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Notting Hill Subdivision

2128 Trim Road, Ottawa

Transportation Impact Assessment

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Notting Hill Subdivision
2128 Trim Road

Transportation Impact Assessment

Prepared By:

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

July 2018

Novatech File: 117155
Ref: R-2018-070

NOVATECH
Engineers, Planners & Landscape Architects

July 10, 2018

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

Attention: **Mr. Asad Yousfani**
Project Manager, Infrastructure Approvals

Dear Mr. Yousfani:

Reference: **Notting Hill Subdivision**
Transportation Impact Assessment
Novatech File No. 117155

We are pleased to submit the following Transportation Impact Assessment (TIA) in support of a Draft Plan of Subdivision for the Notting Hill Subdivision (located at 2128 Trim Road), for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

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

Yours truly,

NOVATECH

Audia

Joshua Audia, B.Sc.
E.I.T. | Transportation/Traffic

TABLE OF CONTENTS

Figures

Tables

Appendices

EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of a Draft Plan of Subdivision for the lands located at 2128 Trim Road. The approximately 38.8-hectare site is currently undeveloped.

The proposed subdivision, referred to as the 'Notting Hill Subdivision' and formerly referred to as the 'Legault Lands,' is to be constructed in six phases. Phases 1-5 (approximately 27.7 hectares) are included in this application, while Phase 6 (approximately 11.1 hectares) will be subject to a future application. At full buildout (assumed to take place in 2025), Phases 1-5 of the development will consist of 535 dwellings.

The proposed Notting Hill subdivision is designated as General Urban Area and Urban Natural Features on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is Development Reserve (DR), which acts as a placeholder to limit permitted uses to those which will not preclude future development options before studies have been completed and approved. There are no Secondary Plans or Community Design Plans applicable to the proposed subdivision.

Phases 1-5 of the proposed subdivision will include 535 dwellings at full buildout. The number of units, year of buildout and the location of each phase are as follows:

- **Phase 1 (2019)**: 35 detached homes and 24 townhomes
  (northwest corner of Portobello Boulevard and Aquaview Drive)
- **Phase 2 (2021)**: 85 detached homes and 90 townhomes
  (northwest corner of Trim Road/Millennium Boulevard)
- **Phase 3 (2022)**: 119 detached homes and 30 townhomes
  (northeast corner of Provence Avenue/Street No. 1)
- **Phase 4 (2023)**: 27 detached homes, 27 townhomes, and 40 apartment units
  (southwest corner of Trim Road/Millennium Boulevard)
- **Phase 5 (2024)**: 30 detached homes and 28 townhomes
  (southeast corner of Provence Avenue/Street No. 1)

Connections from the Notting Hill subdivision to the existing road network are proposed at Aquaview Drive, Provence Avenue, Salzburg Drive, and Trim Road.

The study area for this report will include Innes Road, Trim Road, Portobello Boulevard, Provence Avenue, Aquaview Drive, Nantes Street, Montmere Avenue, Plainhill Drive, Salzburg Drive, and Millennium Boulevard. The study area includes the signalized intersections at Innes Road/Provence Avenue and Innes Road/Trim Road, the roundabout at Trim Road/Millennium Boulevard, and the unsignalized intersections at Trim Road/Salzburg Drive, Trim Road/Montmere Avenue, Provence Avenue/Plainhill Drive, and Portobello Boulevard/Aquaview Drive/Nantes Street.

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. The proposed development is expected to be completed with full occupancy by the year 2025. City staff has confirmed that analysis of the horizon year 2030 shall be waived. Therefore, this TIA will perform analysis for the weekday AM and PM peak periods in the buildout year 2025.

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

Forecasting

- Phases 1-5 of the proposed subdivision are projected to generate approximately 614 person trips during the AM peak period and 687 person trips during the PM peak period, which includes approximately 341 vehicle trips during the AM peak period and 379 vehicle trips during the PM peak period.

Development Design

- With a minimum spacing of 60m, all proposed intersections to/within the proposed subdivision are appropriately spaced from adjacent intersections, per the TAC *Geometric Design Guide for Canadian Roads*.

- Street No. 1 has a proposed ROW width of 22m and a proposed roadway width of 11m, which is sufficient for a travel lane and a parking lane in each direction. This is consistent for a collector roadway, and is sufficient to accommodate transit service.

- Street No. 2 has a proposed ROW width of 20m and Streets No. 3 through 10 have a proposed ROW width of 18m. All of these streets have a proposed roadway width of 8.5m, which is sufficient for a travel lane in each direction and parking on one side of the roadway. This is adequate given the context of the proposed development, a low-speed residential neighbourhood with limited opportunity for cut-through traffic.

- 1.8m concrete sidewalks are proposed on both sides of Street No. 1, the west side of Streets No. 2 and 3, and the outside of Streets No. 8 and 9. A 1.8 asphalt pathway is proposed on Street No. 5, which will connect the proposed subdivision to the Trans-Orléans Pathway.

- A PXO D is recommended at the west approach of the Street No. 1/Street No. 2 intersection.

Boundary Streets

- The results of the segment MMLOS analysis can be summarized as follows:
  - Only Provence Avenue meets the target pedestrian level of service (PLOS), while Trim Road, Portobello Boulevard, Aquaview Drive, and Salzburg Drive do not;
  - Portobello Boulevard, Aquaview Drive, and Salzburg Drive meet the target bicycle level of service (BLOS), while Trim Road and Provence Avenue do not;
  - As the only roadway with a target, Trim Road meets the target transit level of service (TLOS);
  - As the only roadway with a target, Trim Road meets the target truck level of service (TkLOS);
  - All roadways meet the target vehicular level of service (Auto LOS).

- The PLOS of Trim Road can only be improved to the target PLOS A with a reduction in the operating speed, which is not desirable given Trim Road is an arterial roadway. Therefore, no modifications are recommended.

- The PLOS of Portobello Boulevard can be improved to the target PLOS A by implementing a 0.5m sidewalk boulevard while maintaining a 2.0m-wide sidewalk on the east side, and implementing a 1.8m-wide sidewalk while maintaining a 2.0m sidewalk boulevard. As the existing cross-section meets the current City standards, no modifications are recommended.

- The PLOS of Aquaview Drive can be improved to the target PLOS A by implementing a 1.8m-wide sidewalk while maintaining a 2.0m sidewalk boulevard on the south side of the roadway. There appears to be limited space to widen the sidewalk due to the location of street light poles on the south side. Given the acceptable PLOS on the north side of Aquaview Drive, no modifications are recommended.

- The PLOS of Salzburg Drive can be improved to the target PLOS A by implementing sidewalks with a minimum width of 2.0m and a minimum boulevard width of 0.5m on both sides of the roadway. As the existing cross-section meets the current City standards, no modifications are recommended.

- The BLOS of Trim Road can be improved beyond the target BLOS C by implementing multi-use pathways on both sides of the roadway. Currently, a multi-use pathway is only provided on the east side of Trim Road, north of Millennium Boulevard. The *Ontario Traffic Manual – Book 18* identifies bike lanes as a suitable cycling facility, and a reduction in the operating speed is undesirable. Therefore, no modifications are recommended.

- The BLOS of Provence Avenue can only be improved to the target BLOS B by implementing a physically separated bikeway (such as a multi-use pathway). The *Ontario Traffic Manual – Book 18* identifies a shared roadway as suitable given the low traffic volumes. Therefore, no modifications are recommended.

Access Intersections

- Phase 1 will be served by two unsignalized all-movement accesses at Aquaview Drive, approximately 60m and 140m west of Portobello Boulevard. Phases 2-5 will be served by three accesses: an unsignalized access at Provence Avenue, a tie-in to Salzburg Drive, and a tie-in to the roundabout at Trim Road/Millennium Boulevard.

- Of the proposed unsignalized access intersections (Provence Avenue/Street No. 1 and the two accesses at Aquaview Drive/Street No. 10), none are anticipated to meet the OTM or City criteria for all-way stop control. Therefore, side street stop control is recommended for the approaches on Street No. 1 and Street No. 10.

- It is anticipated that all-way stop control will not be warranted for the intersection of Trim Road/Salzburg Drive at full buildout.

- It is proposed that the access to Street No. 1 tie into the existing roundabout at Trim Road/ Millennium Boulevard. Assuming similar approach geometry to the existing approach on Millennium Boulevard, the roundabout is anticipated to continue operating acceptably at full buildout.

Transportation Demand Management

- The following TDM measures will be implemented as the proposed subdivision is built:
    - Designate an internal TDM program coordinator;
    - Display local area maps with walking/cycling routes and key destinations (at sales centre);
    - Display relevant transit schedules and route maps (at sales centre);

  - Provide multimodal travel option information packages to new residents (at sales centre).

Transit

- Phases 1-5 of the proposed subdivision are projected to generate 154 transit trips during the AM peak period and 171 transit trips during the PM peak period.

- No capacity problems are anticipated on OC Transpo routes 33 and 233, which serve the stops adjacent to the proposed Phase 1 development.

- Discussions with City staff confirmed that as the subdivision develops, OC Transpo will provide transit service on Provence Avenue and Street No. 1. Therefore, no capacity problems are anticipated as a result of transit trips generated by Phases 2-5 of the development.

Intersection Design

- Based on the results of the intersection MMLOS analysis:
  - Neither signalized intersection meets the target pedestrian level of service (PLOS);
  - Neither signalized intersection meets the target bicycle level of service (BLOS);
  - Among signalized intersections, only Innes Road/Provence Avenue meets the target transit level of service (TLOS);
  - Among signalized intersections, only Innes Road/Trim Road meets the target truck level of service (TkLOS);
  - Among all study area intersections, only Innes Road/Trim Road does not meet the target vehicular level of service (Auto LOS).

- The PLOS of Innes Road/Provence Avenue cannot achieve the target PLOS at any approach without significantly reducing the number of lanes and restricting turning movements. While only the east and west approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks (greater than 400,000 vehicle/pedestrian conflicts over an eight-hour period), implementing zebra-striped crosswalks could be considered at all approaches given the intersection is adjacent to a school.

- The PLOS of Innes Road/Trim Road cannot achieve the target PLOS at any approach without significantly reducing the number of lanes and restricting turning movements. Implementing zebra-striped crosswalks could be considered at all approaches to improve the level of comfort for pedestrians.

- The BLOS of Innes Road/Provence Avenue can only improve to the target BLOS A with the implementation of two-stage left-turn bike boxes on all approaches and higher order (separated) cycling facilities. Given that there is insufficient space on Innes Road to accommodate separate cycling facilities, the only recommended modification is to shift the pocket bike lane on the west approach so that it is adjacent with the curb. Based on Exhibit 8 of the MMLOS guidelines, this will improve the level of service of the intersection to a BLOS B based on right turn characteristics. No other modifications are recommended.

- The BLOS of Innes Road/Trim Road can only improve beyond the target BLOS B with the implementation of two-stage left-turn bike boxes and higher order (separated) cycling facilities on all approaches. Given that there is insufficient space on Innes Road to accommodate separate cycling facilities, the only recommended modification is to shift the pocket bike lanes on all approaches to be adjacent with the curb. Based on Exhibit 8 of the MMLOS guidelines, this will improve the level of service of the intersection to a BLOS B based on right turn characteristics. No other modifications are recommended.

- The TLOS of Innes Road/Trim Road can be achieved if transit signal priority and queue jump lanes are implemented at all approaches. The 2013 TMP identifies that in the Affordable Network, these measures will be implemented on Innes Road between Blair Station and Millennium Station. Extensions of the Blackburn Hamlet Bypass and Brian Coburn Boulevard will provide alternate parallel routes for eastbound/westbound traffic, and may provide some relief to the current traffic volumes on Innes Road.

- The TkLOS of Innes Road/Provence Avenue does not achieve the target TkLOS D at the east approach. Since Provence Avenue is not a truck route, this manoeuvre is not anticipated to occur with regularity, and therefore no recommendations have been made in improving the TkLOS for this approach.

- The Auto LOS of Innes Road/Trim Road does not achieve the target Auto LOS D during the PM peak period, due to the southbound left turn and eastbound left turn movements.
    - The southbound left turn movement can meet the target with a reduction of 10 vehicles.
    - The eastbound left turn movement requires a reduction of 160 vehicles to meet the target (a reduction of approximately 50%), and there is insufficient space to implement a second left turn lane without further deteriorating the PLOS and BLOS .

- Under the 2025 background traffic conditions, there is anticipated traffic growth on Innes Road, Trim Road, and Portobello Boulevard. Compared to existing conditions, all intersections are anticipated to operate at approximately the same level of service.

- Under the 2025 total traffic conditions, all intersections are anticipated to operate at approximately the same level of service compared to background conditions. The intersection of Trim Road/Salzburg Drive is projected to downgrade to an Auto LOS C during the AM peak period. All accesses to the proposed subdivision are anticipated to perform acceptably.

- No auxiliary lanes are recommended at Provence Avenue/Street No. 1, as none are required.

- Phases 1-5 of the proposed subdivision are recommended from a transportation perspective. An additional study will be prepared in support of a separate draft plan application for Phase 6.

1.0 INTRODUCTION

This Transportation Impact Assessment (TIA) has been prepared in support of a Draft Plan of Subdivision for the lands located at 2128 Trim Road. The approximately 38.8-hectare site is currently undeveloped.

The proposed subdivision, referred to as the ‘Notting Hill Subdivision’ and formerly referred to as the ‘Legault Lands,’ is to be constructed in six phases. Phases 1-5 (approximately 27.7 hectares) are included in this application, while Phase 6 (approximately 11.1 hectares) will be subject to a future application. At full buildout (assumed to take place in 2025), Phases 1-5 of the development will consist of 535 dwellings.

The subject site is surrounded by the following:

- Residences, commercial uses, and a secondary school to the north;
- Residences and Cumberland Millennium Sports Park to the east;
- Residences, a future transitway, a future school, and parkland to the south;
- Residences, an elementary school, and parkland to the west.

A view of the subject site is provided in **Figure 1**.

2.0 PROPOSED DEVELOPMENT

The proposed Notting Hill subdivision is designated as General Urban Area and Urban Natural Features on Schedule B of the City of Ottawa’s Official Plan. The implemented zoning for the property is Development Reserve (DR), which acts as a placeholder to limit permitted uses to those which will not preclude future development options before studies have been completed and approved. There are no Secondary Plans or Community Design Plans applicable to the proposed subdivision.

Phases 1-5 of the proposed subdivision will include 535 dwellings at full buildout. The number of units, year of buildout and the location of each phase are as follows:

- **Phase 1 (2019)**: 35 detached homes and 24 townhomes
  (northwest corner of Portobello Boulevard and Aquaview Drive)
- **Phase 2 (2021)**: 85 detached homes and 90 townhomes
  (northwest corner of Trim Road/Millennium Boulevard)
- **Phase 3 (2022)**: 119 detached homes and 30 townhomes
  (northeast corner of Provence Avenue/Street No. 1)
- **Phase 4 (2023)**: 27 detached homes, 27 townhomes, and 40 apartment units
  (southwest corner of Trim Road/Millennium Boulevard)
- **Phase 5 (2024)**: 30 detached homes and 28 townhomes
  (southeast corner of Provence Avenue/Street No. 1)

A sixth phase is to be constructed between Portobello Boulevard and Provence Avenue, north of Nantes Street and Grapefern Terrace. The traffic generated from this phase will be accounted for as background growth in this report, however it will be analyzed in greater detail in a separate draft plan application.

Connections from the Notting Hill subdivision to the existing road network are proposed at Aquaview Drive, Provence Avenue, Salzburg Drive, and Trim Road. A copy of the conceptual site plan is included in **Appendix A**.

Figure 1: View of the Subject Site

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 person trips/peak hour; further assessment is required based on this trigger.
- Location Triggers **–** The development is located along a Spine Cycling Route (Trim Road); further assessment is required based on this trigger.
- Safety Triggers **–** The proposed access to Trim Road connects with the existing roundabout for Trim Road/Millennium Boulevard. For this reason, further assessment is required based on this trigger.

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

4.0 SCOPING

4.1 Existing Conditions

4.1.1 Roadways

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

Innes Road is an urban arterial roadway that generally runs on an east-west alignment between St. Laurent Boulevard and Cox Country Road. West of St. Laurent Boulevard, the roadway continues as Industrial Avenue. Between the western and eastern intersections with the Blackburn Hamlet Bypass, Innes Road acts as a major collector. East of Cox Country Road, Innes Road continues as a rural arterial roadway until Dunning Road. Within the study area, Innes Road has a four-lane divided urban cross-section with bike lanes, sidewalks on both sides of the roadway, and a posted speed limit of 60 km/h. Innes Road is classified as an urban truck route, allowing full loads. Street parking is not permitted.

Trim Road is an arterial roadway that generally runs on a north-south alignment between Ottawa Regional Road 174 and Wall Road. North of Ottawa Regional Road 174, Trim Road continues as a major collector until Jeanne D’Arc Boulevard, and then as a local roadway until terminating at Petrie Island Park. South of Wall Road, Trim Road continues primarily as a collector, with a short section of arterial roadway in Navan, until terminating approximately 930m south of Perrault Road. Within the study area, Trim Road has a four-lane divided urban cross-section with bike lanes, sidewalks on the west side of the roadway, and a posted speed limit of 60 km/h. Trim Road has a multi-use pathway on the east side between Innes Road and Millennium Boulevard, and a sidewalk south of Millennium Boulevard. Trim Road is classified as a truck route, allowing partial loads. Street parking is not permitted. The right-of-way (ROW) at the subject site is approximately 42m. The City of Ottawa’s Official Plan identifies a ROW protection of 37.5m throughout the study area, with an additional 5m protected on the east side to construct a rural cross-section. Widening is not required as part of this application.

Portobello Boulevard is a major collector roadway that generally runs on a north-south alignment between Trim Road and Brian Coburn Boulevard. South of Brian Coburn Boulevard, Portobello Boulevard continues as a major collector roadway before terminating approximately 880m south of Brian Coburn Boulevard. Within the study area, Portobello Boulevard has a four-lane divided urban cross-section with bike lanes, and sidewalks on both sides of the roadway. The posted speed limit is 50 km/h, with a reduction to 40 km/h on school days (from 7:00am-9:30am and 2:00pm-5:00pm). Portobello Boulevard is not classified as a truck route. Street parking is not permitted.

Provence Avenue is a collector roadway that generally runs on a north-south alignment between Valin Street and Brian Coburn Boulevard. Within the study area, Provence Avenue has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, and a posted speed limit of 50 km/h. Provence Avenue is not classified as a truck route. Street parking is permitted. The ROW at the subject site is variable, ranging from approximately 26m at the northern and southern extents and approximately 56.5m at the future transitway.

Aquaview Drive is a collector roadway that runs east-west at the intersection with Portobello Boulevard, before curving into a north-south alignment and terminating at Brian Coburn Boulevard (approximately 370m east of Tenth Line Road). East of Portobello Boulevard, the roadway continues as Nantes Street. Within the study area, Aquaview Drive has a two-lane undivided urban cross-section, sidewalk on the south side of the roadway, and a posted speed limit of 50 km/h. Aquaview Drive is not classified as a truck route. Street parking is permitted. The ROW at the subject site is approximately 22m.

Nantes Street is a collector roadway that runs east-west at the intersection with Portobello Boulevard, before curving into a north-south alignment and terminating at Brian Coburn Boulevard (approximately 310m west of Provence Avenue). West of the intersection of Portobello Boulevard, the roadway continues as Aquaview Drive. Within the study area, Nantes Street has a two-lane undivided urban cross-section, sidewalk on the north side of the roadway, and a posted speed limit of 40 km/h. As a temporary traffic calming device, flex posts have been installed on either side of the school zone on Nantes Street. Nantes Street is not classified as a truck route. Street parking is permitted.

Montmere Avenue is a collector roadway that runs east-west at the intersection with Trim Road for approximately 380m before curving into a north-south alignment and terminating at Brian Coburn Boulevard (approximately 220m east of Provence Avenue). Within the study area, Montmere Avenue has a two-lane undivided urban cross-section, sidewalk on the north/west side of the roadway, and a posted speed limit of 40 km/h. Montmere Avenue is not classified as a truck route. Street parking is permitted.

Plainhill Drive is a local roadway that runs east-west at the intersections of Montmere Avenue and Provence Avenue, before curving into a north-south alignment and continuing as Comfrey Crescent at the intersection with Ivany Way. Within the study area, Plainhill Drive has a two-lane undivided urban cross-section, sidewalk on the north/west side of the roadway, and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. Plainhill Drive is not classified as a truck route. Street parking is permitted.

Salzburg Drive is a local roadway that runs on an east-west alignment from Trim Road, and terminates approximately 200m west of Trim Road. Salzburg Drive has a two-lane undivided urban cross-section, sidewalk on the north side of the roadway, and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. Salzburg Drive is not classified as a truck route. Street parking is permitted.

Millennium Boulevard is a local roadway that generally runs on an east-west alignment from Trim Road, and terminates at Gisèle Lalonde Secondary School (approximately 470m east of Trim Road).

Within the study area, Millennium Boulevard has a two-lane divided urban cross-section, multi-use pathways on both sides of the roadway to the transit station, and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. East of the transit station, Millennium Boulevard has a sidewalk on the north side. Millennium Boulevard is not classified as a truck route. Street parking is not permitted.

4.1.2 Intersections

Innes Road/Provence Avenue

- Signalized four-legged intersection
- Northbound/Southbound: one left turn lane, one shared through/right turn lane
- Eastbound: one left turn lane, two through lanes, one right turn lane
- Westbound: one left turn lane, one through lane, one shared through/right turn lane
- Bike lane on eastbound and westbound approaches

Innes Road/Trim Road

- Signalized four-legged intersection
- Northbound: two left turn lanes, two through lanes, and one right turn lane
- Southbound: one left turn lane, two through lanes, and one right turn lane
- Eastbound/Westbound: one left turn lane, two through lanes, and one right turn lane
- Bike lanes on eastbound and westbound approaches

Trim Road/Salzburg Drive

- Unsignalized four-legged intersection
- Stop controlled on Salzburg Drive
- Northbound/Southbound: one left turn lane and two through lanes
- Eastbound/Westbound: one shared left turn/ through/right turn lane
- Bike lanes on northbound and southbound approaches

Trim Road/Millennium Boulevard

- Three-legged roundabout
- Northbound/Southbound: two lane approach
- Westbound: one lane approach
- Bike lanes on northbound and southbound approaches
- Multi-use pathway on westbound approach

Trim Road/Montmere Avenue

- Unsignalized three-legged intersection
- Stop-controlled on Montmere Avenue
- Northbound: one left turn lane and two through lanes
- Southbound: two through lanes and one right turn lane
- Eastbound: one shared left turn/right turn lane
- Bike lanes on northbound and southbound approaches

Provence Avenue/Plainhill Drive

- Unsignalized four-legged intersection
- All-way stop-controlled
- All approaches: one shared left turn/through/ right turn lane

Portobello Boulevard/
Aquaview Drive/Nantes Street

- Unsignalized four-legged intersection
- All-way stop-controlled
- Northbound/Southbound: one shared left turn/ through lane and one shared through/right turn lane
- Eastbound/Westbound: one shared left turn/ through/right turn lane
- Bike lanes on northbound and southbound approaches

4.1.3 Driveways

Within 200m of the proposed accesses to the subdivision, there are accesses to multiple schools, which are identified as follows:

- Avalon Public School (accesses on Aquaview Drive and Portobello Boulevard);
- Des Sentiers Elementary School (access on Nantes Street).

All existing residences are accessed via local roadways, Aquaview Drive and Nantes Street (which are classified as collector roadways), and Trim Road (an arterial roadway with access to 2170 Trim Road and 2088 Trim Road).

4.1.4 Pedestrian and Cycling Facilities

Concrete sidewalks are provided on both sides of Innes Road, Portobello Boulevard, Provence Avenue, and Trim Road south of Millennium Boulevard. Concrete sidewalks are provided on one side of Aquaview Drive, Nantes Street, Montmere Avenue, Plainhill Drive, and Salzburg Drive, along with the west side of Trim Road north of Millennium Boulevard. Multi-use pathways are provided on both sides of Millennium Boulevard, and the east side of Trim Road north of Millennium Boulevard. The multi-use pathway on the south side of Millennium Boulevard provides connectivity to Millennium Park Stadium and the Millennium Station Park and Ride.

In the City of Ottawa's primary cycling network, Innes Road is classified as a Crosstown Bikeway, Trim Road is classified as a Spine Route, and Portobello Boulevard, Provence Avenue, Aquaview Drive, and Nantes Street are designated as Local Routes. Bike lanes are provided on Innes Road, Trim Road, and Portobello Boulevard.

Construction of the Trans-Orléans Pathway, an asphalt multi-use pathway from Liska Street to Trim Road, has been recently completed. The pathway extends along the south limit of the subdivision between Trim Road and Provence Avenue, connecting to Grapefern Terrace. It continues west along the north side of Aquaview Drive/Nantes Street to the transitway corridor, and connects to the RioCan Shopping Centre at Innes Road/Tenth Line Road, the Hydro corridor, and Liska Street. The pathway is designated as a Community Connectivity initiative project, which complements the Ottawa Cycling Plan. The relevant section of the Trans-Orléans Pathway Functional Design is shown in **Figure 2**.

4.1.5 Area Traffic Management

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

4.1.6 Transit

The nearest bus stops to the subject site are as follows:

<u>Innes Road/Provence Avenue</u>

- Stop #0571 – for routes 94, 135, 611, 612, and 632
  (located at the northwest corner)
- Stop #3241 – for routes 94, 611, 612, and 632
  (located at the southeast corner)
- Stop #3656 – for routes 135 and 612
  (located at the southeast corner)

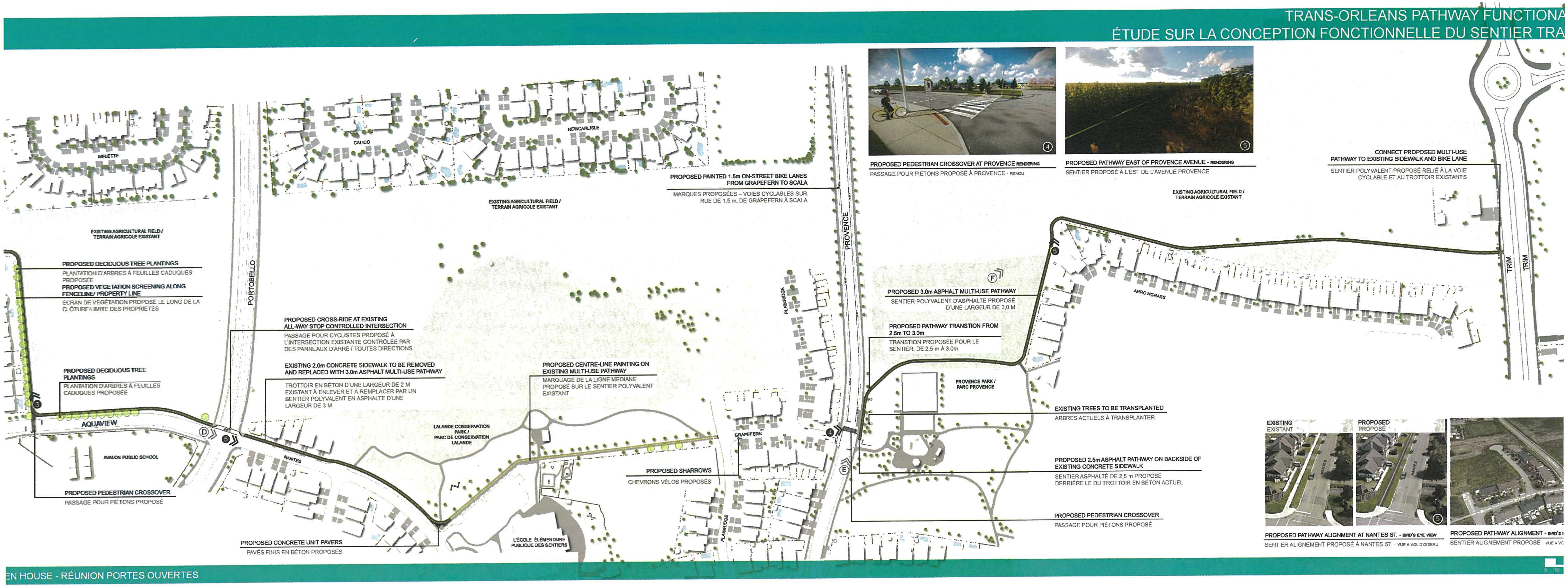
<u>Trim Road/Salzburg Drive</u>

- Stop #9072 – for routes 22, 94, 122, 611, 612, and 632
  (located at the southeast corner)
- Stop #9073 – for routes 22, 94, 122, 611, 612, and 632
  (located at the northwest corner)

<u>Trim Road/Millennium Boulevard</u>

- Stop #1090 – for routes 22, 30, 33, 94, 122, 135, 611, 612, 618, 630, and 632
  (located at the southeast corner)
- Stop #9075 – for routes 22, 30, 33, 94, 122, 135, 611, 612, 618, 630, and 632
  (located at the northeast corner)

Figure 2: Trans-Orleans Pathway Functional Design



Portobello Boulevard/Aquaview Drive/Nantes Street

- Stop #1367 – for routes 33 and 233
  (located at the northwest corner)
- Stop #6314 – for routes 33 and 233
  (located at the northeast corner)

The Millennium Transit Station and Park and Ride (Stop #3076) is approximately 160m east of Trim Road, south of Cumberland Millennium Sports Park. It provides service to routes 22, 30, 94, 122, 612, 618, and 630.

Locations of these bus stops and Millennium Station are shown in **Figure 3**.

Figure 3: OC Transpo Bus Stop Locations

OC Transpo Route 22 travels between either the Albert/Bay or LeBreton stations and Millennium Station. On weekdays, the route operates every 15 minutes from Millennium Station toward

Albert/Bay Station between 6:00am and 9:00am, and every 15 minutes from LeBreton Station toward Millennium Station between 3:00pm and 7:00pm. This route does not operate outside of these hours, or on weekends.

OC Transpo Route 30 travels between either the Albert/Bay, Blair, or LeBreton stations and Millennium Station. During the weekday peak periods, the route operates every 15 minutes from Millennium Station toward Albert/Bay Station between 5:30am and 8:30am, and every 10 minutes from LeBreton Station toward Millennium Station between 3:00pm and 6:30pm. During the weekday off-peak times, the route operates every 30 minutes between Blair Station and Millennium Station from 5:30am to 12:00am. On weekends, the route operates every 30 minutes between Blair Station and Millennium Station between 7:30am and 11:30pm.

OC Transpo Route 33 travels between either the Albert/Bay or Place d’Orléans stations and Portobello/Summer Sky Station. During the weekday peak periods, the route operates every 15 minutes from Portobello/Summer Sky Station toward Albert/Bay Station between 5:30am and 9:00am, and every 15 minutes from LeBreton Station to Portobello/Summer Sky Station between 3:00pm and 6:30pm. Additionally, the route operates every 30 minutes between Place d’Orléans Station and Portobello/ Summer Sky Station from 7:00am to 11:00pm. The route does not operate on weekends.

OC Transpo Route 94 travels between Riverview Station and Millennium Station. During the weekday peak periods, the route operates every 10 minutes from Millennium Station to Tunney’s Pasture Station between 5:00am and 9:00am, and every 10 minutes from Riverview Station or Tunney’s Pasture Station to Millennium Station between 2:00pm and 6:00pm. During the weekday off-peak times, the route operates every 15 minutes from Riverview Station or Tunney’s Pasture Station to Millennium Station between 9:00am and 12:00am. On weekends, the route operates every 15 minutes from 9:30am to 5:30pm, with service from Millennium Station alternating between Riverview Station and Tunney’s Pasture Station. The route additionally operates from 5:30am to 9:00am and 5:30pm to 1:30am on weekends.

OC Transpo Route 122 travels between Place d’Orléans Station and Millennium Station. On all days of the week, the route operates every 30 minutes from Place d’Orléans Station and Millennium Station, with weekday service running from 7:00am to 10:30pm, Saturday service running from 8:00am to 10:30pm, and Sunday service running from 9:30am to 9:00pm.

OC Transpo Route 135 travels between Lakeridge/Vista Park Station and Place d’Orléans Station. On all days of the week, the route operates every 30 minutes from Lakeridge/Vista Park Station and Place d’Orléans Station, with weekday service running from 6:30am to 12:30am, Saturday service running from 8:30am to 12:00am, and Sunday service running from 10:00am to 12:00am.

OC Transpo Route 233 travels between either the Albert/Bay or LeBreton stations and Portobello/ Summer Sky Station. During the weekday peak periods, the route operates every 30 minutes from Millennium Station to Albert/Bay Station between 6:30am and 7:30am, and every 30 minutes from LeBreton Station to Millennium Station between 3:30pm and 4:30pm. This route does not operate outside of these hours, and does not operate on weekends.

The 600-series of OC Transpo Routes provide service to schools throughout the City of Ottawa. The following routes provide service to one or more stops within the study area.

OC Transpo Route 611 travels between either the St. Joseph/Youville or St. Joseph/Forest Valley stations and Gisèle Lalonde Secondary School. Based on the schedule, this route arrives at 8:52am and departs at 3:38pm on school days.

OC Transpo Route 612 travels between Renaud/Saddleridge Station and Gisèle Lalonde Secondary School or Béatrice Desloges Catholic Secondary School. Based on the schedule, this route arrives at Gisèle Lalonde Secondary School at 8:52am and 8:55am, and departs at 3:38pm. The route arrives at Béatrice Desloges Secondary School at 7:43am and departs at 2:30pm on school days.

OC Transpo Route 618 travels between Louis Riel Secondary School and Millennium Station. Based on the schedule, this route departs Millennium Station at 7:53am and arrives at 3:40pm on school days.

OC Transpo Route 630 travels between Ogilvie/Kender Station (for Colonel By Secondary School and Gloucester High School) and Millennium Station. Based on the schedule, this route departs Millennium Station at 8:17am and arrives at 4:10pm on school days.

OC Transpo Route 632 travels between St. Joseph/Orléans Station and Gisèle Lalonde Secondary School. Based on the schedule, this route arrives at Gisèle Lalonde Secondary School at 8:56am and departs at 3:38pm on school days.

OC Transpo maps for the routes outlined above and a copy of the June 2018 OC Transpo System Map are included in **Appendix C**.

4.1.7 Existing Traffic Volumes

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

• Innes Road/Provence Avenue	May 9, 2017
• Innes Road/Trim Road	August 19, 2015
• Trim Road/Millennium Boulevard	February 22, 2017
• Trim Road/Montmere Avenue	November 14, 2012
• Provence Avenue/Plainhill Drive	January 22, 2014
• Portobello Boulevard/Aquaview Drive/Nantes Street	May 25, 2017

The average annual daily traffic (AADT) of the boundary arterial and collector roadways are based on the most recent traffic counts, and shown in **Table 1**. Traffic count data is included in **Appendix D**.

Table 1: AADT of Boundary Streets

Roadway	Road Class	AADT
Innes Road	Arterial	15,410 vpd
Trim Road	Arterial	7,870 vpd
Portobello Boulevard	Major Collector	3,890 vpd
Provence Avenue	Collector	850 vpd
Aquaview Drive	Collector	650 vpd
Nantes Street	Collector	1,080 vpd
Montmere Avenue	Collector	930 vpd

The traffic volumes at Trim Road/Salzburg Drive have been estimated through the following methods. For traffic along Trim Road, the volumes have been carried forward from the traffic count for Trim Road/Millennium Boulevard. The west approach is a residential cul-de-sac, while the east approach is an access to the Trim Road Works Yard, a road maintenance facility operated by the City of Ottawa.

There are 50 dwelling units on Salzburg Drive west of Trim Road. Trips generated by these dwellings have been estimated using the recommended rates from the *TRANS Trip Generation Manual*, prepared in 2009 by McCormick Rankin Corporation. The vehicle trip generation rates, taken from Table 6.3 of the report, correspond to Townhouses in the Suburban Area (outside the greenbelt). The directional split between inbound and outbound trips are based on the blended splits presented in Table 3.17 of the report. The estimated number of trips generated by the residences along Salzburg Drive is shown in **Table 2**.

Table 2: Salzburg Drive - Trip Generation

Land Use	TRANS Rates	Units	AM Peak (VPH)			PM Peak (VPH)		
			IN	OUT	TOT	IN	OUT	TOT
Townhouses	AM: 0.54 PM: 0.71	50 units	10	17	27	19	17	36

The corresponding number of person trips generated by the residences along Salzburg Drive are based on the modal shares presented in Table 3.13 of the TRANS report. The estimated number of person trips generated is shown in **Table 3**.

Table 3: Salzburg Drive - Person Trip Generation

Land Use	TRANS Auto Share	AM Peak (PPH[(1)])			PM Peak (PPH)		
		IN	OUT	TOT	IN	OUT	TOT
Townhouses	AM: 55% PM: 61%	18	31	49	31	28	59

1. PPH = Persons Per Hour

There are several storage and administrative buildings on the Trim Road Works Yard land east of Trim Road. CastleGlenn Consultants prepared a Traffic Impact Brief in support of the Trim Road Works Yard development in January 2014, which indicated two phases of construction. The first phase was constructed after the 2015 traffic count at Innes Road/Trim Road, and the buildout year of the second phase is indefinite. To maintain a conservative analysis, the second phase is assumed to be built by the buildout year of the proposed subdivision.

Trips generated by the Trim Road Works Yard have been estimated using trip generation rates from the *ITE Trip Generation Manual, 9th Edition*. With both phases constructed, the total gross floor area of Buildings A, B, and C as shown on the site plan (included in **Appendix E**), equals approximately 83,040 ft^2. A total of 207 parking spaces will ultimately be provided for service and administrative staff, and 70 spaces will be provided for large vehicles. The land use selected for this development is Warehousing (land use 150).

The estimated number of person trips generated by the Trim Road Works Yard is shown in **Table 4**.

Table 4: Trim Road Works Yard - Person Trip Generation

Land Use	ITE Code	GFA	AM Peak (PPH(1))			PM Peak (PPH)		
			IN	OUT	TOT	IN	OUT	TOT
Warehousing	150	83,040 ft^2	75	20	95	17	51	68
	Phase 1	**61,440 ft^2**	**55**	**15**	**70**	**12**	**38**	**50**
	Phase 2	**21,600 ft^2**	**20**	**5**	**25**	**5**	**13**	**18**

1. PPH calculated using an ITE Trip to Person Trip factor of 1.28, consistent with the 2017 TIA Guidelines

The modal shares for the trips generated by the residences on Salzburg Drive are anticipated to be consistent with the modal shares outlined in the *2011 TRANS O-D Survey Report*, specific to the Orléans region. The modal share values applied are based on all observed trips from/within Orléans in the AM peak period and all observed trips to/within Orléans in the PM peak period.

Given the vehicular-based land uses of the Trim Road Works Yard, the modal shares are anticipated to be highly skewed toward auto drivers. As such, the vehicle trips generated have been taken directly from the *Trip Generation Manual*, which translates to approximately 80% auto drivers. The remainder is split as 10% auto passengers, 5% transit, and 5% non-auto.

A full breakdown of the person trips generated by modal share is shown in **Table 5**.

Table 5: Salzburg Drive and Trim Road Works Yard - Trips by Modal Share

Travel Mode	Modal Share	AM Peak			PM Peak		
		IN	OUT	TOT	IN	OUT	TOT
Salzburg Drive Person Trips		*18*	*31*	*49*	*31*	*28*	*59*
Auto Driver	55%	10	17	27	17	15	32
Auto Passenger	15%	3	5	8	5	5	10
Transit	25%	4	8	12	8	7	15
Non-Auto	5%	1	1	2	1	1	2
Auto Driver (Total)		**10**	**17**	**27**	**17**	**15**	**32**
Auto Passenger (Total)		**3**	**5**	**8**	**5**	**5**	**10**
Transit (Total)		**4**	**8**	**12**	**8**	**7**	**15**
Non-Auto (Total)		**1**	**1**	**2**	**1**	**1**	**2**

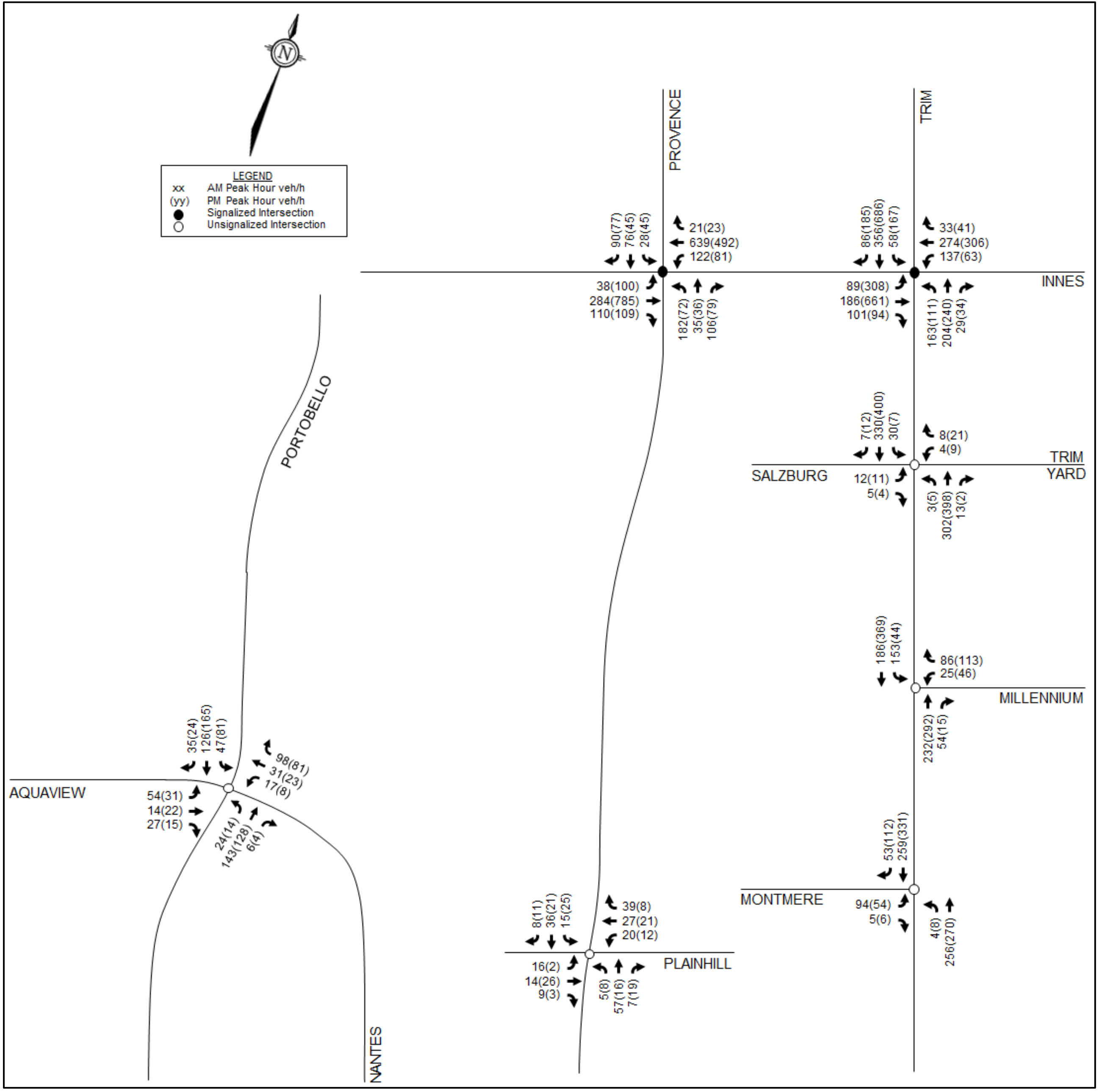
Travel Mode	**Modal Share**	**AM Peak**			**PM Peak**		
		IN	**OUT**	**TOT**	**IN**	**OUT**	**TOT**
Trim Road Works Yard Phase 1 Person Trips		*55*	*15*	*70*	*12*	*38*	*50*
Auto Driver	80%	43	12	55	9	30	39
Auto Passenger	10%	6	1	7	1	4	5
Transit	5%	3	1	4	1	2	3
Non-Auto	5%	3	1	4	1	2	3
Trim Road Works Yard Phase 2 Person Trips		*20*	*5*	*25*	*5*	*13*	*18*
Auto Driver	80%	15	4	19	4	10	14
Auto Passenger	10%	3	1	4	1	1	2
Transit	5%	1	0	1	0	1	1
Non-Auto	5%	1	0	1	0	1	1
Auto Driver (Total)		**58**	**16**	**74**	**13**	**40**	**53**
Auto Passenger (Total)		**9**	**2**	**11**	**2**	**5**	**7**
Transit (Total)		**4**	**1**	**5**	**1**	**3**	**4**
Non-Auto (Total)		**4**	**1**	**5**	**1**	**3**	**4**

From the previous table, the residences on Salzburg Drive are expected to generate 27 vehicle trips in the AM peak period and 32 vehicle trips in the PM peak period. In existing conditions, the Trim Road Works Yard is expected to generate 55 vehicle trips in the AM peak period and 39 vehicle trips in the PM peak period. At full buildout, the Trim Road Works Yard is expected to generate 74 vehicle trips in the AM peak period and 53 vehicle trips in the PM peak period. The traffic generated at full buildout will be reflected in the future background traffic.

The distribution of these trips is assumed to follow existing traffic patterns, where the split between Innes Road and Brian Coburn Boulevard is approximately 70%/30%. This is a reasonable assumption, given that Innes Road (four lanes) has approximately double the capacity of Brian Coburn Boulevard (two lanes). As such, 70% of trips are distributed to/from the north and 30% of trips are distributed to/from the south.

Traffic volumes within the study area are shown in **Figure 4**.

Figure 4: Existing Network 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 intersections. Copies of the collision summary reports are included in **Appendix F**.

The collision data has been evaluated to determine if there are any identifiable collision patterns. The number of collisions at each intersection from January 1, 2012 to December 31, 2016 is summarized in **Table 6**.

Table 6: Reported Collisions

Intersection	Number of Reported Collisions
Innes Road/Provence Avenue	10
Innes Road/Trim Road	34
Trim Road/Salzburg Drive	0
Trim Road/Millennium Boulevard	5
Trim Road/Montmere Avenue	1
Provence Avenue/Plainhill Drive	0
Portobello Boulevard/Aquaview Drive/Nantes Street	4

Innes Road/Provence Avenue

A total of 10 collisions were reported at this intersection over the last five years, of which there were four rear-end impacts, two sideswipe impacts, and four angle impacts. One collision caused injuries, but none caused fatalities.

Innes Road/Trim Road

A total of 34 collisions were reported at this intersection over the last five years, of which there were eight rear-end impacts, 16 turning movement impacts, three sideswipe impacts, five angle impacts, and two single-vehicle/other impacts. Six of the collisions caused injuries, but none caused fatalities.

Of the eight rear-end impacts, two occurred at the northbound approach (two through vehicle incidents), two occurred at the southbound approach (one through vehicle incident and one right turn incident), three occurred at the eastbound approach (three left turn incidents), and one occurred at the westbound approach (a through vehicle incident). One of the eight impacts occurred in poor weather conditions.

Of the 16 turning movement impacts, four involved left turns at the northbound approach, three involved left turns at the southbound approach, one involved a U-turn at the southbound approach, four involved left turns at the eastbound approach, one involved a U-turn at the eastbound approach, and three involved left turns at the westbound approach. Two of the 16 impacts occurred in poor weather conditions.

Trim Road/Millennium Boulevard

A total of five collisions were reported at this intersection over the last five years, of which there were two rear-end impacts, two sideswipe impacts, and one angle impact. None of these collisions caused injuries or fatalities.

Trim Road/Montmere Avenue

A total of one collision was reported at this intersection over the last five years, which was an angle impact. This collision did not result in injuries or fatalities.

Portobello Boulevard/Aquaview Drive/Nantes Street

A total of four collisions were reported at this intersection over the last five years, of which there was one rear-end impact, two angle impacts, and one single-vehicle/other impact involving a pedestrian. Two of the collisions caused injuries, but none caused fatalities.

4.2 Planned Conditions

The City of Ottawa’s 2013 Transportation Master Plan (TMP) does not identify any upcoming roadway projects within the study area in its Affordable Road Network. The widening of Trim Road between North Service Road and Innes Road has been completed.

The Blackburn Hamlet Bypass Extension is identified as a Phase 2 project (2020-2025) under the Affordable Road Network, and includes a new four-lane road between Innes Road and Navan Road. The Brian Coburn Boulevard Extension is identified under the 2031 Network Concept, and includes a new two-lane roadway (ultimately four-lane) between Trim Road and Frank Kenny Road. Trim Road is also identified as a widened arterial roadway from Millennium Boulevard to Brian Coburn Boulevard under the Network Concept.

The Blackburn Hamlet Bypass and Brian Coburn Boulevard extensions will provide a major parallel arterial route south of Innes Road, and may provide some relief to the eastbound/westbound through traffic volumes on Innes Road.

The Affordable Rapid Transit and Transit Priority (RTTP) Network identifies Innes Road and Brian Coburn Boulevard west of Tenth Line Road as Transit Priority Corridors with Isolated Measures. Transit signal priority and queue jump lanes will be implemented at select intersections. Peak period bus lanes and transit signal priority are identified for the Blackburn Hamlet Bypass between Innes Road and Brian Coburn Boulevard, which may include the repurposing of general purpose lanes. The RTTP 2031 Network Concept identifies at-grade crossings throughout the study area for the Cumberland Transitway, with an underpass at Trim Road. A corridor for the proposed transitway has been reserved by the City of Ottawa. Grade separated crossings are identified between Blair Station and Tenth Line Road.

The 2013 Ottawa Cycling Plan does not identify any projects within the study area. Construction of the Trans-Orléans Pathway is designated as a Community Connectivity initiative, projects which complement the Ottawa Cycling Plan.

A Transportation Overview was completed by IBI Group in August 2017 for a proposed retirement residence located at 5157 Innes Road (northwest corner of Innes Road/Trim Road). The trips generated by this development are accounted for in the forecasting and analysis sections of this TIA. No other development applications are noted on the City’s Development Application search tool.

4.3 Study Area and Time Periods

The study area for this report will include Innes Road, Trim Road, Portobello Boulevard, Provence Avenue, Aquaview Drive, Nantes Street, Montmere Avenue, Plainhill Drive, Salzburg Drive, and Millennium Boulevard. The study area includes the signalized intersections at Innes Road/Provence Avenue and Innes Road/Trim Road, the roundabout at Trim Road/Millennium Boulevard, and the unsignalized intersections at Trim Road/Salzburg Drive, Trim Road/Montmere Avenue, Provence Avenue/Plainhill Drive, and Portobello Boulevard/Aquaview Drive/Nantes Street.

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the ‘worst case’ combination of site generated traffic and adjacent street traffic. The proposed development is expected to be completed with full occupancy by the year 2025. City staff has confirmed that analysis of the horizon year 2030 shall be waived. Therefore, this TIA will perform analysis for the weekday AM and PM peak periods in the buildout year 2025.

4.4 Exemptions Review

This module reviews possible exemptions from the final Transportation Impact Assessment, as outlined in the TIA guidelines. The applicable exemptions for this site are shown in **Table 7**.

Table 7: 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	Exempt
	4.1.3 New Street Networks	• Only required for plans of subdivision	Not Exempt
4.2 Parking	*4.2.1* Parking Supply	• Only required for site plans	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	Exempt
4.8 Network Concept	*All elements*	• Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning	Exempt

The Neighbourhood Traffic Management module will not be reviewed, as the additional traffic generated by the proposed development is not anticipated to change the function of any local or collector roadways. The Network Concept module will not be reviewed, as the established zoning permits the proposed development.

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

- Module 4.1: Development Design
- Module 4.3: Boundary Streets
- Module 4.4: Access Design
- Module 4.5: Transportation Demand Management
- Module 4.7: Transit
- Module 4.9: Intersection Design

5.0 FORECASTING

5.1 Development-Generated Travel Demand

5.1.1 Trip Generation

Phases 1-5 of the proposed subdivision will include 535 dwellings, of which there will be 296 detached homes, 199 townhomes and 40 apartment units. Trips generated by these dwellings have been estimated using the relevant recommended rates outlined in the *TRANS Trip Generation Manual*. An additional sixth phase is planned as part of the proposed subdivision, but this will be filed under a separate Draft Plan of Subdivision application. This TIA report will account for this phase (which includes 55 detached homes, 68 townhomes and 230 apartment units) as background traffic.

The vehicle trip generation rates, taken from Table 6.3 of the TRANS report, correspond to either Single-Detached Dwellings, Townhouses, Low-Rise Apartments (1-2 floors), or Mid-Rise Apartment (3-10 floors), all in the Suburban Area (outside the greenbelt). The directional split between inbound and outbound trips are based on the blended splits presented in Table 3.17 of the report.

Estimates of the trips generated by all six phases of the proposed subdivision are summarized in **Table 8**.

The corresponding number of person trips generated by each phase of the proposed subdivision are based on the modal shares presented in Table 3.13 of the TRANS report. The estimated number of person trips generated by each phase is shown in **Table 9**.

Table 8: Proposed Residential Vehicle Trip Generation

Land Use	TRANS Rate	Units	AM Peak (VPH)			PM Peak (VPH)		
			IN	OUT	TOT	IN	OUT	TOT
Phase 1								
Single-Detached Dwelling	AM: 0.70 PM: 0.90	35 units	8	17	25	20	12	32
Townhouse	AM: 0.54 PM: 0.71	24 units	5	8	13	9	8	17
Phase 1 Total			**13**	**25**	**38**	**29**	**20**	**49**
Phase 2								
Single-Detached Dwelling	AM: 0.70 PM: 0.90	85 units	17	43	60	48	29	77
Townhouse	AM: 0.54 PM: 0.71	90 units	18	31	49	34	30	64
Phase 2 Total			**35**	**74**	**109**	**82**	**59**	**141**
Phase 3								
Single-Detached Dwelling	AM: 0.70 PM: 0.90	119 units	24	59	83	66	41	107
Townhouse	AM: 0.54 PM: 0.71	30 units	6	10	16	11	10	21
Phase 3 Total			**30**	**69**	**99**	**77**	**51**	**128**

Land Use	TRANS Rate	Units	AM Peak (VPH)			PM Peak (VPH)		
			IN	OUT	TOT	IN	OUT	TOT
Phase 4								
Single-Detached Dwelling	AM: 0.70 PM: 0.90	27 units	6	13	19	15	9	24
Townhouse	AM: 0.54 PM: 0.71	27 units	6	9	15	10	9	19
Low-Rise Apartment	AM: 0.37 PM: 0.46	40 units	3	12	15	12	6	18
Phase 4 Total			**15**	**34**	**49**	**37**	**24**	**61**
Phase 5								
Single-Detached Dwelling	AM: 0.70 PM: 0.90	30 units	6	15	21	17	10	27
Townhouse	AM: 0.54 PM: 0.71	28 units	6	9	15	11	9	20
Phase 5 Total			**12**	**24**	**36**	**28**	**19**	**47**
Phases 1-5 Total			**105**	**226**	**331**	**253**	**173**	**426**
Phase 6								
Single-Detached Dwelling	AM: 0.70 PM: 0.90	55 units	11	28	39	31	19	50
Townhouse	AM: 0.54 PM: 0.71	68 units	14	23	37	25	23	48
Mid-Rise Apartment	AM: 0.29 PM: 0.37	230 units	16	51	67	53	32	85
Phase 6 Total			**41**	**102**	**143**	**109**	**74**	**183**

Table 9: Proposed Residential Person Trip Generation

Land Use	TRANS Auto Share	AM Peak (PPH)			PM Peak (PPH)		
		IN	OUT	TOT	IN	OUT	TOT
Phase 1							
Single-Detached Dwelling	AM: 55% PM: 64%	13	32	45	31	19	50
Townhouse	AM: 55% PM: 61%	9	15	24	15	13	28
Phase 1 Total		**22**	**47**	**69**	**46**	**32**	**78**
Phase 2							
Single-Detached Dwelling	AM: 55% PM: 64%	31	77	108	74	46	120
Townhouse	AM: 55% PM: 61%	35	59	94	55	48	103
Phase 2 Total		**66**	**136**	**202**	**129**	**94**	**223**
Phase 3							
Single-Detached Dwelling	AM: 55% PM: 64%	44	107	151	104	63	167
Townhouse	AM: 55% PM: 61%	11	18	29	18	16	34
Phase 3 Total		**55**	**125**	**180**	**122**	**79**	**201**

Land Use	TRANS Auto Share	AM Peak (PPH)			PM Peak (PPH)		
		IN	OUT	TOT	IN	OUT	TOT
Phase 4							
Single-Detached Dwelling	AM: 55% PM: 64%	10	25	35	24	14	38
Townhouse	AM: 55% PM: 61%	11	18	29	16	15	31
Low-Rise Apartment	AM: 44% PM: 44%	7	27	34	26	15	41
	Phase 4 Total	**28**	**70**	**98**	**66**	**44**	**110**
Phase 5							
Single-Detached Dwelling	AM: 55% PM: 64%	11	27	38	26	16	42
Townhouse	AM: 55% PM: 61%	10	17	27	17	16	33
	Phase 5 Total	**21**	**44**	**65**	**43**	**32**	**75**
	Phases 1-5 Total	**192**	**422**	**614**	**406**	**281**	**687**
Phase 6							
Single-Detached Dwelling	AM: 55% PM: 64%	21	50	71	48	30	78
Townhouse	AM: 55% PM: 61%	25	42	67	42	37	79
Mid-Rise Apartment	AM: 44% PM: 44%	36	116	152	120	73	193
	Phase 6 Total	**82**	**208**	**290**	**210**	**140**	**350**

From the previous table, Phases 1-5 of the proposed subdivision are projected to generate 614 person trips during the AM peak period and 687 person trips during the PM peak period. Phase 6 of the proposed subdivision is projected to generate 290 person trips during the AM peak period and 350 person trips during the PM peak period.

The modal shares for the proposed subdivision are assumed to be consistent with the modal shares outlined in the *2011 TRANS O-D Survey Report*, specific to the Orléans region. While the subject site is adjacent to the boundary between the Orléans and Rural East regions, the modal shares outlined for the Orléans region are anticipated to be consistent due to the subject site's proximity to the Millennium Park and Ride. The modal share values applied to the proposed dwellings are based on all observed trips from/within Orléans in the AM peak hour, and all observed trips to/within Orléans in the PM peak hour.

A full breakdown of the projected person trips generated by modal share is shown in **Table 10**.

Table 10: Person Trips by Modal Share

Travel Mode	Modal Share	AM Peak			PM Peak		
		IN	OUT	TOT	IN	OUT	TOT
Phase 1							
Person Trips		*22*	*47*	*69*	*46*	*32*	*78*
Auto Driver	55%	12	27	39	26	17	43
Auto Passenger	15%	3	7	10	7	5	12
Transit	25%	6	11	17	11	8	19
Non-Auto	5%	1	2	3	2	2	4
Phase 2							
Person Trips		*66*	*136*	*202*	*129*	*94*	*223*
Auto Driver	55%	36	75	111	71	52	123
Auto Passenger	15%	10	20	30	19	14	33
Transit	25%	17	34	51	32	23	55
Non-Auto	5%	3	7	10	7	5	12
Phase 3							
Person Trips		*55*	*125*	*180*	*122*	*79*	*201*
Auto Driver	55%	30	70	100	67	44	111
Auto Passenger	15%	8	18	26	18	12	30
Transit	25%	14	31	45	31	19	50
Non-Auto	5%	3	6	9	6	4	10
Phase 4							
Person Trips		*28*	*70*	*98*	*66*	*44*	*110*
Auto Driver	55%	16	38	54	36	25	61
Auto Passenger	15%	4	10	14	10	6	16
Transit	25%	7	18	25	17	11	28
Non-Auto	5%	1	4	5	3	2	5
Phase 5							
Person Trips		*21*	*44*	*65*	*43*	*32*	*75*
Auto Driver	55%	12	25	37	24	17	41
Auto Passenger	15%	3	6	9	6	5	11
Transit	25%	5	11	16	11	8	19
Non-Auto	5%	1	2	3	2	2	4
Auto Driver (Total)		**106**	**235**	**341**	**224**	**155**	**379**
Auto Passenger (Total)		**28**	**61**	**89**	**60**	**42**	**102**
Transit (Total)		**49**	**105**	**154**	**102**	**69**	**171**
Non-Auto (Total)		**9**	**21**	**30**	**20**	**15**	**35**
Phase 6							
Person Trips		*82*	*208*	*290*	*210*	*140*	*350*
Auto Driver	55%	46	116	162	116	76	192
Auto Passenger	15%	12	30	42	31	21	52
Transit	25%	20	52	72	52	36	88
Non-Auto	5%	4	10	14	11	7	18
Auto Driver (Total)		**46**	**116**	**162**	**116**	**76**	**192**
Auto Passenger (Total)		**12**	**30**	**42**	**31**	**21**	**52**
Transit (Total)		**20**	**52**	**72**	**52**	**36**	**88**
Non-Auto (Total)		**4**	**10**	**14**	**11**	**7**	**18**

From the previous table, Phases 1-5 of the proposed subdivision are projected to generate 341 vehicle trips during the AM peak period and 379 vehicle trips during the PM peak period. Phase 6 of the proposed subdivision is projected to generate 162 vehicle trips during the AM peak period and 192 vehicle trips during the PM peak period.

5.1.2 Trip Distribution

While a widening of Brian Coburn Boulevard (south of the study area) is identified in the TMP's ultimate road network, it is not identified in either the Affordable Network or the 2031 Network Concept. Therefore, the distribution of traffic generated by the proposed subdivision to the road network is assumed to be consistent with existing traffic patterns during the AM and PM peak periods. The trip distribution is as follows:

- 70% north toward Innes Road, which is further distributed as follows:
    - 25% to/from the north on Trim Road;
    - 10% to/from the east on Innes Road;
    - 35% to/from the west on Innes Road;
- 25% south toward Brian Coburn Boulevard, of which all traffic is assumed to come to/from the west on Brian Coburn Boulevard;
- 5% east toward Millennium Boulevard.

5.1.3 Trip Assignment

Trips generated by the proposed subdivision have been assigned to the accesses based on access proximity and logical trip routing. For example, a vehicle trip originating from a property adjacent to the access on Provence Avenue is anticipated to use that access to travel north or south. However, that vehicle would use the access at Trim Road/Millennium Boulevard to travel east on Millennium Boulevard.

The assignment of generated trips to the proposed accesses are listed by phase below:

<u>Phase 1</u>

- Accesses at Aquaview Drive: 100% of all trips.

<u>Phase 2</u>

- Access at Salzburg Drive: 60% of trips to/from the north;
- Access at Trim Road/Millennium Boulevard: 40% of trips to/from the north, 100% of trips to/from the south, 100% of trips to/from the east.

<u>Phase 3</u>

- Access at Salzburg Drive: 50% of trips to/from the north;
- Access at Provence Avenue: 50% of trips to/from the north, 75% of trips to/from the south;
- Access at Trim Road/Millennium Boulevard: 25% of trips to/from the south, 100% of trips to/from the east.

<u>Phase 4</u>

- Access at Trim Road/Millennium Boulevard: 100% of all trips.

Phase 5

- Access at Provence Avenue: 75% of trips to/from the north, 100% of trips to/from the south;
- Access at Trim Road/Millennium Boulevard: 25% of trips to/from the north, 100% of trips to/from the east.

Phase 6 (background traffic)

- Access at Nantes Street: 80% of trips to/from the north, 80% of trips to/from the south;
- Access at Grapefern Terrace: 20% of trips to/from the north, 20% of trips to/from the south, 100% of trips to/from the east.

Trips generated by Phases 1-5 of the proposed subdivision are shown in **Figure 5**. Trips generated by Phase 6 of the proposed subdivision are shown in **Figure 6**.

5.2 Background Traffic

5.2.1 General Background Growth Rate

A rate of background growth has been established through a review of the City of Ottawa's Strategic Long Range Model, comparing snapshots of 2011 and 2031 AM peak volumes, and the City's 2013 TMP. The snapshots indicate a growth rate of less than 1% on Innes Road and Portobello Boulevard, while growth rates on Trim Road and Provence Avenue were unrealistic. Section 2.3 of the TMP projects a 33% growth in the population of the Orléans area between 2011 and 2031, which translates to an annual growth rate of approximately 1.4% per annum. A 1% annual growth rate has been assumed for the arterial and major collector roadways (Innes Road, Trim Road, Portobello Boulevard), which is consistent with the 2014 Transportation Brief for the Trim Road Works Yard. A 0% growth rate has been applied to all other roadways within the study area.

5.2.2 Other Area Developments

The projected traffic volumes generated by the proposed retirement residence at 5157 Innes Road has been added to the background traffic at all relevant intersections within the study area. Relevant excerpts of IBI Group's study for 5157 Innes Road are included in **Appendix G**.

Background volumes for the 2025 buildout year are shown in **Figure 7**. Total traffic volumes for the 2025 buildout year are shown in **Figure 8**.

Figure 5: Proposed Site-Generated Traffic, Phases 1-5

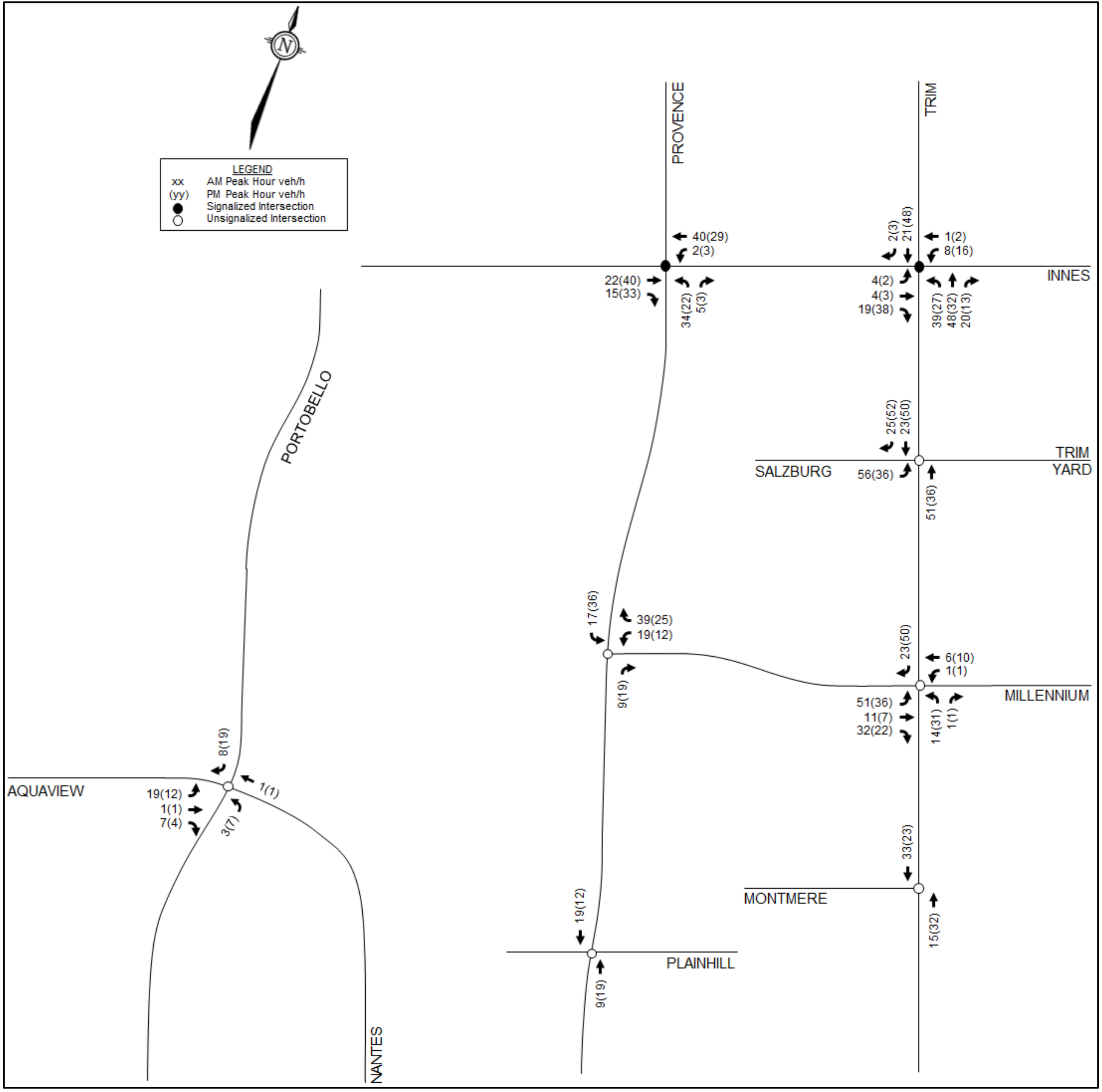


Figure 6: Proposed Site-Generated Traffic, Phase 6

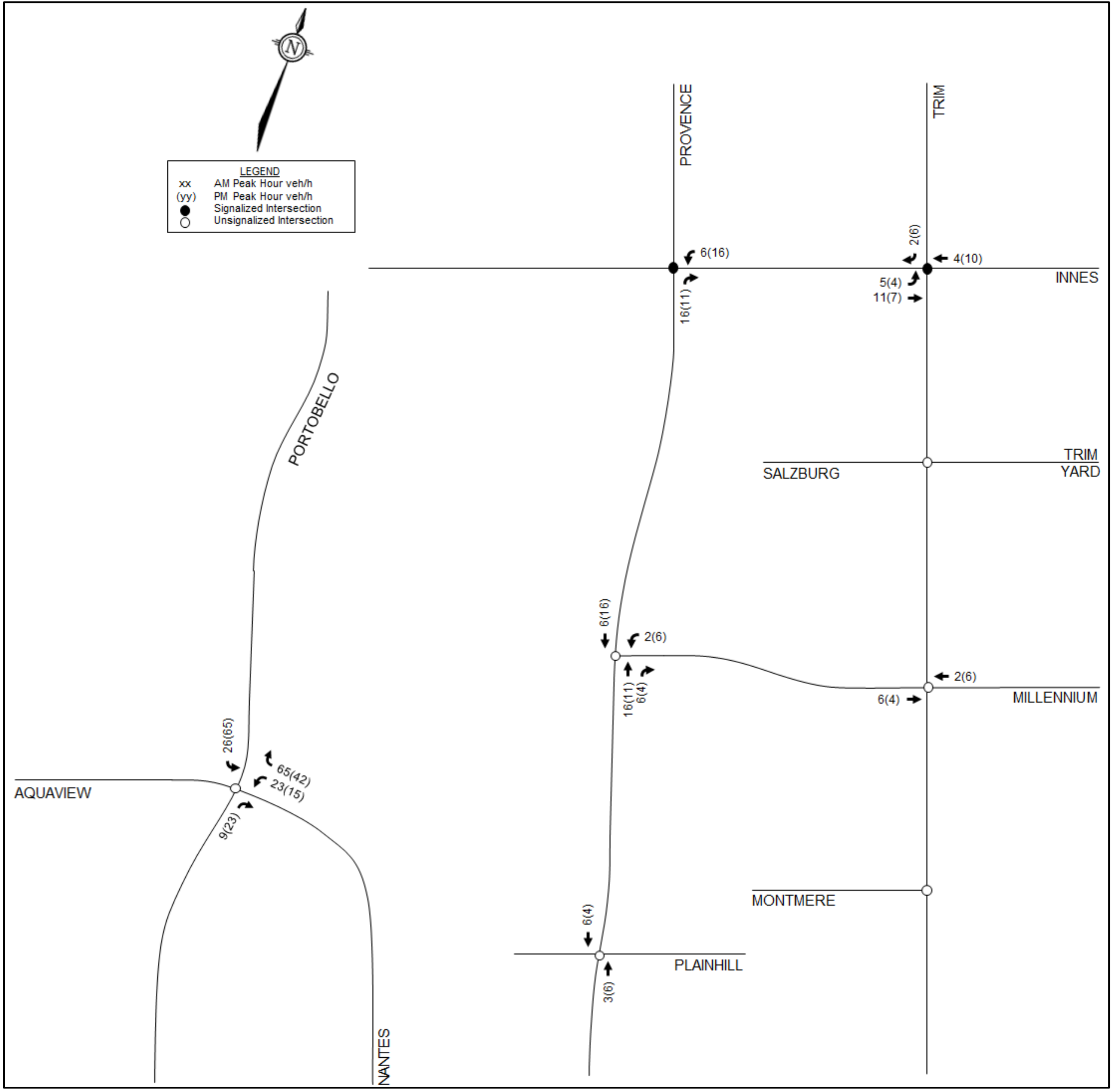


Figure 7: 2025 Background Traffic

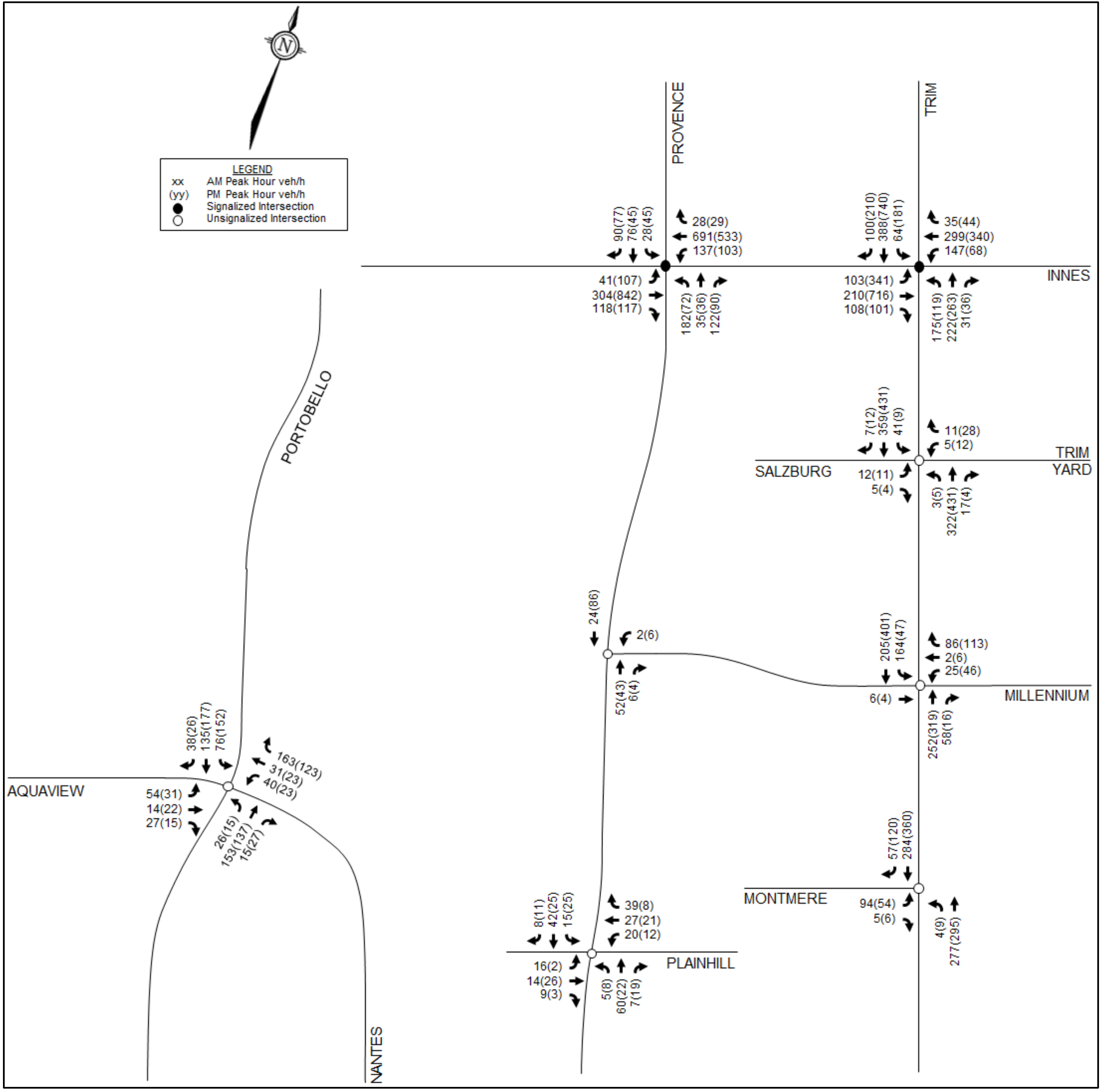
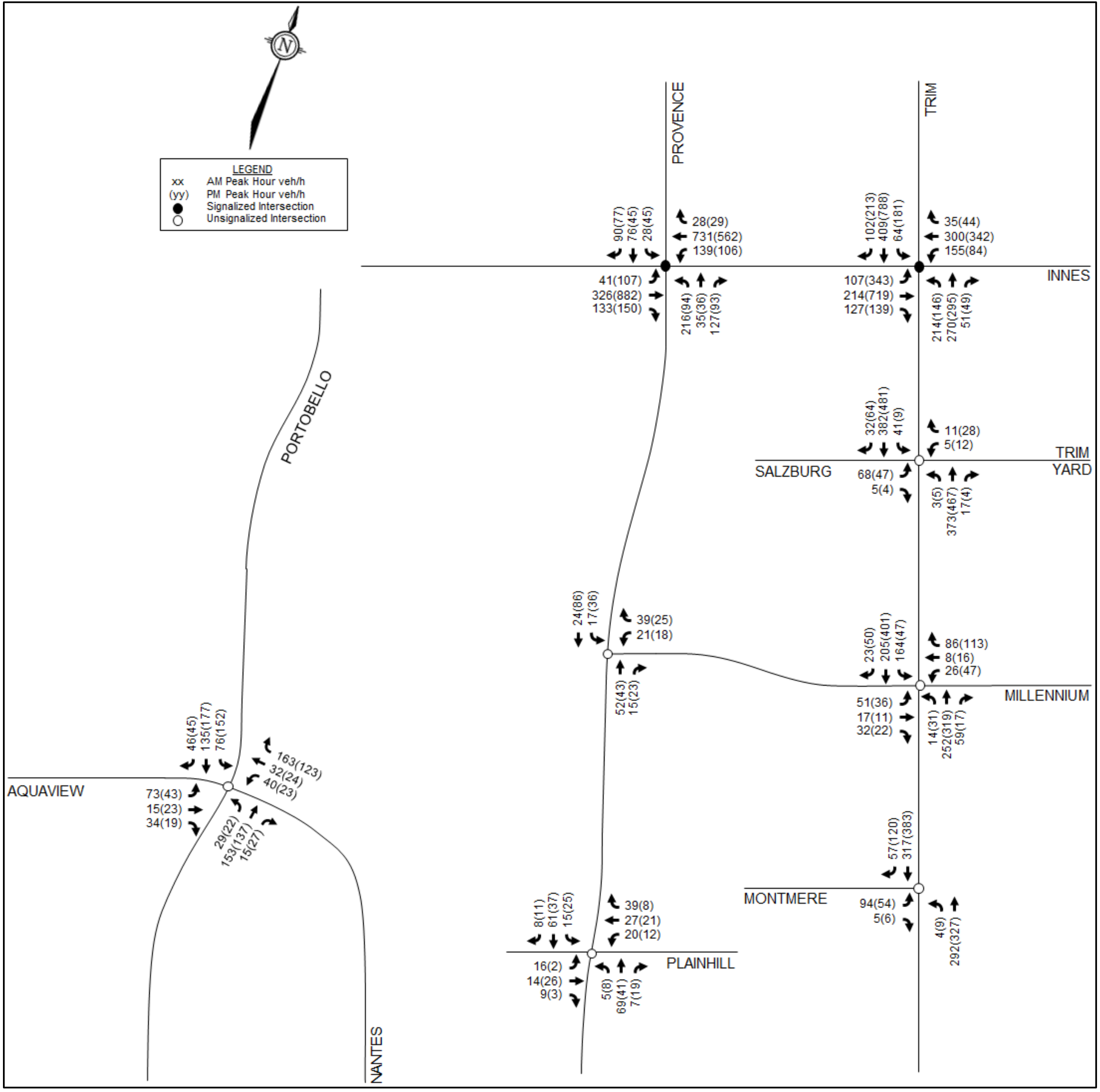


Figure 8: 2025 Total Traffic



6.0 ANALYSIS

6.1 Development Design

This section provides a review of the development design in terms of the road network, roadway cross-sections, and pedestrian crossing locations. A review of the City's Transportation Demand Management (TDM) – Supportive Development Design and Infrastructure Checklist is exempt from Draft Plan of Subdivision applications. A review of this TDM checklist will be conducted for the multi-unit blocks within the proposed subdivision during the Site Plan Control process, if required. A copy of the concept plan is provided in **Appendix A**.

6.1.1 Road Network

A review of the new road network with respect to the initiatives identified in the City's Building Better and Smarter Suburbs (BBSS) report was completed. The proposed road network is consistent with the following BBSS initiatives:

- Design the street network as an integral part and extension of the municipal grid, taking into consideration its future adjustments and evolution;
- Ensure that a range of appropriate sized roadways complements the character and functional needs of each community area;
- Implement prescribed facilities from the 2013 Ottawa Pedestrian Plan and 2013 Ottawa Cycling Plan with development;
- Avoid reverse frontage lots (rear yards abutting public streets) within a community;
- Encourage representation from OC Transpo at pre-consultation meeting for plans of subdivision, in order to incorporate transit planning into initial subdivision design.

The Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads* stipulates that the minimum desired distance between two T-intersections is 60m along a collector roadway and 40m along a local roadway. Additionally, the minimum desired distance between a four-way intersection and the adjacent intersection is 60m along local roadways. The proposed intersections on-site are therefore considered to be appropriately spaced from each other and adjacent intersections (with a minimum separation of approximately 60m, measured centre-to-centre).

6.1.2 Roadway Cross-Sections

ROW widths of 18m are proposed for all internal streets, with the exception of two streets. A ROW width of 22m is proposed for Street No. 1, which allows it to function as a collector roadway and accommodate transit. Street No. 1 will run east-west between Provence Avenue and Trim Road at Millennium Boulevard. A ROW width of 20m is proposed for Street No. 2, which ties into Salzburg Drive, an existing local roadway with a ROW width of 20m. Street No. 2 will run north-south between Salzburg Drive and Street No. 1.

The proposed road width for all internal streets except Street No. 1 is 8.5m, which can accommodate a travel lane in each direction and parking on one side of the roadway. The proposed road width of Street No. 1 is 11m, which can accommodate a travel lane and a parking lane in each direction. These road widths are sufficient given the context of the proposed development, a low-speed residential neighbourhood with limited opportunity for cut-through traffic. All roadways within the proposed subdivision are anticipated to be local roadways with the exception of Street No. 1, which is anticipated to act as a collector roadway.

1.8m concrete sidewalks are proposed on both sides of Street No. 1, the west side of Street No. 2 (which will tie into the existing sidewalk on Salzburg Drive), the west side of Street No. 3, and the outside of Street No. 8/Street No. 9. A 1.8m asphalt pathway is proposed on Street No. 5, which will connect the proposed subdivision to the Trans-Orléans Pathway.

6.1.3 Pedestrian Crossovers

The *Ontario Traffic Manual* (OTM) – *Book 15* identifies the following criteria for the consideration of a pedestrian crossover (PXO):

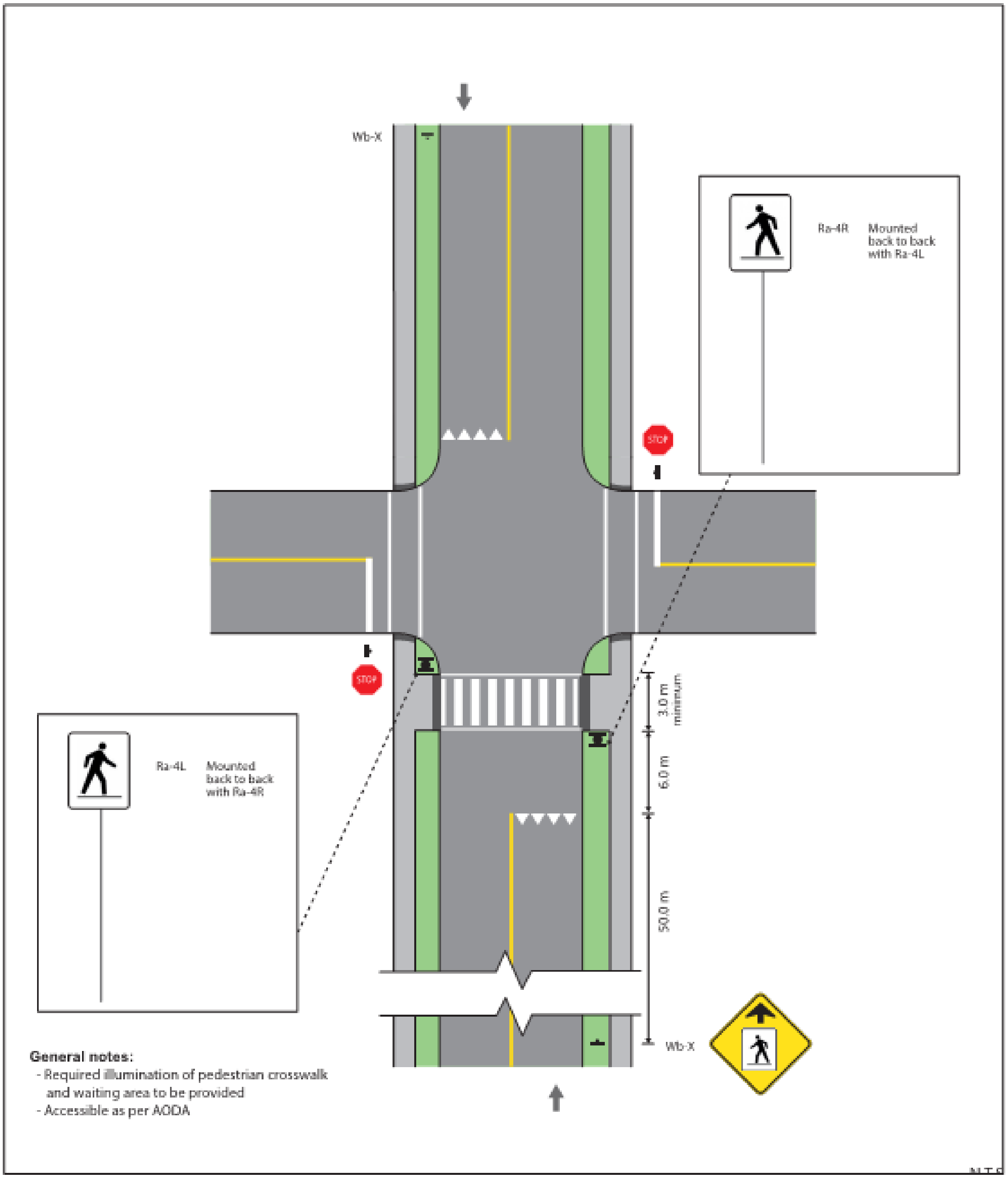
- If the total 8-hour pedestrian volume crossing the main road is greater than 100 and the total 8-hour vehicular volume is greater than 750 vehicles; or
- If the crossing location provides system connectivity or is on a desired pedestrian line.

Based on the City's expansion factors for vehicular volumes, the 8-hour two-way vehicular volume on Street No. 1 is projected to exceed 750 vehicles. While the 8-hour pedestrian volume crossing Street No. 1 is anticipated to be less than 100 pedestrians, there is a clear desired pedestrian line crossing Street No. 1 at Street No. 2, as transit service will be provided on Street No. 1. This intersection is not within 200m of a signal-protected pedestrian crossing.

Street No. 1 is assumed to have a speed limit of 50 km/h, and the proposed cross-section of the roadway includes two lanes. With a two-way vehicular volume between 750 vehicles and 2,250 vehicles, the corresponding PXO recommended by the Pedestrian Crossover Selection Matrix shown in OTM Book 15 is a PXO D. Therefore, a PXO D is recommended at the west approach of Street No. 1/Street No. 2.

An illustration from OTM Book 15 of the required PXO D components for a two-way intersection is shown in **Figure 9**. The PXO selection matrix presented in OTM Book 15 is included in **Table 11**.

Figure 9: PXO D (Intersection, 2-way)



General notes:

- Required illumination of pedestrian crosswalk and waiting area to be provided
- Accessible as per AODA

Table 11: Pedestrian Crossover Selection Matrix

Two-way Vehicular Volume			Speed Limit (km/h	Total Number of Lanes for the Roadway Cross Section^1			
Time Period	Lower Bound	Upper Bound		1 or 2 Lanes	3 lanes	4 lanes w/raised refuge	4 lanes w/o raised refuge
8 Hour	750	2,250	≤50	PXO D	PXO C^3	PXO D^2	PXO B
4 Hour	395	1,185					
8 Hour	750	2,250	60	PXO C	PXO B	PXO C^2	PXO B
4 Hour	395	1,185					
8 Hour	2,250	4,500	≤50	PXO D	PXO B	PXO D^2	PXO B
4 Hour	1,185	2,370					
8 Hour	2,250	4,500	60	PXO C	PXO B	PXO C^2	PXO B
4 Hour	1,185	2,370					
8 Hour	4,500	6,000	≤50	PXO C	PXO B	PXO C^2	PXO B
4 Hour	2,370	3,155					
8 Hour	4,500	6,000	60	PXO B	PXO B	PXO C^2	PXO B
4 Hour	2,370	3,155					
8 Hour	6,000	7,500	≤50	PXO B	PXO B	PXO C^2	PXO A
4 Hour	3,155	3,950					
8 Hour	6,000	7,500	60	PXO B	PXO B		
4 Hour	3,155	3,950					
8 Hour	7,500	17,500	≤50	PXO B	PXO B		
4 Hour	3,950	9,215					
8 Hour	7,500	17,500	60	PXO B			
4 Hour	3,950	9,215					

6.2 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 October 2015 were used to evaluate the levels of service for the boundary roadways for each mode of transportation. Schedule B of the City of Ottawa's Official Plan identifies all boundary streets as being within the General Urban Area land use designation. Virtually all of the proposed subdivision falls under the policy areas 'Within 300m of a school' or 'Within 600m of a rapid transit station,' both of which have identical

MMLOS targets. As these targets are more stringent, they have been used to evaluate the MMLOS of all boundary roadways.

Targets for PLOS, BLOS, TLOS, TkLOS, and Auto LOS for the boundary streets adhere to those outlined in Exhibit 22 of the MMLOS guidelines. The boundary streets review evaluates the MMLOS for all boundary roadways based on existing conditions.

6.2.1 Pedestrian Level of Service (PLOS)

Exhibit 4 of the MMLOS guidelines has been used to evaluate the segment PLOS of the boundary roadways. Exhibit 22 of the MMLOS guidelines suggest a target PLOS A for all roadways within 300m of a school (Portobello Boulevard, Provence Avenue, and Aquaview Drive) or 600m of a rapid transit station (Trim Road and Salzburg Drive). The results of the segment PLOS analysis are summarized in **Table 12**.

Table 12: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed(1)	Segment PLOS
Trim Road (east side)					
≥ 2.0m	0.5 to 2.0m	≤ 3000 vpd	No	70 km/h	B
Trim Road (west side)					
≥ 2.0m	≥ 2.0m	≤ 3000 vpd	No	70 km/h	B
Portobello Boulevard (east side)					
≥ 2.0m	0m	≤ 3000 vpd	No	50 km/h	B
Portobello Boulevard (west side)					
1.5m	≥ 2.0m	≤ 3000 vpd	No	50 km/h	C
Provence Avenue (east side)					
≥ 2.0m	≥ 2.0m	≤ 3000 vpd	No	60 km/h	A
Provence Avenue (west side)					
≥ 2.0m	≥ 2.0m	≤ 3000 vpd	No	60 km/h	A
Aquaview Drive (north side)					
≥ 2.0m	0.5 to 2.0m	≤ 3000 vpd	Yes	60 km/h	A
Aquaview Drive (south side)					
1.5m	≥ 2.0m	≤ 3000 vpd	Yes	60 km/h	C
Salzburg Drive (north side)					
1.8m	0m	≤ 3000 vpd	Yes	50 km/h	B
Salzburg Drive (south side)					
No sidewalk		≤ 3000 vpd	Yes	50 km/h	F

1. Operating speed of Trim Road, Portobello Boulevard, Provence Avenue, and Aquaview Drive taken as the posted speed limit plus 10 km/h. The operating speed of Salzburg Drive is taken as the unposted regulatory speed limit, as it is currently a cul-de-sac.

6.2.2 Bicycle Level of Service (BLOS)

Exhibit 11 of the MMLOS guidelines has been used to evaluate the segment BLOS of the boundary roadways. Exhibit 22 of the MMLOS guidelines suggest a target BLOS B for Local Cycling Routes within 300m of a school (Provence Avenue, Portobello Boulevard, and Aquaview Drive), a target BLOS C for Spine Cycling Routes on arterial roadways within 600m of a rapid transit station (Trim

Road), and a target BLOS D for all roadways with no cycling designation 600m of a rapid transit station (Salzburg Drive). The results of the segment BLOS analysis are summarized in **Table 13**.

Table 13: BLOS Segment Analysis

Road Class	Bike Route	Type of Bikeway	Bike Lane Width	Bike Lane Blockage	Travel Lanes	Center-line Type	Operating Speed	Segment BLOS
Trim Road (Salzburg Drive to Montmere Avenue)								
Arterial	Spine Route	Bike Lane	> 1.8m	Rare	4	Raised Median	70 km/h	E
Portobello Boulevard (Scala Avenue to Aquaview Drive/Nantes Street)								
Major Collector	Local Route	Bike Lane	1.5-1.8m	Rare	4	Raised Median	50 km/h	B
Provence Avenue (Scala Avenue to Grapefern Terrace)								
Collector	Local Route	Mixed Traffic	-	-	2	Line Markings	60 km/h	F
Aquaview Drive (Clermont Crescent to Portobello Boulevard)								
Collector	Local Route	Multi-Use Pathway	-	-	-	-	-	A
Salzburg Drive (west of Trim Road)								
Local	No Class	Mixed Traffic	-	-	2	No Markings	50 km/h	B

6.2.3 Transit Level of Service (TLOS)

Exhibit 15 of the MMLOS guidelines has been used to evaluate the segment TLOS of the boundary roadways. Exhibit 22 of the MMLOS guidelines suggest a target TLOS D for Transit Priority Corridors with Isolated Measures within 600m of a rapid transit station (Trim Road). No other boundary streets have TLOS targets, however Portobello Boulevard and Provence Avenue have been evaluated, as Portobello Boulevard currently serves transit, and Provence Avenue is anticipated to begin serving transit as the proposed subdivision develops. Aquaview Drive and Salzburg Drive have not been evaluated for TLOS. The results of the segment TLOS analysis are summarized in **Table 14**.

Table 14: TLOS Segment Analysis

Facility Type	Level/Exposure to Congestion Delay, Friction and Incidents			Segment TLOS
	Congestion	Friction	Incident Potential	
Trim Road (Salzburg Drive to Montmere Avenue)				
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D
Portobello Boulevard (Scala Avenue to Aquaview Drive/Nantes Street)				
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D
Provence Avenue (Scala Avenue to Grapefern Terrace)				
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D

6.2.4 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 suggests a target TkLOS D for truck routes within 600m of a rapid transit station (Trim Road). No other boundary streets have TkLOS targets, and have not been evaluated. The results of the segment TkLOS analysis are summarized in **Table 15**.

Table 15: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	Segment TkLOS
Trim Road (Salzburg Drive to Montmere Avenue)		
3.3m to 3.5m	2	A

6.2.5 Vehicular Level of Service (Auto LOS)

Exhibit 22 of the MMLOS guidelines suggest a target Auto LOS E for all roadways within 300m of a school or 600m of a rapid transit station. The typical lane capacity along the study area roadways are based on the City's guidelines for the TRANS Long-Range Transportation Model. The lane capacity along the boundary streets has been estimated based on roadway classification and general characteristics (i.e. suburban with limited access, urban with on-street parking, etc.). The results of the Auto LOS analysis are summarized in **Table 16**.

Table 16: Auto LOS Segment Analysis

Direction	Directional Capacity	Traffic Volumes		V/C Ratio and LOS			
		AM Peak	PM Peak	AM Peak		PM Peak	
				V/C	LOS	V/C	LOS
Trim Road (Salzburg Drive to Montmere Avenue)							
Northbound	2400 vph	286	308	0.12	A	0.13	A
Southbound	2400 vph	342	421	0.14	A	0.18	A
Portobello Boulevard (Scala Avenue to Aquaview Drive/Nantes Street)							
Northbound	1200 vph	174	146	0.15	A	0.12	A
Southbound	1200 vph	208	270	0.17	A	0.23	A
Provence Avenue (Scala Avenue to Grapefern Terrace)							
Northbound	600 vph	69	43	0.12	A	0.07	A
Southbound	600 vph	59	57	0.10	A	0.10	A
Aquaview Drive (Clermont Crescent to Portobello Boulevard)							
Eastbound	600 vph	95	68	0.16	A	0.11	A
Westbound	600 vph	90	61	0.15	A	0.10	A
Salzburg Drive (west of Trim Road)							
Eastbound	400 vph	12	11	0.03	A	0.03	A
Westbound	400 vph	8	12	0.02	A	0.03	A

6.2.6 Segment MMLOS Summary

A summary of the results of the segment MMLOS analysis for the boundary roadways are provided in **Table 17**.

Table 17: Segment MMLOS Summary

Segment		Trim Road	Portobello Boulevard	Provence Avenue	Aquaview Drive	Salzburg Drive
Pedestrian	Sidewalk Width	≥ 2.0m	1.5m	≥ 2.0m	1.5m	0m
	Boulevard Width	0.5 to 2.0m	≥ 2.0m	≥ 2.0m	≥ 2.0m	-
	Average Daily Curb Lane Traffic Volume	< 3000 vpd	< 3000 vpd	< 3000 vpd	< 3000 vpd	< 3000 vpd
	On-Street Parking	No	No	No	Yes	Yes
	Operating Speed	70 km/h	50 km/h	60 km/h	60 km/h	50 km/h
	Level of Service	B	C	A	C	F
	Target	A	A	A	A	A
Cyclist	Road Classification	Arterial	Major Collector	Collector	Collector	Local
	Bike Route Classification	Spine Route	Local Route	Local Route	Local Route	No Class
	Type of Bikeway	Bike Lane	Bike Lane	Mixed Traffic	Multi-Use Path	Mixed Traffic
	Bike Lane Width	> 1.8m	1.5 to 1.8m	-	-	-
	Bike Lane Blockage	Rare	Rare	-	-	-
	Travel Lanes	4	4	2	-	2
	Centerline Type	Raised Median	Raised Median	Line Markings	-	No Markings
	Operating Speed	70 km/h	50 km/h	60 km/h	-	50 km/h
	Level of Service	E	B	F	A	B
	Target	C	B	B	B	D
Transit	Facility Type	Mixed Traffic	Mixed Traffic	Mixed Traffic	-	-
	Friction/Congestion/Incident Potential	Limited	Limited	Limited	-	-
	Level of Service	D	D	D	-	-
	Target	D	-	-	-	-
Truck	Lane Width	3.3 to 3.5m	-	-	-	-
	Travel Lanes (per direction)	2	-	-	-	-
	Level of Service	A	-	-	-	-
	Target	D	-	-	-	-
Auto	Level of Service	A	A	A	A	A
	Target	E	E	E	E	E

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

- Only Provence Avenue meets the target pedestrian level of service (PLOS), while Trim Road, Portobello Boulevard, Aquaview Drive, and Salzburg Drive do not;
- Portobello Boulevard, Aquaview Drive, and Salzburg Drive meet the target bicycle level of service (BLOS), while Trim Road and Provence Avenue do not;
- As the only roadway with a target, Trim Road meets the target transit level of service (TLOS);
- As the only roadway with a target, Trim Road meets the target truck level of service (TkLOS);
- All roadways meet the target vehicular level of service (Auto LOS).

Pedestrian Level of Service

Trim Road currently achieves a PLOS B. This is attributable to the operating speed of 70 km/h. Per Exhibit 4 of the MMLOS guidelines, a PLOS A can only be achieved with a reduction in the operating speed to 60 km/h, which is not desirable given Trim Road is an arterial roadway. As such, no recommendations are made for improving the PLOS for Trim Road.

Portobello Boulevard currently achieves a PLOS B on the east side and a PLOS C on the west side. Per Exhibit 4 of the MMLOS guidelines, a PLOS A can be achieved by providing either:

a) A minimum sidewalk width of 1.8m and a minimum sidewalk boulevard width of 2.0m, or;
b) A minimum sidewalk width of 2.0m and a minimum sidewalk boulevard width of 0.5m.

No modifications are recommended, as the existing cross-section met the current City standard when Portobello Boulevard was widened approximately 10 years ago.

Aquaview Drive currently achieves a PLOS C on the south side and a PLOS A on the north side. Per Exhibit 4 of the MMLOS guidelines, the south side of Aquaview Drive can achieve a PLOS A by widening the sidewalk to 1.8m and maintaining a sidewalk boulevard width of at least 2.0m. However, due to the location of street light poles, it does not appear that there is sufficient room to widen the sidewalk by 0.3m. Given the acceptable PLOS on the north side of Aquaview Drive, no modifications are recommended.

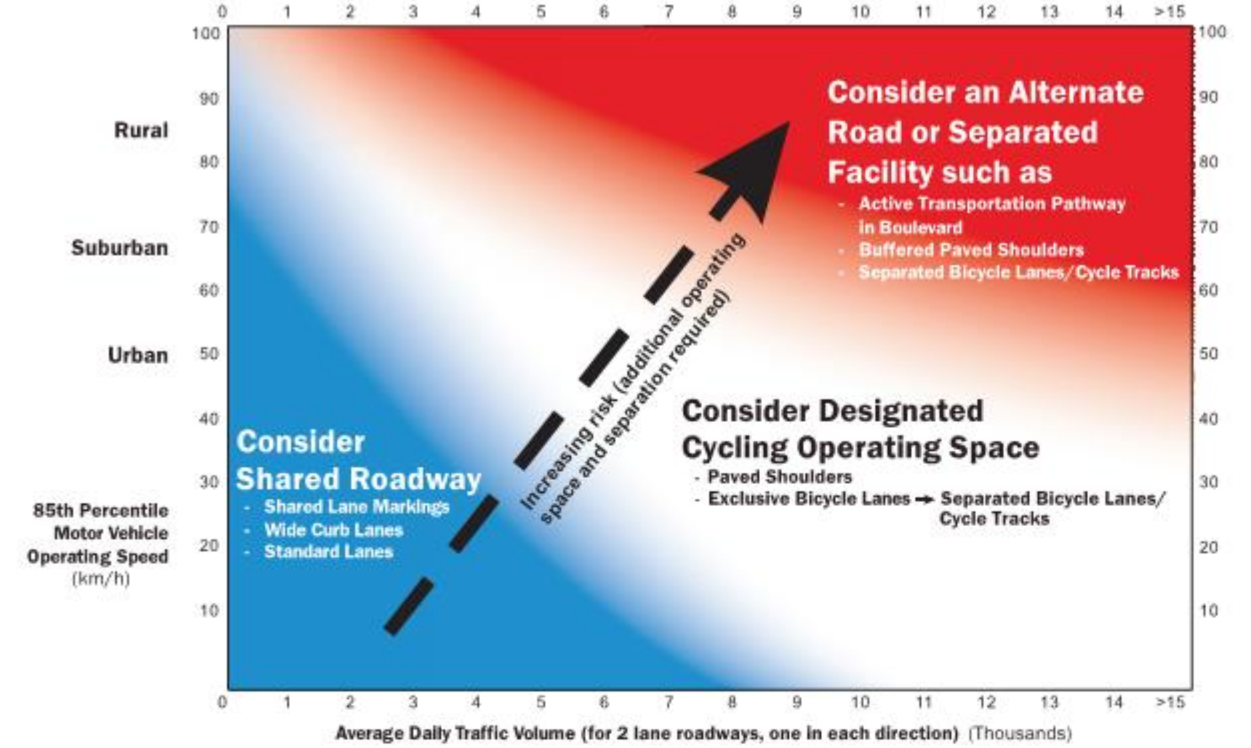
Salzburg Drive currently achieves a PLOS E on the north side and a PLOS F on the south side. Per Exhibit 4 of the MMLOS guidelines, Salzburg Drive can achieve a PLOS A by implementing sidewalks with a minimum width of 2.0m and a minimum boulevard width of 0.5m. However, the existing cross-section meets the current City standards, and therefore no modifications are recommended.

Bicycle Level of Service

Trim Road currently achieves a BLOS E. This is attributable to the operating speed of 70 km/h. Per Exhibit 11 of the MMLOS guidelines, a BLOS C can only be achieved with a reduction in the operating speed to 60 km/h. An existing multi-use pathway is provided on the east side of Trim Road, north of Millennium Boulevard. The *Ontario Traffic Manual – Book 18* describes the desirable cycling facility for a roadway, given the roadway's average annual daily traffic and operating speed. Based on a curbside lane AADT of approximately 2,000 vehicles/day and an operating speed of 70 km/h, the selection tool presented in OTM Book 18 suggests that bike lanes are appropriate. As noted above, a reduced operating speed on Trim Road is not considered desirable. For these reasons, no modifications are recommended.

Provence Avenue currently achieves a BLOS F. This is attributable to the operating speed of 60 km/h, and the requirement of cyclists to be in mixed traffic. For roadways with an AADT of approximately 1,000 vehicles/day and an operating speed of 60 km/h, the *Ontario Traffic Manual* states that a 'shared roadway' is appropriate. Therefore, no modifications are recommended. The selection tool used in OTM Book 18 to describe the desirable cycling facility is shown in **Figure 10**.

Figure 10: Desirable Cycling Facility Pre-Selection Nomograph



Footnotes:
- This nomograph is the **first of a three step bicycle facility selection process.**, and should not be used by itself as the justification for facility selection (see Steps 2 and 3). The nomograph simply helps practitioners pre-select a desirable cycling facility type, however the context of the situation governs the final decision.
- The nomograph has been adapted for the North American context and is based on international examples and research for two lane roadways. It is, however, still applicable for multi-lane roadways. For these situations, designers should consider the operating speed, total combined traffic volume and traffic mix of the vehicles traveling in the lanes immediately adjacent to the cycling facilities.
- Consider a Separated Facility or an Alternate Road for roadways with an AADT greater than 15,000 vehicles and an operating speed of greater then 50 km/h.
- For rural and suburban locations this nomograph assumes good sightlines are provided for all road users. In urban areas, there are typically more frequent conflict points at driveways, midblock crossings and intersections (especially on multi-lane roads), as well as on road segments with on-street parking. This needs to be considered when assessing risk exposure in urban environments since it will influence the selection of a suitable facility type.

6.3 Access Intersections Design

Phase 1 of the proposed subdivision will be served by two unsignalized all-movement accesses at Aquaview Drive, approximately 60m and 140m west of Portobello Boulevard. These distances are consistent with other accesses along Aquaview Drive. Phases 2-5 of the proposed subdivision will be served by three accesses: an unsignalized access at Provence Avenue (approximately 500m south of Innes Road), a tie-in to Salzburg Drive, and a tie-in to the roundabout at Trim Road/Millennium Boulevard. The accesses at Provence Avenue and Trim Road/Millennium Boulevard will be connected by Street No. 1.

The *Ontario Traffic Manual – Book 5* identifies criteria for the implementation of all-way stop control. Based on OTM Book 5, all-way stop control at a three-legged intersection should be implemented if the total vehicle volumes on all approaches to an intersection exceed 350 vehicles during the peak hour and if the split does not exceed 75%/25%.

The City of Ottawa identifies its own criteria for the implementation of all-way stop control. Based on the City's criteria, all-way stop control for local or collector roadways is warranted if any of the following three criteria are met:

- Volume: Total vehicles on all approaches average more than 200 per hour over an 8-hour weekday period, and the total minor street volume (including pedestrians) average more than 80 per hour over the same 8-hour period;
- Collision: An average of three or more collisions have occurred over a three-year period (including only the collisions which are preventable by all-way stop control);
- Visibility: The sight distance from a point 2.7m from the edge of the major street is less than 55m to the left and 60m to the right.

Of the proposed unsignalized intersections (Provence Avenue/Street No.1 and the two accesses at Aquaview Drive/Street No. 10), none are anticipated to meet the OTM or City criteria for all-way stop control. Therefore, it is recommended that stop control be implemented on the minor approaches (Street No. 1 at Provence Avenue, and both accesses to Street No. 10 at Aquaview Drive).

The existing stop control on Salzburg Drive at Trim Road is anticipated to continue being acceptable with the additional traffic generated by the proposed subdivision, with respect to the all-way stop warrants. The performance of this intersection at full buildout is included in Section 6.6.3.

It is proposed that the access to Street No. 1 at Trim Road/Millennium Boulevard tie into the existing roundabout. Assuming similar approach geometry to the existing approach on Millennium Boulevard, the roundabout is anticipated to continue operating acceptably. The performance of this roundabout at full buildout is included in Section 6.6.3.

6.4 Transportation Demand Management

A review of the TDM Measures Checklist was conducted, and can be found in **Appendix H**.

The following measures will be implemented as the proposed subdivision is built:
- Designate an internal TDM program coordinator;
- Display local area maps with walking/cycling routes and key destinations (at sales centre);
- Display relevant transit schedules and route maps (at sales centre);
- Provide multimodal travel option information packages to new residents (at sales centre).

A review of the TDM Measures Checklist can also be conducted for the multi-unit blocks within the subdivision during the Site Plan Control application if required.

6.5 Transit

Based on the trip generation presented in Section 5.1.1, Phases 1-5 of the proposed subdivision are projected to generate 154 transit trips in the AM peak period and 171 transit trips in the PM peak period. Discussions with City staff confirmed that as the subdivision develops, OC Transpo will provide transit service on Provence Avenue and Street No. 1. It is anticipated that all transit trips generated by Phases 2-5 of the proposed subdivision will board or alight transit at these new stops. Transit trips generated by Phase 1 of the development are anticipated to board or alight transit at the existing stops at Portobello Boulevard/Aquaview Drive/Nantes Street. The transit trips are distributed as follows:

<u>Phase 1</u>

- 17 passengers (11 boarding, 6 alighting) at stop #6314 in the AM peak period;
- 19 passengers (8 boarding, 11 alighting) at stop #1367 in the PM peak period.

<u>Phases 2-5</u>

- 137 passengers (94 boarding, 43 alighting) at new stops along Provence Avenue and Street No. 1 in the AM peak period;
- 152 passengers (61 boarding, 91 alighting) at new stops along Provence Avenue and Street No. 1 in the PM peak period.

Based on the projected passenger volumes, no capacity problems are anticipated on the bus routes 33 and 233, which serve the stops adjacent to the proposed Phase 1 development. No capacity problems are anticipated as a result of transit trips generated by Phases 2-5 of the proposed subdivision, given the comments from City staff.

6.6 Intersection Design

6.6.1 Intersection MMLOS Analysis

This section provides a review of the study area intersection using complete streets principles. The MMLOS guidelines produced by IBI Group in October 2015 were used to evaluate the multi-modal levels of service for each signalized intersection. The vehicular level of service has been evaluated for the unsignalized intersections within the study area. The MMLOS targets associated with the policy areas 'Within 300m of a school' or 'Within 600m of a rapid transit station' have been used to evaluate the signalized intersections at Innes Road/Provence Avenue and Innes Road/Trim Road. The MMLOS targets associated with the 'General Urban Area' designation have been used to evaluate the signalized intersection at Innes Road/Trim Road.

The full intersection MMLOS analysis is included in **Appendix I**. A summary of the results is shown in **Table 18**.

Table 18: Intersection MMLOS Summary

Intersection	PLOS		BLOS		TLOS		TkLOS		Auto LOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Innes Road/ Provence Avenue	**F**	A	**F**	A	D	D	**E**	D	C	E
Innes Road/ Trim Road	**F**	C	**F**	B	**F**	D	A	D	**F**	D
Trim Road/ Salzburg Drive	-	-	-	-	-	-	-	-	C	E
Trim Road/ Millennium Boulevard	-	-	-	-	-	-	-	-	A	E
Trim Road/ Montmere Avenue	-	-	-	-	-	-	-	-	B	E
Provence Avenue/ Plainhill Drive	-	-	-	-	-	-	-	-	A	E
Portobello Boulevard/ Aquaview Drive/Nantes Street	-	-	-	-	-	-	-	-	A	E

Based on the results of the intersection MMLOS analysis:

- Neither signalized intersection meets the target pedestrian level of service (PLOS);
- Neither signalized intersection meets the target bicycle level of service (BLOS);
- Among signalized intersections, only Innes Road/Provence Avenue meets the target transit level of service (TLOS);
- Among signalized intersections, only Innes Road/Trim Road meets the target truck level of service (TkLOS);
- Among all study area intersections, only Innes Road/Trim Road does not meet the target vehicular level of service (Auto LOS).

The following sections outline a further discussion for the intersections of Innes Road/Provence Avenue and Innes Road/Trim Road.

6.6.1.1 Innes Road/Provence Avenue

Innes Road/Provence Avenue does not meet the target PLOS A, BLOS A, or TkLOS D.

The target PLOS A is unachievable at all approaches. Each approach has a cross-section with widths equivalent to five lanes crossed or more, with no median refuge provided. There are limited opportunities to improve the current PLOS of each approach without reducing the number of travel lanes or restricting turn movements. While only the east and west approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks (greater than 400,000 vehicle/pedestrian conflicts over an eight-hour period), implementing zebra-striped crosswalks at all approaches could be considered given the intersection is adjacent to a school. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

All approaches do not meet the target BLOS A based on left turn characteristics, with the west approach also failing to meet the target based on right turn characteristics. Each approach requires cyclists to cross one or more lanes of traffic to perform a left turn, and the operating speeds of Innes Road and Provence Avenue are at least 60 km/h. For roadways with an AADT of more than 15,000 vehicles/day and an operating speed of 70 km/h, the *Ontario Traffic Manual* states that a higher order cycling facility (such as cycle tracks) should be considered, which would result in a BLOS A. However, there is insufficient space for a separated bike facility. Based on Exhibit 8 of the MMLOS guidelines, shifting the pocket bike lane on Innes Road curbside would improve the level of traffic stress (LTS) for cyclists from LTS 3 to LTS 2. Exhibit 8 shows that LTS 2 corresponds to a BLOS B, the best possible level of service given the existing ROW of Innes Road. No other modifications have been recommended.

The east approach does not meet the target TkLOS D. Since Provence Avenue is not a truck route, this manoeuvre is not anticipated to occur with regularity, and therefore no recommendations are made to improve the TkLOS at this approach.

6.6.1.2 Innes Road/Trim Road

Innes Road/Trim Road does not meet the target PLOS C, BLOS B, TLOS D, or Auto LOS D.

The target PLOS C is unachievable at all approaches. Each approach has a divided cross-section with widths equivalent to nine lanes crossed or more, with no median refuge provided. There are limited opportunities to improve the current PLOS of each approach without reducing the number of travel lanes or restricting turn movements. The north and west approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. Implementing these could be considered to improve the level of comfort for pedestrians. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

All approaches do not meet the target BLOS B based on both left turn and right turn characteristics. Each approach requires cyclists to cross at least two lanes to perform a left turn, and the operating speeds of Innes Road and Trim Road are approximately 70 km/h. Additionally, the south approach makes use of dual left turn lanes. Without implementing higher order cycling facilities, the BLOS cannot be improved based on left turn characteristics. However, there is insufficient space on Innes Road to accommodate such modifications, and therefore no modifications have been recommended based on left turn characteristics.

With respect to right turn characteristics, all approaches implement pocket bike lanes with right turn lanes greater than 50m, which translates to a BLOS D. As discussed with the previous intersection, shifting all pocket bike lanes curbside reduces the level of traffic stress to an LTS 2, per Exhibit 8 of the MMLOS guidelines. This level of traffic stress corresponds to a BLOS B, the best possible level of service given the existing ROW of Innes Road.

All approaches do not meet the target TLOS D. The 2013 TMP identifies that in the Affordable Network, transit signal priority and queue jump lanes will be implemented at select intersections with Innes Road between Blair Station and Millennium Station. These measures, provided they are implemented at all approaches of Innes Road/Trim Road will reduce delays and improve the TLOS significantly. Extensions of the Blackburn Hamlet Bypass and Brian Coburn Boulevard will provide alternate parallel routes for eastbound/westbound traffic, and may provide some relief to the current traffic volumes on Innes Road.

The southbound left turn and eastbound left turn movements do not meet the target Auto LOS D during the PM peak period. To meet the target, a reduction of 10 southbound left turning vehicles and 160 eastbound left turning vehicles is required (a reduction of approximately 50%). As mentioned above, extensions of the Blackburn Hamlet Bypass and Brian Coburn Boulevard are anticipated to alleviate traffic volumes on Innes Road in the future.

Implementing dual left turn lanes for the eastbound approach would improve the eastbound left turn movement to an Auto LOS E, although there is insufficient space for road widenings on Innes Road and this would further deteriorate the intersection's PLOS and BLOS. To illustrate the effect of dual left turn lanes at this approach, an Auto LOS comparison between the existing intersection and a scenario where dual left turn lanes are implemented at the eastbound approach is presented in **Table 19**.

Additionally, the Synchro analysis identifies queueing that exceeds storage length for certain movements during the AM and PM peak periods. Based on 95th-percentile queue lengths, the westbound left turn movement exceeds the available storage length during the AM peak period, while the southbound left turn and eastbound left turn movements exceed the available storage length during the PM peak period. There is extremely limited opportunity in adjusting the signal timing at Innes Road/Trim Road to allow for longer protected left turn phases, as the minimum time required for pedestrians to cross is approximately equal to the amount of time allotted to the through movement phases.

Table 19: Innes Road/Trim Road – Existing Conditions vs Dual Left Turn Lane Mitigation

Condition	Mvmt	AM Peak				PM Peak			
		v/c	LOS	50th % Queue (m)	95th % Queue (m)	v/c	LOS	50th % Queue (m)	95th % Queue (m)
Existing (Dual left turn lanes on NB approach only)	EBL	0.65	A	24	43	**1.83**	**F**	**~128**	**#193**
Mitigation (Dual left turn lanes on NB and EB approaches)	EBL	0.39	A	11	21	**0.94**	**E**	**44**	**#77**

6.6.2 2025 Background Intersection Operations

Intersection capacity analysis has been completed for the 2025 background traffic conditions. The intersection parameters used in the analysis are consistent with the 2017 TIA Guidelines (Saturation Flow Rate: 1800 vphpl, Peak Hour Factor: 1.0). The results of the Synchro analysis for the AM and PM peak periods are summarized in **Table 20**. Approaches where queuing issues have been identified are listed with the associated 50th- and 95th-percentile queue lengths in **Table 21**. Signal timing plans are included in **Appendix J**. Detailed reports are included in **Appendix K**.

Table 20: 2025 Background – Intersection Operations

Intersection	AM Peak			PM Peak		
	v/c	LOS	Mvmt	v/c	LOS	Mvmt
Innes Road/ Provence Avenue	0.63	B	NBL	0.43	A	NBL/ NBT
Innes Road/ Trim Road	0.76	C	WBL	**1.81**	**F**	**EBL**
Trim Road/ Salzburg Drive(1)	14 sec	B	EBL/ EBR	15 sec	B	EBL/ EBR
Trim Road/ Millennium Boulevard/Street No. 1(2),(3)	5 sec	A	SBT	5 sec	A	WBT
Trim Road/ Montmere Avenue(1)	13 sec	B	EBL/ EBR	13 sec	B	EBL/ EBR
Provence Avenue/ Plainhill Drive(1)	8 sec	A	NBT	7 sec	A	SBT
Portobello Boulevard/ Aquaview Drive/Nantes Street(1)	10 sec	A	WBT	11 sec	B	SBL
Provence Avenue/ Street No. 1(1),(3)	9 sec	A	WBL/ WBR	9 sec	A	WBL/ WBR

1. Unsignalized intersection
2. Roundabout – results taken from Rodel analysis
3. Street No. 1 is included in the background analysis, as it is anticipated that some traffic generated by Phase 6 of the proposed subdivision (considered background traffic in this TIA) will use Street No. 1 to access Millennium Station

Table 21: 2025 Background – Queues Over Capacity

Intersection	Mvmt	AM Peak				PM Peak			
		v/c	LOS	50th % Queue (m)	95th % Queue (m)	v/c	LOS	50th % Queue (m)	95th % Queue (m)
Innes Road/ Trim Road	SBL	0.46	A	13	30	**0.91**	**E**	**44**	**#93**
	EBL	0.62	B	21	45	**1.81**	**F**	**~126**	**#192**
	WBL	0.76	C	31	#75	0.50	A	16	31

#: volume for the 95th percentile cycle exceeds capacity
~: approach is above capacity

Based on the previous tables, marginal changes to the v/c ratios, queue lengths, and delays are anticipated as a result of background growth within the study area. When compared to existing conditions, the 2025 background conditions for some movements appear to improve despite no reduction in traffic volumes. This can be attributed to differences in the Peak Hour Factor (set to 0.90 in existing conditions and 1.0 in future conditions, as per the TIA Guidelines).

6.6.3 2025 Total Intersection Operations

Intersection capacity analysis has been completed for the 2025 total traffic conditions. The intersection parameters used in the analysis are consistent with the 2017 TIA Guidelines (Saturation Flow Rate: 1800 vphpl, Peak Hour Factor: 1.0). The results of the Synchro analysis for the AM and PM peak periods are summarized in **Table 22**. Approaches where queuing issues have been identified are listed with the associated 50th- and 95th-percentile queue lengths in **Table 23**. Signal timing plans are included in **Appendix J**. Detailed reports are included in **Appendix K**.

Table 22: 2025 Total – Intersection Operations

Intersection	AM Peak			PM Peak		
	v/c	LOS	Mvmt	v/c	LOS	Mvmt
Innes Road/ Provence Avenue	0.70	B	NBL	0.53	A	NBL
Innes Road/ Trim Road	0.80	C	WBL	**1.86**	**F**	**EBL**
Trim Road/ Salzburg Drive$^{(1)}$	19 sec	C	EBL/ EBR	21 sec	C	EBL/ EBR
Trim Road/ Millennium Boulevard/Street No. 1$^{(2)}$	5 sec	A	SBT	5 sec	A	WBT
Trim Road/ Montmere Avenue$^{(1)}$	13 sec	B	EBL/ EBR	14 sec	B	EBL/ EBR
Provence Avenue/ Plainhill Drive$^{(1)}$	8 sec	A	NBT/ SBT	8 sec	A	SBT
Portobello Boulevard/ Aquaview Drive/Nantes Street$^{(1)}$	10 sec	A	WBT	11 sec	B	SBL
Provence Avenue/ Street No. 1$^{(1)}$	9 sec	A	WBL/ WBR	9 sec	A	WBL/ WBR

1. Unsignalized intersection
2. Roundabout – results taken from Rodel analysis

Table 23: 2025 Total – Queues Over Capacity

Intersection	Mvmt	AM Peak				PM Peak			
		v/c	LOS	50th % Queue (m)	95th % Queue (m)	v/c	LOS	50th % Queue (m)	95th % Queue (m)
Innes Road/ Trim Road	SBL	0.46	A	14	30	**0.93**	**E**	**45**	**#93**
	EBL	0.64	A	23	48	**1.86**	**F**	**~129**	**#194**
	WBL	0.80	C	34	#80	0.57	A	20	38

#: volume for the 95th percentile cycle exceeds capacity
~: approach is above capacity

Based on the previous tables, marginal increases to the v/c ratios, queue lengths, and delays are anticipated as a result of the additional site traffic within the study area. The level of service at Trim Road/Salzburg Drive is projected to downgrade to an Auto LOS C in the AM peak period.

At Innes Road/Trim Road in the PM peak period, the southbound approach can achieve the Auto LOS D with a reduction of approximately 10 southbound left turning vehicles, and the eastbound approach can achieve the Auto LOS D with a reduction of approximately 180 eastbound left turning vehicles. These results are similar to the existing conditions. As noted in the analysis of the existing conditions, there is insufficient ROW for further widening on Innes Road, and this would further deteriorate the PLOS and BLOS.

The Ministry of Transportation of Ontario (MTO) Left Turn Lane Storage graphs and TAC/MTO warrants for right turn lanes were reviewed for the intersection of Provence Avenue/Street No. 1. No auxiliary turning lanes are recommended, as none are required.

7.0 CONCLUSIONS AND RECOMMENDATIONS

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

Forecasting

- Phases 1-5 of the proposed subdivision are projected to generate approximately 614 person trips during the AM peak period and 687 person trips during the PM peak period, which includes approximately 341 vehicle trips during the AM peak period and 379 vehicle trips during the PM peak period.

Development Design

- With a minimum spacing of 60m, all proposed intersections to/within the proposed subdivision are appropriately spaced from adjacent intersections, per the TAC *Geometric Design Guide for Canadian Roads*.

- Street No. 1 has a proposed ROW width of 22m and a proposed roadway width of 11m, which is sufficient for a travel lane and a parking lane in each direction. This is consistent for a collector roadway, and is sufficient to accommodate transit service.

- Street No. 2 has a proposed ROW width of 20m and Streets No. 3 through 10 have a proposed ROW width of 18m. All of these streets have a proposed roadway width of 8.5m, which is sufficient for a travel lane in each direction and parking on one side of the roadway.

This is adequate given the context of the proposed development, a low-speed residential neighbourhood with limited opportunity for cut-through traffic.

- 1.8m concrete sidewalks are proposed on both sides of Street No. 1, the west side of Streets No. 2 and 3, and the outside of Streets No. 8 and 9. A 1.8 asphalt pathway is proposed on Street No. 5, which will connect the proposed subdivision to the Trans-Orléans Pathway.

- A PXO D is recommended at the west approach of the Street No. 1/Street No. 2 intersection.

Boundary Streets

- The results of the segment MMLOS analysis can be summarized as follows:
    - Only Provence Avenue meets the target pedestrian level of service (PLOS), while Trim Road, Portobello Boulevard, Aquaview Drive, and Salzburg Drive do not;
    - Portobello Boulevard, Aquaview Drive, and Salzburg Drive meet the target bicycle level of service (BLOS), while Trim Road and Provence Avenue do not;
    - As the only roadway with a target, Trim Road meets the target transit level of service (TLOS);
    - As the only roadway with a target, Trim Road meets the target truck level of service (TkLOS);
    - All roadways meet the target vehicular level of service (Auto LOS).

- The PLOS of Trim Road can only be improved to the target PLOS A with a reduction in the operating speed, which is not desirable given Trim Road is an arterial roadway. Therefore, no modifications are recommended.

- The PLOS of Portobello Boulevard can be improved to the target PLOS A by implementing a 0.5m sidewalk boulevard while maintaining a 2.0m-wide sidewalk on the east side, and implementing a 1.8m-wide sidewalk while maintaining a 2.0m sidewalk boulevard. As the existing cross-section meets the current City standards, no modifications are recommended.

- The PLOS of Aquaview Drive can be improved to the target PLOS A by implementing a 1.8m-wide sidewalk while maintaining a 2.0m sidewalk boulevard on the south side of the roadway. There appears to be limited space to widen the sidewalk due to the location of street light poles on the south side. Given the acceptable PLOS on the north side of Aquaview Drive, no modifications are recommended.

- The PLOS of Salzburg Drive can be improved to the target PLOS A by implementing sidewalks with a minimum width of 2.0m and a minimum boulevard width of 0.5m on both sides of the roadway. As the existing cross-section meets the current City standards, no modifications are recommended.

- The BLOS of Trim Road can be improved beyond the target BLOS C by implementing multi-use pathways on both sides of the roadway. Currently, a multi-use pathway is only provided on the east side of Trim Road, north of Millennium Boulevard. The *Ontario Traffic Manual – Book 18* identifies bike lanes as a suitable cycling facility, and a reduction in the operating speed is undesirable. Therefore, no modifications are recommended.

- The BLOS of Provence Avenue can only be improved to the target BLOS B by implementing a physically separated bikeway (such as a multi-use pathway). The *Ontario Traffic Manual –*

Book 18 identifies a shared roadway as suitable given the low traffic volumes. Therefore, no modifications are recommended.

Access Intersections

- Phase 1 will be served by two unsignalized all-movement accesses at Aquaview Drive, approximately 60m and 140m west of Portobello Boulevard. Phases 2-5 will be served by three accesses: an unsignalized access at Provence Avenue, a tie-in to Salzburg Drive, and a tie-in to the roundabout at Trim Road/Millennium Boulevard.
- Of the proposed unsignalized access intersections (Provence Avenue/Street No. 1 and the two accesses at Aquaview Drive/Street No. 10), none are anticipated to meet the OTM or City criteria for all-way stop control. Therefore, side street stop control is recommended for the approaches on Street No. 1 and Street No. 10.
- It is anticipated that all-way stop control will not be warranted for the intersection of Trim Road/Salzburg Drive at full buildout.
- It is proposed that the access to Street No. 1 tie into the existing roundabout at Trim Road/ Millennium Boulevard. Assuming similar approach geometry to the existing approach on Millennium Boulevard, the roundabout is anticipated to continue operating acceptably at full buildout.

Transportation Demand Management

- The following TDM measures will be implemented as the proposed subdivision is built:
    - Designate an internal TDM program coordinator;
    - Display local area maps with walking/cycling routes and key destinations (at sales centre);
    - Display relevant transit schedules and route maps (at sales centre);
    - Provide multimodal travel option information packages to new residents (at sales centre).

Transit

- Phases 1-5 of the proposed subdivision are projected to generate 154 transit trips during the AM peak period and 171 transit trips during the PM peak period.
- No capacity problems are anticipated on OC Transpo routes 33 and 233, which serve the stops adjacent to the proposed Phase 1 development.
- Discussions with City staff confirmed that as the subdivision develops, OC Transpo will provide transit service on Provence Avenue and Street No. 1. Therefore, no capacity problems are anticipated as a result of transit trips generated by Phases 2-5 of the development.

Intersection Design

- Based on the results of the intersection MMLOS analysis:
    - Neither signalized intersection meets the target pedestrian level of service (PLOS);
    - Neither signalized intersection meets the target bicycle level of service (BLOS);
    - Among signalized intersections, only Innes Road/Provence Avenue meets the target transit level of service (TLOS);

  - Among signalized intersections, only Innes Road/Trim Road meets the target truck level of service (TkLOS);
  - Among all study area intersections, only Innes Road/Trim Road does not meet the target vehicular level of service (Auto LOS).

- The PLOS of Innes Road/Provence Avenue cannot achieve the target PLOS at any approach without significantly reducing the number of lanes and restricting turning movements. While only the east and west approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks (greater than 400,000 vehicle/pedestrian conflicts over an eight-hour period), implementing zebra-striped crosswalks could be considered at all approaches given the intersection is adjacent to a school.

- The PLOS of Innes Road/Trim Road cannot achieve the target PLOS at any approach without significantly reducing the number of lanes and restricting turning movements. Implementing zebra-striped crosswalks could be considered at all approaches to improve the level of comfort for pedestrians.

- The BLOS of Innes Road/Provence Avenue can only improve to the target BLOS A with the implementation of two-stage left-turn bike boxes on all approaches and higher order (separated) cycling facilities. Given that there is insufficient space on Innes Road to accommodate separate cycling facilities, the only recommended modification is to shift the pocket bike lane on the west approach so that it is adjacent with the curb. Based on Exhibit 8 of the MMLOS guidelines, this will improve the level of service of the intersection to a BLOS B based on right turn characteristics. No other modifications are recommended.

- The BLOS of Innes Road/Trim Road can only improve beyond the target BLOS B with the implementation of two-stage left-turn bike boxes and higher order (separated) cycling facilities on all approaches. Given that there is insufficient space on Innes Road to accommodate separate cycling facilities, the only recommended modification is to shift the pocket bike lanes on all approaches to be adjacent with the curb. Based on Exhibit 8 of the MMLOS guidelines, this will improve the level of service of the intersection to a BLOS B based on right turn characteristics. No other modifications are recommended.

- The TLOS of Innes Road/Trim Road can be achieved if transit signal priority and queue jump lanes are implemented at all approaches. The 2013 TMP identifies that in the Affordable Network, these measures will be implemented on Innes Road between Blair Station and Millennium Station. Extensions of the Blackburn Hamlet Bypass and Brian Coburn Boulevard will provide alternate parallel routes for eastbound/westbound traffic, and may provide some relief to the current traffic volumes on Innes Road.

- The TkLOS of Innes Road/Provence Avenue does not achieve the target TkLOS D at the east approach. Since Provence Avenue is not a truck route, this manoeuvre is not anticipated to occur with regularity, and therefore no recommendations have been made in improving the TkLOS for this approach.

- The Auto LOS of Innes Road/Trim Road does not achieve the target Auto LOS D during the PM peak period, due to the southbound left turn and eastbound left turn movements.
  - The southbound left turn movement can meet the target with a reduction of 10 vehicles.

  - The eastbound left turn movement requires a reduction of 160 vehicles to meet the target (a reduction of approximately 50%), and there is insufficient space to implement a second left turn lane without further deteriorating the PLOS and BLOS .

- Under the 2025 background traffic conditions, there is anticipated traffic growth on Innes Road, Trim Road, and Portobello Boulevard. Compared to existing conditions, all intersections are anticipated to operate at approximately the same level of service.
- Under the 2025 total traffic conditions, all intersections are anticipated to operate at approximately the same level of service compared to background conditions. The intersection of Trim Road/Salzburg Drive is projected to downgrade to an Auto LOS C during the AM peak period. All accesses to the proposed subdivision are anticipated to perform acceptably.
- No auxiliary lanes are recommended at Provence Avenue/Street No. 1, as none are required.
- Phases 1-5 of the proposed subdivision are recommended from a transportation perspective. An additional study will be prepared in support of a separate draft plan application for Phase 6.

NOVATECH

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APPENDIX A

Concept Plan

Unit Breakdown / Phase						
Phase #	**50' Singles**	**42' Singles**	**35' Singles**	**31' Singles**	**Street Towns**	**Total**
Phase 1		6	23	6	24	59
Phase 2	1	5	44	35	90	175
Phase 3	24	23	36	36	30	149
Phase 4		4	12	11	27	54
Phase 5	10	20			28	58
Total	**35**	**58**	**115**	**88**	**199**	**495**

Multi-Unit Count	
Phase #	**Multi-Unit**
Phase 4	40

LEGEND:

- 31' SINGLES
- 35' SINGLES
- 42' SINGLES
- 50' SINGLES
- 🟩 PARK / WALKWAY BLOCK

Saleable Frontage & Road Length	Phase 4	
	Frontage (m)	roads (m)
Back-to-Back Units	304.36	367.96

Concept 14-1												
Saleable Frontage & Road Length	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		TOTAL	
	Frontage (m)	roads (m)	Frontage (m)	roads (m)	Frontage (m)	roads (m)	Frontage (m)	roads (m)	Frontage (m)	roads (m)	Frontage (m)	roads (m)
Single Detached Units	387.38	319.29	913.29	1257.75	1406.52	1166.94	291.23	279.73	409.14	360.66	3407.56	3384.37
Medium Density	167.72		615.04		205.47		179.31		186.37		1353.91	
Total	555.10	319.29	1528.33	1257.75	1611.99	1166.94	470.54	279.73	595.51	360.66	4761.47	3384.37

M:\2017\117155\CAD\Planning\Concept Plans\117155-CP14-1.dwg, CP14-24X36, Jul 03, 2018 - 4:57pm, channa

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.

No.	REVISION	DATE	BY
6.	ISSUED WITH DP APPLICATION	JUNE 29/18	MER
5	ADDED STREET 8 / CLEANUP	JUNE 08/18	MER
4.	FRONTAGE AND UNIT COUNTS UPDATED	MAY 15/18	MER
3.	UNIT COUNTS UPDATED	JAN 08/18	MER
2.	PATHWAYS ADDED	JAN 03/18	JGR
1.	PARK ADJUSTED	DEC 11/17	JGR

SCALE
1:2000 (A1) /
1:4000 (11x17)

1:2000
0 20 40 60 80

DESIGN MER/WLS
CHECKED MER
DRAWN CAH
CHECKED MER
APPROVED MER

FOR REVIEW ONLY

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone	(613) 254-9643
Facsimile	(613) 254-5867
Website	www.novatech-eng.com

LOCATION
CITY of OTTAWA
NOTTING HILL SUBDIVISION (2128 TRIM ROAD)

DRAWING NAME
CONCEPT PLAN 14-1

PROJECT No. 117155-00
REV REV # 6
DRAWING No. 117155-CP14-1

PLAN24x36.DWG - 914.4mmx609.6mm

APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	**2128 Trim Road (Legault Lands)**
Description of Location	**The approximately 27.7-hectare property is located:** • **At the northwest corner of Portobello Boulevard/Aquaview Drive/Nantes Street** • **South of Salzburg Drive, between Provence Avenue and Trim Road**
Land Use Classification	**Single-family homes, townhomes and apartments**
Development Size (units)	**535 units**
Development Size (m^2)	**-**
Number of Accesses and Locations	• **One access at Trim Road/Millennium Boulevard** • **One access connecting to Salzburg Drive** • **One access on Provence Avenue, approx 350m south of Scala Avenue** • **Two accesses at Aquaview Drive, approx 60m and 140m west of Portobello Boulevard**
Phase of Development	**5**
Buildout Year	**Full buildout in 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?	✓	
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*		✓

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

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

4. Safety Triggers

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

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

5. Summary

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

If none of the triggers are satisfied, 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 Route Maps

OC Transpo

22 ALBERT / BAY
MILLENNIUM

Monday to Friday / Lundi au vendredi
Peak periods only
Périodes de pointe seulement

Legend • *Légende*

☐ Transitway Stations / *Stations du Transitway*

🚗 Park & Ride / *Parc-o-bus*

● Limited stops: Off only in AM / No stop in PM /
Arrêts limités : Débarquement en AM seulement /
Aucun arrêt en PM

2016.12

Information / Renseignement	**613-741-4390**
Customer Relations Service à la clientèle	**613-842-3600**
Lost and Found / Objets perdus	**613-563-4011**
Schedule / Horaire	**613-560-1000**
Text / Texto	**560560**

plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Effective / En vigueur Dec. 25 déc. 2016

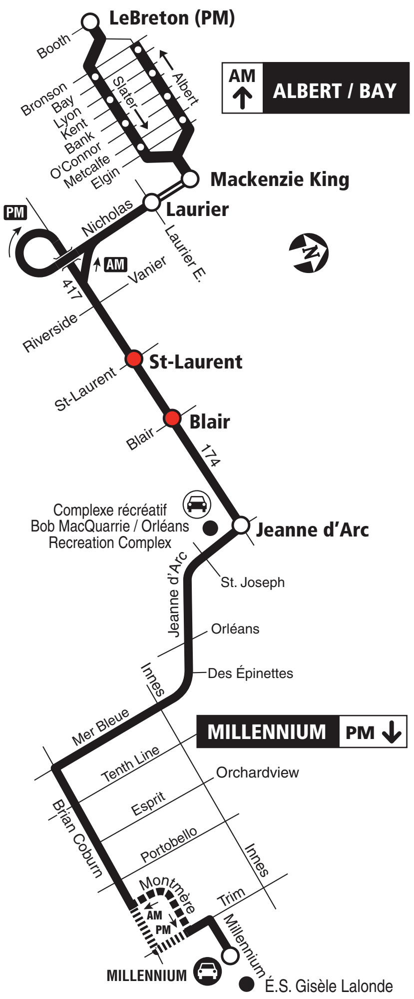
613-741-4390 octranspo.com

30

ALBERT /BAY
MILLENNIUM

Local

Monday to Friday / Lundi au vendredi
Peak periods only
Périodes de pointe seulement



═○═	Transitway & Station
■■■■■■■	Peak periods / Périodes de pointe
▮▮▮▮▮▮▮▮▮▮	Off-peak periods / Périodes hors-pointe
●	Limited stops: Off only in AM / No stop in PM Arrêts limités : Débarquement en AM seulement / Aucun arrêt en PM
🚘 🚘	Park & Ride / Parc-o-bus

2017.12

Schedule / Horaire.......613-560-1000
Text / Texto 560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Customer Relations
Service à la clientèle **613-842-3600**

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

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

Effective September 6, 2016
En vigueur 6 septembre 2016

INFO 613-741-4390
octranspo.com

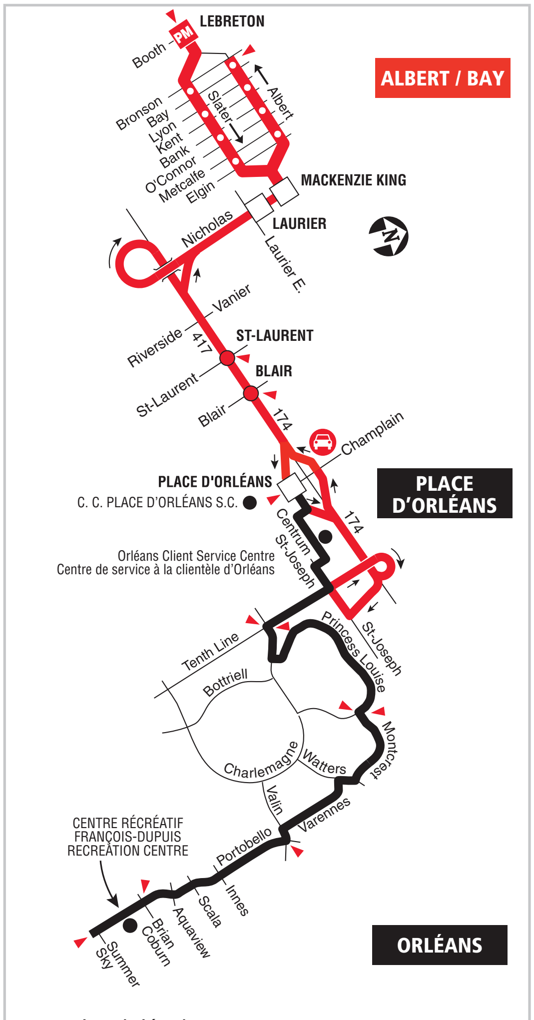
OC Transpo

FORMER / ANCIEN 20A & 120

33 PLACE D'ORLÉANS ALBERT / BAY ORLÉANS

Monday to Friday / Lundi au vendredi

All day service
Service toute la journée



Legend • *Légende*

☐	Transitway Stations / *Stations du Transitway*
🟥	Weekday Peak trips only *Trajets de semaine en périodes de pointe seulement*
●	Limited stops: Off only in AM / No stop in PM *Arrêts limités : Débarquement en AM seulement / Aucun arrêt en PM*
🚗	Park & Ride / *Parc-o-bus*
▲	Timepoint / *Heures de passage*

2016.12

Information / Renseignement.............613-741-4390

Customer Relations
Service à la clientèle 613-842-3600

Lost and Found / Objets perdus 613-563-4011

Schedule / Horaire.............................613-560-1000

Text / Texto 560560

plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Effective / En vigueur Dec. 25 déc. 2016

613-741-4390 octranspo.com

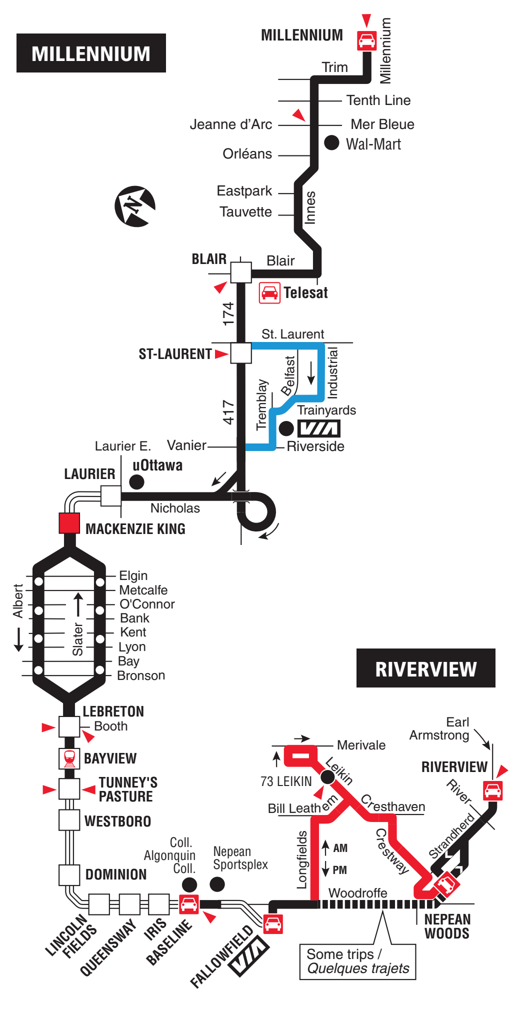
OC Transpo

94

MILLENNIUM

RIVERVIEW

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



Legend • *Légende*

Transitway & Station

O-Train Connection / *Correspondance avec l'O-Train*

🟥 Late night trips via Rideau St. instead of Mackenzie King / *Les trajets de fin de soirée utilisent la rue Rideau au lieu de la station Mackenzie King*

Peak periods / *Périodes de pointe*

Early morning service / *Service matinal*

Park & Ride *Parc-o-bus*

▲ Timepoint *heures de passage*

2016.09

Information / Renseignement.............613-741-4390

Customer Relations
Service à la clientèle 613-842-3600

Lost and Found / Objets perdus 613-563-4011

Schedule / Horaire.............................613-560-1000

Text / Texto 560560

plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Effective / En vigueur Sept. 4 sept. 2016

613-741-4390 octranspo.com

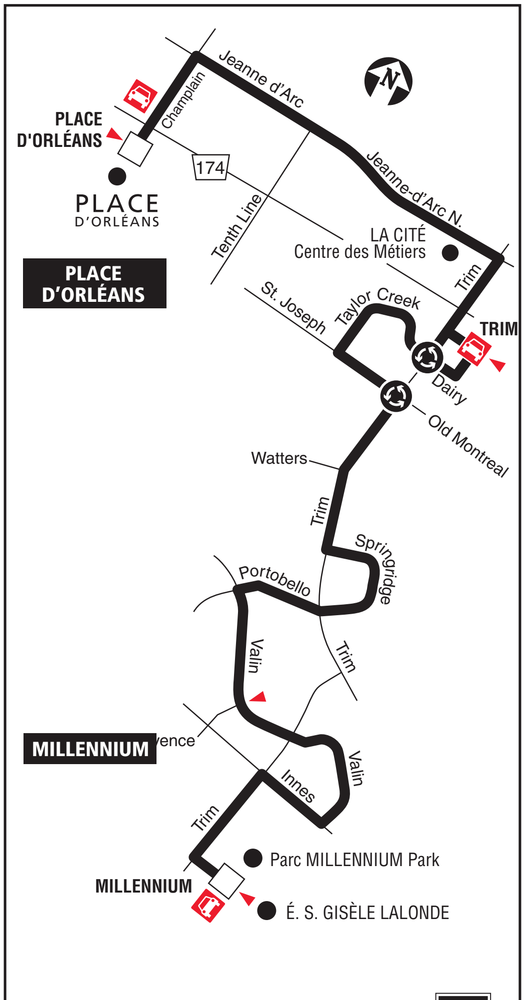
OC Transpo

122

MILLENNIUM

PLACE D'ORLÉANS

7 days a week / 7 jours par semaine
No Saturday late evening service
Aucun service tard en soirée le samedi



Legend • *Légende* ♿

☐ Transitway Station / *Station du Transitway*

🟥 Park & Ride / *Parc-o-Bus*

▲ Timepoint / *Heures de passage*

2010.09

Information Renseignement	613-741-4390
Customer service Service à la clientèle	613-842-3600
Lost and Found Objets perdus	613-563-4011
Schedule Horaire	613-560-1000

plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

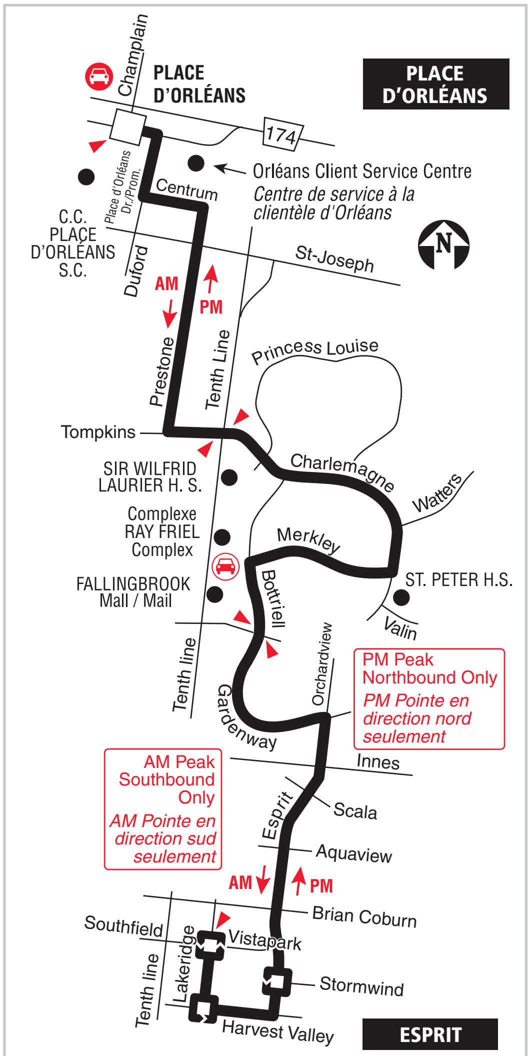
Effective / En vigueur Sept 6 sept 2009

613-741-4390 octranspo.com

135

PLACE D'ORLÉANS
ESPRIT

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



Legend • *Légende*

☐ Transitway Station / *Station du Transitway*

🚗 Park & Ride / *Parc-o-bus*

▲ Timepoint / *Heures de passage*

2016.12

Information / Renseignement	613-741-4390
Customer Relations Service à la clientèle	613-842-3600
Lost and Found / Objets perdus	613-563-4011
Schedule / Horaire	613-560-1000
Text / Texto	560560

plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Effective / En vigueur Dec. 25 déc. 2016

613-741-4390 octranspo.com

233

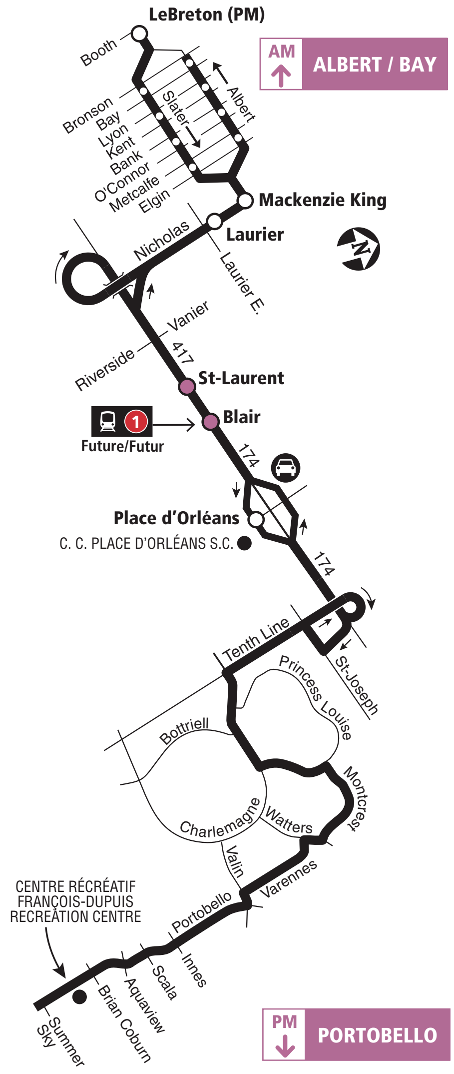
Connexion

ALBERT / BAY

PORTOBELLO

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



○	Transitway & Station
●	Limited stops: Off only in AM / No stop in PM Arrêts limités : Débarquement en AM seulement / Aucun arrêt en PM
🚗	Park & Ride / Parc-o-bus

2018.05

Schedule / Horaire……. 613-560-1000
Text / Texto …………………… 560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

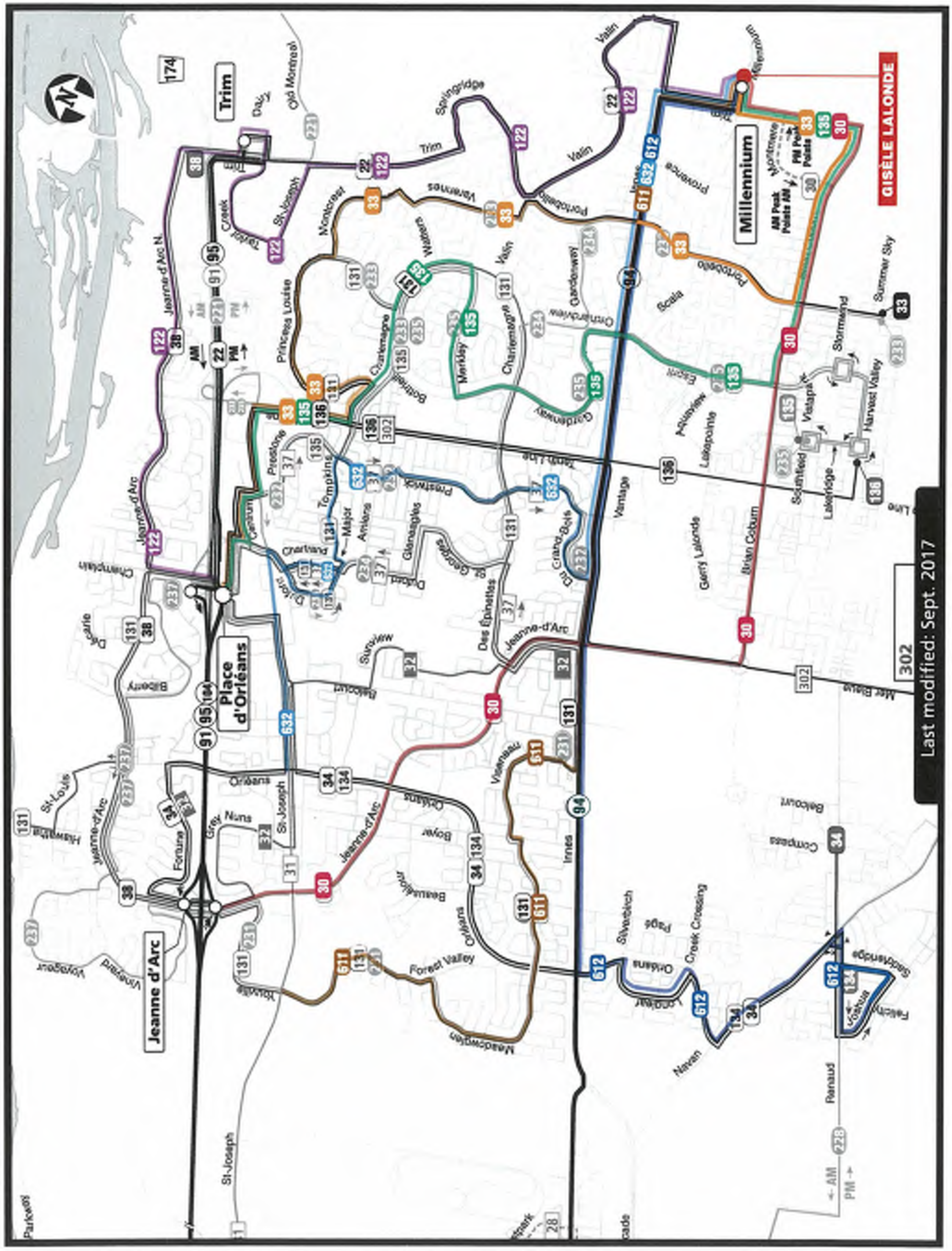
Customer Relations
Service à la clientèle ……………… **613-842-3600**

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

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

Effective December 25, 2016
En vigueur 25 décembre 2016

OC Transpo
INFO 613-741-4390
octranspo.com


Trim
Place d'Orléans
Jeanne d'Arc
Millennium
GISÈLE LALONDE
Last modified: Sept. 2017
302
174
AM Peak Points AM
PM Peak Points
Jeanne-d'Arc N.
Jeanne-d'Arc
Trim
Springridge
Valin
Portobello
Varennes
Montreal
Old Montreal
Dairy
Taylor Creek
St-Joseph
Princess Louise
Charlemagne
Watters
Merkley
Gardenway
Orchardview
Innes
Provence
Scala
Summer Sky
Stormland
Harvest Valley
Vistapark
Aquaview
Lakepointe
Southfield
Lakeridge
Tenth Line
Vantage
Gerry Lalonde
Brian Coburn
Mer Bleue
Prestone
Tompkins
Major
Amiens
Chartrand
Glenaggies
Dussere
St Georges
Des Épinettes
Du Grand-Bois
Sunview
Belcourt
Champlain
Duford
Bilberry
Orléans
Grey Nuns
Fortune
St-Louis
Hiawatha
Vineyard
Voyageur
Boyer
Beausoleil
Viseneau
Forest Valley
Meadowglen
Tauvette
Silverbirch
Pagé
Creek Crossing
Longleaf
Navan
Saddleridge
Fairlight
Renaud
Compass
St-Joseph
Parkway
AM
PM
30
33
34
38
22
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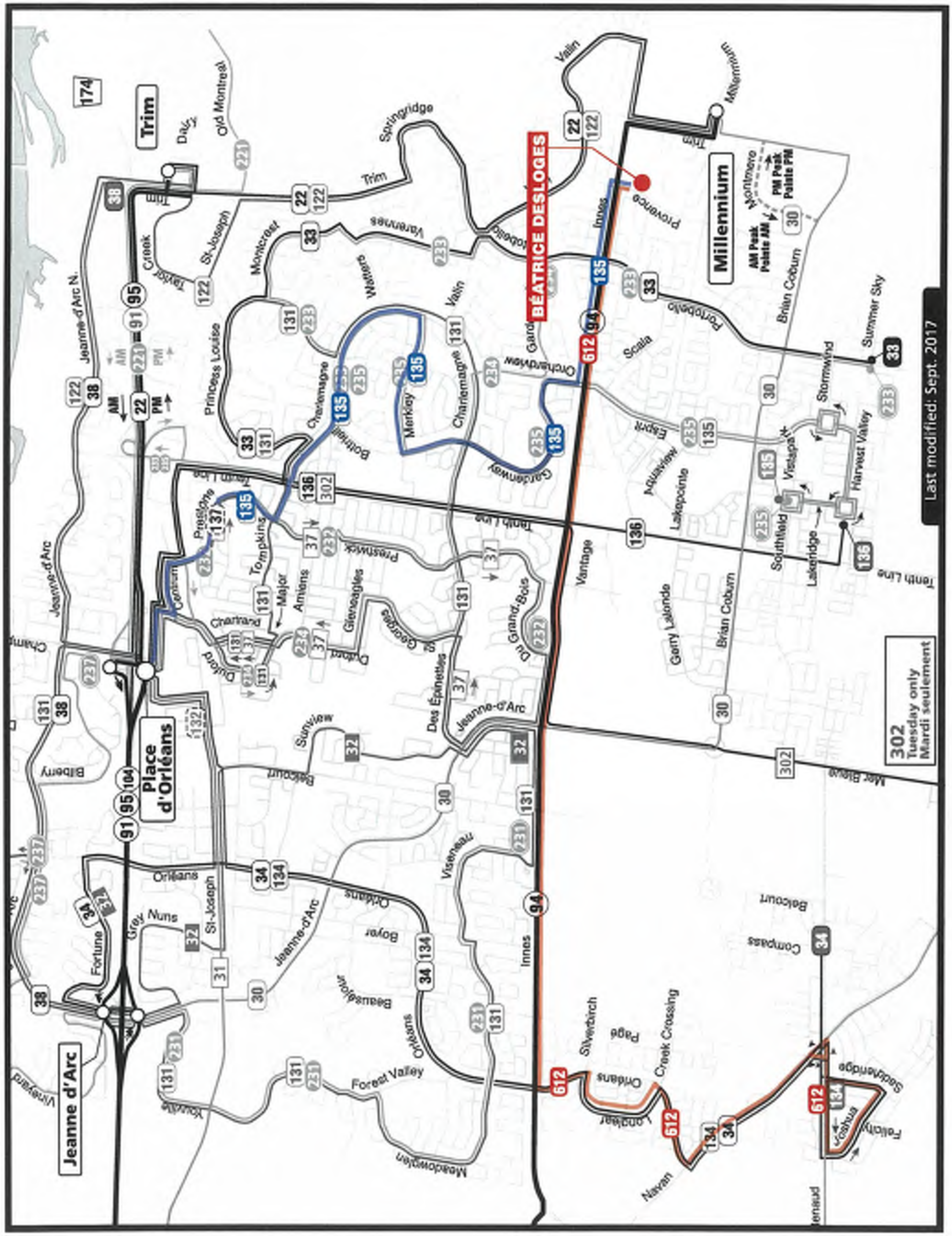
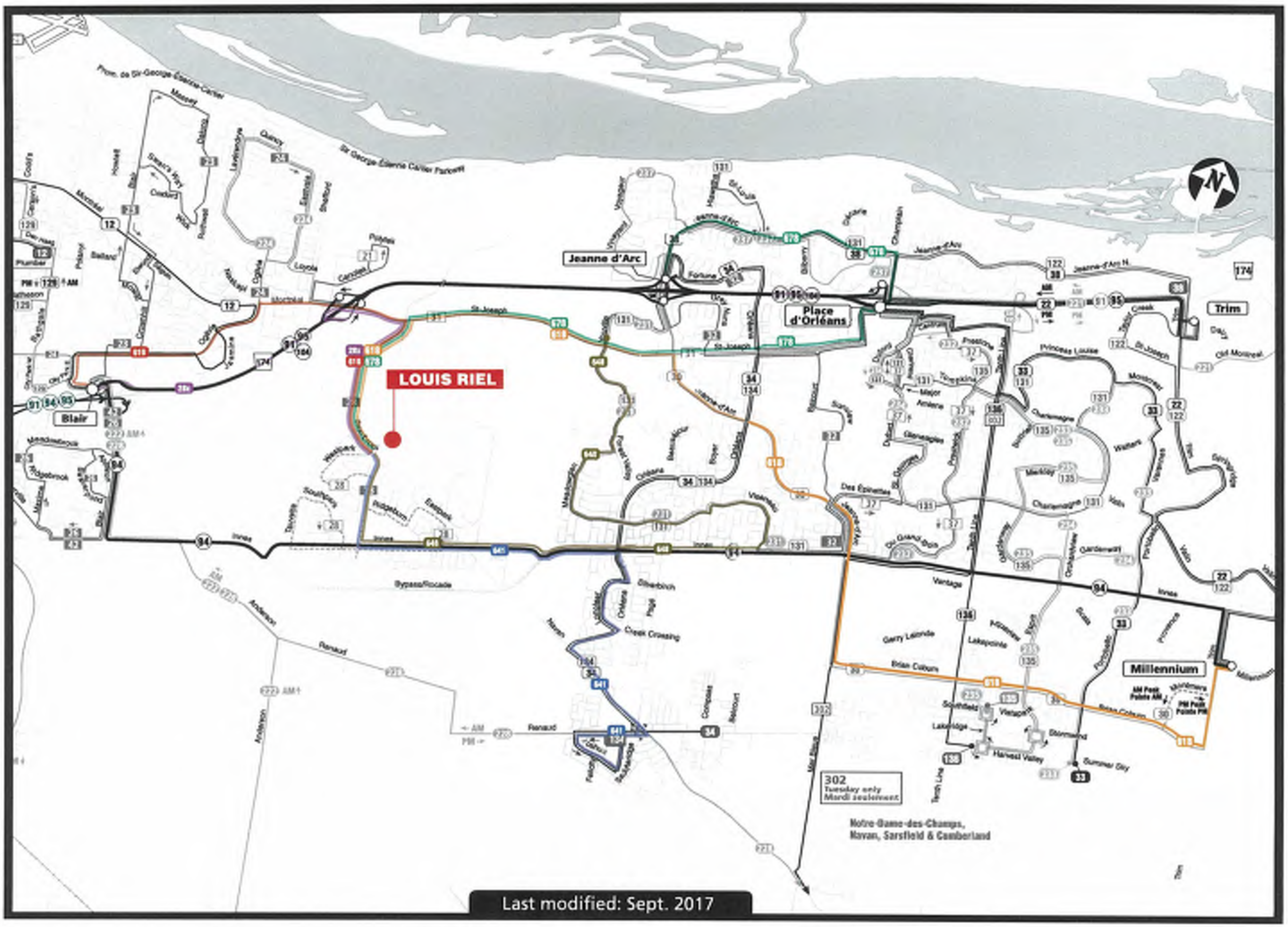
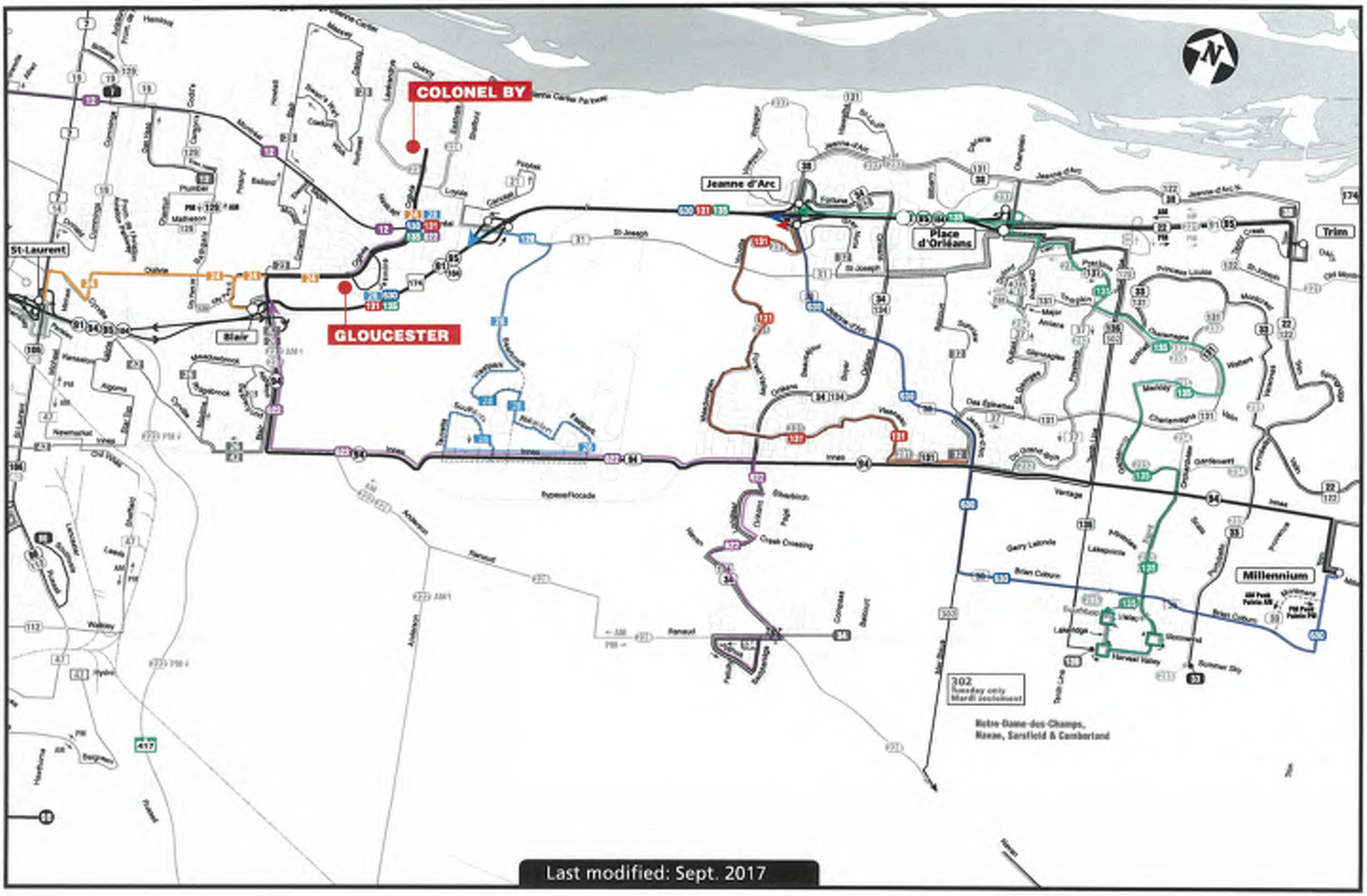
94
95
122
131
134
135
136
611
612
632


BÉATRICE DESLOGES
Millennium
Place d'Orléans
Jeanne d'Arc
Trim
Last modified: Sept. 2017
302
Tuesday only
Mardi seulement
AM Peak
Palais AM
PM Peak
Palais PM
AM
PM
Innes
Tenth Line
Jeanne-d'Arc
Jeanne-d'Arc N.
Orléans
St-Joseph
Charlemagne
Valin
Provence
Portobello
Brian Coburn
Mer Bleue
Trim
Springridge
Old Montreal
Varennes
Montcrest
Princess Louise
Watters
Gardenway
Esprit
Vistapark
Harvest Valley
Stormwind
Summer Sky
Lakeridge
Southfield
Lakepointe
Aquaview
Gerry Lalonde
Vantage
Du Grand-Bois
Des Épinettes
Belcourt
Sunview
Viseneau
Forest Valley
Meadowglen
Youville
Vineyard
Fortune
Grey Nuns
Boyer
Beausejour
Silverbirch
Page
Creek Crossing
Longleaf
Navan
Compass
Sadlebridge
Felicity
Joshua
Renaud
Tompkins
Major
Amiens
Gleneagles
Prestwick
Chartrand
Duford
Dugas
St-Georges
Centrum
Prestone
Bilberry
Taylor Creek
Dairy
Millennium
Montmero
Scala
Orchardview
Gardenway
Merkley
Bothwell
Champlain
22 122 33 38 30 31 32 34 37 91 94 95 104 122 131 132 134 135 136 137 174 221 231 232 233 234 235 237 302 612



Last modified: Sept. 2017



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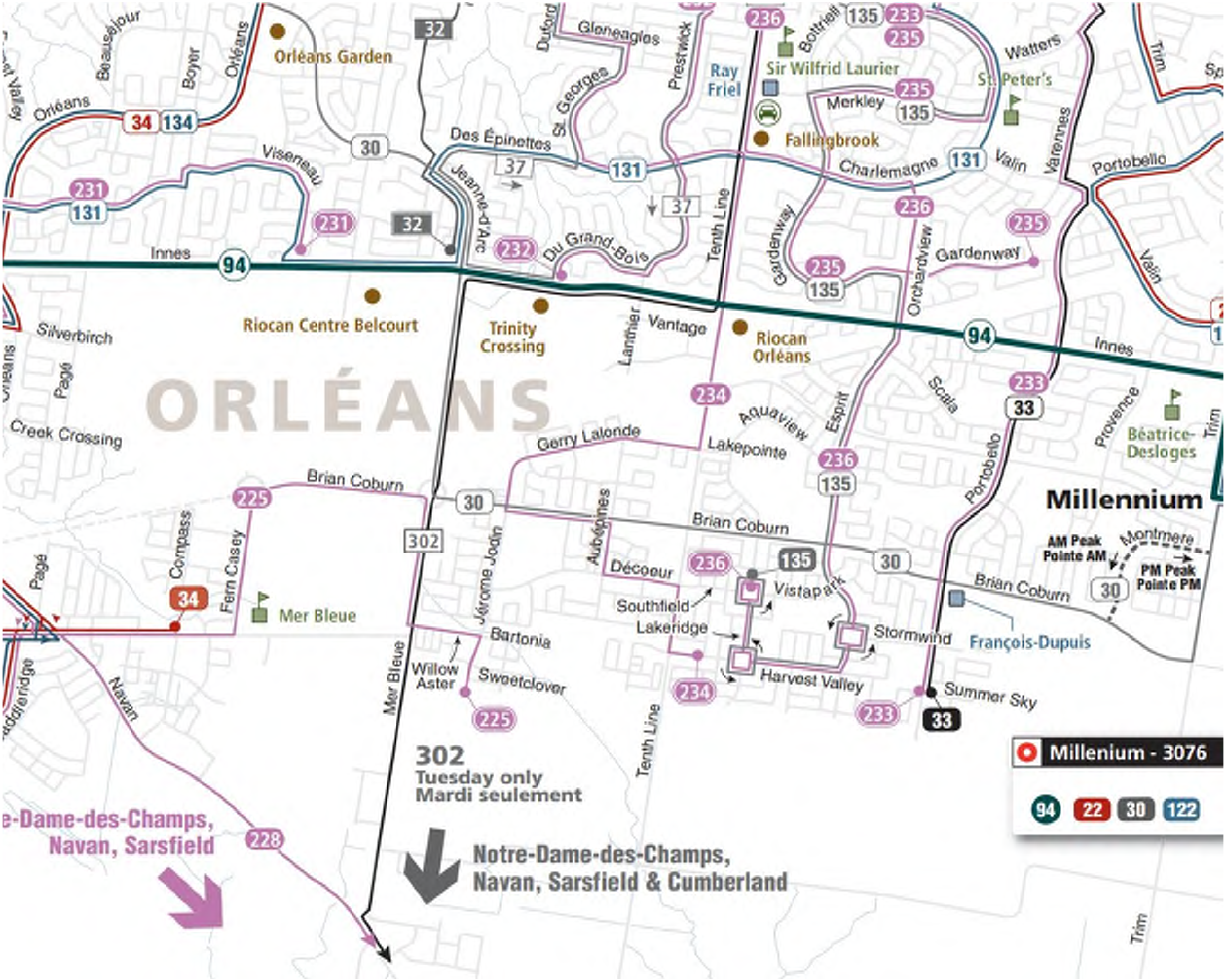
ORLÉANS
Millennium
Millenium - 3076
94
22
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AM Peak
Pointe AM
PM Peak
Pointe PM
Montmere
302
Tuesday only
Mardi seulement
Notre-Dame-des-Champs,
Navan, Sarsfield & Cumberland
e-Dame-des-Champs,
Navan, Sarsfield
Orléans Garden
Riocan Centre Belcourt
Trinity
Crossing
Riocan
Orléans
Fallingbrook
Ray
Friel
Sir Wilfrid Laurier
St. Peter's
Béatrice-
Desloges
Mer Bleue
François-Dupuis
Orléans
Beauséjour
Boyer
Des Épinettes
Viseneau
Jeanne-d'Arc
Innes
Du Grand-Bois
St Georges
Gleneagles
Duford
Prestwick
Tenth Line
Bottriell
Merkley
Charlemagne
Watters
Varennes
Valin
Portobello
Trim
Gardenway
Orchardview
Lanthier
Vantage
Silverbirch
Pagé
Creek Crossing
Aquaview
Esprit
Scala
Provence
Gerry Lalonde
Lakepointe
Brian Coburn
Aubépines
Décoeur
Southfield
Lakeridge
Vistapark
Stormwind
Harvest Valley
Summer Sky
Jérome Jodin
Bartonia
Willow
Aster
Sweetclover
Mer Bleue
Compass
Fern Casey
Navan
Paddleridge
34
134
131
231
30
32
37
232
236
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233
135
234
225
228
33

APPENDIX D

Traffic Count Data

Transportation Services - Traffic Services

Work Order
37021

Turning Movement Count - Full Study Summary Report

INNES RD @ PROVENCE AVE

Survey Date: Tuesday, May 09, 2017

Total Observed U-Turns

Northbound: 0 Southbound: 0
Eastbound: 8 Westbound: 1

AADT Factor

.90

Full Study

	PROVENCE AVE									INNES RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	195	40	103	**338**	29	78	117	**224**	**562**	32	263	102	**397**	117	634	20	**771**	**1168**	**1730**
08:00 09:00	78	19	54	**151**	39	20	113	**172**	**323**	41	337	48	**426**	66	530	20	**616**	**1042**	**1365**
09:00 10:00	66	19	65	**150**	10	16	49	**75**	**225**	16	308	27	**351**	41	394	15	**450**	**801**	**1026**
11:30 12:30	41	15	32	**88**	11	17	42	**70**	**158**	42	442	41	**525**	30	399	8	**437**	**962**	**1120**
12:30 13:30	45	15	39	**99**	18	13	39	**70**	**169**	40	466	40	**546**	54	370	19	**443**	**989**	**1158**
15:00 16:00	64	23	85	**172**	35	30	60	**125**	**297**	55	661	68	**784**	83	405	37	**525**	**1309**	**1606**
16:00 17:00	72	36	79	**187**	45	45	77	**167**	**354**	100	785	109	**994**	81	492	23	**596**	**1590**	**1944**
17:00 18:00	75	28	85	**188**	39	29	56	**124**	**312**	97	713	112	**922**	88	483	38	**609**	**1531**	**1843**
Sub Total	636	195	542	**1373**	226	248	553	**1027**	**2400**	423	3975	547	**4945**	560	3707	180	**4447**	**9392**	**11792**
U Turns				**0**				**0**	**0**				**8**				**1**	**9**	**9**
Total	636	195	542	**1373**	226	248	553	**1027**	**2400**	423	3975	547	**4953**	560	3707	180	**4448**	**9401**	**11801**
EQ 12Hr	884	271	753	**1908**	314	345	769	**1428**	**3336**	588	5525	760	**6885**	778	5153	250	**6183**	**13068**	**16404**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	796	244	678	**1718**	283	310	692	**1285**	**3003**	529	4973	684	**6196**	701	4637	225	**5564**	**11760**	**14763**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**.90**					
AVG 24Hr	1042	320	888	**2250**	370	406	906	**1683**	**3933**	693	6514	896	**8117**	918	6075	295	**7289**	**15406**	**19339**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

Comments:

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

Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

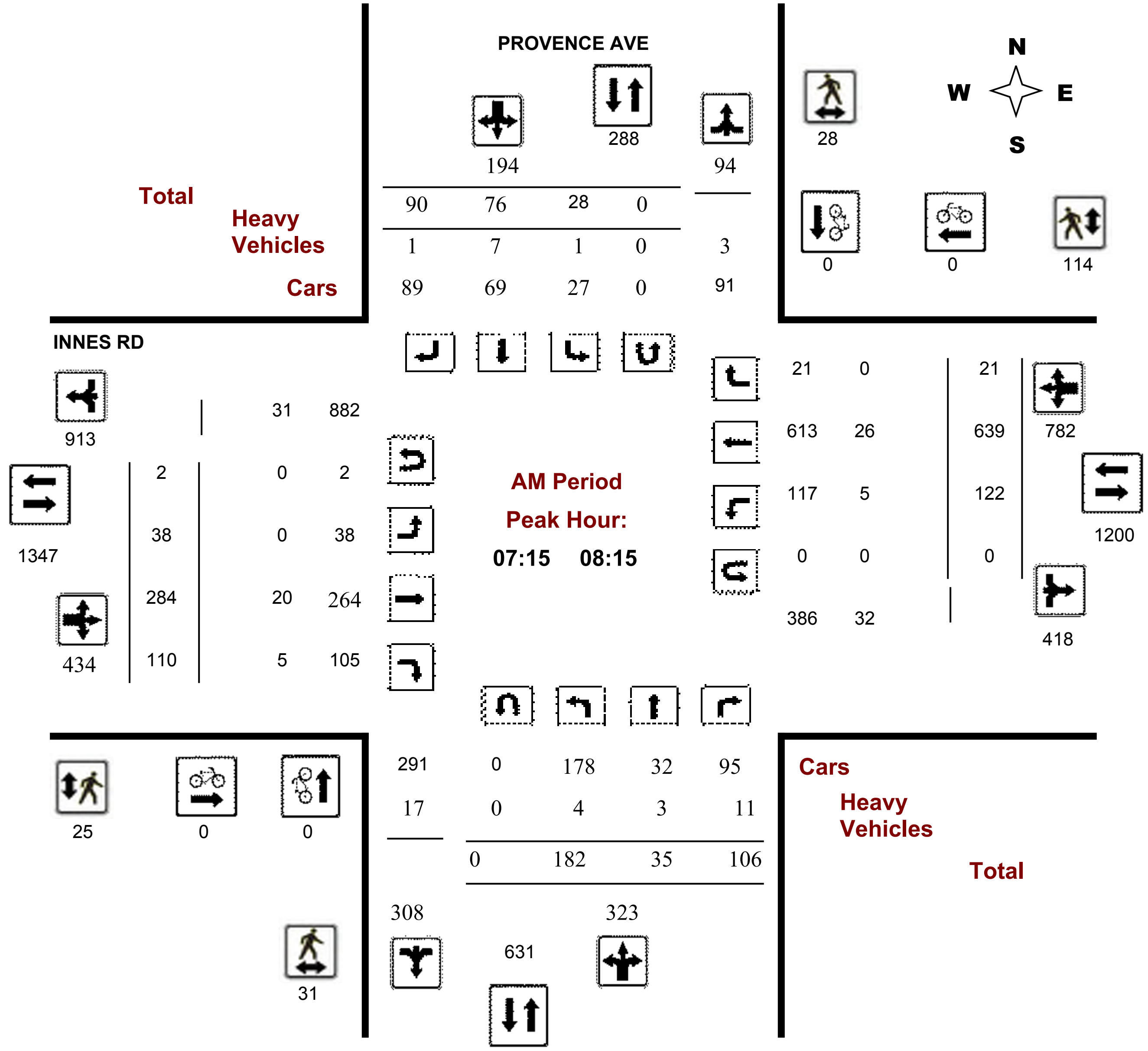
INNES RD @ PROVENCE AVE

Survey Date: Tuesday, May 09, 2017

Start Time: 07:00

WO No: 37021

Device: Miovision



Comments

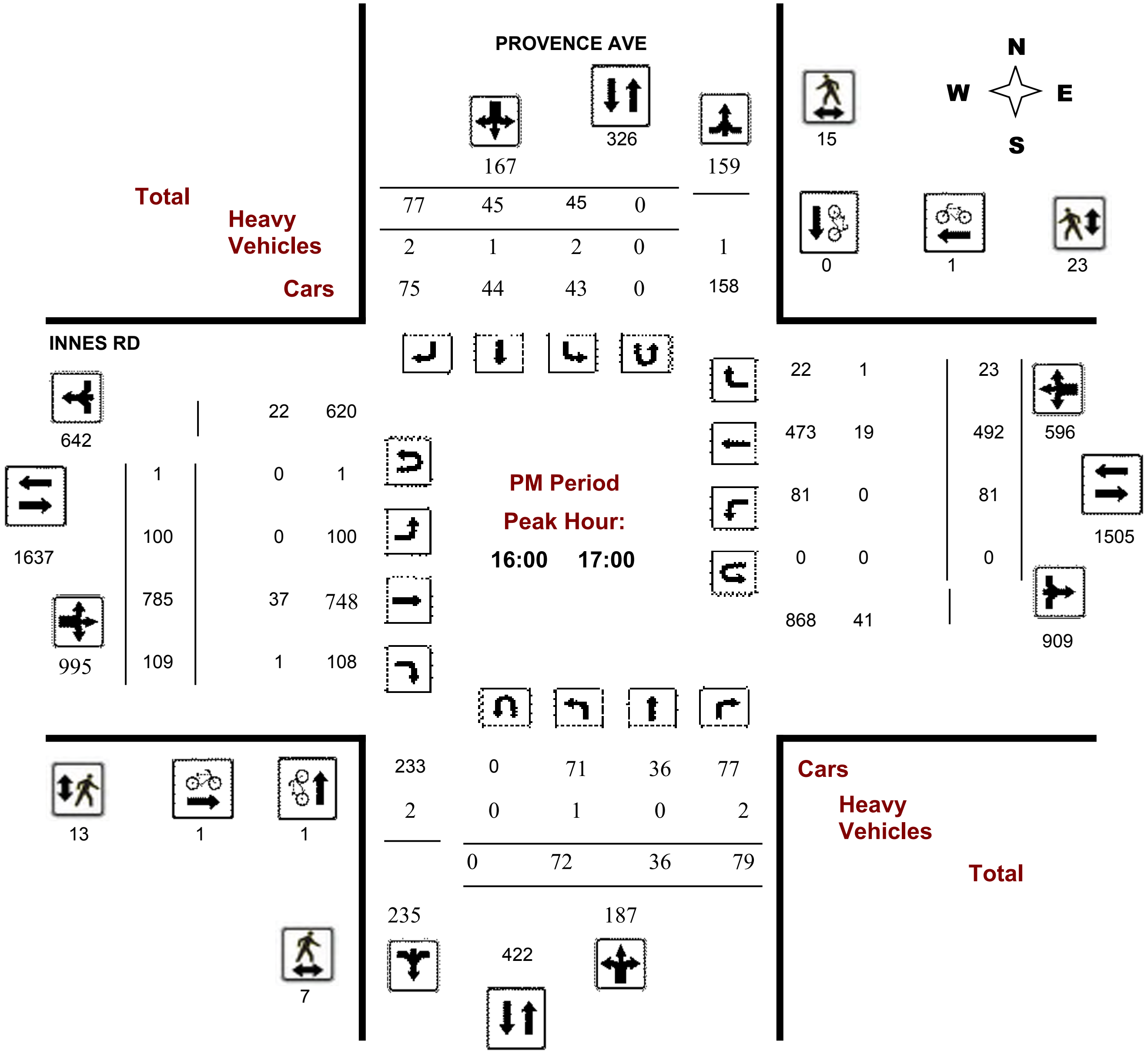
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

INNES RD @ PROVENCE AVE

Survey Date: Tuesday, May 09, 2017 **WO No:** 37021

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



Comments

Transportation Services - Traffic Services

Work Order
35264

Turning Movement Count - Full Study Summary Report

INNES RD @ TRIM RD

Survey Date: Wednesday, August 19, 2015

Total Observed U-Turns

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

AADT Factor
.90

Full Study

	TRIM RD									INNES RD										
	Northbound				Southbound					Eastbound				Westbound						
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	171	288	16	**475**	72	333	80	**485**	**960**	126	167	74	**367**	59	219	30	**308**	**675**	**1635**
08:00 09:00	143	214	11	**368**	83	330	82	**495**	**863**	91	187	74	**352**	112	284	43	**439**	**791**	**1654**
09:00 10:00	91	164	54	**309**	103	406	104	**613**	**922**	94	124	80	**298**	121	218	36	**375**	**673**	**1595**
11:30 12:30	84	300	19	**403**	60	386	62	**508**	**911**	147	120	69	**336**	60	108	42	**210**	**546**	**1457**
12:30 13:30	42	239	39	**320**	83	452	109	**644**	**964**	154	120	48	**322**	39	105	45	**189**	**511**	**1475**
15:00 16:00	111	240	34	**385**	167	686	185	**1038**	**1423**	308	661	94	**1063**	63	306	41	**410**	**1473**	**2896**
16:00 17:00	105	237	32	**374**	123	594	124	**841**	**1215**	189	204	72	**465**	55	129	37	**221**	**686**	**1901**
17:00 18:00	36	299	34	**369**	238	699	152	**1089**	**1458**	302	253	126	**681**	28	98	20	**146**	**827**	**2285**
Sub Total	783	1981	239	**3003**	929	3886	898	**5713**	**8716**	1411	1836	637	**3884**	537	1467	294	**2298**	**6182**	**14898**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	783	1981	239	**3003**	929	3886	898	**5713**	**8716**	1411	1836	637	**3884**	537	1467	294	**2298**	**6182**	**14898**
EQ 12Hr	1088	2754	332	**4174**	1291	5402	1248	**7941**	**12115**	1961	2552	885	**5399**	746	2039	409	**3194**	**8593**	**20708**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	980	2478	299	**3757**	1162	4861	1123	**7147**	**10904**	1765	2297	797	**4859**	672	1835	368	**2875**	**7734**	**18638**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**.90**						
AVG 24Hr	1283	3246	392	**4921**	1522	6368	1472	**9363**	**14284**	2312	3009	1044	**6365**	880	2404	482	**3766**	**10131**	**24415**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

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

Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

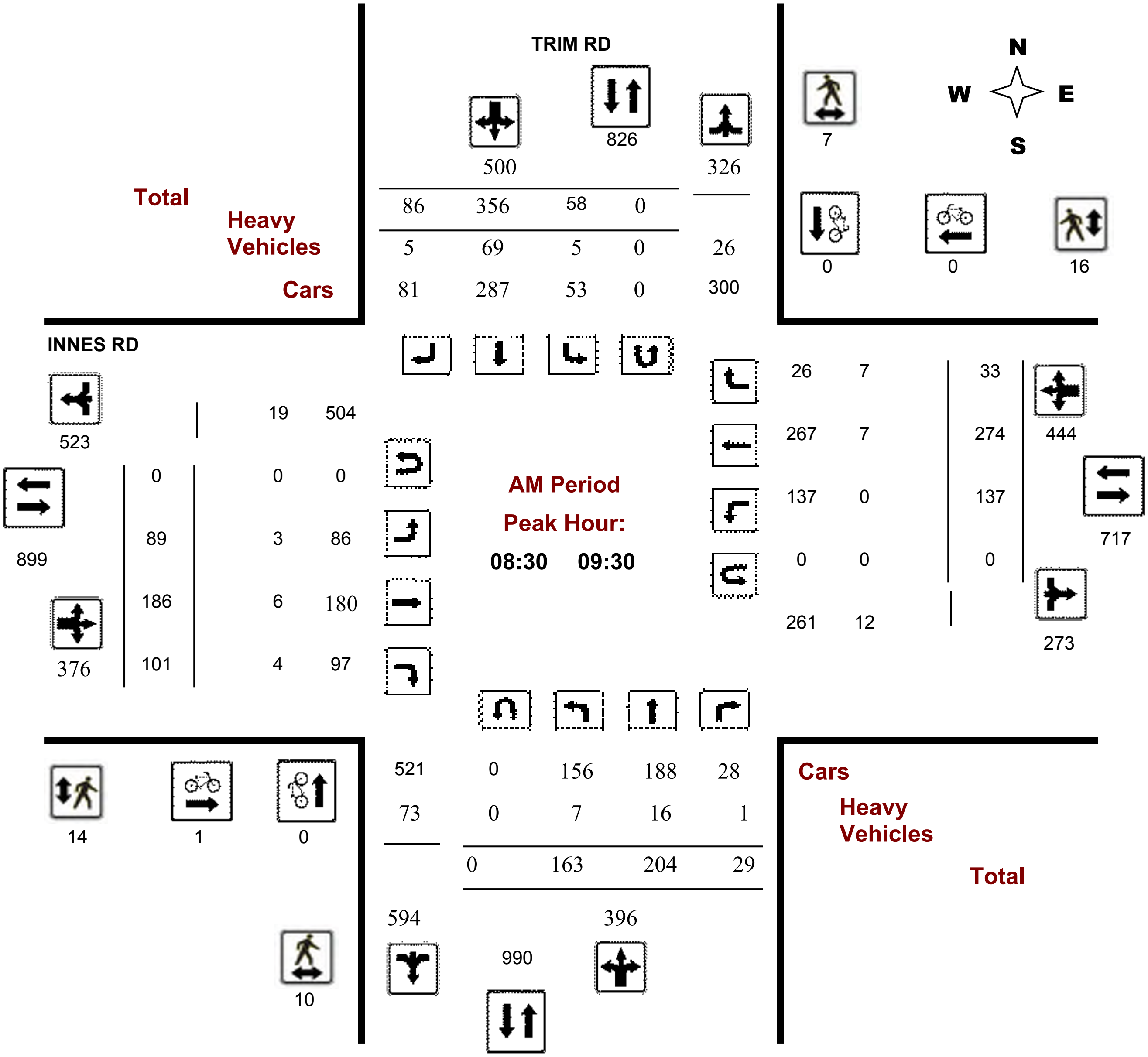
INNES RD @ TRIM RD

Survey Date: Wednesday, August 19, 2015

Start Time: 07:00

WO No: 35264

Device: Jamar Technologies, Inc



Comments

Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

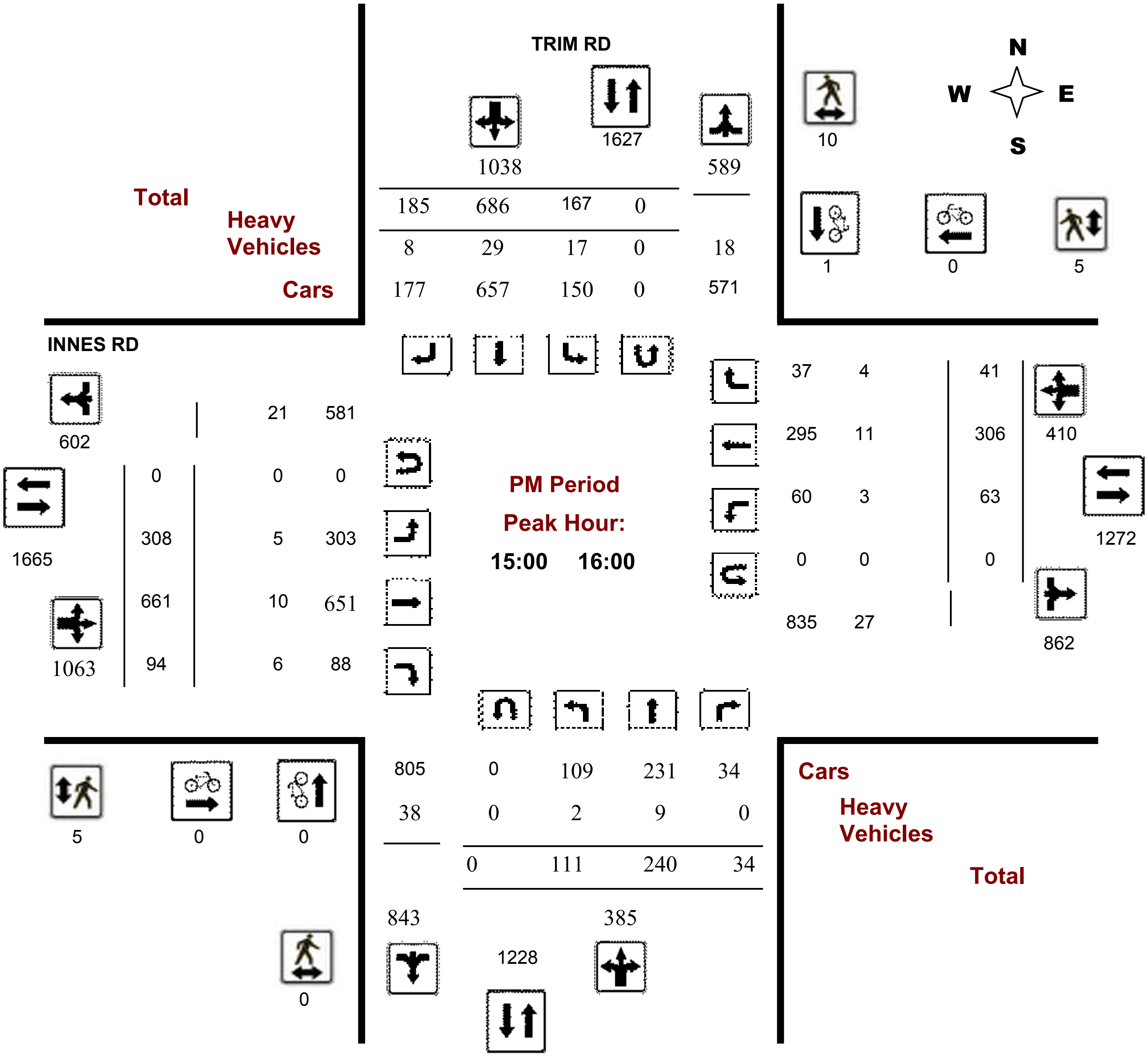
INNES RD @ TRIM RD

Survey Date: Wednesday, August 19, 2015

Start Time: 07:00

WO No: 35264

Device: Jamar Technologies, Inc



Comments

Transportation Services - Traffic Services

Work Order
36717

Turning Movement Count - Full Study Summary Report

TRIM RD @ MILLENNIUM BLVD

Survey Date: Wednesday, February 22, 2017

Total Observed U-Turns

Northbound: 4 Southbound: 31
Eastbound: 0 Westbound: 0

AADT Factor
1.00

Full Study

	TRIM RD									MILLENNIUM BLVD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	0	245	34	**279**	96	219	0	**315**	**594**	0	0	0	**0**	26	0	60	**86**	**86**	**680**
08:00 09:00	0	232	54	**286**	153	186	0	**339**	**625**	0	0	0	**0**	25	0	86	**111**	**111**	**736**
09:00 10:00	1	167	11	**179**	22	125	0	**147**	**326**	1	0	0	**1**	11	0	37	**48**	**49**	**375**
11:30 12:30	0	150	8	**158**	20	152	0	**172**	**330**	1	0	0	**1**	6	0	24	**30**	**31**	**361**
12:30 13:30	0	150	8	**158**	20	170	0	**190**	**348**	0	0	0	**0**	4	0	19	**23**	**23**	**371**
15:00 16:00	0	235	20	**255**	74	299	0	**373**	**628**	0	0	0	**0**	44	0	107	**151**	**151**	**779**
16:00 17:00	0	304	17	**321**	37	367	0	**404**	**725**	0	0	0	**0**	26	0	85	**111**	**111**	**836**
17:00 18:00	0	297	13	**310**	31	367	0	**398**	**708**	0	0	0	**0**	13	0	43	**56**	**56**	**764**
Sub Total	1	1780	165	**1946**	453	1885	0	**2338**	**4284**	2	0	0	**2**	155	0	461	**616**	**618**	**4902**
U Turns				**4**				**31**	**35**				**0**				**0**	**0**	**35**
Total	1	1780	165	**1950**	453	1885	0	**2369**	**4319**	2	0	0	**2**	155	0	461	**616**	**618**	**4937**
EQ 12Hr	1	2474	229	**2710**	630	2620	0	**3293**	**6003**	3	0	0	**3**	215	0	641	**856**	**859**	**6862**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	1	2474	229	**2710**	630	2620	0	**3293**	**6003**	3	0	0	**3**	215	0	641	**856**	**859**	**6862**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**1.00**						
AVG 24Hr	2	3241	300	**3551**	825	3432	0	**4314**	**7865**	4	0	0	**4**	282	0	839	**1122**	**1126**	**8991**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

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

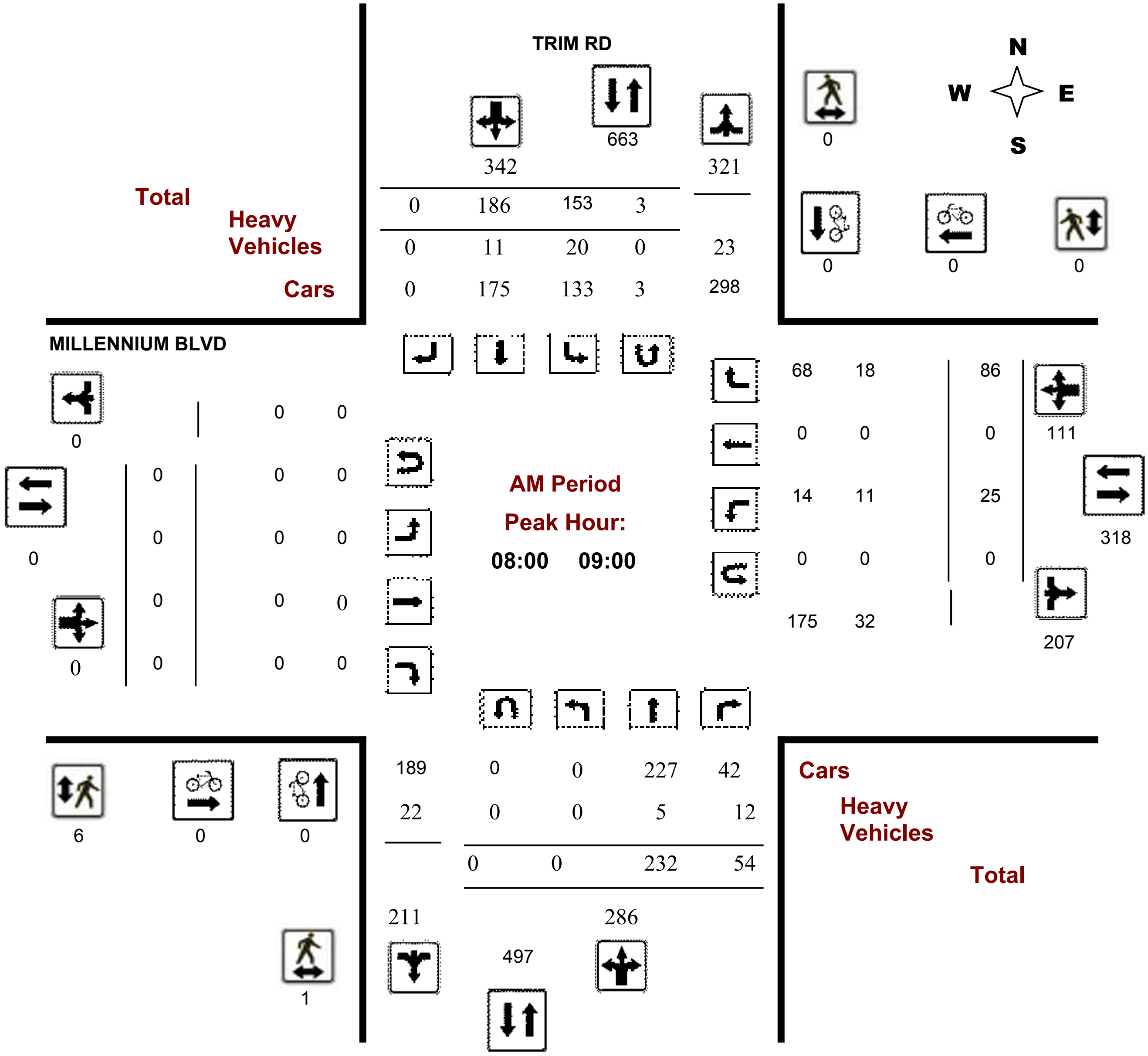
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

TRIM RD @ MILLENNIUM BLVD

Survey Date: Wednesday, February 22, 2017 **WO No:** 36717

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



Comments

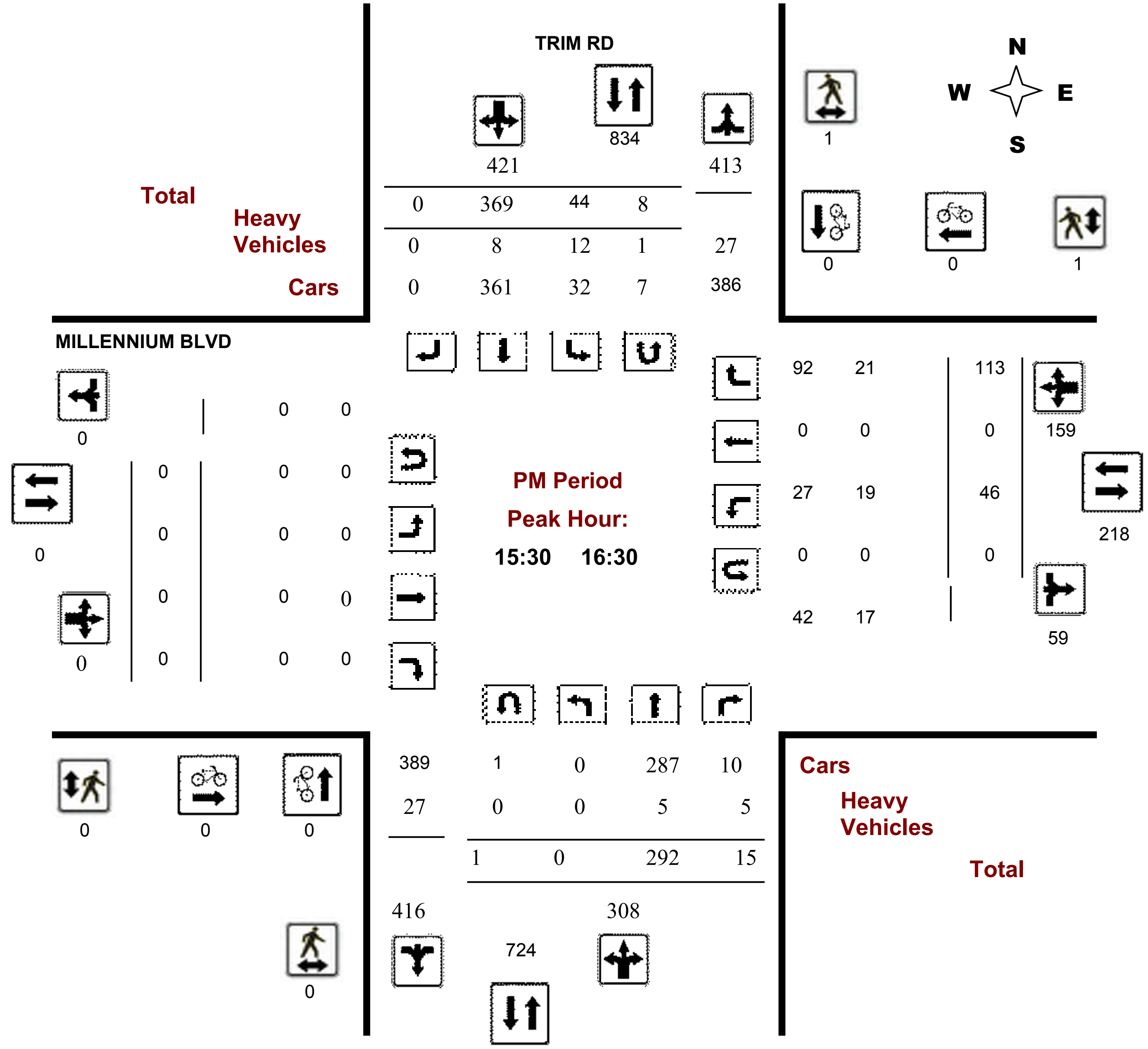
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

TRIM RD @ MILLENNIUM BLVD

Survey Date: Wednesday, February 22, 2017
Start Time: 07:00

WO No: 36717
Device: Miovision



Comments

Transportation Services - Traffic Services

Work Order
36967

Turning Movement Count - Full Study Summary Report

MONTMERE AVE @ TRIM RD

Survey Date: Wednesday, November 14, 2012

Total Observed U-Turns

Northbound: 4 Southbound: 7
Eastbound: 1 Westbound: 0

AADT Factor
.90

Full Study

	TRIM RD									MONTMERE 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	4	246	0	**250**	0	253	51	**304**	**554**	93	0	4	**97**	0	0	0	**0**	**97**	**651**
08:00 09:00	0	229	0	**229**	0	195	44	**239**	**468**	89	0	4	**93**	0	0	0	**0**	**93**	**561**
09:00 10:00	2	141	0	**143**	0	142	48	**190**	**333**	55	0	3	**58**	0	0	0	**0**	**58**	**391**
11:30 12:30	0	141	0	**141**	0	138	44	**182**	**323**	58	0	4	**62**	0	0	0	**0**	**62**	**385**
12:30 13:30	1	125	0	**126**	0	163	33	**196**	**322**	50	0	1	**51**	0	0	0	**0**	**51**	**373**
15:00 16:00	5	200	0	**205**	0	227	88	**315**	**520**	65	0	4	**69**	0	0	0	**0**	**69**	**589**
16:00 17:00	8	267	0	**275**	0	316	104	**420**	**695**	66	0	6	**72**	0	0	0	**0**	**72**	**767**
17:00 18:00	4	224	0	**228**	0	285	112	**397**	**625**	61	0	3	**64**	0	0	0	**0**	**64**	**689**
Sub Total	24	1573	0	**1597**	0	1719	524	**2243**	**3840**	537	0	29	**566**	0	0	0	**0**	**566**	**4406**
U Turns				**4**				**7**	**11**				**1**				**0**	**1**	**12**
Total	24	1573	0	**1601**	0	1719	524	**2250**	**3851**	537	0	29	**567**	0	0	0	**0**	**567**	**4418**
EQ 12Hr	33	2186	0	**2225**	0	2389	728	**3128**	**5353**	746	0	40	**788**	0	0	0	**0**	**788**	**6141**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	30	1968	0	**2003**	0	2150	656	**2815**	**4818**	672	0	36	**709**	0	0	0	**0**	**709**	**5527**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**.90**						
AVG 24Hr	39	2578	0	**2624**	0	2817	859	**3687**	**6311**	880	0	48	**929**	0	0	0	**0**	**929**	**7240**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

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

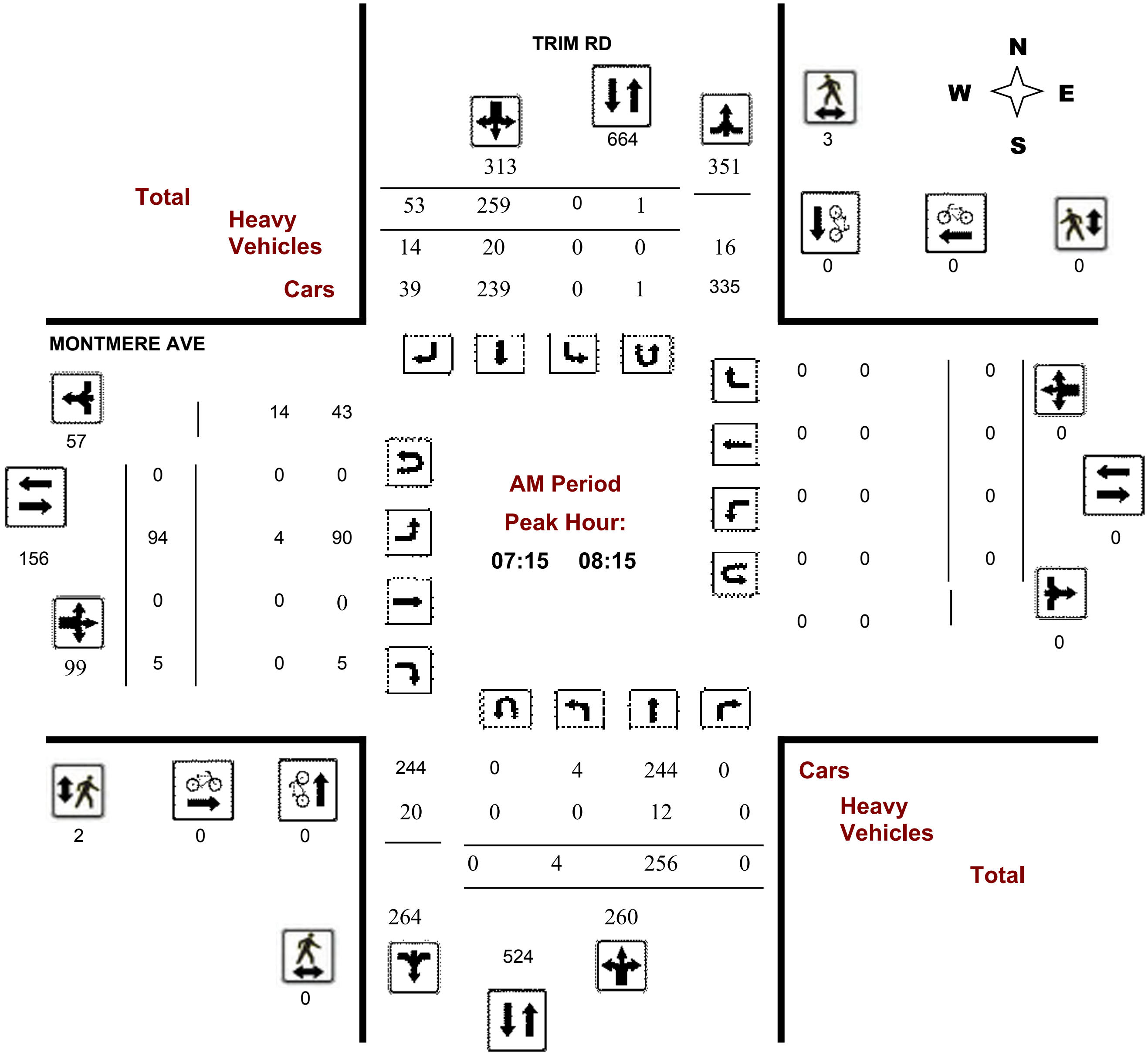
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

MONTMERE AVE @ TRIM RD

Survey Date: Wednesday, November 14, 2012 **WO No:** 36967

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

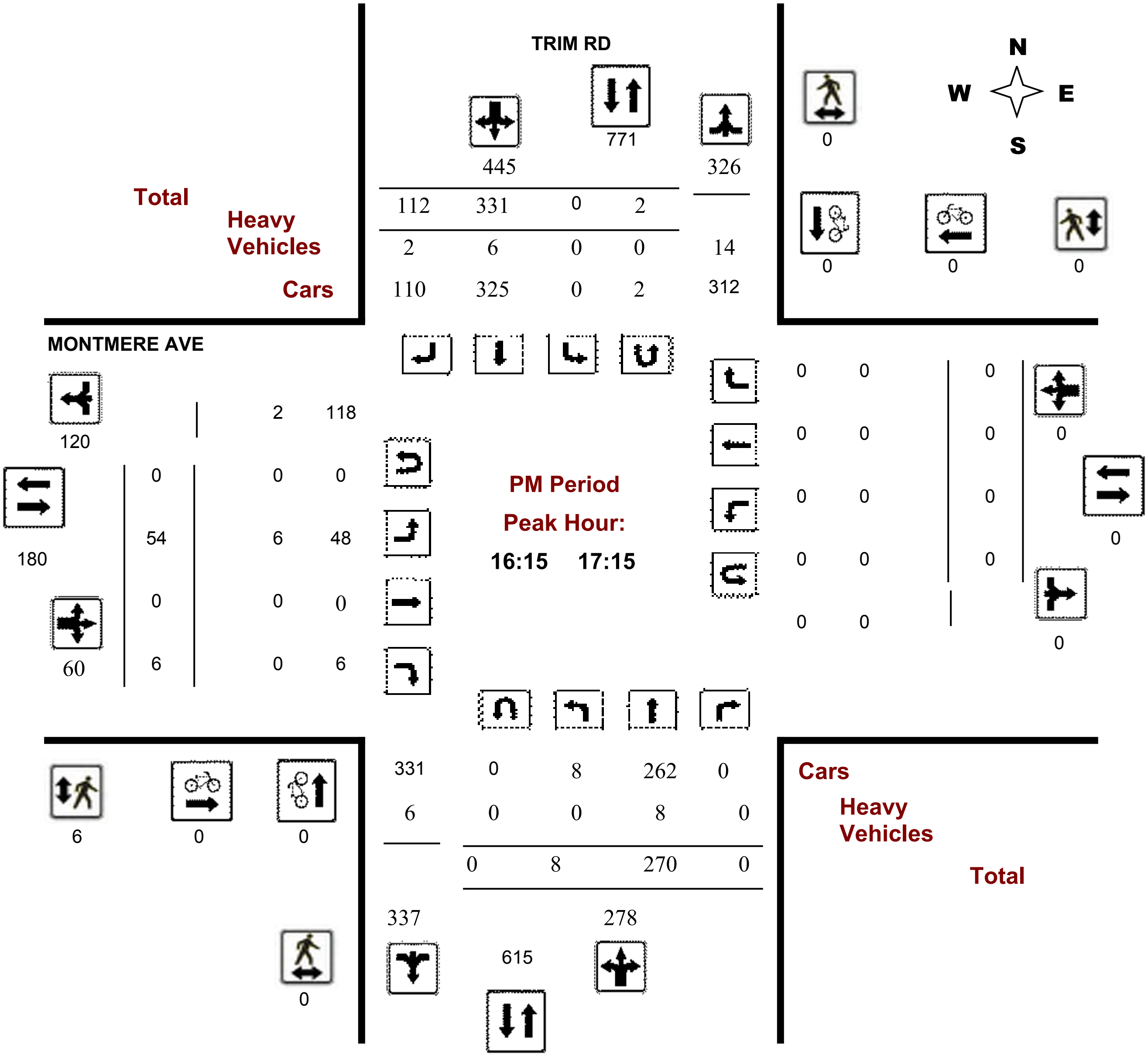
MONTMERE AVE @ TRIM RD

Survey Date: Wednesday, November 14, 2012

Start Time: 07:00

WO No: 36967

Device: Miovision



Comments

Transportation Services - Traffic Services

Work Order
397

Turning Movement Count - Full Study Summary Report

PLAINHILL DR @ PROVENCE AVE

Survey Date: Wednesday, January 22, 2014

Total Observed U-Turns

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

AADT Factor
1.00

Full Study

	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	3	52	6	**61**	5	27	6	**38**	**99**	17	12	7	**36**	14	24	38	**76**	**112**	**211**
08:00 09:00	2	24	5	**31**	15	20	5	**40**	**71**	12	13	7	**32**	17	24	23	**64**	**96**	**167**
09:00 10:00	3	3	4	**10**	3	5	1	**9**	**19**	6	7	3	**16**	12	15	3	**30**	**46**	**65**
11:30 12:30	1	4	7	**12**	3	4	3	**10**	**22**	3	7	1	**11**	3	8	11	**22**	**33**	**55**
12:30 13:30	2	7	9	**18**	6	6	8	**20**	**38**	5	4	1	**10**	5	10	4	**19**	**29**	**67**
15:00 16:00	2	16	8	**26**	9	4	9	**22**	**48**	1	16	5	**22**	7	12	6	**25**	**47**	**95**
16:00 17:00	6	15	17	**38**	20	20	8	**48**	**86**	1	30	2	**33**	15	24	7	**46**	**79**	**165**
17:00 18:00	6	19	20	**45**	14	11	14	**39**	**84**	9	13	2	**24**	5	18	11	**34**	**58**	**142**
Sub Total	25	140	76	**241**	75	97	54	**226**	**467**	54	102	28	**184**	78	135	103	**316**	**500**	**967**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	25	140	76	**241**	75	97	54	**226**	**467**	54	102	28	**184**	78	135	103	**316**	**500**	**967**
EQ 12Hr	35	195	106	**335**	104	135	75	**314**	**649**	75	142	39	**256**	108	188	143	**439**	**695**	**1344**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	35	195	106	**335**	104	135	75	**314**	**649**	75	142	39	**256**	108	188	143	**439**	**695**	**1344**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**1.00**						
AVG 24Hr	46	255	138	**439**	137	177	98	**412**	**851**	98	186	51	**335**	142	246	188	**575**	**910**	**1761**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

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

Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

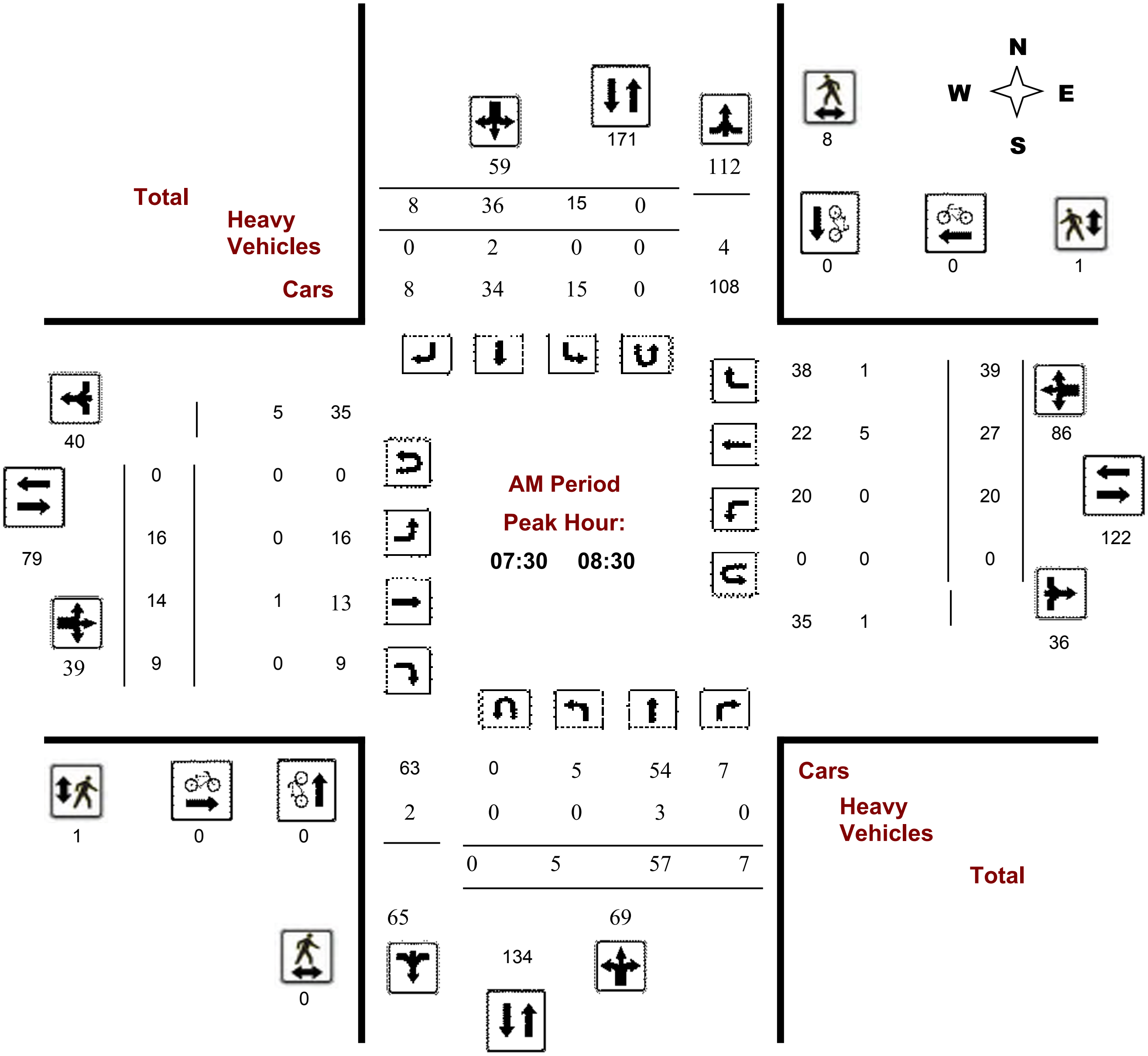
PLAINHILL DR @ PROVENCE AVE

Survey Date: Wednesday, January 22, 2014

Start Time: 07:00

WO No: 397

Device: Miovision



Comments

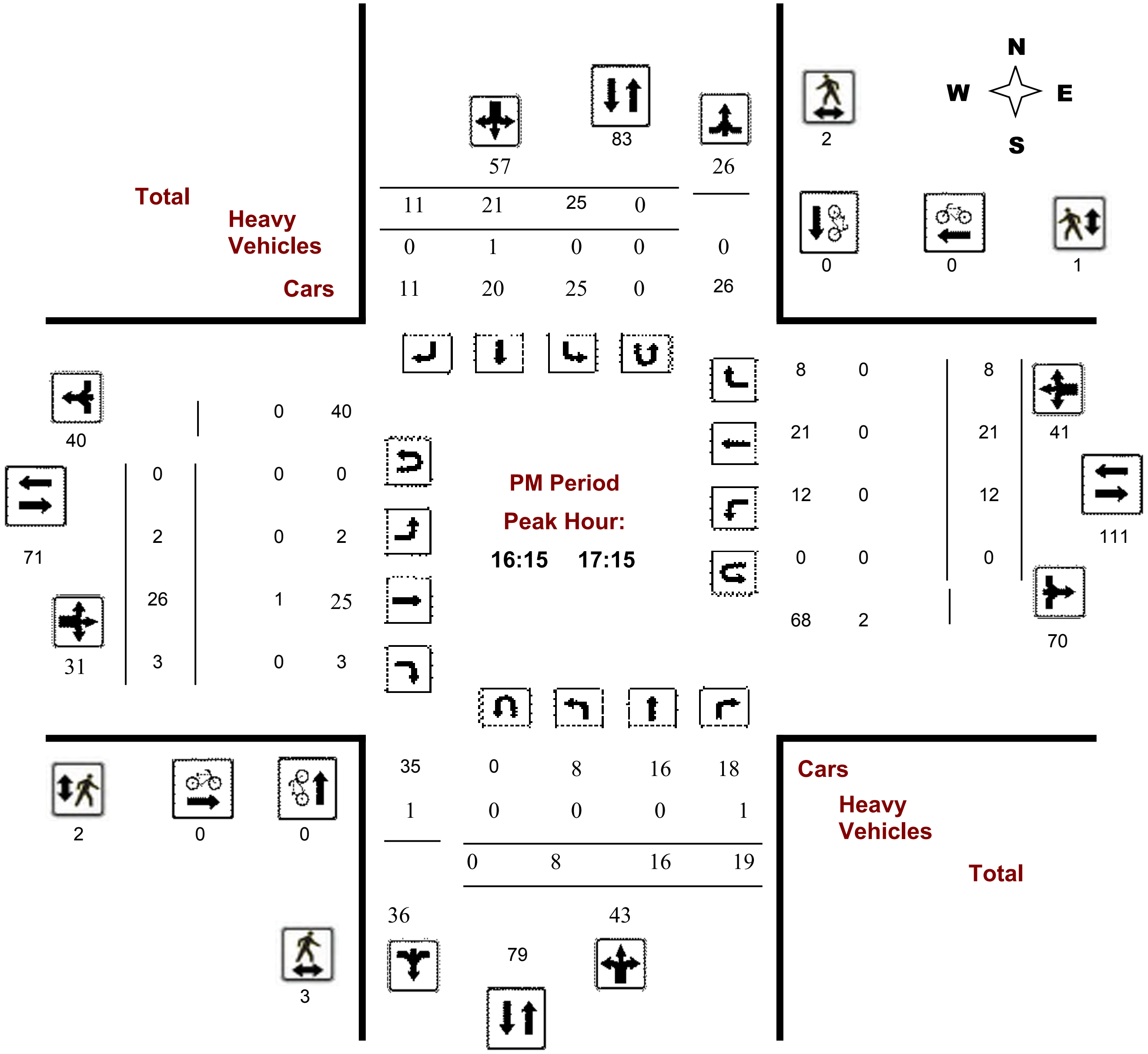
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

PLAINHILL DR @ PROVENCE AVE

Survey Date: Wednesday, January 22, 2014 **WO No:** 397

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



Comments

Transportation Services - Traffic Services

Work Order
37061

Turning Movement Count - Full Study Summary Report

PORTOBELLO BLVD @ AQUAVIEW DR/NANTES ST

Survey Date: Thursday, May 25, 2017

Total Observed U-Turns

Northbound: 4 Southbound: 2
Eastbound: 1 Westbound: 0

AADT Factor
.90

Full Study

	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	19	134	4	**157**	31	129	33	**193**	**350**	47	11	19	**77**	12	33	99	**144**	**221**	**571**
08:00 09:00	16	126	7	**149**	51	97	15	**163**	**312**	34	13	15	**62**	8	16	91	**115**	**177**	**489**
09:00 10:00	2	72	4	**78**	29	66	8	**103**	**181**	14	11	2	**27**	3	23	55	**81**	**108**	**289**
11:30 12:30	4	56	0	**60**	31	62	13	**106**	**166**	14	10	2	**26**	4	5	34	**43**	**69**	**235**
12:30 13:30	2	47	2	**51**	23	52	9	**84**	**135**	18	5	3	**26**	2	7	24	**33**	**59**	**194**
15:00 16:00	13	106	1	**120**	76	154	20	**250**	**370**	27	19	8	**54**	7	17	46	**70**	**124**	**494**
16:00 17:00	12	129	5	**146**	84	162	23	**269**	**415**	29	23	18	**70**	6	13	79	**98**	**168**	**583**
17:00 18:00	15	161	4	**180**	80	150	29	**259**	**439**	19	27	9	**55**	4	17	52	**73**	**128**	**567**
Sub Total	83	831	27	**941**	405	872	150	**1427**	**2368**	202	119	76	**397**	46	131	480	**657**	**1054**	**3422**
U Turns				**4**				**2**	**6**				**1**				**0**	**1**	**7**
Total	83	831	27	**945**	405	872	150	**1429**	**2374**	202	119	76	**398**	46	131	480	**657**	**1055**	**3429**
EQ 12Hr	115	1155	38	**1314**	563	1212	208	**1986**	**3300**	281	165	106	**553**	64	182	667	**913**	**1466**	**4766**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	104	1040	34	**1182**	507	1091	188	**1788**	**2970**	253	149	95	**498**	58	164	600	**822**	**1320**	**4290**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**.90**						
AVG 24Hr	136	1362	44	**1549**	664	1429	246	**2342**	**3891**	331	195	125	**652**	75	215	787	**1077**	**1729**	**5620**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

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

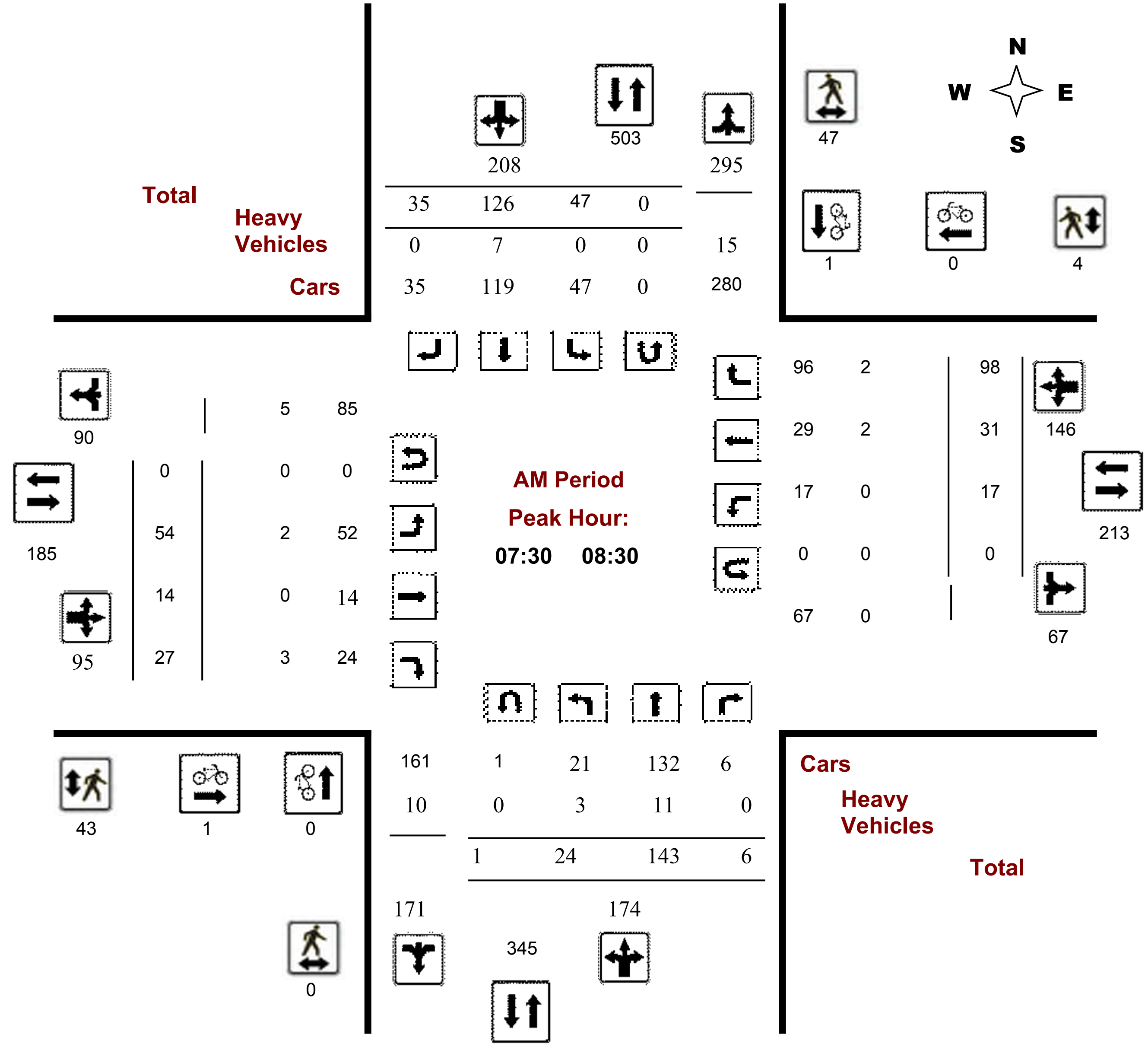
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

PORTOBELLO BLVD @ AQUAVIEW DR/NANTES ST

Survey Date: Thursday, May 25, 2017
WO No: 37061

Start Time: 07:00
Device: Miovision



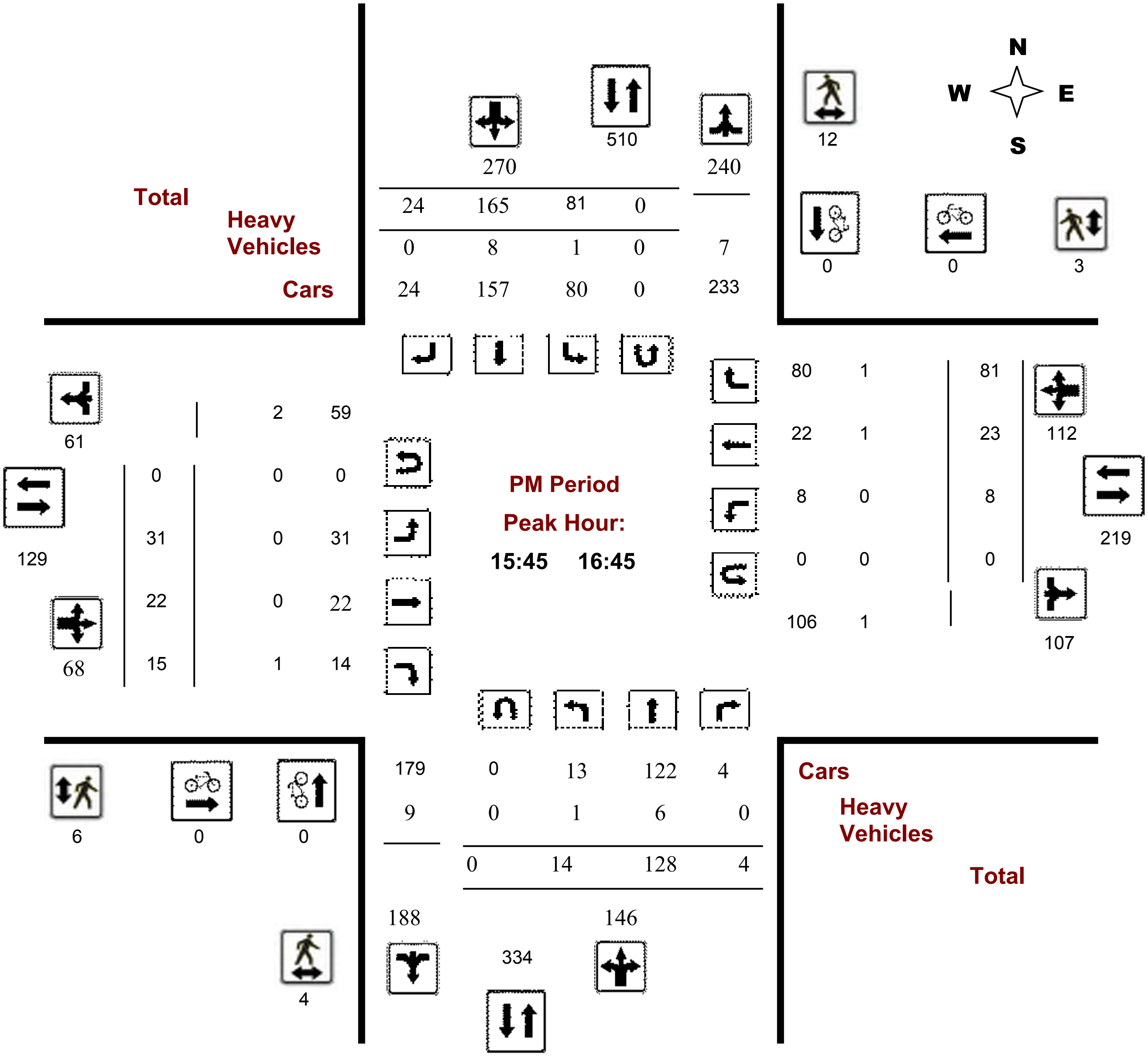
Comments

Turning Movement Count - Full Study Peak Hour Diagram

PORTOBELLO BLVD @ AQUAVIEW DR/NANTES ST

Survey Date: Thursday, May 25, 2017 **WO No:** 37061

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



Comments

APPENDIX E

Trim Road Works Yard – Site Plan

TRWY

TRIM ROAD WORKS YARD

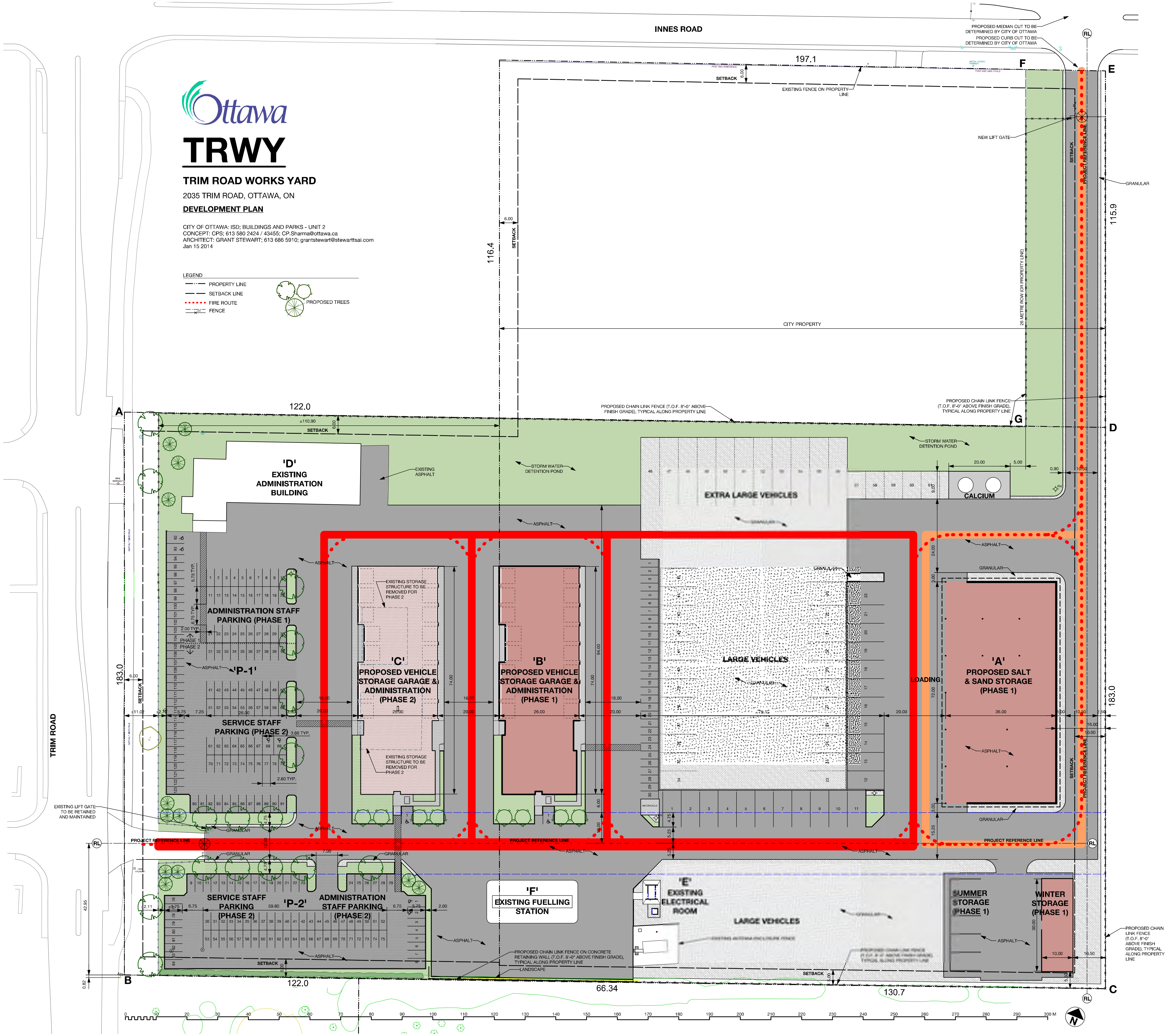
2035 TRIM ROAD, OTTAWA, ON

DEVELOPMENT PLAN

CITY OF OTTAWA: ISD; BUILDINGS AND PARKS - UNIT 2
CONCEPT: CPS; 613 580 2424 / 43455; CP.Sharma@ottawa.ca
ARCHITECT: GRANT STEWART; 613 686 5910; grantstewart@stewarttsai.com
Jan 15 2014

LEGEND

—··—	PROPERTY LINE
— —	SETBACK LINE
• • • •	FIRE ROUTE
—×—	FENCE
	PROPOSED TREES



Jan 15, 2014
13006TRWYD.vwx

APPENDIX F

Collision Records

City Operations - Transportation Services

Collision Details Report - Public Version

From: January 1, 2012 **To:** December 31, 2016

Location: INNES RD @ PROVENCE AVE

Traffic Control: Traffic signal **Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Jan-03, Fri,14:34	Clear	Angle	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Feb-10, Mon,12:45	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Pick-up truck	Other motor vehicle	
2014-May-24, Sat,13:18	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Bus (other)	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Mar-18, Fri,16:40	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Dec-21, Mon,17:46	Freezing Rain	Rear end	P.D. only	Ice	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-19, Mon,16:48	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle	

					East	Going ahead	Pick-up truck	Other motor vehicle	
2016-Oct-23, Sun,17:29	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	
					South	Going ahead	Passenger van	Other motor vehicle	
2013-Feb-27, Wed,15:13	Snow	Angle	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2012-Mar-29, Thu,07:55	Freezing Rain	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2012-Nov-01, Thu,16:10	Clear	Angle	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Pick-up truck	Other motor vehicle	

Location: INNES RD @ TRIM RD

Traffic Control: Traffic signal

Total Collisions: 34

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Mar-01, Sat,12:50	Snow	Turning movement	P.D. only	Loose snow	North	Turning left	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Feb-26, Wed,17:50	Clear	Angle	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	
					East	Going ahead	Pick-up truck	Other motor vehicle	

2014-May-03, Sat,17:54	Clear	Turning movement	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-May-31, Sat,14:40	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2014-May-30, Fri,17:25	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle
					South	Turning right	Motorcycle	Other motor vehicle
2014-Jun-14, Sat,11:22	Clear	Rear end	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle
					East	Turning left	Passenger van	Other motor vehicle
2014-Nov-29, Sat,10:10	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle
					North	Turning left	Automobile, station wagon	Other motor vehicle
2014-Nov-07, Fri,17:26	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jun-18, Thu,11:46	Clear	Turning movement	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Feb-27, Sat,09:29	Clear	Turning movement	P.D. only	Dry	South	Making "U" turn	Automobile, station wagon	Other motor vehicle

					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-27, Fri,17:20	Clear	SMV other	Non-fatal injury	Wet	East	Turning left	Pick-up truck	Pedestrian	1
2016-Jan-08, Fri,16:55	Clear	Turning movement	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	
					East	Going ahead	Pick-up truck	Other motor vehicle	
2016-Apr-25, Mon,22:08	Clear	Turning movement	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Aug-09, Tue,16:29	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Apr-02, Sat,10:32	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jul-01, Fri,14:02	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-May-17, Tue,11:58	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	

2016-Aug-04, Thu,12:00	Clear	Rear end	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle
					East	Turning left	Automobile, station wagon	Other motor vehicle
2016-Nov-13, Sun,18:46	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2016-Dec-30, Fri,19:09	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2013-Jun-21, Fri,11:00	Clear	Sideswipe	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning left	Pick-up truck	Other motor vehicle
2013-Sep-16, Mon,10:15	Clear	Sideswipe	P.D. only	Dry	South	Turning left	Truck - tractor	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2013-Nov-14, Thu,17:12	Clear	Turning movement	Non-fatal injury	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2013-Dec-11, Wed,22:35	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2013-Dec-26, Thu,23:20	Clear	Angle	Non-fatal injury	Slush	East	Going ahead	Automobile, station wagon	Other motor vehicle

					South	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Jan-15, Sun,15:00	Clear	Rear end	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					East	Turning left	Passenger van	Other motor vehicle
2012-Jun-03, Sun,22:27	Clear	SMV other	Non-reportable	Wet	West	Going ahead	Automobile, station wagon	Other
2012-Jun-21, Thu,18:09	Rain	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Jun-19, Tue,07:25	Clear	Turning movement	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Turning left	Pick-up truck	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2012-Oct-08, Mon,21:00	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2012-Sep-17, Mon,22:14	Clear	Turning movement	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Nov-15, Thu,20:30	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle

					North	Going ahead	Pick-up truck	Other motor vehicle	
2012-Nov-29, Thu,07:30	Snow	Rear end	P.D. only	Wet	South	Slowing or stopping	Pick-up truck	Other motor vehicle	
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2012-Dec-22, Sat,19:50	Clear	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Other motor vehicle	
					North	Going ahead	Pick-up truck	Other motor vehicle	

Location: MONTMERE AVE @ TRIM RD

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-Mar-01, Sun,11:58	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: PORTOBELLO BLVD @ AQUAVIEW DR/NANTES ST

Traffic Control: Stop sign **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Apr-10, Thu,20:50	Rain	SMV other	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Pedestrian	1
2014-Jun-25, Wed,16:58	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Cyclist	
2014-Dec-08, Mon,20:15	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	

					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2012-Apr-27, Fri,16:50	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	

Location: TRIM RD @ MILLENNIUM BLVD

Traffic Control: Yield sign **Total Collisions:** 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Apr-04, Fri,22:30	Rain	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Aug-21, Fri,14:20	Clear	Sideswipe	P.D. only	Dry	South	Turning left	Municipal transit bus	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Feb-17, Tue,08:40	Clear	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Passenger van	Other motor vehicle	
2015-Mar-30, Mon,14:35	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2012-Sep-26, Wed,17:24	Clear	Rear end	P.D. only	Dry	South	Going ahead	Municipal transit bus	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	

APPENDIX G

Excerpts of 5157 Innes Road Transportation Overview

IBI

Innes / Trim Retirement Residence
Transportation Overview

EXHIBIT 1: Site Plan

PROJECT No. 103451
DATE: July 2017
SCALE: 2m 5m 10m

TRAFFIC GENERATION

Traffic generation associated with the proposed development has been estimated based on the data provided in the Institute of Transportation Engineers Trip Generation Manual 9th Edition, 2012.

Typically, automobile ownership for residents of this type of land use is relatively low and the majority of trips generated are by employees and visitors to the facility. In addition to this, traffic generation is distributed throughout the day and peak demand does not typically coincide with peak hour commuter traffic on the adjacent road network.

Relevant extractions from the ITE publication are attached. **Table 1** summarizes the expected trip generation rates that would be expected during both the weekday morning and weekday afternoon peak hour of adjacent street traffic:

TABLE 1 – Trip Generation

Land Use (Code)	Peak Hour	Size (No. of Beds)	Trip Generation Average Rate	Directional Split		Traffic Generated (veh/h)		
				Entering	Exiting	Entering	Exiting	Total Trips
Senior Adult Housing – Attached (252)	AM	146	0.20	34%	66%	10	19	**29**
	PM	146	0.25	54%	46%	20	17	**37**

The results indicate that approximately 30 to 40 new trips can be expected during the weekday peak hours. Traffic generated by the proposed development will be primarily in and out of Site Access #1, where Site Access #2 and #3 will experience only a fraction of the traffic volumes indicated above.

PRIVATE APPROACH BY-LAW

City of Ottawa By-law 2003-447, which regulates the use of private approaches, has been referenced to ensure that the proposed site plan is in conformance with By-law requirements. Of particular note, the following items have been reviewed in detail:

1) **Number of Private Approaches**: The site frontage along Trim Road is approximately 80 metres, which allows for either 1 two-way and 2 one-way or 2 two-way private approaches to be constructed. The site plan proposes 1 two-way and 1 one-way private approach, and thus the By-law is satisfied in terms of overall frontage requirements to accommodate the proposed access from Trim Road.

   The site frontage along Innes Road is approximately 105 metres, and permits the same access configurations as on Trim Road. As only 1 two-way private approach is proposed, the By-law requirements are also satisfied on the Innes Road frontage.

2) **Width**: Site Access #1 and #3 have a proposed with of 6.7m which is acceptable for a two-way private approach. Site Access #2 has a proposed width of 6.0m and is acceptable for a one-way private approach. Each of the proposed private approaches are less than the maximum stipulated with of 9.0m and are therefore in conformance with the By-law.

3) **Spacing**: The proposed distance between Site Access #2 and the Innes Road street line is approximately 24 metres. This complies with the Private Approach By-law, which states that this distance is required to be at least 18 metres for a residential property containing between 20 and 99 parking spaces.

   The proposed distance between Site Access #1 and #2 is approximately 40 metres, which complies with the minimum By-law requirement of 15 metres between a two-way private approach and any other private approach on a property that is located within 46 metres of an arterial road.

APPENDIX H

TDM Measures Checklist

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	☑ - member of EQ Homes marketing team
		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)*	☑ - will be provided in sales centre
		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)*	☑ - will be provided in sales centre
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)*	☒ - will be considered during Site Plan Control application
BASIC	★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☒ - will be considered during Site Plan Control application

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	☑ - in sales centre
		6.2	**Personalized trip planning**	
BETTER	★	6.2.1	Offer personalized trip planning to new residents	☒

APPENDIX I

Intersection MMLOS Analysis

Intersection MMLOS Analysis

Pedestrian Level of Service (PLOS)

Exhibit 5 of the Addendum to the MMLOS guidelines has been used to evaluate the existing PLOS at all signalized intersections within the study area. Exhibit 22 of the MMLOS guidelines suggests a target PLOS A for all roadways within 300m of a school (Innes Road/Provence Avenue) and PLOS C for all roadways in the General Urban Area (Innes Road/Trim Road). The results of the intersection PLOS analysis are summarized in **Table 1** and **Table 2**.

Bicycle Level of Service (BLOS)

Exhibit 12 of the MMLOS guidelines has been used to evaluate the existing BLOS at all signalized intersections within the study area. Exhibit 22 of the MMLOS guidelines suggests a target BLOS A for Crosstown Bikeways within 300m of a school and BLOS B for Crosstown Bikeways in the General Urban Area (Innes Road). The results of the intersection BLOS analysis are summarized in **Table 3**.

Transit Level of Service (TLOS)

Exhibit 16 of the MMLOS guidelines has been used to evaluate the existing TLOS at relevant intersections within the study area. Exhibit 22 of the MMLOS guidelines suggests a target TLOS D for Transit Priority Corridors with Isolated Measures within 300m of a school or in the General Urban Area (Innes Road and Trim Road). The results of the intersection TLOS analysis are summarized in **Table 4**.

Truck Level of Service (TkLOS)

Exhibit 21 of the MMLOS guidelines has been used to evaluate the existing TkLOS at relevant intersections within the study area. Exhibit 22 of the MMLOS guidelines suggests a target TkLOS D for Truck Routes within 300m of a school or in the General Urban Area (Innes Road and Trim Road). The results of the intersection TkLOS analysis are summarized in **Table 5**.

Vehicular Level of Service (Auto LOS)

Exhibit 22 of the MMLOS guidelines suggests a target Auto LOS D for all roadways in the General Urban Area (Innes Road/Trim Road), Auto LOS E for all roadways within 300m of a school (Innes Road/Provence Avenue, Provence Avenue/Plainhill Drive, and Portobello Boulevard/Aquaview Drive/Nantes Street) and Auto LOS E for all roadways within 600m of a rapid transit station (Trim Road/Salzburg Drive, Trim Road/Millennium Boulevard, and Trim Road/Montmere Avenue). Detailed Synchro and Rodel reports are included in **Appendix K**.

The results of the intersection Auto LOS analysis are summarized in **Table 6**. Approaches where queueing issues have been identified are listed with the associated 50th- and 95th-percentile queue lengths, and presented in **Table 7**.

Intersection MMLOS Summary

A summary of the existing signalized intersection MMLOS analysis is provided in **Table 8**.

Table 1: PLOS Intersection Analysis – Innes Road/Provence Avenue

CRITERIA	North Approach		South Approach		East Approach		West Approach	
PETSI SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	72	No	39	No	39	No	23
Lanes Crossed (3.5m Lane Width)	5		7		7		8	
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	Yes	0	Yes	0
CORNER RADIUS								
Parallel Radius	> 10m to 15m	-6	> 15m to 25m	-8	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		**37**		**2**		**6**		**-10**
LOS		**E**		**F**		**F**		**F**
DELAY SCORE								
Cycle Length		90		90		100		100
Pedestrian Walk Time		26.7		26.7		7.2		7.2
DELAY SCORE		**22.3**		**22.3**		**43.1**		**43.1**
LOS		**C**		**C**		**E**		**E**
OVERALL		**E**		**F**		**F**		**F**

Table 2: PLOS Intersection Analysis – Innes Road/Trim Road

CRITERIA	North Approach		South Approach		East Approach		West Approach	
PETSI SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	-10	No	-10	No	-10	No	6
Lanes Crossed (3.5m Lane Width)	10 +		10 +		10 +		9	
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Protected	0	Protected	0	Protected	0	Protected	0
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	> 10m to 15m	-6	> 10m to 15m	-6	> 10m to 15m	-6	> 10m to 15m	-6
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	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		**-37**		**-37**		**-37**		**-21**
LOS		**F**		**F**		**F**		**F**
DELAY SCORE								
Cycle Length		130		130		130		130
Pedestrian Walk Time		7.0		7.0		7.4		7.4
DELAY SCORE		**58.2**		**58.2**		**57.8**		**57.8**
LOS		**E**		**E**		**E**		**E**
OVERALL		**F**		**F**		**F**		**F**

Table 3: BLOS Intersection Analysis

Approach	Bikeway Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Innes Road/Provence Avenue				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	1 lane crossed; ≥ 60 km/h	F
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	1 lane crossed; ≥ 60 km/h	F
East Approach	Curbside Bike Lane	Right Turn Lane Characteristics	Shared through/right turn lane (bike lane remains on the right)	A
		Left Turn Accommodation	2 lanes crossed; ≥ 50 km/h	F
West Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane introduced to the right and > 50m long; turn speed ≤ 30 km/h	D
		Left Turn Accommodation	2 lanes crossed; ≥ 50 km/h	F
Innes Road/Trim Road				
North Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane introduced to the right and > 50m long; turn speed ≤ 30 km/h	D
		Left Turn Accommodation	3 lanes crossed; ≥ 50 km/h	F
South Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane introduced to the right and > 50m long; turn speed ≤ 30 km/h	D
		Left Turn Accommodation	Dual left turn lanes	F
East Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane introduced to the right and > 50m long; turn speed ≤ 30 km/h	D
		Left Turn Accommodation	2 lanes crossed; ≥ 50 km/h	F
West Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane introduced to the right and > 50m long; turn speed ≤ 30 km/h	D
		Left Turn Accommodation	2 lanes crossed; ≥ 50 km/h	F

Table 4: TLOS Intersection Analysis

Approach	Delay$^{(1)}$	TLOS
Innes Road/Provence Avenue		
North Approach	25 sec	D
South Approach	30 sec	D
East Approach	10 sec	B
West Approach	10 sec	B
Innes Road/Trim Road		
North Approach	55 sec	F
South Approach	45 sec	F
East Approach	40 sec	E
West Approach	145 sec	F

1. Delay based on outputs from Synchro analysis (summarized in Table 6)

Table 5: TkLOS Intersection Analysis

Approach	Effective Corner Radius	Number of Receiving Lanes on Departure from Intersection	TkLOS
Innes Road/Provence Avenue			
North Approach	> 15m	2	A
South Approach	> 15m	2	A
East Approach	10m to 15m	1	E
West Approach	> 15m	1	C
Innes Road/Trim Road			
North Approach	> 15m	2	A
South Approach	> 15m	2	A
East Approach	> 15m	2	A
West Approach	> 15m	2	A

Table 6: Auto LOS Intersection Analysis – Existing

Intersection	AM Peak			PM Peak		
	v/c	LOS	Mvmt	v/c	LOS	Mvmt
Innes Road/ Provence Avenue	0.71	C	NBL	0.48	A	NBL
Innes Road/ Trim Road	0.78	C	WBL	**1.83**	**F**	**EBL**
Trim Road/ Salzburg Drive(1)	14 sec	B	EBL/ EBR	16 sec	C	EBL/ EBR
Trim Road/ Millennium Boulevard(2)	5 sec	A	SBL/ SBT	5 sec	A	WBL/ WBR
Trim Road/ Montmere Avenue(1)	13 sec	B	EBL/ EBR	14 sec	B	EBL/ EBR
Provence Avenue/ Plainhill Drive(1)	8 sec	A	NBT/ SBT	7 sec	A	SBT/ WBT
Portobello Boulevard/ Aquaview Drive/Nantes Street(1)	9 sec	A	EBT/ WBT	9 sec	A	SBL

1. Unsignalized intersection
2. Roundabout – results taken from Rodel analysis

Table 7: Existing Queues Over Capacity

Intersection	Mvmt	AM Peak				PM Peak			
		v/c	LOS	50th % Queue (m)	95th % Queue (m)	v/c	LOS	50th % Queue (m)	95th % Queue (m)
Innes Road/ Trim Road	SBL	0.46	A	13	30	**0.94**	**E**	**46**	**#96**
	EBL	0.60	A	21	43	**1.83**	**F**	**~128**	**#193**
	WBL	0.78	C	32	#78	0.51	A	17	33

#: volume for the 95th percentile cycle exceeds capacity

~: approach is above capacity

Table 8: Signalized Intersection MMLOS Summary

	Intersection	Innes Road/Provence Avenue				Innes Road/Trim Road			
		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Island Refuge	No	No	No	No	No	No	No	No
	Lanes	5	7	7	8	10	10	10	9
	Conflicting Left Turns	Permissive	Permissive	Permissive	Permissive	Protected	Protected	Protected	Protected
	Conflicting Right Turns	Permissive or Yield	Permissive or Yield	Permissive or Yield	Permissive or Yield	Permissive or Yield	Permissive or Yield	Permissive or Yield	Permissive or Yield
	Right Turn on Red	RTOR Allowed	RTOR Allowed	RTOR Allowed	RTOR Allowed	RTOR Allowed	RTOR Allowed	RTOR Allowed	RTOR Allowed
	Pedestrian Leading Interval	No	No	Yes	Yes	No	No	No	No
	Parallel Radius	> 10m to 15m	> 15m to 25m	> 10m to 15m	> 10m to 15m	> 10m to 15m	> 10m to 15m	> 10m to 15m	> 10m to 15m
	Parallel Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel
	Perpendicular Radius	-	-	-	-	-	-	-	-
	Perpendicular Channel	-	-	-	-	-	-	-	-
	Crosswalk Type	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
	PETSI Score	37	2	6	-10	-37	-37	-37	-21
	Delay Score	22.3	22.3	43.1	43.1	58.2	58.2	57.8	57.8
	Level of Service	E	F	F	F	F	F	F	F
		F				F			
	Target	A				C			
Cyclist	Type of Bikeway	Mixed Traffic	Mixed Traffic	Curbside Bike Lane	Pocket Bike Lane	Pocket Bike Lane	Pocket Bike Lane	Pocket Bike Lane	Pocket Bike Lane
	Turning Speed	Slow	Slow	Slow	Slow	Slow	Slow	Slow	Slow
	Right Turn Storage	-	-	-	> 50m	> 50m	> 50m	> 50m	> 50m
	Dual Right Turn Lanes	No	No	No	No	No	No	No	No
	Shared Through-Right Lane	Yes	Yes	Yes	No	No	No	No	No
	Bike Box	No	No	No	No	No	No	No	No
	Lanes Crossed (Left Turns)	1	1	2	2	3	2	2	2
	Dual Left Turn Lanes	No	No	No	No	No	Yes	No	No
	Approach Speed	60 km/h	60 km/h	70 km/h	70 km/h	70 km/h	70 km/h	70 km/h	70 km/h
	Level of Service	F	F	F	F	F	F	F	F
		F				F			
	Target	A				B			
Transit	Average Signal Delay	25 sec	30 sec	10 sec	10 sec	55 sec	45 sec	40 sec	145 sec
	Level of Service	D	D	B	B	F	F	E	F
		D				F			
	Target	D				D			
Truck	Turning Radius	> 15m	> 15m	10m - 15m	> 15m	> 15m	> 15m	> 15m	> 15m
	Receiving Lanes	2	2	1	1	2	2	2	2
	Level of Service	A	A	E	C	A	A	A	A
		E				A			
	Target	D				D			
Auto	Level of Service	C				F			
	Target	E				D			

APPENDIX J

Signal Timing Plans

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

Intersection: **Main:** Innes **Side:** Provence

Controller: **MS-3200** **TSD:** **6562**

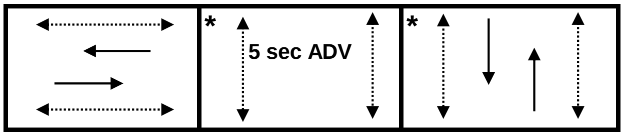
Author: Sarah Saade **Date:** 14-May-2018

Existing Timing Plans†

	Plan							**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**AM School** 11	**PM School** 12	***Walk***	***DW***	***A+R***
Cycle	100	90	100	80	95	100	90			
Offset	51	85	21	X	85	51	85			
EB Thru	63	53	63	43	58	43	33	7	20	3.7+2.6
WB Thru	63	53	63	43	58	43	33	7	20	3.7+2.6
NB Thru	37	37	37	37	37	57	57	7	23	3.0+3.8
SB Thru	37	37	37	37	37	57	57	7	23	3.0+3.8

Phasing Sequence‡

Plan: All



Notes:
1) Timing plan 11 and 12 have a ped recall for north/south
2) The 5 sec ADV walk interval is included in the split provided in the table above

Schedule

Weekday

Time	Plan
0:10	4
6:00	1
7:30	11
8:05	1
9:00	2
14:10	12
14:40	2
15:00	3
18:30	2
22:00	4

Saturday

Time	Plan
0:10	4
7:00	2
9:00	5
20:00	2
22:00	4

Sunday

Time	Plan
0:10	4
7:00	2
10:00	5
19:00	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 $56.50 ($50 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

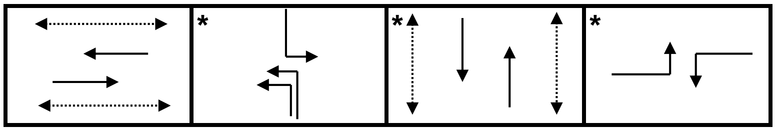
Intersection: **Main:** Innes **Side:** Trim
Controller: **MS-3200** **TSD:** **6670**
Author: Sarah Saade **Date:** 14-May-2018

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	130	130	130	130	130			
Offset	X	X	X	X	X			
EB Thru	46	46	46	46	46	7	32	3.7+3.3
WB Thru	46	46	46	46	46	7	32	3.7+3.3
NB Left (fp)	22	22	22	22	22	-	-	3.7+3.0
SB Left (fp)	22	22	22	22	22	-	-	3.7+3.0
NB Thru	42	42	42	42	42	7	28	3.7+2.9
SB Thru	42	42	42	42	42	7	28	3.7+2.9
EB Left (fp)	20	20	20	20	20	-	-	3.7+2.8
WB Left (fp)	20	20	20	20	20	-	-	3.7+2.8

Phasing Sequence[‡]

Plan: All



Schedule

Weekday

Time	Plan
0:10	4
6:00	1
9:00	2
15:00	3
18:30	2
22:00	4

Saturday

Time	Plan
0:10	4
7:00	2
9:00	5
20:00	2
22:00	4

Sunday

Time	Plan
0:10	4
7:00	2
10:00	5
19:00	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 $56.50 ($50 + HST)

APPENDIX K

Synchro and Rodel Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↱		↰	↱	
Traffic Volume (vph)	38	284	110	122	639	21	182	35	106	28	76	90
Future Volume (vph)	38	284	110	122	639	21	182	35	106	28	76	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		145.0	60.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	40.0			45.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.92	0.96	1.00		0.98	0.89		0.89	0.98	
Frt			0.850		0.995			0.887			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3293	1473	1662	3303	0	1647	1369	0	1647	1555	0
Flt Permitted	0.343			0.560			0.609			0.655		
Satd. Flow (perm)	603	3293	1361	944	3303	0	1031	1369	0	1010	1555	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122		4			118			78	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		220.1			496.4			517.4			152.1	
Travel Time (s)		13.2			29.8			31.0			9.1	
Confl. Peds. (#/hr)	28		31	31		28	25		114	114		25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	5%	4%	4%	2%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	42	316	122	136	710	23	202	39	118	31	84	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	316	122	136	733	0	202	157	0	31	184	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)		4.0			4.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		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	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												

Lane Group	Ø3	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)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	33.3	33.3	33.3	33.3	33.3		31.8	31.8		31.8	31.8	
Total Split (s)	43.0	43.0	43.0	43.0	43.0		52.0	52.0		52.0	52.0	
Total Split (%)	43.0%	43.0%	43.0%	43.0%	43.0%		52.0%	52.0%		52.0%	52.0%	
Maximum Green (s)	36.7	36.7	36.7	36.7	36.7		45.2	45.2		45.2	45.2	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.8	6.8		6.8	6.8	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		2.0	2.0		2.0	2.0	
Flash Dont Walk (s)	20.0	20.0	20.0	20.0	20.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	30	30	30	30	30		15	15		15	15	
Act Effct Green (s)	59.1	59.1	59.1	59.1	59.1		27.8	27.8		27.8	27.8	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.59		0.28	0.28		0.28	0.28	
v/c Ratio	0.12	0.16	0.14	0.24	0.38		0.71	0.34		0.11	0.38	
Control Delay	11.6	10.2	2.6	12.3	12.0		46.0	10.1		26.2	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.6	10.2	2.6	12.3	12.0		46.0	10.1		26.2	17.9	
LOS	B	B	A	B	B		D	B		C	B	
Approach Delay		8.4			12.0			30.3			19.1	
Approach LOS		A			B			C			B	
Queue Length 50th (m)	3.1	12.4	0.0	10.8	33.4		36.6	5.8		4.7	16.6	
Queue Length 95th (m)	10.2	24.3	8.3	26.9	58.7		54.0	18.5		10.2	30.2	
Internal Link Dist (m)		196.1			472.4			493.4			128.1	
Turn Bay Length (m)	75.0		145.0	60.0			50.0			50.0		
Base Capacity (vph)	356	1945	853	557	1953		466	683		456	745	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.16	0.14	0.24	0.38		0.43	0.23		0.07	0.25	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 51 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

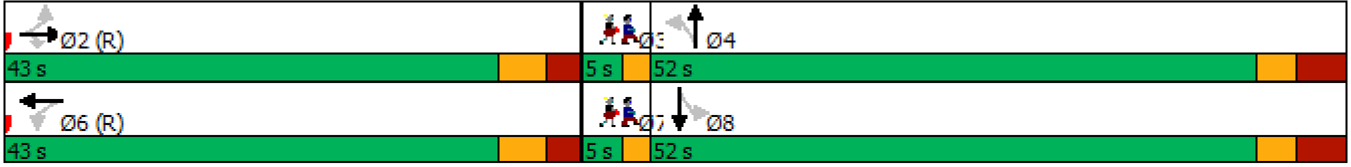
Maximum v/c Ratio: 0.71

Intersection Signal Delay: 15.3 Intersection LOS: B

Intersection Capacity Utilization 84.1% ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Provence & Innes



Lane Group	Ø3	Ø7
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

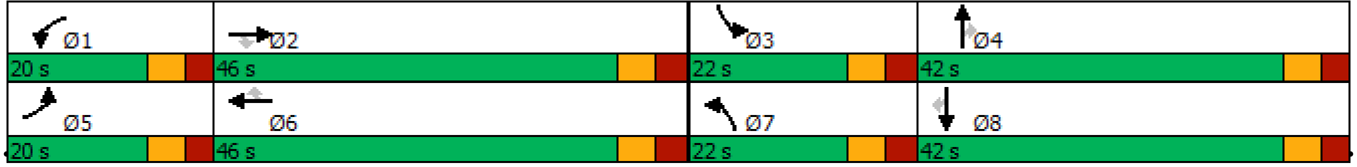
	↰	→	↱	↰	←	↱	↰	↑	↱	↰	↓	↱
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱	↱	↰	↑↑	↱	↰↰	↑↑	↱	↰	↑↑	↱
Traffic Volume (vph)	89	186	101	137	274	33	163	204	29	58	356	86
Future Volume (vph)	89	186	101	137	274	33	163	204	29	58	356	86
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	35.0			45.0			100.0			25.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	0.98	0.99		0.98	0.98		0.97	0.99		0.97
Frt		0.989	0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3145	1354	1662	3325	1488	3195	3293	1473	1572	3007	1406
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1655	3145	1323	1650	3325	1459	3147	3293	1430	1551	3007	1368
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6	141			141			144			144
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			273.9			148.0			249.0	
Travel Time (s)		29.8			16.4			8.9			14.9	
Confl. Peds. (#/hr)	7		10	10		7	14		16	16		14
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	5%	5%	5%	10%	15%	10%
Adj. Flow (vph)	99	207	112	152	304	37	181	227	32	64	396	96
Shared Lane Traffic (%)			14%									
Lane Group Flow (vph)	99	223	96	152	304	37	181	227	32	64	396	96
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)		4.0			4.0			12.0			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	46.0	46.0	11.5	46.0	46.0	11.7	41.6	41.6	11.7	41.6	41.6
Total Split (s)	20.0	46.0	46.0	20.0	46.0	46.0	22.0	42.0	42.0	22.0	42.0	42.0
Total Split (%)	15.4%	35.4%	35.4%	15.4%	35.4%	35.4%	16.9%	32.3%	32.3%	16.9%	32.3%	32.3%
Maximum Green (s)	13.5	39.0	39.0	13.5	39.0	39.0	15.3	35.4	35.4	15.3	35.4	35.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	3.3	3.3	2.8	3.3	3.3	3.0	2.9	2.9	3.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.7	6.6	6.6	6.7	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	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)		32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		5	5		5	5		5	5		5	5
Act Effct Green (s)	11.2	39.3	39.3	13.2	41.4	41.4	11.6	25.9	25.9	10.0	21.5	21.5
Actuated g/C Ratio	0.10	0.35	0.35	0.12	0.37	0.37	0.10	0.23	0.23	0.09	0.19	0.19
v/c Ratio	0.60	0.20	0.17	0.78	0.25	0.06	0.55	0.30	0.07	0.46	0.69	0.25
Control Delay	66.1	27.5	2.1	76.6	27.8	0.2	55.9	38.2	0.3	61.3	49.0	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	27.5	2.1	76.6	27.8	0.2	55.9	38.2	0.3	61.3	49.0	3.0
LOS	E	C	A	E	C	A	E	D	A	E	D	A
Approach Delay		30.8			40.7			42.7			42.5	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	20.6	17.8	0.0	32.2	23.8	0.0	19.4	22.5	0.0	13.4	43.0	0.0
Queue Length 95th (m)	43.1	33.9	4.3	#77.7	44.0	0.0	34.4	35.0	0.0	29.8	60.7	3.6
Internal Link Dist (m)		472.4			249.9			124.0			225.0	
Turn Bay Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Base Capacity (vph)	200	1101	553	200	1221	625	437	1043	551	215	952	531
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.20	0.17	0.76	0.25	0.06	0.41	0.22	0.06	0.30	0.42	0.18

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 112.6
Natural Cycle: 115
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 39.5 Intersection LOS: D
Intersection Capacity Utilization 85.1% 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: 2: Trim & Innes



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↑↱		↰	↑↱	
Traffic Volume (vph)	12	0	5	4	0	8	3	302	13	30	330	7
Future Volume (vph)	12	0	5	4	0	8	3	302	13	30	330	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	30.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.957			0.907			0.994			0.997	
Flt Protected		0.967			0.985		0.950			0.950		
Satd. Flow (prot)	0	1651	0	0	1594	0	1695	3277	0	1695	3285	0
Flt Permitted		0.967			0.985		0.950			0.950		
Satd. Flow (perm)	0	1651	0	0	1594	0	1695	3277	0	1695	3285	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		184.6			108.9			290.2			63.9	
Travel Time (s)		11.1			6.5			17.4			3.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	13	0	6	4	0	9	3	336	14	33	367	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	13	0	3	350	0	33	375	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			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 26.5% ICU Level of Service A

Analysis Period (min) 15

	↗	↘	↖	↑	↓	↙
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		↰	↑↑	↑↑	↱
Traffic Volume (vph)	94	5	4	256	259	53
Future Volume (vph)	94	5	4	256	259	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	55.0			60.0
Storage Lanes	1	0	1			1
Taper Length (m)	2.5		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt	0.993					0.850
Flt Protected	0.955		0.950			
Satd. Flow (prot)	1677	0	1695	3293	3144	1406
Flt Permitted	0.955		0.950			
Satd. Flow (perm)	1677	0	1695	3293	3144	1406
Link Speed (k/h)	60			60	60	
Link Distance (m)	321.9			342.9	293.3	
Travel Time (s)	19.3			20.6	17.6	
Confl. Peds. (#/hr)			2			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	2%	2%	5%	10%	10%
Adj. Flow (vph)	104	6	4	284	288	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	110	0	4	284	288	59
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)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 20.0% ICU Level of Service A

Analysis Period (min) 15

6: Provence & Plainhill
AM Peak Hour

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Volume (vph)	16	14	9	20	27	39	5	57	7	15	36	8
Future Volume (vph)	16	14	9	20	27	39	5	57	7	15	36	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969			0.939			0.986			0.982	
Flt Protected		0.980			0.989			0.996			0.987	
Satd. Flow (prot)	0	1676	0	0	1642	0	0	1711	0	0	1699	0
Flt Permitted		0.980			0.989			0.996			0.987	
Satd. Flow (perm)	0	1676	0	0	1642	0	0	1711	0	0	1699	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		172.0			254.2			289.3			547.2	
Travel Time (s)		10.3			15.3			17.4			32.8	
Confl. Peds. (#/hr)	8					8	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	18	16	10	22	30	43	6	63	8	17	40	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	44	0	0	95	0	0	77	0	0	66	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary		
Area Type:	Other	
Control Type: Unsignalized		
Intersection Capacity Utilization 22.4%		ICU Level of Service A
Analysis Period (min) 15		

7: Portobello & Aquaview/Nantes
AM Peak Hour

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰↑↱			↰↓↱	
Traffic Volume (vph)	54	14	27	17	31	98	24	143	6	47	126	35
Future Volume (vph)	54	14	27	17	31	98	24	143	6	47	126	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.909			0.995			0.975	
Flt Protected		0.972			0.994			0.993			0.989	
Satd. Flow (prot)	0	1652	0	0	1571	0	0	3257	0	0	3212	0
Flt Permitted		0.972			0.994			0.993			0.989	
Satd. Flow (perm)	0	1652	0	0	1571	0	0	3257	0	0	3212	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		231.0			336.5			404.0			435.7	
Travel Time (s)		13.9			20.2			24.2			26.1	
Confl. Peds. (#/hr)	47					47	43		4	4		43
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	2%	5%	5%	5%	5%	2%	2%	5%	2%
Adj. Flow (vph)	60	16	30	19	34	109	27	159	7	52	140	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	162	0	0	193	0	0	231	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			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 46.8% ICU Level of Service A

Analysis Period (min) 15

Scheme Summary

Control Data

Control Data and Model Parameters

117155 (Notting Hill)	2018 PHF Flow Profile (veh)
Existing AM	7.5 min Time Slice
Rodel-Win1	Queuing Delays (sec)
Right Hand Drive	Daylight conditions
AM Peak Hour	Peak 60/15 min Results
AVERAGE DELAY to Geometry	Output flows: Vehicles
Metric Units (m)	85% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	No
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (m)

Geometry and Design Target

Leg	Leg Names	Approach Geometry (m)				Target	Circulating and Exit Geom		
		Bearing (deg)	Grade Sep G	Half Width V	Lanes n	Average Delay (sec/veh)	Inscribed Diameter D	Half Width Vx	Lanes n
1	N - Trim	0	0	6.80	2	10	55.00	7.40	2
2	S - Trim	180	0	7.40	2	10	55.00	7.40	2
3	E - Millennium	270	0	4.30	1	10	55.00	4.30	1

Capacity Modifiers and Capacity Calibration (veh/hr)

Leg	Leg Names	Entry Capacity		Entry Calibration		Approach Road			Exit Road		
		Capacity + or -	XWalk Factor	Intercept + or -	Slope Factor	V (m)	Default Capacity	Calib Capacity	V (m)	Default Capacity	Calib Capacity
1	N - Trim	0	1.000	0	1.000	4.00	3332	0	7.40	3626	0
2	S - Trim	0	1.000	0	1.000	4.00	3626	0	7.40	3626	0
3	E - Millennium	0	1.000	0	1.000	4.00	2107	0	4.30	2107	0

Traffic Flow Data (veh/hr)

2018 AM Peak Peak Hour Flows

Leg	Leg Names	Turning Flows				Flow Modifiers		
		U-Turn	Exit-2	Exit-1	Bypass	Trucks %	Flow Factor	Peak Hour Factor
1	N - Trim	0	153	186	0	5.0	1.00	0.900
2	S - Trim	0	232	54	0	5.0	1.00	0.900
3	E - Millennium	0	25	86	0	5.0	1.00	0.900

Operational Results

Geometry for Target Input

Geometry Options for 2018 AM Peak

Leg 1 - N - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	6.80	0.00

Geometry Options for 2018 AM Peak

Leg 2 - S - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	7.40	0.00

Geometry Options for 2018 AM Peak

Leg 3 - E - Millennium					
nv	ne	nc	nx	E (m)	L' (m)
1	1	2	1	4.30	0.00

2018 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	339		25		318	1710		0.1982	
2	S - Trim	None	286		153		211	1802		0.1587	
3	E - Millennium	None	111		232		207	925		0.1200	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	4.47		4.47	1.26		A		A
2	S - Trim	None	2.74		2.74	0.66		A		A
3	E - Millennium	None	4.14		4.14	0.39		A		A

2018 AM Peak - 15 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	377		28		353	1708		0.2206	
2	S - Trim	None	318		170		234	1790		0.1775	
3	E - Millennium	None	123		258		230	916		0.1347	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	4.41		4.41	1.26		A		A
2	S - Trim	None	2.71		2.71	0.66		A		A
3	E - Millennium	None	4.09		4.09	0.39		A		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↱		↰	↱	
Traffic Volume (vph)	100	785	109	81	492	23	72	36	79	45	45	77
Future Volume (vph)	100	785	109	81	492	23	72	36	79	45	45	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		145.0	60.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	40.0			45.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97	1.00	1.00		0.99	0.97		0.98	0.98	
Frt			0.850		0.993			0.897			0.905	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3293	1517	1695	3328	0	1695	1557	0	1695	1587	0
Flt Permitted	0.436			0.312			0.661			0.675		
Satd. Flow (perm)	769	3293	1466	555	3328	0	1164	1557	0	1177	1587	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121		8			88			83	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		220.1			496.4			517.4			152.1	
Travel Time (s)		13.2			29.8			31.0			9.1	
Confl. Peds. (#/hr)	15		7	7		15	13		23	23		13
Confl. Bikes (#/hr)			1			1			1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	111	872	121	90	547	26	80	40	88	50	50	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	872	121	90	573	0	80	128	0	50	136	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)		4.0			4.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		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	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	6	6		8	8		4	4	

Lane Group	Ø3	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 (%)		
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	3	7
Permitted Phases		
Detector Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	33.3	33.3	33.3	33.3	33.3		31.8	31.8		31.8	31.8	
Total Split (s)	63.0	63.0	63.0	63.0	63.0		32.0	32.0		32.0	32.0	
Total Split (%)	63.0%	63.0%	63.0%	63.0%	63.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	56.7	56.7	56.7	56.7	56.7		25.2	25.2		25.2	25.2	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.8	6.8		6.8	6.8	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		2.0	2.0		2.0	2.0	
Flash Dont Walk (s)	20.0	20.0	20.0	20.0	20.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	10	10	10	7	7		10	10		7	7	
Act Effct Green (s)	72.6	72.6	72.6	72.6	72.6		14.3	14.3		14.3	14.3	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73		0.14	0.14		0.14	0.14	
v/c Ratio	0.20	0.36	0.11	0.22	0.24		0.48	0.43		0.30	0.46	
Control Delay	6.7	6.3	1.5	7.5	5.4		47.5	17.9		40.7	20.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.7	6.3	1.5	7.5	5.4		47.5	17.9		40.7	20.8	
LOS	A	A	A	A	A		D	B		D	C	
Approach Delay		5.8			5.7			29.3			26.1	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	5.3	25.3	0.0	4.4	14.5		14.9	7.1		9.0	9.5	
Queue Length 95th (m)	17.6	54.7	6.2	16.1	32.8		25.3	20.3		17.3	23.1	
Internal Link Dist (m)		196.1			472.4			493.4			128.1	
Turn Bay Length (m)	75.0		145.0	60.0			50.0			50.0		
Base Capacity (vph)	558	2390	1097	402	2418		293	458		296	462	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.36	0.11	0.22	0.24		0.27	0.28		0.17	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 21 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 9.8 Intersection LOS: A

Intersection Capacity Utilization 76.6% ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Provence & Innes

Lane Group	Ø3	Ø7
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

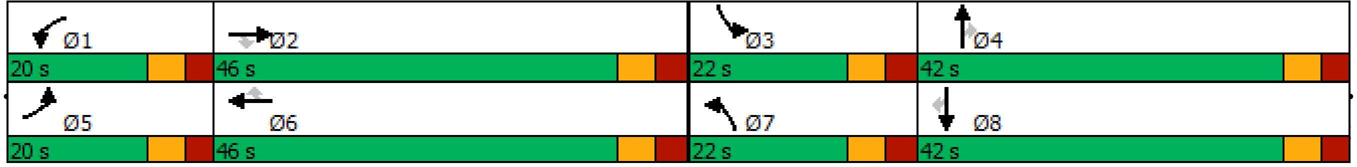
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱	↱	↰	↑↑	↱	↰↰	↑↑	↱	↰	↑↑	↱
Traffic Volume (vph)	308	661	94	63	306	41	111	240	34	167	686	185
Future Volume (vph)	308	661	94	63	306	41	111	240	34	167	686	185
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	35.0			45.0			100.0			25.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99					0.98	1.00		0.98	1.00		0.98
Frt		0.998	0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3209	1354	1662	3325	1488	3288	3325	1517	1572	3325	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1685	3209	1354	1662	3325	1455	3278	3325	1490	1566	3325	1460
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1	141			141			144			200
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			273.9			148.0			249.0	
Travel Time (s)		29.8			16.4			8.9			14.9	
Confl. Peds. (#/hr)	10					10	5		5	5		5
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	4%	4%	4%	4%	2%	4%	2%	10%	4%	4%
Adj. Flow (vph)	342	734	104	70	340	46	123	267	38	186	762	206
Shared Lane Traffic (%)			10%									
Lane Group Flow (vph)	342	744	94	70	340	46	123	267	38	186	762	206
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)		4.0			4.0			12.0			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	46.0	46.0	11.5	46.0	46.0	11.7	41.6	41.6	11.7	41.6	41.6
Total Split (s)	20.0	46.0	46.0	20.0	46.0	46.0	22.0	42.0	42.0	22.0	42.0	42.0
Total Split (%)	15.4%	35.4%	35.4%	15.4%	35.4%	35.4%	16.9%	32.3%	32.3%	16.9%	32.3%	32.3%
Maximum Green (s)	13.5	39.0	39.0	13.5	39.0	39.0	15.3	35.4	35.4	15.3	35.4	35.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	3.3	3.3	2.8	3.3	3.3	3.0	2.9	2.9	3.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.7	6.6	6.6	6.7	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	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)		32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		5	5		5	5		5	5		5	5
Act Effct Green (s)	13.5	45.2	45.2	10.2	39.1	39.1	10.0	27.5	27.5	15.3	32.9	32.9
Actuated g/C Ratio	0.11	0.37	0.37	0.08	0.32	0.32	0.08	0.22	0.22	0.12	0.27	0.27
v/c Ratio	1.83	0.63	0.16	0.51	0.32	0.08	0.46	0.36	0.09	0.94	0.85	0.38
Control Delay	424.2	37.2	1.9	67.3	33.5	0.3	60.0	40.9	0.4	105.7	52.9	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	424.2	37.2	1.9	67.3	33.5	0.3	60.0	40.9	0.4	105.7	52.9	7.4
LOS	F	D	A	E	C	A	E	D	A	F	D	A
Approach Delay		146.5			35.4			42.8			53.3	
Approach LOS		F			D			D			D	
Queue Length 50th (m)	~127.6	86.1	0.0	16.7	33.5	0.0	15.1	28.5	0.0	46.0	91.4	1.1
Queue Length 95th (m)	#193.0	119.3	3.8	32.5	48.9	0.0	25.2	40.7	0.0	#96.1	118.6	19.1
Internal Link Dist (m)		472.4			249.9			124.0			225.0	
Turn Bay Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Base Capacity (vph)	187	1186	589	183	1062	560	412	964	534	197	973	568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.83	0.63	0.16	0.38	0.32	0.08	0.30	0.28	0.07	0.94	0.78	0.36

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 122.4
Natural Cycle: 125
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.83
Intersection Signal Delay: 83.5 Intersection LOS: F
Intersection Capacity Utilization 98.4% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Trim & Innes



3: Trim & Salzburg/Trim Yard
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↑↱		↰	↑↱	
Traffic Volume (vph)	11	0	4	9	0	21	5	399	2	7	401	12
Future Volume (vph)	11	0	4	9	0	21	5	399	2	7	401	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	30.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.966			0.906			0.999			0.996	
Flt Protected		0.964			0.985		0.950			0.950		
Satd. Flow (prot)	0	1662	0	0	1592	0	1695	3290	0	1695	3283	0
Flt Permitted		0.964			0.985		0.950			0.950		
Satd. Flow (perm)	0	1662	0	0	1592	0	1695	3290	0	1695	3283	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		184.6			108.9			290.2			63.9	
Travel Time (s)		11.1			6.5			17.4			3.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	12	0	4	10	0	23	6	443	2	8	446	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	33	0	6	445	0	8	459	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			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.1% ICU Level of Service A

Analysis Period (min) 15

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰↱		↰	↑↑	↑↑	↱
Traffic Volume (vph)	54	6	8	270	331	112
Future Volume (vph)	54	6	8	270	331	112
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	55.0			60.0
Storage Lanes	1	0	1			1
Taper Length (m)	2.5		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt	0.986					0.850
Flt Protected	0.957		0.950			
Satd. Flow (prot)	1684	0	1695	3390	3390	1517
Flt Permitted	0.957		0.950			
Satd. Flow (perm)	1684	0	1695	3390	3390	1517
Link Speed (k/h)	60			60	60	
Link Distance (m)	321.9			342.9	293.3	
Travel Time (s)	19.3			20.6	17.6	
Confl. Peds. (#/hr)			6			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	7	9	300	368	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	9	300	368	124
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)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 19.9% 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)	2	26	3	12	21	8	8	16	19	25	21	11
Future Volume (vph)	2	26	3	12	21	8	8	16	19	25	21	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.973			0.941			0.974	
Flt Protected		0.997			0.986			0.991			0.978	
Satd. Flow (prot)	0	1758	0	0	1712	0	0	1664	0	0	1700	0
Flt Permitted		0.997			0.986			0.991			0.978	
Satd. Flow (perm)	0	1758	0	0	1712	0	0	1664	0	0	1700	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		172.0			254.2			289.3			547.2	
Travel Time (s)		10.3			15.3			17.4			32.8	
Confl. Peds. (#/hr)	2		3	3		2	2		1	1		2
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
Adj. Flow (vph)	2	29	3	13	23	9	9	18	21	28	23	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	0	0	45	0	0	48	0	0	63	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 20.7% ICU Level of Service A
Analysis Period (min) 15

7: Portobello & Aquaview/Nantes
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰↑ ↑↱			↰↑ ↑↱	
Traffic Volume (vph)	31	22	15	8	23	81	14	128	4	81	165	24
Future Volume (vph)	31	22	15	8	23	81	14	128	4	81	165	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.969			0.903			0.996			0.986	
Flt Protected		0.978			0.996			0.995			0.985	
Satd. Flow (prot)	0	1691	0	0	1605	0	0	3303	0	0	3254	0
Flt Permitted		0.978			0.996			0.995			0.985	
Satd. Flow (perm)	0	1691	0	0	1605	0	0	3303	0	0	3254	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		231.0			336.5			404.0			435.7	
Travel Time (s)		13.9			20.2			24.2			26.1	
Confl. Peds. (#/hr)	12		4	4		12	6		3	3		6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Adj. Flow (vph)	34	24	17	9	26	90	16	142	4	90	183	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	75	0	0	125	0	0	162	0	0	300	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			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 35.3% ICU Level of Service A

Analysis Period (min) 15

Scheme Summary

Control Data

Control Data and Model Parameters

117155 (Notting Hill)	2018 PHF Flow Profile (veh)
Existing PM	7.5 min Time Slice
Rodel-Win1	Queuing Delays (sec)
Right Hand Drive	Daylight conditions
PM Peak Hour	Peak 60/15 min Results
AVERAGE DELAY to Geometry	Output flows: Vehicles
Metric Units (m)	85% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	No
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (m)

Geometry and Design Target

Leg	Leg Names	Approach Geometry (m)				Target	Circulating and Exit Geom		
		Bearing (deg)	Grade Sep G	Half Width V	Lanes n	Average Delay (sec/veh)	Inscribed Diameter D	Half Width Vx	Lanes n
1	N - Trim	0	0	6.80	2	10	55.00	7.40	2
2	S - Trim	180	0	7.40	2	10	55.00	7.40	2
3	E - Millennium	270	0	4.30	1	10	55.00	4.30	1

Capacity Modifiers and Capacity Calibration (veh/hr)

Leg	Leg Names	Entry Capacity		Entry Calibration		Approach Road			Exit Road		
		Capacity + or -	XWalk Factor	Intercept + or -	Slope Factor	V (m)	Default Capacity	Calib Capacity	V (m)	Default Capacity	Calib Capacity
1	N - Trim	0	1.000	0	1.000	4.00	3332	0	7.40	3626	0
2	S - Trim	0	1.000	0	1.000	4.00	3626	0	7.40	3626	0
3	E - Millennium	0	1.000	0	1.000	4.00	2107	0	4.30	2107	0

Traffic Flow Data (veh/hr)

2018 PM Peak Peak Hour Flows

Leg	Leg Names	Turning Flows				Flow Modifiers		
		U-Turn	Exit-2	Exit-1	Bypass	Trucks %	Flow Factor	Peak Hour Factor
1	N - Trim	0	44	369	0	5.0	1.00	0.900
2	S - Trim	0	292	15	0	5.0	1.00	0.900
3	E - Millennium	0	46	113	0	5.0	1.00	0.900

Operational Results

Geometry for Target Input

Geometry Options for 2018 PM Peak

Leg 1 - N - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	6.80	0.00

Geometry Options for 2018 PM Peak

Leg 2 - S - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	7.40	0.00

Geometry Options for 2018 PM Peak

Leg 3 - E - Millennium					
nv	ne	nc	nx	E (m)	L' (m)
1	1	2	1	4.30	0.00

2018 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	413		46		405	1691		0.2442	
2	S - Trim	None	307		44		415	1875		0.1638	
3	E - Millennium	None	159		292		59	904		0.1760	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	2.93		2.93	1.02		A		A
2	S - Trim	None	2.25		2.25	0.58		A		A
3	E - Millennium	None	4.51		4.51	0.61		A		A

2018 PM Peak - 15 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	459		51		450	1686		0.2721	
2	S - Trim	None	341		49		461	1871		0.1823	
3	E - Millennium	None	177		324		66	892		0.1981	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	2.92		2.92	1.02		A		A
2	S - Trim	None	2.22		2.22	0.58		A		A
3	E - Millennium	None	4.49		4.49	0.61		A		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↱		↰	↱	
Traffic Volume (vph)	38	284	110	122	639	21	182	35	106	28	76	90
Future Volume (vph)	38	284	110	122	639	21	182	35	106	28	76	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		145.0	60.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	40.0			45.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.92	0.96	1.00		0.98	0.89		0.89	0.98	
Frt			0.850		0.995			0.887			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3293	1473	1662	3303	0	1647	1369	0	1647	1555	0
Flt Permitted	0.343			0.560			0.609			0.655		
Satd. Flow (perm)	603	3293	1361	944	3303	0	1031	1369	0	1010	1555	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122		4			118			78	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		220.1			496.4			517.4			152.1	
Travel Time (s)		13.2			29.8			31.0			9.1	
Confl. Peds. (#/hr)	28		31	31		28	25		114	114		25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	5%	4%	4%	2%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	42	316	122	136	710	23	202	39	118	31	84	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	316	122	136	733	0	202	157	0	31	184	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)		4.0			4.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		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	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												

Lane Group	Ø3	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)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	33.3	33.3	33.3	33.3	33.3		33.8	33.8		33.8	33.8	
Total Split (s)	43.0	43.0	43.0	43.0	43.0		52.0	52.0		52.0	52.0	
Total Split (%)	43.0%	43.0%	43.0%	43.0%	43.0%		52.0%	52.0%		52.0%	52.0%	
Maximum Green (s)	36.7	36.7	36.7	36.7	36.7		45.2	45.2		45.2	45.2	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.8	6.8		6.8	6.8	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		2.0	2.0		2.0	2.0	
Flash Dont Walk (s)	20.0	20.0	20.0	20.0	20.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	30	30	30	30	30		15	15		15	15	
Act Effct Green (s)	59.1	59.1	59.1	59.1	59.1		27.8	27.8		27.8	27.8	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.59		0.28	0.28		0.28	0.28	
v/c Ratio	0.12	0.16	0.14	0.24	0.38		0.71	0.34		0.11	0.38	
Control Delay	11.6	10.2	2.6	12.3	12.0		46.0	10.1		26.2	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.6	10.2	2.6	12.3	12.0		46.0	10.1		26.2	17.9	
LOS	B	B	A	B	B		D	B		C	B	
Approach Delay		8.4			12.0			30.3			19.1	
Approach LOS		A			B			C			B	
Queue Length 50th (m)	3.1	12.4	0.0	10.8	33.4		36.6	5.8		4.7	16.6	
Queue Length 95th (m)	10.2	24.3	8.3	26.9	58.7		54.0	18.5		10.2	30.2	
Internal Link Dist (m)		196.1			472.4			493.4			128.1	
Turn Bay Length (m)	75.0		145.0	60.0			50.0			50.0		
Base Capacity (vph)	356	1945	853	557	1953		466	683		456	745	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.16	0.14	0.24	0.38		0.43	0.23		0.07	0.25	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 51 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

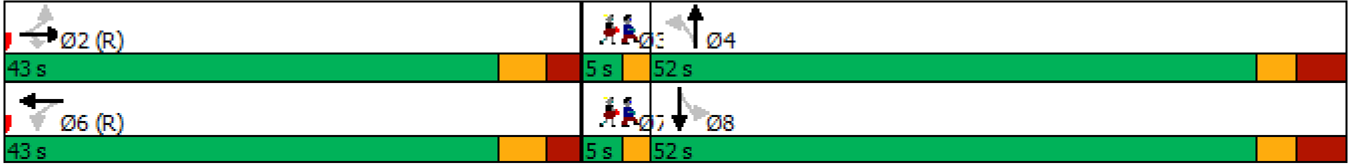
Maximum v/c Ratio: 0.71

Intersection Signal Delay: 15.3 Intersection LOS: B

Intersection Capacity Utilization 84.1% ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Provence & Innes



Lane Group	Ø3	Ø7
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

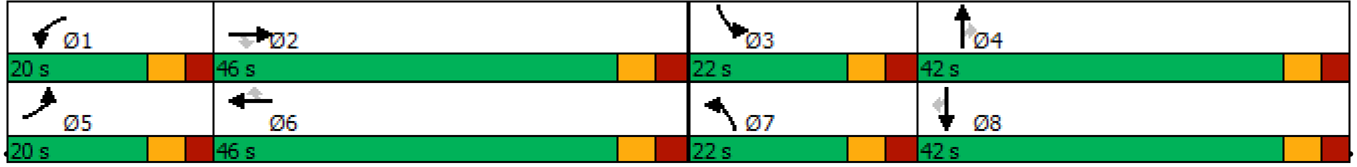
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↱	↱	↰	↑↑	↱	↰↰	↑↑	↱	↰	↑↑	↱
Traffic Volume (vph)	89	186	101	137	274	33	163	204	29	58	356	86
Future Volume (vph)	89	186	101	137	274	33	163	204	29	58	356	86
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Storage Lanes	2		1	1		1	2		1	1		1
Taper Length (m)	35.0			45.0			100.0			25.0		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99	1.00	0.98	0.99		0.98	0.98		0.97	0.99		0.97
Frt		0.989	0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3225	3145	1354	1662	3325	1488	3195	3293	1473	1572	3007	1406
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3201	3145	1323	1650	3325	1459	3147	3293	1430	1551	3007	1368
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6	141			141			144			144
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			273.9			148.0			249.0	
Travel Time (s)		29.8			16.4			8.9			14.9	
Confl. Peds. (#/hr)	7		10	10		7	14		16	16		14
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	5%	5%	5%	10%	15%	10%
Adj. Flow (vph)	99	207	112	152	304	37	181	227	32	64	396	96
Shared Lane Traffic (%)			14%									
Lane Group Flow (vph)	99	223	96	152	304	37	181	227	32	64	396	96
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.7			4.0			12.0			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	16.5	46.0	46.0	16.5	46.0	46.0	16.7	42.0	42.0	16.7	42.0	42.0
Total Split (s)	20.0	46.0	46.0	20.0	46.0	46.0	22.0	42.0	42.0	22.0	42.0	42.0
Total Split (%)	15.4%	35.4%	35.4%	15.4%	35.4%	35.4%	16.9%	32.3%	32.3%	16.9%	32.3%	32.3%
Maximum Green (s)	13.5	39.0	39.0	13.5	39.0	39.0	15.3	35.4	35.4	15.3	35.4	35.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	3.3	3.3	2.8	3.3	3.3	3.0	2.9	2.9	3.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.7	6.6	6.6	6.7	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	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)		32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		5	5		5	5		5	5		5	5
Act Effct Green (s)	8.9	39.3	39.3	13.2	43.6	43.6	11.6	25.9	25.9	10.0	21.5	21.5
Actuated g/C Ratio	0.08	0.35	0.35	0.12	0.39	0.39	0.10	0.23	0.23	0.09	0.19	0.19
v/c Ratio	0.39	0.20	0.17	0.78	0.24	0.06	0.55	0.30	0.07	0.46	0.69	0.25
Control Delay	55.7	27.5	2.1	76.6	26.0	0.2	55.9	38.2	0.3	61.3	49.0	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	27.5	2.1	76.6	26.0	0.2	55.9	38.2	0.3	61.3	49.0	3.0
LOS	E	C	A	E	C	A	E	D	A	E	D	A
Approach Delay		28.3			39.7			42.7			42.5	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	10.6	17.8	0.0	32.2	22.6	0.0	19.4	22.5	0.0	13.4	43.0	0.0
Queue Length 95th (m)	21.3	33.9	4.3	#77.7	43.2	0.0	34.4	35.0	0.0	29.8	60.7	3.6
Internal Link Dist (m)		472.4			249.9			124.0			225.0	
Turn Bay Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Base Capacity (vph)	389	1101	553	200	1289	651	437	1043	551	215	952	531
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.20	0.17	0.76	0.24	0.06	0.41	0.22	0.06	0.30	0.42	0.18

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 112.6
Natural Cycle: 125
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 38.7 Intersection LOS: D
Intersection Capacity Utilization 85.1% 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: 2: Trim & Innes



	↰	→	↴	↲	←	↖	↰	↑	↱	↳	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↑↱		↰	↑↱	
Traffic Volume (vph)	12	0	5	4	0	8	3	302	13	30	330	7
Future Volume (vph)	12	0	5	4	0	8	3	302	13	30	330	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	30.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.957			0.907			0.994			0.997	
Flt Protected		0.967			0.985		0.950			0.950		
Satd. Flow (prot)	0	1651	0	0	1594	0	1695	3277	0	1695	3285	0
Flt Permitted		0.967			0.985		0.950			0.950		
Satd. Flow (perm)	0	1651	0	0	1594	0	1695	3277	0	1695	3285	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		184.6			108.9			290.2			63.9	
Travel Time (s)		11.1			6.5			17.4			3.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	13	0	6	4	0	9	3	336	14	33	367	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	13	0	3	350	0	33	375	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			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary		
Area Type:	Other	
Control Type: Unsignalized		
Intersection Capacity Utilization 26.5%		ICU Level of Service A
Analysis Period (min) 15		

	↗	↘	↖	↑	↓	↙
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		↰	↑↑	↑↑	↱
Traffic Volume (vph)	94	5	4	256	259	53
Future Volume (vph)	94	5	4	256	259	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	55.0			60.0
Storage Lanes	1	0	1			1
Taper Length (m)	2.5		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt	0.993					0.850
Flt Protected	0.955		0.950			
Satd. Flow (prot)	1677	0	1695	3293	3144	1406
Flt Permitted	0.955		0.950			
Satd. Flow (perm)	1677	0	1695	3293	3144	1406
Link Speed (k/h)	60			60	60	
Link Distance (m)	321.9			342.9	293.3	
Travel Time (s)	19.3			20.6	17.6	
Confl. Peds. (#/hr)			2			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	2%	2%	5%	10%	10%
Adj. Flow (vph)	104	6	4	284	288	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	110	0	4	284	288	59
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)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 20.0% 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)	16	14	9	20	27	39	5	57	7	15	36	8
Future Volume (vph)	16	14	9	20	27	39	5	57	7	15	36	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969			0.939			0.986			0.982	
Flt Protected		0.980			0.989			0.996			0.987	
Satd. Flow (prot)	0	1676	0	0	1642	0	0	1711	0	0	1699	0
Flt Permitted		0.980			0.989			0.996			0.987	
Satd. Flow (perm)	0	1676	0	0	1642	0	0	1711	0	0	1699	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		172.0			254.2			289.3			547.2	
Travel Time (s)		10.3			15.3			17.4			32.8	
Confl. Peds. (#/hr)	8					8	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	18	16	10	22	30	43	6	63	8	17	40	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	44	0	0	95	0	0	77	0	0	66	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.4% 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)	54	14	27	17	31	98	24	143	6	47	126	35
Future Volume (vph)	54	14	27	17	31	98	24	143	6	47	126	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.909			0.995			0.975	
Flt Protected		0.972			0.994			0.993			0.989	
Satd. Flow (prot)	0	1652	0	0	1571	0	0	3257	0	0	3212	0
Flt Permitted		0.972			0.994			0.993			0.989	
Satd. Flow (perm)	0	1652	0	0	1571	0	0	3257	0	0	3212	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		231.0			336.5			404.0			435.7	
Travel Time (s)		13.9			20.2			24.2			26.1	
Confl. Peds. (#/hr)	47					47	43		4	4		43
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	2%	5%	5%	5%	5%	2%	2%	5%	2%
Adj. Flow (vph)	60	16	30	19	34	109	27	159	7	52	140	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	162	0	0	193	0	0	231	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			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 46.8% 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)	100	785	109	81	492	23	72	36	79	45	45	77
Future Volume (vph)	100	785	109	81	492	23	72	36	79	45	45	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		145.0	60.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	40.0			45.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97	1.00	1.00		0.99	0.97		0.98	0.98	
Frt			0.850		0.993			0.897			0.905	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3293	1517	1695	3328	0	1695	1557	0	1695	1587	0
Flt Permitted	0.436			0.312			0.661			0.675		
Satd. Flow (perm)	769	3293	1466	555	3328	0	1164	1557	0	1177	1587	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121		8			88			83	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		220.1			496.4			517.4			152.1	
Travel Time (s)		13.2			29.8			31.0			9.1	
Confl. Peds. (#/hr)	15		7	7		15	13		23	23		13
Confl. Bikes (#/hr)			1			1			1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	111	872	121	90	547	26	80	40	88	50	50	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	872	121	90	573	0	80	128	0	50	136	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)		4.0			4.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		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	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	6	6		8	8		4	4	

Lane Group	Ø3	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 (%)		
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	3	7
Permitted Phases		
Detector Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	34.5	34.5	34.5	34.5	34.5		31.8	31.8		31.8	31.8	
Total Split (s)	63.0	63.0	63.0	63.0	63.0		32.0	32.0		32.0	32.0	
Total Split (%)	63.0%	63.0%	63.0%	63.0%	63.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	56.7	56.7	56.7	56.7	56.7		25.2	25.2		25.2	25.2	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.8	6.8		6.8	6.8	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		2.0	2.0		2.0	2.0	
Flash Dont Walk (s)	20.0	20.0	20.0	20.0	20.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	10	10	10	7	7		10	10		7	7	
Act Effct Green (s)	72.6	72.6	72.6	72.6	72.6		14.3	14.3		14.3	14.3	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73		0.14	0.14		0.14	0.14	
v/c Ratio	0.20	0.36	0.11	0.22	0.24		0.48	0.43		0.30	0.46	
Control Delay	6.7	6.3	1.5	7.5	5.4		47.5	17.9		40.7	20.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.7	6.3	1.5	7.5	5.4		47.5	17.9		40.7	20.8	
LOS	A	A	A	A	A		D	B		D	C	
Approach Delay		5.8			5.7			29.3			26.1	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	5.3	25.3	0.0	4.4	14.5		14.9	7.1		9.0	9.5	
Queue Length 95th (m)	17.6	54.7	6.2	16.1	32.8		25.3	20.3		17.3	23.1	
Internal Link Dist (m)		196.1			472.4			493.4			128.1	
Turn Bay Length (m)	75.0		145.0	60.0			50.0			50.0		
Base Capacity (vph)	558	2390	1097	402	2418		293	458		296	462	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.36	0.11	0.22	0.24		0.27	0.28		0.17	0.29	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 21 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 9.8 Intersection LOS: A
Intersection Capacity Utilization 76.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Provence & Innes

Lane Group	Ø3	Ø7
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↱	↱	↰	↑↑	↱	↰↰	↑↑	↱	↰	↑↑	↱
Traffic Volume (vph)	308	661	94	63	306	41	111	240	34	167	686	185
Future Volume (vph)	308	661	94	63	306	41	111	240	34	167	686	185
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Storage Lanes	2		1	1		1	2		1	1		1
Taper Length (m)	35.0			45.0			100.0			25.0		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99					0.98	1.00		0.98	1.00		0.98
Frt		0.998	0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	3209	1354	1662	3325	1488	3288	3325	1517	1572	3325	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3254	3209	1354	1662	3325	1455	3278	3325	1490	1566	3325	1460
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1	141			141			144			200
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			273.9			148.0			249.0	
Travel Time (s)		29.8			16.4			8.9			14.9	
Confl. Peds. (#/hr)	10					10	5		5	5		5
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	4%	4%	4%	4%	2%	4%	2%	10%	4%	4%
Adj. Flow (vph)	342	734	104	70	340	46	123	267	38	186	762	206
Shared Lane Traffic (%)			10%									
Lane Group Flow (vph)	342	744	94	70	340	46	123	267	38	186	762	206
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.7			4.0			12.0			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.7	46.0	46.0	11.7	46.0	46.0	11.7	42.0	42.0	11.7	42.0	42.0
Total Split (s)	20.0	46.0	46.0	20.0	46.0	46.0	22.0	42.0	42.0	22.0	42.0	42.0
Total Split (%)	15.4%	35.4%	35.4%	15.4%	35.4%	35.4%	16.9%	32.3%	32.3%	16.9%	32.3%	32.3%
Maximum Green (s)	13.5	39.0	39.0	13.5	39.0	39.0	15.3	35.4	35.4	15.3	35.4	35.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	3.3	3.3	2.8	3.3	3.3	3.0	2.9	2.9	3.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.7	6.6	6.6	6.7	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	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)		32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		5	5		5	5		5	5		5	5
Act Effct Green (s)	13.5	45.2	45.2	10.2	39.1	39.1	10.0	27.5	27.5	15.3	32.9	32.9
Actuated g/C Ratio	0.11	0.37	0.37	0.08	0.32	0.32	0.08	0.22	0.22	0.12	0.27	0.27
v/c Ratio	0.94	0.63	0.16	0.51	0.32	0.08	0.46	0.36	0.09	0.94	0.85	0.38
Control Delay	89.3	37.2	1.9	67.3	33.5	0.3	60.0	40.9	0.4	105.7	52.9	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.3	37.2	1.9	67.3	33.5	0.3	60.0	40.9	0.4	105.7	52.9	7.4
LOS	F	D	A	E	C	A	E	D	A	F	D	A
Approach Delay		49.5			35.4			42.8			53.3	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	43.7	86.1	0.0	16.7	33.5	0.0	15.1	28.5	0.0	46.0	91.4	1.1
Queue Length 95th (m)	#76.8	119.3	3.8	32.5	48.9	0.0	25.2	40.7	0.0	#96.1	118.6	19.1
Internal Link Dist (m)		472.4			249.9			124.0			225.0	
Turn Bay Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Base Capacity (vph)	363	1186	589	183	1062	560	412	964	534	197	973	568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.63	0.16	0.38	0.32	0.08	0.30	0.28	0.07	0.94	0.78	0.36

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 122.4

Natural Cycle: 125

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.94

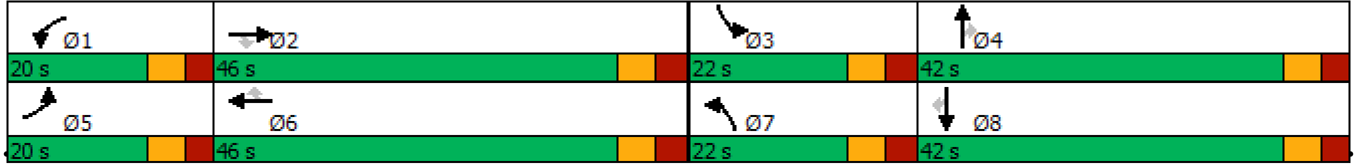
Intersection Signal Delay: 47.9 Intersection LOS: D

Intersection Capacity Utilization 89.7% 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: 2: Trim & Innes



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↑↱		↰	↑↱	
Traffic Volume (vph)	11	0	4	9	0	21	5	399	2	7	401	12
Future Volume (vph)	11	0	4	9	0	21	5	399	2	7	401	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	30.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.966			0.906			0.999			0.996	
Flt Protected		0.964			0.985		0.950			0.950		
Satd. Flow (prot)	0	1662	0	0	1592	0	1695	3290	0	1695	3283	0
Flt Permitted		0.964			0.985		0.950			0.950		
Satd. Flow (perm)	0	1662	0	0	1592	0	1695	3290	0	1695	3283	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		184.6			108.9			290.2			63.9	
Travel Time (s)		11.1			6.5			17.4			3.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	12	0	4	10	0	23	6	443	2	8	446	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	33	0	6	445	0	8	459	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			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.1% ICU Level of Service A

Analysis Period (min) 15

5: Trim & Montmere
PM Peak Hour

	↗	↘	↖	↑	↓	↙
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		↰	↑↑	↑↑	↱
Traffic Volume (vph)	54	6	8	270	331	112
Future Volume (vph)	54	6	8	270	331	112
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	55.0			60.0
Storage Lanes	1	0	1			1
Taper Length (m)	2.5		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt	0.986					0.850
Flt Protected	0.957		0.950			
Satd. Flow (prot)	1684	0	1695	3390	3390	1517
Flt Permitted	0.957		0.950			
Satd. Flow (perm)	1684	0	1695	3390	3390	1517
Link Speed (k/h)	60			60	60	
Link Distance (m)	321.9			342.9	293.3	
Travel Time (s)	19.3			20.6	17.6	
Confl. Peds. (#/hr)			6			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	7	9	300	368	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	9	300	368	124
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)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 19.9% ICU Level of Service A

Analysis Period (min) 15

6: Provence & Plainhill
PM Peak Hour

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	2	26	3	12	21	8	8	16	19	25	21	11
Future Volume (vph)	2	26	3	12	21	8	8	16	19	25	21	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.973			0.941			0.974	
Flt Protected		0.997			0.986			0.991			0.978	
Satd. Flow (prot)	0	1758	0	0	1712	0	0	1664	0	0	1700	0
Flt Permitted		0.997			0.986			0.991			0.978	
Satd. Flow (perm)	0	1758	0	0	1712	0	0	1664	0	0	1700	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		172.0			254.2			289.3			547.2	
Travel Time (s)		10.3			15.3			17.4			32.8	
Confl. Peds. (#/hr)	2		3	3		2	2		1	1		2
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
Adj. Flow (vph)	2	29	3	13	23	9	9	18	21	28	23	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	0	0	45	0	0	48	0	0	63	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 20.7% ICU Level of Service A

Analysis Period (min) 15

7: Portobello & Aquaview/Nantes
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰↑↑↱			↰↑↑↱	
Traffic Volume (vph)	31	22	15	8	23	81	14	128	4	81	165	24
Future Volume (vph)	31	22	15	8	23	81	14	128	4	81	165	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.969			0.903			0.996			0.986	
Flt Protected		0.978			0.996			0.995			0.985	
Satd. Flow (prot)	0	1691	0	0	1605	0	0	3303	0	0	3254	0
Flt Permitted		0.978			0.996			0.995			0.985	
Satd. Flow (perm)	0	1691	0	0	1605	0	0	3303	0	0	3254	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		231.0			336.5			404.0			435.7	
Travel Time (s)		13.9			20.2			24.2			26.1	
Confl. Peds. (#/hr)	12		4	4		12	6		3	3		6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Adj. Flow (vph)	34	24	17	9	26	90	16	142	4	90	183	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	75	0	0	125	0	0	162	0	0	300	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			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 35.3% 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)	41	304	118	137	691	28	182	35	122	28	76	90
Future Volume (vph)	41	304	118	137	691	28	182	35	122	28	76	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		145.0	60.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	40.0			45.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.92	0.96	1.00		0.98	0.89		0.89	0.98	
Frt			0.850		0.994			0.883			0.919	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3293	1473	1662	3298	0	1647	1357	0	1647	1557	0
Flt Permitted	0.351			0.567			0.636			0.652		
Satd. Flow (perm)	617	3293	1361	955	3298	0	1076	1357	0	1006	1557	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118		5			122			78	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		220.1			496.4			517.4			152.1	
Travel Time (s)		13.2			29.8			31.0			9.1	
Confl. Peds. (#/hr)	28		31	31		28	25		114	114		25
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	5%	4%	4%	2%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	41	304	118	137	691	28	182	35	122	28	76	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	304	118	137	719	0	182	157	0	28	166	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)		4.0			4.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		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	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												

Lane Group	Ø3	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)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	33.3	33.3	33.3	33.3	33.3		36.8	36.8		36.8	36.8	
Total Split (s)	43.0	43.0	43.0	43.0	43.0		52.0	52.0		52.0	52.0	
Total Split (%)	43.0%	43.0%	43.0%	43.0%	43.0%		52.0%	52.0%		52.0%	52.0%	
Maximum Green (s)	36.7	36.7	36.7	36.7	36.7		45.2	45.2		45.2	45.2	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.8	6.8		6.8	6.8	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		2.0	2.0		2.0	2.0	
Flash Dont Walk (s)	20.0	20.0	20.0	20.0	20.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	15	15	15	15	15		30	30		30	30	
Act Effct Green (s)	60.2	60.2	60.2	60.2	60.2		26.7	26.7		26.7	26.7	
Actuated g/C Ratio	0.60	0.60	0.60	0.60	0.60		0.27	0.27		0.27	0.27	
v/c Ratio	0.11	0.15	0.14	0.24	0.36		0.63	0.35		0.10	0.35	
Control Delay	10.4	9.4	2.4	11.3	11.1		42.9	10.4		27.6	17.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.4	9.4	2.4	11.3	11.1		42.9	10.4		27.6	17.4	
LOS	B	A	A	B	B		D	B		C	B	
Approach Delay		7.7			11.1			27.8			18.9	
Approach LOS		A			B			C			B	
Queue Length 50th (m)	3.0	11.9	0.0	10.8	32.5		31.9	5.2		4.2	13.6	
Queue Length 95th (m)	9.4	22.0	7.7	25.5	53.7		49.6	18.8		10.0	27.6	
Internal Link Dist (m)		196.1			472.4			493.4			128.1	
Turn Bay Length (m)	75.0		145.0	60.0			50.0			50.0		
Base Capacity (vph)	371	1983	866	575	1988		486	680		454	746	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.15	0.14	0.24	0.36		0.37	0.23		0.06	0.22	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 51 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

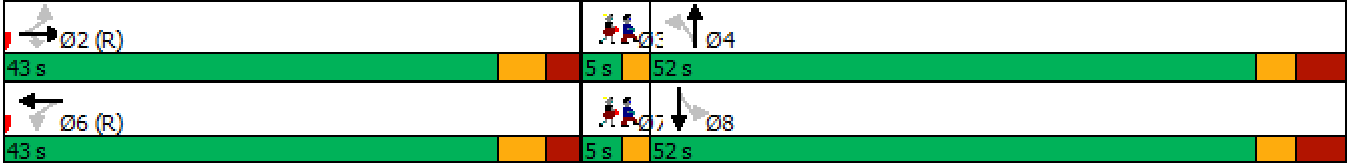
Maximum v/c Ratio: 0.63

Intersection Signal Delay: 14.1 Intersection LOS: B

Intersection Capacity Utilization 84.1% ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Provence & Innes



Lane Group	Ø3	Ø7
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

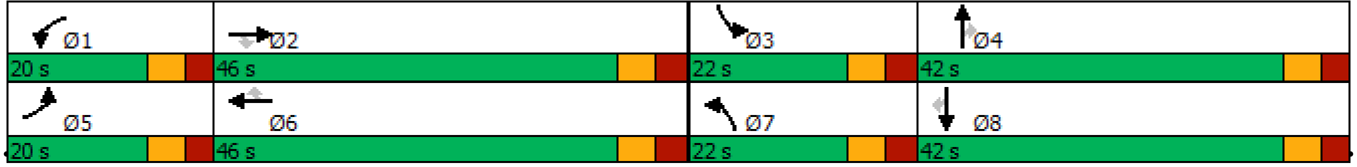
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱	↱	↰	↑↑	↱	↰↰	↑↑	↱	↰	↑↑	↱
Traffic Volume (vph)	103	210	108	147	299	35	175	222	31	64	388	100
Future Volume (vph)	103	210	108	147	299	35	175	222	31	64	388	100
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	35.0			45.0			100.0			25.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	0.98	0.99		0.98	0.98		0.97	0.99		0.97
Frt		0.991	0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3152	1354	1662	3325	1488	3195	3293	1473	1572	3007	1406
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1655	3152	1323	1650	3325	1459	3146	3293	1430	1551	3007	1368
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5	141			141			144			144
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			273.9			148.0			249.0	
Travel Time (s)		29.8			16.4			8.9			14.9	
Confl. Peds. (#/hr)	7		10	10		7	14		16	16		14
Confl. Bikes (#/hr)			1									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	5%	5%	5%	10%	15%	10%
Adj. Flow (vph)	103	210	108	147	299	35	175	222	31	64	388	100
Shared Lane Traffic (%)			12%									
Lane Group Flow (vph)	103	223	95	147	299	35	175	222	31	64	388	100
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)		4.0			4.0			12.0			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	46.0	46.0	11.5	46.0	46.0	11.7	41.6	41.6	11.7	41.6	41.6
Total Split (s)	20.0	46.0	46.0	20.0	46.0	46.0	22.0	42.0	42.0	22.0	42.0	42.0
Total Split (%)	15.4%	35.4%	35.4%	15.4%	35.4%	35.4%	16.9%	32.3%	32.3%	16.9%	32.3%	32.3%
Maximum Green (s)	13.5	39.0	39.0	13.5	39.0	39.0	15.3	35.4	35.4	15.3	35.4	35.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	3.3	3.3	2.8	3.3	3.3	3.0	2.9	2.9	3.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.7	6.6	6.6	6.7	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	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)		32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		5	5		5	5		5	5		5	5
Act Effct Green (s)	11.3	39.3	39.3	13.0	41.1	41.1	11.4	25.5	25.5	10.0	21.1	21.1
Actuated g/C Ratio	0.10	0.35	0.35	0.12	0.37	0.37	0.10	0.23	0.23	0.09	0.19	0.19
v/c Ratio	0.62	0.20	0.17	0.76	0.24	0.06	0.54	0.30	0.07	0.46	0.68	0.27
Control Delay	66.7	27.3	2.1	74.7	27.6	0.2	55.5	38.2	0.3	61.1	48.7	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.7	27.3	2.1	74.7	27.6	0.2	55.5	38.2	0.3	61.1	48.7	3.5
LOS	E	C	A	E	C	A	E	D	A	E	D	A
Approach Delay		31.2			40.0			42.5			41.9	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	21.3	17.6	0.0	30.8	23.2	0.0	18.7	22.0	0.0	13.3	41.8	0.0
Queue Length 95th (m)	44.6	34.0	4.1	#74.5	43.2	0.0	33.5	34.3	0.0	29.8	59.4	4.6
Internal Link Dist (m)		472.4			249.9			124.0			225.0	
Turn Bay Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Base Capacity (vph)	202	1111	556	202	1221	625	440	1050	554	216	959	534
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.20	0.17	0.73	0.24	0.06	0.40	0.21	0.06	0.30	0.40	0.19

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 111.9
Natural Cycle: 115
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 39.2 Intersection LOS: D
Intersection Capacity Utilization 86.7% 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: 2: Trim & Innes



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↑↱		↰	↑↱	
Traffic Volume (vph)	12	0	5	5	0	11	3	322	17	41	359	7
Future Volume (vph)	12	0	5	5	0	11	3	322	17	41	359	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	30.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.960			0.907			0.992			0.997	
Flt Protected		0.966			0.985		0.950			0.950		
Satd. Flow (prot)	0	1655	0	0	1594	0	1695	3272	0	1695	3285	0
Flt Permitted		0.966			0.985		0.950			0.950		
Satd. Flow (perm)	0	1655	0	0	1594	0	1695	3272	0	1695	3285	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		184.6			108.9			290.2			63.9	
Travel Time (s)		11.1			6.5			17.4			3.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	12	0	5	5	0	11	3	322	17	41	359	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	0	0	16	0	3	339	0	41	366	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			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 27.4% ICU Level of Service A

Analysis Period (min) 15

	↗	↘	↖	↑	↓	↙
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		↰	↑↑	↑↑	↱
Traffic Volume (vph)	94	5	4	277	284	57
Future Volume (vph)	94	5	4	277	284	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	55.0			60.0
Storage Lanes	1	0	1			1
Taper Length (m)	2.5		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt	0.993					0.850
Flt Protected	0.955		0.950			
Satd. Flow (prot)	1676	0	1695	3293	3144	1406
Flt Permitted	0.955		0.950			
Satd. Flow (perm)	1676	0	1695	3293	3144	1406
Link Speed (k/h)	60			60	60	
Link Distance (m)	321.9			342.9	293.3	
Travel Time (s)	19.3			20.6	17.6	
Confl. Peds. (#/hr)			2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	2%	5%	10%	10%
Adj. Flow (vph)	94	5	4	277	284	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	4	277	284	57
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)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 20.8% ICU Level of Service A

Analysis Period (min) 15

6: Provence & Plainhill
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	16	14	9	20	27	39	5	60	7	15	42	8
Future Volume (vph)	16	14	9	20	27	39	5	60	7	15	42	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969			0.939			0.987			0.983	
Flt Protected		0.980			0.989			0.997			0.989	
Satd. Flow (prot)	0	1677	0	0	1642	0	0	1714	0	0	1702	0
Flt Permitted		0.980			0.989			0.997			0.989	
Satd. Flow (perm)	0	1677	0	0	1642	0	0	1714	0	0	1702	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		172.0			254.2			289.3			547.2	
Travel Time (s)		10.3			15.3			17.4			32.8	
Confl. Peds. (#/hr)	8					8	1		1	1		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	16	14	9	20	27	39	5	60	7	15	42	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	0	86	0	0	72	0	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 22.7% 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)	54	14	27	40	31	163	26	153	15	76	135	38
Future Volume (vph)	54	14	27	40	31	163	26	153	15	76	135	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.906			0.988			0.977	
Flt Protected		0.972			0.992			0.993			0.985	
Satd. Flow (prot)	0	1652	0	0	1565	0	0	3238	0	0	3211	0
Flt Permitted		0.972			0.992			0.993			0.985	
Satd. Flow (perm)	0	1652	0	0	1565	0	0	3238	0	0	3211	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		231.0			336.5			404.0			435.7	
Travel Time (s)		13.9			20.2			24.2			26.1	
Confl. Peds. (#/hr)	47					47	43		4	4		43
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	2%	5%	5%	5%	5%	2%	2%	5%	2%
Adj. Flow (vph)	54	14	27	40	31	163	26	153	15	76	135	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	95	0	0	234	0	0	194	0	0	249	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			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 46.2% ICU Level of Service A

Analysis Period (min) 15

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Volume (vph)	2	0	52	6	0	24
Future Volume (vph)	2	0	52	6	0	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.986			
Flt Protected	0.950					
Satd. Flow (prot)	1695	0	1759	0	0	1784
Flt Permitted	0.950					
Satd. Flow (perm)	1695	0	1759	0	0	1784
Link Speed (k/h)	60		60			60
Link Distance (m)	596.5		547.2			517.4
Travel Time (s)	35.8		32.8			31.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	0	52	6	0	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	0	58	0	0	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 13.3% ICU Level of Service A

Analysis Period (min) 15

Scheme Summary

Control Data

Control Data and Model Parameters

117155 (Notting Hill)	2025 PHF Flow Profile (veh)
2025 Background AM	7.5 min Time Slice
Rodel-Win1	Queuing Delays (sec)
Right Hand Drive	Daylight conditions
AM Peak Hour	Peak 60/15 min Results
AVERAGE DELAY to Geometry	Output flows: Vehicles
Metric Units (m)	85% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	No
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (m)

Geometry and Design Target

Leg	Leg Names	Approach Geometry (m)				Target	Circulating and Exit Geom		
		Bearing (deg)	Grade Sep G	Half Width V	Lanes n	Average Delay (sec/veh)	Inscribed Diameter D	Half Width Vx	Lanes n
1	N - Trim	0	0	6.80	2	10	55.00	7.40	2
2	W - Street No 1	90	0	4.30	1	10	55.00	4.30	1
3	S - Trim	180	0	7.40	2	10	55.00	7.40	2
4	E - Millennium	270	0	4.30	1	10	55.00	4.30	1

Capacity Modifiers and Capacity Calibration (veh/hr)

Leg	Leg Names	Entry Capacity		Entry Calibration		Approach Road			Exit Road		
		Capacity + or -	XWalk Factor	Intercept + or -	Slope Factor	V (m)	Default Capacity	Calib Capacity	V (m)	Default Capacity	Calib Capacity
1	N - Trim	0	1.000	0	1.000	6.00	3332	0	7.40	3626	0
2	W - Street No 1	0	1.000	0	1.000	6.00	2107	0	4.30	2107	0
3	S - Trim	0	1.000	0	1.000	6.00	3626	0	7.40	3626	0
4	E - Millennium	0	1.000	0	1.000	6.00	2107	0	4.30	2107	0

Traffic Flow Data (veh/hr)

2025 AM Peak Peak Hour Flows

Leg	Leg Names	Turning Flows					Flow Modifiers		
		U-Turn	Exit-3	Exit-2	Exit-1	Bypass	Trucks %	Flow Factor	Peak Hour Factor
1	N - Trim	0	164	205	0	0	5.0	1.00	1.000
2	W - Street No 1	0	0	6	0	0	5.0	1.00	1.000
3	S - Trim	0	0	252	58	0	5.0	1.00	1.000
4	E - Millennium	0	25	2	86	0	5.0	1.00	1.000

Operational Results

Geometry for Target Input

Geometry Options for 2025 AM Peak

Leg 1 - N - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	6.80	0.00

Geometry Options for 2025 AM Peak

Leg 2 - W - Street No 1					
nv	ne	nc	nx	E (m)	L' (m)
1	1	2	1	4.30	0.00

Geometry Options for 2025 AM Peak

Leg 3 - S - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	7.40	0.00

Geometry Options for 2025 AM Peak

Leg 4 - E - Millennium					
nv	ne	nc	nx	E (m)	L' (m)
1	1	2	1	4.30	0.00

2025 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	369		27		338	1657		0.2227	
2	W - Street No 1	None	6		394		2	853		0.0070	
3	S - Trim	None	310		170		230	1691		0.1833	
4	E - Millennium	None	113		252		228	904		0.1250	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	4.72		4.72	1.27		A		A
2	W - Street No 1	None	0.00		0.00	0.00		A		A
3	S - Trim	None	3.02		3.02	0.68		A		A
4	E - Millennium	None	4.29		4.29	0.36		A		A

2025 AM Peak - 15 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	369		27		338	1657		0.2227	
2	W - Street No 1	None	6		394		2	853		0.0070	
3	S - Trim	None	310		170		230	1691		0.1833	
4	E - Millennium	None	113		252		228	904		0.1250	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	4.73		4.73	1.27		A		A
2	W - Street No 1	None	0.00		0.00	0.00		A		A
3	S - Trim	None	3.02		3.02	0.68		A		A
4	E - Millennium	None	4.30		4.30	0.36		A		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↱		↰	↱	
Traffic Volume (vph)	107	842	117	103	533	29	72	36	90	45	45	77
Future Volume (vph)	107	842	117	103	533	29	72	36	90	45	45	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		145.0	60.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	40.0			45.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97	1.00	1.00		0.99	0.97		0.98	0.98	
Frt			0.850		0.992			0.893			0.905	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3293	1517	1695	3324	0	1695	1548	0	1695	1587	0
Flt Permitted	0.441			0.323			0.679			0.676		
Satd. Flow (perm)	777	3293	1466	574	3324	0	1196	1548	0	1178	1587	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			117		9			90			77	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		220.1			496.4			517.4			152.1	
Travel Time (s)		13.2			29.8			31.0			9.1	
Confl. Peds. (#/hr)	15		7	7		15	13		23	23		13
Confl. Bikes (#/hr)			1			1			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	107	842	117	103	533	29	72	36	90	45	45	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	842	117	103	562	0	72	126	0	45	122	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)		4.0			4.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		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	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	

Lane Group	Ø3	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 (%)		
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	3	7
Permitted Phases		
Detector Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	33.3	33.3	33.3	33.3	33.3		31.8	31.8		31.8	31.8	
Total Split (s)	63.0	63.0	63.0	63.0	63.0		32.0	32.0		32.0	32.0	
Total Split (%)	63.0%	63.0%	63.0%	63.0%	63.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	56.7	56.7	56.7	56.7	56.7		25.2	25.2		25.2	25.2	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.8	6.8		6.8	6.8	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		2.0	2.0		2.0	2.0	
Flash Dont Walk (s)	20.0	20.0	20.0	20.0	20.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	7	7	7	7	7		10	10		7	7	
Act Effct Green (s)	72.9	72.9	72.9	72.9	72.9		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73		0.14	0.14		0.14	0.14	
v/c Ratio	0.19	0.35	0.11	0.25	0.23		0.43	0.43		0.27	0.42	
Control Delay	6.4	6.1	1.5	7.6	5.3		45.6	17.3		40.4	19.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.4	6.1	1.5	7.6	5.3		45.6	17.3		40.4	19.9	
LOS	A	A	A	A	A		D	B		D	B	
Approach Delay		5.6			5.6			27.6			25.4	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	4.8	23.1	0.0	4.9	13.5		13.4	6.4		8.2	8.1	
Queue Length 95th (m)	16.8	52.3	6.1	18.2	32.1		23.1	19.5		15.9	20.9	
Internal Link Dist (m)		196.1			472.4			493.4			128.1	
Turn Bay Length (m)	75.0		145.0	60.0			50.0			50.0		
Base Capacity (vph)	566	2401	1100	418	2426		301	457		296	457	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.19	0.35	0.11	0.25	0.23		0.24	0.28		0.15	0.27	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 21 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 9.3 Intersection LOS: A
Intersection Capacity Utilization 78.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Provence & Innes

Lane Group	Ø3	Ø7
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

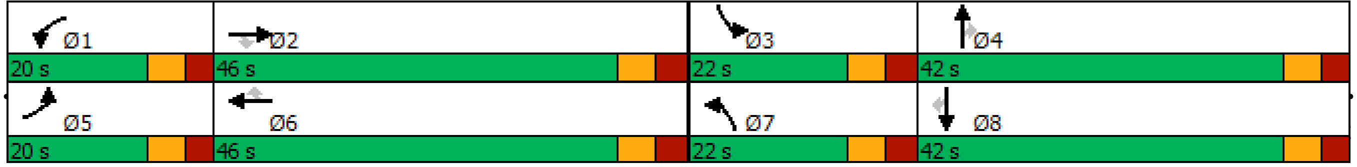
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱	↱	↰	↑↑	↱	↰↰	↑↑	↱	↰	↑↑	↱
Traffic Volume (vph)	341	716	101	68	340	44	119	263	36	181	740	210
Future Volume (vph)	341	716	101	68	340	44	119	263	36	181	740	210
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	35.0			45.0			100.0			25.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99					0.98	1.00		0.98	1.00		0.98
Frt		0.998	0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3209	1354	1662	3325	1488	3288	3325	1517	1572	3325	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1685	3209	1354	1662	3325	1455	3278	3325	1490	1566	3325	1460
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1	141			141			144			210
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			273.9			148.0			249.0	
Travel Time (s)		29.8			16.4			8.9			14.9	
Confl. Peds. (#/hr)	10					10	5		5	5		5
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	4%	4%	4%	4%	2%	4%	2%	10%	4%	4%
Adj. Flow (vph)	341	716	101	68	340	44	119	263	36	181	740	210
Shared Lane Traffic (%)			10%									
Lane Group Flow (vph)	341	726	91	68	340	44	119	263	36	181	740	210
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)		4.0			4.0			12.0			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	46.0	46.0	11.5	46.0	46.0	11.7	41.6	41.6	11.7	41.6	41.6
Total Split (s)	20.0	46.0	46.0	20.0	46.0	46.0	22.0	42.0	42.0	22.0	42.0	42.0
Total Split (%)	15.4%	35.4%	35.4%	15.4%	35.4%	35.4%	16.9%	32.3%	32.3%	16.9%	32.3%	32.3%
Maximum Green (s)	13.5	39.0	39.0	13.5	39.0	39.0	15.3	35.4	35.4	15.3	35.4	35.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	3.3	3.3	2.8	3.3	3.3	3.0	2.9	2.9	3.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.7	6.6	6.6	6.7	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	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)		32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		5	5		5	5		5	5		5	5
Act Effct Green (s)	13.5	45.4	45.4	10.1	39.1	39.1	9.8	26.8	26.8	15.4	32.4	32.4
Actuated g/C Ratio	0.11	0.37	0.37	0.08	0.32	0.32	0.08	0.22	0.22	0.13	0.27	0.27
v/c Ratio	1.81	0.61	0.15	0.50	0.32	0.08	0.45	0.36	0.08	0.91	0.84	0.39
Control Delay	416.8	36.3	1.5	66.8	33.2	0.3	59.8	41.0	0.4	98.9	51.7	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	416.8	36.3	1.5	66.8	33.2	0.3	59.8	41.0	0.4	98.9	51.7	6.8
LOS	F	D	A	E	C	A	E	D	A	F	D	A
Approach Delay		145.6			35.1			42.9			50.9	
Approach LOS		F			D			D			D	
Queue Length 50th (m)	~126.2	82.6	0.0	16.1	33.2	0.0	14.5	28.1	0.0	44.4	88.0	0.0
Queue Length 95th (m)	#192.4	115.8	3.1	31.4	48.9	0.0	24.6	40.2	0.0	#93.0	114.3	17.9
Internal Link Dist (m)		472.4			249.9			124.0			225.0	
Turn Bay Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Base Capacity (vph)	188	1197	593	184	1069	563	414	970	536	198	980	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.81	0.61	0.15	0.37	0.32	0.08	0.29	0.27	0.07	0.91	0.76	0.36

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 121.7
Natural Cycle: 125
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.81
Intersection Signal Delay: 82.3 Intersection LOS: F
Intersection Capacity Utilization 101.7% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Trim & Innes



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↑↱		↰	↑↱	
Traffic Volume (vph)	11	0	4	12	0	28	5	431	4	9	431	12
Future Volume (vph)	11	0	4	12	0	28	5	431	4	9	431	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	30.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.964			0.905			0.999			0.996	
Flt Protected		0.965			0.985		0.950			0.950		
Satd. Flow (prot)	0	1660	0	0	1591	0	1695	3291	0	1695	3283	0
Flt Permitted		0.965			0.985		0.950			0.950		
Satd. Flow (perm)	0	1660	0	0	1591	0	1695	3291	0	1695	3283	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		184.6			108.9			290.2			63.9	
Travel Time (s)		11.1			6.5			17.4			3.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	11	0	4	12	0	28	5	431	4	9	431	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	40	0	5	435	0	9	443	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			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 23.0% ICU Level of Service A

Analysis Period (min) 15

	↗	↘	↖	↑	↓	↙
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰↱		↰	↑↑	↑↑	↱
Traffic Volume (vph)	54	6	9	295	360	120
Future Volume (vph)	54	6	9	295	360	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	55.0			60.0
Storage Lanes	1	0	1			1
Taper Length (m)	2.5		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt	0.986					0.850
Flt Protected	0.957		0.950			
Satd. Flow (prot)	1684	0	1695	3390	3390	1517
Flt Permitted	0.957		0.950			
Satd. Flow (perm)	1684	0	1695	3390	3390	1517
Link Speed (k/h)	60			60	60	
Link Distance (m)	321.9			342.9	293.3	
Travel Time (s)	19.3			20.6	17.6	
Confl. Peds. (#/hr)			6			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	54	6	9	295	360	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	0	9	295	360	120
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)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 20.7% 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)	2	26	3	12	21	8	8	22	19	25	25	11
Future Volume (vph)	2	26	3	12	21	8	8	22	19	25	25	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.974			0.948			0.976	
Flt Protected		0.997			0.986			0.992			0.980	
Satd. Flow (prot)	0	1756	0	0	1714	0	0	1678	0	0	1707	0
Flt Permitted		0.997			0.986			0.992			0.980	
Satd. Flow (perm)	0	1756	0	0	1714	0	0	1678	0	0	1707	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		172.0			254.2			289.3			547.2	
Travel Time (s)		10.3			15.3			17.4			32.8	
Confl. Peds. (#/hr)	2		3	3		2	2		1	1		2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	26	3	12	21	8	8	22	19	25	25	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	31	0	0	41	0	0	49	0	0	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.3% ICU Level of Service A

Analysis Period (min) 15

7: Portobello & Aquaview/Nantes
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰↱			↰↱	
Traffic Volume (vph)	31	22	15	23	23	123	15	137	27	152	177	26
Future Volume (vph)	31	22	15	23	23	123	15	137	27	152	177	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.970			0.902			0.977			0.989	
Flt Protected		0.978			0.993			0.996			0.979	
Satd. Flow (prot)	0	1693	0	0	1598	0	0	3250	0	0	3251	0
Flt Permitted		0.978			0.993			0.996			0.979	
Satd. Flow (perm)	0	1693	0	0	1598	0	0	3250	0	0	3251	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		231.0			336.5			404.0			435.7	
Travel Time (s)		13.9			20.2			24.2			26.1	
Confl. Peds. (#/hr)	12		4	4		12	6		3	3		6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Adj. Flow (vph)	31	22	15	23	23	123	15	137	27	152	177	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	169	0	0	179	0	0	355	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			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 39.7%	ICU Level of Service A
Analysis Period (min) 15	

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↱			↰
Traffic Volume (vph)	6	0	43	4	0	86
Future Volume (vph)	6	0	43	4	0	86
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.989			
Flt Protected	0.950					
Satd. Flow (prot)	1695	0	1765	0	0	1784
Flt Permitted	0.950					
Satd. Flow (perm)	1695	0	1765	0	0	1784
Link Speed (k/h)	60		60			60
Link Distance (m)	605.4		547.2			517.4
Travel Time (s)	36.3		32.8			31.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	6	0	43	4	0	86
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	47	0	0	86
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 14.8% ICU Level of Service A

Analysis Period (min) 15

Scheme Summary

Control Data

Control Data and Model Parameters

117155 (Notting Hill)	2025 PHF Flow Profile (veh)
2025 Background PM	7.5 min Time Slice
Rodel-Win1	Queuing Delays (sec)
Right Hand Drive	Daylight conditions
PM Peak Hour	Peak 60/15 min Results
AVERAGE DELAY to Geometry	Output flows: Vehicles
Metric Units (m)	85% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	No
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (m)

Geometry and Design Target

Leg	Leg Names	Approach Geometry (m)				Target	Circulating and Exit Geom		
		Bearing (deg)	Grade Sep G	Half Width V	Lanes n	Average Delay (sec/veh)	Inscribed Diameter D	Half Width Vx	Lanes n
1	N - Trim	0	0	6.80	2	10	55.00	7.40	2
2	W - Street No 1	90	0	4.30	1	10	55.00	4.30	1
3	S - Trim	180	0	7.40	2	10	55.00	7.40	2
4	E - Millennium	270	0	4.30	1	10	55.00	4.30	1

Capacity Modifiers and Capacity Calibration (veh/hr)

Leg	Leg Names	Entry Capacity		Entry Calibration		Approach Road			Exit Road		
		Capacity + or -	XWalk Factor	Intercept + or -	Slope Factor	V (m)	Default Capacity	Calib Capacity	V (m)	Default Capacity	Calib Capacity
1	N - Trim	0	1.000	0	1.000	6.00	3332	0	7.40	3626	0
2	W - Street No 1	0	1.000	0	1.000	6.00	2107	0	4.30	2107	0
3	S - Trim	0	1.000	0	1.000	6.00	3626	0	7.40	3626	0
4	E - Millennium	0	1.000	0	1.000	6.00	2107	0	4.30	2107	0

Traffic Flow Data (veh/hr)

2025 PM Peak Peak Hour Flows

Leg	Leg Names	Turning Flows					Flow Modifiers		
		U-Turn	Exit-3	Exit-2	Exit-1	Bypass	Trucks %	Flow Factor	Peak Hour Factor
1	N - Trim	0	47	401	0	0	5.0	1.00	1.000
2	W - Street No 1	0	0	4	0	0	5.0	1.00	1.000
3	S - Trim	0	0	319	16	0	5.0	1.00	1.000
4	E - Millennium	0	46	6	113	0	5.0	1.00	1.000

Operational Results

Geometry for Target Input

Geometry Options for 2025 PM Peak

Leg 1 - N - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	6.80	0.00

Geometry Options for 2025 PM Peak

Leg 2 - W - Street No 1					
nv	ne	nc	nx	E (m)	L' (m)
1	1	2	1	4.30	0.00

Geometry Options for 2025 PM Peak

Leg 3 - S - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	7.40	0.00

Geometry Options for 2025 PM Peak

Leg 4 - E - Millennium					
nv	ne	nc	nx	E (m)	L' (m)
1	1	2	1	4.30	0.00

2025 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	448		52		432	1635		0.2740	
2	W - Street No 1	None	4		494		6	818		0.0049	
3	S - Trim	None	335		51		447	1799		0.1862	
4	E - Millennium	None	165		319		67	880		0.1874	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	3.16		3.16	1.03		A		A
2	W - Street No 1	None	0.00		0.00	0.00		A		A
3	S - Trim	None	2.43		2.43	0.59		A		A
4	E - Millennium	None	4.73		4.73	0.57		A		A

2025 PM Peak - 15 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	448		52		432	1635		0.2740	
2	W - Street No 1	None	4		494		6	818		0.0049	
3	S - Trim	None	335		51		447	1799		0.1862	
4	E - Millennium	None	165		319		67	880		0.1874	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	3.17		3.17	1.03		A		A
2	W - Street No 1	None	0.00		0.00	0.00		A		A
3	S - Trim	None	2.43		2.43	0.59		A		A
4	E - Millennium	None	4.73		4.73	0.57		A		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↱		↰	↱	
Traffic Volume (vph)	41	326	133	139	731	28	216	35	127	28	76	90
Future Volume (vph)	41	326	133	139	731	28	216	35	127	28	76	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		145.0	60.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	40.0			45.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.92	0.96	1.00		0.98	0.89		0.89	0.98	
Frt			0.850		0.994			0.882			0.919	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3293	1473	1662	3299	0	1647	1354	0	1647	1557	0
Flt Permitted	0.330			0.555			0.641			0.648		
Satd. Flow (perm)	580	3293	1361	936	3299	0	1085	1354	0	1001	1557	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133		4			127			78	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		220.1			496.4			517.4			152.1	
Travel Time (s)		13.2			29.8			31.0			9.1	
Confl. Peds. (#/hr)	28		31	31		28	25		114	114		25
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	5%	4%	4%	2%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	41	326	133	139	731	28	216	35	127	28	76	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	326	133	139	759	0	216	162	0	28	166	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)		4.0			4.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		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	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6	6		4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												

Lane Group	Ø3	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)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	36.3	36.3	36.3	36.3	36.3		36.8	36.8		36.8	36.8	
Total Split (s)	43.0	43.0	43.0	43.0	43.0		52.0	52.0		52.0	52.0	
Total Split (%)	43.0%	43.0%	43.0%	43.0%	43.0%		52.0%	52.0%		52.0%	52.0%	
Maximum Green (s)	36.7	36.7	36.7	36.7	36.7		45.2	45.2		45.2	45.2	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.8	6.8		6.8	6.8	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		2.0	2.0		2.0	2.0	
Flash Dont Walk (s)	20.0	20.0	20.0	20.0	20.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	15	15	15	15	15		30	30		30	30	
Act Effct Green (s)	58.6	58.6	58.6	58.6	58.6		28.3	28.3		28.3	28.3	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.59		0.28	0.28		0.28	0.28	
v/c Ratio	0.12	0.17	0.16	0.25	0.39		0.70	0.34		0.10	0.33	
Control Delay	12.1	10.6	2.7	12.9	12.5		44.6	9.3		25.3	16.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.1	10.6	2.7	12.9	12.5		44.6	9.3		25.3	16.0	
LOS	B	B	A	B	B		D	A		C	B	
Approach Delay		8.6			12.6			29.5			17.3	
Approach LOS		A			B			C			B	
Queue Length 50th (m)	3.0	12.8	0.0	11.1	34.9		39.3	5.2		4.2	13.6	
Queue Length 95th (m)	10.4	25.7	8.9	28.3	62.8		56.0	17.7		9.3	25.8	
Internal Link Dist (m)		196.1			472.4			493.4			128.1	
Turn Bay Length (m)	75.0		145.0	60.0			50.0			50.0		
Base Capacity (vph)	340	1929	852	548	1934		490	681		452	746	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.17	0.16	0.25	0.39		0.44	0.24		0.06	0.22	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 51 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

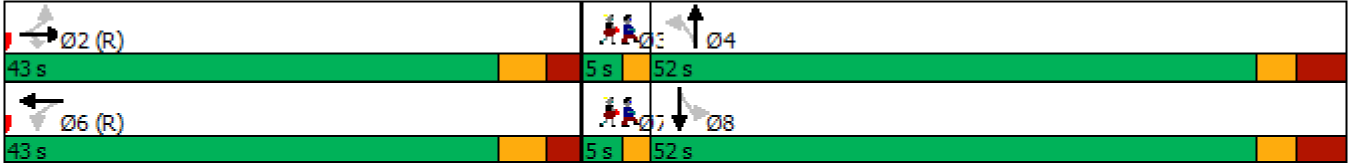
Maximum v/c Ratio: 0.70

Intersection Signal Delay: 15.3 Intersection LOS: B

Intersection Capacity Utilization 86.1% ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Provence & Innes



Lane Group	Ø3	Ø7
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

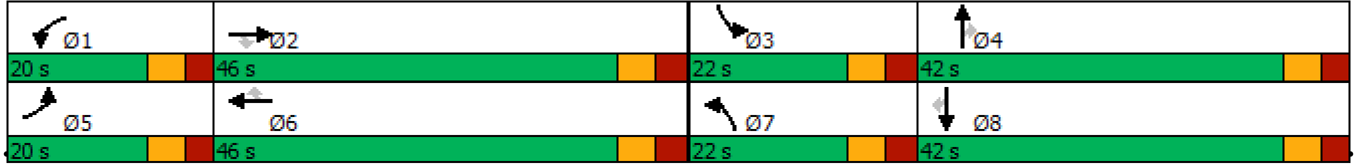
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱	↱	↰	↑↑	↱	↰↰	↑↑	↱	↰	↑↑	↱
Traffic Volume (vph)	107	214	127	155	300	35	214	270	51	64	409	102
Future Volume (vph)	107	214	127	155	300	35	214	270	51	64	409	102
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	35.0			45.0			100.0			25.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	0.98	0.99		0.98	0.99		0.97	0.99		0.97
Frt		0.985	0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3130	1354	1662	3325	1488	3195	3293	1473	1572	3007	1406
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1655	3130	1323	1651	3325	1459	3147	3293	1430	1553	3007	1368
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9	141			141			144			144
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			273.9			148.0			249.0	
Travel Time (s)		29.8			16.4			8.9			14.9	
Confl. Peds. (#/hr)	7		10	10		7	14		16	16		14
Confl. Bikes (#/hr)			1									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	5%	5%	5%	10%	15%	10%
Adj. Flow (vph)	107	214	127	155	300	35	214	270	51	64	409	102
Shared Lane Traffic (%)			19%									
Lane Group Flow (vph)	107	238	103	155	300	35	214	270	51	64	409	102
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)		4.0			4.0			12.0			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	46.0	46.0	11.5	46.0	46.0	11.7	41.6	41.6	11.7	41.6	41.6
Total Split (s)	20.0	46.0	46.0	20.0	46.0	46.0	22.0	42.0	42.0	22.0	42.0	42.0
Total Split (%)	15.4%	35.4%	35.4%	15.4%	35.4%	35.4%	16.9%	32.3%	32.3%	16.9%	32.3%	32.3%
Maximum Green (s)	13.5	39.0	39.0	13.5	39.0	39.0	15.3	35.4	35.4	15.3	35.4	35.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	3.3	3.3	2.8	3.3	3.3	3.0	2.9	2.9	3.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.7	6.6	6.6	6.7	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	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)		32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		5	5		5	5		5	5		5	5
Act Effct Green (s)	11.5	39.3	39.3	13.3	41.1	41.1	12.5	27.4	27.4	10.0	22.1	22.1
Actuated g/C Ratio	0.10	0.34	0.34	0.12	0.36	0.36	0.11	0.24	0.24	0.09	0.19	0.19
v/c Ratio	0.64	0.22	0.19	0.80	0.25	0.06	0.61	0.34	0.11	0.46	0.70	0.27
Control Delay	68.9	27.9	2.8	79.8	28.6	0.2	57.6	38.4	0.5	62.2	49.8	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	27.9	2.8	79.8	28.6	0.2	57.6	38.4	0.5	62.2	49.8	3.6
LOS	E	C	A	E	C	A	E	D	A	E	D	A
Approach Delay		31.9			42.7			42.5			43.0	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	22.7	19.3	0.0	33.6	24.4	0.0	23.4	27.2	0.0	13.6	45.2	0.0
Queue Length 95th (m)	#48.0	35.7	6.2	#79.8	43.3	0.0	40.0	41.0	0.0	29.8	62.7	5.2
Internal Link Dist (m)		472.4			249.9			124.0			225.0	
Turn Bay Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Base Capacity (vph)	197	1082	547	197	1197	615	431	1028	545	212	939	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.22	0.19	0.79	0.25	0.06	0.50	0.26	0.09	0.30	0.44	0.19

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 114.1
Natural Cycle: 115
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 40.4 Intersection LOS: D
Intersection Capacity Utilization 88.7% 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: 2: Trim & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↑↱		↰	↑↱	
Traffic Volume (vph)	68	0	5	5	0	11	3	373	17	41	382	32
Future Volume (vph)	68	0	5	5	0	11	3	373	17	41	382	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	30.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.991			0.907			0.993			0.988	
Flt Protected		0.955			0.985		0.950			0.950		
Satd. Flow (prot)	0	1689	0	0	1594	0	1695	3274	0	1695	3261	0
Flt Permitted		0.955			0.985		0.950			0.950		
Satd. Flow (perm)	0	1689	0	0	1594	0	1695	3274	0	1695	3261	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		184.6			108.9			290.2			63.9	
Travel Time (s)		11.1			6.5			17.4			3.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	68	0	5	5	0	11	3	373	17	41	382	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	16	0	3	390	0	41	414	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			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 36.3% ICU Level of Service A

Analysis Period (min) 15

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰↱		↰	↑↑	↑↑	↱
Traffic Volume (vph)	94	5	4	292	317	57
Future Volume (vph)	94	5	4	292	317	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	55.0			60.0
Storage Lanes	1	0	1			1
Taper Length (m)	2.5		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt	0.993					0.850
Flt Protected	0.955		0.950			
Satd. Flow (prot)	1676	0	1695	3293	3144	1406
Flt Permitted	0.955		0.950			
Satd. Flow (perm)	1676	0	1695	3293	3144	1406
Link Speed (k/h)	60			60	60	
Link Distance (m)	321.9			342.9	293.3	
Travel Time (s)	19.3			20.6	17.6	
Confl. Peds. (#/hr)			2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	2%	5%	10%	10%
Adj. Flow (vph)	94	5	4	292	317	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	4	292	317	57
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)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.7% 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)	16	14	9	20	27	39	5	69	7	15	61	8
Future Volume (vph)	16	14	9	20	27	39	5	69	7	15	61	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969			0.939			0.988			0.987	
Flt Protected		0.980			0.989			0.997			0.991	
Satd. Flow (prot)	0	1677	0	0	1642	0	0	1715	0	0	1709	0
Flt Permitted		0.980			0.989			0.997			0.991	
Satd. Flow (perm)	0	1677	0	0	1642	0	0	1715	0	0	1709	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		172.0			254.2			289.3			547.2	
Travel Time (s)		10.3			15.3			17.4			32.8	
Confl. Peds. (#/hr)	8					8	1		1	1		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	16	14	9	20	27	39	5	69	7	15	61	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	0	86	0	0	81	0	0	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 23.9% 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)	73	15	34	40	32	163	29	153	15	76	135	46
Future Volume (vph)	73	15	34	40	32	163	29	153	15	76	135	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.906			0.989			0.973	
Flt Protected		0.971			0.992			0.993			0.985	
Satd. Flow (prot)	0	1651	0	0	1565	0	0	3241	0	0	3200	0
Flt Permitted		0.971			0.992			0.993			0.985	
Satd. Flow (perm)	0	1651	0	0	1565	0	0	3241	0	0	3200	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		231.0			336.5			404.0			435.7	
Travel Time (s)		13.9			20.2			24.2			26.1	
Confl. Peds. (#/hr)	47					47	43		4	4		43
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	2%	5%	5%	5%	5%	2%	2%	5%	2%
Adj. Flow (vph)	73	15	34	40	32	163	29	153	15	76	135	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	0	0	235	0	0	197	0	0	257	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			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 48.9% ICU Level of Service A

Analysis Period (min) 15

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Volume (vph)	21	39	52	15	17	24
Future Volume (vph)	21	39	52	15	17	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912		0.970			
Flt Protected	0.983					0.980
Satd. Flow (prot)	1600	0	1731	0	0	1749
Flt Permitted	0.983					0.980
Satd. Flow (perm)	1600	0	1731	0	0	1749
Link Speed (k/h)	60		60			60
Link Distance (m)	596.5		547.2			517.4
Travel Time (s)	35.8		32.8			31.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	39	52	15	17	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	0	67	0	0	41
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 19.4% ICU Level of Service A

Analysis Period (min) 15

Scheme Summary

Control Data

Control Data and Model Parameters

117155 (Notting Hill)	2025 PHF Flow Profile (veh)
2025 Total AM	7.5 min Time Slice
Rodel-Win1	Queuing Delays (sec)
Right Hand Drive	Daylight conditions
AM Peak Hour	Peak 60/15 min Results
AVERAGE DELAY to Geometry	Output flows: Vehicles
Metric Units (m)	85% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	No
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (m)

Geometry and Design Target

Leg	Leg Names	Approach Geometry (m)				Target	Circulating and Exit Geom		
		Bearing (deg)	Grade Sep G	Half Width V	Lanes n	Average Delay (sec/veh)	Inscribed Diameter D	Half Width Vx	Lanes n
1	N - Trim	0	0	6.80	2	10	55.00	7.40	2
2	W - Street No 1	90	0	4.30	1	10	55.00	4.30	1
3	S - Trim	180	0	7.40	2	10	55.00	7.40	2
4	E - Millennium	270	0	4.30	1	10	55.00	4.30	1

Capacity Modifiers and Capacity Calibration (veh/hr)

Leg	Leg Names	Entry Capacity		Entry Calibration		Approach Road			Exit Road		
		Capacity + or -	XWalk Factor	Intercept + or -	Slope Factor	V (m)	Default Capacity	Calib Capacity	V (m)	Default Capacity	Calib Capacity
1	N - Trim	0	1.000	0	1.000	6.00	3332	0	7.40	3626	0
2	W - Street No 1	0	1.000	0	1.000	6.00	2107	0	4.30	2107	0
3	S - Trim	0	1.000	0	1.000	6.00	3626	0	7.40	3626	0
4	E - Millennium	0	1.000	0	1.000	6.00	2107	0	4.30	2107	0

Traffic Flow Data (veh/hr)

2025 AM Peak Peak Hour Flows

Leg	Leg Names	Turning Flows					Flow Modifiers		
		U-Turn	Exit-3	Exit-2	Exit-1	Bypass	Trucks %	Flow Factor	Peak Hour Factor
1	N - Trim	0	164	205	23	0	5.0	1.00	1.000
2	W - Street No 1	0	51	17	32	0	5.0	1.00	1.000
3	S - Trim	0	14	252	59	0	5.0	1.00	1.000
4	E - Millennium	0	26	8	86	0	5.0	1.00	1.000

Operational Results

Geometry for Target Input

Geometry Options for 2025 AM Peak

Leg 1 - N - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	6.80	0.00

Geometry Options for 2025 AM Peak

Leg 2 - W - Street No 1					
nv	ne	nc	nx	E (m)	L' (m)
1	1	2	1	4.30	0.00

Geometry Options for 2025 AM Peak

Leg 3 - S - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	7.40	0.00

Geometry Options for 2025 AM Peak

Leg 4 - E - Millennium					
nv	ne	nc	nx	E (m)	L' (m)
1	1	2	1	4.30	0.00

2025 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	392		48		389	1639		0.2392	
2	W - Street No 1	None	100		395		45	853		0.1172	
3	S - Trim	None	325		232		263	1634		0.1989	
4	E - Millennium	None	120		317		240	881		0.1362	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	4.65		4.65	1.32		A		A
2	W - Street No 1	None	4.51		4.51	0.33		A		A
3	S - Trim	None	3.15		3.15	0.75		A		A
4	E - Millennium	None	4.46		4.46	0.39		A		A

2025 AM Peak - 15 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	392		48		389	1639		0.2392	
2	W - Street No 1	None	100		395		45	853		0.1172	
3	S - Trim	None	325		232		263	1634		0.1989	
4	E - Millennium	None	120		317		240	881		0.1362	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	4.65		4.65	1.32		A		A
2	W - Street No 1	None	4.52		4.52	0.33		A		A
3	S - Trim	None	3.15		3.15	0.75		A		A
4	E - Millennium	None	4.47		4.47	0.39		A		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↱		↰	↱	
Traffic Volume (vph)	107	882	150	106	562	29	94	36	93	45	45	77
Future Volume (vph)	107	882	150	106	562	29	94	36	93	45	45	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		145.0	60.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	40.0			45.0			100.0			100.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97	1.00	1.00		0.99	0.97		0.98	0.98	
Frt			0.850		0.993			0.892			0.905	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3293	1517	1695	3328	0	1695	1546	0	1695	1587	0
Flt Permitted	0.429			0.307			0.679			0.674		
Satd. Flow (perm)	757	3293	1466	546	3328	0	1196	1546	0	1175	1587	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			150		9			93			77	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		220.1			496.4			517.4			152.1	
Travel Time (s)		13.2			29.8			31.0			9.1	
Confl. Peds. (#/hr)	15		7	7		15	13		23	23		13
Confl. Bikes (#/hr)			1			1			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	107	882	150	106	562	29	94	36	93	45	45	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	882	150	106	591	0	94	129	0	45	122	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)		4.0			4.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		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	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	

Lane Group	Ø3	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 (%)		
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	3	7
Permitted Phases		
Detector Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	33.3	33.3	33.3	33.3	33.3		31.8	31.8		31.8	31.8	
Total Split (s)	63.0	63.0	63.0	63.0	63.0		32.0	32.0		32.0	32.0	
Total Split (%)	63.0%	63.0%	63.0%	63.0%	63.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	56.7	56.7	56.7	56.7	56.7		25.2	25.2		25.2	25.2	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.8	6.8		6.8	6.8	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		2.0	2.0		2.0	2.0	
Flash Dont Walk (s)	20.0	20.0	20.0	20.0	20.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)	7	7	7	7	7		10	10		7	7	
Act Effct Green (s)	72.0	72.0	72.0	72.0	72.0		14.9	14.9		14.9	14.9	
Actuated g/C Ratio	0.72	0.72	0.72	0.72	0.72		0.15	0.15		0.15	0.15	
v/c Ratio	0.20	0.37	0.14	0.27	0.25		0.53	0.42		0.26	0.40	
Control Delay	6.9	6.6	1.5	8.4	5.6		48.6	16.3		38.9	19.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.9	6.6	1.5	8.4	5.6		48.6	16.3		38.9	19.0	
LOS	A	A	A	A	A		D	B		D	B	
Approach Delay		5.9			6.1			29.9			24.3	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	5.3	27.2	0.0	5.7	15.8		17.4	6.3		8.0	7.9	
Queue Length 95th (m)	17.0	55.6	6.8	19.3	34.0		29.1	19.6		15.9	20.9	
Internal Link Dist (m)		196.1			472.4			493.4			128.1	
Turn Bay Length (m)	75.0		145.0	60.0			50.0			50.0		
Base Capacity (vph)	544	2370	1097	392	2398		301	459		296	457	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.37	0.14	0.27	0.25		0.31	0.28		0.15	0.27	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 21 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 9.8 Intersection LOS: A
Intersection Capacity Utilization 79.9% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Provence & Innes

Lane Group	Ø3	Ø7
Switch Phase		
Minimum Initial (s)	3.0	3.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

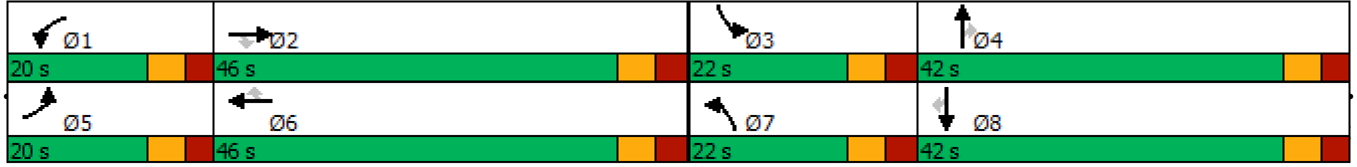
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱	↱	↰	↑↑	↱	↰↰	↑↑	↱	↰	↑↑	↱
Traffic Volume (vph)	343	719	139	84	342	44	146	295	49	181	788	213
Future Volume (vph)	343	719	139	84	342	44	146	295	49	181	788	213
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	35.0			45.0			100.0			25.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99					0.98	1.00		0.98	1.00		0.98
Frt		0.997	0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	3206	1354	1662	3325	1488	3288	3325	1517	1572	3325	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1685	3206	1354	1662	3325	1455	3278	3325	1490	1566	3325	1460
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1	141			141			144			199
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		496.4			273.9			148.0			249.0	
Travel Time (s)		29.8			16.4			8.9			14.9	
Confl. Peds. (#/hr)	10					10	5		5	5		5
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	4%	4%	4%	4%	2%	4%	2%	10%	4%	4%
Adj. Flow (vph)	343	719	139	84	342	44	146	295	49	181	788	213
Shared Lane Traffic (%)			10%									
Lane Group Flow (vph)	343	733	125	84	342	44	146	295	49	181	788	213
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)		4.0			4.0			12.0			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	46.0	46.0	11.5	46.0	46.0	11.7	41.6	41.6	11.7	41.6	41.6
Total Split (s)	20.0	46.0	46.0	20.0	46.0	46.0	22.0	42.0	42.0	22.0	42.0	42.0
Total Split (%)	15.4%	35.4%	35.4%	15.4%	35.4%	35.4%	16.9%	32.3%	32.3%	16.9%	32.3%	32.3%
Maximum Green (s)	13.5	39.0	39.0	13.5	39.0	39.0	15.3	35.4	35.4	15.3	35.4	35.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	3.3	3.3	2.8	3.3	3.3	3.0	2.9	2.9	3.0	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.7	6.6	6.6	6.7	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	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)		32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		5	5		5	5		5	5		5	5
Act Effct Green (s)	13.5	44.5	44.5	11.0	39.1	39.1	10.8	29.3	29.3	15.3	33.7	33.7
Actuated g/C Ratio	0.11	0.36	0.36	0.09	0.32	0.32	0.09	0.24	0.24	0.12	0.27	0.27
v/c Ratio	1.86	0.64	0.22	0.57	0.33	0.08	0.51	0.38	0.11	0.93	0.87	0.39
Control Delay	438.8	38.5	4.8	70.2	34.3	0.3	60.8	40.8	0.5	104.2	54.8	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	438.8	38.5	4.8	70.2	34.3	0.3	60.8	40.8	0.5	104.2	54.8	8.3
LOS	F	D	A	E	C	A	E	D	A	F	D	A
Approach Delay		149.4			37.5			42.8			54.0	
Approach LOS		F			D			D			D	
Queue Length 50th (m)	~129.4	86.5	0.0	20.2	34.1	0.0	18.0	31.8	0.0	45.0	96.7	2.5
Queue Length 95th (m)	#194.0	117.2	12.0	37.5	49.2	0.0	28.9	44.7	0.0	#93.0	#125.5	21.8
Internal Link Dist (m)		472.4			249.9			124.0			225.0	
Turn Bay Length (m)	90.0		50.0	65.0		70.0	60.0		80.0	85.0		70.0
Base Capacity (vph)	184	1150	576	181	1047	554	406	950	528	194	954	560
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.86	0.64	0.22	0.46	0.33	0.08	0.36	0.31	0.09	0.93	0.83	0.38

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 124
Natural Cycle: 125
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.86
Intersection Signal Delay: 84.3 Intersection LOS: F
Intersection Capacity Utilization 103.2% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Trim & Innes



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↑↱		↰	↑↱	
Traffic Volume (vph)	47	0	4	12	0	28	5	467	4	9	481	64
Future Volume (vph)	47	0	4	12	0	28	5	467	4	9	481	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	30.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.989			0.905			0.999			0.982	
Flt Protected		0.956			0.985		0.950			0.950		
Satd. Flow (prot)	0	1687	0	0	1591	0	1695	3291	0	1695	3245	0
Flt Permitted		0.956			0.985		0.950			0.950		
Satd. Flow (perm)	0	1687	0	0	1591	0	1695	3291	0	1695	3245	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		184.6			108.9			290.2			63.9	
Travel Time (s)		11.1			6.5			17.4			3.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	47	0	4	12	0	28	5	467	4	9	481	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	51	0	0	40	0	5	471	0	9	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 30.6% ICU Level of Service A

Analysis Period (min) 15

	↗	↘	↖	↑	↓	↙
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		↰	↑↑	↑↑	↱
Traffic Volume (vph)	54	6	9	327	383	120
Future Volume (vph)	54	6	9	327	383	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	55.0			60.0
Storage Lanes	1	0	1			1
Taper Length (m)	2.5		40.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt	0.986					0.850
Flt Protected	0.957		0.950			
Satd. Flow (prot)	1684	0	1695	3390	3390	1517
Flt Permitted	0.957		0.950			
Satd. Flow (perm)	1684	0	1695	3390	3390	1517
Link Speed (k/h)	60			60	60	
Link Distance (m)	321.9			342.9	293.3	
Travel Time (s)	19.3			20.6	17.6	
Confl. Peds. (#/hr)			6			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	54	6	9	327	383	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	0	9	327	383	120
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)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.4% ICU Level of Service A

Analysis Period (min) 15

6: Provence & Plainhill
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	2	26	3	12	21	8	8	41	19	25	37	11
Future Volume (vph)	2	26	3	12	21	8	8	41	19	25	37	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.974			0.962			0.980	
Flt Protected		0.997			0.986			0.994			0.983	
Satd. Flow (prot)	0	1756	0	0	1714	0	0	1706	0	0	1719	0
Flt Permitted		0.997			0.986			0.994			0.983	
Satd. Flow (perm)	0	1756	0	0	1714	0	0	1706	0	0	1719	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		172.0			254.2			289.3			547.2	
Travel Time (s)		10.3			15.3			17.4			32.8	
Confl. Peds. (#/hr)	2		3	3		2	2		1	1		2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	26	3	12	21	8	8	41	19	25	37	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	31	0	0	41	0	0	68	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 23.1% ICU Level of Service A
Analysis Period (min) 15

7: Portobello & Aquaview/Nantes
PM Peak Hour

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱			↰↑↑↱			↰↑↑↱	
Traffic Volume (vph)	43	23	19	23	24	123	22	137	27	152	177	45
Future Volume (vph)	43	23	19	23	24	123	22	137	27	152	177	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.970			0.902			0.978			0.982	
Flt Protected		0.975			0.993			0.994			0.980	
Satd. Flow (prot)	0	1688	0	0	1598	0	0	3249	0	0	3233	0
Flt Permitted		0.975			0.993			0.994			0.980	
Satd. Flow (perm)	0	1688	0	0	1598	0	0	3249	0	0	3233	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		231.0			336.5			404.0			435.7	
Travel Time (s)		13.9			20.2			24.2			26.1	
Confl. Peds. (#/hr)	12		4	4		12	6		3	3		6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Adj. Flow (vph)	43	23	19	23	24	123	22	137	27	152	177	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	170	0	0	186	0	0	374	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			1.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 42.0% ICU Level of Service A

Analysis Period (min) 15

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Volume (vph)	18	25	43	23	36	86
Future Volume (vph)	18	25	43	23	36	86
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.922		0.953			
Flt Protected	0.979					0.985
Satd. Flow (prot)	1611	0	1700	0	0	1758
Flt Permitted	0.979					0.985
Satd. Flow (perm)	1611	0	1700	0	0	1758
Link Speed (k/h)	60		60			60
Link Distance (m)	605.4		547.2			517.4
Travel Time (s)	36.3		32.8			31.0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	18	25	43	23	36	86
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	66	0	0	122
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 23.5% ICU Level of Service A

Analysis Period (min) 15

Scheme Summary

Control Data

Control Data and Model Parameters

117155 (Notting Hill)	2025 PHF Flow Profile (veh)
2025 Total PM	7.5 min Time Slice
Rodel-Win1	Queuing Delays (sec)
Right Hand Drive	Daylight conditions
PM Peak Hour	Peak 60/15 min Results
AVERAGE DELAY to Geometry	Output flows: Vehicles
Metric Units (m)	85% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	No
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (m)

Geometry and Design Target

Leg	Leg Names	Approach Geometry (m)				Target	Circulating and Exit Geom		
		Bearing (deg)	Grade Sep G	Half Width V	Lanes n	Average Delay (sec/veh)	Inscribed Diameter D	Half Width Vx	Lanes n
1	N - Trim	0	0	6.80	2	10	55.00	7.40	2
2	W - Street No 1	90	0	4.30	1	10	55.00	4.30	1
3	S - Trim	180	0	7.40	2	10	55.00	7.40	2
4	E - Millennium	270	0	4.30	1	10	55.00	4.30	1

Capacity Modifiers and Capacity Calibration (veh/hr)

Leg	Leg Names	Entry Capacity		Entry Calibration		Approach Road			Exit Road		
		Capacity + or -	XWalk Factor	Intercept + or -	Slope Factor	V (m)	Default Capacity	Calib Capacity	V (m)	Default Capacity	Calib Capacity
1	N - Trim	0	1.000	0	1.000	6.00	3332	0	7.40	3626	0
2	W - Street No 1	0	1.000	0	1.000	6.00	2107	0	4.30	2107	0
3	S - Trim	0	1.000	0	1.000	6.00	3626	0	7.40	3626	0
4	E - Millennium	0	1.000	0	1.000	6.00	2107	0	4.30	2107	0

Traffic Flow Data (veh/hr)

2025 PM Peak Peak Hour Flows

Leg	Leg Names	Turning Flows					Flow Modifiers		
		U-Turn	Exit-3	Exit-2	Exit-1	Bypass	Trucks %	Flow Factor	Peak Hour Factor
1	N - Trim	0	47	401	50	0	5.0	1.00	1.000
2	W - Street No 1	0	36	11	22	0	5.0	1.00	1.000
3	S - Trim	0	31	319	17	0	5.0	1.00	1.000
4	E - Millennium	0	47	16	113	0	5.0	1.00	1.000

Operational Results

Geometry for Target Input

Geometry Options for 2025 PM Peak

Leg 1 - N - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	6.80	0.00

Geometry Options for 2025 PM Peak

Leg 2 - W - Street No 1					
nv	ne	nc	nx	E (m)	L' (m)
1	1	2	1	4.30	0.00

Geometry Options for 2025 PM Peak

Leg 3 - S - Trim					
nv	ne	nc	nx	E (m)	L' (m)
2	2	1	2	7.40	0.00

Geometry Options for 2025 PM Peak

Leg 4 - E - Millennium					
nv	ne	nc	nx	E (m)	L' (m)
1	1	2	1	4.30	0.00

2025 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	498		94		468	1598		0.3116	
2	W - Street No 1	None	69		495		97	817		0.0844	
3	S - Trim	None	367		94		470	1760		0.2085	
4	E - Millennium	None	176		386		75	856		0.2055	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	3.38		3.38	1.22		A		A
2	W - Street No 1	None	4.55		4.55	0.23		A		A
3	S - Trim	None	2.65		2.65	0.71		A		A
4	E - Millennium	None	4.96		4.96	0.64		A		A

2025 PM Peak - 15 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	N - Trim	None	498		94		468	1598		0.3116	
2	W - Street No 1	None	69		495		97	817		0.0844	
3	S - Trim	None	367		94		470	1760		0.2085	
4	E - Millennium	None	176		386		75	856		0.2055	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	N - Trim	None	3.39		3.39	1.22		A		A
2	W - Street No 1	None	4.56		4.56	0.23		A		A
3	S - Trim	None	2.66		2.66	0.71		A		A
4	E - Millennium	None	4.97		4.97	0.64		A		A