Queue Length 50th (m) | | 22.3 | 0.0 | | 34.8 | 0.0 | | 53.2 | | 13.5 | 40.5 | |
| Queue Length 95th (m) | | 44.7 | 3.3 | | 67.8 | 8.8 | | #91.2 | | 27.3 | 60.5 | |
| Internal Link Dist (m) | | 64.8 | | | 84.9 | | | 118.8 | | | 90.2 | |
| Turn Bay Length (m) | | | 40.0 | | | 45.0 | | | | 40.0 | | |
| Base Capacity (vph) | | 762 | 614 | | 784 | 734 | | 522 | | 259 | 660 | |
| 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 | | 0.37 | 0.05 | | 0.51 | 0.20 | | 0.77 | | 0.46 | 0.55 | |

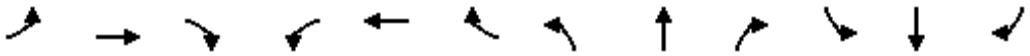
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 75 | | | |
| Actuated Cycle Length: 75 | | | |
| Offset: 63 (84%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.95 | | | |
| Intersection Signal Delay: 27.2 | | Intersection LOS: C | |
| Intersection Capacity Utilization 107.3% | | 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. | | | |

Splits and Phases: 3: Bayswater & Somerset



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 347 | 76 | 53 | 425 | 23 | 94 | 312 | 54 | 40 | 285 | 62 |
| Future Volume (vph) | 69 | 347 | 76 | 53 | 425 | 23 | 94 | 312 | 54 | 40 | 285 | 62 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 15.0 | | 0.0 | 15.0 | | 0.0 | 20.0 | | 0.0 | 15.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 30.0 | | | 30.0 | | | 30.0 | | | 30.0 | | |
| 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 | 0.92 | 0.95 | | 0.91 | 0.99 | | 0.91 | 0.98 | | 0.93 | 0.96 | |
| Frt | | 0.973 | | | 0.992 | | | 0.978 | | | 0.973 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1695 | 1457 | 0 | 1695 | 1567 | 0 | 1695 | 1461 | 0 | 1695 | 1472 | 0 |
| Flt Permitted | 0.292 | | | 0.323 | | | 0.405 | | | 0.379 | | |
| Satd. Flow (perm) | 482 | 1457 | 0 | 524 | 1567 | 0 | 658 | 1461 | 0 | 629 | 1472 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 435.9 | | | 97.2 | | | 225.8 | | | 107.4 | |
| Travel Time (s) | | 31.4 | | | 7.0 | | | 16.3 | | | 7.7 | |
| Confl. Peds. (#/hr) | 103 | | 115 | 115 | | 103 | 99 | | 80 | 80 | | 99 |
| Confl. Bikes (#/hr) | | | 28 | | | 53 | | | 8 | | | 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 (%) | 2% | 3% | 11% | 2% | 2% | 9% | 2% | 8% | 2% | 2% | 5% | 2% |
| Parking (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Adj. Flow (vph) | 69 | 347 | 76 | 53 | 425 | 23 | 94 | 312 | 54 | 40 | 285 | 62 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 69 | 423 | 0 | 53 | 448 | 0 | 94 | 366 | 0 | 40 | 347 | 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) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.9 | | | 4.9 | | | 4.9 | | | 4.9 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 | 1.06 | 1.21 | 1.06 |
| Turning Speed (k/h) | 24 | | 14 | 24 | | 14 | 24 | | 14 | 24 | | 14 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | | 6.1 | 30.5 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | | 6.1 | 1.8 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 28.7 | | | 28.7 | | | 28.7 | | | 28.7 | |
| Detector 2 Size(m) | | 1.8 | | | 1.8 | | | 1.8 | | | 1.8 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | | 10.0 | 10.0 | |
| Minimum Split (s) | 24.6 | 24.6 | | 24.6 | 24.6 | | 26.7 | 26.7 | | 26.7 | 26.7 | |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Total Split (%) | 41.4% | 41.4% | | 41.4% | 41.4% | | 44.3% | 44.3% | | 44.3% | 44.3% | |
| Maximum Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |

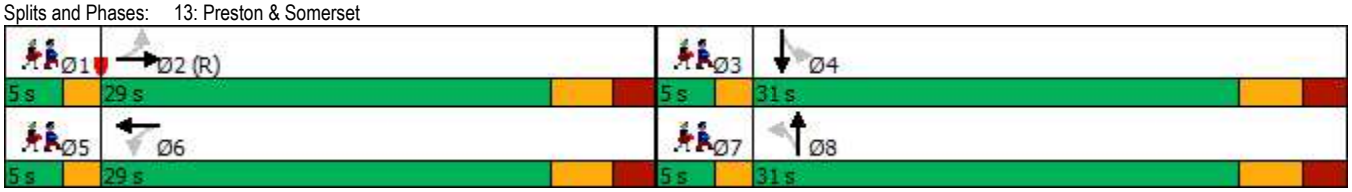
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | | | | |
| Future Volume (vph) | | | | |
| Ideal Flow (vphpl) | | | | |
| Storage Length (m) | | | | |
| Storage Lanes | | | | |
| Taper Length (m) | | | | |
| Lane Util. Factor | | | | |
| 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 (%) | | | | |
| Parking (#/hr) | | | | |
| 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 | 1 | 3 | 5 | 7 |
| Permitted Phases | | | | |
| Detector Phase | | | | |
| Switch Phase | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Total Split (%) | 7% | 7% | 7% | 7% |
| Maximum Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow Time (s) | 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 | | 2.4 | 2.4 | | 2.4 | 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) | 5.6 | 5.6 | | 5.6 | 5.6 | | 5.7 | 5.7 | | 5.7 | 5.7 | |
| Lead/Lag | Lag | Lag | | Lag | Lag | | Lag | Lag | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Max | C-Max | | Max | Max | | None | None | | None | None | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Pedestrian Calls (#/hr) | 95 | 95 | | 80 | 80 | | 60 | 60 | | 80 | 80 | |
| Act Effct Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.8 | 21.8 | | 21.8 | 21.8 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | 0.33 | 0.33 | | 0.31 | 0.31 | | 0.31 | 0.31 | |
| v/c Ratio | 0.43 | 0.87 | | 0.30 | 0.86 | | 0.46 | 0.81 | | 0.21 | 0.76 | |
| Control Delay | 28.2 | 43.0 | | 23.1 | 40.4 | | 26.2 | 36.3 | | 19.0 | 32.6 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 28.2 | 43.0 | | 23.1 | 40.4 | | 26.2 | 36.3 | | 19.0 | 32.6 | |
| LOS | C | D | | C | D | | C | D | | B | C | |
| Approach Delay | | 40.9 | | | 38.5 | | | 34.2 | | | 31.2 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| 90th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 90th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Max | Max | |
| 70th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 25.3 | 25.3 | | 25.3 | 25.3 | |
| 70th %ile Term Code | Coord | Coord | | Coord | Coord | | Max | Max | | Hold | Hold | |
| 50th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 22.7 | 22.7 | | 22.7 | 22.7 | |
| 50th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| 30th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| 30th %ile Term Code | Coord | Coord | | Coord | Coord | | Hold | Hold | | Ped | Ped | |
| 10th %ile Green (s) | 23.4 | 23.4 | | 23.4 | 23.4 | | 14.6 | 14.6 | | 14.6 | 14.6 | |
| 10th %ile Term Code | Coord | Coord | | Coord | Coord | | Gap | Gap | | Hold | Hold | |
| Stops (vph) | 57 | 354 | | 41 | 377 | | 73 | 320 | | 30 | 299 | |
| Fuel Used(l) | 6 | 39 | | 2 | 27 | | 6 | 25 | | 2 | 19 | |
| CO Emissions (g/hr) | 105 | 733 | | 44 | 493 | | 103 | 469 | | 31 | 352 | |
| NOx Emissions (g/hr) | 20 | 142 | | 8 | 95 | | 20 | 91 | | 6 | 68 | |
| VOC Emissions (g/hr) | 24 | 169 | | 10 | 114 | | 24 | 108 | | 7 | 81 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (m) | 6.9 | 51.1 | | 5.1 | 53.8 | | 9.6 | 42.6 | | 3.7 | 39.6 | |
| Queue Length 95th (m) | 18.7 | #99.1 | | 14.1 | #102.1 | | 21.3 | #69.7 | | 10.2 | 63.7 | |
| Internal Link Dist (m) | | 411.9 | | | 73.2 | | | 201.8 | | | 83.4 | |
| Turn Bay Length (m) | 15.0 | | | 15.0 | | | 20.0 | | | 15.0 | | |
| Base Capacity (vph) | 161 | 487 | | 175 | 523 | | 237 | 528 | | 227 | 532 | |
| 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 | 0.43 | 0.87 | | 0.30 | 0.86 | | 0.40 | 0.69 | | 0.18 | 0.65 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 32 (46%), Referenced to phase 2:EBTL, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.87 | | | |
| Intersection Signal Delay: 36.5 | | Intersection LOS: D | |
| Intersection Capacity Utilization 82.5% | | 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. | | | |

Splits and Phases: 13: Preston & Somerset



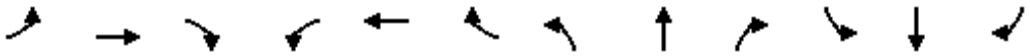
| Lane Group | Ø1 | Ø3 | Ø5 | Ø7 |
|---|---|---|---|---|
| Yellow Time (s) | 2.0 | 2.0 | 2.0 | 2.0 |
| All-Red Time (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lost Time Adjust (s) | | | | |
| Total Lost Time (s) | | | | |
| Lead/Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max |
| 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 Delay | | | | |
| Approach LOS | | | | |
| 90th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 90th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 70th %ile Green (s) | 3.0 | 3.0 | 3.0 | 3.0 |
| 70th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 50th %ile Green (s) | 5.6 | 3.0 | 5.6 | 3.0 |
| 50th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 30th %ile Green (s) | 7.3 | 3.0 | 7.3 | 3.0 |
| 30th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| 10th %ile Green (s) | 13.7 | 3.0 | 13.7 | 3.0 |
| 10th %ile Term Code | MaxR | MaxR | MaxR | MaxR |
| Stops (vph) | | | | |
| Fuel Used(l) | | | | |
| CO Emissions (g/hr) | | | | |
| NOx Emissions (g/hr) | | | | |
| VOC Emissions (g/hr) | | | | |
| Dilemma Vehicles (#) | | | | |
| 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 |
|---|

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 392 | 45 | 53 | 494 | 40 | 51 |
| Future Volume (Veh/h) | 392 | 45 | 53 | 494 | 40 | 51 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 392 | 45 | 53 | 494 | 40 | 51 |
| Pedestrians | 18 | | | | 120 | |
| Lane Width (m) | 3.7 | | | | 3.7 | |
| Walking Speed (m/s) | 1.2 | | | | 1.2 | |
| Percent Blockage | 2 | | | | 10 | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | 109 | | | | | |
| pX, platoon unblocked | | | 0.91 | | 0.91 | 0.91 |
| vC, conflicting volume | | | 557 | | 1152 | 534 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 459 | | 1116 | 434 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 94 | | 77 | 90 |
| cM capacity (veh/h) | | | 896 | | 173 | 505 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 437 | 547 | 91 |
| Volume Left | 0 | 53 | 40 |
| Volume Right | 45 | 0 | 51 |
| cSH | 1700 | 896 | 274 |
| Volume to Capacity | 0.26 | 0.06 | 0.33 |
| Queue Length 95th (m) | 0.0 | 1.4 | 10.7 |
| Control Delay (s) | 0.0 | 1.6 | 24.6 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 1.6 | 24.6 |
| Approach LOS | | | C |

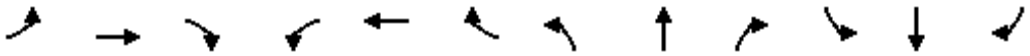
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.9 | | |
| Intersection Capacity Utilization | 71.5% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 35 | 1 | 15 | 58 | 37 |
| Future Volume (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 35 | 1 | 15 | 58 | 37 |
| 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 |
| Hourly flow rate (vph) | 15 | 8 | 10 | 4 | 22 | 20 | 24 | 35 | 1 | 15 | 58 | 37 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 33 | 46 | 60 | 110 |
| Volume Left (vph) | 15 | 4 | 24 | 15 |
| Volume Right (vph) | 10 | 20 | 1 | 37 |
| Hadj (s) | -0.06 | -0.21 | 0.10 | -0.14 |
| Departure Headway (s) | 4.3 | 4.1 | 4.3 | 4.0 |
| Degree Utilization, x | 0.04 | 0.05 | 0.07 | 0.12 |
| Capacity (veh/h) | 806 | 840 | 812 | 879 |
| Control Delay (s) | 7.4 | 7.3 | 7.6 | 7.5 |
| Approach Delay (s) | 7.4 | 7.3 | 7.6 | 7.5 |
| Approach LOS | A | A | A | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | | | 7.5 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | | 29.1% | ICU Level of Service |
| Analysis Period (min) | | | 15 | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 23 | 233 | 4 | 6 | 582 | 34 | 3 | 0 | 1 | 35 | 0 | 29 |
| Future Volume (Veh/h) | 23 | 233 | 4 | 6 | 582 | 34 | 3 | 0 | 1 | 35 | 0 | 29 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 23 | 233 | 4 | 6 | 582 | 34 | 3 | 0 | 1 | 35 | 0 | 29 |
| Pedestrians | | 7 | | | 10 | | | 25 | | | 22 | |
| Lane Width (m) | | 3.7 | | | 3.7 | | | 3.7 | | | 3.7 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 1 | | | 2 | | | 2 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 638 | | | 262 | | | 953 | 956 | 270 | 925 | 941 | 628 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 638 | | | 262 | | | 953 | 956 | 270 | 925 | 941 | 628 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.2 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.6 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 99 | 100 | 100 | 84 | 100 | 94 |
| cM capacity (veh/h) | 928 | | | 1274 | | | 207 | 240 | 746 | 221 | 245 | 471 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 260 | 622 | 4 | 64 |
| Volume Left | 23 | 6 | 3 | 35 |
| Volume Right | 4 | 34 | 1 | 29 |
| cSH | 928 | 1274 | 252 | 291 |
| Volume to Capacity | 0.02 | 0.00 | 0.02 | 0.22 |
| Queue Length 95th (m) | 0.6 | 0.1 | 0.4 | 6.2 |
| Control Delay (s) | 1.0 | 0.1 | 19.5 | 20.8 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 1.0 | 0.1 | 19.5 | 20.8 |
| Approach LOS | | | C | C |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.9 | | | |
| Intersection Capacity Utilization | 48.9% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 5 | 26 | 65 | 8 | 42 | 59 |
| Future Volume (Veh/h) | 5 | 26 | 65 | 8 | 42 | 59 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 5 | 26 | 65 | 8 | 42 | 59 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 212 | 69 | | | 73 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 212 | 69 | | | 73 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 99 | 97 | | | 97 | |
| cM capacity (veh/h) | 755 | 994 | | | 1527 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 31 | 73 | 101 |
| Volume Left | 5 | 0 | 42 |
| Volume Right | 26 | 8 | 0 |
| cSH | 946 | 1700 | 1527 |
| Volume to Capacity | 0.03 | 0.04 | 0.03 |
| Queue Length 95th (m) | 0.8 | 0.0 | 0.6 |
| Control Delay (s) | 8.9 | 0.0 | 3.2 |
| Lane LOS | A | | A |
| Approach Delay (s) | 8.9 | 0.0 | 3.2 |
| Approach LOS | A | | |

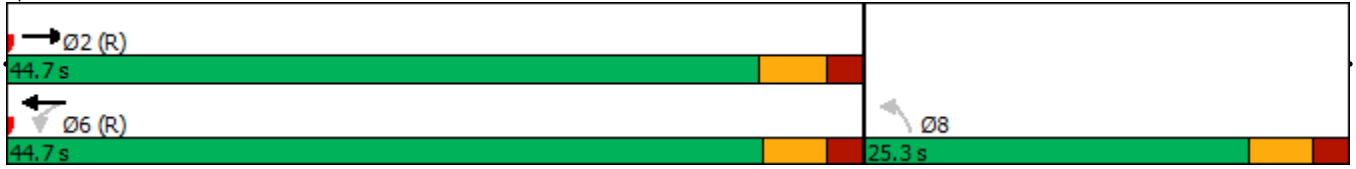
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.9 | | |
| Intersection Capacity Utilization | 22.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 392 | 45 | 53 | 494 | 40 | 51 |
| Future Volume (vph) | 392 | 45 | 53 | 494 | 40 | 51 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | | 0.0 | 15.0 | | 0.0 | 0.0 |
| Storage Lanes | | 0 | 0 | | 1 | 0 |
| Taper Length (m) | | | 45.0 | | 30.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 0.98 | | | 0.99 | 0.89 | |
| Frt | 0.986 | | | | 0.924 | |
| Flt Protected | | | | 0.995 | 0.978 | |
| Satd. Flow (prot) | 1531 | 0 | 0 | 1598 | 1356 | 0 |
| Flt Permitted | | | | 0.930 | 0.978 | |
| Satd. Flow (perm) | 1531 | 0 | 0 | 1480 | 1298 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 13 | | | | 51 | |
| Link Speed (k/h) | 50 | | | 50 | 40 | |
| Link Distance (m) | 108.9 | | | 435.9 | 109.2 | |
| Travel Time (s) | 7.8 | | | 31.4 | 9.8 | |
| Confl. Peds. (#/hr) | | 100 | 100 | | 50 | 50 |
| Confl. Bikes (#/hr) | | 50 | | | | 2 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 2% |
| Parking (#/hr) | 0 | | | 0 | 0 | |
| Adj. Flow (vph) | 392 | 45 | 53 | 494 | 40 | 51 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 437 | 0 | 0 | 547 | 91 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.7 | | | 3.7 | 3.7 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.9 | | | 4.9 | 4.9 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.21 | 1.06 | 1.06 | 1.21 | 1.21 | 1.06 |
| Turning Speed (k/h) | | 14 | 24 | | 24 | 14 |
| Number of Detectors | 2 | | 1 | 2 | 1 | |
| Detector Template | Thru | | Left | Thru | Left | |
| Leading Detector (m) | 30.5 | | 6.1 | 30.5 | 6.1 | |
| Trailing Detector (m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 1.8 | | 6.1 | 1.8 | 6.1 | |
| Detector 1 Type | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 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 | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | Perm | NA | Perm | |
| Protected Phases | 2 | | | 6 | | |
| Permitted Phases | | | 6 | | 8 | |
| Detector Phase | 2 | | 6 | 6 | 8 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | |
| Minimum Split (s) | 23.5 | | 25.3 | 25.3 | 25.3 | |
| Total Split (s) | 44.7 | | 44.7 | 44.7 | 25.3 | |
| Total Split (%) | 63.9% | | 63.9% | 63.9% | 36.1% | |
| Maximum Green (s) | 39.2 | | 39.4 | 39.4 | 20.0 | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Yellow Time (s) | 3.5 | | 3.3 | 3.3 | 3.3 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.5 | | | 5.3 | 5.3 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | C-Max | | C-Max | C-Max | None | |
| Walk Time (s) | 7.0 | | 7.0 | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | | 13.0 | 13.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 80 | | 30 | 30 | 30 | |
| Act Effct Green (s) | 50.2 | | | 50.3 | 13.2 | |
| Actuated g/C Ratio | 0.72 | | | 0.72 | 0.19 | |
| v/c Ratio | 0.40 | | | 0.51 | 0.32 | |
| Control Delay | 7.4 | | | 5.9 | 15.0 | |
| Queue Delay | 0.5 | | | 0.0 | 0.0 | |
| Total Delay | 7.9 | | | 5.9 | 15.0 | |
| LOS | A | | | A | B | |
| Approach Delay | 7.9 | | | 5.9 | 15.0 | |
| Approach LOS | A | | | A | B | |
| 90th %ile Green (s) | 41.2 | | 41.4 | 41.4 | 18.0 | |
| 90th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 70th %ile Green (s) | 41.2 | | 41.4 | 41.4 | 18.0 | |
| 70th %ile Term Code | Coord | | Coord | Coord | Ped | |
| 50th %ile Green (s) | 49.2 | | 49.4 | 49.4 | 10.0 | |
| 50th %ile Term Code | Coord | | Coord | Coord | Min | |
| 30th %ile Green (s) | 49.2 | | 49.4 | 49.4 | 10.0 | |
| 30th %ile Term Code | Coord | | Coord | Coord | Min | |
| 10th %ile Green (s) | 64.5 | | 64.7 | 64.7 | 0.0 | |
| 10th %ile Term Code | Coord | | Coord | Coord | Skip | |
| Stops (vph) | 186 | | | 267 | 39 | |
| Fuel Used(l) | 11 | | | 31 | 3 | |
| CO Emissions (g/hr) | 208 | | | 579 | 49 | |
| NOx Emissions (g/hr) | 40 | | | 112 | 10 | |
| VOC Emissions (g/hr) | 48 | | | 134 | 11 | |
| Dilemma Vehicles (#) | 0 | | | 0 | 0 | |
| Queue Length 50th (m) | 18.4 | | | 8.8 | 4.7 | |
| Queue Length 95th (m) | 48.3 | | | m17.8 | 14.4 | |
| Internal Link Dist (m) | 84.9 | | | 411.9 | 85.2 | |
| Turn Bay Length (m) | | | | | | |
| Base Capacity (vph) | 1100 | | | 1064 | 407 | |
| Starvation Cap Reductn | 308 | | | 0 | 0 | |
| Spillback Cap Reductn | 0 | | | 0 | 0 | |
| Storage Cap Reductn | 0 | | | 0 | 0 | |
| Reduced v/c Ratio | 0.55 | | | 0.51 | 0.22 | |

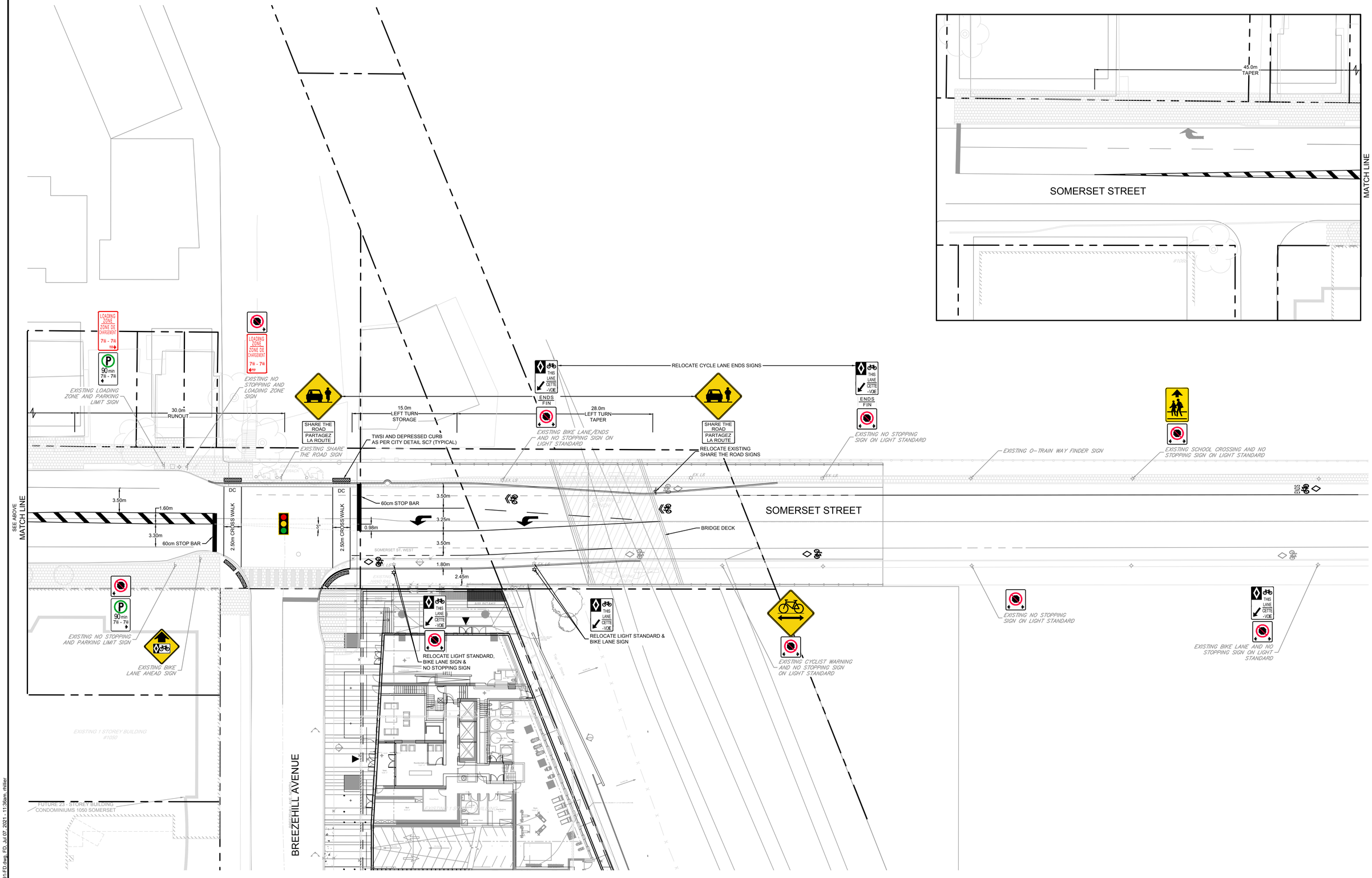
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 70 | | | |
| Actuated Cycle Length: 70 | | | |
| Offset: 26 (37%), Referenced to phase 2:EBT and 6:WBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.51 | | | |
| Intersection Signal Delay: 7.5 | | Intersection LOS: A | |
| Intersection Capacity Utilization 83.0% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 1: Breezehill & Somerset



# APPENDIX K

Functional Design




NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

## LEGEND

- DC — PROPOSED TWSI & DEPRESSED CURB
- OLS — EXISTING LIGHT STANDARD
- EXISTING SANITARY MANHOLE
- EXISTING STORM MANHOLE
- EXISTING CATCHBASIN
- H — EXISTING HYDRO DUCT
- B — EXISTING BELL DUCT
- OHW — EXISTING OVERHEAD WIRES
- T — EXISTING TRAFFIC DUCT
- G — EXISTING GAS MAIN

| No. | REVISION | DATE | BY |
|---|---|---|---|
| - | WORK IN PROGRESS | JUL ??/21 | RCH |
| 2. | ISSUED FOR CITY REVIEW | APR 27/21 | BJB |
| 1. | ISSUED FOR CITY REVIEW | MAR 01/21 | BJB |

SCALE 1:250 (1:250 0 2 4 6 8 10)

DESIGN RCH
CHECKED RF
DRAWN RCH
CHECKED RF
APPROVED BJB

**FOR REVIEW ONLY**

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LOCATION
CITY of OTTAWA
1040 SOMERSET STREET

DRAWING NAME
FUNCTIONAL DESIGN

PROJECT No. 112191
REV REV -
DRAWING No. 112191-FD

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PLANA1.DWG - 8M1mm/50mm