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39 Years

2009 & 2013 Prince of Wales Drive Transportation Impact Assessment

2009 & 2013 Prince of Wales Drive

Transportation Impact Assessment

Prepared By:

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

Dated: June 2023
Revised: November 2023

Novatech File: 122124
Ref: R-2022-201

November 30, 2023

City of Ottawa
Planning, Real Estate, and Economic Development Department
110 Laurier Ave. W., 4th Floor,
Ottawa, Ontario K1P 1J1

Attention: **Ms. Josiane Gervais**
Project Manager, Infrastructure Approvals

Dear Ms. Gervais:

Reference: **2009 & 2013 Prince of Wales Drive**
Revised Transportation Impact Assessment
Novatech File No. 122124

We are pleased to submit the following revised Transportation Impact Assessment (TIA) report in support of Draft Plan of Subdivision and Zoning By-law Amendment applications for the above properties. 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 the undersigned.

Yours truly,

NOVATECH

Jennifer Luong, P.Eng.
Senior Project Manager | Transportation

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Certification Form for Transportation Impact Assessment (TIA) Study Program Manager

TIA Plan Reports

On April 14, 2022, the Province's Bill 109 received Royal Assent providing legislative direction to implement the More Homes for Everyone Act, 2022 aiming to increase the supply of a range of housing options to make housing more affordable. Revisions have been made to the TIA guidelines to comply with Bill 109 and streamline the process for applicants and staff.

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

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

Certification

- ☑ I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines (Update Effective July 2023);
- ☑ I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
- ☑ I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and

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Transportation Engineering Services
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☑ I am either a licensed or registered[1] professional in good standing, whose field of expertise [check ✓ appropriate field(s)]:

- ☑ is either transportation engineering
- ☐ or transportation planning.

Dated at Ottawa (City) this 30th day of November, 20 23.

Name: Jennifer Luong, P.Eng.

Professional Title: Senior Project Manager

Jennifer Luong

Signature of Individual certifier that they meet the above four criteria

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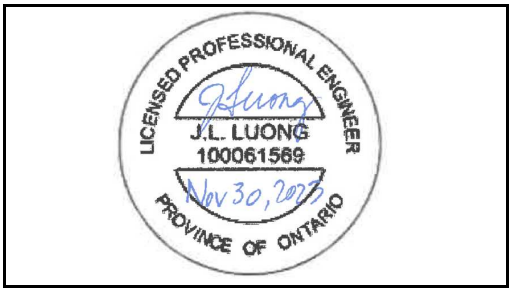
Stamp



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

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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of Draft Plan of Subdivision and Zoning By-law Amendment applications for 2009 & 2013 Prince of Wales Drive.

The proposed development consists of seven single family homes and a private road with access to Prince of Wales Drive, and will replace one existing single family home and two driveways to Prince of Wales Drive. One existing single family home is to remain.

An Environmental Study Report (ESR) was prepared in 2011 for the Prince of Wales widening. The recommended plan for Prince of Wales Drive between Hunt Club Road and Colonnade Road includes a four-lane mostly divided roadway with an urban (curbed) cross-section.

The planned widening includes a new service road along the east side of Prince of Wales Drive connecting to the Prince of Wales Drive/Colonnade Road intersection and terminating in a cul-de-sac at the subject site. This new east side local service road will replace existing driveway connections to Prince of Wales Drive and connect them into the signalized intersection at Prince of Wales Drive/Colonnade Road.

The main conclusions and recommendations from this report are summarized below:

Existing and Background Traffic

- Several movements at the Prince of Wales Drive/Colonnade Road intersection are operating with a LOS E or F in the AM and PM peak hours.
- Split signal timing/phasing for the eastbound/westbound movements would improve intersection operations at this intersection in the AM and PM peak but will not achieve the target v/c ratio of 0.90.
- The planned Prince of Wales Drive widening would achieve the City's target v/c ratio of 0.90.
- The eastbound through/right queue at Prince of Wales Drive/Colonnade Road is anticipated to be approximately 110m in the PM peak. This exceeds the storage length of 70m. A taper length of 60m is currently provided for this movement. There are currently 340 vehicles performing an eastbound right turn at this intersection in the PM peak. As part of the Prince of Wales widening, a channelized right turn lane is planned at this intersection with an additional southbound receiving lane.
- The northbound left turn queue is approximately 115m in the AM peak with existing signal timing. With adjusted timing, this queue is anticipated to increase to 120m but will reduce to 80m without pedestrian actuation. A storage length of 100m with an 80m taper is currently provided at this intersection.
- Traffic throughout the study area could be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate time to travel for drivers using the study area roadways to make use of off-peak capacity, and alternate routes for travel.

Development and Access Design

- Access to the development is provided via a private roadway which connects to Prince of Wales Drive approximately 120m south of the Prince of Wales Drive/Colonnade Road intersection, measured from stop bar to nearest edge. The private road will have a 6m width and a hammerhead is provided at the terminus to facilitate turnaround movements.

- After the planned Prince of Wales widening, direct access to/from Prince of Wales will be restricted, and the site will be accessed via the new service road. This new service road will tie into the traffic signal at the Prince of Wales Drive/Colonnade Road intersection.
- Based on field measurements performed on October 18, 2022, the required stopping sight distance is available on the north and south approaches to the Prince of Wales Drive/Private Street intersection and there is adequate intersection sight distance north and south of the intersection for vehicles to safely turn left and right.

Boundary Streets

- Prince of Wales Drive does not meet the target PLOS or BLOS.
- As part of the planned Prince of Wales Drive widening the following improvements are proposed which will improve the PLOS and BLOS:
    - a new multi-use pathway along the east side and a new sidewalk is proposed along the west side of the road.
    - cycling improvements include on-road bike lanes and a multi-use pathway on the east side of the road.

Total Intersections Operations

- The westbound left at the Prince of Wales Drive/Private Street intersection is anticipated to operate with projected delays over six minutes. Based on this, the westbound left movement out of the site should be prohibited with signage during peak hours. The westbound right turn out of the site is anticipated to operate with acceptable delays.
- Consistent with background traffic conditions, several movements at the Prince of Wales Drive/Colonnade Road intersection are anticipated to operate with a LOS E or F in the AM and PM peak hours. No further improvements from background traffic conditions are proposed.
- The maximum projected southbound through/left queue at the Prince of Wales Drive/Private Street intersection is anticipated to be approximately 25-35m in the AM and PM peak hours, with existing or adjusted signal timing. The proposed spacing between the Prince of Wales Drive/Colonnade Road and Prince of Wales Drive/Private Street intersections is approximately 120m and this queueing length is not anticipated to interrupt operations at the nearby Prince of Wales Drive/Colonnade Road intersection.
- The maximum northbound through/right queue at the Prince of Wales Drive/Colonnade Drive intersection is anticipated to be 145m in the AM and 110m in the PM with existing signal timing. This queue is anticipated to improve to 140m in the AM (125m with no pedestrian actuation) and 100m in the PM with adjusted signal timing. The projected northbound queue is anticipated to block the site access in the AM peak. Southbound left traffic at the site access may need to rely on courtesy during the peak hours.
- A maximum westbound queue of 15m is projected leaving the site, or approximately two vehicles.

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of Draft Plan of Subdivision and Zoning By-law Amendment applications for 2009 & 2013 Prince of Wales Drive. The development will replace one existing single family home and two driveways to Prince of Wales Drive.

The subject site is surrounded by the following:

- Residential properties and a church in the north,
- Prince of Wales Drive and industrial in the west,
- The Rideau River in the east, and
- The elevated CN/VIA Rail line to the south.

Figure 1: Site Location

1.2 Proposed Development

The site is designated Neighbourhood Area within the Outer Urban Transect and Natural Area in the new Council Adopted Official Plan. The site is zoned Residential First Density Subzone E (R1E). A rezoning is required to facilitate the reduced lot areas, increased setbacks from the watercourse and rail line.

The proposed development consists of seven single family homes and a private road with access to Prince of Wales Drive, and will replace one existing single family home and two driveways to Prince of Wales Drive. One existing single family home is to remain.

Full buildout is anticipated by 2025. A copy of the Draft Plan is included in **Appendix A**.

1.3 Screening Form

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

- Trip Generation Trigger – The development is not anticipated to generate over 60 peak hour person trips; further assessment **is not required** based on this trigger.

- Location Triggers – The development site proposes a new driveway to a Crosstown Bikeway and Transit Priority Corridor (Prince of Wales Drive); further assessment **is required** based on this trigger.

- Safety Triggers – The development is within the auxiliary lanes and within 150m of a signalized intersection (Prince of Wales Drive/Colonnade Road); further assessment **is required** based on this trigger.

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

All roadways discussed below fall under the jurisdiction of the City of Ottawa.

Prince of Wales Drive is a north-south arterial roadway that runs from Fourth Line Road in the south to Preston Street in the north, where it continues as the Queen Elizabeth Driveway (federally owned). Within the study area, it has a two-lane undivided rural cross-section south of Colonnade Road and a four-lane undivided cross-section north of Colonnade Road. Within the study area, Prince of Wales Drive has paved shoulders and a posted speed limit of 60km/h. Prince of Wales Drive is a designed truck route, allowing full loads. The new Council Adopted Official Plan identifies a right-of-way (ROW) protection on Prince of Wales Drive (from Colonnade Road to Rideau Heights Lane) of 32m-58m, which varies and is subject to unequal widening requirements of the Prince of Wales Widening Environmental Study Report (ESR). The Prince of Wales Drive Widening ESR document is further reviewed in Section 2.2. A widening will be required as part of this application and is shown on the Draft Plan.

Colonnade Road is an east-west roadway that runs from Prince of Wales Drive in the east to Merivale Road in the west. It splits into Colonnade Road North and Colonnade Road South to form a loop serving the Colonnade Road Business Park. Colonnade Road and Colonnade Road North are classified as Major Collector roadways, while Colonnade Road South is classified as a Collector roadway. Colonnade Road generally has a two-lane undivided urban cross-section. The posted speed on Colonnade Road North and Colonnade Road South is 60km/h. Colonnade Road is a designated truck route, allowing full loads.

2.1.2 Intersections

Prince of Wales Drive/Colonnade Road

- Signalized four-legged intersection, with the east leg being a private approach
- Northbound: one left turn lane, one shared through/right turn lane
- Eastbound: dual left turn lanes, one through/right turn lane
- Southbound: one through lane, one right turn lane. Southbound left turns are prohibited by way of signage
- Westbound: one left turn lane, one shared through/right turn lane. Lanes are separated by a concrete median.
- Standard crosswalks provided on the east, west, and south approaches.

2.1.3 Driveways

A review of adjacent driveways along Prince of Wales Drive in this area is provided as follows:

Prince of Wales Drive, east side:

- Three driveways to residential properties at 2005, 2001, and 1997 Prince of Wales Drive
- One driveway to the church and community centre at 1993/1989 Prince of Wales Drive

Prince of Wales Drive, west side:

- One gravel service access to the rail corridor

2.1.4 Pedestrian and Cycling Facilities

Within the vicinity of the subject site, Prince of Wales Drive has paved shoulders on both sides of the roadway. Colonnade Road and Colonnade Road South have sidewalk along the south side while Colonnade Road North has sidewalk along the north side of the road. A multi-use pathway (Nepean Trail) travels along the south side of Nepean Creek, north of Colonnade Road.

Prince of Wales Drive is designated as a Spine Cycling Route and a Major Pathway, while Colonnade Road and Colonnade Road North are designated as a Local Route and a Major Pathway in the City's Ultimate Cycling Network. Prince of Wales Drive also forms part of Cross-Town Bikeway #6 within the vicinity of the subject site.

2.1.5 Transit

The nearest transit stops to the subject site are described in **Table 1**. The locations of the nearby transit stops are shown in **Figure 2** and OC Transpo Route information is included in **Appendix C**.

Table 1: OC Transpo Stops

Stop Number	Location	Route(s) Serviced
#1611	East side of Prince of Wales Drive, north of Colonnade Road	670
#1612	West side of Prince of Wales Drive, south of Colonnade Road	670
#0982	West side of Colonnade Road South, south of Colonnade Road	80, 89, 96b
#6049	North side of Colonnade Road South, west of Colonnade Road	80, 89, 96b
#9039	South side of Colonnade Road South, west of Colonnade Road	89
#9041	North side of Colonnade Road North, west of Colonnade Road	89
#6048	South side of Colonnade Road North, west of Colonnade Road	80, 89

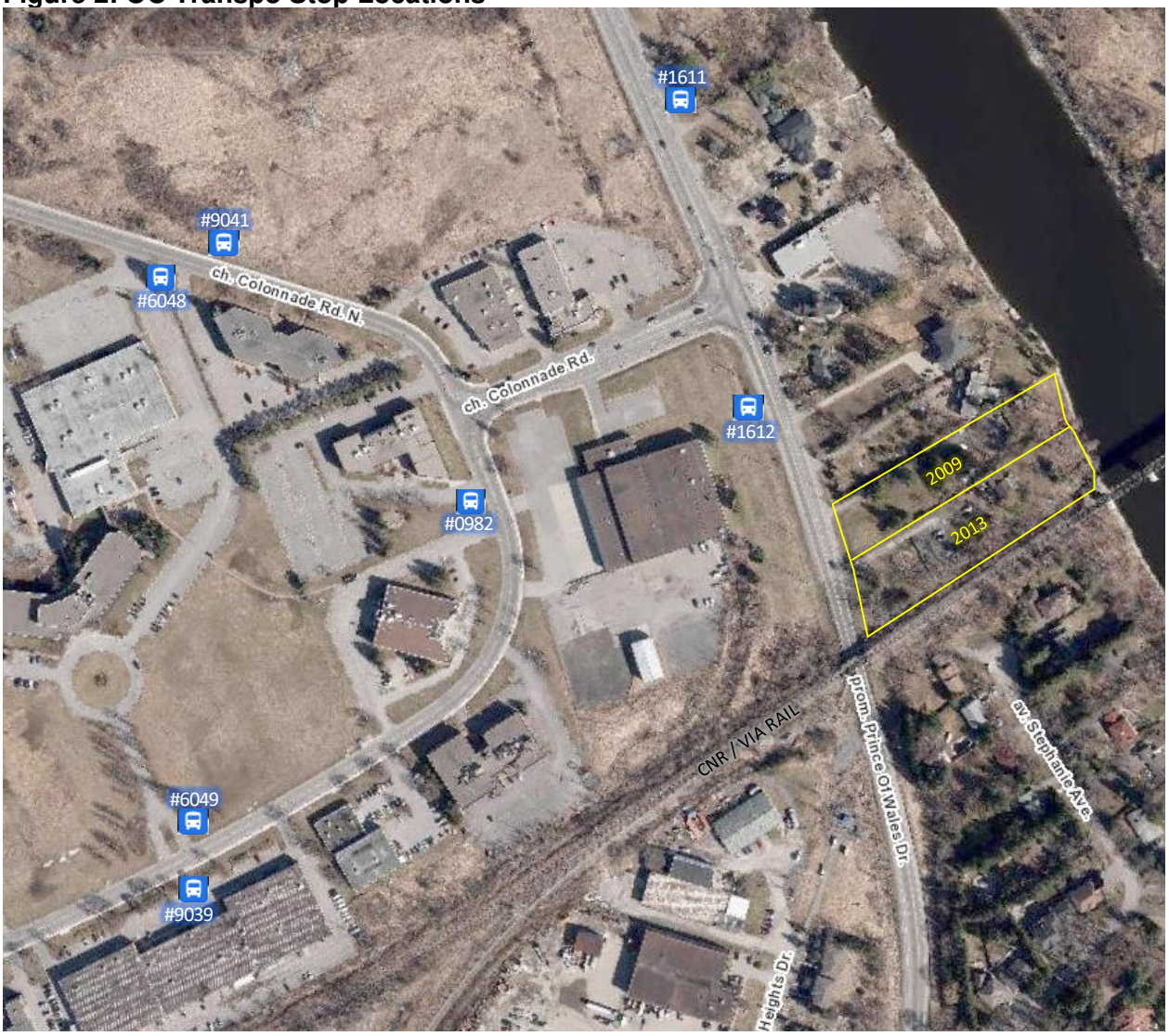
OC Transpo Route #80 runs from Barrhaven Centre Transit Station to Tunney's Pasture Transit Station. It is a frequent route that operates seven days a week, with all day service. Within the study area, Route 80 serves the nearby stops with two trips in the early morning on weekdays.

OC Transpo Route #89 runs from Tunney's Pasture Transit Station to Colonnade. It is a local route that operates seven days a week, with all day service.

OC Transpo Route #96b runs from Hurdman and Greenboro Transit Stations to Merivale, with one trip stopping at Colonnade in the AM.

OC Transpo Route #670 is a school route that runs from St. Pius X High School to Nepean South.

Figure 2: OC Transpo Stop Locations



2.1.6 Existing Area Traffic Management Measures

Southbound left turns are prohibited at the Prince of Wales Drive/Colonnade Road intersection. Flex posts are provided on the south approach to delineate the paved shoulder at the intersection.

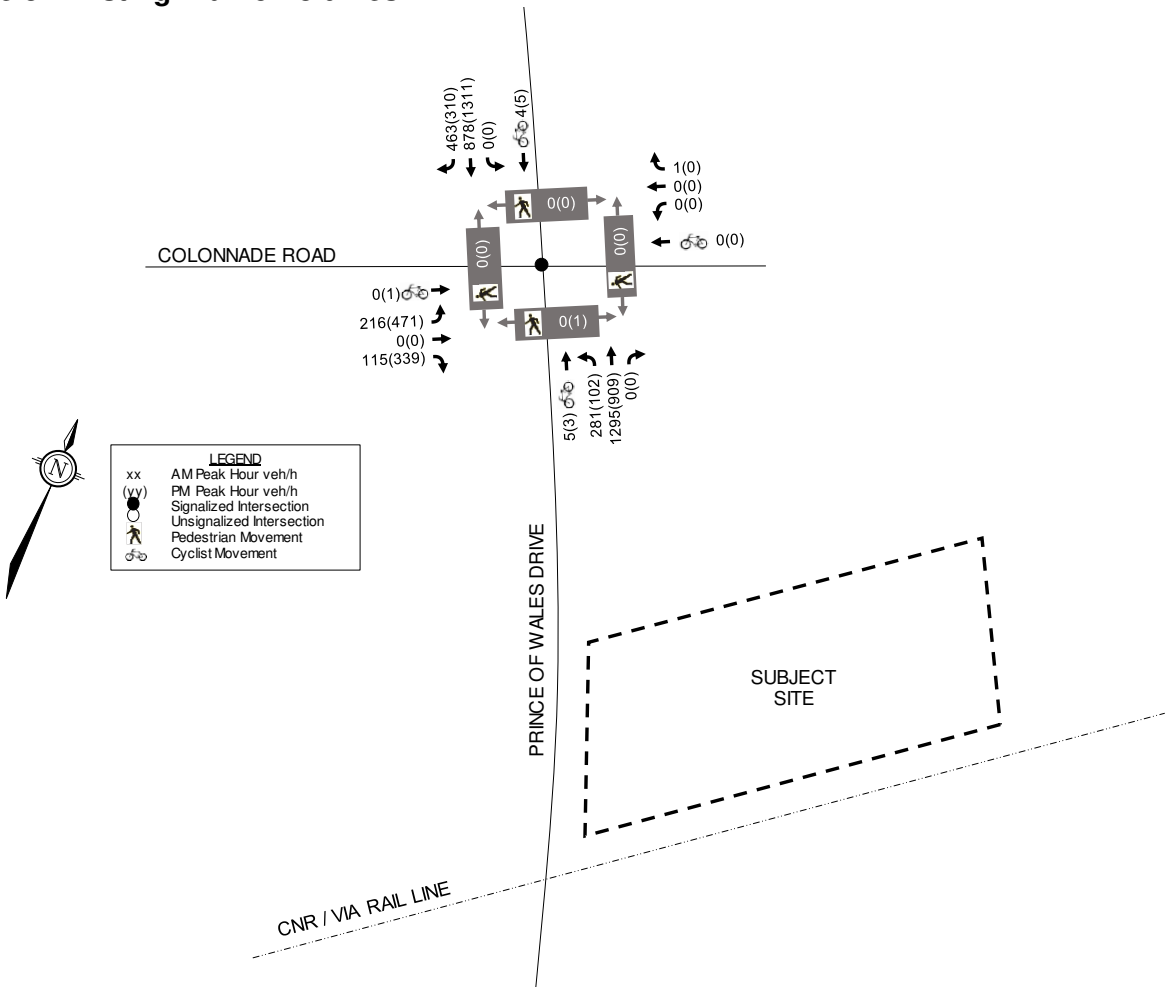
Currently, there are no other existing Area Traffic Management (ATM) measures within the study area.

2.1.7 Existing Traffic Volumes

A weekday traffic count was obtained from the City of Ottawa for the Prince of Wales Drive/Colonnade Road intersection to determine the nearby existing pedestrian, cyclist and vehicular traffic volumes. The available traffic count was performed on April 10, 2018 (Tuesday).

Peak hour summary sheets of the traffic counts are included in **Appendix D**. Existing peak hour traffic volumes are shown in **Figure 3**.

Figure 3: Existing Traffic Volumes



2.1.8 Collision Records

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

The collision data have been evaluated to identify collision patterns. **Table 2** summarizes the number of collisions at each location from January 1, 2016 to December 31, 2020. During the five-year period there were no reported fatal collisions in the analyzed area.

Table 2: Reported Collisions

Intersection/ Roadway Segment	Impact Type					Total
	Rear End	Turning Mvmt	Sideswipe	Angle	SMV[1]/ Other	
Colonnade Road/ Prince of Wales Drive	48	8	7	-	3	**66**
Prince of Wales Drive between Colonnade Road and Stephanie Avenue	7	-	-	1	2	**10**
Colonnade Road/Colonnade Road (East)[2]	1	-	2	-	1	**4**

1. SMV: Single Motor Vehicle
2. Easterly intersection of Colonnade Road North/Colonnade Road South

Colonnade Road/Prince of Wales Drive

A total of 66 collisions were reported at this intersection over the course of the last five years. Of these, there were 48 rear end collisions, eight turning movement collisions, seven sideswipe collisions, and three single vehicle or other collisions. A total of six collisions occurred under snow or freezing rain conditions, three occurred under rainy conditions, and the remainder occurred under clear conditions. A total of eleven collisions caused injuries but no fatalities and the remainder were classified as causing property damage only. There were no reported collisions involving pedestrians or cyclists.

Of the 48 rear end collisions that were reported at this intersection over the course of the last five years, 29 involved southbound vehicles, 16 involved northbound vehicles, two involved eastbound vehicles, and one involved westbound vehicles. A total of two rear end collisions occurred under snowy conditions, three occurred under rainy conditions, and the remainder occurred under clear conditions. A total of seven rear end collisions caused injuries but no fatalities and the remainder were classified as causing property damage only. Of the 29 rear end collisions involving southbound vehicles, 16 of them occurred between 4-6PM, indicating that heavy southbound volumes in the PM peak were a contributing factor.

Of the eight turning movement collisions that were reported at this intersection over the course of the last five years, seven were northbound left turning vehicles colliding with southbound through vehicles and one was an eastbound right turning vehicle colliding with a westbound left turning vehicle. Three of the turning movement collisions caused injuries but none caused fatalities.

Of the seven sideswipe collisions that were reported at this intersection over the course of the last five years, three involved northbound vehicles, three involved southbound vehicles, and one involved eastbound vehicles. All sideswipe collisions caused property damage only and no injuries or fatalities.

Prince of Wales Drive between Colonnade Road and Stephanie Avenue

A total of ten collisions were reported at this location over the course of the last five years. Of these, there were seven rear end collisions, one angle collision, one approaching collision, and one 'other' collision. All collisions occurred under clear environmental conditions. Two of the collisions caused injuries but not fatalities and the remainder were classified as causing property damage only. There were no collisions involving pedestrians or cyclists.

Of the seven rear end collisions, four involved southbound vehicles and three involved northbound vehicles. One rear end collision caused injuries but no fatalities and all others were classified as causing property damage only.

Colonnade Road/Colonnade Road (East)
A total of four collisions were reported at this intersection over the course of the last five years. Of these, there were two sideswipes, one rear end, and one 'other' collision. All collisions were classified as causing property damage only.

2.2 Planned Conditions

2.2.1 Planned Infrastructure Projects

The City's Draft 2024 Transportation Master Plan identifies a new cycling project along Colonnade Road and Colonnade Road North, from Prince of Wales to the existing multi-use pathway (250m east of Merivale Road).

The City's Transportation Master Plan (TMP) identifies the widening of Prince of Wales Drive from two lane to four lanes between Strandherd Drive and Fisher Avenue as part of the 2031 Network Concept, in order to address capacity deficiencies at the CNR West screenline. The 2031 Affordable Network includes the widening of Prince of Wales Drive from two to four lanes between Hunt Club Road and Merivale Road as part of a Phase 3 project (2026-2031). The City is currently updating the TMP and the timing of the Prince of Wales Drive widening is unknown.

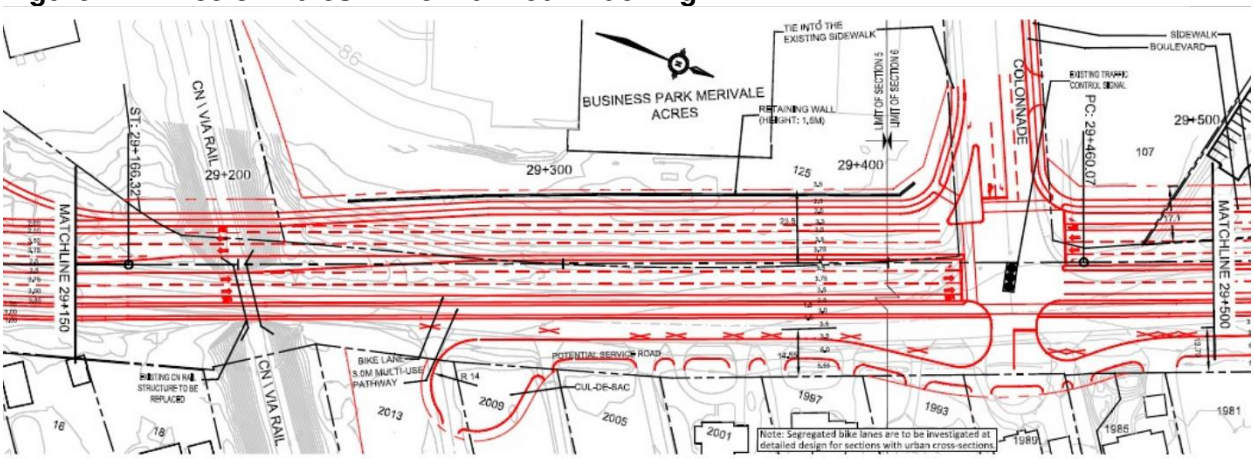
An Environmental Study Report (ESR) was prepared in 2011 for the Prince of Wales widening. The recommended plan for Prince of Wales Drive between Hunt Club Road and Colonnade Road includes a four-lane mostly divided roadway with an urban (curbed) cross-section. On-road cyclists will be accommodated with cycling lanes. A multi-use pathway is proposed along the east side of the roadway and a new sidewalk along the west side except where it diverts along Rideau Heights Drive to minimize property encroachments. The horizontal alignment of the roadway mostly follows an equal widening although a shift to the west is introduced at the north end to improve construction staging flexibility at the rail underpass and to enable to inclusion of an east side local service road north of the rail line. The existing rail line structure will be replaced by a new two-span structure.

The planned widening includes a new service road along the east side of Prince of Wales Drive connecting to the Prince of Wales Drive/Colonnade Road intersection and terminating in a cul-de-sac at the subject site. This new east side local service road will replace existing driveway connections to Prince of Wales Drive and connect them into the signalized intersection at Prince of Wales Drive/Colonnade Road. The recommended configuration at Prince of Wales/Colonnade Drive includes the following:

- Northbound: one left turn lane, one through lane, one shared through/right lane, one bike lane
- Southbound: one left turn lane, two through lanes, one right turn lane, one bike lane
- Westbound (new service road): one shared approach lane
- Eastbound: one left turn lane, one shared left/through lane, one channelized right turn lane
- Crosswalks on all approaches.

The recommended plan for the section of Prince of Wales Drive near the subject site is shown in **Figure 4**.

Figure 4: Prince of Wales Drive Planned Widening



2.2.2 Other Study Area Developments

A review of the City's Development Application search tool identifies the following developments in proximity of the subject site that are under construction, approved, or in the approval process.

125 Colonnade Road
A TIA (originally dated June 2022 and revised in October 2022, Crozier Consulting Engineers) was prepared in support of a Site Plan application for a new industrial development at 125 Colonnade Road. The proposed development is an industrial expansion which will retain the existing one-storey building on-site and add two additional buildings, one new three-storey (8,667m^2 GFA) self-storage building, and one new one-storey (3,747m^2 GFA) warehouse building. The existing site accesses are to be retained. Full buildout is anticipated for 2025.

2.3 Study Area and Time Periods

The study area for this report includes the boundary roadway Prince of Wales Drive and the intersections of Prince of Wales Drive/Colonnade Road and Prince of Wales Drive/Site Access.

The proposed development is expected to be completed with full occupancy by 2025. Analysis will be completed for the 2025 build-out year and the 2030 horizon year.

The selected time periods for this study are the weekday AM peak hour and PM peak hour, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic.

2.4 Exemptions Review

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

Table 3: TIA Exemptions

Module	Element	Exemption Criteria	Exemption Status
Design Review Component			
4.1 Development Design	*4.1.2* Circulation and Access	• Required for site plans	Exempt
	4.1.3 New Street Networks	• Required for plans of subdivision	Not Exempt
4.2 Parking	*4.2.1* Parking Supply	• Required for site plans	Exempt

As the trip generation trigger is not met, the Network Impact modules (Modules 4.5 through 4.9) are exempt from further analysis. However, City staff have requested a review of the intersection operations at Prince of Wales Drive/Colonnade Road and Prince of Wales Drive/Site Access. Therefore, the following will be included in the TIA report:

- Module 4.1 – Development Design
- Module 4.3 – Boundary Street Design
- Module 4.4 – Access Intersections Design
- Module 4.9 – Intersection Design

3.0 FORECASTING

3.1 Development-Generated Travel Demand

3.1.1 Trip Generation

As stated in Section 1.3, the proposed development is not anticipated to meet the trip generation trigger of 60 net new person trips during the peak hour. The trip generation estimates below serve to confirm that this trigger is not met.

The proposed development will consist of seven single family homes and a private road with access to Prince of Wales Drive and will replace the existing single family homes and two driveways to Prince of Wales Drive.

Trips generated by the proposed development during the weekday AM and PM peak period have been estimated based on relevant rates presented in the TRANS *Trip Generation Manual Summary Report*, prepared in October 2020 by WSP. The manual includes data to estimate the trip generation and mode shares for residential uses, divided into single-family detached housing, low-rise multifamily housing (one to two storeys), and high-rise multifamily housing (three or more storeys).

The peak hour person trips generated by the proposed development are summarized in the following table. The peak hour person trips generated by the proposed residences are based on the Single Detached Housing rates for the Merivale district.

Table 4: Peak Hour Person Trip Generation

Land Use	Units	AM Peak Hour (pph[1])			PM Peak Hour (pph)		
		IN	OUT	TOT	IN	OUT	TOT
Single Family Detached Housing	7	2	5	7	5	3	8

1. pph: Person Trips per Peak Hour

From the previous table, the proposed development is anticipated to generate 7 person trips during the AM peak hour and 8 person trips during the PM peak hour.

The TRANS *Trip Generation Manual Summary Report*, prepared in October 2020 by WSP, includes data to estimate the mode shares for single-detached housing (in Table 6 of the manual) for the AM and PM peak periods, based on district. The TRANS *Trip Generation Manual* identifies the subject site as being located within the Merivale district, and outlines the following mode shares for residential developments in the Merivale district:

- Auto Driver: 52% AM, 54% PM
- Auto Passenger: 16% AM, 18% PM
- Transit: 21% AM, 17% PM
- Cyclist: 3% AM, 3% PM
- Pedestrian: 8% AM, 9% PM

A breakdown of the peak hour person trips by modal share is shown in **Table 6**.

Table 5: Peak Hour Person Trips by Modal Share

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOT	IN	OUT	TOT
Total Person Trips		**2**	**5**	**7**	**5**	**3**	**8**
Auto Driver	53%	1	3	4	3	1	4
Auto Passenger	17%	0	1	1	1	0	1
Transit	19%	1	0	1	1	1	2
Cyclist	3%	0	0	0	0	0	0
Pedestrian	8%	0	1	1	0	1	1

From the previous table, the proposed development is estimated to generate 4 vehicle trips during the AM peak hour and 4 vehicle trips during the PM peak hour.

3.1.2 Trip Distribution

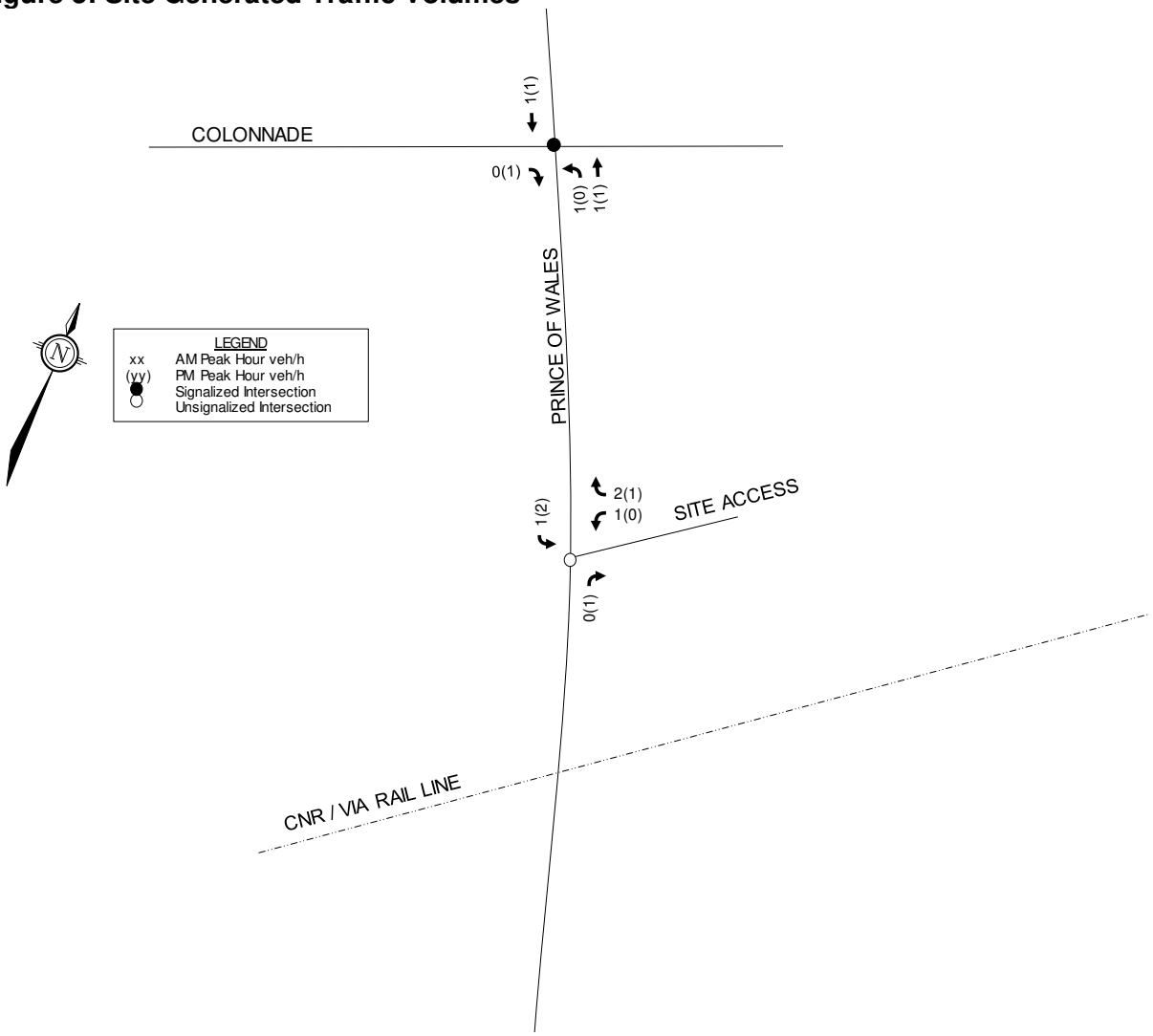
The distribution of traffic generated by the proposed development to the road network has been estimated based on logical trip routing, existing outbound traffic patterns during the AM peak hour, and existing inbound traffic patterns during the PM peak hour.

The trip distribution can be described as follows:

- 50% to/from the north via Prince of Wales Drive
- 30% to/from the south via Prince of Wales Drive
- 20% to/from the west via Colonnade Road

Site generated traffic is shown in **Figure 5**.

Figure 5: Site Generated Traffic Volumes



3.2 Background Traffic

3.2.1 Other Area Developments

A description of other study area development is included in Section 2.2.1.

Buildout of the 125 Colonnade Road development was anticipated for 2025. Traffic generated by this development has been added to the background traffic using the distribution outlined in the 2021 TIA. Relevant excerpts from the TIA for this development are included in **Appendix F**.

3.2.2 General Background Growth Rate

A review of the City's TRANS Long-Range Model (comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes), *Intersection Traffic Growth Rates* (2000 to 2016), and other recent studies was completed to establish general background growth. Excerpts are included in **Appendix F**.

A comparison of the 2011 and 2031 AM peak hour volumes included in the Long-Range Model along the study area roadways indicate that:

- Total traffic along Prince of Wales Drive (north of Colonnade Road) is anticipated to have no growth,
- Total traffic along Prince of Wales Drive (south of Colonnade Road) is anticipated to grow at 0.15% annually, and
- Total traffic along Colonnade Road (west of Prince of Wales Drive) is anticipated to grow at 0.39% annually.

The City's Intersection Traffic Growth Rates figures, which determine growth rates based on total vehicular volumes entering the intersection, identify that traffic at the nearby Prince of Wales Drive/Colonnade Road intersection had an annual growth between -0.2% to 0.2% in the AM peak hour and decreased by 0.2% to 2% annually in the PM peak hour between 2000 and 2016.

The 125 Colonnade Road TIA applied a 1% annual growth rate to northbound through traffic in the AM peak and to southbound through traffic in the PM peak along Prince of Wales Drive. No growth rate was applied to Colonnade Road.

Based on the foregoing, no growth rate was applied to the study area roadways. Other area developments have been accounted for separately.

Background traffic volumes are shown in **Figure 6**. Total traffic volumes are shown in **Figure 7**.

Figure 6: Background Traffic Volumes

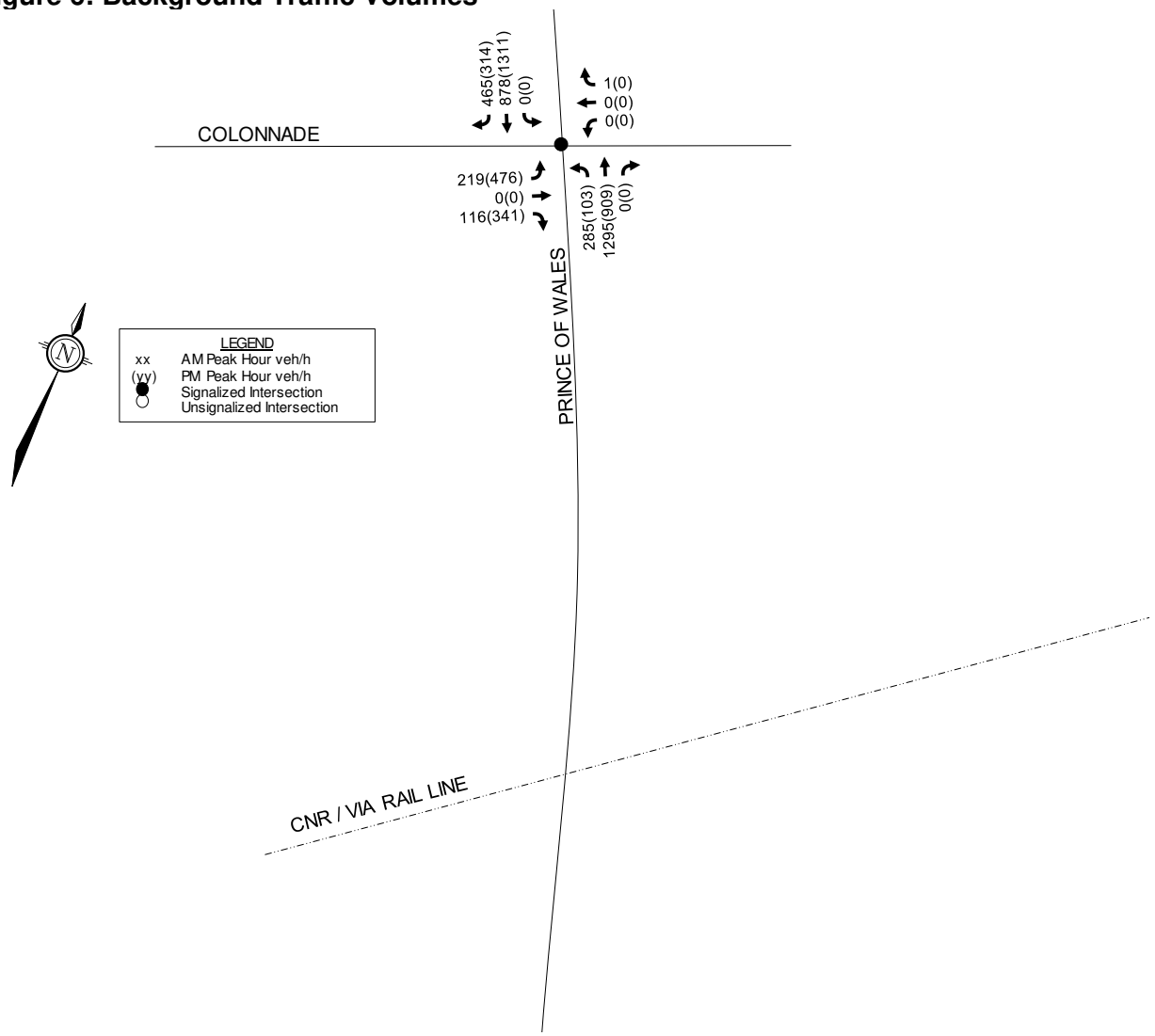
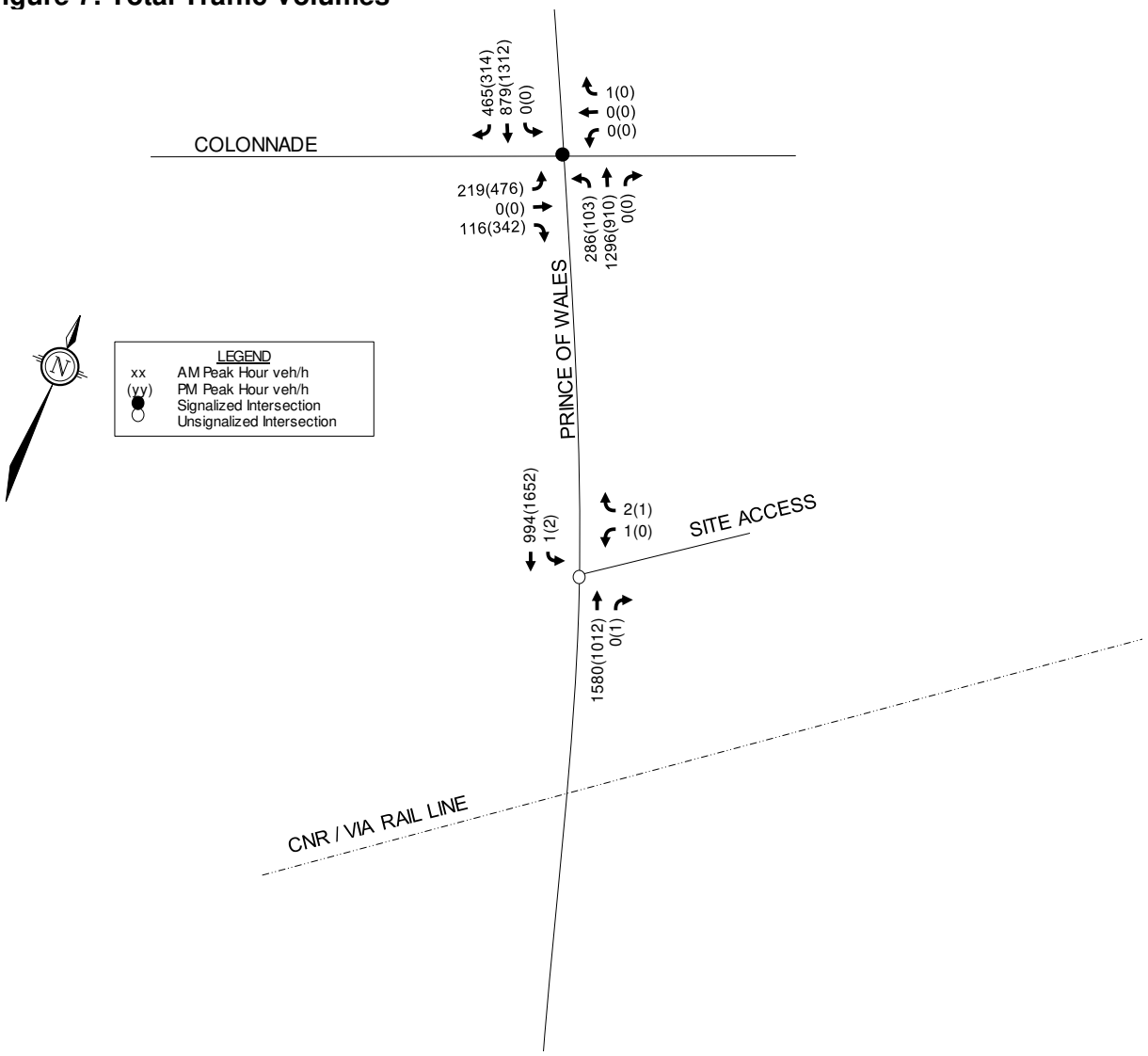


Figure 7: Total Traffic Volumes



3.3 Demand Rationalization

A review of the existing and background intersection operations (using Synchro software) has been conducted to determine if observed traffic volumes or projected background traffic volumes will exceed capacity within the study area. The intersection parameters used in the analysis are consistent with the TIA Guidelines (Saturation Flow Rate: 1,800 vphpl, Peak Hour Factor: 0.90 for existing conditions and 1.0 for future conditions). The signal timing plan for the Prince of Wales Drive/Colonnade Road intersection has been obtained from the City and is included in **Appendix G**.

3.3.1 Existing Intersection Operations

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

Table 6: Existing Intersection Operations

Intersection	AM Peak			PM Peak		
	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Prince of Wales Drive/ Colonnade Road	**1.39**	**F**	**EBL**	**4.89**	**F**	**EBL**
	0.29	A	EBT/R	**1.02**	**F**	**EBT/R**
	0.00	A	WB	-	-	WB
	1.08	**F**	**NBL**	**0.97**	**E**	**NBL**
	1.24	**F**	**NBT/R**	0.86	D	NBT/R
	1.22	**F**	**SBT**	**1.44**	**F**	**SBT**
	0.56	A	SBR	0.36	A	SBR

Under existing traffic conditions, several movements at the Prince of Wales Drive/Colonnade Road intersection are operating with a LOS E or F in the AM and PM peak hours.

Adjustments to the signal timing plan are anticipated to improve intersection operations at this intersection in the AM and PM peak but will not achieve the target v/c ratio of 0.90. Split signal timing/phasing for the eastbound/westbound movements would improve the maximum v/c ratio to 1.34 in the AM peak and 1.29 in the PM peak, as shown in the below table.

The traffic count obtained for the Prince of Wales Drive/Colonnade Road intersection indicated no pedestrian activity in the AM peak hour and only one pedestrian crossing Prince of Wales Drive in the PM peak. Over the course of the 8-hour traffic count, a total of 4 pedestrian crossings (one on the south approach and three on the west approach) were observed at this intersection. The intersection was further modeled with split eastbound/westbound phasing and forcing off the eastbound movement 12 seconds early (i.e., no pedestrian activity) in the AM peak. This would improve the maximum v/c ratio to 1.15 in the AM peak, as shown in the below table.

The planned Prince of Wales Drive widening would achieve the City's target v/c ratio of 0.90, as shown in the below table.

Table 7: Existing Intersection Operations (Mitigated)

Intersection	AM Peak			PM Peak		
	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Prince of Wales Drive/ Colonnade Road[1]	0.54	A	EBL	**0.99**	**E**	**EBL**
	0.27	A	EBT/R	**0.95**	**E**	**EBT/R**
	0.00	A	WB	-	-	WB
	1.34	**F**	**NBL**	**1.05**	**F**	**NBL**
	1.18	**F**	**NBT/R**	0.78	C	NBT/R
	1.07	**F**	**SBT**	**1.29**	**F**	**SBT**
	0.45	A	SBR	0.28	A	SBR
Prince of Wales Drive/ Colonnade Road[2]	0.82	D	EBL	-		
	0.29	A	EBT/R			
	0.00	A	WB			
	1.15	**F**	**NBL**			
	1.09	**F**	**NBT/R**			
	0.99	**E**	**SBT**			
	0.46	A	SBR			

Intersection	AM Peak			PM Peak		
	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Prince of Wales Drive/ Colonnade Road[3]	0.47	A	EBL/T	0.76	C	EBL/T
	0.37	A	EBR	0.66	B	EBR
	0.00	A	WB	-	-	WB
	0.85	D	NBL	0.74	C	NBL
	0.68	B	NBT	0.47	A	NBT
	0.78	C	SBL/T	0.83	D	SBL/T
	0.49	A	SBR	0.29	A	SBR

1. Split Phasing for EB/WB movements
2. Split Phasing and force off EB movement 12 seconds early if no pedestrian actuation
3. Widened Prince of Wales Drive

Several movements are operating at or near capacity and the 95th percentile queues reported by Synchro include the # modifier, which signifies that the 95th percentile volume exceeds capacity, and the queue may be longer. In those cases, the queue shown is the maximum after two cycles. Movements which include the # symbol include:

- In the AM peak: EBL, NBL, NBT, SBT
- In the PM peak: EBL, EBT/R, NBL, SBT

A further review of existing intersection operations was conducted using the SimTraffic 11 software. The SimTraffic software is designed to model networks of signalized and unsignalized intersections, and is useful for analyzing complex situations including:

- Closely spaced intersections with blocking problems,
- Closely spaced intersections with lane change problems,
- The effect on signals on nearby unsignalized intersections and driveways, and
- The operation of intersections under heavy congestion.

The SimTraffic software was used to run ten models with a 30-minute seed period and 60-minute run time representing the AM and PM peak hours. The ten models provide a range of expected queues at the intersections over the peak hours. The 95th percentile queue length (averaged over all ten models) is provided in the following table for critical movements. Detailed results from the SimTraffic software are included in **Appendix J**.

Table 8: SimTraffic Queues – Existing Traffic

Intersection	Mvmt	95th Percentile Queue (m)					Auxiliary Lane	
		Existing Signal Timing		Split EB/WB Phasing			Storage (m)	Taper (m)
		AM Peak	PM Peak	AM Peak	AM Peak[1]	PM Peak		
Prince of Wales Drive/ Colonnade Road	EBL	101	105	50	57	109	140	-
	EBT/R	46	**105**	40	39	**115**	70	60
	WB	3	-	3	4	-	-	-
	NBL	**115**	54	**123**	82	47	100	80
	NBT/R	144	110	137	125	104	-	-
	SBT	530	453	549	266	454	-	-
	SBR	603	451	574	151	450	-	-

1. No pedestrian actuation – force off EB movement 12 seconds early

The eastbound through/right queue is approximately 105m in the PM peak with existing signal timing and 115m with adjusted EB/WB split phasing. This exceeds the storage length of 70m. A taper length of 60m is currently provided for this movement. There are currently 340 vehicles performing an eastbound right turn at this intersection in the PM peak. As part of the Prince of Wales widening, a channelized right turn lane is planned at this intersection with an additional southbound receiving lane.

The northbound left turn queue is approximately 115m in the AM peak with existing signal timing. With adjusted EB/WB split timing, this queue is anticipated to increase to 123m but will reduce to 82m without pedestrian actuation. A storage length of 100m with an 80m taper is currently provided at this intersection. Per the TIA guidelines, a signalized intersection should accommodate 1.5 times the average number of arrivals per cycle during the heaviest hour, assuming an average vehicle length of 7m, or the projected maximum queue. Using the formula S=1.5NL/(3600/CL), the required northbound left storage length is 100m in the AM peak.

The approximate required reduction in volumes to meet the target Auto LOS under existing lane configurations (with the above noted signal timing improvements) for each over capacity movement is included below.

AM Peak Hour

- Northbound left turn (v/c 1.15): reduction of 10 vehicles required.
- Northbound through/right (v/c 1.09): reduction of 220 vehicles required.
- Southbound through (v/c 0.99): reduction of 80 vehicles required.

PM Peak Hour

- Eastbound left turn (v/c 0.99): reduction of 45 vehicles required.
- Southbound through (v/c 1.29): reduction of 390 vehicles required.
- Eastbound through/right (v/c 0.95) and northbound left turn (v/c 1.05): above noted reduction in southbound volumes will bring these movements to within target v/c ratio.

3.3.2 Background Intersection Operations

Intersection capacity analysis has been conducted for the background traffic conditions. The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix I**.

Note that some critical movements appear to operate slightly better under projected conditions than under existing conditions; this is a result of the peak hour factor (PHF) of 1.0 for future conditions as per the TIA guidelines.

Table 9: Background Intersection Operations

Intersection	AM Peak			PM Peak		
	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Prince of Wales Drive/ Colonnade Road	**1.27**	**F**	**EBL**	**4.37**	**F**	**EBL**
	0.26	A	EBT/R	**0.94**	**E**	**EBT/R**
	0.00	A	WB	-	-	WB
	0.99	**E**	**NBL**	0.87	D	NBL
	1.11	**F**	**NBT/R**	0.76	C	NBT/R
	1.10	**F**	**SBT**	**1.27**	**F**	**SBT**
	0.51	A	SBR	0.33	A	SBR

Under background traffic conditions, several movements at the Prince of Wales Drive/Colonnade Road intersection are anticipated to operate with a LOS E or F in the AM and PM peak hours.

Consistent with the existing traffic conditions, adjustments to the signal timing plan are anticipated to improve intersection operations at this intersection in the AM and PM peak but will not achieve the target v/c ratio of 0.90.

Split signal timing/phasing for the eastbound/westbound movements would improve the maximum v/c ratio to 1.06 in the AM peak and 1.16 in the PM peak.

Split signal timing/phasing for the eastbound/westbound movements and forcing off the eastbound movement 12 seconds early would improve the maximum v/c ratio to 0.98 in the AM peak.

The planned Prince of Wales Drive widening would achieve the City's target v/c ratio of 0.90.

Background intersection operations with the above noted mitigations are shown in the below table.

Table 10: Background Intersection Operations (Mitigated)

Intersection	AM Peak			PM Peak		
	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Prince of Wales Drive/ Colonnade Road[1]	0.52	A	EBL	0.90	D	EBL
	0.24	A	EBT/R	0.84	D	EBT/R
	0.00	A	WB	-	-	WB
	1.06	**F**	**NBL**	**0.95**	**E**	**NBL**
	1.05	**F**	**NBT/R**	0.71	C	NBT/R
	0.96	**E**	**SBT**	**1.16**	**F**	**SBT**
	0.41	A	SBR	0.26	A	SBR
Prince of Wales Drive/ Colonnade Road[2]	0.75	C	EBL	-		
	0.25	A	EBT/R			
	0.00	A	WB			
	0.83	D	NBL			
	0.98	**E**	**NBT/R**			
	0.89	D	SBT			
	0.41	A	SBR			

Intersection	AM Peak			PM Peak		
	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Prince of Wales Drive/ Colonnade Road[3]	0.47	A	EBL/T	0.71	C	EBL/T
	0.35	A	EBR	0.59	A	EBR
	0.00	A	WB	0.00	A	WB
	0.66	B	NBL	0.65	B	NBL
	0.59	A	NBT	0.45	A	NBT
	0.67	B	SBT	0.83	D	SBT
	0.45	A	SBR	0.28	A	SBR

1. Split Phasing for EB/WB movements
2. Split Phasing and force off EB movement 12 seconds early if no pedestrian actuation
3. Widened Prince of Wales Drive

A further review of background intersection operations was conducted using the SimTraffic 11 software. The 95th percentile queue length (averaged over ten models) is provided in the following table for critical movements. Detailed results from the SimTraffic software are included in **Appendix J**.

Table 11: SimTraffic Queues – Background Traffic

Intersection	Mvmt	95th Percentile Queue (m)					Auxiliary Lane	
		Existing Signal Timing		Split EB/WB Phasing			Storage (m)	Taper (m)
		AM Peak	PM Peak	AM Peak	AM Peak[1]	PM Peak		
Prince of Wales Drive/ Colonnade Road	EBL	98	105	50	56	115	140	-
	EBT/R	44	**109**	39	40	**114**	70	60
	WB	3	-	3	3	-	-	-
	NBL	**111**	53	**118**	78	46	100	80
	NBT/R	142	117	138	125	106	-	-
	SBT	543	453	555	286	453	-	-
	SBR	603	451	615	168	451	-	-

1. No pedestrian actuation – force off EB movement 12 seconds early

The eastbound through/right queue is anticipated to be approximately 110m in the PM peak with existing signal timing and 115m with adjusted EB/WB split phasing. This exceeds the storage length of 70m. A taper length of 60m is currently provided for this movement. There are projected to be 340 vehicles performing an eastbound right turn at this intersection in the PM peak. As part of the Prince of Wales widening, a channelized right turn lane is planned at this intersection with an additional southbound receiving lane.

The northbound left turn queue is anticipated to be approximately 110m in the AM peak with existing signal timing. With adjusted EB/WB split timing, this queue is anticipated to increase to 120m but will reduce to 80m without pedestrian actuation. A storage length of 100m with an 80m taper is currently provided at this intersection.

The approximate required reduction in volumes to meet the target Auto LOS under existing lane configurations (with the above noted signal timing improvements) for each over capacity movement is included below.

AM Peak Hour
- Northbound through/right (v/c 0.98): reduction of 100 vehicles required.

PM Peak Hour
- Southbound through (v/c 1.16): reduction of 290 vehicles required.
- Northbound left turn (v/c 0.95): above noted reduction in southbound volumes will bring this movements to within target v/c ratio.

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

Increased Use of Non-Auto Modes
As congestion increases within the study area, some motorists may shift to other modes of travel such a walking, cycling, or transit use.

Alternate Travel Times
As congestion increases within the study area, some motorists may alter their travel to occur outside of the peak hours. This shift in travel times may result in a reduction of peak hour traffic volumes. It is noted that the traffic count obtained for this study was performed prior to the COVID-19 pandemic and some peak hour commuters may have since shifted to telework and/or hybrid work plans.

Alternate Travel Times
As congestion increases within the study area, some motorists may choose alternate routes of travel outside the study area. Alternate north-south routes outside the study area include Merivale Road and Riverside Drive. Alternate east-west routes outside the study area include West Hunt Club Road, Hog's Back Road, and Heron Road.

4.0 ANALYSIS

4.1 Development and Access Design

This section provides a review of the development design in terms of the internal roadway and cross-section. A review of the City's Transportation Demand Management (TDM) – Supportive Development Design and Infrastructure Checklist is exempt from Draft Plan of Subdivision applications.

4.1.1 New Street Networks

Access to the development is provided via a private roadway which connects to Prince of Wales Drive approximately 120m south of the Prince of Wales Drive/Colonnade Road intersection, measured from stop bar to nearest edge. The private road will have a 6m width and a hammerhead is provided at the terminus to facilitate turnaround movements.

After the planned Prince of Wales widening, direct access to/from Prince of Wales will be restricted, and the site will be accessed via the new service road. This new service road will tie into the traffic signal at the Prince of Wales Drive/Colonnade Road intersection.

Turning movement figures have been prepared for a fire truck design vehicle and a Medium Single Unit (MSU) design vehicle. Both design vehicles are able to drive forward to the final house along the proposed private roadway, reverse into a proposed hammerhead, and drive forward out. The turning movements are shown in **Figure 8** and **Figure 9**.

4.1.2 Sightlines

A review of sight distances was completed for the intersection of Prince of Wales Drive/Private Street, using the relevant standards presented in the Transportation of Canada (TAC) *Geometric Design Guide for Canadian Roads.*

Prince of Wales Drive has a posted speed limit of 60km/h along the site's frontage. For a design speed of 70km/h (10km/h over the posted speed), the required sight distances are as follows:

- Stopping Sight Distance (SSD): 105m
- Intersection Sight Distance (ISD):
    - Left turn from stop (looking right): 150m
    - Right turn from stop (looking left): 130m

Prince of Wales has horizontal curvature south of the subject site and the CNR/rail overpass abutments are located approximately 90m south of the proposed private road connection.

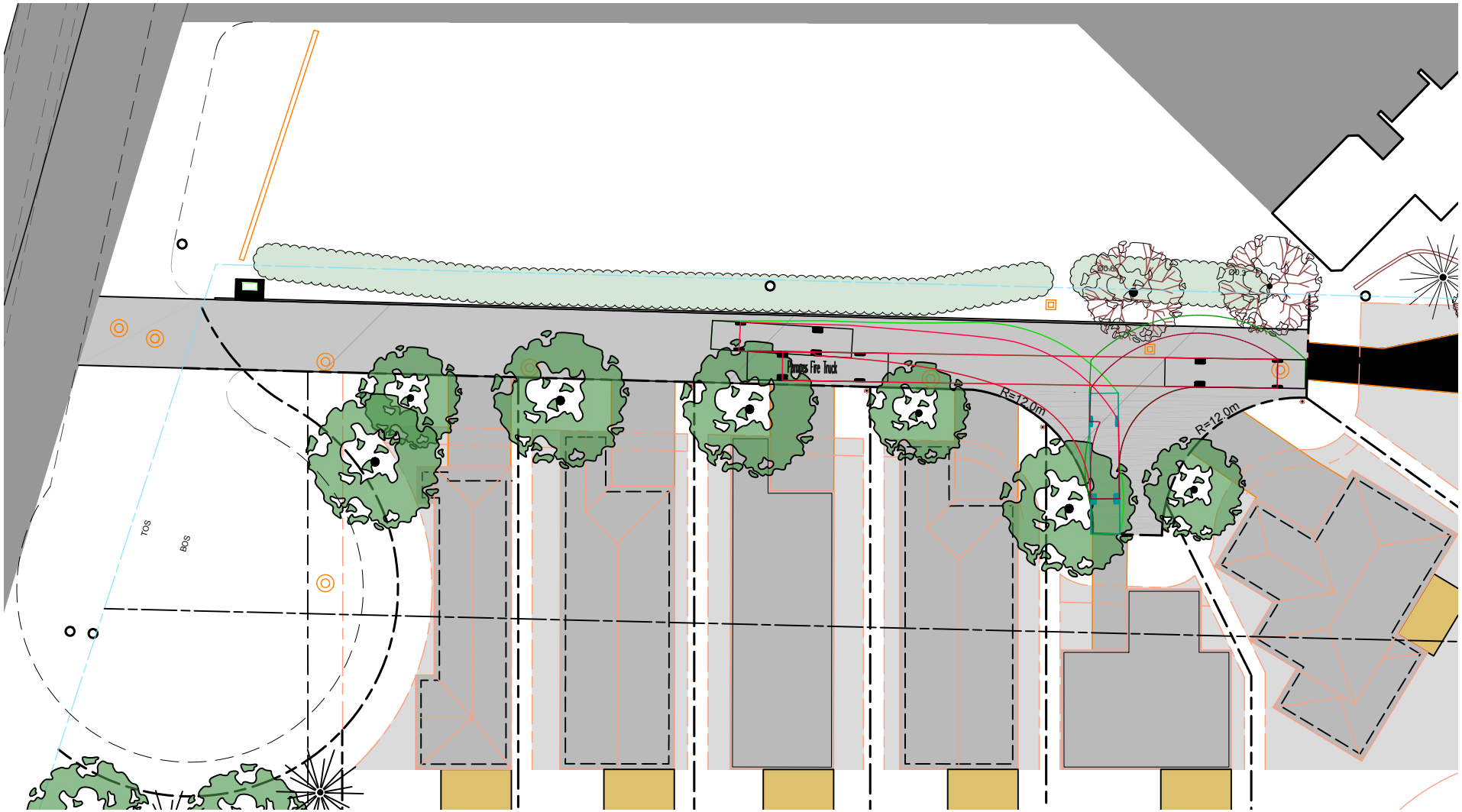
Based on field measurements performed on October 18, 2022, the required stopping sight distance is available on the north and south approaches to the Prince of Wales Drive/Private Street intersection and there is adequate intersection sight distance north and south of the intersection for vehicles to safely turn left and right.

4.2 Boundary Streets

A review of the boundary street (Prince of Wales Drive) has been conducted, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation. The 2015 MMLOS targets are based on the City's former Official Plan land use designations and policy areas.

Schedule B of the City's former Official Plan identifies that the subject site and the east side of Prince of Wales Drive are located within the 'General Urban Area' land use designation, while the west side of Prince of Wales Drive and the Colonnade Road business park are an 'Urban Employment Area'. Targets for pedestrian level of service (PLOS), bicycle level of service (BLOS), and truck level of service (TkLOS) adhere to those outlined in Exhibit 22 of the MMLOS Guidelines. There is no target transit level of service (TLOS) for Prince of Wales Drive as it does not have a transit priority designation. As such, the TLOS has not been reviewed along this roadway.

The boundary street review evaluates the MMLOS for the boundary roadways based on existing conditions. A detailed MMLOS review is included in **Appendix H**, and a summary of the segment MMLOS analysis is included in the following table.



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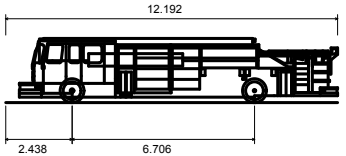

Pumper Fire Truck

Overall Length	12.192m
Overall Width	2.489m
Overall Body Height	2.361m
Min Body Ground Clearance	0.200m
Track Width	2.489m
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

2009-2013 PRINCE OF WALES DRIVE

TURNING MOVEMENT (FIRE TRUCK)

SCALE 1 : 500 (0, 5m, 10m, 20m)

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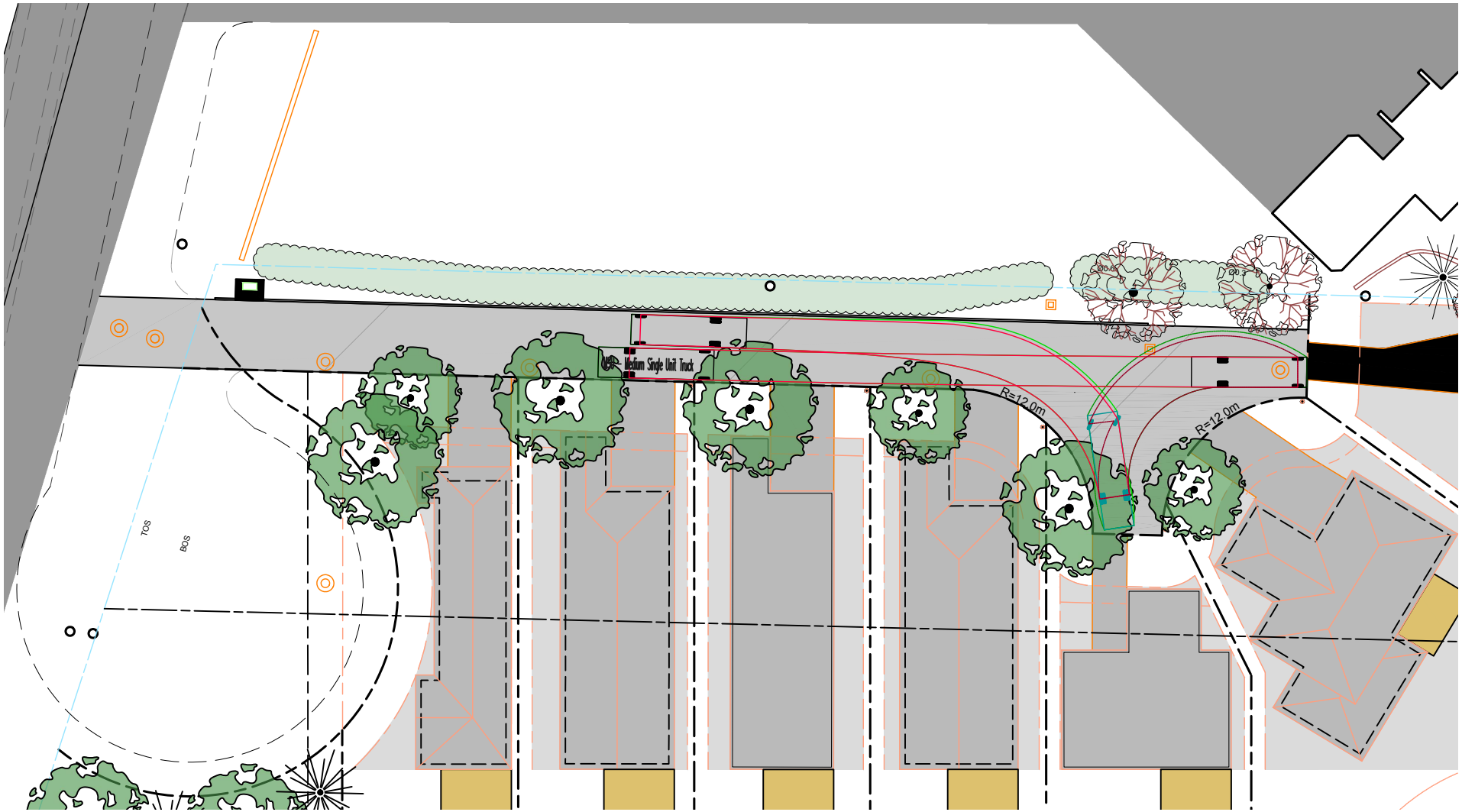

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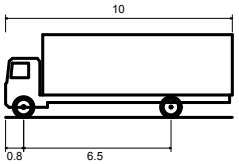

MSU - Medium Single Unit Truck

Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

2009-2013 PRINCE OF WALES DRIVE

TURNING MOVEMENT (MSU)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE NOV 2023 | JOB 122124 | FIGURE FIGURE 9

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Table 12: Segment MMLOS Summary

Segment	PLOS	BLOS	TkLOS
Prince of Wales Drive	F	F	B
Target	**C**	**B**	**B**

Prince of Wales Drive does not meet the target PLOS or BLOS.

Exhibit 4 of the MMLOS guidelines suggests that a PLOS C is not achievable for an operating speed of 70km/h (10km/h above the posted speed) and an AADT above 3,000vpd. The traffic count obtained for the Prince of Wales Drive/Colonnade Road intersection only indicated one pedestrian crossing Prince of Wales Drive and none crossing Colonnade Road during the AM and PM peak periods. Over the course of the 8-hour traffic count, a total of 4 pedestrian crossings (one on the south approach and three on the west approach) were observed at this intersection. As part of the planned Prince of Wales Drive widening, a new multi-use pathway is proposed along the east side of the roadway and a new sidewalk is proposed along the west side of Prince of Wales Drive. These planned pedestrian facilities are anticipated to achieve a PLOS D.

Currently, there are paved shoulders along Prince of Wales Drive and the operating speed is assumed to be 70km/h (10km/h above the speed limit). The Ontario Traffic Manual (OTM) *Book 18 – Cycling Facilities* desirable cycling facility pre-selection nomograph suggests a physically separated bikeway (such a separated bicycle lane, cycle track, or multi-use path) for a posted speed limit of 60km/h and average daily traffic volumes of greater than 10,000vpd. A physically separated bikeway would achieve a BLOS A. As part of the planned Prince of Wales Drive widening, cycling improvements include on-road bike lanes and a multi-use pathway on the east side of the road.

4.3 Intersections Design

Based on total traffic volumes presented in **Figure 7**, the left turn traffic into the site will be approximately 0.1% of the adjacent advancing through traffic on Prince of Wales Drive. As this is significantly less than 5% of the adjacent through traffic volumes, the MTO Left Turn Lane Storage Graphs do not apply, and a southbound left turn lane is not warranted for the site.

Intersection capacity analysis has been conducted for the total traffic conditions. The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix I**.

Table 13: Total Intersection Operations

Intersection	AM Peak			PM Peak		
	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Prince of Wales Drive/ Colonnade Road	**1.27**	**F**	**EBL**	**4.37**	**F**	**EBL**
	0.26	A	EBT/R	**0.94**	**E**	**EBT/R**
	0.00	A	WB	-	-	WB
	0.99	**E**	**NBL**	0.87	D	NBL
	1.11	**F**	**NBT/R**	0.76	C	NBT/R
	1.10	**F**	**SBT**	**1.28**	**F**	**SBT**
	0.51	A	SBR	0.33	A	SBR
Prince of Wales Drive/ Private Street	**413 sec**	**F**	**WBL**	-	-	WBL
	32.4 sec	D	WBR	17.4 sec	C	WBR

Under total traffic conditions, the westbound left at the Prince of Wales Drive/Private Street intersection is anticipated to operate with projected delays over six minutes. Based on this, the westbound left movement out of the site should be prohibited during peak hours with signage. The westbound right turn out of the site is anticipated to operate with acceptable delays.

Consistent with background traffic conditions, several movements at the Prince of Wales Drive/Colonnade Road intersection are anticipated to operate with a LOS E or F in the AM and PM peak hours.

Consistent with the background traffic conditions, adjustments to the signal timing plan are anticipated to improve intersection operations at this intersection in the AM and PM peak but will not achieve the target v/c ratio of 0.90.

Split signal timing/phasing for the eastbound/westbound movements would improve the maximum v/c ratio to 1.07 in the AM peak and 1.16 in the PM peak.

Split signal timing/phasing for the eastbound/westbound movements and forcing off the eastbound movement 12 seconds early would improve the maximum v/c ratio to 0.98 in the AM peak.

The planned Prince of Wales Drive widening would achieve the City's target v/c ratio of 0.90.

Total intersection operations with the above noted mitigations are shown in the below table.

Table 14: Total Intersection Operations (Mitigated)

Intersection	AM Peak			PM Peak		
	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Prince of Wales Drive/ Colonnade Road[1]	0.52	A	EBL	0.90	D	EBL
	0.24	A	EBT/R	0.84	D	EBT/R
	0.00	A	WB	-	-	WB
	1.07	**F**	**NBL**	**0.95**	**E**	**NBL**
	1.05	**F**	**NBT/R**	0.71	C	NBT/R
	0.96	**E**	**SBT**	**1.16**	**F**	**SBT**
	0.41	A	SBR	0.26	A	SBR

Intersection	AM Peak			PM Peak		
	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Prince of Wales Drive/ Colonnade Road[2]	0.75	C	EBL	-		
	0.25	A	EBT/R			
	0.00	A	WB			
	0.84	D	NBL			
	0.98	**E**	**NBT/R**			
	0.89	D	SBT			
	0.41	A	SBR			
Prince of Wales Drive/ Colonnade Road[3]	0.47	A	EBL/T	0.71	C	EBL/T
	0.35	A	EBR	0.59	A	EBR
	0.02	A	WB	0.00	A	WB
	0.66	A	NBL	0.65	B	NBL
	0.59	A	NBT	0.45	A	NBT
	0.67	B	SBT	0.83	D	SBT
	0.45	A	SBR	0.28	A	SBR

1. Split Phasing for EB/WB movements
2. Split Phasing and force off EB movement 12 seconds early if no pedestrian actuation
3. Widened Prince of Wales Drive

A further review of total intersection operations was conducted using the SimTraffic 11 software. SimTraffic modeling was performed with the westbound left out of the site prohibited and a shared southbound through/left into the site (i.e. no dedicated southbound left turn lane). The 95th percentile queue length (averaged over ten models) is provided in the following table for critical movements. Detailed results from the SimTraffic software are included in **Appendix J**.

Table 15: SimTraffic Queues – Total Traffic

Intersection	Mvmt	95th Percentile Queue (m)					Auxiliary Lane	
		Existing Signal Timing		Split EB/WB Phasing			Storage (m)	Taper (m)
		AM Peak	PM Peak	AM Peak	AM Peak[1]	PM Peak		
Prince of Wales Drive/ Colonnade Road	EBL	104	106	51	58	109	140	-
	EBT/R	40	**108**	42	51	**107**	70	60
	WB	3	-	3	4	-	-	-
	NBL	**114**	45	**114**	77	44	100	80
	NBT/R	143	110	139	126	101	-	-
	SBT	534	453	561	350	452	-	-
	SBR	607	450	627	286	452	-	-
Prince of Wales Drive/ Private Street	SBL/T	24	31	31	36	29	-	-
	WB	16	4	13	15	3	-	-
	NBT/R	289	13	282	111	10	-	-

1. No pedestrian actuation – force off EB movement 12 seconds early

The SimTraffic results indicate that the southbound through and right queue at the Prince of Wales Drive/Colonnade Road is anticipated to increase by approximately 65m and 120m, respectively, in the AM peak hour under the split phasing with no pedestrian actuation scenario, compared to background traffic results. It appears the SimTraffic model is sensitive at this approach due to heavy background traffic volumes. The proposed development is only anticipated to add one vehicle in the AM hour to the southbound through movement and none to the southbound right movement at the Prince of Wales Drive/Colonnade Road intersection. Minor changes to projected queue lengths for all other movements at the Prince of Wales Drive/Colonnade Drive are anticipated as a result of site traffic.

The maximum projected southbound through/left queue at the Prince of Wales Drive/Private Street intersection is anticipated to be approximately 25-35m in the AM and PM peak hours, with existing or adjusted signal timing. The proposed spacing between the Prince of Wales Drive/Colonnade Road and Prince of Wales Drive/Private Street intersections is approximately 120m and this queueing length is not anticipated to interrupt operations at the nearby Prince of Wales Drive/Colonnade Road intersection. A maximum westbound queue of 15m is projected for the right turn movement leaving the site, or approximately two vehicles.

The maximum northbound through/right queue at the Prince of Wales Drive/Colonnade Drive intersection is anticipated to be approximately 145m in the AM and 110m under existing signal timing. This queue is anticipated to improve to 140m in the AM (125m with no pedestrian actuation) and 100m in the PM with adjusted signal timing. The proposed spacing between the Prince of Wales Drive/Colonnade Road and Prince of Wales Drive/Private Street intersections is approximately 120m and the projected northbound queue is anticipated to block the site access in the AM peak. Southbound left traffic at the site access may need to rely on courtesy during the peak hours.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The main conclusions and recommendations from this report are summarized below:

Existing and Background Traffic

- Several movements at the Prince of Wales Drive/Colonnade Road intersection are operating with a LOS E or F in the AM and PM peak hours.
- Split signal timing/phasing for the eastbound/westbound movements would improve intersection operations at this intersection in the AM and PM peak but will not achieve the target v/c ratio of 0.90.
- The planned Prince of Wales Drive widening would achieve the City's target v/c ratio of 0.90.
- The eastbound through/right queue at Prince of Wales Drive/Colonnade Road is anticipated to be approximately 110m in the PM peak. This exceeds the storage length of 70m. A taper length of 60m is currently provided for this movement. There are currently 340 vehicles performing an eastbound right turn at this intersection in the PM peak. As part of the Prince of Wales widening, a channelized right turn lane is planned at this intersection with an additional southbound receiving lane.
- The northbound left turn queue is approximately 115m in the AM peak with existing signal timing. With adjusted timing, this queue is anticipated to increase to 120m but will reduce to 80m without pedestrian actuation. A storage length of 100m with an 80m taper is currently provided at this intersection.

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

Development and Access Design

- Access to the development is provided via a private roadway which connects to Prince of Wales Drive approximately 120m south of the Prince of Wales Drive/Colonnade Road intersection, measured from stop bar to nearest edge. The private road will have a 6m width and a hammerhead is provided at the terminus to facilitate turnaround movements.
- After the planned Prince of Wales widening, direct access to/from Prince of Wales will be restricted, and the site will be accessed via the new service road. This new service road will tie into the traffic signal at the Prince of Wales Drive/Colonnade Road intersection.
- Based on field measurements performed on October 18, 2022, the required stopping sight distance is available on the north and south approaches to the Prince of Wales Drive/Private Street intersection and there is adequate intersection sight distance north and south of the intersection for vehicles to safely turn left and right.

Boundary Streets

- Prince of Wales Drive does not meet the target PLOS or BLOS.
- As part of the planned Prince of Wales Drive widening the following improvements are proposed which will improve the PLOS and BLOS:
    - a new multi-use pathway along the east side and a new sidewalk is proposed along the west side of the road.
    - cycling improvements include on-road bike lanes and a multi-use pathway on the east side of the road.

Total Intersections Operations

- The westbound left at the Prince of Wales Drive/Private Street intersection is anticipated to operate with projected delays over six minutes. Based on this, the westbound left movement out of the site should be prohibited with signage during peak hours. The westbound right turn out of the site is anticipated to operate with acceptable delays.
- Consistent with background traffic conditions, several movements at the Prince of Wales Drive/Colonnade Road intersection are anticipated to operate with a LOS E or F in the AM and PM peak hours. No further improvements from background traffic conditions are proposed.
- The maximum projected southbound through/left queue at the Prince of Wales Drive/Private Street intersection is anticipated to be approximately 25-35m in the AM and PM peak hours, with existing or adjusted signal timing. The proposed spacing between the Prince of Wales Drive/Colonnade Road and Prince of Wales Drive/Private Street intersections is approximately 120m and this queueing length is not anticipated to interrupt operations at the nearby Prince of Wales Drive/Colonnade Road intersection.
- The maximum northbound through/right queue at the Prince of Wales Drive/Colonnade Drive intersection is anticipated to be 145m in the AM and 110m in the PM with existing signal timing. This queue is anticipated to improve to 140m in the AM (125m with no pedestrian actuation) and 100m in the PM with adjusted signal timing. The projected northbound queue is anticipated to block the site access in the AM peak. Southbound left traffic at the site access may need to rely on courtesy during the peak hours.

- A maximum westbound queue of 15m is projected leaving the site, or approximately two vehicles.

NOVATECH

Prepared by:

Joshua Audia, P.Eng. for Rochelle Fortier, P.Eng.
Project Engineer | Transportation

Reviewed by:

Jennifer Luong, P.Eng.
Senior Project Manager | Transportation

APPENDIX A

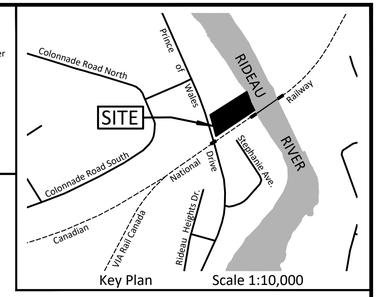
Draft Plan

Subject to the conditions, if any, set forth in our letter dated ..... 2023.

This draft plan is approved by the City of Ottawa, under section 51 of The Planning Act this

..... day of ..... 2023.

.....
ALLISON HAMLIN, MCIP, RPP, ACTING MANAGER
DEVELOPMENT REVIEW-WEST
PLANNING, REAL ESTATE AND ECONOMIC
DEVELOPMENT, CITY OF OTTAWA



DRAFT PLAN OF SUBDIVISION OF

LOTS 11 AND 12 REGISTERED PLAN 404 CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2023

Scale 1: 300

0 5 10 15 20 25 30 metres

Metric Note
Distances and coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Distance Note
Distances shown on this plan are ground distances and can be converted to grid distances by multiplying by the combined scale factor of 0.99994.

Bearing Note
Bearings hereon are grid, referred to the easterly limit of Prince of Wales Drive, having a bearing of N15°59'05"W as shown on a Topographical Plan of Survey by (1692) dated July 11th, 2022, and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) Nad-83 (Original).

Elevation Notes
1. Elevations shown are geodetic , derived from NCC Control Monument 01919680092, and are referred to Geodetic Datum CGVD-1928 :1978.
3. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Owner's Certificate
I hereby authorize Farley, Smith & Denis Surveying Ltd. to submit this draft plan of subdivision on our behalf.

_____ Date

_____ Alex Sivasambu "I have the authority to bind the corporation"

Surveyor's Certificate
I certify that :

The boundaries of the lands to be subdivided and their relationship to adjoining lands are accurately and correctly shown.

June 13, 2023 Date

Daniel Robinson
Ontario Land Surveyor

Additional Information

(a)	See Plan
(b)	See Key Plan
(c)	See Plan
(d)	7 Residential Units, SWM Pond
(e)	See Plan
(f)	See Plan
(g)	See Plan
(h)	Municipal Water
(i)	See Soil Report
(j)	Spot Elevations - See Plan
(k)	All Municipal Services
(l)	See Plan

Notes & Legend

—□—	Denotes	Survey Monument Planted
—■—	"	Survey Monument Found
SIB	"	Standard Iron Bar
SSIB	"	Short Standard Iron Bar
SSIB*	"	Short Standard Iron Bar (0.3m Long)
(Wit)	"	Witness
(P1)	"	Registered Plan 404
(P2)	"	Plan by (1692) December 10, 2020, revised Nov. 24, 2022 (FSD Job 531-20)
(P3)	"	Plan by (1692) July 11, 2022 (FSD Job 315-22)
—·—·—·—	"	Centreline of Swale
OHW	"	Overhead Wires
UP	"	Utility Pole
FH	"	Fire Hydrant
	"	Gate
CLF	"	Chain Link Fence
BF	"	Board Fence
SRW	"	Stone Retaining Wall
C/L	"	Centreline
+65.00	"	Location of Elevations
	"	Property Line

LOT/BLOCK	AREA ± (Sq.m.)
1	1159±
2	2795±
3	887.9
4	952.9
5	965.5
6	971.8
7	924.0
8	895.9
9	748.9
10	12.9
11	984.8

FARLEY, SMITH & DENIS SURVEYING LTD.

ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS

Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-8226 E-mail: fsdsurveys@bellnet.ca

FILE No.: 51-23

J:\2023\51-23_2009 & 2013 Prince of Wales dr_draft Subd\Calculations\51-23 C1.dwg

DRAWING LEGEND

- SUBJECT SITE
- ZONING BOUNDARY
- LOT LINE
- ZONING SETBACK
- EASEMENT
- RAILWAY SETBACK
- TOP OF STABLE SLOPE
- TOE EROSION SETBACK
- ACCESS ALLOWANCE
- WATERCOURSE SETBACK
- o/h wires — OVERHEAD WIRES
- EXISTING FENCE
- UP — UTILITY POLE
- TOS — TOP OF SLOPE
- BOS — BOTTOM OF SLOPE
- NEW CHAIN LINK FENCE
- DWELLING UNIT MAIN ENTRY
- BUILDABLE AREA
- LANDSCAPED AREA
- FLOOD PLAIN LIMIT
- NEW PRIVATE ROAD
- NEW 20'X12' DECK
- NEW SINGLE DETACHED HOUSE (House size depicted for illustration purposes only.)
- EXISTING TREES
- EXISTING HEDGE
- NEW DECIDUOUS TREE
- NEW CONIFEROUS TREE

PROPOSED ZONING - R1XX

Minimum Lot Width(m)	Minimum Lot Area (m2)	Maximum Building Height (m)	Minimum Front Yard Setback (m)	Minimum Corner Side Yard Setback (m)	Minimum Rear Yard Setback (m)	Minimum Interior Side Yard Setback (m)
9	240	9.5	4.5 *	3	6	1.8 total,0.6 min. for one side yard

* Minimum front yard setback is 6.0 m for any attached garage (By-law 2020-288)

	LOT AREA	LOT WIDTH	BUILDABLE AREA	STREET FRONTAGE
LOT 1	1163m²	11.53m	115m² (1238 ft²)	29 ft.
LOT 2	2795m²	17.08m	268m² (2885 ft²)	54 ft.
LOT 3	887.9m²	13.62m	240m² (2583 ft²)	64 ft.
LOT 4	952.9m²	15.24m	372m² (4004 ft²)	52 ft.
LOT 5	965.5m²	15.24m	387m² (4166 ft²)	50 ft.
LOT 6	971.8m²	15.24m	393m² (4230 ft²)	50 ft.
LOT 7	924m²	16.84m	260m² (2799 ft²)	78ft.
LOT 8	895.9m²	--	--	--
LOT 9	748.9m²	--	--	--
LOT 10	12.9m²	--	--	--
LOT 11	984.8m²	--	--	--

EXISTING ZONING - R1E

	REQUIRED	EXISTING PROVIDED 2013 Survey by Farley, Smith & Denis	2009 Survey by Farley, Smith & Denis
Min. Lot Width:	19.8m	46.45m	31.34m
Min. Lot Area:	*1390m²	6461.09m²	4600.4m²
Min. Front Yard Setback:	7.5m	93.84m	114.80m
Min. Rear Yard Setback:	12m	48.06m	26.70m
Min. Interior Yard Setback:	0.9m,1.2m	1.39m	5.18m
Max. Lot Coverage:	**15%	N/A	N/A
Max. Building Height:	8.5m	N/A	N/A

*Minimum lot area is 930 m2 for lots connected to a piped municipal water supply
**Maximum lot coverage is 25% for a lot connected to a piped municipal water supply

Survey Info
Surveys completed by Farley, Smith & Denis Surveying Limited on December 10, 2020 and July 11, 2022 which were revised on November 24, 2022.
Updated property boundaries and topographic info is taken from R-PLAN 404 by Farley, Smith & Denis Surveying Limited on June 13, 2023.

3

SECTION 139
Front Yard and Corner Side Yard Landscaping
Minimum Soft Landscaped Area:
lot width > 12 m = 40%
lot width >8.25 <12 = 35%

Driveway width
lot width > 15 m <18= 3m to 5.5m
lot width >8.25 <15 = 3m
+ 0.15m landscape strip from side lot line.
Garage or carpot setback 0.6m further from applicable lot line

SECTION 144
Rear Yards on Interior or Through Lots
Minimum rear yard area for lots with a front yard setback of 4.5m or less:
lot depth < 23.5m = 25% of lot depth
lot depth > 23.5m < 25.0m = lot depth minus 17.5m
lot depth > 25.0m = 30% of the lot depth

3

PERMITTED PROJECTIONS
- No building or structure, including any part of a sewage system, which does not require plan of subdivision, or site plan control approval, shall be located closer than 30 m to the normal high-water mark of any watercourse or waterbody

- No building within 30m of a railway right-of-way is to be used for a residential use building

no.	date	revision
3	xxxx-xx-xx	REVISED SUBMISSION
2	2023-06-29	ISSUED FOR PLAN OF SUBDIVIS...
1	2023-06-29	ISSUED FOR ZONING BYLAW AM...

GENERAL NOTES
1. Contractor must verify dimensions and conditions on site before proceeding with any portion of this work.
2. Do not scale from drawings.
3. All work to comply with the Ontario Building Code and municipal regulations.
4. This drawing to be read in conjunction with all material relevant to this project.

PROPERTY OWNER
Alex Sivasambu
7 Leaver Avenue
Ottawa, ON K2E 5P5
sivasamburealty@gmail.com

3

1
A101
CONCEPT SITE PLAN

D02-02-23-0061 & D07-16-23-0009

jane thompson architect
404 mackay street
ottawa, ontario, K1M 2C4
tel: (613)747-8104
jtarch@rogers.com

scale	1:300
job no.	2112
project	2009 / 2013 Prince of Wales Ottawa, ON
date	November 29, 2023
drawing	CONCEPT SITE PLAN
designed	JT, ED
drawn	ED, IC, AH
checked	JT, ED
dwg no.	A101

APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	2009 & 2013 Prince of Wales Drive
Description of Location	N of railway line, E of Prince of Wales, W of Rideau River
Land Use Classification	Single-family Residential
Development Size (units)	7 homes (replacing 2 homes)
Development Size square metre (m^2)	
Number of Accesses and Locations	1 access to Prince of Wales (removal of existing accesses)
Phase of Development	1
Buildout Year	2025

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

2. Trip Generation Trigger

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

Table notes:

1. Table 2, Table 3 & Table 4 TRANS Trip Generation Manual
2. Institute of Transportation Engineers (ITE) Trip Generation Manual 11.1 Ed.

Land Use Type	Minimum Development Size
Single-family homes	**60 units**
Multi-Use Family (Low-Rise)[1]	**90 units**
Multi-Use Family (High-Rise)[1]	**150 units**
Office[2]	**1,400 m^2**
Industrial[2]	**7,000 m^2**
Fast-food restaurant or coffee shop[2]	**110 m^2**
Destination retail[2]	**1,800 m^2**
Gas station or convenience market[2]	**90 m^2**

If the proposed development size is equal to or 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 Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	☑	☐
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?[2]	☐	☑

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 kilometers per hour (km/h) 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 metre [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?	☐	☑

[2] Hubs are identified in Schedules B1 to B8 of the City of Ottawa Official Plan. PMTSAs are identified in Schedule C1 of the Official Plan. DPAs are identified in Schedule C7A and C7B of the Official. See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.

	Yes	No
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.

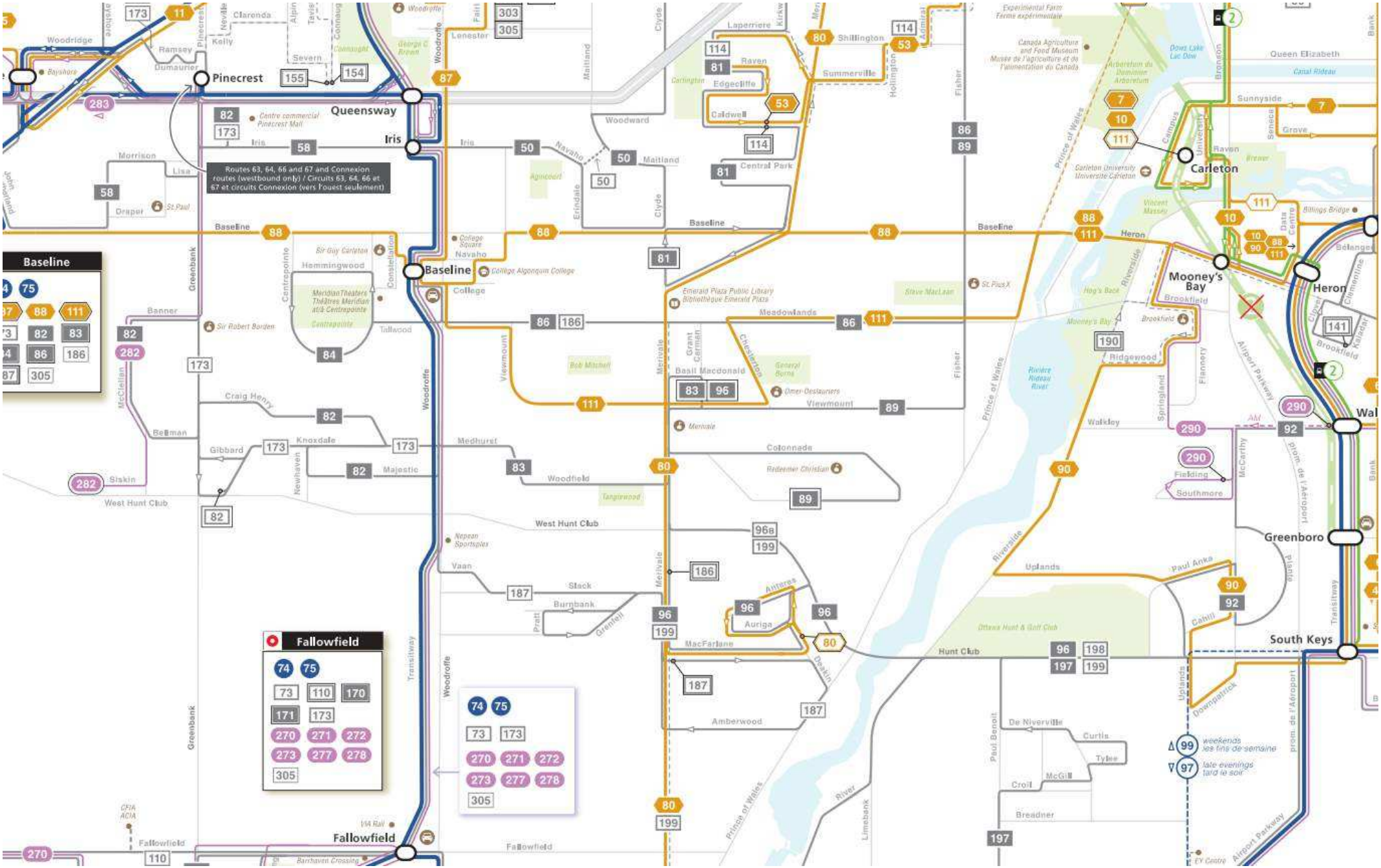
5. Summary

Results of Screening	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

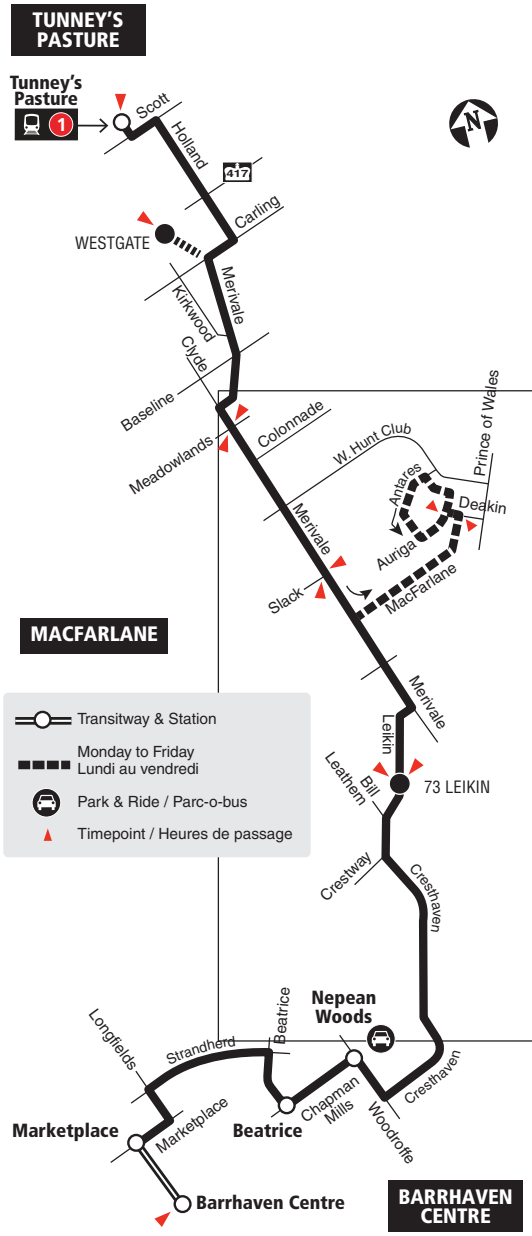
OC Transpo System Information


Pinecrest
Queensway
Iris
Baseline
Carleton
Mooney's Bay
Heron
Greenboro
South Keys
Fallowfield
Hunt Club
West Hunt Club
Routes 63, 64, 66 and 67 and Connexion routes (westbound only) / Circuits 63, 64, 66 et 67 et circuits Connexion (vers l'ouest seulement)
Baseline
Fallowfield
weekends les fins de semaine
late evenings tard le soir

80 BARRHAVEN CENTRE / TUNNEY'S PASTURE

Fréquent

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



2018.12

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 June 24, 2018
En vigueur 24 june 2018

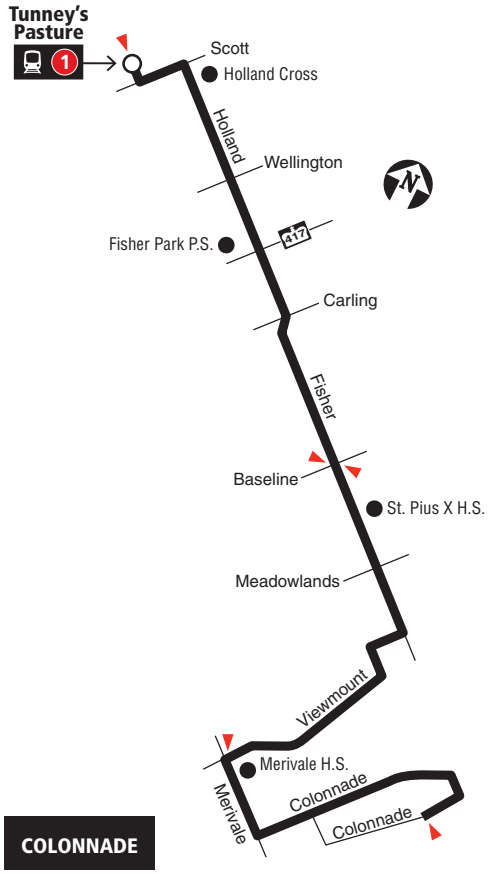
OC Transpo
INFO 613-741-4390
octranspo.com

89 COLONNADE / TUNNEY'S PASTURE

Local

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

TUNNEY'S PASTURE



COLONNADE

○ Station

▲ Timepoint / Heures de passage

2019.06

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

Customer Service
Service à la clientèle **613-842-3600**
Lost and Found / Objets perdus..... **613-563-4011**
Security / Sécurité..... **613-741-2478**

Effective June 24, 2018
En vigueur 24 juin 2018

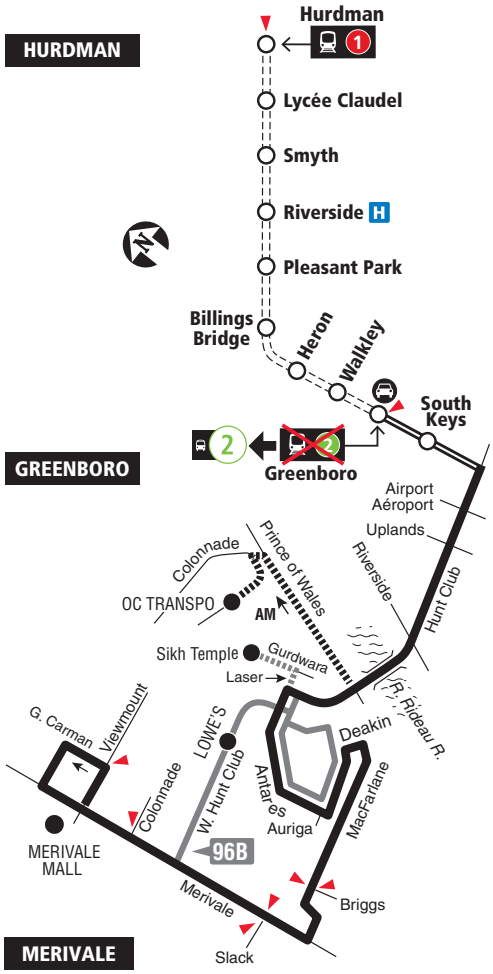
OC Transpo
INFO 613-741-4390
octranspo.com

96

MERIVALE
GREENBORO
HURDMAN

Local

7 days a week / 7 jours par semaine



Transitway & Station

Transitway & Station
(Peak periods only / Périodes de pointe seulement)

96B

96B Some trips / 96B Quelques trajets

Some trips / Quelques trajets

Park & Ride / Parc-o-bus

Timepoint / Heures de passage

2019.06

Schedule / Horaire 613-560-1000
Text / Texto.....560560

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

Customer Service
Service à la clientèle **613-741-4390**

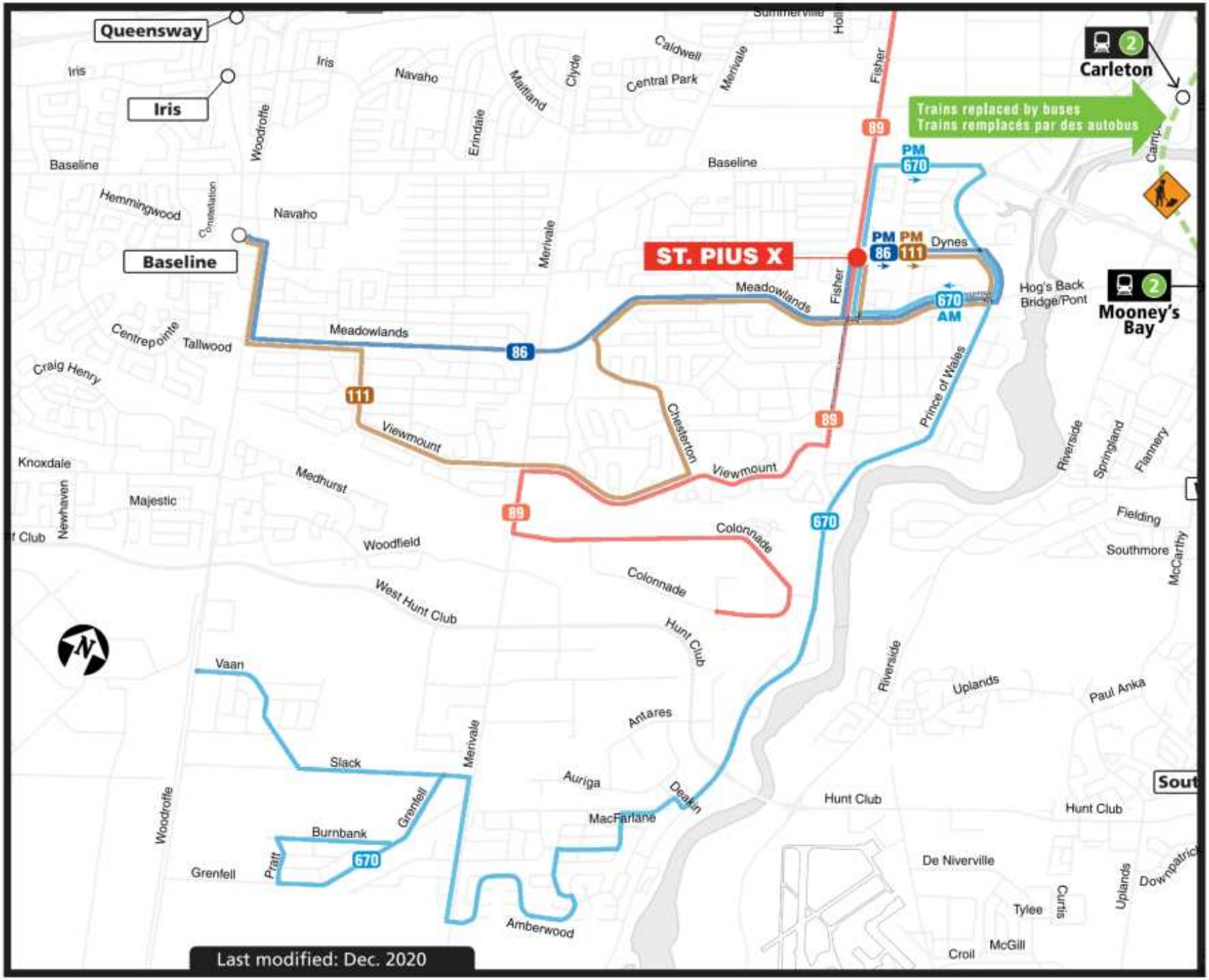
Lost and Found / Objets perdus..... **613-563-4011**

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

Effective May 3, 2020
En vigueur 3 mai 2020

OC Transpo

INFO 613-741-4390
octranspo.com


Queensway
Iris
Iris
Baseline
Baseline
Hemmingwood
Navaho
Constellation
Woodroffe
Erindale
Maitland
Clyde
Caldwell
Central Park
Merivale
Fisher
Carleton
Trains replaced by buses
Trains remplacés par des autobus
PM 670
PM 86
PM 111
Dynes
ST. PIUS X
Meadowlands
Fisher
670 AM
Hog's Back Bridge/Pont
Mooney's Bay
Centrepointe
Tallwood
Craig Henry
Meadowlands
86
111
Viewmount
Chesterton
89
Prince of Wales
Riverside
Springland
Flannery
Knoxdale
Newhaven
Majestic
Medhurst
Viewmount
89
Colonnade
670
Fielding
Southmore
McCarthy
Woodfield
Colonnade
West Hunt Club
Hunt Club
Vaan
Riverside
Uplands
Paul Anka
Antares
Slack
Merivale
Auriga
Deakin
MacFarlane
Hunt Club
Hunt Club
Burnbank
Grenfell
Pratt
670
Grenfell
De Niverville
Tylee
Curtis
Uplands
Amberwood
Croil
McGill
Last modified: Dec. 2020

APPENDIX D

Traffic Count Data

Transportation Services - Traffic Services

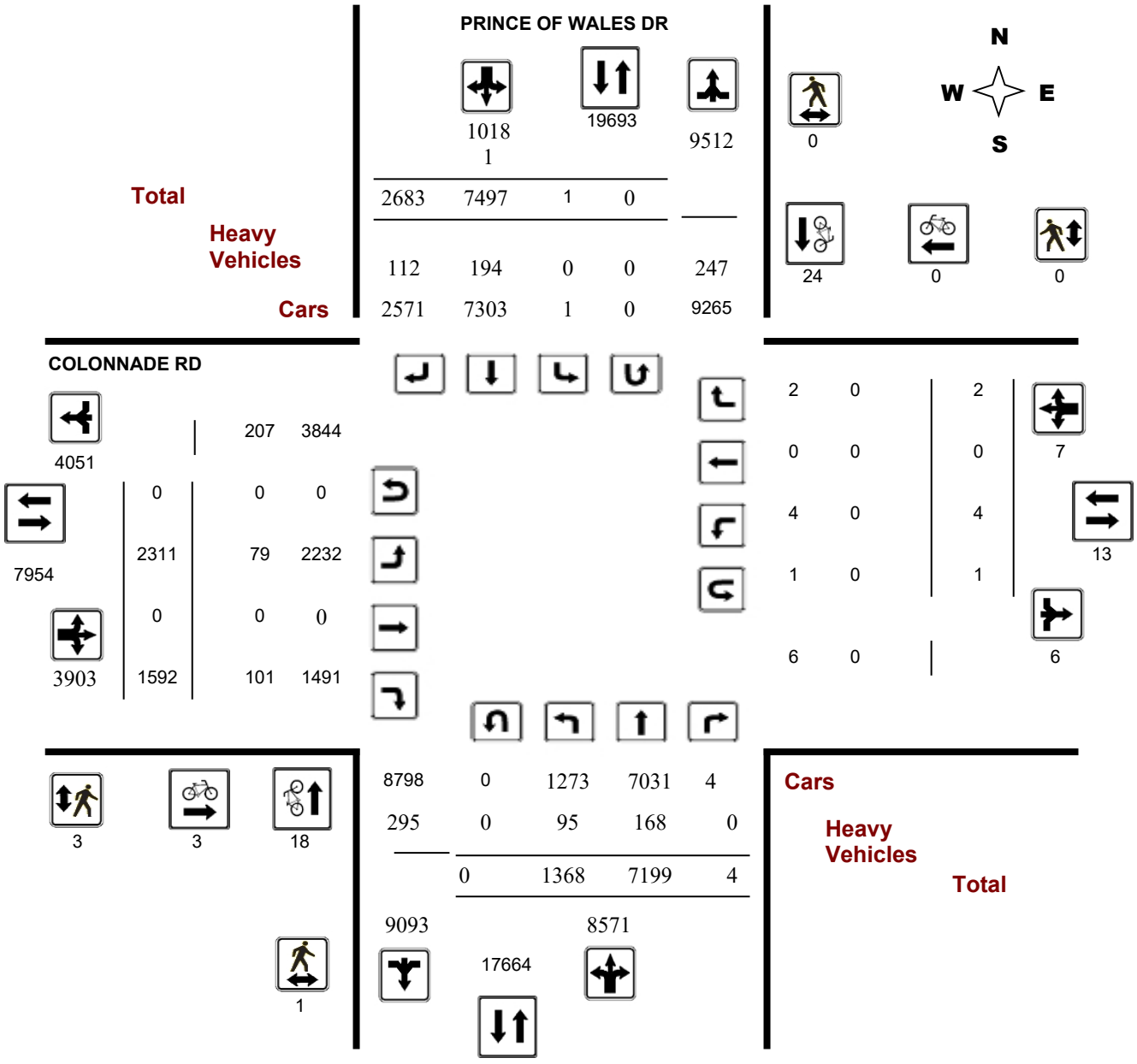
Turning Movement Count - Study Results

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018
Start Time: 07:00

WO No: 37714
Device: Miovision

Full Study Diagram



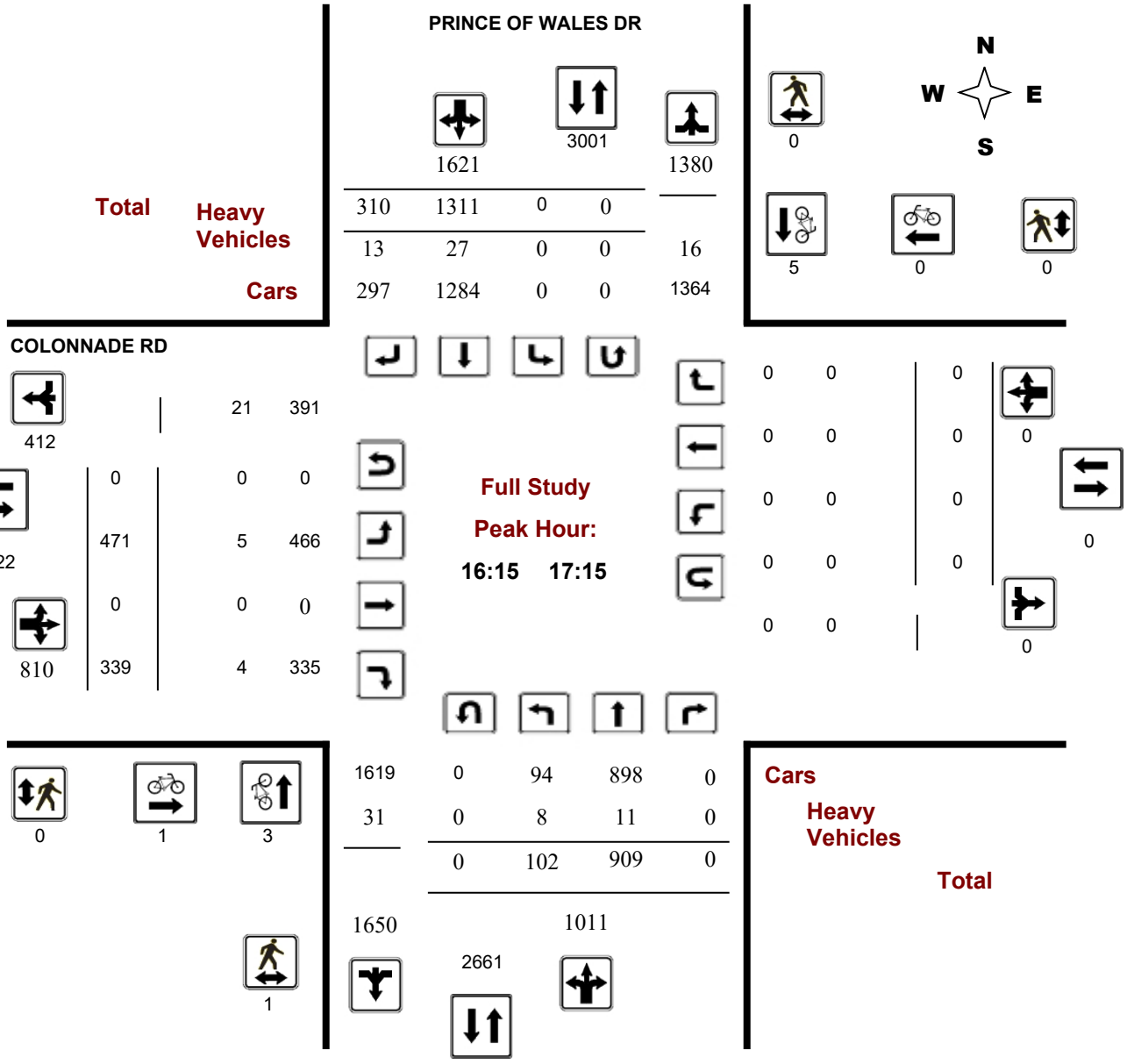
Transportation Services - Traffic Services

Turning Movement Count - Study Results

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018
Start Time: 07:00
WO No: 37714
Device: Miovision

Full Study Peak Hour Diagram



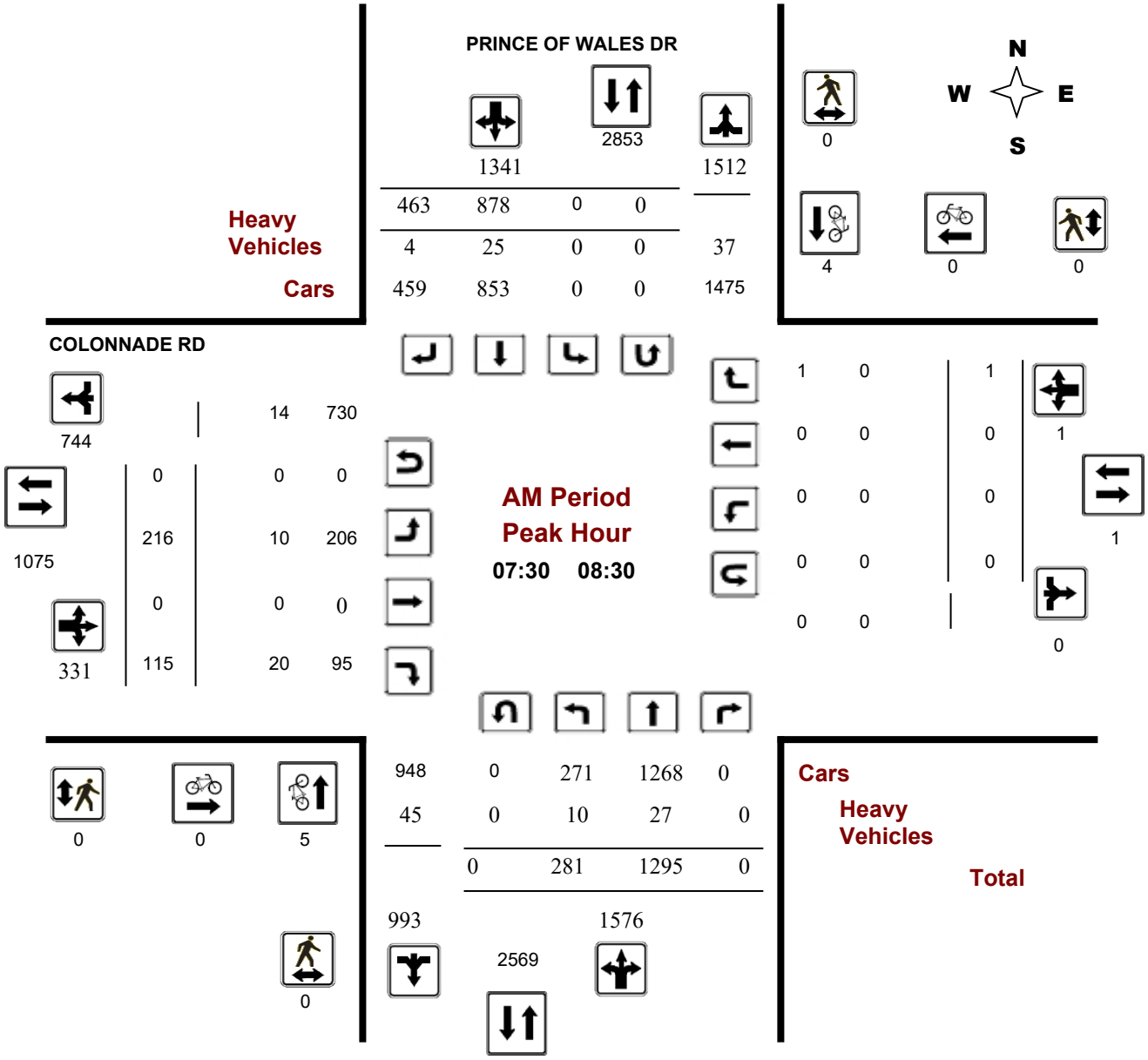
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018
Start Time: 07:00

WO No: 37714
Device: Miovision



Comments

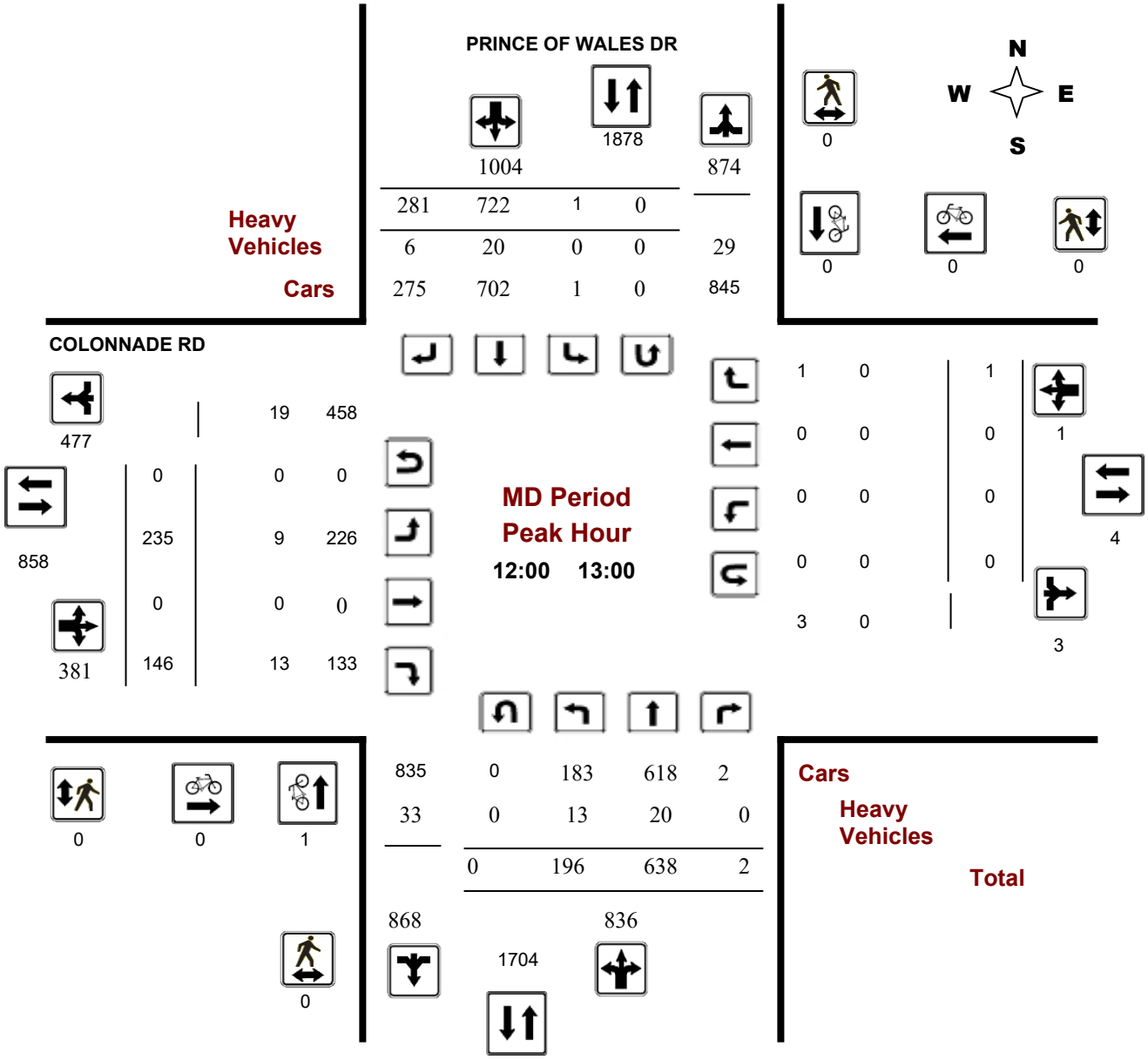
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018
Start Time: 07:00

WO No: 37714
Device: Miovision



Comments

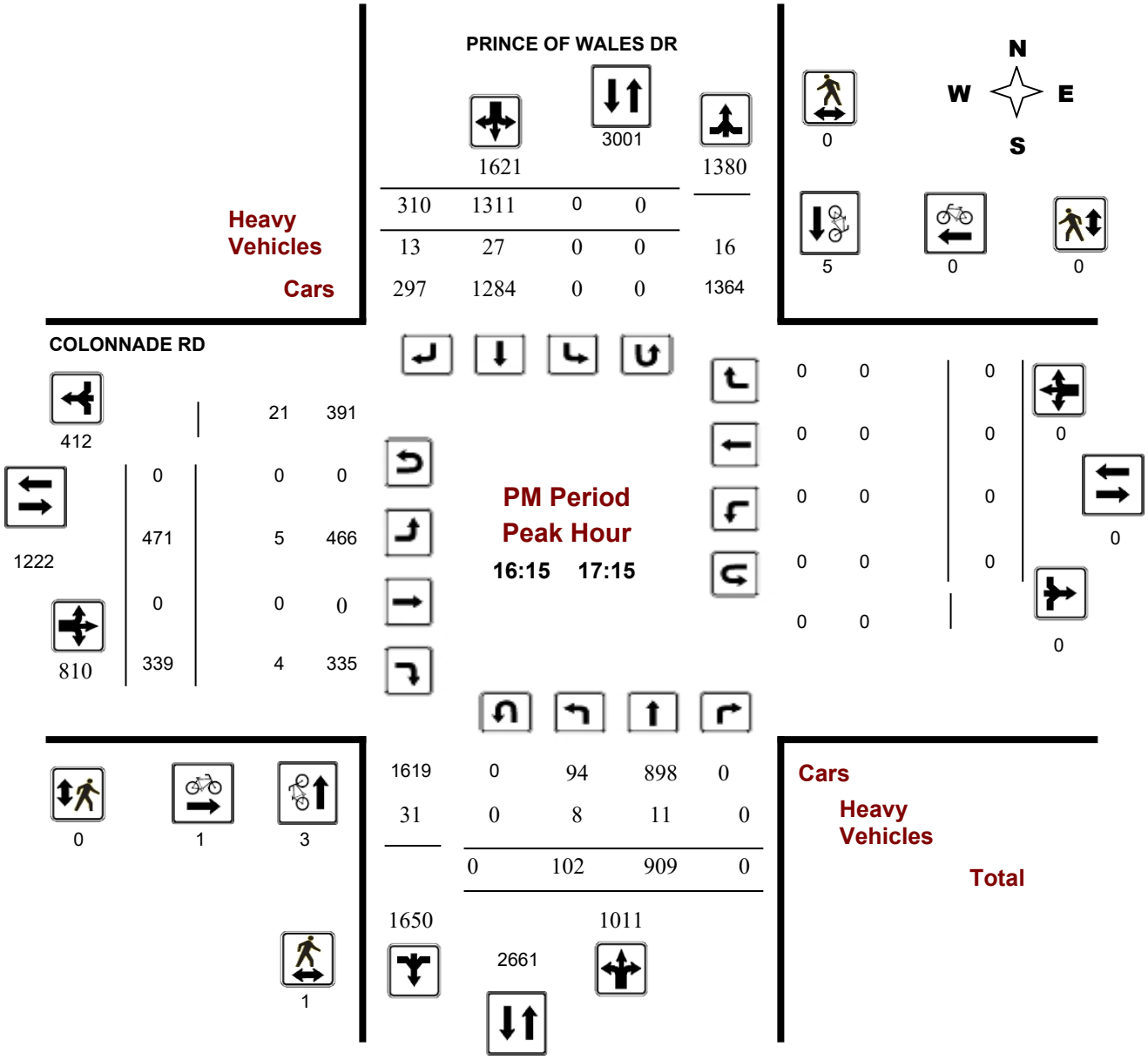
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018
Start Time: 07:00

WO No: 37714
Device: Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018 **WO No:** 37714

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, April 10, 2018

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 1

AADT Factor

.90

	PRINCE OF WALES DR									COLONNADE 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	244	1285	0	**1529**	0	753	365	**1118**	**2647**	209	0	110	**319**	0	0	0	**0**	**319**	**2966**
08:00 09:00	265	1183	0	**1448**	0	947	496	**1443**	**2891**	180	0	103	**283**	0	0	1	**1**	**284**	**3175**
09:00 10:00	187	899	1	**1087**	0	653	327	**980**	**2067**	166	0	88	**254**	0	0	0	**0**	**254**	**2321**
11:30 12:30	159	630	1	**790**	0	713	241	**954**	**1744**	261	0	206	**467**	0	0	1	**1**	**468**	**2212**
12:30 13:30	187	619	1	**807**	1	723	266	**990**	**1797**	215	0	140	**355**	0	0	0	**0**	**355**	**2152**
15:00 16:00	129	833	0	**962**	0	1190	343	**1533**	**2495**	394	0	314	**708**	2	0	0	**2**	**710**	**3205**
16:00 17:00	98	856	0	**954**	0	1327	320	**1647**	**2601**	449	0	353	**802**	1	0	0	**1**	**803**	**3404**
17:00 18:00	99	894	1	**994**	0	1191	325	**1516**	**2510**	437	0	278	**715**	1	0	0	**1**	**716**	**3226**
Sub Total	1368	7199	4	**8571**	1	7497	2683	**10181**	**18752**	2311	0	1592	**3903**	4	0	2	**6**	**3909**	**22661**
U Turns	0			**0**	0			**0**	**0**	**0**			**0**	1			**1**	**1**	**1**
Total	1368	7199	4	**8571**	1	7497	2683	**10181**	**18752**	2311	0	1592	**3903**	5	0	2	**7**	**3910**	**22662**
EQ 12Hr	1902	10007	6	**11915**	1	10421	3729	**14151**	**26066**	3212	0	2213	**5425**	7	0	3	**10**	**5435**	**31501**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1712	9006	5	**10723**	1	9379	3356	**12736**	**23459**	2891	0	1992	**4883**	6	0	3	**9**	**4892**	**28351**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**.90**					
AVG 24Hr	2243	11798	7	**14048**	1	12286	4396	**16683**	**30731**	3787	0	2610	**6397**	8	0	4	**12**	**6409**	**37140**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

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

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018 **WO No:** 37714

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

Full Study 15 Minute Increments

		PRINCE OF WALES DR									COLONNADE RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	50	299	0	349	0	155	77	232	**581**	38	0	20	58	0	0	0	0	**58**	**639**
07:15	07:30	62	318	0	380	0	181	83	264	**644**	66	0	25	91	0	0	0	0	**91**	**735**
07:30	07:45	70	352	0	422	0	210	92	302	**724**	50	0	29	79	0	0	0	0	**79**	**803**
07:45	08:00	62	316	0	378	0	207	113	320	**698**	55	0	36	91	0	0	0	0	**91**	**789**
08:00	08:15	66	324	0	390	0	239	136	375	**765**	54	0	26	80	0	0	1	1	**81**	**846**
08:15	08:30	83	303	0	386	0	222	122	344	**730**	57	0	24	81	0	0	0	0	**81**	**811**
08:30	08:45	48	259	0	307	0	271	109	380	**687**	28	0	23	51	0	0	0	0	**51**	**738**
08:45	09:00	68	297	0	365	0	215	129	344	**709**	41	0	30	71	0	0	0	0	**71**	**780**
09:00	09:15	54	244	1	299	0	180	105	285	**584**	46	0	14	60	0	0	0	0	**60**	**644**
09:15	09:30	47	243	0	290	0	165	94	259	**549**	40	0	30	70	0	0	0	0	**70**	**619**
09:30	09:45	34	222	0	256	0	154	58	212	**468**	39	0	22	61	0	0	0	0	**61**	**529**
09:45	10:00	52	190	0	242	0	154	70	224	**466**	41	0	22	63	0	0	0	0	**63**	**529**
11:30	11:45	27	162	0	189	0	175	58	233	**422**	59	0	69	128	0	0	0	0	**128**	**550**
11:45	12:00	33	149	0	182	0	172	62	234	**416**	72	0	56	128	1	0	0	1	**129**	**545**
12:00	12:15	59	169	0	228	0	177	54	231	**459**	64	0	36	100	0	0	0	0	**100**	**559**
12:15	12:30	40	150	1	191	0	189	67	256	**447**	66	0	45	111	0	0	1	1	**112**	**559**
12:30	12:45	38	158	0	196	1	172	85	258	**454**	58	0	32	90	0	0	0	0	**90**	**544**
12:45	13:00	59	161	1	221	0	184	75	259	**480**	47	0	33	80	0	0	0	0	**80**	**560**
13:00	13:15	41	157	0	198	0	184	61	245	**443**	48	0	32	80	0	0	0	0	**80**	**523**
13:15	13:30	49	143	0	192	0	183	45	228	**420**	62	0	43	105	0	0	0	0	**105**	**525**
15:00	15:15	26	211	0	237	0	232	67	299	**536**	90	0	70	160	1	0	0	1	**161**	**697**
15:15	15:30	30	214	0	244	0	331	75	406	**650**	76	0	75	151	1	0	0	1	**152**	**802**
15:30	15:45	26	211	0	237	0	321	94	415	**652**	115	0	76	191	0	0	0	0	**191**	**843**
15:45	16:00	47	197	0	244	0	306	107	413	**657**	113	0	93	206	0	0	0	0	**206**	**863**
16:00	16:15	23	181	0	204	0	319	93	412	**616**	134	0	117	251	1	0	0	1	**252**	**868**
16:15	16:30	17	225	0	242	0	366	88	454	**696**	97	0	72	169	0	0	0	0	**169**	**865**
16:30	16:45	20	215	0	235	0	326	57	383	**618**	115	0	87	202	0	0	0	0	**202**	**820**
16:45	17:00	38	235	0	273	0	316	82	398	**671**	103	0	77	180	0	0	0	0	**180**	**851**
17:00	17:15	27	234	0	261	0	303	83	386	**647**	156	0	103	259	0	0	0	0	**259**	**906**
17:15	17:30	21	223	0	244	0	310	98	408	**652**	102	0	83	185	0	0	0	0	**185**	**837**
17:30	17:45	24	246	0	270	0	318	83	401	**671**	97	0	59	156	0	0	0	0	**156**	**827**
17:45	18:00	27	191	1	219	0	260	61	321	**540**	82	0	33	115	1	0	0	1	**116**	**656**
Total:		1368	7199	4	8571	1	7497	2683	10181	**18752**	2311	0	1592	3903	5	0	2	7	**18752**	**22,662**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018 **WO No:** 37714

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

Full Study Cyclist Volume

Time Period		PRINCE OF WALES DR			COLONNADE RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	3	0	**3**	0	0	**0**	**3**
07:15	07:30	1	0	**1**	0	0	**0**	**1**
07:30	07:45	0	2	**2**	0	0	**0**	**2**
07:45	08:00	2	2	**4**	0	0	**0**	**4**
08:00	08:15	1	0	**1**	0	0	**0**	**1**
08:15	08:30	2	0	**2**	0	0	**0**	**2**
08:30	08:45	0	1	**1**	0	0	**0**	**1**
08:45	09:00	0	1	**1**	0	0	**0**	**1**
09:00	09:15	1	3	**4**	0	0	**0**	**4**
09:15	09:30	0	1	**1**	0	0	**0**	**1**
09:30	09:45	0	0	**0**	0	0	**0**	**0**
09:45	10:00	0	1	**1**	0	0	**0**	**1**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	1	0	**1**	0	0	**0**	**1**
12:45	13:00	0	0	**0**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	1	0	**1**	0	0	**0**	**1**
15:00	15:15	0	1	**1**	0	0	**0**	**1**
15:15	15:30	1	0	**1**	0	0	**0**	**1**
15:30	15:45	0	1	**1**	0	0	**0**	**1**
15:45	16:00	0	3	**3**	0	0	**0**	**3**
16:00	16:15	0	2	**2**	0	0	**0**	**2**
16:15	16:30	0	2	**2**	1	0	**1**	**3**
16:30	16:45	0	3	**3**	0	0	**0**	**3**
16:45	17:00	0	0	**0**	0	0	**0**	**0**
17:00	17:15	3	0	**3**	0	0	**0**	**3**
17:15	17:30	1	0	**1**	1	0	**1**	**2**
17:30	17:45	1	0	**1**	1	0	**1**	**2**
17:45	18:00	0	1	**1**	0	0	**0**	**1**
Total		18	24	**42**	3	0	**3**	**45**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018 **WO No:** 37714

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

Full Study Pedestrian Volume

	PRINCE OF WALES DR			COLONNADE RD			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	0	0	**0**	0	0	**0**	**0**
07:15 07:30	0	0	**0**	0	0	**0**	**0**
07:30 07:45	0	0	**0**	0	0	**0**	**0**
07:45 08:00	0	0	**0**	0	0	**0**	**0**
08:00 08:15	0	0	**0**	0	0	**0**	**0**
08:15 08:30	0	0	**0**	0	0	**0**	**0**
08:30 08:45	0	0	**0**	0	0	**0**	**0**
08:45 09:00	0	0	**0**	0	0	**0**	**0**
09:00 09:15	0	0	**0**	1	0	**1**	**1**
09:15 09:30	0	0	**0**	0	0	**0**	**0**
09:30 09:45	0	0	**0**	0	0	**0**	**0**
09:45 10:00	0	0	**0**	0	0	**0**	**0**
11:30 11:45	0	0	**0**	0	0	**0**	**0**
11:45 12:00	0	0	**0**	0	0	**0**	**0**
12:00 12:15	0	0	**0**	0	0	**0**	**0**
12:15 12:30	0	0	**0**	0	0	**0**	**0**
12:30 12:45	0	0	**0**	0	0	**0**	**0**
12:45 13:00	0	0	**0**	0	0	**0**	**0**
13:00 13:15	0	0	**0**	0	0	**0**	**0**
13:15 13:30	0	0	**0**	0	0	**0**	**0**
15:00 15:15	0	0	**0**	0	0	**0**	**0**
15:15 15:30	0	0	**0**	0	0	**0**	**0**
15:30 15:45	0	0	**0**	1	0	**1**	**1**
15:45 16:00	0	0	**0**	0	0	**0**	**0**
16:00 16:15	0	0	**0**	0	0	**0**	**0**
16:15 16:30	0	0	**0**	0	0	**0**	**0**
16:30 16:45	1	0	**1**	0	0	**0**	**1**
16:45 17:00	0	0	**0**	0	0	**0**	**0**
17:00 17:15	0	0	**0**	0	0	**0**	**0**
17:15 17:30	0	0	**0**	0	0	**0**	**0**
17:30 17:45	0	0	**0**	0	0	**0**	**0**
17:45 18:00	0	0	**0**	1	0	**1**	**1**
Total	1	0	**1**	3	0	**3**	**4**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018 **WO No:** 37714

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

Full Study Heavy Vehicles

		PRINCE OF WALES DR									COLONNADE RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	7	0	**8**	0	3	2	**5**	**13**	5	0	4	**9**	0	0	0	**0**	**9**	**22**
07:15	07:30	1	12	0	**13**	0	5	3	**8**	**21**	3	0	5	**8**	0	0	0	**0**	**8**	**29**
07:30	07:45	3	9	0	**12**	0	4	1	**5**	**17**	1	0	4	**5**	0	0	0	**0**	**5**	**22**
07:45	08:00	1	5	0	**6**	0	6	2	**8**	**14**	4	0	8	**12**	0	0	0	**0**	**12**	**26**
08:00	08:15	2	4	0	**6**	0	7	0	**7**	**13**	4	0	3	**7**	0	0	0	**0**	**7**	**20**
08:15	08:30	4	9	0	**13**	0	8	1	**9**	**22**	1	0	5	**6**	0	0	0	**0**	**6**	**28**
08:30	08:45	3	6	0	**9**	0	9	5	**14**	**23**	2	0	2	**4**	0	0	0	**0**	**4**	**27**
08:45	09:00	5	7	0	**12**	0	11	8	**19**	**31**	2	0	3	**5**	0	0	0	**0**	**5**	**36**
09:00	09:15	4	10	0	**14**	0	7	6	**13**	**27**	2	0	0	**2**	0	0	0	**0**	**2**	**29**
09:15	09:30	2	3	0	**5**	0	4	11	**15**	**20**	0	0	3	**3**	0	0	0	**0**	**3**	**23**
09:30	09:45	4	9	0	**13**	0	3	5	**8**	**21**	2	0	6	**8**	0	0	0	**0**	**8**	**29**
09:45	10:00	4	7	0	**11**	0	4	3	**7**	**18**	3	0	6	**9**	0	0	0	**0**	**9**	**27**
11:30	11:45	1	3	0	**4**	0	4	5	**9**	**13**	2	0	10	**12**	0	0	0	**0**	**12**	**25**
11:45	12:00	1	6	0	**7**	0	13	2	**15**	**22**	5	0	1	**6**	0	0	0	**0**	**6**	**28**
12:00	12:15	4	4	0	**8**	0	9	2	**11**	**19**	2	0	1	**3**	0	0	0	**0**	**3**	**22**
12:15	12:30	0	4	0	**4**	0	6	0	**6**	**10**	5	0	8	**13**	0	0	0	**0**	**13**	**23**
12:30	12:45	2	6	0	**8**	0	4	1	**5**	**13**	2	0	2	**4**	0	0	0	**0**	**4**	**17**
12:45	13:00	7	6	0	**13**	0	1	3	**4**	**17**	0	0	2	**2**	0	0	0	**0**	**2**	**19**
13:00	13:15	4	4	0	**8**	0	7	1	**8**	**16**	4	0	5	**9**	0	0	0	**0**	**9**	**25**
13:15	13:30	6	3	0	**9**	0	8	5	**13**	**22**	5	0	4	**9**	0	0	0	**0**	**9**	**31**
15:00	15:15	2	4	0	**6**	0	2	2	**4**	**10**	7	0	4	**11**	0	0	0	**0**	**11**	**21**
15:15	15:30	4	5	0	**9**	0	6	4	**10**	**19**	3	0	1	**4**	0	0	0	**0**	**4**	**23**
15:30	15:45	5	6	0	**11**	0	9	4	**13**	**24**	4	0	4	**8**	0	0	0	**0**	**8**	**32**
15:45	16:00	5	8	0	**13**	0	8	2	**10**	**23**	2	0	1	**3**	0	0	0	**0**	**3**	**26**
16:00	16:15	5	4	0	**9**	0	10	6	**16**	**25**	1	0	2	**3**	0	0	0	**0**	**3**	**28**
16:15	16:30	1	6	0	**7**	0	7	4	**11**	**18**	1	0	2	**3**	0	0	0	**0**	**3**	**21**
16:30	16:45	1	3	0	**4**	0	6	3	**9**	**13**	2	0	0	**2**	0	0	0	**0**	**2**	**15**
16:45	17:00	2	1	0	**3**	0	6	3	**9**	**12**	0	0	2	**2**	0	0	0	**0**	**2**	**14**
17:00	17:15	4	1	0	**5**	0	8	3	**11**	**16**	2	0	0	**2**	0	0	0	**0**	**2**	**18**
17:15	17:30	1	5	0	**6**	0	3	4	**7**	**13**	2	0	2	**4**	0	0	0	**0**	**4**	**17**
17:30	17:45	1	1	0	**2**	0	5	7	**12**	**14**	0	0	1	**1**	0	0	0	**0**	**1**	**15**
17:45	18:00	5	0	0	**5**	0	1	4	**5**	**10**	1	0	0	**1**	0	0	0	**0**	**1**	**11**
Total:	None	95	168	0	**263**	0	194	112	**306**	**569**	79	0	101	**180**	0	0	0	**0**	**180**	**749**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COLONNADE RD @ PRINCE OF WALES DR

Survey Date: Tuesday, April 10, 2018 **WO No:** 37714

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

Full Study 15 Minute U-Turn Total

Time Period		PRINCE OF WALES DR		COLONNADE RD		
		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	**0**
07:15	07:30	0	0	0	0	**0**
07:30	07:45	0	0	0	0	**0**
07:45	08:00	0	0	0	0	**0**
08:00	08:15	0	0	0	0	**0**
08:15	08:30	0	0	0	0	**0**
08:30	08:45	0	0	0	0	**0**
08:45	09:00	0	0	0	0	**0**
09:00	09:15	0	0	0	0	**0**
09:15	09:30	0	0	0	0	**0**
09:30	09:45	0	0	0	0	**0**
09:45	10:00	0	0	0	0	**0**
11:30	11:45	0	0	0	0	**0**
11:45	12:00	0	0	0	1	**1**
12:00	12:15	0	0	0	0	**0**
12:15	12:30	0	0	0	0	**0**
12:30	12:45	0	0	0	0	**0**
12:45	13:00	0	0	0	0	**0**
13:00	13:15	0	0	0	0	**0**
13:15	13:30	0	0	0	0	**0**
15:00	15:15	0	0	0	0	**0**
15:15	15:30	0	0	0	0	**0**
15:30	15:45	0	0	0	0	**0**
15:45	16:00	0	0	0	0	**0**
16:00	16:15	0	0	0	0	**0**
16:15	16:30	0	0	0	0	**0**
16:30	16:45	0	0	0	0	**0**
16:45	17:00	0	0	0	0	**0**
17:00	17:15	0	0	0	0	**0**
17:15	17:30	0	0	0	0	**0**
17:30	17:45	0	0	0	0	**0**
17:45	18:00	0	0	0	0	**0**
Total		0	0	0	1	**1**

APPENDIX E

Collision Records

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: COLONNADE RD @ COLONNADE RD E

Traffic Control: Traffic signal **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Nov-16, Thu,17:23	Rain	Rear end	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2019-Jan-23, Wed,16:30	Snow	Sideswipe	P.D. only	Loose snow	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Oct-08, Tue,16:45	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Oct-11, Fri,15:00	Clear	Other	P.D. only	Dry	South	Reversing	Pick-up truck	Other motor vehicle	0
					North	Unknown	Unknown	Other motor vehicle	

Location: COLONNADE RD @ PRINCE OF WALES DR

Traffic Control: Traffic signal **Total Collisions:** 66

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-13, Wed,07:07	Snow	Turning movement	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Feb-08, Mon,10:03	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2016-Feb-25, Thu,20:28	Freezing Rain	Other	Non-fatal injury	Ice	South	Turning right	Passenger van	Pole (sign, parking meter)	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Mar-29, Tue,17:04	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2016-May-31, Tue,12:00	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jun-10, Fri,13:07	Clear	Rear end	P.D. only	Dry	South	Stopped	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: COLONNADE RD @ PRINCE OF WALES DR

Traffic Control: Traffic signal **Total Collisions:** 66

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jul-22, Fri,12:47	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2016-Aug-28, Sun,12:03	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Sep-29, Thu,16:39	Clear	Turning movement	P.D. only	Dry	East	Turning right	Unknown	Other motor vehicle	0
					West	Turning left	Passenger van	Other motor vehicle	
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Oct-12, Wed,18:40	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Oct-28, Fri,08:00	Rain	Rear end	Non-fatal injury	Wet	North	Changing lanes	Unknown	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Dec-06, Tue,11:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-13, Tue,13:18	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-05, Thu,08:53	Clear	Rear end	P.D. only	Ice	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-06, Fri,18:41	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-02, Thu,16:18	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Feb-17, Fri,12:15	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: COLONNADE RD @ PRINCE OF WALES DR

Traffic Control: Traffic signal **Total Collisions:** 66

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Mar-12, Sun,19:36	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-21, Tue,17:20	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2017-Apr-18, Tue,12:01	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Skidding/sliding	0
2017-May-03, Wed,16:24	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-18, Thu,17:45	Clear	Rear end	Non-fatal injury	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-May-26, Fri,17:30	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-Aug-01, Tue,19:00	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-10, Thu,18:30	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-18, Fri,16:47	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-18, Fri,17:10	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-16, Mon,07:01	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Motorcycle	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: COLONNADE RD @ PRINCE OF WALES DR

Traffic Control: Traffic signal **Total Collisions:** 66

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Dec-05, Tue,16:11	Clear	Sideswipe	P.D. only	Wet	North	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-05, Mon,11:57	Clear	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Feb-14, Wed,10:20	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-08, Thu,18:05	Snow	Rear end	Non-fatal injury	Loose snow	North	Slowing or stopping	Delivery van	Skidding/sliding	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Apr-09, Mon,07:25	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Unknown	Other motor vehicle	0
					South	Going ahead	Ambulance	Other motor vehicle	
2018-May-01, Tue,16:34	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-19, Thu,12:37	Clear	Sideswipe	P.D. only	Dry	South	Turning right	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jul-29, Sun,19:22	Clear	Turning movement	Non-fatal injury	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2018-Aug-03, Fri,14:35	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Sep-25, Tue,16:35	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-26, Wed,08:00	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: COLONNADE RD @ PRINCE OF WALES DR

Traffic Control: Traffic signal **Total Collisions:** 66

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Oct-20, Sat,13:05	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-27, Tue,07:52	Snow	Sideswipe	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2019-Mar-13, Wed,17:20	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-20, Wed,13:54	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-16, Tue,08:06	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-05, Sun,16:26	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-10, Fri,15:05	Clear	Rear end	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-21, Tue,17:05	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Delivery van	Other motor vehicle	
2019-Jun-14, Fri,14:16	Clear	Rear end	P.D. only	Dry	South	Going ahead	Unknown	Other motor vehicle	0
					South	Going ahead	Truck - open	Other motor vehicle	
2019-Jun-14, Fri,15:45	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jun-19, Wed,19:27	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-03, Wed,18:00	Clear	Rear end	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: COLONNADE RD @ PRINCE OF WALES DR

Traffic Control: Traffic signal **Total Collisions:** 66

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-09, Tue,16:54	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-28, Sun,11:20	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jul-30, Tue,16:26	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-14, Wed,17:49	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-23, Fri,07:40	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Unknown	Unknown	Other motor vehicle	
					North	Unknown	Unknown	Other motor vehicle	
2019-Sep-11, Wed,13:00	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-09, Wed,14:03	Clear	Sideswipe	P.D. only	Dry	East	Unknown	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-19, Tue,16:40	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-02, Mon,08:52	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-16, Mon,13:30	Clear	Sideswipe	P.D. only	Wet	North	Changing lanes	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: COLONNADE RD @ PRINCE OF WALES DR

Traffic Control: Traffic signal **Total Collisions:** 66

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Jan-25, Sat,10:04	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2020-Feb-20, Thu,10:44	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Mar-15, Sun,14:25	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2020-Nov-25, Wed,11:13	Snow	SMV other	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Curb	0
2020-Dec-15, Tue,17:19	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	

Location: PRINCE OF WALES DR btwn COLONNADE RD & STEPHANIE AVE

Traffic Control: No control **Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-07, Thu,08:30	Clear	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Apr-23, Sat,16:02	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Aug-07, Sun,10:09	Clear	Other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Debris falling off vehicle	0
					North	Going ahead	Pick-up truck	Other	
2016-Aug-15, Mon,14:10	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

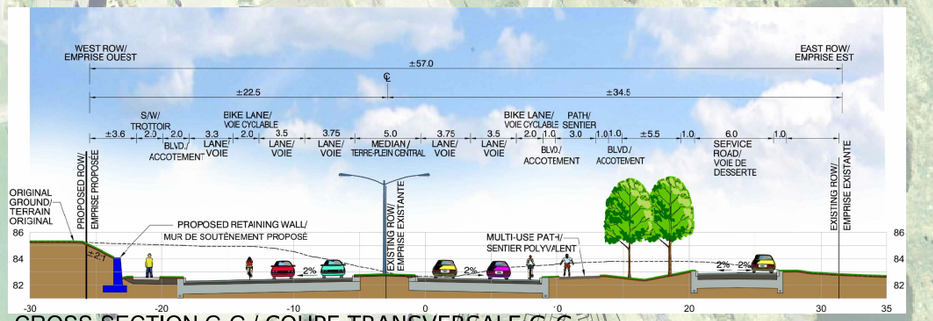
Location: PRINCE OF WALES DR btwn COLONNADE RD & STEPHANIE AVE

Traffic Control: No control **Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Sep-01, Fri,14:47	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-11, Wed,16:05	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-04, Tue,16:55	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-24, Sun,10:10	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-08, Wed,09:32	Clear	Approaching	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Oct-05, Mon,15:50	Clear	Angle	P.D. only	Dry	West	Turning left	Passenger van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

APPENDIX F

Excerpts From Relevant Traffic Studies



CROSS-SECTION G-G / COUPE TRANSVERSALE G-G

LIMIT OF STUDY / LIMITE DE L'ÉTUDE

FISHER

VALLEY RIDGE

BORDEN

LIMIT OF STUDY / LIMITE DE L'ÉTUDE

EXISTING STRUCTURE TO BE EXTENDED / STRUCTURE EXISTANTE À PROLONGER

SIDEWALK - BY OTHERS / TROTTOIR - RÉALISÉ PAR D'AUTRES INTERVENANTS

MITIGATION PLANTING AS REQUIRED / PLANTATION D'ATTÉNUATION AU BESOIN

NEPEAN STORMWATER MANAGEMENT FACILITY/ INSTALLATION DE GESTION DES EAUX PLUVIALES DE NEPEAN

PROPOSED ASHCROFT DEVELOPMENT/ LOTISSEMENT ASHCROFT PROPOSÉ

EXTEND SIDEWALK/ PROLONGER LE TROTTOIR

MERIVALE ACRES BUSINESS PARK/ PARC D'AFFAIRES MERIVALE ACRES

COLONNADE

PRINCE OF WALES

RIDEAU SHORE

NEPEAN CREEK/

CUL-DE-SAC

SERVICE ROAD / VOIE DE DESSERTE

POTENTIAL FUTURE PATHWAY EXTENSION/ PROLONGEMENT ÉVENTUEL DU SENTIER FUTUR

NOISE BARRIER/ ÉCRAN ANTIBRUIT

H

H

G

G

PROPOSED 1.5m HT RETAINING WALL / MUR DE SOUTÈNEMENT DE 1.5 M PROPOSÉ

RIGHT-IN RIGHT-OUT ACCESS / ACCÈS TOURNE-À-DROITE

RIDEAU RIVER/ RIVIÈRE RIDEAU

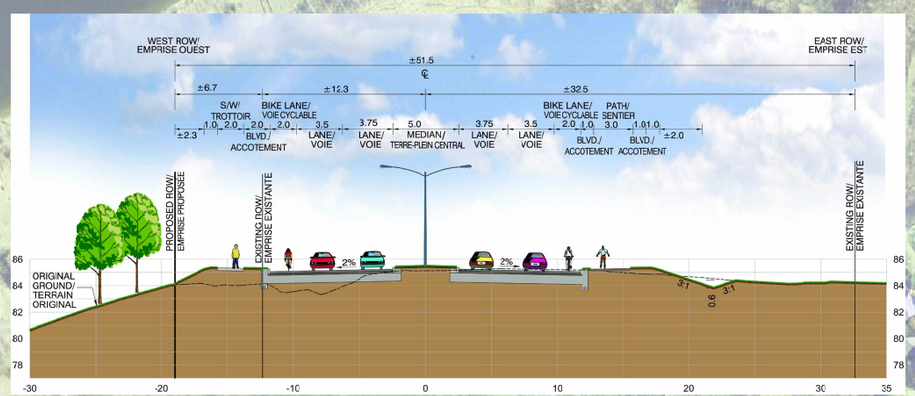
SERVICE ROAD / VOIE DE DESSERTE

CUL-DE-SAC

CN/ VIA RAIL/

POTENTIAL FUTURE PATHWAY CONNECTION FOR POETS PATHWAY / LIEN ÉVENTUEL DU FUTUR SENTIER VERS LE SENTIER DES POÈTES

REPLACE CN/VIA RAIL STRUCTURE TO ACCOMMODATE ROAD WIDENING / REMPLACEMENT DE LA STRUCTURE DE CN/VIA RAIL POUR PERMETTRE L'ÉLARGISSEMENT DE LA ROUTE



CROSS-SECTION H-H / COUPE TRANSVERSALE H-H

NOTE: Segregated bike lanes are to be investigated at detailed design for sections with urban cross-sections.

LEGEND/ LEGENDE

- EXISTING TRAFFIC LIGHT/ FEU DE CIRCULATION EXISTANT
- PROPOSED TRAFFIC LIGHT/ FEU DE CIRCULATION PROPOSÉ
- EXISTING STONE DUST RECREATIONAL PATHWAY/ SENTIER RÉCRÉATIF EXISTANT EN POUSSIÈRE DE PIERRE
- SHARED USE COMMUNITY ROADWAY/ ROUTE COMMUNAUTAIRE PARTAGÉE
- 3.0m WIDE MULTI-USE PATHWAY/ SENTIER POLYVALENT DE 3,0 M
- 2.0m WIDE CONCRETE SIDEWALK/ TROTTOIR DE BÉTON DE 2,0 M
- EXISTING RIGHT OF WAY/ EMPRISE EXISTANTE
- PROPOSED RIGHT OF WAY/ EMPRISE PROPOSÉE
- PROPOSED RETAINING WALL/ MUR DE SOUTÈNEMENT PROPOSÉ
- NOISE BARRIER/ ÉCRAN ANTIBRUIT
- PROPOSED STREET TREES/ ARBRES DE RUE PROPOSÉS
- PROPOSED SHRUBS/ ARBUSTES PROPOSÉS

Ottawa

DATE: OCTOBER 2011

SCALE: 20 0 20 40 60m

PRINCE OF WALES EA STUDY
RECOMMENDED DESIGN PLANS

CORUSH SUNDERLAND WRIGHT

MORRISON HERSHFIELD

EXHIBIT 8.1I

L:\proj\2074025\Drawings\AutoCAD\Pow_DTW_MASTERLAYOUT_DN_12Sep2011

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Prince of Wales and Colonnade Area

2011 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: Feb 2, 2021
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

50 100 150 200 250

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Prince of Wales and Colonnade Area

2031 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: Feb 2, 2021
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

50 100 150 200 250

FISHER GLEN

REVELSTOKE

Nepean Creek

Viewmount Drive

Corinth Private

Colonnade Rd. N

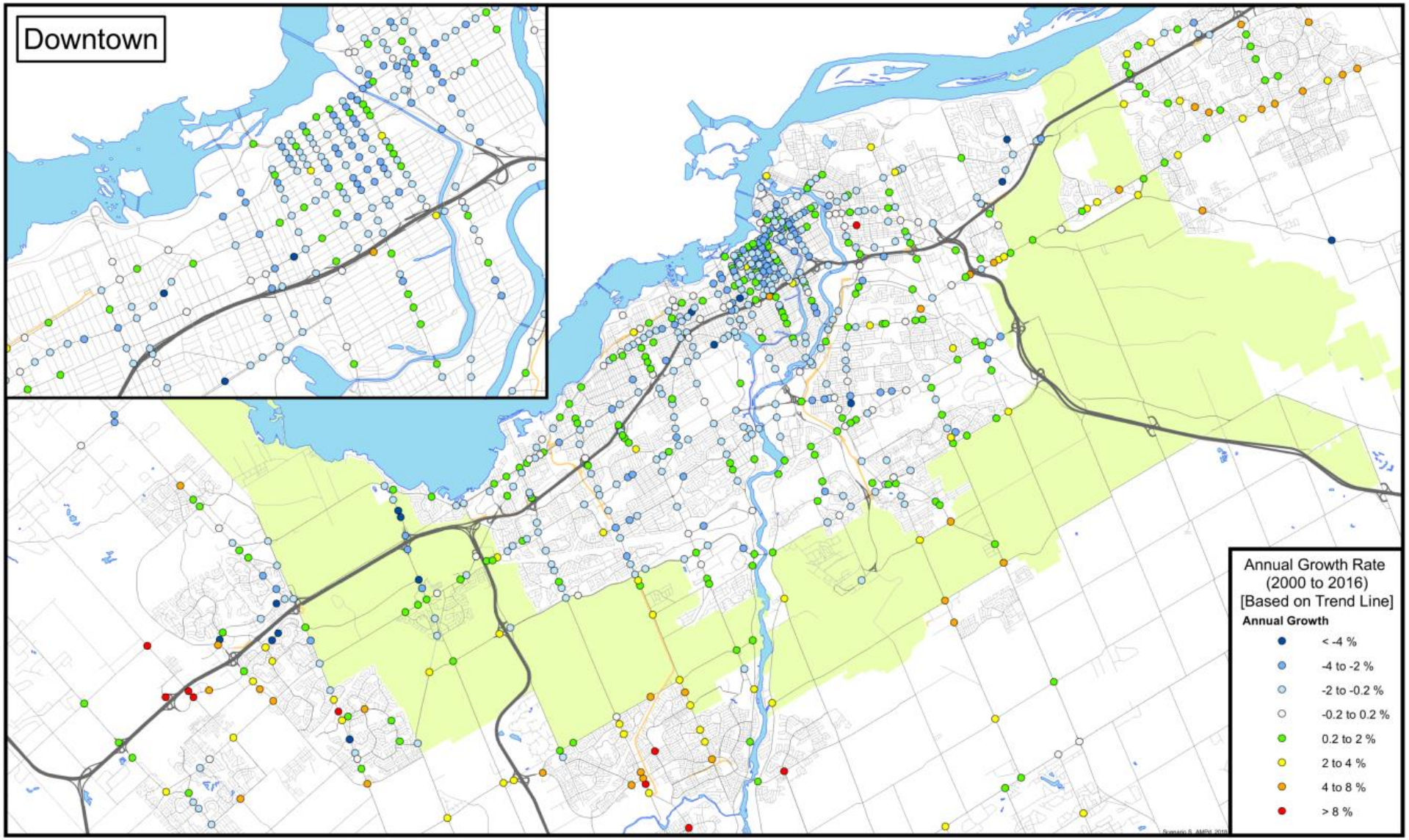
Colonnade Rd. S

Prince Of Wales Dr

Clanwilliam Avenue

INTERSECTION TRAFFIC GROWTH RATE, AM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



INTERSECTION TRAFFIC GROWTH RATE, PM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016

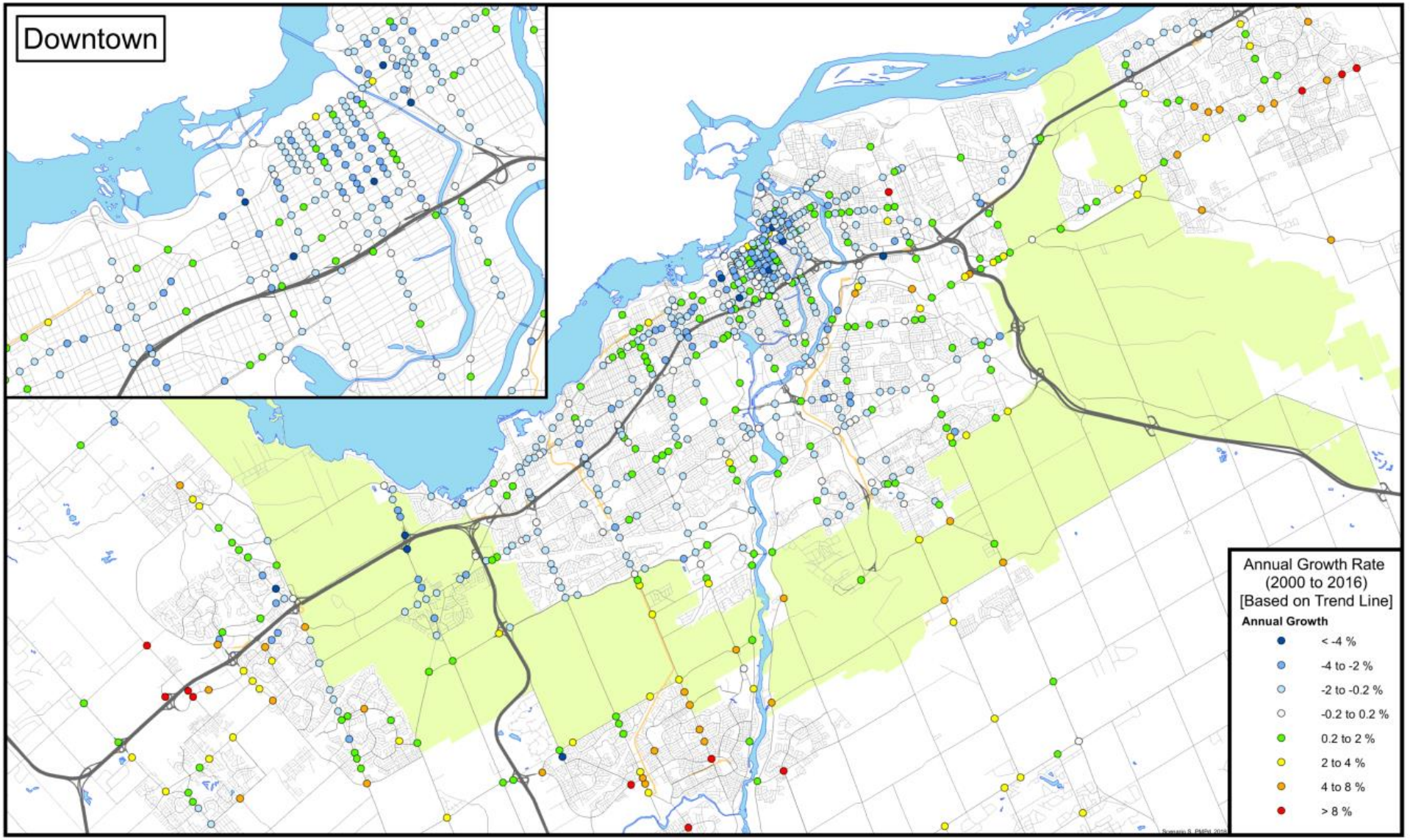


Table 6: Possible Exemptions

Module	Element	Exemption Condition	Development Status
Design Review Component			
Development Design	Circulation and Access	Only required for Site Plans	Not exempt
	New Street Networks	**Only required for Plans of Subdivision**	**Exempt**
Parking	Parking Supply	Only required for Site Plans	Not exempt
	Spillover Parking	**Only required for Site Plans where parking supply is 15% below unconstrained demand**	**Exempt**
Transportation Demand Management	All elements	Not required for Site Plans expected to have fewer than 60 employees and/or students on location at any given time	Not exempt
Neighbourhood Traffic Management	Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	Not exempt
Network Concept	**---**	**Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning**	**Exempt**

Therefore, the TIA will contain analysis of Circulation and Access, Parking Supply, Transportation Demand Management, and Neighbourhood Traffic Management.

4.0 Forecasting

4.1 Trip Generation and Mode Share

Trip generation for the proposed development was forecasted using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition and the City of Ottawa TRANS Trip Generation Manual given that the TRANS Trip Generation Manual does not have trip generation rates for employment type land uses. The proposed development includes retaining the existing 5000m^2 warehouse building, while adding a 8575m^2 self-storage building and a 3747m^2 warehouse building. Given that traffic counts was not available for the existing site accesses and undertaking such counts may not be accurate due to the pandemic, trip generation was forecasted for both the existing warehouse building and proposed future buildings at the site. These trip generation forecast and methodology are outlined in the following subsections.

4.1.1. Existing Site Trip Generation

Given the nature of the existing site, Land Use Category (LUC) 150 "Warehousing" was applied to the existing 1-storey warehouse building with a GFA of 5000m^2. The average rate methodology was applied given multiple land uses are included as part of the future proposed development, and a consistent trip generation was sought for the existing building under the existing and future site trip generation forecasts. The results of the ITE trip generation for the existing site are shown in **Table 7.**

Table 7: Existing Site ITE Trip Generation

Trip Type	ITE Land Use Category	Gross Floor Area (GFA)	Peak Hour	Number of Trips		
				Inbound	Outbound	Total
Existing Warehouse Building						
Vehicle	LUC 150 Warehousing	5,000 m² (53.82ksqft)	A.M.	7	2	9
			P.M.	3	7	10
Truck			A.M.	0	1	1
			P.M.	1	1	2

The City of Ottawa TIA Guidelines require identification of the existing mode share of the area using the most recent National Capital Region Origin-Destination survey. Given that the site is located within the "Merivale" district, mode splits from Table 12 of the "TRANS Trip Generation Manual – Summary Report" for the "Merivale" district was used for existing modal distribution. **Table 8** outlines the existing mode split for the subject site. This mode split was applied to the existing site trip generation.

Table 8: Existing Mode Split

Travel Mode	Percent Mode Split
Auto Driver	69.4%
Auto Passenger	6.9%
Transit	16.3%
Cycling	3.4%
Walking	4.1%

The vehicle trips identified in **Table 7** were converted to person-trips using the conversion factor of 1.28 for non-residential land uses as noted in the City of Ottawa's TRANS Trip Generation Manual. Truck trips were added to the TRANS Trip Generation Manual forecast separately given the manual does not forecast truck trips.

The resulting person trips by travel mode are summarized in **Table 9** for the existing site.

Table 9: TRANS Trip Generation Forecast – Existing Site

Travel Mode	Trips Generated – A.M. Peak			Trips Generated – P.M. Peak		
	In	Out	Total	In	Out	Total
Total Person Trips	***9***	***3***	***12***	***4***	***9***	***13***
Auto Driver	*6*	*2*	*8*	*3*	*6*	*9*
Auto Passenger	*1*	*0*	*1*	*0*	*1*	*1*
Transit	*1*	*1*	*2*	*1*	*1*	*2*
Cycling	*0*	*0*	*0*	*0*	*1*	*1*
Walking	*1*	*0*	*1*	*0*	*0*	*0*

The above forecast estimates an existing site trip generation of 12 and 13 person-trips in the a.m. and p.m. peak hour, respectively. The existing building is proposed to be retained as part of the future site plan. Thus, the person-trip generation for this building is incorporated into the future site trip generation process.

4.1.2. Future Site Trip Generation

Given the nature of the future site, LUC 151 "Mini-Warehousing" was applied to the proposed 3-storey self storage facility with a GFA of 8667m^2, while LUC 150 "Warehousing" was applied to the proposed 1-storey warehousing building with a GFA of 3747 m^2. The average rate methodology was applied given multiple land uses are included as part of the future proposed development. The existing 5000m^2 warehouse building trip generation discussed in **Section 4.1.1** was maintained for this scenario. The results of the ITE trip generation for the existing site are shown in **Table 10**.

Table 10: Future Site ITE Trip Generation

Trip Type	ITE Land Use Category	Gross Floor Area (GFA)	Peak Hour	Number of Trips		
				Inbound	Outbound	Total
Existing Warehouse Building						
Vehicle	LUC 150 Warehousing	5,000 m^2 (53.82ksqft)	A.M.	7	2	9
			P.M.	3	7	10
Truck			A.M.	0	1	1
			P.M.	1	1	2
Future Building "A" Self-Storage Facility						
Vehicle	LUC 151 Mini-Warehousing	8667m^2 (93.29ksqft)	A.M.	5	3	8
			P.M.	7	7	14
Truck			A.M.	0	0	0
			P.M.	0	0	0
Future Building "B" Warehouse						
Vehicle	LUC 150 Warehousing	3747 m^2 (40.33ksqft)	A.M.	7	2	9
			P.M.	3	6	9
Truck			A.M.	1	0	1
			P.M.	1	1	2
Combined Site Future Total						
Vehicle	Various	17414 m^2 (187.44ksqft)	A.M.	19	7	26
			P.M.	13	20	33
Truck			A.M.	1	1	2
			P.M.	2	2	4

The TIA guidelines require mode share target to be set for the development given the future horizon years considered within the assessment. Concerning this, the surrounding lands in the Merivale District generally conform to land use policies outlined in the City of Ottawa's Official Plan, and no major improvements were identified in the City of Ottawa 2013 Transportation Master Plan that would significantly change the mode split of any travel mode. Therefore, the current modal split was applied to the future horizons. A heavy reliance on auto travel is still expected in the future given the industrial nature of the proposed development, the suburban context of the study area with no nearby origin or destination points for walking or cycling trips, and the absence of planned alternative transportation infrastructure improvements in the study area. The mode split identified in **Table 8** was applied to the proposed development as part of the TRANS Trip Generation Manual process.

The vehicle trips identified above were converted to person-trips using the conversion factor of 1.28 for non-residential land uses as noted in the City of Ottawa's TRANS Trip Generation Manual. Similar to the existing site trip generation process, truck trips were added to the TRANS Trip Generation Manual forecast separately given the manual does not forecast truck trips.

The combined person-trip generation for the proposed future site, which was calculated by summing the person trips of each of the three buildings which make up the proposed future site, is outlined in **Table 11**.

Table 11: TRANS Trip Generation Forecast – Proposed Future Site Total

Travel Mode		Trips Generated – A.M. Peak			Trips Generated – P.M. Peak		
		In	Out	Total	In	Out	Total
Total Person Trips		**20**	**9**	**29**	**15**	**23**	**38**
Auto Driver	69.4%	*6*	*20*	*11*	*15*	*26*	*29*
Auto Passenger	6.9%	*0*	*2*	*1*	*2*	*3*	*3*
Transit	16.3%	*2*	*5*	*3*	*4*	*7*	*8*
Cycling	3.4%	*0*	*1*	*0*	*1*	*1*	*1*
Walking	4.1%	*1*	*1*	*0*	*1*	*1*	*2*

The proposed development is forecast to generate 29 and 38 two-way person-trips in the a.m. and p.m. peak hours, respectively.

4.2 Trip Distribution

The vehicle trips generated by the proposed development were distributed to the road network based on origin and destination data from the NCR survey (2011) for the Merivale District in support of traffic volume forecasting. The percentage of trips from origin points outside of the study area entering the study area during the weekday a.m. peak hour were analyzed and were assigned based on the most convenient route available and the route with the shortest travel time. Further, trips internal to the Merivale District were assigned based on expected catchment areas given the site's location. The following trip distribution was derived for the boundary road network:

- 28% to and from the south via Prince of Wales Drive
- 28% to and from the north via Prince of Wales Drive
- 26% to and from the west via Colonnade Road (split between North/South, discussed below)
- 18% to and from the north via Fisher Avenue

Appendix H contains the NCR survey data and **Appendix I** contains the trip distribution analysis based on percentage of trips from various origin points.

It is noted that the trip distribution for Colonnade Road accounts for both the Colonnade Road North and Colonnade Road South routes. For the purposes of analysis, of the 26% trip distribution to Colonnade Road, 60% of this distribution was directed to the North branch (i.e., 16% of total site traffic) while 40% of this distribution was assigned to the South branch (ie. 10% of total site traffic). As noted, the slightly larger distribution to the Colonnade Road North was assumed due to roadway horizontal alignment and given it is a Major Collector roadway under the City of Ottawa Official Plan, while Colonnade Road South is only designated as a Collector. In consideration of these findings, more

traffic was distributed to Colonnade Road North. Refer to **Figures 3, 4 and 5** for the trip distributions.

4.3 Trip Assignment

Passenger vehicle and truck trips generated by the proposed development are assigned to the road network based on the trip distribution outlined in **Section 4.2**.

Given the multiple site accesses, site traffic may utilize any of the three site accesses to service the site. Proportions of the total vehicle trips were assigned to each of the site accesses based on expected travel patterns for both the existing and future buildings. **Table 12** provides a summary of the portions used for site access trip assignment. The site access numeration is properly defined in the boundary road network, shown in **Figure 2**.

Table 12: Site Access Trip Assignment Proportions

	Site Access #1	Site Access #2	Site Access #3
Existing Building	50%	25%	25%
Future Building "A"	0%	30%	70%
Future Building "B"	0%	30%	70%

The site access #1 and the associated parking facility is expected to exclusively service the existing building upon buildout of the proposed development. Some vehicle trips, including all truck trips attributable to the existing building, are expected to use the site accesses along Colonnade Road South.

The future buildings "A" and "B" will be serviced by the site accesses along Colonnade Road South. While it is expected that site traffic will utilize both site access #2 and #3 approximately equal amounts of time, the location of the proposed internal roadways and parking locations (as shown on the Site Plan in **Appendix B**) lends to site access #3 being a slightly more attractive option for vehicles and trucks. Therefore, 70% of these building's site traffic was assigned to site access #3, while 30% of this traffic was assigned to site access #2. This assignment method additionally allows for analysis of a worst case scenario should significant traffic opt to use only one of the site accesses.

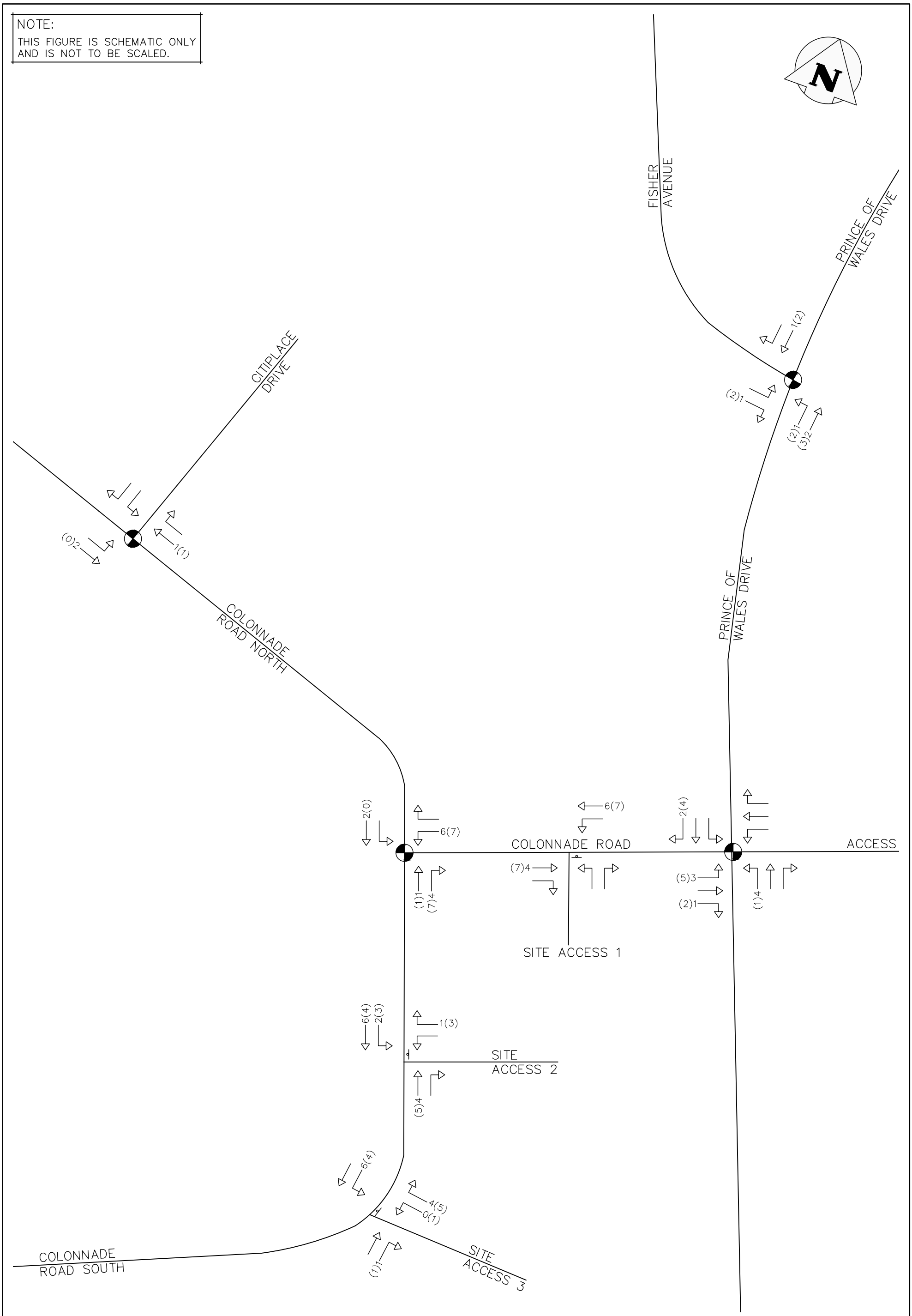
Figures 3, 4 and 5 outline the trip distribution used for trips entering and exiting site access #1, #2, and #3, respectively. The existing site vehicle trip assignment is outlined as **Figure 6**. The future proposed development vehicle trip assignment is outlined as **Figure 7**.

4.4 Background Transportation Network Plans

According to Map 10 of the City of Ottawa 2013 Transportation Master Plan (TMP), Prince of Wales Drive is identified as a "widened arterial" under the 2031 network concept. However, the City of Ottawa is currently updating their TMP. The City confirmed through correspondence that timing of this road improvement is currently unknown. Roadway drawings outlining the ultimate intersection configurations of Colonnade Road and Fisher Avenue at Prince of Wales Drive after road widening was circulated and is attached in **Appendix G**.

Therefore, the existing boundary road network (identified in **Figure 2**) was applied for the future analysis scenarios.

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- AM(PM) WEEKDAY AM(PM) TRIP DISTRIBUTION

125 COLONNADE ROAD
CORBETT LAND STRATEGIES INC.
CITY OF OTTAWA

SITE TRIP ASSIGNMENT – NEW SITE TRIPS

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 301
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2112–6218
Date	Check	Scale	Dwg.
2022/03/11	A.H.	N.T.S	FIG. 07

APPENDIX G

Signal Timing

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

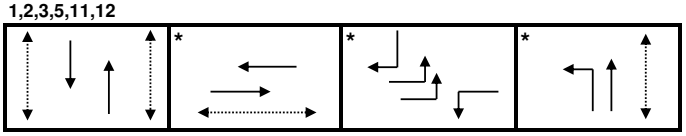
Intersection:	***Main:*** Prince of Wales	***Side:***	Colonnade
Controller:	**ATC 3**	**TSD:**	**6374**
Author:	Matthew Anderson	**Date:**	21-Oct-2022

Existing Timing Plans†

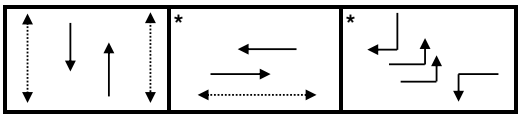
	Plan							**Ped Minimum Time**		
	Early AM	**Off Peak**	**PM Peak**	**Night**	**Saturday**	**AM Peak**	**Evening**	***Walk***	***DW***	***A+R***
	1	2	3	4	5	11	12			
Cycle	120	100	150	80	115	120	100			
Offset	X	X	X	X	X	X	X			
NB Thru	57	47	94	40	58	57	47	7	22	3.7+3.3
SB Thru	57	47	94	40	58	57	47	7	22	3.7+3.3
EB Thru	28	28	30	28	28	28	28	7	15	3.7+2.3
WB Thru	16	16	16	16	16	16	16	-	-	3.7+2.3
EB Left (fp)	13	12	12	12	12	13	12	-	-	3.7+3.3
WB Left (fp)	13	12	12	12	12	13	12	-	-	3.7+3.3
SB Right	13	12	12	12	12	13	12	-	-	3.7+3.3
NB Left	22	13	14	-	17	22	13	-	-	3.7+3.3

Phasing Sequence‡

Plan: 1,2,3,5,11,12



Plan: 4



Notes: 1) The SBLT is prohibited

Schedule

Weekday

Time	Plan
0:15	4
6:00	1
7:25	11
9:30	2
15:00	3
18:00	2
19:00	12
22:30	4

Saturday

Time	Plan
0:15	4
6:30	5
11:30	2
18:30	12
23:00	4

Sunday

Time	Plan
0:15	4
8:30	12
23:00	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 $61.16 ($54.12 + HST)

APPENDIX H

Multi-Modal Level of Service Calculations

Segment MMLOS Analysis

Exhibit 4 of the MMLOS Guidelines has been used to evaluate the segment pedestrian level of service (PLOS). Exhibit 22 of the MMLOS Guidelines suggest a target PLOS C for all roadways within an employment area or the general urban area. The results of the segment PLOS analysis are summarized in **Table 1**.

Exhibit 11 of the MMLOS Guidelines has been used to evaluate the segment bicycle level of service (BLOS). Exhibit 22 of the MMLOS Guidelines suggest a BLOS B for a cross-town bikeway within an employment area or within the general urban area. The results of the segment BLOS analysis are summarized in **Table 2**.

Exhibit 20 of the MMLOS Guidelines has been used to evaluate the segment truck level of service (TkLOS). Exhibit 22 of the MMLOS Guidelines suggests a target TkLOS B for arterial roadways classified as truck routes within an Employment Area. The results of the segment TkLOS analysis are summarized in **Table 4**.

Table 1: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed[(1)]	PLOS
>2m	-	> 3,000 vpd	No	70 km/h	F

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

Table 2: BLOS Segment Analysis

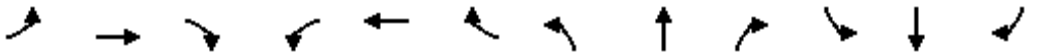
Road Class	Type of Route	Type of Bikeway	Travel Lanes	Operating Speed	BLOS
Arterial	Cross-Town Bikeway, Spine Route	Bike Lane	2	70 km/h	F

Table 3: TkLOS Segment Analysis

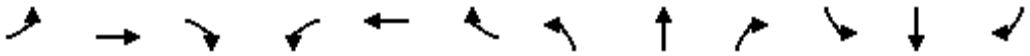
Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
>3.7m	One	B

APPENDIX I

Synchro Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	0	115	0	0	1	281	1295	0	0	878	463
Future Volume (vph)	216	0	115	0	0	1	281	1295	0	0	878	463
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.070					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	120	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		356			164							326
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	240	0	128	0	0	1	312	1439	0	0	976	514
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	128	0	0	1	0	312	1439	0	0	976	514
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

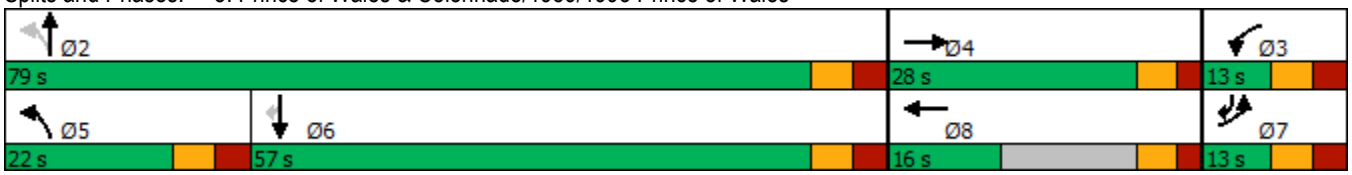


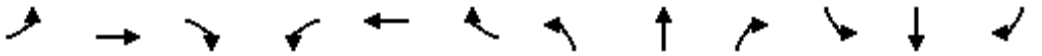
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA			NA	pm+ov
Protected Phases	7	4		3	8		5	2			6	7
Permitted Phases							2					6
Detector Phase	7	4		3	8		5	2			6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0			10.0	5.0
Minimum Split (s)	12.0	28.0		12.0	16.0		12.0	36.0			36.0	12.0
Total Split (s)	13.0	28.0		13.0	16.0		22.0	79.0			57.0	13.0
Total Split (%)	10.8%	23.3%		10.8%	13.3%		18.3%	65.8%			47.5%	10.8%
Maximum Green (s)	6.0	22.0		6.0	10.0		15.0	72.0			50.0	6.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	3.3	2.3		3.3	2.3		3.3	3.3			3.3	3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0			7.0	7.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		15.0						22.0			22.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	6.0	10.0			10.0		72.0	72.0			50.0	56.0
Actuated g/C Ratio	0.06	0.09			0.09		0.67	0.67			0.46	0.52
v/c Ratio	1.39	0.29			0.00		1.08	1.24			1.22	0.56
Control Delay	244.6	1.7			0.0		107.0	135.4			138.6	6.1
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	244.6	1.7			0.0		107.0	135.4			138.6	6.1
LOS	F	A			A		F	F			F	A
Approach Delay		160.1						130.3			92.9	
Approach LOS		F						F			F	
90th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
90th %ile Term Code	Max	Min		Skip	Max		Max	MaxR			MaxR	Max
70th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
70th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
50th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
50th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
30th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
30th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
10th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
10th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
Stops (vph)	163	0			0		176	1023			710	118
Fuel Used(l)	49	2			0		32	184			151	24
CO Emissions (g/hr)	915	35			0		601	3423			2816	453
NOx Emissions (g/hr)	177	7			0		116	661			544	87
VOC Emissions (g/hr)	211	8			0		139	789			650	104
Dilemma Vehicles (#)	0	5			0		0	49			33	0
Queue Length 50th (m)	~36.5	0.0			0.0		~62.4	~396.5			~266.4	11.0
Queue Length 95th (m)	#62.2	0.0			0.0		#119.0	#479.7			#345.0	33.0
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	173	546			432		289	1163			800	916
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	1.39	0.23			0.00		1.08	1.24			1.22	0.56

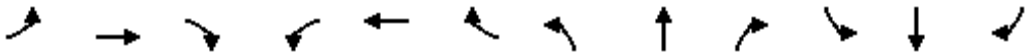
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 108			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.39			
Intersection Signal Delay: 117.9		Intersection LOS: F	
Intersection Capacity Utilization 95.9%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 108			
70th %ile Actuated Cycle: 108			
50th %ile Actuated Cycle: 108			
30th %ile Actuated Cycle: 108			
10th %ile Actuated Cycle: 108			
~ 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: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	471	0	339	0	0	0	102	909	0	0	1311	310
Future Volume (vph)	471	0	339	0	0	0	102	909	0	0	1311	310
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97										0.99
Frt		0.850										0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3216	1445	0	1745	1745	0	1566	1745	0	0	1745	1455
Flt Permitted	0.950						0.043					
Satd. Flow (perm)	3216	1445	0	1745	1745	0	71	1745	0	0	1745	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		165										161
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
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%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	523	0	377	0	0	0	113	1010	0	0	1457	344
Shared Lane Traffic (%)												
Lane Group Flow (vph)	523	377	0	0	0	0	113	1010	0	0	1457	344
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



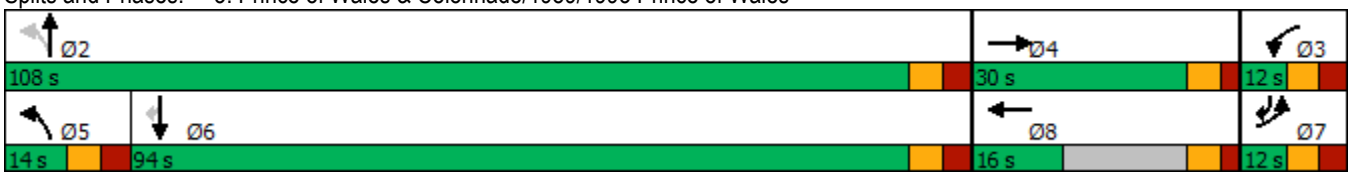
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot			pm+pt	NA			NA	pm+ov
Protected Phases	7	4		3	8		5	2			6	7
Permitted Phases							2					6
Detector Phase	7	4		3	8		5	2			6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0			10.0	5.0
Minimum Split (s)	12.0	28.0		12.0	16.0		12.0	36.0			36.0	12.0
Total Split (s)	12.0	30.0		12.0	16.0		14.0	108.0			94.0	12.0
Total Split (%)	8.0%	20.0%		8.0%	10.7%		9.3%	72.0%			62.7%	8.0%
Maximum Green (s)	5.0	24.0		5.0	10.0		7.0	101.0			87.0	5.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	3.3	2.3		3.3	2.3		3.3	3.3			3.3	3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0			7.0	7.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		15.0						22.0			22.0	
Pedestrian Calls (#/hr)		1						0			0	
Act Effct Green (s)	5.0	24.0					101.0	101.0			87.0	92.0
Actuated g/C Ratio	0.03	0.16					0.67	0.67			0.58	0.61
v/c Ratio	4.89	1.02					0.97	0.86			1.44	0.36
Control Delay	1783.2	86.3					107.5	28.4			231.5	6.1
Queue Delay	0.0	0.0					0.0	0.0			0.0	0.0
Total Delay	1783.2	86.3					107.5	28.4			231.5	6.1
LOS	F	F					F	C			F	A
Approach Delay		1072.4						36.4			188.4	
Approach LOS		F						D			F	
90th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
90th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
70th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
70th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
50th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
50th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
30th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
30th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
10th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
10th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
Stops (vph)	348	170					50	689			951	89
Fuel Used(l)	665	33					11	53			316	17
CO Emissions (g/hr)	12363	616					211	993			5881	309
NOx Emissions (g/hr)	2386	119					41	192			1135	60
VOC Emissions (g/hr)	2851	142					49	229			1356	71
Dilemma Vehicles (#)	0	10					0	30			31	0
Queue Length 50th (m)	~157.0	~78.6					21.1	229.5			~617.3	14.5
Queue Length 95th (m)	#194.8	#146.3					#63.8	313.8			#703.0	27.9

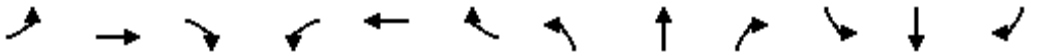
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)							80.0					
Base Capacity (vph)	107	369					117	1174			1012	943
Starvation Cap Reductn	0	0					0	0			0	0
Spillback Cap Reductn	0	0					0	0			0	0
Storage Cap Reductn	0	0					0	0			0	0
Reduced v/c Ratio	4.89	1.02					0.97	0.86			1.44	0.36

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 4.89			
Intersection Signal Delay: 351.8		Intersection LOS: F	
Intersection Capacity Utilization 117.7%		ICU Level of Service H	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 150			
70th %ile Actuated Cycle: 150			
50th %ile Actuated Cycle: 150			
30th %ile Actuated Cycle: 150			
10th %ile Actuated Cycle: 150			

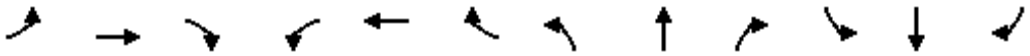
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	0	115	0	0	1	281	1295	0	0	878	463
Future Volume (vph)	216	0	115	0	0	1	281	1295	0	0	878	463
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.067					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	115	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		341			155							463
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	240	0	128	0	0	1	312	1439	0	0	976	514
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	128	0	0	1	0	312	1439	0	0	976	514
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

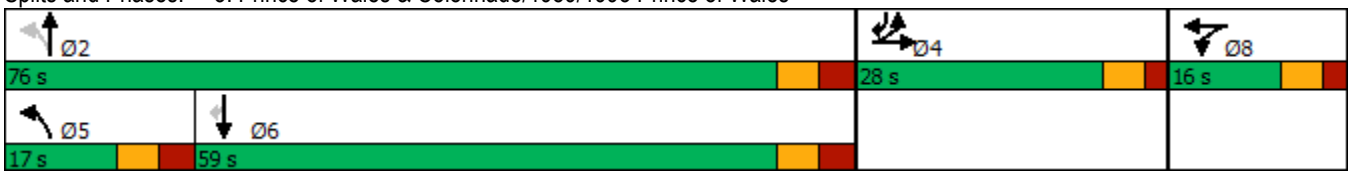


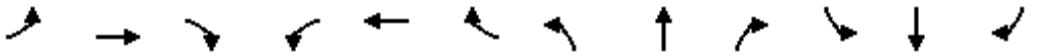
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA		Split	NA		pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	28.0	28.0		16.0	16.0		12.0	36.0			36.0	28.0
Total Split (s)	28.0	28.0		16.0	16.0		17.0	76.0			59.0	28.0
Total Split (%)	23.3%	23.3%		13.3%	13.3%		14.2%	63.3%			49.2%	23.3%
Maximum Green (s)	22.0	22.0		10.0	10.0		10.0	69.0			52.0	22.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)	7.0	7.0						7.0			7.0	7.0
Flash Dont Walk (s)	15.0	15.0						22.0			22.0	15.0
Pedestrian Calls (#/hr)	0	0						0			0	0
Act Effct Green (s)	14.3	14.3			10.1		69.6	69.6			52.4	67.8
Actuated g/C Ratio	0.14	0.14			0.10		0.70	0.70			0.53	0.68
v/c Ratio	0.54	0.27			0.00		1.34	1.18			1.07	0.45
Control Delay	44.7	1.4			0.0		205.5	109.5			77.4	2.2
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	44.7	1.4			0.0		205.5	109.5			77.4	2.2
LOS	D	A			A		F	F			E	A
Approach Delay		29.6						126.6			51.5	
Approach LOS		C						F			D	
90th %ile Green (s)	21.1	21.1		10.0	10.0		10.0	69.0			52.0	21.1
90th %ile Term Code	Gap	Gap		Max	Max		Max	MaxR			MaxR	Gap
70th %ile Green (s)	15.9	15.9		0.0	0.0		10.0	69.0			52.0	15.9
70th %ile Term Code	Gap	Gap		Skip	Skip		Max	MaxR			MaxR	Gap
50th %ile Green (s)	13.5	13.5		0.0	0.0		10.0	69.0			52.0	13.5
50th %ile Term Code	Gap	Gap		Skip	Skip		Max	MaxR			MaxR	Gap
30th %ile Green (s)	12.1	12.1		0.0	0.0		10.0	69.0			52.0	12.1
30th %ile Term Code	Gap	Gap		Skip	Skip		Max	MaxR			MaxR	Gap
10th %ile Green (s)	10.0	10.0		0.0	0.0		10.0	69.0			52.0	10.0
10th %ile Term Code	Min	Min		Skip	Skip		Max	MaxR			MaxR	Min
Stops (vph)	191	0			0		149	957			687	28
Fuel Used(l)	17	2			0		53	156			109	20
CO Emissions (g/hr)	313	34			0		981	2904			2033	373
NOx Emissions (g/hr)	60	7			0		189	560			392	72
VOC Emissions (g/hr)	72	8			0		226	670			469	86
Dilemma Vehicles (#)	0	6			0		0	54			39	0
Queue Length 50th (m)	22.6	0.0			0.0		~63.4	~329.0			~205.7	2.0
Queue Length 95th (m)	40.5	0.0			0.0		#155.0	#562.2			#386.8	15.5
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	695	552			289		233	1217			908	1226
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.35	0.23			0.00		1.34	1.18			1.07	0.42

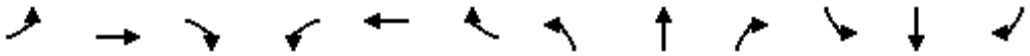
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 99.7			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.34			
Intersection Signal Delay: 85.7		Intersection LOS: F	
Intersection Capacity Utilization 95.9%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 119.1			
70th %ile Actuated Cycle: 97.9			
50th %ile Actuated Cycle: 95.5			
30th %ile Actuated Cycle: 94.1			
10th %ile Actuated Cycle: 92			
~ 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: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	0	115	0	0	1	281	1295	0	0	878	463
Future Volume (vph)	216	0	115	0	0	1	281	1295	0	0	878	463
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.059					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	101	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		360			155							434
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	240	0	128	0	0	1	312	1439	0	0	976	514
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	128	0	0	1	0	312	1439	0	0	976	514
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

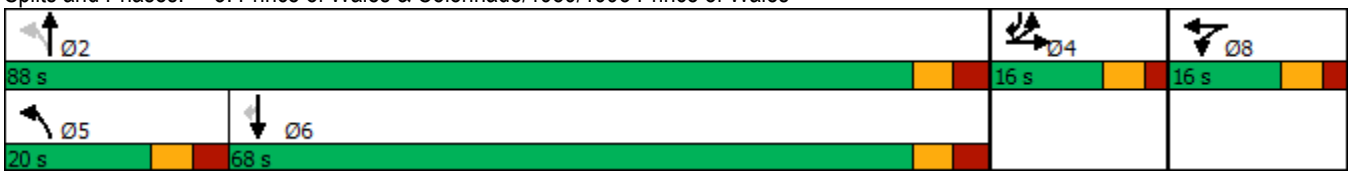


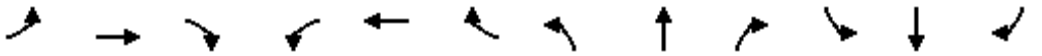
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA		Split	NA		pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	16.0	16.0		16.0	16.0		12.0	36.0			36.0	16.0
Total Split (s)	16.0	16.0		16.0	16.0		20.0	88.0			68.0	16.0
Total Split (%)	13.3%	13.3%		13.3%	13.3%		16.7%	73.3%			56.7%	13.3%
Maximum Green (s)	10.0	10.0		10.0	10.0		13.0	81.0			61.0	10.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								22.0			22.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)	10.0	10.0			10.0		81.3	81.3			61.2	72.2
Actuated g/C Ratio	0.09	0.09			0.09		0.76	0.76			0.57	0.67
v/c Ratio	0.82	0.29			0.00		1.19	1.09			0.99	0.46
Control Delay	71.1	1.6			0.0		147.8	68.3			50.5	2.6
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	71.1	1.6			0.0		147.8	68.3			50.5	2.6
LOS	E	A			A		F	E			D	A
Approach Delay		47.0						82.5			34.0	
Approach LOS		D						F			C	
90th %ile Green (s)	10.0	10.0		10.0	10.0		13.0	81.0			61.0	10.0
90th %ile Term Code	Max	Max		Max	Max		Max	MaxR			MaxR	Max
70th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
70th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
50th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
50th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
30th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
30th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
10th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
10th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
Stops (vph)	192	0			0		164	961			700	38
Fuel Used(l)	21	2			0		41	115			92	21
CO Emissions (g/hr)	396	35			0		758	2143			1703	382
NOx Emissions (g/hr)	76	7			0		146	414			329	74
VOC Emissions (g/hr)	91	8			0		175	494			393	88
Dilemma Vehicles (#)	0	5			0		0	54			38	0
Queue Length 50th (m)	26.2	0.0			0.0		~64.0	~337.7			184.5	3.8
Queue Length 95th (m)	#56.3	0.0			0.0		#144.9	#523.0			#356.8	19.9
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	292	447			279		262	1323			986	1129
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.82	0.29			0.00		1.19	1.09			0.99	0.46

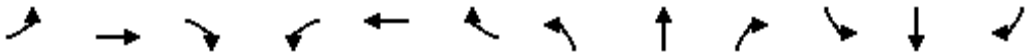
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 107.2			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 58.8		Intersection LOS: E	
Intersection Capacity Utilization 95.9%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 120			
70th %ile Actuated Cycle: 104			
50th %ile Actuated Cycle: 104			
30th %ile Actuated Cycle: 104			
10th %ile Actuated Cycle: 104			
~ 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: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	471	0	339	0	0	0	102	909	0	0	1311	310
Future Volume (vph)	471	0	339	0	0	0	102	909	0	0	1311	310
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97										0.99
Frt		0.850										0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3216	1445	0	1745	1745	0	1566	1745	0	0	1745	1455
Flt Permitted	0.950						0.043					
Satd. Flow (perm)	3216	1445	0	1745	1745	0	71	1745	0	0	1745	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192										234
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
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%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	523	0	377	0	0	0	113	1010	0	0	1457	344
Shared Lane Traffic (%)												
Lane Group Flow (vph)	523	377	0	0	0	0	113	1010	0	0	1457	344
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



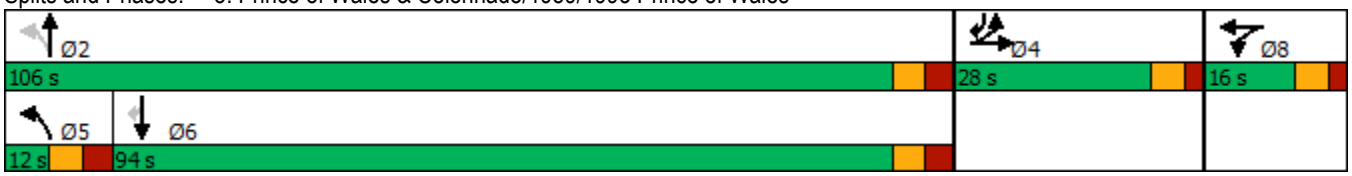
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split			pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	28.0	28.0		16.0	16.0		12.0	36.0			36.0	28.0
Total Split (s)	28.0	28.0		16.0	16.0		12.0	106.0			94.0	28.0
Total Split (%)	18.7%	18.7%		10.7%	10.7%		8.0%	70.7%			62.7%	18.7%
Maximum Green (s)	22.0	22.0		10.0	10.0		5.0	99.0			87.0	22.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)	7.0	7.0						7.0			7.0	7.0
Flash Dont Walk (s)	15.0	15.0						22.0			22.0	15.0
Pedestrian Calls (#/hr)	1	1						0			0	1
Act Effct Green (s)	22.0	22.0					99.0	99.0			87.0	110.0
Actuated g/C Ratio	0.16	0.16					0.74	0.74			0.65	0.82
v/c Ratio	0.99	0.95					1.05	0.78			1.29	0.28
Control Delay	92.5	61.3					127.6	16.4			160.5	1.1
Queue Delay	0.0	0.0					0.0	0.0			0.0	0.0
Total Delay	92.5	61.3					127.6	16.4			160.5	1.1
LOS	F	E					F	B			F	A
Approach Delay		79.4						27.6			130.1	
Approach LOS		E						C			F	
90th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
90th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
70th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
70th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
50th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
50th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
30th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
30th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
10th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
10th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
Stops (vph)	423	154					41	556			1016	16
Fuel Used(l)	54	26					13	41			247	13
CO Emissions (g/hr)	1009	485					234	758			4589	243
NOx Emissions (g/hr)	195	94					45	146			886	47
VOC Emissions (g/hr)	233	112					54	175			1058	56
Dilemma Vehicles (#)	0	12					0	34			38	0
Queue Length 50th (m)	75.8	55.6					~19.3	154.8			~514.7	3.2
Queue Length 95th (m)	#113.8	#120.7					#60.9	219.2			#599.7	6.9

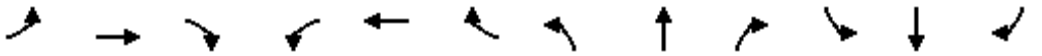
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)							80.0					
Base Capacity (vph)	528	397					108	1289			1132	1223
Starvation Cap Reductn	0	0					0	0			0	0
Spillback Cap Reductn	0	0					0	0			0	0
Storage Cap Reductn	0	0					0	0			0	0
Reduced v/c Ratio	0.99	0.95					1.05	0.78			1.29	0.28

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 134			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.29			
Intersection Signal Delay: 88.1		Intersection LOS: F	
Intersection Capacity Utilization 117.7%		ICU Level of Service H	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 134			
70th %ile Actuated Cycle: 134			
50th %ile Actuated Cycle: 134			
30th %ile Actuated Cycle: 134			
10th %ile Actuated Cycle: 134			

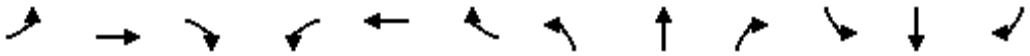
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	0	115	0	0	1	271	1075	0	0	798	463
Future Volume (vph)	216	0	115	0	0	1	271	1075	0	0	798	463
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.093					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	159	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		377			155							478
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	240	0	128	0	0	1	301	1194	0	0	887	514
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	128	0	0	1	0	301	1194	0	0	887	514
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

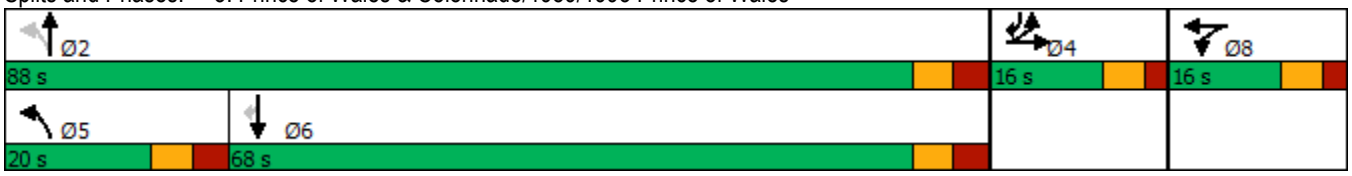


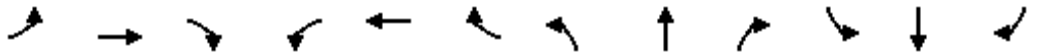
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA		Split	NA		pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	16.0	16.0		16.0	16.0		12.0	36.0			36.0	16.0
Total Split (s)	16.0	16.0		16.0	16.0		20.0	88.0			68.0	16.0
Total Split (%)	13.3%	13.3%		13.3%	13.3%		16.7%	73.3%			56.7%	13.3%
Maximum Green (s)	10.0	10.0		10.0	10.0		13.0	81.0			61.0	10.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								22.0			22.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)	10.0	10.0			10.0		81.3	81.3			61.2	72.2
Actuated g/C Ratio	0.09	0.09			0.09		0.76	0.76			0.57	0.67
v/c Ratio	0.82	0.28			0.00		1.01	0.90			0.90	0.45
Control Delay	71.1	1.5			0.0		79.9	22.6			34.9	2.2
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	71.1	1.5			0.0		79.9	22.6			34.9	2.2
LOS	E	A			A		E	C			C	A
Approach Delay		46.9						34.1			22.9	
Approach LOS		D						C			C	
90th %ile Green (s)	10.0	10.0		10.0	10.0		13.0	81.0			61.0	10.0
90th %ile Term Code	Max	Max		Max	Max		Max	MaxR			MaxR	Max
70th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
70th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
50th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
50th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
30th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
30th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
10th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
10th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
Stops (vph)	192	0			0		136	680			614	26
Fuel Used(l)	21	2			0		24	54			73	20
CO Emissions (g/hr)	396	35			0		454	1004			1356	372
NOx Emissions (g/hr)	76	7			0		88	194			262	72
VOC Emissions (g/hr)	91	8			0		105	232			313	86
Dilemma Vehicles (#)	0	5			0		0	48			36	0
Queue Length 50th (m)	26.2	0.0			0.0		40.3	143.4			150.1	1.7
Queue Length 95th (m)	#56.3	0.0			0.0		#120.6	#395.1			#309.9	15.2
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	292	463			279		299	1323			986	1143
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.82	0.28			0.00		1.01	0.90			0.90	0.45

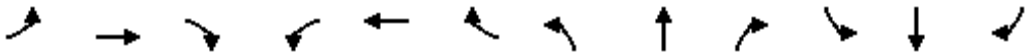
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 107.2			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 30.7		Intersection LOS: C	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 120			
70th %ile Actuated Cycle: 104			
50th %ile Actuated Cycle: 104			
30th %ile Actuated Cycle: 104			
10th %ile Actuated Cycle: 104			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	426	0	339	0	0	0	102	909	0	0	921	310
Future Volume (vph)	426	0	339	0	0	0	102	909	0	0	921	310
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97										0.99
Frt		0.850										0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3216	1445	0	1745	1745	0	1566	1745	0	0	1745	1455
Flt Permitted	0.950						0.101					
Satd. Flow (perm)	3216	1445	0	1745	1745	0	166	1745	0	0	1745	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		250										333
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
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%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	473	0	377	0	0	0	113	1010	0	0	1023	344
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	377	0	0	0	0	113	1010	0	0	1023	344
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

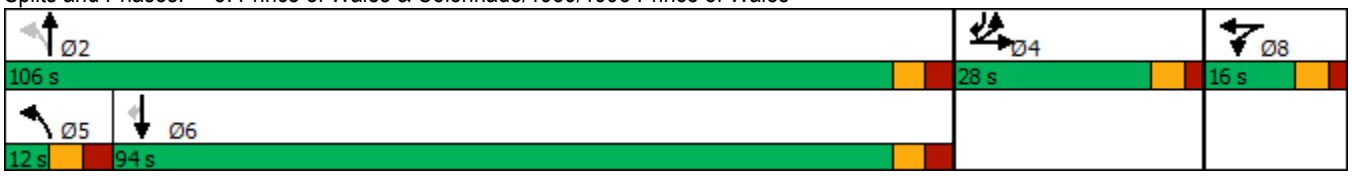


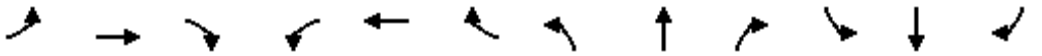
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split			pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	28.0	28.0		16.0	16.0		12.0	36.0			36.0	28.0
Total Split (s)	28.0	28.0		16.0	16.0		12.0	106.0			94.0	28.0
Total Split (%)	18.7%	18.7%		10.7%	10.7%		8.0%	70.7%			62.7%	18.7%
Maximum Green (s)	22.0	22.0		10.0	10.0		5.0	99.0			87.0	22.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)	7.0	7.0						7.0			7.0	7.0
Flash Dont Walk (s)	15.0	15.0						22.0			22.0	15.0
Pedestrian Calls (#/hr)	1	1						0			0	1
Act Effct Green (s)	22.0	22.0					99.0	99.0			87.0	110.0
Actuated g/C Ratio	0.16	0.16					0.74	0.74			0.65	0.82
v/c Ratio	0.90	0.85					0.65	0.78			0.90	0.28
Control Delay	75.4	36.1					24.1	16.4			32.7	0.7
Queue Delay	0.0	0.0					0.0	0.0			0.0	0.0
Total Delay	75.4	36.1					24.1	16.4			32.7	0.7
LOS	E	D					C	B			C	A
Approach Delay		58.0						17.2			24.7	
Approach LOS		E						B			C	
90th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
90th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
70th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
70th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
50th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
50th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
30th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
30th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
10th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
10th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
Stops (vph)	392	115					28	556			732	5
Fuel Used(l)	44	18					4	41			83	13
CO Emissions (g/hr)	814	339					76	758			1550	235
NOx Emissions (g/hr)	157	65					15	146			299	45
VOC Emissions (g/hr)	188	78					17	175			358	54
Dilemma Vehicles (#)	0	12					0	34			33	0
Queue Length 50th (m)	67.3	36.0					7.9	154.8			225.4	0.3
Queue Length 95th (m)	#97.7	#91.8					#16.0	219.2			#346.5	3.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)							80.0					
Base Capacity (vph)	528	446					174	1289			1132	1240
Starvation Cap Reductn	0	0					0	0			0	0
Spillback Cap Reductn	0	0					0	0			0	0
Storage Cap Reductn	0	0					0	0			0	0
Reduced v/c Ratio	0.90	0.85					0.65	0.78			0.90	0.28

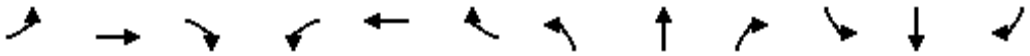
Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 134			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 30.6		Intersection LOS: C	
Intersection Capacity Utilization 96.1%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 134			
70th %ile Actuated Cycle: 134			
50th %ile Actuated Cycle: 134			
30th %ile Actuated Cycle: 134			
10th %ile Actuated Cycle: 134			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	0	115	0	0	1	281	1295	0	0	878	463
Future Volume (vph)	216	0	115	0	0	1	281	1295	0	0	878	463
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (m)	30.0			30.0			80.0			80.0		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												0.99
Frt			0.850		0.865							0.850
Flt Protected	0.950	0.950					0.950					
Satd. Flow (prot)	1530	1530	1293	0	1510	0	1626	3316	0	1745	3283	1483
Flt Permitted	0.950	0.950					0.124					
Satd. Flow (perm)	1530	1530	1293	0	1510	0	212	3316	0	1745	3283	1462
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155		155							514
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.5			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	240	0	128	0	0	1	312	1439	0	0	976	514
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	120	120	128	0	1	0	312	1439	0	0	976	514
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			5.0			5.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

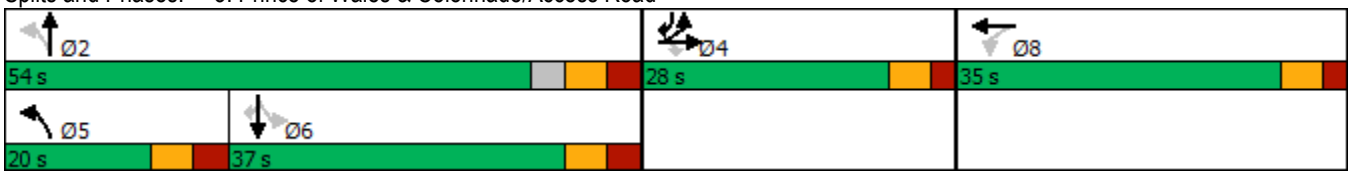


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm		NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	4	4			8		5	2			6	4
Permitted Phases			4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	28.0	28.0	28.0	35.0	35.0		12.0	36.0		36.0	36.0	28.0
Total Split (s)	28.0	28.0	28.0	35.0	35.0		20.0	54.0		37.0	37.0	28.0
Total Split (%)	23.3%	23.3%	23.3%	29.2%	29.2%		16.7%	45.0%		30.8%	30.8%	23.3%
Maximum Green (s)	22.0	22.0	22.0	29.0	29.0		13.0	47.0		30.0	30.0	22.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3		3.3	3.3		3.3	3.3	2.3
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)	6.0	6.0	6.0		6.0		7.0	7.0		7.0	7.0	6.0
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Max		Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0	15.0	17.0	17.0			22.0		22.0	22.0	15.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effct Green (s)	13.3	13.3	13.3		10.1		50.7	50.7			30.4	44.7
Actuated g/C Ratio	0.17	0.17	0.17		0.13		0.64	0.64			0.38	0.56
v/c Ratio	0.47	0.47	0.37		0.00		0.85	0.68			0.78	0.49
Control Delay	37.3	37.3	6.8		0.0		40.1	13.6			29.0	2.6
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay	37.3	37.3	6.8		0.0		40.1	13.6			29.0	2.6
LOS	D	D	A		A		D	B			C	A
Approach Delay		26.7						18.3			19.9	
Approach LOS		C						B			B	
90th %ile Green (s)	20.5	20.5	20.5	10.0	10.0		13.0	50.0		30.0	30.0	20.5
90th %ile Term Code	Gap	Gap	Gap	Min	Min		Max	Hold		MaxR	MaxR	Gap
70th %ile Green (s)	14.6	14.6	14.6	0.0	0.0		13.0	50.0		30.0	30.0	14.6
70th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	Hold		MaxR	MaxR	Gap
50th %ile Green (s)	12.0	12.0	12.0	0.0	0.0		13.0	50.0		30.0	30.0	12.0
50th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	Hold		MaxR	MaxR	Gap
30th %ile Green (s)	10.5	10.5	10.5	0.0	0.0		13.0	50.0		30.0	30.0	10.5
30th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	Hold		MaxR	MaxR	Gap
10th %ile Green (s)	10.0	10.0	10.0	0.0	0.0		13.0	50.0		30.0	30.0	10.0
10th %ile Term Code	Min	Min	Min	Skip	Skip		Max	Hold		MaxR	MaxR	Min
Stops (vph)	91	91	11		0		144	779			685	25
Fuel Used(l)	7	7	3		0		22	79			76	20
CO Emissions (g/hr)	135	135	48		0		411	1473			1423	374
NOx Emissions (g/hr)	26	26	9		0		79	284			275	72
VOC Emissions (g/hr)	31	31	11		0		95	340			328	86
Dilemma Vehicles (#)	0	6	0		0		0	79			53	0
Queue Length 50th (m)	17.3	17.3	0.0		0.0		26.5	56.6			63.4	0.0
Queue Length 95th (m)	40.4	40.4	10.4		0.0		#108.0	163.9			#148.0	13.4
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

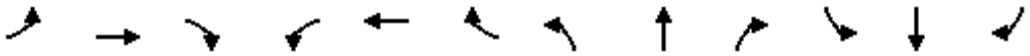
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)			45.0				80.0					80.0
Base Capacity (vph)	427	427	473		654		368	2108			1252	1158
Starvation Cap Reductn	0	0	0		0		0	0			0	0
Spillback Cap Reductn	0	0	0		0		0	0			0	0
Storage Cap Reductn	0	0	0		0		0	0			0	0
Reduced v/c Ratio	0.28	0.28	0.27		0.00		0.85	0.68			0.78	0.44

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 79.7	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 19.8	Intersection LOS: B
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	
90th %ile Actuated Cycle: 99.5	
70th %ile Actuated Cycle: 77.6	
50th %ile Actuated Cycle: 75	
30th %ile Actuated Cycle: 73.5	
10th %ile Actuated Cycle: 73	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Prince of Wales & Colonnade/Access Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	471	0	339	0	0	0	102	909	0	0	1311	310
Future Volume (vph)	471	0	339	0	0	0	102	909	0	0	1311	310
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (m)	30.0			30.0			80.0			80.0		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.98									0.99
Frt			0.850									0.850
Flt Protected	0.950	0.950					0.950					
Satd. Flow (prot)	1575	1575	1483	0	1745	0	1566	3316	0	1745	3316	1455
Flt Permitted	0.950	0.950					0.076					
Satd. Flow (perm)	1575	1575	1461	0	1745	0	125	3316	0	1745	3316	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			318									329
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.5			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
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%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	523	0	377	0	0	0	113	1010	0	0	1457	344
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	261	262	377	0	0	0	113	1010	0	0	1457	344
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			5.0			5.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

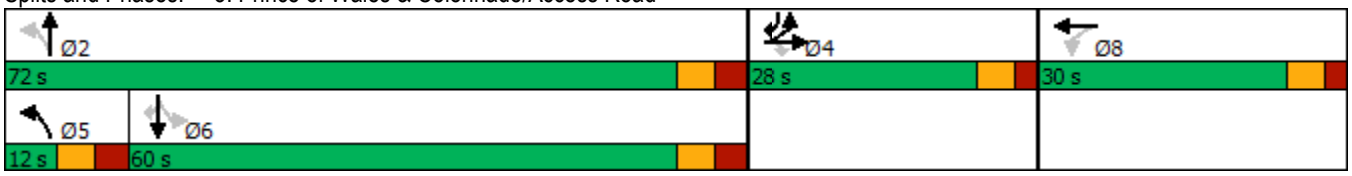


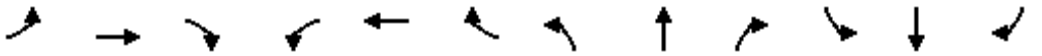
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm				pm+pt	NA		Perm	NA	pm+ov
Protected Phases	4	4			8		5	2			6	4
Permitted Phases			4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	28.0	28.0	28.0	30.0	30.0		12.0	36.0		36.0	36.0	28.0
Total Split (s)	28.0	28.0	28.0	30.0	30.0		12.0	72.0		60.0	60.0	28.0
Total Split (%)	21.5%	21.5%	21.5%	23.1%	23.1%		9.2%	55.4%		46.2%	46.2%	21.5%
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0		5.0	65.0		53.0	53.0	22.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3		3.3	3.3		3.3	3.3	2.3
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)	6.0	6.0	6.0		6.0		7.0	7.0		7.0	7.0	6.0
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Max		Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0	15.0	17.0	17.0			22.0		18.0	18.0	15.0
Pedestrian Calls (#/hr)	1	1	1	0	0			0		0	0	1
Act Effct Green (s)	22.0	22.0	22.0				65.0	65.0			53.0	76.0
Actuated g/C Ratio	0.22	0.22	0.22				0.65	0.65			0.53	0.76
v/c Ratio	0.75	0.76	0.66				0.74	0.47			0.83	0.29
Control Delay	51.8	52.0	13.2				41.2	9.7			24.9	0.9
Queue Delay	0.0	0.0	0.0				0.0	0.0			0.0	0.0
Total Delay	51.8	52.0	13.2				41.2	9.7			24.9	0.9
LOS	D	D	B				D	A			C	A
Approach Delay		35.7						12.9			20.3	
Approach LOS		D						B			C	
90th %ile Green (s)	22.0	22.0	22.0	0.0	0.0		5.0	65.0		53.0	53.0	22.0
90th %ile Term Code	Max	Max	Max	Skip	Skip		Max	MaxR		MaxR	MaxR	Max
70th %ile Green (s)	22.0	22.0	22.0	0.0	0.0		5.0	65.0		53.0	53.0	22.0
70th %ile Term Code	Max	Max	Max	Skip	Skip		Max	MaxR		MaxR	MaxR	Max
50th %ile Green (s)	22.0	22.0	22.0	0.0	0.0		5.0	65.0		53.0	53.0	22.0
50th %ile Term Code	Max	Max	Max	Skip	Skip		Max	MaxR		MaxR	MaxR	Max
30th %ile Green (s)	22.0	22.0	22.0	0.0	0.0		5.0	65.0		53.0	53.0	22.0
30th %ile Term Code	Max	Max	Max	Skip	Skip		Max	MaxR		MaxR	MaxR	Max
10th %ile Green (s)	22.0	22.0	22.0	0.0	0.0		5.0	65.0		53.0	53.0	22.0
10th %ile Term Code	Max	Max	Max	Skip	Skip		Max	MaxR		MaxR	MaxR	Max
Stops (vph)	210	212	72				40	426			1061	10
Fuel Used(l)	19	19	10				8	49			111	13
CO Emissions (g/hr)	348	351	195				143	910			2071	239
NOx Emissions (g/hr)	67	68	38				28	176			400	46
VOC Emissions (g/hr)	80	81	45				33	210			478	55
Dilemma Vehicles (#)	0	12	0				0	46			66	0
Queue Length 50th (m)	52.6	52.9	9.9				7.9	49.3			124.8	0.4
Queue Length 95th (m)	#92.0	#92.9	41.3				#23.5	63.2			157.8	4.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)			45.0				80.0					80.0
Base Capacity (vph)	346	346	569				153	2155			1757	1173
Starvation Cap Reductn	0	0	0				0	0			0	0
Spillback Cap Reductn	0	0	0				0	0			0	0
Storage Cap Reductn	0	0	0				0	0			0	0
Reduced v/c Ratio	0.75	0.76	0.66				0.74	0.47			0.83	0.29

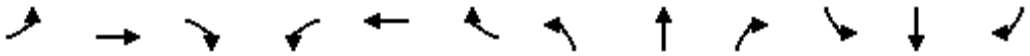
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 100			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 74.8%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 100			
70th %ile Actuated Cycle: 100			
50th %ile Actuated Cycle: 100			
30th %ile Actuated Cycle: 100			
10th %ile Actuated Cycle: 100			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Prince of Wales & Colonnade/Access Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Future Volume (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.070					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	120	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		369			164							328
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	116	0	0	1	0	285	1295	0	0	878	465
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

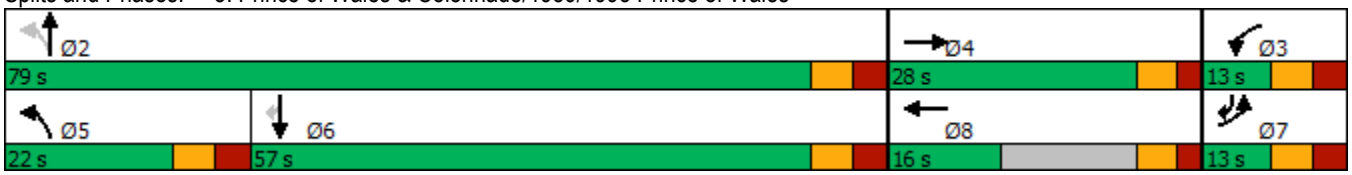


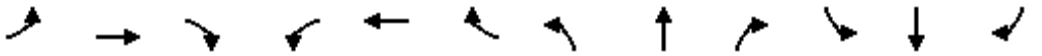
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA			NA	pm+ov
Protected Phases	7	4		3	8		5	2			6	7
Permitted Phases							2					6
Detector Phase	7	4		3	8		5	2			6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0			10.0	5.0
Minimum Split (s)	12.0	28.0		12.0	16.0		12.0	36.0			36.0	12.0
Total Split (s)	13.0	28.0		13.0	16.0		22.0	79.0			57.0	13.0
Total Split (%)	10.8%	23.3%		10.8%	13.3%		18.3%	65.8%			47.5%	10.8%
Maximum Green (s)	6.0	22.0		6.0	10.0		15.0	72.0			50.0	6.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	3.3	2.3		3.3	2.3		3.3	3.3			3.3	3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0			7.0	7.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		15.0						22.0			22.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	6.0	10.0			10.0		72.0	72.0			50.0	56.0
Actuated g/C Ratio	0.06	0.09			0.09		0.67	0.67			0.46	0.52
v/c Ratio	1.27	0.26			0.00		0.99	1.11			1.10	0.51
Control Delay	199.4	1.4			0.0		81.1	83.6			91.2	4.7
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	199.4	1.4			0.0		81.1	83.6			91.2	4.7
LOS	F	A			A		F	F			F	A
Approach Delay		130.8						83.2			61.2	
Approach LOS		F						F			E	
90th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
90th %ile Term Code	Max	Min		Skip	Max		Max	MaxR			MaxR	Max
70th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
70th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
50th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
50th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
30th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
30th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
10th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
10th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
Stops (vph)	171	0			0		181	1044			737	88
Fuel Used(l)	42	2			0		27	133			120	23
CO Emissions (g/hr)	789	35			0		505	2476			2236	427
NOx Emissions (g/hr)	152	7			0		98	478			432	82
VOC Emissions (g/hr)	182	8			0		117	571			516	98
Dilemma Vehicles (#)	0	5			0		0	53			36	0
Queue Length 50th (m)	~31.5	0.0			0.0		48.4	~329.9			~221.1	7.7
Queue Length 95th (m)	#56.5	0.0			0.0		#104.4	#412.2			#297.4	20.4
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	173	557			432		289	1163			800	917
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	1.27	0.21			0.00		0.99	1.11			1.10	0.51

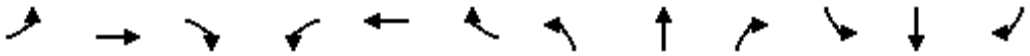
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 108			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.27			
Intersection Signal Delay: 79.0		Intersection LOS: E	
Intersection Capacity Utilization 96.0%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 108			
70th %ile Actuated Cycle: 108			
50th %ile Actuated Cycle: 108			
30th %ile Actuated Cycle: 108			
10th %ile Actuated Cycle: 108			
~ 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: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	476	0	341	0	0	0	103	909	0	0	1311	314
Future Volume (vph)	476	0	341	0	0	0	103	909	0	0	1311	314
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97										0.99
Frt		0.850										0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3216	1445	0	1745	1745	0	1566	1745	0	0	1745	1455
Flt Permitted	0.950						0.043					
Satd. Flow (perm)	3216	1445	0	1745	1745	0	71	1745	0	0	1745	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		179										164
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	476	0	341	0	0	0	103	909	0	0	1311	314
Shared Lane Traffic (%)												
Lane Group Flow (vph)	476	341	0	0	0	0	103	909	0	0	1311	314
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

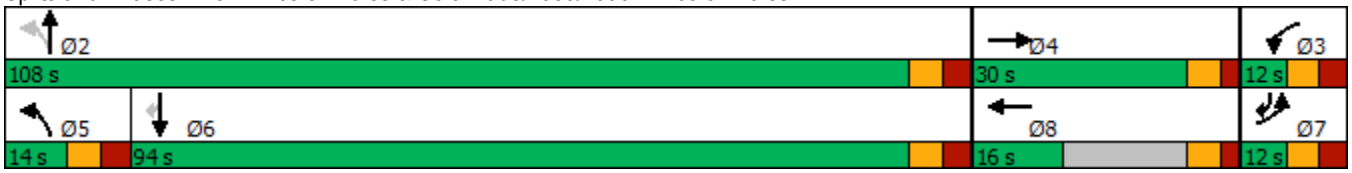


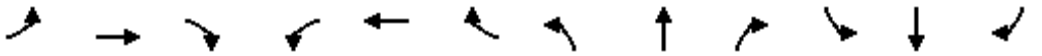
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot			pm+pt	NA			NA	pm+ov
Protected Phases	7	4		3	8		5	2			6	7
Permitted Phases							2					6
Detector Phase	7	4		3	8		5	2			6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0			10.0	5.0
Minimum Split (s)	12.0	28.0		12.0	16.0		12.0	36.0			36.0	12.0
Total Split (s)	12.0	30.0		12.0	16.0		14.0	108.0			94.0	12.0
Total Split (%)	8.0%	20.0%		8.0%	10.7%		9.3%	72.0%			62.7%	8.0%
Maximum Green (s)	5.0	24.0		5.0	10.0		7.0	101.0			87.0	5.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	3.3	2.3		3.3	2.3		3.3	3.3			3.3	3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0			7.0	7.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		15.0						22.0			22.0	
Pedestrian Calls (#/hr)		1						0			0	
Act Effct Green (s)	5.0	21.4					101.1	101.1			87.1	92.1
Actuated g/C Ratio	0.03	0.15					0.69	0.69			0.59	0.62
v/c Ratio	4.37	0.94					0.87	0.76			1.27	0.33
Control Delay	1554.2	63.5					82.4	21.2			159.3	4.9
Queue Delay	0.0	0.0					0.0	0.0			0.0	0.0
Total Delay	1554.2	63.5					82.4	21.2			159.3	4.9
LOS	F	E					F	C			F	A
Approach Delay		932.0						27.4			129.5	
Approach LOS		F						C			F	
90th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
90th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
70th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
70th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
50th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
50th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
30th %ile Green (s)	5.0	21.9		0.0	21.9		7.0	101.0			87.0	5.0
30th %ile Term Code	Max	Gap		Skip	Hold		Max	MaxR			MaxR	Max
10th %ile Green (s)	5.0	13.7		0.0	13.7		7.0	101.0			87.0	5.0
10th %ile Term Code	Max	Gap		Skip	Hold		Max	MaxR			MaxR	Max
Stops (vph)	334	157					49	596			1029	74
Fuel Used(l)	587	27					9	45			246	16
CO Emissions (g/hr)	10923	500					175	843			4575	298
NOx Emissions (g/hr)	2108	96					34	163			883	58
VOC Emissions (g/hr)	2519	115					40	195			1055	69
Dilemma Vehicles (#)	0	11					0	31			35	0
Queue Length 50th (m)	~141.3	53.4					17.7	181.5			~522.5	11.5
Queue Length 95th (m)	#178.4	#112.8					#55.9	244.6			#608.2	20.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)							80.0					
Base Capacity (vph)	109	385					119	1195			1030	958
Starvation Cap Reductn	0	0					0	0			0	0
Spillback Cap Reductn	0	0					0	0			0	0
Storage Cap Reductn	0	0					0	0			0	0
Reduced v/c Ratio	4.37	0.89					0.87	0.76			1.27	0.33

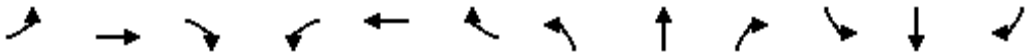
Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 147.5			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 4.37			
Intersection Signal Delay: 289.4		Intersection LOS: F	
Intersection Capacity Utilization 117.9%		ICU Level of Service H	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 150			
70th %ile Actuated Cycle: 150			
50th %ile Actuated Cycle: 150			
30th %ile Actuated Cycle: 147.9			
10th %ile Actuated Cycle: 139.7			
~ 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: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Future Volume (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.067					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	115	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		356			155							465
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	116	0	0	1	0	285	1295	0	0	878	465
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

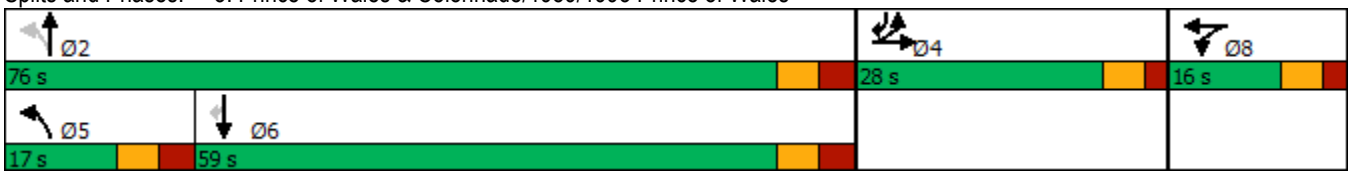


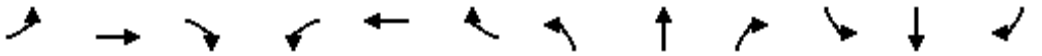
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA		Split	NA		pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	28.0	28.0		16.0	16.0		12.0	36.0			36.0	28.0
Total Split (s)	28.0	28.0		16.0	16.0		17.0	76.0			59.0	28.0
Total Split (%)	23.3%	23.3%		13.3%	13.3%		14.2%	63.3%			49.2%	23.3%
Maximum Green (s)	22.0	22.0		10.0	10.0		10.0	69.0			52.0	22.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)	7.0	7.0						7.0			7.0	7.0
Flash Dont Walk (s)	15.0	15.0						22.0			22.0	15.0
Pedestrian Calls (#/hr)	0	0						0			0	0
Act Effct Green (s)	13.1	13.1			10.1		69.6	69.6			52.4	66.6
Actuated g/C Ratio	0.13	0.13			0.10		0.71	0.71			0.53	0.68
v/c Ratio	0.53	0.24			0.00		1.21	1.05			0.96	0.41
Control Delay	45.1	1.2			0.0		154.2	57.7			44.9	1.7
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	45.1	1.2			0.0		154.2	57.7			44.9	1.7
LOS	D	A			A		F	E			D	A
Approach Delay		29.9						75.1			29.9	
Approach LOS		C						E			C	
90th %ile Green (s)	19.0	19.0		10.0	10.0		10.0	69.0			52.0	19.0
90th %ile Term Code	Gap	Gap		Max	Max		Max	MaxR			MaxR	Gap
70th %ile Green (s)	14.2	14.2		0.0	0.0		10.0	69.0			52.0	14.2
70th %ile Term Code	Gap	Gap		Skip	Skip		Max	MaxR			MaxR	Gap
50th %ile Green (s)	12.8	12.8		0.0	0.0		10.0	69.0			52.0	12.8
50th %ile Term Code	Gap	Gap		Skip	Skip		Max	MaxR			MaxR	Gap
30th %ile Green (s)	10.5	10.5		0.0	0.0		10.0	69.0			52.0	10.5
30th %ile Term Code	Gap	Gap		Skip	Skip		Max	MaxR			MaxR	Gap
10th %ile Green (s)	10.0	10.0		0.0	0.0		10.0	69.0			52.0	10.0
10th %ile Term Code	Min	Min		Skip	Skip		Max	MaxR			MaxR	Min
Stops (vph)	195	0			0		150	931			677	18
Fuel Used(l)	17	2			0		42	104			87	20
CO Emissions (g/hr)	320	34			0		785	1927			1618	365
NOx Emissions (g/hr)	62	7			0		151	372			312	70
VOC Emissions (g/hr)	74	8			0		181	445			373	84
Dilemma Vehicles (#)	0	6			0		0	59			41	0
Queue Length 50th (m)	20.5	0.0			0.0		~51.3	~238.9			146.3	0.0
Queue Length 95th (m)	37.4	0.0			0.0		#135.6	#475.6			#326.1	10.6
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	703	567			291		235	1232			919	1235
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.31	0.20			0.00		1.21	1.05			0.96	0.38

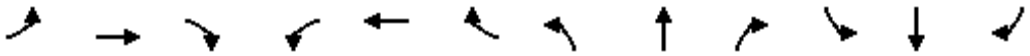
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 98.5			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.21			
Intersection Signal Delay: 51.8		Intersection LOS: D	
Intersection Capacity Utilization 96.0%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 117			
70th %ile Actuated Cycle: 96.2			
50th %ile Actuated Cycle: 94.8			
30th %ile Actuated Cycle: 92.5			
10th %ile Actuated Cycle: 92			
~ 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: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Future Volume (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.099					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	169	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		379			155							437
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	116	0	0	1	0	285	1295	0	0	878	465
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

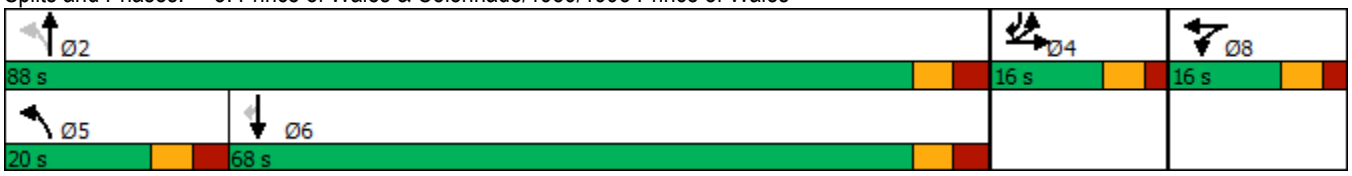


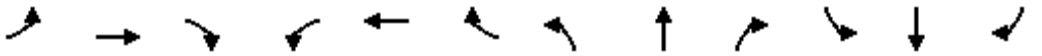
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA		Split	NA		pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	16.0	16.0		16.0	16.0		12.0	36.0			36.0	16.0
Total Split (s)	16.0	16.0		16.0	16.0		20.0	88.0			68.0	16.0
Total Split (%)	13.3%	13.3%		13.3%	13.3%		16.7%	73.3%			56.7%	13.3%
Maximum Green (s)	10.0	10.0		10.0	10.0		13.0	81.0			61.0	10.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								22.0			22.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)	10.0	10.0			10.0		81.3	81.3			61.2	72.2
Actuated g/C Ratio	0.09	0.09			0.09		0.76	0.76			0.57	0.67
v/c Ratio	0.75	0.25			0.00		0.93	0.98			0.89	0.41
Control Delay	64.8	1.3			0.0		60.8	34.5			33.9	2.0
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	64.8	1.3			0.0		60.8	34.5			33.9	2.0
LOS	E	A			A		E	C			C	A
Approach Delay		42.8						39.2			22.9	
Approach LOS		D						D			C	
90th %ile Green (s)	10.0	10.0		10.0	10.0		13.0	81.0			61.0	10.0
90th %ile Term Code	Max	Max		Max	Max		Max	MaxR			MaxR	Max
70th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
70th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
50th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
50th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
30th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
30th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
10th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
10th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
Stops (vph)	195	0			0		135	899			672	26
Fuel Used(l)	21	2			0		21	79			79	20
CO Emissions (g/hr)	381	35			0		395	1478			1477	372
NOx Emissions (g/hr)	74	7			0		76	285			285	72
VOC Emissions (g/hr)	88	8			0		91	341			341	86
Dilemma Vehicles (#)	0	5			0		0	57			39	0
Queue Length 50th (m)	23.7	0.0			0.0		34.3	190.1			147.0	1.3
Queue Length 95th (m)	#49.6	0.0			0.0		#108.1	#447.7			#305.2	14.0
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	292	464			279		305	1323			986	1130
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.75	0.25			0.00		0.93	0.98			0.89	0.41

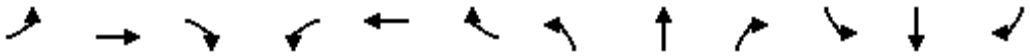
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 107.2			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 32.8		Intersection LOS: C	
Intersection Capacity Utilization 96.0%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 120			
70th %ile Actuated Cycle: 104			
50th %ile Actuated Cycle: 104			
30th %ile Actuated Cycle: 104			
10th %ile Actuated Cycle: 104			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	476	0	341	0	0	0	103	909	0	0	1311	314
Future Volume (vph)	476	0	341	0	0	0	103	909	0	0	1311	314
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97										0.99
Frt		0.850										0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3216	1445	0	1745	1745	0	1566	1745	0	0	1745	1455
Flt Permitted	0.950						0.043					
Satd. Flow (perm)	3216	1445	0	1745	1745	0	71	1745	0	0	1745	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		205										237
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	476	0	341	0	0	0	103	909	0	0	1311	314
Shared Lane Traffic (%)												
Lane Group Flow (vph)	476	341	0	0	0	0	103	909	0	0	1311	314
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



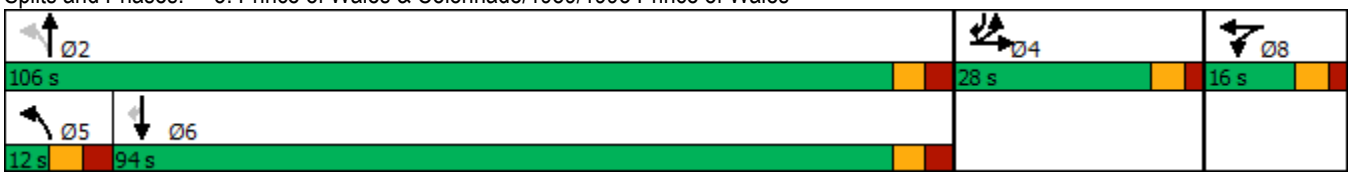
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split			pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	28.0	28.0		16.0	16.0		12.0	36.0			36.0	28.0
Total Split (s)	28.0	28.0		16.0	16.0		12.0	106.0			94.0	28.0
Total Split (%)	18.7%	18.7%		10.7%	10.7%		8.0%	70.7%			62.7%	18.7%
Maximum Green (s)	22.0	22.0		10.0	10.0		5.0	99.0			87.0	22.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)	7.0	7.0						7.0			7.0	7.0
Flash Dont Walk (s)	15.0	15.0						22.0			22.0	15.0
Pedestrian Calls (#/hr)	1	1						0			0	1
Act Effct Green (s)	22.0	22.0					99.0	99.0			87.0	110.0
Actuated g/C Ratio	0.16	0.16					0.74	0.74			0.65	0.82
v/c Ratio	0.90	0.84					0.95	0.71			1.16	0.26
Control Delay	76.2	39.8					101.6	13.3			105.9	0.9
Queue Delay	0.0	0.0					0.0	0.0			0.0	0.0
Total Delay	76.2	39.8					101.6	13.3			105.9	0.9
LOS	E	D					F	B			F	A
Approach Delay		61.0						22.3			85.6	
Approach LOS		E						C			F	
90th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
90th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
70th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
70th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
50th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
50th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
30th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
30th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
10th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
10th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
Stops (vph)	438	133					41	480			1067	14
Fuel Used(l)	49	20					11	36			193	13
CO Emissions (g/hr)	915	369					198	671			3595	244
NOx Emissions (g/hr)	177	71					38	130			694	47
VOC Emissions (g/hr)	211	85					46	155			829	56
Dilemma Vehicles (#)	0	12					0	34			42	0
Queue Length 50th (m)	67.8	38.4					14.3	122.5			~430.3	2.2
Queue Length 95th (m)	#98.9	#90.2					#53.3	169.8			#515.3	5.6

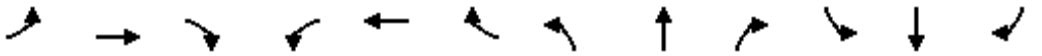
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)							80.0					
Base Capacity (vph)	528	408					108	1289			1132	1223
Starvation Cap Reductn	0	0					0	0			0	0
Spillback Cap Reductn	0	0					0	0			0	0
Storage Cap Reductn	0	0					0	0			0	0
Reduced v/c Ratio	0.90	0.84					0.95	0.71			1.16	0.26

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 134			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 61.2		Intersection LOS: E	
Intersection Capacity Utilization 117.9%		ICU Level of Service H	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 134			
70th %ile Actuated Cycle: 134			
50th %ile Actuated Cycle: 134			
30th %ile Actuated Cycle: 134			
10th %ile Actuated Cycle: 134			

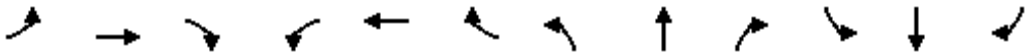
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	116	0	0	1	285	1195	0	0	878	465
Future Volume (vph)	219	0	116	0	0	1	285	1195	0	0	878	465
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.099					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	169	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		379			155							437
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	219	0	116	0	0	1	285	1195	0	0	878	465
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	116	0	0	1	0	285	1195	0	0	878	465
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

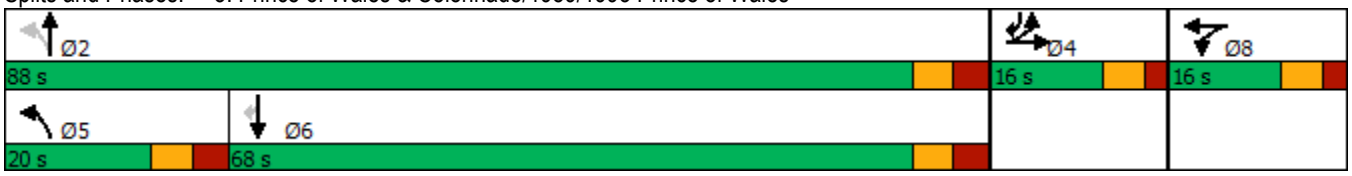


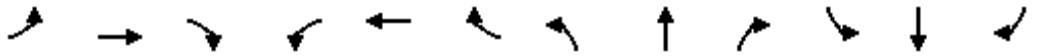
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA		Split	NA		pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	16.0	16.0		16.0	16.0		12.0	36.0			36.0	16.0
Total Split (s)	16.0	16.0		16.0	16.0		20.0	88.0			68.0	16.0
Total Split (%)	13.3%	13.3%		13.3%	13.3%		16.7%	73.3%			56.7%	13.3%
Maximum Green (s)	10.0	10.0		10.0	10.0		13.0	81.0			61.0	10.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								22.0			22.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)	10.0	10.0			10.0		81.3	81.3			61.2	72.2
Actuated g/C Ratio	0.09	0.09			0.09		0.76	0.76			0.57	0.67
v/c Ratio	0.75	0.25			0.00		0.93	0.90			0.89	0.41
Control Delay	64.8	1.3			0.0		60.8	22.7			33.9	2.0
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	64.8	1.3			0.0		60.8	22.7			33.9	2.0
LOS	E	A			A		E	C			C	A
Approach Delay		42.8						30.0			22.9	
Approach LOS		D						C			C	
90th %ile Green (s)	10.0	10.0		10.0	10.0		13.0	81.0			61.0	10.0
90th %ile Term Code	Max	Max		Max	Max		Max	MaxR			MaxR	Max
70th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
70th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
50th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
50th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
30th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
30th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
10th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
10th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
Stops (vph)	195	0			0		135	757			672	26
Fuel Used(l)	21	2			0		21	60			79	20
CO Emissions (g/hr)	381	35			0		395	1118			1477	372
NOx Emissions (g/hr)	74	7			0		76	216			285	72
VOC Emissions (g/hr)	88	8			0		91	258			341	86
Dilemma Vehicles (#)	0	5			0		0	53			39	0
Queue Length 50th (m)	23.7	0.0			0.0		34.3	143.5			147.0	1.3
Queue Length 95th (m)	#49.6	0.0			0.0		#108.1	#395.1			#305.2	14.0
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	292	464			279		305	1323			986	1130
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.75	0.25			0.00		0.93	0.90			0.89	0.41

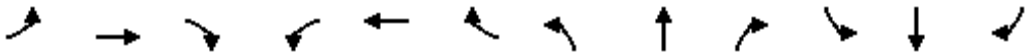
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 107.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 28.3	Intersection LOS: C
Intersection Capacity Utilization 95.4%	ICU Level of Service F
Analysis Period (min) 15	
90th %ile Actuated Cycle: 120	
70th %ile Actuated Cycle: 104	
50th %ile Actuated Cycle: 104	
30th %ile Actuated Cycle: 104	
10th %ile Actuated Cycle: 104	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	476	0	341	0	0	0	103	909	0	0	1021	314
Future Volume (vph)	476	0	341	0	0	0	103	909	0	0	1021	314
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97										0.99
Frt		0.850										0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3216	1445	0	1745	1745	0	1566	1745	0	0	1745	1455
Flt Permitted	0.950						0.102					
Satd. Flow (perm)	3216	1445	0	1745	1745	0	168	1745	0	0	1745	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		251										304
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.5			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	476	0	341	0	0	0	103	909	0	0	1021	314
Shared Lane Traffic (%)												
Lane Group Flow (vph)	476	341	0	0	0	0	103	909	0	0	1021	314
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

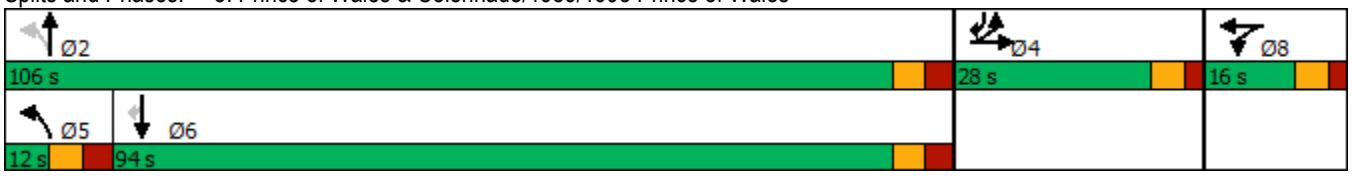


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split			pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	28.0	28.0		16.0	16.0		12.0	36.0			36.0	28.0
Total Split (s)	28.0	28.0		16.0	16.0		12.0	106.0			94.0	28.0
Total Split (%)	18.7%	18.7%		10.7%	10.7%		8.0%	70.7%			62.7%	18.7%
Maximum Green (s)	22.0	22.0		10.0	10.0		5.0	99.0			87.0	22.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)	7.0	7.0						7.0			7.0	7.0
Flash Dont Walk (s)	15.0	15.0						22.0			22.0	15.0
Pedestrian Calls (#/hr)	1	1						0			0	1
Act Effct Green (s)	22.0	22.0					99.0	99.0			87.0	110.0
Actuated g/C Ratio	0.16	0.16					0.74	0.74			0.65	0.82
v/c Ratio	0.90	0.76					0.59	0.71			0.90	0.25
Control Delay	76.2	26.9					18.7	13.3			32.5	0.7
Queue Delay	0.0	0.0					0.0	0.0			0.0	0.0
Total Delay	76.2	26.9					18.7	13.3			32.5	0.7
LOS	E	C					B	B			C	A
Approach Delay		55.6						13.9			25.0	
Approach LOS		E						B			C	
90th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
90th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
70th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
70th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
50th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
50th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
30th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
30th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
10th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
10th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
Stops (vph)	438	101					27	480			809	6
Fuel Used(l)	47	15					4	36			92	13
CO Emissions (g/hr)	879	282					67	671			1714	238
NOx Emissions (g/hr)	170	54					13	130			331	46
VOC Emissions (g/hr)	203	65					16	155			395	55
Dilemma Vehicles (#)	0	13					0	34			37	0
Queue Length 50th (m)	67.8	23.4					7.1	122.5			224.3	0.3
Queue Length 95th (m)	#98.9	#62.9					13.1	169.8			#345.4	3.3

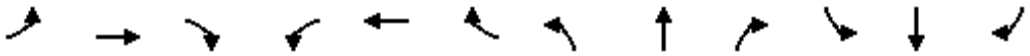
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)							80.0					
Base Capacity (vph)	528	447					176	1289			1132	1235
Starvation Cap Reductn	0	0					0	0			0	0
Spillback Cap Reductn	0	0					0	0			0	0
Storage Cap Reductn	0	0					0	0			0	0
Reduced v/c Ratio	0.90	0.76					0.59	0.71			0.90	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 134			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 29.3		Intersection LOS: C	
Intersection Capacity Utilization 101.8%		ICU Level of Service G	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 134			
70th %ile Actuated Cycle: 134			
50th %ile Actuated Cycle: 134			
30th %ile Actuated Cycle: 134			
10th %ile Actuated Cycle: 134			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Future Volume (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (m)	30.0			30.0			80.0			80.0		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												0.99
Frt			0.850		0.865							0.850
Flt Protected	0.950	0.950					0.950					
Satd. Flow (prot)	1530	1530	1293	0	1510	0	1626	3316	0	1745	3283	1483
Flt Permitted	0.950	0.950					0.170					
Satd. Flow (perm)	1530	1530	1293	0	1510	0	291	3316	0	1745	3283	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155		155							465
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.5			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	219	0	116	0	0	1	285	1295	0	0	878	465
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	109	110	116	0	1	0	285	1295	0	0	878	465
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			5.0			5.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

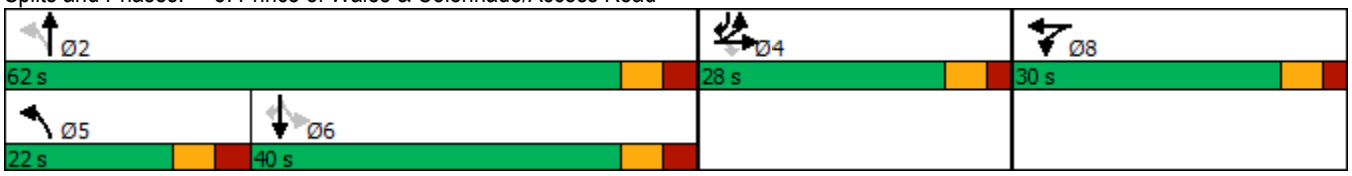


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm		NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	28.0	28.0	28.0	30.0	30.0		12.0	36.0		36.0	36.0	28.0
Total Split (s)	28.0	28.0	28.0	30.0	30.0		22.0	62.0		40.0	40.0	28.0
Total Split (%)	23.3%	23.3%	23.3%	25.0%	25.0%		18.3%	51.7%		33.3%	33.3%	23.3%
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0		15.0	55.0		33.0	33.0	22.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3		3.3	3.3		3.3	3.3	2.3
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)	6.0	6.0	6.0		6.0		7.0	7.0		7.0	7.0	6.0
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Max		Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0	15.0	17.0	17.0			22.0		22.0	22.0	15.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effct Green (s)	12.8	12.8	12.8		10.1		55.7	55.7			33.4	47.2
Actuated g/C Ratio	0.15	0.15	0.15		0.12		0.66	0.66			0.40	0.56
v/c Ratio	0.47	0.47	0.35		0.00		0.66	0.59			0.67	0.45
Control Delay	40.6	40.7	5.7		0.0		19.6	11.0			25.7	2.4
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay	40.6	40.7	5.7		0.0		19.6	11.0			25.7	2.4
LOS	D	D	A		A		B	B			C	A
Approach Delay		28.5						12.6			17.7	
Approach LOS		C						B			B	
90th %ile Green (s)	19.3	19.3	19.3	10.0	10.0		15.0	55.0		33.0	33.0	19.3
90th %ile Term Code	Gap	Gap	Gap	Min	Min		Max	MaxR		MaxR	MaxR	Gap
70th %ile Green (s)	13.6	13.6	13.6	0.0	0.0		15.0	55.0		33.0	33.0	13.6
70th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	MaxR		MaxR	MaxR	Gap
50th %ile Green (s)	11.9	11.9	11.9	0.0	0.0		15.0	55.0		33.0	33.0	11.9
50th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	MaxR		MaxR	MaxR	Gap
30th %ile Green (s)	10.0	10.0	10.0	0.0	0.0		15.0	55.0		33.0	33.0	10.0
30th %ile Term Code	Min	Min	Min	Skip	Skip		Max	MaxR		MaxR	MaxR	Min
10th %ile Green (s)	10.0	10.0	10.0	0.0	0.0		15.0	55.0		33.0	33.0	10.0
10th %ile Term Code	Min	Min	Min	Skip	Skip		Max	MaxR		MaxR	MaxR	Min
Stops (vph)	95	95	7		0		118	688			682	26
Fuel Used(l)	8	8	2		0		17	74			74	20
CO Emissions (g/hr)	143	144	45		0		316	1370			1380	375
NOx Emissions (g/hr)	28	28	9		0		61	264			266	72
VOC Emissions (g/hr)	33	33	10		0		73	316			318	86
Dilemma Vehicles (#)	0	6	0		0		0	77			51	0
Queue Length 50th (m)	17.0	17.1	0.0		0.0		14.6	47.0			57.3	0.0
Queue Length 95th (m)	39.3	39.8	7.9		0.0		#76.0	132.3			#116.0	13.3
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

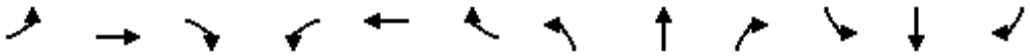
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)			45.0				80.0					80.0
Base Capacity (vph)	404	404	455		545		432	2192			1301	1142
Starvation Cap Reductn	0	0	0		0		0	0			0	0
Spillback Cap Reductn	0	0	0		0		0	0			0	0
Storage Cap Reductn	0	0	0		0		0	0			0	0
Reduced v/c Ratio	0.27	0.27	0.25		0.00		0.66	0.59			0.67	0.41

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 84.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 16.3	Intersection LOS: B
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	
90th %ile Actuated Cycle: 103.3	
70th %ile Actuated Cycle: 81.6	
50th %ile Actuated Cycle: 79.9	
30th %ile Actuated Cycle: 78	
10th %ile Actuated Cycle: 78	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Prince of Wales & Colonnade/Access Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	476	0	341	0	0	1	103	909	0	0	1311	314
Future Volume (vph)	476	0	341	0	0	1	103	909	0	0	1311	314
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (m)	30.0			30.0			80.0			80.0		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.99									0.99
Frt			0.850		0.865							0.850
Flt Protected	0.950	0.950					0.950					
Satd. Flow (prot)	1575	1575	1483	0	1510	0	1566	3316	0	1745	3316	1455
Flt Permitted	0.950	0.950					0.079					
Satd. Flow (perm)	1575	1575	1461	0	1510	0	130	3316	0	1745	3316	1434
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			341		155							314
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.5			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	476	0	341	0	0	1	103	909	0	0	1311	314
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	238	238	341	0	1	0	103	909	0	0	1311	314
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			5.0			5.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

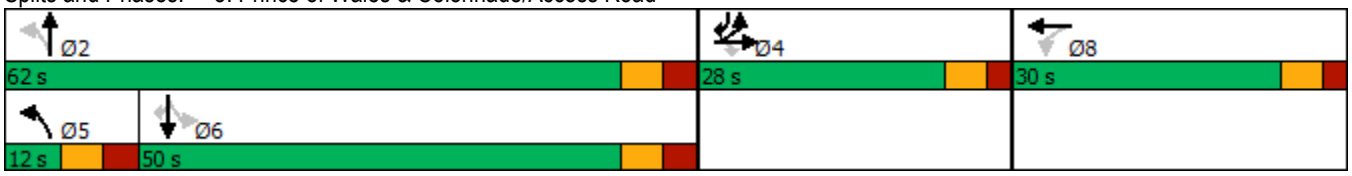


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm		NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	4	4			8		5	2			6	4
Permitted Phases			4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	28.0	28.0	28.0	30.0	30.0		12.0	36.0		36.0	36.0	28.0
Total Split (s)	28.0	28.0	28.0	30.0	30.0		12.0	62.0		50.0	50.0	28.0
Total Split (%)	23.3%	23.3%	23.3%	25.0%	25.0%		10.0%	51.7%		41.7%	41.7%	23.3%
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0		5.0	55.0		43.0	43.0	22.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3		3.3	3.3		3.3	3.3	2.3
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)	6.0	6.0	6.0		6.0		7.0	7.0		7.0	7.0	6.0
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Max		Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0	15.0	17.0	17.0			22.0		22.0	22.0	15.0
Pedestrian Calls (#/hr)	1	1	1	0	0			0		0	0	1
Act Effct Green (s)	19.3	19.3	19.3		10.1		55.4	55.4			43.3	63.6
Actuated g/C Ratio	0.21	0.21	0.21		0.11		0.61	0.61			0.48	0.70
v/c Ratio	0.71	0.71	0.59		0.00		0.65	0.45			0.83	0.28
Control Delay	46.7	46.7	8.4		0.0		32.7	11.5			27.5	1.3
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay	46.7	46.7	8.4		0.0		32.7	11.5			27.5	1.3
LOS	D	D	A		A		C	B			C	A
Approach Delay		30.7						13.7			22.5	
Approach LOS		C						B			C	
90th %ile Green (s)	22.0	22.0	22.0	10.0	10.0		5.0	55.0		43.0	43.0	22.0
90th %ile Term Code	Max	Max	Max	Min	Min		Max	MaxR		MaxR	MaxR	Max
70th %ile Green (s)	22.0	22.0	22.0	0.0	0.0		5.0	55.0		43.0	43.0	22.0
70th %ile Term Code	Max	Max	Max	Skip	Skip		Max	MaxR		MaxR	MaxR	Max
50th %ile Green (s)	21.6	21.6	21.6	0.0	0.0		5.0	55.0		43.0	43.0	21.6
50th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	MaxR		MaxR	MaxR	Gap
30th %ile Green (s)	17.9	17.9	17.9	0.0	0.0		5.0	55.0		43.0	43.0	17.9
30th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	MaxR		MaxR	MaxR	Gap
10th %ile Green (s)	13.2	13.2	13.2	0.0	0.0		5.0	55.0		43.0	43.0	13.2
10th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	MaxR		MaxR	MaxR	Gap
Stops (vph)	206	206	40		0		41	464			1015	13
Fuel Used(l)	18	18	8		0		7	51			113	13
CO Emissions (g/hr)	332	332	155		0		133	956			2093	245
NOx Emissions (g/hr)	64	64	30		0		26	185			404	47
VOC Emissions (g/hr)	77	77	36		0		31	221			483	57
Dilemma Vehicles (#)	0	12	0		0		0	50			70	0
Queue Length 50th (m)	40.7	40.7	0.0		0.0		7.0	41.9			102.9	0.0
Queue Length 95th (m)	#87.6	#87.6	25.2		0.0		#36.9	84.1			#195.6	8.3

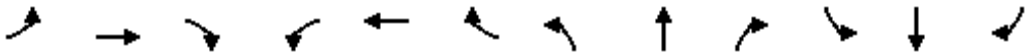
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)			45.0				80.0					80.0
Base Capacity (vph)	385	385	615		516		159	2030			1587	1142
Starvation Cap Reductn	0	0	0		0		0	0			0	0
Spillback Cap Reductn	0	0	0		0		0	0			0	0
Storage Cap Reductn	0	0	0		0		0	0			0	0
Reduced v/c Ratio	0.62	0.62	0.55		0.00		0.65	0.45			0.83	0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 90.5			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 84.8%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 106			
70th %ile Actuated Cycle: 90			
50th %ile Actuated Cycle: 89.6			
30th %ile Actuated Cycle: 85.9			
10th %ile Actuated Cycle: 81.2			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Prince of Wales & Colonnade/Access Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	116	0	0	1	286	1296	0	0	879	465
Future Volume (vph)	219	0	116	0	0	1	286	1296	0	0	879	465
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.070					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	120	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		369			164							327
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	219	0	116	0	0	1	286	1296	0	0	879	465
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	116	0	0	1	0	286	1296	0	0	879	465
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

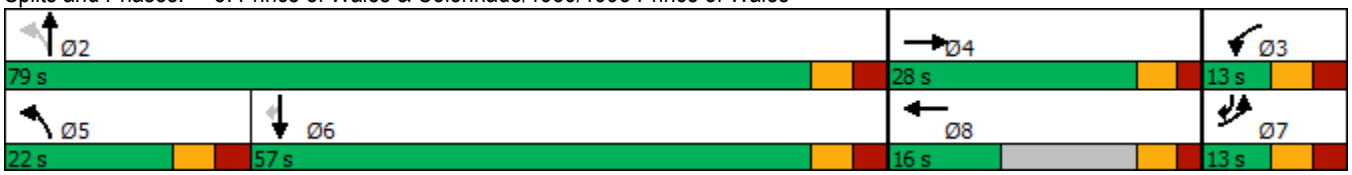


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA			NA	pm+ov
Protected Phases	7	4		3	8		5	2			6	7
Permitted Phases							2					6
Detector Phase	7	4		3	8		5	2			6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0			10.0	5.0
Minimum Split (s)	12.0	28.0		12.0	16.0		12.0	36.0			36.0	12.0
Total Split (s)	13.0	28.0		13.0	16.0		22.0	79.0			57.0	13.0
Total Split (%)	10.8%	23.3%		10.8%	13.3%		18.3%	65.8%			47.5%	10.8%
Maximum Green (s)	6.0	22.0		6.0	10.0		15.0	72.0			50.0	6.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	3.3	2.3		3.3	2.3		3.3	3.3			3.3	3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0			7.0	7.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		15.0						22.0			22.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)	6.0	10.0			10.0		72.0	72.0			50.0	56.0
Actuated g/C Ratio	0.06	0.09			0.09		0.67	0.67			0.46	0.52
v/c Ratio	1.27	0.26			0.00		0.99	1.11			1.10	0.51
Control Delay	199.4	1.4			0.0		82.1	84.0			91.6	4.7
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	199.4	1.4			0.0		82.1	84.0			91.6	4.7
LOS	F	A			A		F	F			F	A
Approach Delay		130.8						83.6			61.5	
Approach LOS		F						F			E	
90th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
90th %ile Term Code	Max	Min		Skip	Max		Max	MaxR			MaxR	Max
70th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
70th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
50th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
50th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
30th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
30th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
10th %ile Green (s)	6.0	10.0		0.0	10.0		15.0	72.0			50.0	6.0
10th %ile Term Code	Max	Min		Skip	Hold		Max	MaxR			MaxR	Max
Stops (vph)	171	0			0		182	1044			737	88
Fuel Used(l)	42	2			0		27	134			121	23
CO Emissions (g/hr)	789	35			0		511	2483			2243	427
NOx Emissions (g/hr)	152	7			0		99	479			433	82
VOC Emissions (g/hr)	182	8			0		118	573			517	98
Dilemma Vehicles (#)	0	5			0		0	53			36	0
Queue Length 50th (m)	~31.5	0.0			0.0		48.6	~330.3			~221.5	7.8
Queue Length 95th (m)	#56.5	0.0			0.0		#104.8	#412.7			#298.3	20.6
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	173	557			432		289	1163			800	917
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	1.27	0.21			0.00		0.99	1.11			1.10	0.51

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 108	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 79.3	Intersection LOS: E
Intersection Capacity Utilization 96.1%	ICU Level of Service F
Analysis Period (min) 15	
90th %ile Actuated Cycle: 108	
70th %ile Actuated Cycle: 108	
50th %ile Actuated Cycle: 108	
30th %ile Actuated Cycle: 108	
10th %ile Actuated Cycle: 108	
~ 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: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	2	1580	0	1	994
Future Volume (Veh/h)	1	2	1580	0	1	994
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	2	1580	0	1	994
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						143
pX, platoon unblocked	0.55					
vC, conflicting volume	2576	1580			1580	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3472	1580			1580	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	99			100	
cM capacity (veh/h)	4	134			416	

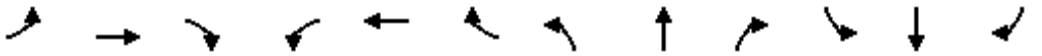
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	3	1580	995
Volume Left	1	0	1
Volume Right	2	0	0
cSH	11	1700	416
Volume to Capacity	0.26	0.93	0.00
Queue Length 95th (m)	5.3	0.0	0.1
Control Delay (s)	412.7	0.0	0.1
Lane LOS	F		A
Approach Delay (s)	412.7	0.0	0.1
Approach LOS	F		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

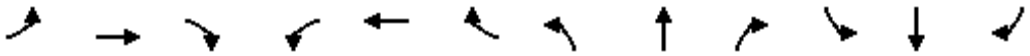
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	3	1580	0	1	995
Future Volume (Veh/h)	0	3	1580	0	1	995
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	3	1580	0	1	995
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						143
pX, platoon unblocked	0.55					
vC, conflicting volume	2577	1580			1580	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3474	1580			1580	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	4	134			416	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	3	1580	996
Volume Left	0	0	1
Volume Right	3	0	0
cSH	134	1700	416
Volume to Capacity	0.02	0.93	0.00
Queue Length 95th (m)	0.5	0.0	0.1
Control Delay (s)	32.4	0.0	0.1
Lane LOS	D		A
Approach Delay (s)	32.4	0.0	0.1
Approach LOS	D		

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		97.8%	ICU Level of Service F
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	476	0	342	0	0	0	103	910	0	0	1312	314
Future Volume (vph)	476	0	342	0	0	0	103	910	0	0	1312	314
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97										0.99
Frt		0.850										0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3216	1445	0	1745	1745	0	1566	1745	0	0	1745	1455
Flt Permitted	0.950						0.043					
Satd. Flow (perm)	3216	1445	0	1745	1745	0	71	1745	0	0	1745	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		178										163
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.5			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	476	0	342	0	0	0	103	910	0	0	1312	314
Shared Lane Traffic (%)												
Lane Group Flow (vph)	476	342	0	0	0	0	103	910	0	0	1312	314
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

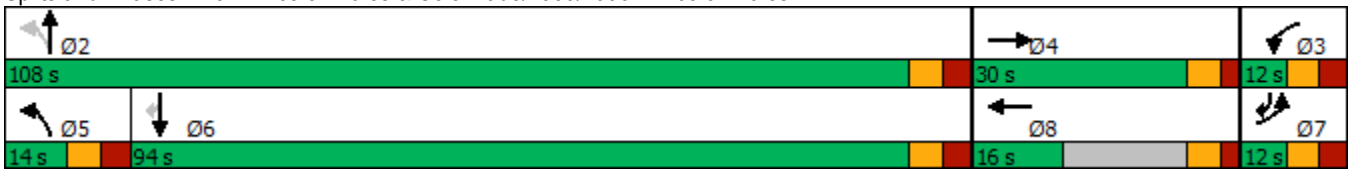


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot			pm+pt	NA			NA	pm+ov
Protected Phases	7	4		3	8		5	2			6	7
Permitted Phases							2					6
Detector Phase	7	4		3	8		5	2			6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0			10.0	5.0
Minimum Split (s)	12.0	28.0		12.0	16.0		12.0	36.0			36.0	12.0
Total Split (s)	12.0	30.0		12.0	16.0		14.0	108.0			94.0	12.0
Total Split (%)	8.0%	20.0%		8.0%	10.7%		9.3%	72.0%			62.7%	8.0%
Maximum Green (s)	5.0	24.0		5.0	10.0		7.0	101.0			87.0	5.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	3.3	2.3		3.3	2.3		3.3	3.3			3.3	3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0			7.0	7.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)		7.0						7.0			7.0	
Flash Dont Walk (s)		15.0						22.0			22.0	
Pedestrian Calls (#/hr)		1						0			0	
Act Effct Green (s)	5.0	21.6					101.1	101.1			87.1	92.1
Actuated g/C Ratio	0.03	0.15					0.68	0.68			0.59	0.62
v/c Ratio	4.37	0.94					0.87	0.76			1.28	0.33
Control Delay	1557.8	64.3					82.8	21.3			160.3	5.0
Queue Delay	0.0	0.0					0.0	0.0			0.0	0.0
Total Delay	1557.8	64.3					82.8	21.3			160.3	5.0
LOS	F	E					F	C			F	A
Approach Delay		933.4						27.6			130.3	
Approach LOS		F						C			F	
90th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
90th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
70th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
70th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
50th %ile Green (s)	5.0	24.0		0.0	24.0		7.0	101.0			87.0	5.0
50th %ile Term Code	Max	Max		Skip	Hold		Max	MaxR			MaxR	Max
30th %ile Green (s)	5.0	22.2		0.0	22.2		7.0	101.0			87.0	5.0
30th %ile Term Code	Max	Gap		Skip	Hold		Max	MaxR			MaxR	Max
10th %ile Green (s)	5.0	14.1		0.0	14.1		7.0	101.0			87.0	5.0
10th %ile Term Code	Max	Gap		Skip	Hold		Max	MaxR			MaxR	Max
Stops (vph)	334	157					49	597			1031	75
Fuel Used(l)	589	27					9	45			247	16
CO Emissions (g/hr)	10948	505					175	846			4598	299
NOx Emissions (g/hr)	2113	97					34	163			887	58
VOC Emissions (g/hr)	2525	116					40	195			1060	69
Dilemma Vehicles (#)	0	11					0	31			35	0
Queue Length 50th (m)	~141.3	54.2					17.7	182.1			~523.2	11.6
Queue Length 95th (m)	#178.4	#114.1					#55.9	245.1			#608.9	20.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)							80.0					
Base Capacity (vph)	109	384					119	1194			1029	956
Starvation Cap Reductn	0	0					0	0			0	0
Spillback Cap Reductn	0	0					0	0			0	0
Storage Cap Reductn	0	0					0	0			0	0
Reduced v/c Ratio	4.37	0.89					0.87	0.76			1.28	0.33

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 147.7			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 4.37			
Intersection Signal Delay: 290.2		Intersection LOS: F	
Intersection Capacity Utilization 118.0%		ICU Level of Service H	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 150			
70th %ile Actuated Cycle: 150			
50th %ile Actuated Cycle: 150			
30th %ile Actuated Cycle: 148.2			
10th %ile Actuated Cycle: 140.1			
~ 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: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	1	1012	1	2	1652
Future Volume (Veh/h)	0	1	1012	1	2	1652
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1	1012	1	2	1652
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						143
pX, platoon unblocked	0.42					
vC, conflicting volume	2668	1012			1013	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4308	1012			1013	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1	290			684	

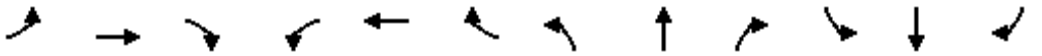
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1	1013	1654
Volume Left	0	0	2
Volume Right	1	1	0
cSH	290	1700	684
Volume to Capacity	0.00	0.60	0.00
Queue Length 95th (m)	0.1	0.0	0.1
Control Delay (s)	17.4	0.0	1.1
Lane LOS	C		A
Approach Delay (s)	17.4	0.0	1.1
Approach LOS	C		

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		96.8%	ICU Level of Service F
Analysis Period (min)		15	

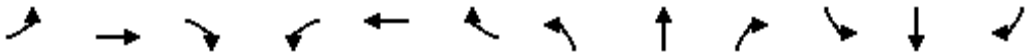
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	1	1012	1	2	1652
Future Volume (Veh/h)	0	1	1012	1	2	1652
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1	1012	1	2	1652
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						143
pX, platoon unblocked	0.42					
vC, conflicting volume	2668	1012			1013	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4308	1012			1013	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1	290			684	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1	1013	1654
Volume Left	0	0	2
Volume Right	1	1	0
cSH	290	1700	684
Volume to Capacity	0.00	0.60	0.00
Queue Length 95th (m)	0.1	0.0	0.1
Control Delay (s)	17.4	0.0	1.1
Lane LOS	C		A
Approach Delay (s)	17.4	0.0	1.1
Approach LOS	C		

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		96.8%	ICU Level of Service F
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	116	0	0	1	287	1296	0	0	879	465
Future Volume (vph)	219	0	116	0	0	1	287	1296	0	0	879	465
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.067					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	115	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		356			155							465
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	219	0	116	0	0	1	287	1296	0	0	879	465
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	116	0	0	1	0	287	1296	0	0	879	465
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

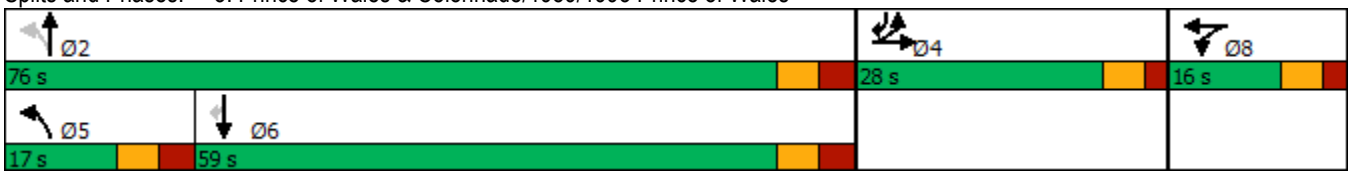


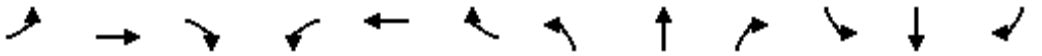
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA		Split	NA		pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	28.0	28.0		16.0	16.0		12.0	36.0			36.0	28.0
Total Split (s)	28.0	28.0		16.0	16.0		17.0	76.0			59.0	28.0
Total Split (%)	23.3%	23.3%		13.3%	13.3%		14.2%	63.3%			49.2%	23.3%
Maximum Green (s)	22.0	22.0		10.0	10.0		10.0	69.0			52.0	22.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)	7.0	7.0						7.0			7.0	7.0
Flash Dont Walk (s)	15.0	15.0						22.0			22.0	15.0
Pedestrian Calls (#/hr)	0	0						0			0	0
Act Effct Green (s)	13.1	13.1			10.1		69.6	69.6			52.4	66.6
Actuated g/C Ratio	0.13	0.13			0.10		0.71	0.71			0.53	0.68
v/c Ratio	0.53	0.24			0.00		1.22	1.05			0.96	0.41
Control Delay	45.1	1.2			0.0		157.4	58.0			45.1	1.7
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	45.1	1.2			0.0		157.4	58.0			45.1	1.7
LOS	D	A			A		F	E			D	A
Approach Delay		29.9						76.0			30.1	
Approach LOS		C						E			C	
90th %ile Green (s)	19.0	19.0		10.0	10.0		10.0	69.0			52.0	19.0
90th %ile Term Code	Gap	Gap		Max	Max		Max	MaxR			MaxR	Gap
70th %ile Green (s)	14.2	14.2		0.0	0.0		10.0	69.0			52.0	14.2
70th %ile Term Code	Gap	Gap		Skip	Skip		Max	MaxR			MaxR	Gap
50th %ile Green (s)	12.8	12.8		0.0	0.0		10.0	69.0			52.0	12.8
50th %ile Term Code	Gap	Gap		Skip	Skip		Max	MaxR			MaxR	Gap
30th %ile Green (s)	10.5	10.5		0.0	0.0		10.0	69.0			52.0	10.5
30th %ile Term Code	Gap	Gap		Skip	Skip		Max	MaxR			MaxR	Gap
10th %ile Green (s)	10.0	10.0		0.0	0.0		10.0	69.0			52.0	10.0
10th %ile Term Code	Min	Min		Skip	Skip		Max	MaxR			MaxR	Min
Stops (vph)	195	0			0		150	932			678	18
Fuel Used(l)	17	2			0		43	104			87	20
CO Emissions (g/hr)	320	34			0		803	1934			1623	365
NOx Emissions (g/hr)	62	7			0		155	373			313	70
VOC Emissions (g/hr)	74	8			0		185	446			374	84
Dilemma Vehicles (#)	0	6			0		0	59			41	0
Queue Length 50th (m)	20.5	0.0			0.0		~52.1	~240.7			146.6	0.0
Queue Length 95th (m)	37.4	0.0			0.0		#137.2	#476.1			#327.1	10.6
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	703	567			291		235	1232			919	1235
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.31	0.20			0.00		1.22	1.05			0.96	0.38

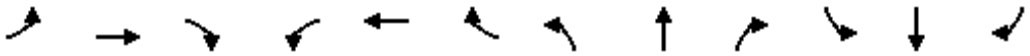
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 98.5			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.22			
Intersection Signal Delay: 52.3		Intersection LOS: D	
Intersection Capacity Utilization 96.1%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 117			
70th %ile Actuated Cycle: 96.2			
50th %ile Actuated Cycle: 94.8			
30th %ile Actuated Cycle: 92.5			
10th %ile Actuated Cycle: 92			
~ 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: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	116	0	0	1	287	1296	0	0	879	465
Future Volume (vph)	219	0	116	0	0	1	287	1296	0	0	879	465
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt		0.850			0.850							0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3124	1293	0	1745	1483	0	1626	1745	0	0	1728	1483
Flt Permitted	0.950						0.098					
Satd. Flow (perm)	3124	1293	0	1745	1483	0	168	1745	0	0	1728	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		379			155							436
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	219	0	116	0	0	1	287	1296	0	0	879	465
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	116	0	0	1	0	287	1296	0	0	879	465
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

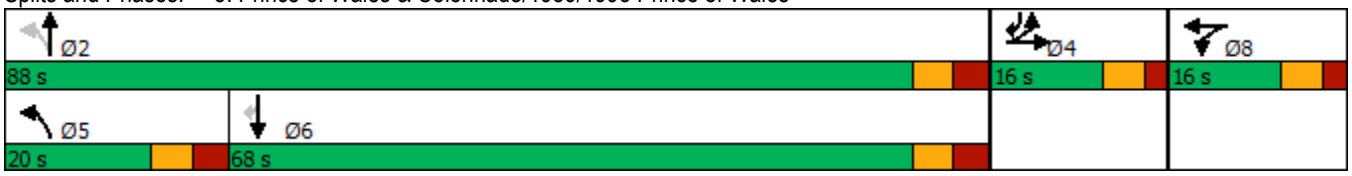


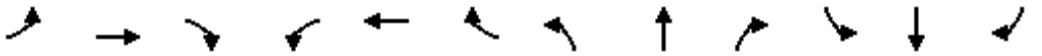
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA		Split	NA		pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	16.0	16.0		16.0	16.0		12.0	36.0			36.0	16.0
Total Split (s)	16.0	16.0		16.0	16.0		20.0	88.0			68.0	16.0
Total Split (%)	13.3%	13.3%		13.3%	13.3%		16.7%	73.3%			56.7%	13.3%
Maximum Green (s)	10.0	10.0		10.0	10.0		13.0	81.0			61.0	10.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)								7.0			7.0	
Flash Dont Walk (s)								22.0			22.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)	10.0	10.0			10.0		81.3	81.3			61.2	72.2
Actuated g/C Ratio	0.09	0.09			0.09		0.76	0.76			0.57	0.67
v/c Ratio	0.75	0.25			0.00		0.94	0.98			0.89	0.41
Control Delay	64.8	1.3			0.0		62.3	34.7			34.0	2.0
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Delay	64.8	1.3			0.0		62.3	34.7			34.0	2.0
LOS	E	A			A		E	C			C	A
Approach Delay		42.8						39.7			22.9	
Approach LOS		D						D			C	
90th %ile Green (s)	10.0	10.0		10.0	10.0		13.0	81.0			61.0	10.0
90th %ile Term Code	Max	Max		Max	Max		Max	MaxR			MaxR	Max
70th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
70th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
50th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
50th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
30th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
30th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
10th %ile Green (s)	10.0	10.0		0.0	0.0		13.0	81.0			61.0	10.0
10th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
Stops (vph)	195	0			0		137	901			672	26
Fuel Used(l)	21	2			0		22	80			80	20
CO Emissions (g/hr)	381	35			0		405	1483			1480	372
NOx Emissions (g/hr)	74	7			0		78	286			286	72
VOC Emissions (g/hr)	88	8			0		93	342			341	86
Dilemma Vehicles (#)	0	5			0		0	57			39	0
Queue Length 50th (m)	23.7	0.0			0.0		35.0	190.5			147.4	1.3
Queue Length 95th (m)	#49.6	0.0			0.0		#110.0	#448.3			#305.2	14.1
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							80.0					
Base Capacity (vph)	292	464			279		305	1323			986	1129
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.75	0.25			0.00		0.94	0.98			0.89	0.41

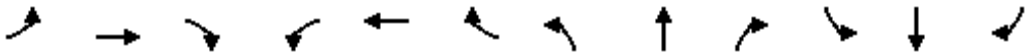
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 107.2			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 33.1		Intersection LOS: C	
Intersection Capacity Utilization 96.1%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 120			
70th %ile Actuated Cycle: 104			
50th %ile Actuated Cycle: 104			
30th %ile Actuated Cycle: 104			
10th %ile Actuated Cycle: 104			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	476	0	342	0	0	0	103	910	0	0	1312	314
Future Volume (vph)	476	0	342	0	0	0	103	910	0	0	1312	314
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	0.0		0.0
Storage Lanes	2		0	1		0	1		0	0		1
Taper Length (m)	30.0			30.0			100.0			30.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97										0.99
Frt		0.850										0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3216	1445	0	1745	1745	0	1566	1745	0	0	1745	1455
Flt Permitted	0.950						0.043					
Satd. Flow (perm)	3216	1445	0	1745	1745	0	71	1745	0	0	1745	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		205										237
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.1			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	476	0	342	0	0	0	103	910	0	0	1312	314
Shared Lane Traffic (%)												
Lane Group Flow (vph)	476	342	0	0	0	0	103	910	0	0	1312	314
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(m)		9.2			5.0			5.0			1.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2			2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0			10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6			0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

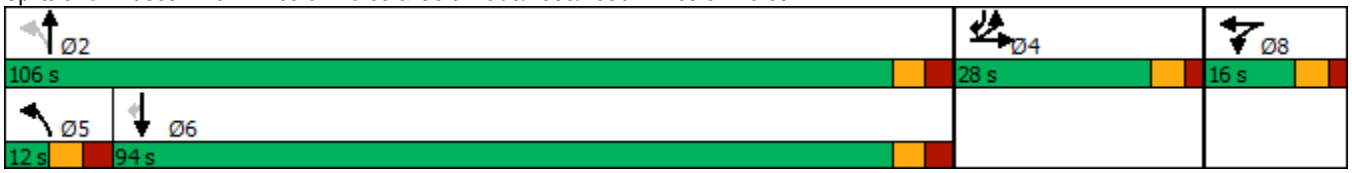


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split			pm+pt	NA			NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases							2					6
Detector Phase	4	4		8	8		5	2			6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0			10.0	10.0
Minimum Split (s)	28.0	28.0		16.0	16.0		12.0	36.0			36.0	28.0
Total Split (s)	28.0	28.0		16.0	16.0		12.0	106.0			94.0	28.0
Total Split (%)	18.7%	18.7%		10.7%	10.7%		8.0%	70.7%			62.7%	18.7%
Maximum Green (s)	22.0	22.0		10.0	10.0		5.0	99.0			87.0	22.0
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7			3.7	3.7
All-Red Time (s)	2.3	2.3		2.3	2.3		3.3	3.3			3.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		7.0	7.0			7.0	6.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode	None	None		None	None		None	Max			Max	None
Walk Time (s)	7.0	7.0						7.0			7.0	7.0
Flash Dont Walk (s)	15.0	15.0						22.0			22.0	15.0
Pedestrian Calls (#/hr)	1	1						0			0	1
Act Effct Green (s)	22.0	22.0					99.0	99.0			87.0	110.0
Actuated g/C Ratio	0.16	0.16					0.74	0.74			0.65	0.82
v/c Ratio	0.90	0.84					0.95	0.71			1.16	0.26
Control Delay	76.2	40.1					101.6	13.3			106.3	0.9
Queue Delay	0.0	0.0					0.0	0.0			0.0	0.0
Total Delay	76.2	40.1					101.6	13.3			106.3	0.9
LOS	E	D					F	B			F	A
Approach Delay		61.1						22.3			85.9	
Approach LOS		E						C			F	
90th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
90th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
70th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
70th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
50th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
50th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
30th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
30th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
10th %ile Green (s)	22.0	22.0		0.0	0.0		5.0	99.0			87.0	22.0
10th %ile Term Code	Max	Max		Skip	Skip		Max	MaxR			MaxR	Max
Stops (vph)	438	135					41	481			1067	14
Fuel Used(l)	49	20					11	36			194	13
CO Emissions (g/hr)	915	373					198	673			3604	244
NOx Emissions (g/hr)	177	72					38	130			696	47
VOC Emissions (g/hr)	211	86					46	155			831	56
Dilemma Vehicles (#)	0	12					0	34			42	0
Queue Length 50th (m)	67.8	38.8					14.3	122.9			~430.9	2.2
Queue Length 95th (m)	#98.9	#91.4					#53.3	170.2			#515.9	5.6

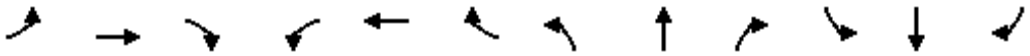
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)							80.0					
Base Capacity (vph)	528	408					108	1289			1132	1223
Starvation Cap Reductn	0	0					0	0			0	0
Spillback Cap Reductn	0	0					0	0			0	0
Storage Cap Reductn	0	0					0	0			0	0
Reduced v/c Ratio	0.90	0.84					0.95	0.71			1.16	0.26

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 134			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 61.4		Intersection LOS: E	
Intersection Capacity Utilization 118.0%		ICU Level of Service H	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 134			
70th %ile Actuated Cycle: 134			
50th %ile Actuated Cycle: 134			
30th %ile Actuated Cycle: 134			
10th %ile Actuated Cycle: 134			
~ 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: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	116	1	1	2	285	1295	0	1	878	465
Future Volume (vph)	219	0	116	1	1	2	285	1295	0	1	878	465
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (m)	30.0			30.0			80.0			80.0		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												0.99
Frt			0.850		0.932							0.850
Flt Protected	0.950	0.950			0.988		0.950			0.950		
Satd. Flow (prot)	1530	1530	1293	0	1607	0	1626	3316	0	1658	3283	1483
Flt Permitted	0.950	0.950			0.988		0.170			0.213		
Satd. Flow (perm)	1530	1530	1293	0	1607	0	291	3316	0	372	3283	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155		2							465
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.5			8.6			27.4	
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	2%	17%	2%	2%	2%	4%	2%	2%	2%	3%	2%
Adj. Flow (vph)	219	0	116	1	1	2	285	1295	0	1	878	465
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	109	110	116	0	4	0	285	1295	0	1	878	465
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			5.0			5.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

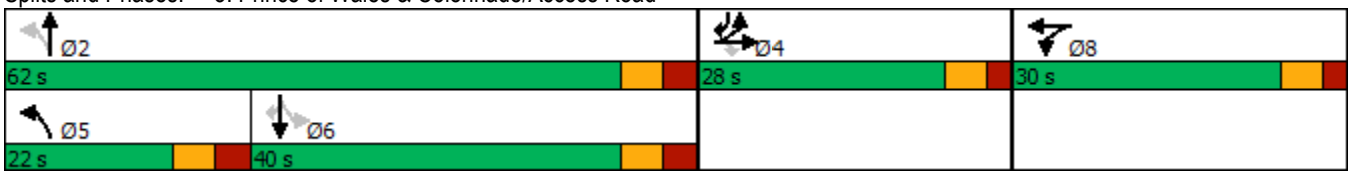


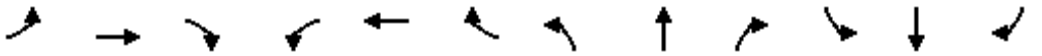
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm	Split	NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	4	4		8	8		5	2			6	4
Permitted Phases			4				2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	28.0	28.0	28.0	30.0	30.0		12.0	36.0		36.0	36.0	28.0
Total Split (s)	28.0	28.0	28.0	30.0	30.0		22.0	62.0		40.0	40.0	28.0
Total Split (%)	23.3%	23.3%	23.3%	25.0%	25.0%		18.3%	51.7%		33.3%	33.3%	23.3%
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0		15.0	55.0		33.0	33.0	22.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3		3.3	3.3		3.3	3.3	2.3
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)	6.0	6.0	6.0		6.0		7.0	7.0		7.0	7.0	6.0
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Max		Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0	15.0	17.0	17.0			22.0		22.0	22.0	15.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effct Green (s)	12.8	12.8	12.8		10.1		55.7	55.7		33.4	33.4	47.2
Actuated g/C Ratio	0.15	0.15	0.15		0.12		0.66	0.66		0.40	0.40	0.56
v/c Ratio	0.47	0.47	0.35		0.02		0.66	0.59		0.01	0.67	0.45
Control Delay	40.6	40.7	5.7		31.5		19.6	11.0		21.0	25.7	2.4
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	40.6	40.7	5.7		31.5		19.6	11.0		21.0	25.7	2.4
LOS	D	D	A		C		B	B		C	C	A
Approach Delay		28.5			31.5			12.6			17.7	
Approach LOS		C			C			B			B	
90th %ile Green (s)	19.3	19.3	19.3	10.0	10.0		15.0	55.0		33.0	33.0	19.3
90th %ile Term Code	Gap	Gap	Gap	Min	Min		Max	MaxR		MaxR	MaxR	Gap
70th %ile Green (s)	13.6	13.6	13.6	0.0	0.0		15.0	55.0		33.0	33.0	13.6
70th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	MaxR		MaxR	MaxR	Gap
50th %ile Green (s)	11.9	11.9	11.9	0.0	0.0		15.0	55.0		33.0	33.0	11.9
50th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	MaxR		MaxR	MaxR	Gap
30th %ile Green (s)	10.0	10.0	10.0	0.0	0.0		15.0	55.0		33.0	33.0	10.0
30th %ile Term Code	Min	Min	Min	Skip	Skip		Max	MaxR		MaxR	MaxR	Min
10th %ile Green (s)	10.0	10.0	10.0	0.0	0.0		15.0	55.0		33.0	33.0	10.0
10th %ile Term Code	Min	Min	Min	Skip	Skip		Max	MaxR		MaxR	MaxR	Min
Stops (vph)	95	95	7		5		118	688		1	682	26
Fuel Used(l)	8	8	2		0		17	74		0	74	20
CO Emissions (g/hr)	143	144	45		4		316	1370		2	1380	375
NOx Emissions (g/hr)	28	28	9		1		61	264		0	266	72
VOC Emissions (g/hr)	33	33	10		1		73	316		0	318	86
Dilemma Vehicles (#)	0	6	0		0		0	77		0	51	0
Queue Length 50th (m)	17.0	17.1	0.0		0.3		14.6	47.0		0.1	57.3	0.0
Queue Length 95th (m)	39.3	39.8	7.9		3.7		#76.0	132.3		1.5	#116.0	13.3
Internal Link Dist (m)		76.6			10.3			119.0			432.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)			45.0				80.0			80.0		80.0
Base Capacity (vph)	404	404	455		464		432	2192		147	1301	1142
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	0.27	0.27	0.25		0.01		0.66	0.59		0.01	0.67	0.41

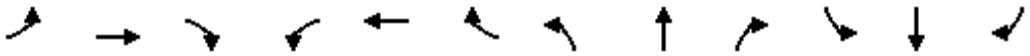
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 84.2			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 16.3		Intersection LOS: B	
Intersection Capacity Utilization 75.9%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 103.3			
70th %ile Actuated Cycle: 81.6			
50th %ile Actuated Cycle: 79.9			
30th %ile Actuated Cycle: 78			
10th %ile Actuated Cycle: 78			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Prince of Wales & Colonnade/Access Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	476	1	341	0	0	1	103	909	1	1	1311	314
Future Volume (vph)	476	1	341	0	0	1	103	909	1	1	1311	314
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		45.0	0.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (m)	30.0			30.0			80.0			80.0		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.99					1.00				0.99
Frt			0.850		0.865							0.850
Flt Protected	0.950	0.953					0.950			0.950		
Satd. Flow (prot)	1575	1580	1483	0	1510	0	1566	3316	0	1658	3316	1455
Flt Permitted	0.950	0.953					0.079			0.313		
Satd. Flow (perm)	1575	1580	1461	0	1510	0	130	3316	0	546	3316	1434
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			341		155							314
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		100.6			34.3			143.0			456.7	
Travel Time (s)		6.0			2.5			8.6			27.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1						3			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	8%	2%	2%	2%	2%	4%
Adj. Flow (vph)	476	1	341	0	0	1	103	909	1	1	1311	314
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	238	239	341	0	1	0	103	910	0	1	1311	314
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			5.0			5.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

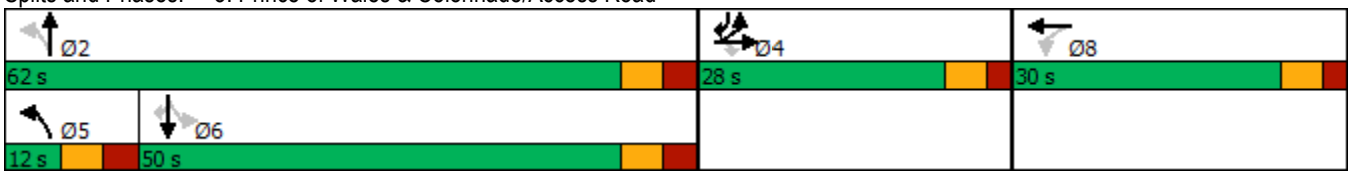


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm		NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	4	4			8		5	2			6	4
Permitted Phases			4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	4
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	28.0	28.0	28.0	30.0	30.0		12.0	36.0		36.0	36.0	28.0
Total Split (s)	28.0	28.0	28.0	30.0	30.0		12.0	62.0		50.0	50.0	28.0
Total Split (%)	23.3%	23.3%	23.3%	25.0%	25.0%		10.0%	51.7%		41.7%	41.7%	23.3%
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0		5.0	55.0		43.0	43.0	22.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3		3.3	3.3		3.3	3.3	2.3
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)	6.0	6.0	6.0		6.0		7.0	7.0		7.0	7.0	6.0
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Max		Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0	15.0	17.0	17.0			22.0		22.0	22.0	15.0
Pedestrian Calls (#/hr)	1	1	1	0	0			0		0	0	1
Act Effct Green (s)	19.3	19.3	19.3		10.1		55.4	55.4		43.3	43.3	63.6
Actuated g/C Ratio	0.21	0.21	0.21		0.11		0.61	0.61		0.48	0.48	0.70
v/c Ratio	0.71	0.71	0.59		0.00		0.65	0.45		0.00	0.83	0.28
Control Delay	46.7	46.7	8.4		0.0		32.7	11.5		16.0	27.5	1.3
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	46.7	46.7	8.4		0.0		32.7	11.5		16.0	27.5	1.3
LOS	D	D	A		A		C	B		B	C	A
Approach Delay		30.8						13.7			22.5	
Approach LOS		C						B			C	
90th %ile Green (s)	22.0	22.0	22.0	10.0	10.0		5.0	55.0		43.0	43.0	22.0
90th %ile Term Code	Max	Max	Max	Min	Min		Max	MaxR		MaxR	MaxR	Max
70th %ile Green (s)	22.0	22.0	22.0	0.0	0.0		5.0	55.0		43.0	43.0	22.0
70th %ile Term Code	Max	Max	Max	Skip	Skip		Max	MaxR		MaxR	MaxR	Max
50th %ile Green (s)	21.6	21.6	21.6	0.0	0.0		5.0	55.0		43.0	43.0	21.6
50th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	MaxR		MaxR	MaxR	Gap
30th %ile Green (s)	17.9	17.9	17.9	0.0	0.0		5.0	55.0		43.0	43.0	17.9
30th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	MaxR		MaxR	MaxR	Gap
10th %ile Green (s)	13.2	13.2	13.2	0.0	0.0		5.0	55.0		43.0	43.0	13.2
10th %ile Term Code	Gap	Gap	Gap	Skip	Skip		Max	MaxR		MaxR	MaxR	Gap
Stops (vph)	206	206	40		0		41	466		1	1015	13
Fuel Used(l)	19	19	8		0		7	52		0	113	13
CO Emissions (g/hr)	346	347	155		0		133	958		2	2093	245
NOx Emissions (g/hr)	67	67	30		0		26	185		0	404	47
VOC Emissions (g/hr)	80	80	36		0		31	221		0	483	57
Dilemma Vehicles (#)	0	12	0		0		0	50		0	70	0
Queue Length 50th (m)	40.7	40.8	0.0		0.0		7.0	42.0		0.1	102.9	0.0
Queue Length 95th (m)	#87.6	#87.8	25.2		0.0		#36.9	84.2		1.3	#195.6	8.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)		76.6			10.3			119.0			432.7	
Turn Bay Length (m)			45.0				80.0			80.0		80.0
Base Capacity (vph)	385	386	615		516		159	2030		261	1587	1142
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	0.62	0.62	0.55		0.00		0.65	0.45		0.00	0.83	0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 90.5			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 84.8%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 106			
70th %ile Actuated Cycle: 90			
50th %ile Actuated Cycle: 89.6			
30th %ile Actuated Cycle: 85.9			
10th %ile Actuated Cycle: 81.2			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Prince of Wales & Colonnade/Access Road



APPENDIX J

SimTraffic Reports

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2852	2870	2947	2933	2969	2939	3000
Vehs Exited	2853	2886	2937	2885	2870	2928	2979
Starting Vehs	133	130	143	112	74	123	120
Ending Vehs	132	114	153	160	173	134	141
Travel Distance (km)	2103	2132	2156	2132	2134	2156	2194
Travel Time (hr)	538.6	426.6	471.0	392.9	284.7	340.1	373.3
Total Delay (hr)	500.9	388.6	432.3	354.8	246.6	301.4	334.1
Total Stops	4114	4037	4218	3899	3748	4182	4381
Fuel Used (l)	615.1	521.3	560.8	487.5	391.8	447.6	480.7

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2963	2914	2872	2926
Vehs Exited	2943	2906	2897	2908
Starting Vehs	134	123	146	124
Ending Vehs	154	131	121	140
Travel Distance (km)	2169	2145	2130	2145
Travel Time (hr)	408.7	446.1	424.6	410.6
Total Delay (hr)	370.0	407.7	386.5	372.3
Total Stops	4228	4234	4090	4112
Fuel Used (l)	507.6	538.7	518.7	507.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	2852	2870	2947	2933	2969	2939	3000
Vehs Exited	2853	2886	2937	2885	2870	2928	2979
Starting Vehs	133	130	143	112	74	123	120
Ending Vehs	132	114	153	160	173	134	141
Travel Distance (km)	2103	2132	2156	2132	2134	2156	2194
Travel Time (hr)	538.6	426.6	471.0	392.9	284.7	340.1	373.3
Total Delay (hr)	500.9	388.6	432.3	354.8	246.6	301.4	334.1
Total Stops	4114	4037	4218	3899	3748	4182	4381
Fuel Used (l)	615.1	521.3	560.8	487.5	391.8	447.6	480.7

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	2963	2914	2872	2926
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Total Delay (hr)	370.0	407.7	386.5	372.3
Total Stops	4228	4234	4090	4112
Fuel Used (l)	507.6	538.7	518.7	507.0

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	B9	B9	WB	NB	NB	SB	SB
Directions Served	L	L	TR	T	T	TR	L	TR	T	R
Maximum Queue (m)	90.8	75.9	52.7	22.7	17.6	6.2	119.8	124.8	456.2	454.8
Average Queue (m)	60.3	47.7	20.8	6.4	3.0	0.3	56.3	116.2	428.1	408.7
95th Queue (m)	100.9	84.9	45.9	34.2	22.8	3.1	115.4	144.1	530.1	603.1
Link Distance (m)	79.7	79.7	79.7	64.4	64.4	13.9		120.0	440.1	440.1
Upstream Blk Time (%)	15	8	0	0	0	0	0	7	71	53
Queuing Penalty (veh)	0	0	0	0	0	0	0	110	0	0
Storage Bay Dist (m)							80.0			
Storage Blk Time (%)							0	24		
Queuing Penalty (veh)							4	66		

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	4:30	4:30	4:30	4:30	4:30	4:30	4:30
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2544	2552	2559	2538	2582	2653	2645
Vehs Exited	2537	2541	2564	2523	2582	2668	2609
Starting Vehs	135	138	138	131	131	144	124
Ending Vehs	142	149	133	146	131	129	160
Travel Distance (km)	1939	1930	1952	1930	1966	2008	1986
Travel Time (hr)	911.8	983.8	914.0	864.7	841.5	827.1	899.4
Total Delay (hr)	877.9	949.9	879.9	830.9	807.0	791.8	864.5
Total Stops	2521	2531	2584	2620	2631	2767	2701
Fuel Used (l)	914.9	978.1	918.8	873.5	859.0	846.5	907.5

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	4:30	4:30	4:30	4:30
End Time	6:00	6:00	6:00	6:00
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2613	2659	2597	2594
Vehs Exited	2612	2650	2582	2586
Starting Vehs	138	129	136	132
Ending Vehs	139	138	151	142
Travel Distance (km)	1981	2019	1958	1967
Travel Time (hr)	940.9	875.4	903.1	896.2
Total Delay (hr)	906.2	839.9	868.6	861.7
Total Stops	2583	2574	2576	2609
Fuel Used (l)	945.9	889.0	909.0	904.2

Interval #0 Information Seeding

Start Time	4:30
End Time	5:00
Total Time (min)	30

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	2544	2552	2559	2538	2582	2653	2645
Vehs Exited	2537	2541	2564	2523	2582	2668	2609
Starting Vehs	135	138	138	131	131	144	124
Ending Vehs	142	149	133	146	131	129	160
Travel Distance (km)	1939	1930	1952	1930	1966	2008	1986
Travel Time (hr)	911.8	983.8	914.0	864.7	841.5	827.1	899.4
Total Delay (hr)	877.9	949.9	879.9	830.9	807.0	791.8	864.5
Total Stops	2521	2531	2584	2620	2631	2767	2701
Fuel Used (l)	914.9	978.1	918.8	873.5	859.0	846.5	907.5

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	2613	2659	2597	2594
Vehs Exited	2612	2650	2582	2586
Starting Vehs	138	129	136	132
Ending Vehs	139	138	151	142
Travel Distance (km)	1981	2019	1958	1967
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Total Delay (hr)	906.2	839.9	868.6	861.7
Total Stops	2583	2574	2576	2609
Fuel Used (l)	945.9	889.0	909.0	904.2

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	B9	B9	NB	NB	SB	SB
Directions Served	L	L	TR	T	T	L	TR	T	R
Maximum Queue (m)	108.7	102.6	99.0	73.3	75.7	72.9	117.4	456.9	454.9
Average Queue (m)	101.6	98.2	47.5	68.1	69.5	25.7	62.8	447.0	445.9
95th Queue (m)	104.9	104.6	105.1	74.3	72.5	53.9	109.9	453.3	450.6
Link Distance (m)	79.7	79.7	79.7	64.4	64.4		120.0	440.1	440.1
Upstream Blk Time (%)	100	99	4	85	97	0	0	79	53
Queuing Penalty (veh)	0	0	0	0	0	0	3	0	0
Storage Bay Dist (m)						80.0			
Storage Blk Time (%)							4		
Queuing Penalty (veh)							4		

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2977	3024	3060	3028	3037	3021	3021
Vehs Exited	2968	3016	3034	2992	2974	3034	3011
Starting Vehs	113	124	80	89	70	106	126
Ending Vehs	122	132	106	125	133	93	136
Travel Distance (km)	2184	2221	2233	2206	2202	2223	2215
Travel Time (hr)	342.3	358.1	317.3	320.8	276.2	225.7	349.8
Total Delay (hr)	303.2	318.4	277.4	281.4	236.9	185.9	310.4
Total Stops	4144	4002	3749	3602	3183	3097	3972
Fuel Used (l)	451.4	467.5	427.4	425.3	386.7	342.7	457.6

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3022	2996	2944	3013
Vehs Exited	3013	2986	2949	2998
Starting Vehs	99	113	135	106
Ending Vehs	108	123	130	121
Travel Distance (km)	2220	2204	2177	2209
Travel Time (hr)	287.0	279.2	338.1	309.5
Total Delay (hr)	247.3	239.8	299.3	270.0
Total Stops	3387	3709	4157	3700
Fuel Used (l)	397.3	395.3	447.9	419.9

Interval #0 Information Seeding

Start Time	6:57
End Time	7:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	2977	3024	3060	3028	3037	3021	3021
Vehs Exited	2968	3016	3034	2992	2974	3034	3011
Starting Vehs	113	124	80	89	70	106	126
Ending Vehs	122	132	106	125	133	93	136
Travel Distance (km)	2184	2221	2233	2206	2202	2223	2215
Travel Time (hr)	342.3	358.1	317.3	320.8	276.2	225.7	349.8
Total Delay (hr)	303.2	318.4	277.4	281.4	236.9	185.9	310.4
Total Stops	4144	4002	3749	3602	3183	3097	3972
Fuel Used (l)	451.4	467.5	427.4	425.3	386.7	342.7	457.6

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3022	2996	2944	3013
Vehs Exited	3013	2986	2949	2998
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Travel Distance (km)	2220	2204	2177	2209
Travel Time (hr)	287.0	279.2	338.1	309.5
Total Delay (hr)	247.3	239.8	299.3	270.0
Total Stops	3387	3709	4157	3700
Fuel Used (l)	397.3	395.3	447.9	419.9

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	L	TR	TR	L	TR	T	R
Maximum Queue (m)	54.2	42.8	51.5	7.1	119.8	124.9	442.0	406.6
Average Queue (m)	31.4	17.9	20.3	0.3	63.1	117.7	344.4	245.6
95th Queue (m)	49.6	40.6	40.0	2.9	123.4	136.7	549.2	573.5
Link Distance (m)	79.7	79.7	79.7	13.9		120.0	440.1	440.1
Upstream Blk Time (%)				0	0	6	33	22
Queuing Penalty (veh)				0	0	89	0	0
Storage Bay Dist (m)					80.0			
Storage Blk Time (%)					1	24		
Queuing Penalty (veh)					19	66		

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3273	3236	3226	3146	3193	3118	3250
Vehs Exited	3287	3232	3229	3139	3164	3126	3232
Starting Vehs	89	76	72	68	57	75	68
Ending Vehs	75	80	69	75	86	67	86
Travel Distance (km)	2421	2397	2387	2322	2352	2299	2393
Travel Time (hr)	127.7	126.2	88.7	169.2	134.5	73.8	120.3
Total Delay (hr)	84.4	83.5	46.2	127.9	92.7	32.7	77.6
Total Stops	2573	1847	1911	1830	1776	1516	1759
Fuel Used (l)	273.3	268.4	235.4	299.7	270.6	210.9	263.4

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3285	3259	3235	3222
Vehs Exited	3279	3243	3218	3215
Starting Vehs	78	93	79	76
Ending Vehs	84	109	96	82
Travel Distance (km)	2427	2409	2384	2379
Travel Time (hr)	126.2	136.7	104.8	120.8
Total Delay (hr)	83.0	93.6	62.4	78.4
Total Stops	2065	2337	1959	1957
Fuel Used (l)	268.6	279.7	246.4	261.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3273	3236	3226	3146	3193	3118	3250
Vehs Exited	3287	3232	3229	3139	3164	3126	3232
Starting Vehs	89	76	72	68	57	75	68
Ending Vehs	75	80	69	75	86	67	86
Travel Distance (km)	2421	2397	2387	2322	2352	2299	2393
Travel Time (hr)	127.7	126.2	88.7	169.2	134.5	73.8	120.3
Total Delay (hr)	84.4	83.5	46.2	127.9	92.7	32.7	77.6
Total Stops	2573	1847	1911	1830	1776	1516	1759
Fuel Used (l)	273.3	268.4	235.4	299.7	270.6	210.9	263.4

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3285	3259	3235	3222
Vehs Exited	3279	3243	3218	3215
Starting Vehs	78	93	79	76
Ending Vehs	84	109	96	82
Travel Distance (km)	2427	2409	2384	2379
Travel Time (hr)	126.2	136.7	104.8	120.8
Total Delay (hr)	83.0	93.6	62.4	78.4
Total Stops	2065	2337	1959	1957
Fuel Used (l)	268.6	279.7	246.4	261.6

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	L	TR	TR	L	TR	T	R
Maximum Queue (m)	64.2	53.1	47.4	8.0	109.7	122.0	266.9	132.1
Average Queue (m)	37.4	25.8	19.8	0.4	45.4	83.9	130.4	35.1
95th Queue (m)	57.0	48.4	38.8	3.6	82.3	124.7	265.8	150.7
Link Distance (m)	79.7	79.7	79.7	13.9		120.0	440.1	440.1
Upstream Blk Time (%)	0			0	0	0	0	0
Queuing Penalty (veh)	0			0	0	5	0	0
Storage Bay Dist (m)					80.0			
Storage Blk Time (%)					0	7		
Queuing Penalty (veh)					3	19		

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	4:30	4:30	4:30	4:30	4:30	4:30	4:30
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3116	3052	3069	3054	3157	3069	3158
Vehs Exited	3105	3060	3075	3035	3146	3086	3132
Starting Vehs	108	154	143	126	111	132	122
Ending Vehs	119	146	137	145	122	115	148
Travel Distance (km)	2271	2240	2258	2238	2305	2268	2295
Travel Time (hr)	384.8	469.2	458.8	320.8	340.9	382.5	473.3
Total Delay (hr)	344.0	429.0	418.4	280.7	299.7	342.0	432.2
Total Stops	3139	3000	3075	3245	3326	3209	3131
Fuel Used (l)	485.2	556.4	548.3	428.5	452.0	482.7	563.8

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	4:30	4:30	4:30	4:30
End Time	6:00	6:00	6:00	6:00
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3176	3155	3109	3112
Vehs Exited	3141	3147	3112	3103
Starting Vehs	113	136	134	126
Ending Vehs	148	144	131	134
Travel Distance (km)	2299	2312	2287	2277
Travel Time (hr)	448.4	453.1	425.7	415.8
Total Delay (hr)	407.2	411.6	384.8	375.0
Total Stops	3219	3187	3051	3158
Fuel Used (l)	542.4	546.7	521.9	512.8

Interval #0 Information Seeding

Start Time	4:30
End Time	5:00
Total Time (min)	30

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3116	3052	3069	3054	3157	3069	3158
Vehs Exited	3105	3060	3075	3035	3146	3086	3132
Starting Vehs	108	154	143	126	111	132	122
Ending Vehs	119	146	137	145	122	115	148
Travel Distance (km)	2271	2240	2258	2238	2305	2268	2295
Travel Time (hr)	384.8	469.2	458.8	320.8	340.9	382.5	473.3
Total Delay (hr)	344.0	429.0	418.4	280.7	299.7	342.0	432.2
Total Stops	3139	3000	3075	3245	3326	3209	3131
Fuel Used (l)	485.2	556.4	548.3	428.5	452.0	482.7	563.8

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3176	3155	3109	3112
Vehs Exited	3141	3147	3112	3103
Starting Vehs	113	136	134	126
Ending Vehs	148	144	131	134
Travel Distance (km)	2299	2312	2287	2277
Travel Time (hr)	448.4	453.1	425.7	415.8
Total Delay (hr)	407.2	411.6	384.8	375.0
Total Stops	3219	3187	3051	3158
Fuel Used (l)	542.4	546.7	521.9	512.8

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	B9	B9	NB	NB	SB	SB
Directions Served	L	L	TR	T	T	L	TR	T	R
Maximum Queue (m)	107.1	85.7	110.2	63.8	78.2	62.9	113.6	457.2	454.3
Average Queue (m)	77.6	62.6	99.6	25.5	58.0	24.2	61.8	447.2	445.8
95th Queue (m)	109.3	89.8	114.8	68.7	99.6	47.0	104.4	453.8	450.1
Link Distance (m)	79.7	79.7	79.7	64.4	64.4		120.0	440.1	440.1
Upstream Blk Time (%)	16	2	75	1	64		0	79	53
Queuing Penalty (veh)	0	0	0	0	0		1	0	0
Storage Bay Dist (m)						80.0			
Storage Blk Time (%)							3		
Queuing Penalty (veh)							3		

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2867	2901	2920	2880	2967	2836	2939
Vehs Exited	2861	2914	2927	2841	2899	2859	2933
Starting Vehs	127	137	159	114	87	154	140
Ending Vehs	133	124	152	153	155	131	146
Travel Distance (km)	2107	2143	2151	2095	2155	2094	2157
Travel Time (hr)	515.8	504.5	481.1	379.6	323.6	339.5	478.5
Total Delay (hr)	478.1	466.2	442.5	342.1	285.1	302.0	440.1
Total Stops	4056	4290	4291	4022	3478	4039	4244
Fuel Used (l)	596.2	588.7	568.9	474.3	424.7	442.7	568.2

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2953	2871	2791	2892
Vehs Exited	2934	2856	2795	2881
Starting Vehs	119	125	137	129
Ending Vehs	138	140	133	141
Travel Distance (km)	2173	2103	2058	2123
Travel Time (hr)	422.3	476.4	517.8	443.9
Total Delay (hr)	383.7	438.7	481.0	405.9
Total Stops	4065	4190	4231	4089
Fuel Used (l)	517.6	562.4	593.3	533.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	2867	2901	2920	2880	2967	2836	2939
Vehs Exited	2861	2914	2927	2841	2899	2859	2933
Starting Vehs	127	137	159	114	87	154	140
Ending Vehs	133	124	152	153	155	131	146
Travel Distance (km)	2107	2143	2151	2095	2155	2094	2157
Travel Time (hr)	515.8	504.5	481.1	379.6	323.6	339.5	478.5
Total Delay (hr)	478.1	466.2	442.5	342.1	285.1	302.0	440.1
Total Stops	4056	4290	4291	4022	3478	4039	4244
Fuel Used (l)	596.2	588.7	568.9	474.3	424.7	442.7	568.2

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	2953	2871	2791	2892
Vehs Exited	2934	2856	2795	2881
Starting Vehs	119	125	137	129
Ending Vehs	138	140	133	141
Travel Distance (km)	2173	2103	2058	2123
Travel Time (hr)	422.3	476.4	517.8	443.9
Total Delay (hr)	383.7	438.7	481.0	405.9
Total Stops	4065	4190	4231	4089
Fuel Used (l)	517.6	562.4	593.3	533.7

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	B9	B9	WB	NB	NB	SB	SB
Directions Served	L	L	TR	T	T	TR	L	TR	T	R
Maximum Queue (m)	94.8	77.9	52.6	14.9	12.1	5.3	119.8	125.0	456.2	453.0
Average Queue (m)	59.9	47.9	20.5	5.1	3.6	0.3	55.4	117.0	424.4	402.8
95th Queue (m)	98.3	85.0	43.5	31.2	25.8	2.8	111.2	142.1	542.9	602.6
Link Distance (m)	79.7	79.7	79.7	64.4	64.4	13.9		120.0	440.1	440.1
Upstream Blk Time (%)	13	8		0	0	0	0	8	71	54
Queuing Penalty (veh)	0	0		0	0	0	0	120	0	0
Storage Bay Dist (m)							80.0			
Storage Blk Time (%)							1	24		
Queuing Penalty (veh)							12	68		

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	4:57	4:57	4:57	4:57	4:57	4:57	4:57
End Time	6:27	6:27	6:27	6:27	6:27	6:27	6:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2552	2584	2577	2544	2595	2653	2622
Vehs Exited	2536	2575	2565	2540	2595	2649	2612
Starting Vehs	134	141	124	138	133	137	142
Ending Vehs	150	150	136	142	133	141	152
Travel Distance (km)	1936	1956	1949	1938	1973	2004	1983
Travel Time (hr)	924.4	993.6	914.8	844.3	819.2	858.1	896.8
Total Delay (hr)	890.5	959.3	880.7	810.3	784.7	822.9	862.0
Total Stops	2495	2693	2706	2753	2693	2636	2761
Fuel Used (l)	924.5	989.0	918.6	856.5	840.6	872.7	905.9

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	4:57	4:57	4:57	4:57
End Time	6:27	6:27	6:27	6:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2588	2699	2620	2604
Vehs Exited	2585	2690	2604	2596
Starting Vehs	140	137	133	133
Ending Vehs	143	146	149	144
Travel Distance (km)	1957	2052	1984	1973
Travel Time (hr)	958.0	883.9	903.6	899.7
Total Delay (hr)	923.7	847.8	868.7	865.1
Total Stops	2723	2622	2600	2669
Fuel Used (l)	959.2	897.0	910.1	907.4

Interval #0 Information Seeding

Start Time	4:57
End Time	5:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:27
End Time	6:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	2552	2584	2577	2544	2595	2653	2622
Vehs Exited	2536	2575	2565	2540	2595	2649	2612
Starting Vehs	134	141	124	138	133	137	142
Ending Vehs	150	150	136	142	133	141	152
Travel Distance (km)	1936	1956	1949	1938	1973	2004	1983
Travel Time (hr)	924.4	993.6	914.8	844.3	819.2	858.1	896.8
Total Delay (hr)	890.5	959.3	880.7	810.3	784.7	822.9	862.0
Total Stops	2495	2693	2706	2753	2693	2636	2761
Fuel Used (l)	924.5	989.0	918.6	856.5	840.6	872.7	905.9

Interval #1 Information Recording

Start Time	5:27
End Time	6:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	2588	2699	2620	2604
Vehs Exited	2585	2690	2604	2596
Starting Vehs	140	137	133	133
Ending Vehs	143	146	149	144
Travel Distance (km)	1957	2052	1984	1973
Travel Time (hr)	958.0	883.9	903.6	899.7
Total Delay (hr)	923.7	847.8	868.7	865.1
Total Stops	2723	2622	2600	2669
Fuel Used (l)	959.2	897.0	910.1	907.4

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	B9	B9	NB	NB	SB	SB
Directions Served	L	L	TR	T	T	L	TR	T	R
Maximum Queue (m)	109.4	105.3	101.9	73.0	76.0	72.6	120.3	458.0	453.9
Average Queue (m)	101.5	98.6	51.5	67.7	69.5	25.6	67.6	446.9	445.9
95th Queue (m)	104.3	104.9	109.3	74.1	72.8	53.0	117.3	453.2	450.5
Link Distance (m)	79.7	79.7	79.7	64.4	64.4		120.0	440.1	440.1
Upstream Blk Time (%)	100	99	4	79	97	0	1	78	53
Queuing Penalty (veh)	0	0	0	0	0	0	5	0	0
Storage Bay Dist (m)						80.0			
Storage Blk Time (%)							5		
Queuing Penalty (veh)							5		

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2973	2992	3049	3053	3053	3049	3059
Vehs Exited	2988	2973	3030	3015	3008	3024	3063
Starting Vehs	142	109	93	90	80	101	136
Ending Vehs	127	128	112	128	125	126	132
Travel Distance (km)	2190	2194	2225	2224	2227	2225	2252
Travel Time (hr)	422.7	402.9	299.6	323.9	267.6	238.6	356.7
Total Delay (hr)	383.5	363.7	259.8	284.1	227.9	198.8	316.6
Total Stops	4071	4191	3563	3473	3054	3606	4339
Fuel Used (l)	522.7	505.7	409.8	431.4	381.7	356.1	470.4

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3054	3003	2963	3025
Vehs Exited	3014	2989	2959	3005
Starting Vehs	91	116	130	107
Ending Vehs	131	130	134	128
Travel Distance (km)	2230	2200	2188	2216
Travel Time (hr)	356.6	277.0	333.1	327.9
Total Delay (hr)	316.8	237.6	294.1	288.3
Total Stops	4086	3994	4191	3857
Fuel Used (l)	461.8	395.8	443.6	437.9

Interval #0 Information Seeding

Start Time	6:57
End Time	7:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	2973	2992	3049	3053	3053	3049	3059
Vehs Exited	2988	2973	3030	3015	3008	3024	3063
Starting Vehs	142	109	93	90	80	101	136
Ending Vehs	127	128	112	128	125	126	132
Travel Distance (km)	2190	2194	2225	2224	2227	2225	2252
Travel Time (hr)	422.7	402.9	299.6	323.9	267.6	238.6	356.7
Total Delay (hr)	383.5	363.7	259.8	284.1	227.9	198.8	316.6
Total Stops	4071	4191	3563	3473	3054	3606	4339
Fuel Used (l)	522.7	505.7	409.8	431.4	381.7	356.1	470.4

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3054	3003	2963	3025
Vehs Exited	3014	2989	2959	3005
Starting Vehs	91	116	130	107
Ending Vehs	131	130	134	128
Travel Distance (km)	2230	2200	2188	2216
Travel Time (hr)	356.6	277.0	333.1	327.9
Total Delay (hr)	316.8	237.6	294.1	288.3
Total Stops	4086	3994	4191	3857
Fuel Used (l)	461.8	395.8	443.6	437.9

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	L	TR	TR	L	TR	T	R
Maximum Queue (m)	54.5	49.9	49.9	6.3	119.7	124.3	451.1	447.5
Average Queue (m)	32.5	18.5	19.4	0.3	58.6	117.7	366.7	294.8
95th Queue (m)	50.3	40.8	39.0	3.1	117.9	138.0	555.4	615.4
Link Distance (m)	79.7	79.7	79.7	13.9		120.0	440.1	440.1
Upstream Blk Time (%)			0	0	0	5	44	32
Queuing Penalty (veh)			0	0	0	87	0	0
Storage Bay Dist (m)					80.0			
Storage Blk Time (%)					1	23		
Queuing Penalty (veh)					12	66		

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3282	3244	3245	3203	3200	3130	3268
Vehs Exited	3293	3239	3247	3195	3171	3148	3268
Starting Vehs	93	83	73	79	60	73	75
Ending Vehs	82	88	71	87	89	55	75
Travel Distance (km)	2423	2407	2391	2355	2355	2312	2409
Travel Time (hr)	148.0	160.5	88.6	143.2	115.5	73.6	121.0
Total Delay (hr)	104.7	117.6	45.8	101.2	73.5	32.2	78.1
Total Stops	2855	2386	1929	1927	1805	1585	1858
Fuel Used (l)	292.6	300.3	233.8	280.7	254.3	210.3	265.2

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3281	3213	3194	3226
Vehs Exited	3283	3219	3167	3223
Starting Vehs	89	76	69	76
Ending Vehs	87	70	96	79
Travel Distance (km)	2430	2383	2352	2382
Travel Time (hr)	126.2	116.4	95.9	118.9
Total Delay (hr)	82.8	73.9	53.9	76.4
Total Stops	2156	2056	1834	2038
Fuel Used (l)	269.8	257.0	234.8	259.9

Interval #0 Information Seeding

Start Time	6:57
End Time	7:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3282	3244	3245	3203	3200	3130	3268
Vehs Exited	3293	3239	3247	3195	3171	3148	3268
Starting Vehs	93	83	73	79	60	73	75
Ending Vehs	82	88	71	87	89	55	75
Travel Distance (km)	2423	2407	2391	2355	2355	2312	2409
Travel Time (hr)	148.0	160.5	88.6	143.2	115.5	73.6	121.0
Total Delay (hr)	104.7	117.6	45.8	101.2	73.5	32.2	78.1
Total Stops	2855	2386	1929	1927	1805	1585	1858
Fuel Used (l)	292.6	300.3	233.8	280.7	254.3	210.3	265.2

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3281	3213	3194	3226
Vehs Exited	3283	3219	3167	3223
Starting Vehs	89	76	69	76
Ending Vehs	87	70	96	79
Travel Distance (km)	2430	2383	2352	2382
Travel Time (hr)	126.2	116.4	95.9	118.9
Total Delay (hr)	82.8	73.9	53.9	76.4
Total Stops	2156	2056	1834	2038
Fuel Used (l)	269.8	257.0	234.8	259.9

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	L	TR	TR	L	TR	T	R
Maximum Queue (m)	61.8	53.5	50.6	7.1	100.2	123.2	261.5	168.7
Average Queue (m)	37.5	26.0	21.1	0.4	44.9	84.7	140.6	38.3
95th Queue (m)	56.4	48.8	40.2	3.4	77.8	124.6	286.4	168.3
Link Distance (m)	79.7	79.7	79.7	13.9		120.0	440.1	440.1
Upstream Blk Time (%)	0			0	0	0	1	1
Queuing Penalty (veh)	0			0	0	6	0	0
Storage Bay Dist (m)					80.0			
Storage Blk Time (%)					1	7		
Queuing Penalty (veh)					14	20		

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	4:57	4:57	4:57	4:57	4:57	4:57	4:57
End Time	6:27	6:27	6:27	6:27	6:27	6:27	6:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3178	3036	3146	3079	3123	3086	3082
Vehs Exited	3167	3033	3135	3053	3088	3082	3090
Starting Vehs	128	145	139	122	111	131	144
Ending Vehs	139	148	150	148	146	135	136
Travel Distance (km)	2309	2224	2299	2253	2264	2267	2258
Travel Time (hr)	391.7	501.4	441.7	398.5	346.0	447.5	444.7
Total Delay (hr)	350.2	461.5	400.5	358.2	305.4	406.9	404.3
Total Stops	3354	3066	3285	3217	3288	3139	3204
Fuel Used (l)	495.3	583.4	536.1	495.5	452.9	537.9	539.0

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	4:57	4:57	4:57	4:57
End Time	6:27	6:27	6:27	6:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3142	3156	3116	3114
Vehs Exited	3123	3166	3084	3102
Starting Vehs	118	135	113	129
Ending Vehs	137	125	145	140
Travel Distance (km)	2279	2305	2253	2271
Travel Time (hr)	472.0	405.4	461.6	431.0
Total Delay (hr)	431.2	363.9	421.0	390.3
Total Stops	3347	3293	3238	3242
Fuel Used (l)	562.6	505.8	549.1	525.8

Interval #0 Information Seeding

Start Time	4:57
End Time	5:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:27
End Time	6:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3178	3036	3146	3079	3123	3086	3082
Vehs Exited	3167	3033	3135	3053	3088	3082	3090
Starting Vehs	128	145	139	122	111	131	144
Ending Vehs	139	148	150	148	146	135	136
Travel Distance (km)	2309	2224	2299	2253	2264	2267	2258
Travel Time (hr)	391.7	501.4	441.7	398.5	346.0	447.5	444.7
Total Delay (hr)	350.2	461.5	400.5	358.2	305.4	406.9	404.3
Total Stops	3354	3066	3285	3217	3288	3139	3204
Fuel Used (l)	495.3	583.4	536.1	495.5	452.9	537.9	539.0

Interval #1 Information Recording

Start Time	5:27
End Time	6:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3142	3156	3116	3114
Vehs Exited	3123	3166	3084	3102
Starting Vehs	118	135	113	129
Ending Vehs	137	125	145	140
Travel Distance (km)	2279	2305	2253	2271
Travel Time (hr)	472.0	405.4	461.6	431.0
Total Delay (hr)	431.2	363.9	421.0	390.3
Total Stops	3347	3293	3238	3242
Fuel Used (l)	562.6	505.8	549.1	525.8

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	B9	B9	NB	NB	SB	SB
Directions Served	L	L	TR	T	T	L	TR	T	R
Maximum Queue (m)	104.8	87.3	111.6	67.1	78.4	58.0	117.3	456.7	456.1
Average Queue (m)	81.8	65.1	100.7	29.8	63.6	24.5	61.7	446.8	446.1
95th Queue (m)	114.5	91.3	113.5	73.5	95.6	46.4	105.8	452.7	451.4
Link Distance (m)	79.7	79.7	79.7	64.4	64.4		120.0	440.1	440.1
Upstream Blk Time (%)	23	3	80	1	72		0	78	52
Queuing Penalty (veh)	0	0	0	0	0		1	0	0
Storage Bay Dist (m)						80.0			
Storage Blk Time (%)						0	3		
Queuing Penalty (veh)						0	3		

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2969	2887	2918	2951	2907	2897	2972
Vehs Exited	2961	2892	2886	2925	2871	2878	2940
Starting Vehs	135	155	111	121	101	138	129
Ending Vehs	143	150	143	147	137	157	161
Travel Distance (km)	2179	2125	2133	2150	2121	2102	2164
Travel Time (hr)	382.1	512.2	376.4	340.0	328.0	343.8	343.1
Total Delay (hr)	343.0	474.2	338.3	301.5	290.1	306.1	304.5
Total Stops	4525	4320	4159	4201	3674	4243	4209
Fuel Used (l)	486.0	594.5	476.5	448.9	427.8	447.4	451.5

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2915	2890	2898	2921
Vehs Exited	2884	2886	2831	2895
Starting Vehs	117	136	73	123
Ending Vehs	148	140	140	145
Travel Distance (km)	2140	2127	2105	2135
Travel Time (hr)	394.5	493.1	362.2	387.5
Total Delay (hr)	356.3	455.1	324.6	349.4
Total Stops	3992	4195	3764	4129
Fuel Used (l)	493.0	578.9	458.5	486.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	2969	2887	2918	2951	2907	2897	2972
Vehs Exited	2961	2892	2886	2925	2871	2878	2940
Starting Vehs	135	155	111	121	101	138	129
Ending Vehs	143	150	143	147	137	157	161
Travel Distance (km)	2179	2125	2133	2150	2121	2102	2164
Travel Time (hr)	382.1	512.2	376.4	340.0	328.0	343.8	343.1
Total Delay (hr)	343.0	474.2	338.3	301.5	290.1	306.1	304.5
Total Stops	4525	4320	4159	4201	3674	4243	4209
Fuel Used (l)	486.0	594.5	476.5	448.9	427.8	447.4	451.5

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	2915	2890	2898	2921
Vehs Exited	2884	2886	2831	2895
Starting Vehs	117	136	73	123
Ending Vehs	148	140	140	145
Travel Distance (km)	2140	2127	2105	2135
Travel Time (hr)	394.5	493.1	362.2	387.5
Total Delay (hr)	356.3	455.1	324.6	349.4
Total Stops	3992	4195	3764	4129
Fuel Used (l)	493.0	578.9	458.5	486.3

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	B9	B9	WB	NB	NB	SB	SB
Directions Served	L	L	TR	T	T	TR	L	TR	T	R
Maximum Queue (m)	96.7	80.2	48.0	18.6	10.2	6.0	119.8	124.9	455.2	456.0
Average Queue (m)	65.0	53.3	21.1	3.3	0.6	0.2	56.0	117.2	424.1	398.2
95th Queue (m)	104.1	88.4	39.7	20.6	9.3	2.6	114.4	142.8	533.6	607.4
Link Distance (m)	79.7	79.7	79.7	64.4	64.4	13.9		120.0	440.1	440.1
Upstream Blk Time (%)	13	2		0		0	0	8	66	50
Queuing Penalty (veh)	0	0		0		0	0	124	0	0
Storage Bay Dist (m)							80.0			
Storage Blk Time (%)							0	24		
Queuing Penalty (veh)							6	70		

Intersection: 6: Prince of Wales & Site Access

Movement	WB	NB	SB
Directions Served	R	TR	LT
Maximum Queue (m)	14.0	225.2	48.8
Average Queue (m)	4.6	179.0	1.8
95th Queue (m)	16.1	289.3	23.8
Link Distance (m)	84.9	209.3	120.0
Upstream Blk Time (%)		21	0
Queuing Penalty (veh)		0	3
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 203

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	4:57	4:57	4:57	4:57	4:57	4:57	4:57
End Time	6:27	6:27	6:27	6:27	6:27	6:27	6:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	2596	2646	2636	2506	2626	2630	2594
Vehs Exited	2602	2634	2620	2506	2603	2626	2607
Starting Vehs	133	133	126	148	128	144	155
Ending Vehs	127	145	142	148	151	148	142
Travel Distance (km)	1987	2008	2001	1899	1984	1990	1973
Travel Time (hr)	908.3	889.7	965.2	977.2	871.7	836.8	957.6
Total Delay (hr)	873.5	854.4	930.3	943.8	837.0	801.8	922.9
Total Stops	2553	2568	2614	2494	2688	2646	2668
Fuel Used (l)	916.3	901.5	965.3	968.6	884.1	853.6	957.8

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	4:57	4:57	4:57	4:57
End Time	6:27	6:27	6:27	6:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2585	2650	2591	2607
Vehs Exited	2579	2611	2617	2600
Starting Vehs	142	119	155	138
Ending Vehs	148	158	129	145
Travel Distance (km)	1957	2000	1982	1978
Travel Time (hr)	944.9	923.1	833.2	910.8
Total Delay (hr)	910.6	888.1	798.3	876.1
Total Stops	2580	2687	2523	2603
Fuel Used (l)	944.1	930.4	851.0	917.3

Interval #0 Information Seeding

Start Time	4:57
End Time	5:27
Total Time (min)	30

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	5:27
End Time	6:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	2596	2646	2636	2506	2626	2630	2594
Vehs Exited	2602	2634	2620	2506	2603	2626	2607
Starting Vehs	133	133	126	148	128	144	155
Ending Vehs	127	145	142	148	151	148	142
Travel Distance (km)	1987	2008	2001	1899	1984	1990	1973
Travel Time (hr)	908.3	889.7	965.2	977.2	871.7	836.8	957.6
Total Delay (hr)	873.5	854.4	930.3	943.8	837.0	801.8	922.9
Total Stops	2553	2568	2614	2494	2688	2646	2668
Fuel Used (l)	916.3	901.5	965.3	968.6	884.1	853.6	957.8

Interval #1 Information Recording

Start Time	5:27
End Time	6:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	2585	2650	2591	2607
Vehs Exited	2579	2611	2617	2600
Starting Vehs	142	119	155	138
Ending Vehs	148	158	129	145
Travel Distance (km)	1957	2000	1982	1978
Travel Time (hr)	944.9	923.1	833.2	910.8
Total Delay (hr)	910.6	888.1	798.3	876.1
Total Stops	2580	2687	2523	2603
Fuel Used (l)	944.1	930.4	851.0	917.3

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	B9	B9	NB	NB	SB	SB
Directions Served	L	L	TR	T	T	L	TR	T	R
Maximum Queue (m)	107.7	106.2	102.0	73.9	77.8	61.3	119.9	455.3	453.2
Average Queue (m)	101.7	98.8	48.8	68.1	69.8	23.3	62.9	447.0	445.8
95th Queue (m)	104.8	105.5	107.7	74.9	73.6	44.5	109.5	452.7	450.4
Link Distance (m)	79.7	79.7	79.7	64.4	64.4		120.0	440.1	440.1
Upstream Blk Time (%)	100	99	3	85	97	0	0	79	53
Queuing Penalty (veh)	0	0	0	0	0	0	2	0	0
Storage Bay Dist (m)						80.0			
Storage Blk Time (%)							4		
Queuing Penalty (veh)							4		

Intersection: 6: Prince of Wales & Site Access

Movement	WB	NB	SB
Directions Served	R	TR	LT
Maximum Queue (m)	6.6	27.1	65.0
Average Queue (m)	0.5	1.6	3.3
95th Queue (m)	3.5	13.3	30.7
Link Distance (m)	84.9	209.3	120.0
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 7

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3038	2979	3007	2998	3065	3003	3106
Vehs Exited	3042	2988	3006	2972	3018	2992	3084
Starting Vehs	126	132	106	113	81	123	82
Ending Vehs	122	123	107	139	128	134	104
Travel Distance (km)	2235	2204	2216	2198	2226	2200	2264
Travel Time (hr)	319.9	385.6	314.8	311.1	295.3	287.7	262.7
Total Delay (hr)	279.8	346.3	275.2	271.8	255.5	248.3	222.2
Total Stops	4232	4245	3343	3992	3277	4278	3497
Fuel Used (l)	435.6	491.6	420.8	424.9	405.5	405.3	380.6

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:27	8:27	8:27	8:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2982	3037	3011	3022
Vehs Exited	2962	3036	2971	3006
Starting Vehs	118	127	86	109
Ending Vehs	138	128	126	124
Travel Distance (km)	2191	2233	2202	2217
Travel Time (hr)	323.1	343.9	261.9	310.6
Total Delay (hr)	284.0	304.0	222.6	271.0
Total Stops	4047	4120	3937	3895
Fuel Used (l)	435.1	457.8	380.9	423.8

Interval #0 Information Seeding

Start Time	6:57
End Time	7:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3038	2979	3007	2998	3065	3003	3106
Vehs Exited	3042	2988	3006	2972	3018	2992	3084
Starting Vehs	126	132	106	113	81	123	82
Ending Vehs	122	123	107	139	128	134	104
Travel Distance (km)	2235	2204	2216	2198	2226	2200	2264
Travel Time (hr)	319.9	385.6	314.8	311.1	295.3	287.7	262.7
Total Delay (hr)	279.8	346.3	275.2	271.8	255.5	248.3	222.2
Total Stops	4232	4245	3343	3992	3277	4278	3497
Fuel Used (l)	435.6	491.6	420.8	424.9	405.5	405.3	380.6

Interval #1 Information Recording

Start Time	7:27
End Time	8:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	2982	3037	3011	3022
Vehs Exited	2962	3036	2971	3006
Starting Vehs	118	127	86	109
Ending Vehs	138	128	126	124
Travel Distance (km)	2191	2233	2202	2217
Travel Time (hr)	323.1	343.9	261.9	310.6
Total Delay (hr)	284.0	304.0	222.6	271.0
Total Stops	4047	4120	3937	3895
Fuel Used (l)	435.1	457.8	380.9	423.8

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	L	TR	TR	L	TR	T	R
Maximum Queue (m)	54.7	43.5	52.6	7.1	119.7	124.6	444.7	433.5
Average Queue (m)	31.5	18.0	21.8	0.3	56.1	117.2	384.3	325.5
95th Queue (m)	50.5	39.4	42.4	3.1	114.3	139.3	561.3	626.9
Link Distance (m)	79.7	79.7	79.7	13.9		120.0	440.1	440.1
Upstream Blk Time (%)				0	0	5	46	32
Queuing Penalty (veh)				0	0	85	0	0
Storage Bay Dist (m)					80.0			
Storage Blk Time (%)					1	23		
Queuing Penalty (veh)					12	65		

Intersection: 6: Prince of Wales & Site Access

Movement	WB	NB	SB
Directions Served	R	TR	LT
Maximum Queue (m)	14.8	222.5	47.9
Average Queue (m)	3.9	167.9	2.7
95th Queue (m)	12.7	281.8	31.0
Link Distance (m)	84.9	209.3	120.0
Upstream Blk Time (%)		15	0
Queuing Penalty (veh)		0	3
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 166

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:59	6:59	6:59	6:59	6:59	6:59	6:59
End Time	8:29	8:29	8:29	8:29	8:29	8:29	8:29
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3220	3259	3285	3213	3249	3008	3236
Vehs Exited	3211	3295	3282	3231	3233	2921	3253
Starting Vehs	63	114	75	94	67	78	91
Ending Vehs	72	78	78	76	83	165	74
Travel Distance (km)	2375	2419	2415	2386	2389	2170	2400
Travel Time (hr)	106.0	115.4	94.9	108.3	156.6	133.4	142.8
Total Delay (hr)	63.6	72.1	51.7	65.6	113.9	94.8	99.9
Total Stops	1921	2337	1964	1966	2070	1733	2099
Fuel Used (l)	247.8	261.6	241.5	251.5	294.4	259.2	280.0

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:59	6:59	6:59	6:59
End Time	8:29	8:29	8:29	8:29
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3283	3244	3211	3221
Vehs Exited	3268	3293	3217	3220
Starting Vehs	68	131	84	86
Ending Vehs	83	82	78	87
Travel Distance (km)	2416	2425	2357	2375
Travel Time (hr)	118.4	206.5	93.2	127.6
Total Delay (hr)	75.2	163.3	51.0	85.1
Total Stops	1800	3288	1600	2077
Fuel Used (l)	261.7	348.1	237.5	268.3

Interval #0 Information Seeding

Start Time	6:59
End Time	7:29
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:29
End Time	8:29
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3220	3259	3285	3213	3249	3008	3236
Vehs Exited	3211	3295	3282	3231	3233	2921	3253
Starting Vehs	63	114	75	94	67	78	91
Ending Vehs	72	78	78	76	83	165	74
Travel Distance (km)	2375	2419	2415	2386	2389	2170	2400
Travel Time (hr)	106.0	115.4	94.9	108.3	156.6	133.4	142.8
Total Delay (hr)	63.6	72.1	51.7	65.6	113.9	94.8	99.9
Total Stops	1921	2337	1964	1966	2070	1733	2099
Fuel Used (l)	247.8	261.6	241.5	251.5	294.4	259.2	280.0

Interval #1 Information Recording

Start Time	7:29
End Time	8:29
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3283	3244	3211	3221
Vehs Exited	3268	3293	3217	3220
Starting Vehs	68	131	84	86
Ending Vehs	83	82	78	87
Travel Distance (km)	2416	2425	2357	2375
Travel Time (hr)	118.4	206.5	93.2	127.6
Total Delay (hr)	75.2	163.3	51.0	85.1
Total Stops	1800	3288	1600	2077
Fuel Used (l)	261.7	348.1	237.5	268.3

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	B9	WB	NB	NB	SB	SB
Directions Served	L	L	TR	T	TR	L	TR	T	R
Maximum Queue (m)	63.8	51.9	59.6	6.8	7.2	97.2	123.6	294.9	193.4
Average Queue (m)	37.7	26.0	23.8	1.0	0.6	43.0	85.5	152.0	69.5
95th Queue (m)	58.1	49.3	50.8	14.0	4.3	77.1	126.2	349.6	286.3
Link Distance (m)	79.7	79.7	79.7	64.4	13.9		120.0	440.1	440.1
Upstream Blk Time (%)			2	1	0	0	0	6	4
Queuing Penalty (veh)			0	0	0	0	8	0	0
Storage Bay Dist (m)						80.0			
Storage Blk Time (%)						1	8		
Queuing Penalty (veh)						9	22		

Intersection: 6: Prince of Wales & Site Access

Movement	WB	NB	SB
Directions Served	R	TR	LT
Maximum Queue (m)	18.6	173.6	21.9
Average Queue (m)	5.2	28.5	3.6
95th Queue (m)	15.1	111.1	35.9
Link Distance (m)	84.9	209.3	120.0
Upstream Blk Time (%)		1	2
Queuing Penalty (veh)		0	23
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 62

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	4:57	4:57	4:57	4:57	4:57	4:57	4:57
End Time	6:27	6:27	6:27	6:27	6:27	6:27	6:27
Total Time (min)	90	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3168	3093	3097	3037	3147	3092	3096
Vehs Exited	3139	3091	3105	3042	3123	3096	3107
Starting Vehs	116	132	152	141	118	138	149
Ending Vehs	145	134	144	136	142	134	138
Travel Distance (km)	2303	2256	2278	2218	2290	2265	2272
Travel Time (hr)	395.0	359.1	535.7	416.1	386.0	357.2	532.3
Total Delay (hr)	353.6	318.6	495.0	376.3	345.0	316.7	491.6
Total Stops	3191	3147	3162	3070	3118	3058	2976
Fuel Used (l)	496.8	462.5	615.1	509.4	486.8	461.0	613.9

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	4:57	4:57	4:57	4:57
End Time	6:27	6:27	6:27	6:27
Total Time (min)	90	90	90	90
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3117	3159	3030	3104
Vehs Exited	3107	3139	3047	3099
Starting Vehs	141	140	134	136
Ending Vehs	151	160	117	140
Travel Distance (km)	2274	2312	2233	2270
Travel Time (hr)	426.8	416.9	417.4	424.2
Total Delay (hr)	386.0	375.4	377.4	383.5
Total Stops	3097	3148	3029	3100
Fuel Used (l)	521.7	515.8	511.1	519.4

Interval #0 Information Seeding

Start Time	4:57
End Time	5:27
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:27
End Time	6:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3168	3093	3097	3037	3147	3092	3096
Vehs Exited	3139	3091	3105	3042	3123	3096	3107
Starting Vehs	116	132	152	141	118	138	149
Ending Vehs	145	134	144	136	142	134	138
Travel Distance (km)	2303	2256	2278	2218	2290	2265	2272
Travel Time (hr)	395.0	359.1	535.7	416.1	386.0	357.2	532.3
Total Delay (hr)	353.6	318.6	495.0	376.3	345.0	316.7	491.6
Total Stops	3191	3147	3162	3070	3118	3058	2976
Fuel Used (l)	496.8	462.5	615.1	509.4	486.8	461.0	613.9

Interval #1 Information Recording

Start Time	5:27
End Time	6:27
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3117	3159	3030	3104
Vehs Exited	3107	3139	3047	3099
Starting Vehs	141	140	134	136
Ending Vehs	151	160	117	140
Travel Distance (km)	2274	2312	2233	2270
Travel Time (hr)	426.8	416.9	417.4	424.2
Total Delay (hr)	386.0	375.4	377.4	383.5
Total Stops	3097	3148	3029	3100
Fuel Used (l)	521.7	515.8	511.1	519.4

Intersection: 3: Prince of Wales & Colonnade/1989/1993 Prince of Wales

Movement	EB	EB	EB	B9	B9	NB	NB	SB	SB
Directions Served	L	L	TR	T	T	L	TR	T	R
Maximum Queue (m)	102.9	82.3	110.8	65.7	78.8	53.2	114.4	454.8	455.8
Average Queue (m)	77.8	63.6	102.2	30.0	66.4	23.7	59.9	446.6	446.3
95th Queue (m)	109.3	89.0	107.2	71.9	87.5	43.5	101.3	451.9	451.5
Link Distance (m)	79.7	79.7	79.7	64.4	64.4		120.0	440.1	440.1
Upstream Blk Time (%)	14	1	85	0	76		0	79	53
Queuing Penalty (veh)	0	0	0	0	0		1	0	0
Storage Bay Dist (m)						80.0			
Storage Blk Time (%)						0	2		
Queuing Penalty (veh)						0	3		

Intersection: 6: Prince of Wales & Site Access

Movement	WB	NB	SB
Directions Served	R	TR	LT
Maximum Queue (m)	6.5	19.2	51.6
Average Queue (m)	0.3	1.1	2.9
95th Queue (m)	2.9	10.1	29.3
Link Distance (m)	84.9	209.3	120.0
Upstream Blk Time (%)			0
Queuing Penalty (veh)			5
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 9