TRAFFIC IMPACT STUDY UPDATE

PART OF LOTS 6, 7, 8 & 9 CONCESSION 9
DRAFT PLAN OF SUBDIVISION
CITY OF MISSISSAUGA,
REGIONAL MUNICIPALITY OF PEEL

PREPARED FOR:
DERRY-BRITANNIA DEVELOPMENTS LTD.

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ORIGINAL – JUNE 2019
UPDATE – SEPTEMBER 2023

CFCA FILE NO. 780-5227

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CROZIER
CONSULTING ENGINEERS

Revision Number	Date	Comments
Rev. 0	May 2019	Draft Circulation
Rev. 1	June 2019	First Submission
Rev. 2	April 2020	Second Submission
Rev. 3	November 2021	Third Submission
Rev.4	May 2023	Fourth Submission
Rev. 5	September 2023	Fifth Submission

1.0 Executive Summary

Background

C.F. Crozier & Associates Inc. (Crozier) was retained by Derry-Britannia Developments Ltd. to prepare a Traffic Impact Study (TIS) in support of the Draft Plan of Subdivision application for a proposed residential development located at Part of Lots 6, 7, 8 & 9 Concession 9 in the City of Mississauga, Regional Municipality of Peel. The purpose of the study is to evaluate the transportation-related impacts of the proposed development on the boundary road network and to recommend any required mitigation measures, if warranted.

An original Traffic Impact Study (TIS) was submitted in June 2019, along with three subsequent submissions in support of the subject north and south draft plans. This TIS Update addresses the fourth submission comments provided by the City (dated July 2023) and reflects the current version of the draft plan.

The current development proposal has two phases along with the provision for future development. In total, the development yield is potentially up to 1678 residential dwelling units consisting of a mix of rear lane detached, townhouses, condominium apartments, and an elementary school. The development proposes three site access connections to Ninth Line to serve development traffic.

As confirmed in the Terms of Reference, the Traffic Impact Study analyzes the following intersections:

- Winston Churchill Boulevard and Highway 401 West Ramp Terminal
- Winston Churchill Boulevard and Highway 401 West Ramp Terminal
- Derry Road West and Highway 407 West Ramp Terminal
- Derry Road West and Highway 407 East Ramp Terminal
- Derry Road West and Ninth Line
- Ninth Line and Doug Leavens Boulevard (and the proposed Street "B" connection)
- Ninth Line and Foxwood Avenue
- Ninth Line and Osprey Boulevard (and the proposed Street "A" connection)
- Proposed Ninth Line and proposed Street "A" (North) connection
- Britannia Road West and Ninth Line
- Britannia Road West and Highway 407 West Ramp Terminal
- Britannia Road West and Highway 407 East Ramp Terminal

Existing Traffic Operations

Analysis of 2019 existing traffic operations indicates that the boundary road network is currently operating at LOS "D" or better during the weekday a.m. and p.m. peak hours, with the exception of the intersection of Britannia Road West and Ninth Line which is currently operating at LOS "E" during the weekday a.m. peak hour. Though constrained, the operations at Britannia Road West and Ninth Line is not uncommon at a high volume major arterial intersection during commuter peak hours. Overall, the boundary road network is operating at acceptable levels of service in the existing conditions.

Future Background Conditions

Background traffic growth was applied to the study intersections per the MMM Study and in consulting City of Mississauga Traffic Modelling. In addition, the following background developments in the study area identified in the MMM study were accounted for under future background conditions.

- Erin Mills Development
- 407 Transitway

- Emerging Land Use Concept on Ninth Line

The following roadway improvements have been identified in the study area by the City of Mississauga, Region of Halton, and the Region of Peel, as follows:

- Widening of Ninth Line from Eglinton Avenue West to Derry Road West to four/five lanes, with a centre median or turn lane (per Ninth Line EA).
- Widening of Derry Road West from Tremaine Road to Highway 407 to six lanes.
- Widening of Britannia Road West from Tremaine Road to Highway 407 to six lanes.

The 2026 future background traffic operations (i.e., prior to Ninth Line widening) indicate similar operational metrics to the existing conditions except at the Britannia Road West and Derry Road West intersections with Ninth Line. Traffic operations at the intersection of Britannia Road West and Ninth Line are forecast to deteriorate to a LOS "F" and LOS "E" in the a.m. and p.m. peak hours, respectively, while at the intersection of Derry Road West and Ninth Line, traffic operations in the p.m. peak hour deteriorates to a LOS "E" compared to a LOS "C" in the 2019 existing conditions scenario. A few movements are near or at capacity and/or experience 95th percentile queuing beyond existing storage.

Analysis of 2041 future background traffic operations indicates that traffic operations will worsen moderately throughout the boundary road network compared to existing conditions, even with the planned Ninth Line EA road widening. The study intersections of Ninth Line with Britannia Road West and Derry Road West are projected have some movements operate near or at capacity during the peak hours, with movements exceeding the critical volume-to-capacity thresholds, as well as 95th percentile queue lengths for turning movements exceeding their designated storage length. Nevertheless, similar to the findings of the MMM study, the widening of Derry Road West and Britannia Road West in the study area is expected to improve traffic operations under 2041 horizon and beyond.

Further, traffic operational impacts herein may be overstated, primarily due to higher than expected growth rates being applied particularly for Derry Road West and Britannia Road West traffic, as well as impact of industry work flexibility on work-home travel during peak commuter hours.

Site Generated Traffic

The full build-out of the proposed development is expected to generate a total of 875 and 774 total two-way trips during the weekday a.m. and p.m. peak hours, respectively. Residential trips were assigned to the boundary road network using a combination of 2016 Transportation Tomorrow Survey (TTS) data, expected destinations, and existing travel patterns. The school trips were assigned based on the expected external trip catchment area.

Future Total Conditions

As part of the proposed development, the following intersections and configurations based on assessed requirements were applied to the future total analysis:

- Traffic signals are not warranted at the proposed at the Street "A" (North) connection to Ninth Line. Assessed as unsignalized, right-in/ right-out and with a single outbound lane.

- To match the opposite street configuration, the proposed site connections to Ninth Line consist of one outbound left-turn storage lane and one outbound shared through/ right-turn lane for Street "B" and Street "A" (south) connections to the existing signalized intersections at Doug Leavens Boulevard and Osprey Boulevard, respectively.

Traffic operations under 2026 future total conditions are forecast to be similar to those projected for

the 2026 future background conditions. No change in Level of Service is forecast within the boundary road network during the peak hours, with volume-to-capacity ratios and 95th percentile queues remaining largely similar to the 2026 future background scenario.

Under the ultimate 2041 future total conditions, the boundary road network is projected to operate similarly compared to the corresponding 2041 future background scenario, with minor additional delays attributable to site traffic. Three study intersections (listed below) are forecast to experience a drop in the Level of Service in either the a.m. or p.m. peak hours; however, these were near the threshold in the Future Background and intersection delay increments due to the site traffic under all cases are below 14 seconds.

- Britannia Road and Ninth Line, from E to F (a.m. and p.m. peak hours)
- Ninth Line and Osprey Boulevard, from A to B (p.m. peak hour)
- Ninth Line and Doug Leavens Boulevard, from B to C (a.m. peak hour)
- Derry Road West and Ninth Line, from E to F (a.m. peak hour)

The site accesses are projected to operate at a LOS "C" or better during the peak hours. Therefore, the proposed three connections can accommodate all site traffic without the Foxwood Drive connection proposed as part of the previous TIS submissions. Finally, the potential future road widening improvement to Derry Road West and Britannia Road West identified in the future background was analyzed under total conditions as well and is projected to improve traffic operations at the Ninth Line intersections with Britannia Road West and Derry Road West.

Further, while the proposed right-in right-out Street A north access connection to Ninth Line will be ideal for the development, the proposed Subdivision is expected to function adequately from a traffic perspective without it.

Safety Analysis

Analysis of safety components associated with the proposed development indicate the following:

- The proposed site access spacing exceeds 250 metres on Ninth Line at the site frontage which will reduce the potential for weaving or merging conflicts associated with traffic entering and exiting at the site accesses.
- The proposed site access spacing exceeds recommended minimum intersection spacing guidelines set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), June 2017.
- The available sight distance at the proposed site connections exceeds the minimum sight distance requirements set out in the TAC GDGCR.
- Roadway alignment of the boundary road network is not considered to be a traffic safety concern for the proposed development.
- The provided clear throat lengths for the roadway connections to Ninth Line exceed the minimum recommended clear throat lengths set out in the TAC GDGCR.
- There are no expected maneuverability constraints within the Plan of Subdivision for firetrucks nor waste collection trucks.

Parking Review

The City of Mississauga Zoning By-Law minimum vehicle and bicycle parking requirements were recently updated and came into effect on July 6, 2022. Parking supply for tenant uses and off-street visitor parking as identified on the Draft Plan are provided accordingly for the condominium blocks, with further on-street parking along Street A supplementing this supply.

Recommendations

The findings of the analysis have resulted in a number of recommendations.

It is recommended that the Region consider widening in the future of Britannia Road West and Derry Road West from four to six travel lanes between Highway 407 and Winston Churchill Boulevard to improve traffic operations, particularly at the intersections with Ninth Line. These improvements would be in-line with the road widening occurring in Halton Region of the noted roadways to six travel lanes. This recommendation is consistent with the MMM Study findings.

The development triggered improvements that are recommended to be implemented with the future Ninth Line widening to serve the full buildout of the development are outlined in **Table E1.**

Table E1: Recommended External Roadway Improvements

Location	Development Phase	Improvement	Recommended Storage Length
Ninth Line and Street "B" opposite Doug Leavens Boulevard	Southern Phase 1 (2026-2028)	Auxiliary northbound left-turn lane	30 metres
Ninth Line and Street "A" (South) opposite Osprey Boulevard	Southern Phase 1 (2026-2028)	Auxiliary northbound left-turn lane	15 metres

In addition, similar to the findings of the Ninth Line EA, southbound right turn lanes at the connections are not required, but the improvement may be considered by the City as desired.

Despite the noted recommendations above, as part of the phase 1 buildout, prior to widening of Ninth Line, the existing runout lane at the south approach on Ninth Line at the Street "B"/ Doug Leavens Boulevard can be repurposed by repainting the pavement markings to function as a northbound left-turn lane in the interim condition prior to the widening of Ninth Line. Furthermore, no auxiliary right-turn storage lanes are required prior to Ninth Line widening. Therefore, no road widenings are required for the interim functionality of the Phase 1 (i.e., prior to Ninth Line widening) development in 2026. Only interim updates to the traffic signal infrastructure is required.

In addition to the external roadway improvements outlined above, the Street "B" and Street "A" south site access connections to Ninth Line should consist of one outbound auxiliary left-turn storage lane and one outbound shared through/ right-turn lane for Street "B" and Street "A" (South). The minimum recommended storage lengths for the outbound auxiliary left-turn lanes for Street "B" and Street "A" (South) are 80m and 30m, respectively. A single inbound lane and a single outbound lane is adequate for the Street "A" (north) connection to Ninth Line.

Conclusion

In conclusion, the proposed development and Draft Plan Application can be supported from a transportation operations and safety perspective, and the phased build-out of the proposed development can also be supported from a transportation operations and safety perspective with the implementation of the noted recommendations. Further, the Phase 1 is expected to be functional from a traffic operations perspective without the Ninth Line widening should that portion be completed by 2026.

TABLE OF CONTENTS

1.0 Executive Summary iii

2.0 Introduction 1
2.1 Background 1
2.2 Development Proposal 1
2.3 Purpose and Scope 2

3.0 Existing Conditions 3
3.1 Development Lands 3
3.2 Study Intersections 3
3.3 Boundary Road Network 4
3.4 Transit Operations 6
3.5 Active Transportation Network 8
3.6 Traffic Data 9
3.7 Traffic Modelling 9
3.7.1. City of Mississauga Modelling Guidelines 9
3.7.2. Region of Peel Modelling Guidelines 10
3.7.3. Critical Volume-To-Capacity Thresholds 11
3.7.4. Ramp Terminal Right-Turn on Red Adjustments 11
3.8 Intersection Operations 12

4.0 Future Background Conditions 15
4.1 Horizon Years 15
4.2 Planned Roadway Improvements 15
4.3 Growth Rates 16
4.3.1. City and Regional Arterial Roads 16
4.3.2. City Collector Roads 17
4.3.3. Highway 401 and 407 Ramp Terminals 18
4.4 Background Developments 18
4.4.1. Timing of Developments 18
4.4.2. Development Traffic 19
4.5 Intersection Modelling 19
4.6 Intersection Operations 20

5.0 Site Generated Traffic 27
5.1 Trip Generation 27
5.2 Trip Distribution 29
5.3 Trip Assignment 30

6.0 Future Total Conditions 30
6.1 Basis of Assessment 30
6.2 Signal Warrant Analysis 31
6.2.1. Pedestrian Volumes 31
6.2.2. Collision Analysis 33
6.2.3. Signal Warrant Analysis Results 33
6.3 Auxiliary Left-Turn Lane Analysis – Unsignalized Intersections 34
6.4 Auxiliary Left-Turn Lane Analysis – Signalized Intersections 34
6.5 Right-Turn Lane Warrant Analysis 35
6.6 Site Access Configuration 36
6.7 Intersection Operations 37
6.8 Sensitivity Analysis – No Street "A" (North) Access 44

7.0 Safety Review 45
7.1 Access Spacing 45
7.2 Sight Distance Analysis 45
7.3 Roadway Alignment 46
7.4 Clear Throat Length 46
7.5 Internal Site Circulation 47
7.6 Traffic Calming Measures 47

8.0 Parking Review 48
8.1 Vehicle Parking Spaces 48
8.2 Electric Vehicle Ready Parking Spaces 48
8.3 Bicycle Parking Spaces 48

9.0 Conclusions & Recommendations 49
9.1 Conclusions 49
9.2 Recommendations 52

LIST OF TABLES

Table 1: Development Proposal 2
Table 2: Boundary Road Network – Provincial and Regional Roads 4
Table 3: Boundary Road Network – City of Mississauga Roads 5
Table 4: Boundary Road Network – Study Intersections 6
Table 5: Existing Transit Services 7
Table 6: Active Transportation Network 8
Table 7: City of Mississauga Synchro Modelling Parameters 10
Table 8: Region of Peel Synchro Modelling Parameters 10
Table 9: 2019 Existing Traffic Operations 13
Table 10: Planned Roadway Improvements in Study Area 15
Table 11: Boundary Road Network Growth Rates 17
Table 12: Background Developments 18
Table 13: 2026 Future Background Traffic Operations (Pre-Widening of Ninth Line) 21
Table 14: 2028 Future Background Traffic Operations 22
Table 15: 2031 Future Background Traffic Operations 23
Table 16: 2036 Future Background Traffic Operations 24
Table 17: 2041 Future Background Traffic Operations 25
Table 18: 2041 Future Background Traffic Operations – Additional Improvements 26
Table 19: Trip Generation 28
Table 20: Trip Distribution 30
Table 21: Pedestrian Trip Generation 32
Table 22: Collision Analysis (2015-2019) 33
Table 23: Signal Warrant Analysis Results 34
Table 24: Right-Turn Lane Warrant Analysis Results – 2041 Future Total 35
Table 25: 2026 Future Total Traffic Operations (Pre-Widening of Ninth Line) 37
Table 26: 2028 Future Total Traffic Operations 38
Table 27: 2031 Future Total Traffic Operations 39
Table 28: 2036 Future Total Traffic Operations 40
Table 29: 2041 Future Total Traffic Operations 41
Table 30: 2041 Future Total Traffic Operations – Additional Improvements 42
Table 31: Sight Distance Analysis 46
Table 32: Recommended Development Triggered Ninth Line Widening Improvements 53

LIST OF APPENDICES

Appendix A: Draft Plans
Appendix B: Correspondence and Draft Plan Revisions Letter
Appendix C: Transit Information
Appendix D: Traffic Data
Appendix E: Level of Service Definitions
Appendix F: Detailed Capacity Analysis Worksheets
Appendix G: Ninth Line Corridor Study (MMM) Excerpts
Appendix H: Ninth Line Environmental Assessment Excerpts
Appendix I: Additional Future Roadway Improvement Information
Appendix J: TTS Data
Appendix K: Pedestrian Volume Analysis
Appendix L: Collision Data
Appendix M: Signal Warrant Analysis Worksheets
Appendix N: External Intersection Functional Sketches
Appendix O: Condo Road Sight Distance Assessment Figures
Appendix P: Vehicle Turning Diagrams
Appendix Q: Pavement Marking and Signage Plan

LIST OF FIGURES

Figure 1: Boundary Road Network
Figure 2: 2019 Existing Traffic Volumes
Figure 3: Future Background Boundary Road Network
Figure 4: Background Traffic (Erin Mills)
Figure 5: Background Traffic (407 Transitway)
Figure 6: Background Traffic (Emerging Land Use – 2026)
Figure 7: Background Traffic (Emerging Land Use – 2028)
Figure 8: Background Traffic (Emerging Land Use – 2031, 2036 & 2041)
Figure 9: 2026 Future Background Traffic Volumes
Figure 10: 2028 Future Background Traffic Volumes
Figure 11: 2031 Future Background Traffic Volumes
Figure 12: 2036 Future Background Traffic Volumes
Figure 13: 2041 Future Background Traffic Volumes
Figure 14: Trip Distribution (South Draft Plan)
Figure 15: Trip Distribution (North Draft Plan)
Figure 16: External School Trip Distribution
Figure 17: Trip Assignment (South Draft Plan)
Figure 18: Trip Assignment (Future Southern Residential Development
Figure 19: Trip Assignment (North Draft Plan)
Figure 20: Trip Assignment (External School Trips)
Figure 21: Trip Assignment (Full Build-Out)
Figure 22: 2026 Future Total Traffic Volumes
Figure 23: 2028 Future Total Traffic Volumes
Figure 24: 2031 Future Total Traffic Volumes
Figure 25: 2036 Future Total Traffic Volumes
Figure 26: 2041 Future Total Traffic Volumes
Figure 27: Sensitivity – No Ninth Line & Street "A" (North) – 2041 Future Total Traffic Volumes
Figure 28: Future Boundary Road Network

2.0 Introduction

2.1 Background

C.F. Crozier & Associates Inc. (Crozier) was retained by Derry-Britannia Developments Ltd. to prepare a Traffic Impact Study in support of the Draft Plan of Subdivision application for a proposed residential development located at Part of Lots 6, 7, 8 & 9 - Concession 9 in the City of Mississauga, Regional Municipality of Peel.

The subject property is located within the Ministry of Transportation of Ontario (MTO)'s permit control area, which includes the area within 395 metres of the centre point of a controlled-access highway and within 45 metres of the right-of-way. The subject property is bound by Highway 407 to the west and is thus within the MTO's permit control area.

An original Traffic Impact Study (TIS) was submitted in June 2019 in support of the North Draft Plan and South Draft Plan. Three subsequent submissions dated April 2020, November 2021, and September 2023, respectively, were previously prepared to address City, Region, and MTO comments. This TIS Update has been prepared to address the fourth submission comments provided by the City (dated July 2023). Highlights regarding how each Transportation Engineering related comment was addressed is provided in a comment response letter under a separate cover to ease review of this TIS.

In addition, under previous submissions, a roadway connection to Ninth Line opposite Foxwood Avenue was proposed but has been replaced with a multiuse path in the current Draft Plan. The Draft Plan Roadway Changes letter (dated March 1, 2023) outlined the rational for the change and benefits of the multiuse path. **Appendix B** contains excerpts from the Draft Plan Revisions Letter.

Furthermore, a sensitivity analysis (**Section 6.8**) has been added in this submission which considers the condition where the Street "A" (North) connection to Ninth Line is not implemented as MTO lands are yet to be obtained.

2.2 Development Proposal

Per the Draft Plan prepared by Glen Schnarr & Associates Inc. (GSAI), dated May 2, 2023, the proposed development yield is potentially up to 1678 residential units, an elementary school, and amenity lots. **Appendix A** contains the Draft Plan and additional details are presented in Table 1.

The development proposal is anticipated to be completed in two phases. The first phase of the development proposal is primarily located on the lands south of the proposed Street "B" opposite Doug Leavens Boulevard. These units are expected to be completely built out by 2028, however, occupancy of some units are expected as early as 2026. The second phase (northern lands) of the development will follow the south phase. The north phase is expected to be built out by 2031. There is also future development included in the draft plan. These future developments include Condominium Block 5, a public elementary school and a future residential apartment development located on the southwest corner of Osprey Boulevard and Ninth Line. The timing of these future developments are unknown but can reasonably be expected to occur during or beyond completion of the second phase. Nevertheless, for the purposes of this study, these developments are assumed to be implemented in the second Phase by the 2031 horizon year.

Table 1 outlines the proposed development statistics, including that of the future residential developments as well as the expected year of build-out and proposed access connections. The total

of 1360 units shown on the Draft Plan excludes the future residentials, but these have been included herein to account for the worst case scenario in terms of trip generation and operational impacts, resulting in the 1578 to 1678 units in **Table 1**.

Table 1: Development Proposal

Phase (Draft Plan of Subdivision)	Unit Type	Total Units	Assumed Build-Out	Proposed Access Connections
Phase 1 (South Draft Plan)	Townhouses [1]	498	2026-2028	Street "A" (South) at Ninth Line (Osprey Boulevard location) Street "B" at Ninth Line (Doug Leavens Boulevard location)
	Future Residential (Condominium Apartment)[3]	100-200	2031+	
	Total	**598 – 698**	2026-2031	
Phase 2 (North Draft Plan)	Rear Lane Detached	27	2031	Street "A" (North connection) at Ninth Line (new intersection) *– herein referred to as Street "A" (North)* [4]
	Townhouses [1]	185		
	Condominium Apartments[2]	550-650		
	Future Townhouses[3]	118		
	Total	**880-980**		
Full Build-Out	Rear Lane Detached	27	**2031**	
	Townhouses [1]	801		
	Condominium Apartments	750-850		
	Total	**1478 – 1678**		
	Elementary School	**850 student capacity [5]**		

Note 1: The Townhouses include street , rear, stacked, and back-to-back.
Note 2: The Condominium Apartments at the northwest and southwest corners of Ninth Line and Doug Leavens Boulevard / Street "B", are considered to fall within the North Draft Plan.
Note 3: A future residential apartment is expected at the southwest corner of the Ninth Line and Osprey Boulevard / Street "A" intersection. Similarly, 118 future townhouse units are shown though not included in the total DP unit yield.
Note 4: The Street "A" north access to Ninth Line will be configured as a right-in right-out (RIRO) given the proximity of the intersection to the future signalized intersection of Beacham Street at Ninth Line.
Note 5: The school capacity is a forecast provided by Peel District School Board and is expected to be completed no earlier than 2031.

2.3 Purpose and Scope

The purpose of the study is to evaluate the transportation-related impacts of the proposed development on the boundary road network and to recommend any required mitigation measures, if warranted.

The study reviews the following main aspects of the proposed development from a transportation engineering perspective:

- Existing, future background, and future total traffic operations on the boundary road network during the weekday a.m. and p.m. peak hours;
- Forecasted trip generation and distribution of the proposed development;
- Mitigation measures to support the proposed development, if required; and
- Transportation safety components, including: sight distance requirements at the site accesses, access spacing and restrictions, and general safety issues pertaining to road users.

The study has been completed in accordance with the following guidelines:

- Guidelines for the Preparation of Traffic Impact Studies (MTO, February 2021);
- Region of Peel Traffic Impact Study Guidelines; and
- Traffic Impact Study Guidelines (City of Mississauga, 2012).

The study has also been completed in accordance with Terms of Reference established with City of Mississauga staff (City staff) and MTO staff. **Appendix B** contains the correspondence outlining the approved terms of reference.

A comprehensive Transportation Demand Management (TDM) Plan was prepared and submitted separately to support the development application as part of the first submission. The TDM Plan analyzed existing and future TDM opportunities to reduce single-occupant vehicle (SOV) trips to and from the site and promote alternate modes of transportation.

3.0 Existing Conditions

3.1 Development Lands

The subject property is located in a residential neighbourhood and is bound by a Union Gas Limited building to the north, an existing church to the south, Ninth Line to the east, and Parkland Belt lands and Highway 407 Express Toll Route (ETR) to the west. The subject property is zoned as D "Development" Lands per the City of Mississauga's Zoning By-Law.

The Draft Plan make allowance for the future bus-rapid transit (BRT) 407 Transitway planned by the MTO, which will span through the subject property running parallel to Highway 407. The Environmental Assessment (EA) process for the 407 Transitway segment from west of Brant Street in the City of Burlington to west of Hurontario Street in the City of Brampton was approved in October 2020. The corresponding Environmental Project Report details the alignment of the transitway near the subject site. Accordingly, the required setbacks to the transitway are provided in the Draft Plan. The 407 Transitway is discussed in more detail in **Section 4.4.**

The Draft Plan in **Appendix A** includes a key plan outlining the subject property.

3.2 Study Intersections

The Traffic Impact Study analyzes the following intersections:

- Winston Churchill Boulevard and Highway 401 West Ramp Terminal
- Winston Churchill Boulevard and Highway 401 West Ramp Terminal
- Derry Road West and Highway 407 West Ramp Terminal
- Derry Road West and Highway 407 East Ramp Terminal
- Derry Road West and Ninth Line
- Ninth Line and Doug Leavens Boulevard
- Ninth Line and Osprey Boulevard
- Ninth Line and future site access connections
- Britannia Road West and Ninth Line
- Britannia Road West and Highway 407 West Ramp Terminal
- Britannia Road West and Highway 407 East Ramp Terminal

3.3 Boundary Road Network

The provincial and regional boundary road network at the site frontage is described in **Table 2**.

Table 2: Boundary Road Network – Provincial and Regional Roads

Feature	Roadway			
	Highway 401	**Highway 407**	**Derry Road West**	**Britannia Road West**
Direction	Two-way (East-West)	Two-way (North-South) [1]	Two-way (North-South)	Two-way (North-South) [1]
Classification	Provincial Freeway	Provincial Freeway – Express Toll Route (ETR)	Regional Arterial (Regional Road 5)	Regional Arterial (Regional Road 3)
Jurisdiction	MTO	407 ETR	Region of Peel	Region of Peel
Speed Limit	100 km/h *Off-Ramp advisory speed is 60 km/h*	100 km/h *Off-Ramp advisory speed is 60 km/h*	60 km/h	80 km/h
Number of lanes	Six	Six	Four	Four
Median type	Jersey Barrier (typical freeway separation)	Jersey Barrier (typical freeway separation)	Raised concrete median (west of Ninth Line) Centre lane (east of Ninth Line)	Raised concrete median (west of Ninth Line) Centre lane (east of Ninth Line)

Note 1: While Highway 407 primarily spans east-west, the segment parallel to Ninth Line spans north-south.

The municipal boundary road network at the site frontage is described in **Table 3**.

Table 3: Boundary Road Network – City of Mississauga Roads

Feature	Roadway		
	Winston Churchill Boulevard	**Ninth Line**	**Doug Leavens Boulevard Foxwood Avenue Osprey Boulevard**
Direction	Two-way (North-South)	Two-way (North-South)	Two-way (East-West)
Classification	Arterial	Arterial	Minor Collector
Jurisdiction	City of Mississauga [1]	City of Mississauga	City of Mississauga
Surrounding Uses	Commercial	Residential	Residential
Speed Limit	60 km/h	70 km/h	50 km/h (assumed)
Number of lanes	Four (north of Highway 401 overpass) Six (south of Highway 401 overpass)	Two	Two
Median type	Raised centre median	None – north of Foxwood Avenue Centre lane – south of Foxwood Avenue	None

Note 1: Winston Churchill Boulevard is under the jurisdiction of the Region of Peel north of Highway 401 through its span in the City of Brampton.

Table 4 outlines the existing traffic control, configurations, and pedestrian crossing provisions at the study intersections on the boundary road network.

Table 4: Boundary Road Network – Study Intersections

Intersection	Control	Approaches	Major Street	Auxiliary Turn Lanes	Pedestrian Crossing
Winston Churchill Boulevard and 401 West Ramp Terminal	Signal Semi-Actuated	3	Winston Churchill Boulevard	WBL WBR	None
Winston Churchill Boulevard and 401 East Ramp Terminal	Signal Semi-Actuated	3	Winston Churchill Boulevard	EBL EBR	None
Derry Road West and 407 South Ramp Terminal	Signal Semi-Actuated	3	Derry Road West	SBL SBR	None
Derry Road West and 407 North Ramp Terminal	Signal Semi-Actuated	3	Derry Road West	NBL NBR	None
Derry Road West and Ninth Line	Signal Semi-Actuated	4	Derry Road West	EBL WBL NBL NBR SBL SBR	All approaches (crossings delineated by ladder markings)
Ninth Line and Doug Leavens Boulevard	Signal Semi-Actuated	3	Ninth Line	WBL WBR NBR SBL	All approaches (crossings delineated by edge markings)
Ninth Line and Osprey Boulevard	Signal Semi-Actuated	3	Ninth Line	WBL WBR NBR SBL	All approaches (crossings delineated by edge markings)
Britannia Road West and Ninth Line	Signal Semi-Actuated	4	Britannia Road West	EBL WBL WBR NBL SBL	All approaches (crossings delineated by ladder markings)
Britannia Road West and 407 South Ramp Terminal	Signal Semi-Actuated	3	Britannia Road West	SBL SBR	None
Britannia Road West and 407 North Ramp Terminal	Signal Semi-Actuated	3	Britannia Road West	NBL NBR	None

Note 1: Although not marked, Foxwood Avenue is wide enough to allow for exclusive westbound left-turns and right-turns.

Figure 1 illustrates the existing boundary road network, including lane configurations, storage lengths, and intersection control.

3.4 Transit Operations

There are several MiWay Transit and GO Transit bus routes that operate in the surrounding area of the subject property. **Table 5** outlines the existing transit routes, direction, days of operation, peak hour headways, and the location of bus stops in the study area.

Table 5: Existing Transit Services

MiWay Transit					
Route	**Start and End Points**	**Days of Operation**	**Peak Hour Headways (min)**	**Bus Stop(s) (Direction 1) near study area**	**Bus Stop(s) (Direction 2) near study area**
39 Britannia	Meadowvale Town Centre to Renforth Station	Monday - Sunday	20 min	Ninth Line At Osprey Boulevard (<50m, <2min walk) Lisgar Drive At Foxwood Drive (~350m, ~5min walk) Lisgar Drive At Doug Leavens Boulevard (~300m, ~4min) Lisgar Drive At Beacham Street (~400m, ~5.5min)	Lisgar Drive At Berryman Trail (~300m, ~4min walk) Lisgar Drive At Doug Leavens Boulevard (~250m, ~3.5min walk) Lisgar Drive At Foxwood Avenue (~350m, ~5min walk) Osprey Boulevard At Ninth Line (<50m, <2min walk)
GO Transit					
Route	**Start and End Points**	**Days of Operation**	**Peak Hour Headways (min)**	**Bus Stop(s) (Direction 1) near study area**	**Bus Stop(s) (Direction 2) near study area**
21 Milton	Milton to Toronto	Monday - Sunday	Varies by sub route, from 20–60min	Derry Road West @ Ninth Line (~800m, ~11min walk) Meadowvale Town Centre (3.0km, ~10min bike or Transit via Route 39) Meadowvale GO Station Lisgar GO Station	Derry Road West @ Ninth Line (~800m, ~11min walk) Meadowvale Town Centre (3.0km, ~10min bike or Transit via Route 39) Meadowvale GO Station Lisgar GO Station
27 Milton/North York	Milton to North York	Monday - Sunday	30min	Derry Road West @ Ninth Line (~800m, ~11min walk) Meadowvale Town Centre (3.0km, ~10min bike or Transit via Route 39)	Derry Road West @ Ninth Line (~800m, ~11min walk) Meadowvale Town Centre (3.0km, ~10min bike or Transit via Route 39)
48 407 West	University of Guelph to Toronto	Monday - Sunday	Varies from 20-30 min		

As outlined, there are several routes that operate within the surrounding area that provide connectivity to major transit terminals in the area such as Meadowvale Town Centre, Meadowvale GO Station, and Lisgar GO Station. These transit terminals provide connectivity to the rest of the Greater Toronto Area (GTA) via other bus routes and the Milton GO Train line to Union Station in Toronto.

The nearest bus stops in the study area are primarily located on Lisgar Drive which runs parallel to Ninth Line. These bus stops are located within 350 metres of Ninth Line, thus being walkable from Ninth Line

via the existing pedestrian sidewalks on the local and collector roadways connecting Ninth Line to Lisgar Drive.

Therefore, the existing transit services in the study area are sufficient to promote transit as a viable mode of transportation.

The boundary road network in **Figure 1** illustrates the existing bus stop locations in the study area. **Appendix C** contains relevant transit information.

3.5 Active Transportation Network

The existing active transportation facilities on the boundary road network are described in **Table 6**.

Table 6: Active Transportation Network

Roadway	Pedestrian Facilities	Separation from Roadway	Cycling Facilities	Separation from Roadway
Winston Churchill Boulevard	1.5 metre concrete sidewalk (Highway 401 overpass, both sides; south of East Ramp Terminal, west side)	None	None	N/A
Derry Road West	1.5 metre concrete sidewalk (Highway 407 overpass, both sides)	None	Multi-use trail east of Ninth Line, north side	Grass Boulevard
Ninth Line	1.5 metre concrete sidewalk (between Osprey Boulevard and multi-use trail, east side)	None	Multi-use trail north of Derry Road West, east side; south of Osprey Boulevard, east side) [1]	Grass Boulevard
Britannia Road West	1.5 metre concrete sidewalk (east of Ninth Line, south side)	Grass Boulevard	Multi-use trail east of Ninth Line, north side	Grass Boulevard
Doug Leavens Boulevard	1.5 metre concrete sidewalk (both sides)	Grass Boulevard	None	N/A
Foxwood Avenue	1.5 metre concrete sidewalk (both sides)	Grass Boulevard	None	N/A
Osprey Boulevard	1.5 metre concrete sidewalk (both sides)	Grass Boulevard	None	N/A

Note 1: Segment of multi-use trail south of Osprey Boulevard is part of the Lisgar Meadow Brook Trail.

It is noted that the Lisgar Meadow Brook Trail runs north-south about 700 metres east of Ninth Line. Thus, while not located on the immediate boundary road network, the provision of a multi-use trail provides active transportation opportunities relatively close to the subject property.

The boundary road network in **Figure 1** illustrates the existing pedestrian and cycling facilities in the study area.

3.6 Traffic Data

Turning movement counts were conducted by Spectrum Traffic Data Inc. staff at the study intersections on Tuesday April 30, 2019, between 6:00 a.m. – 10:00 a.m. and 3:00 p.m. – 7:00 p.m. These time periods are reflective of commuter peak hours and thus were considered appropriate for traffic analysis of the proposed development.

Signal timing plans for the Highway 401 ramp terminals at Winston Churchill Boulevard were provided by the MTO. Signal timing plans for the regional intersections of Ninth Line and Derry Road West, and Ninth Line and Britannia Road West were provided by the Region. Signal timing plans for the municipal intersections of Ninth Line and Doug Leavens Boulevard, and Ninth Line and Osprey Boulevard were provided by the City. Signal timing plans for the Highway 407 ramp terminals at Derry Road West and Britannia Road West were requested, but 407 ETR has not provided the signal timings at the time of this analysis.

The traffic count data and signal timing data are contained in **Appendix D**. **Figure 2** illustrates the 2019 existing traffic volumes that were recorded and implemented for the 2019 existing conditions analysis scenario.

3.7 Traffic Modelling

The boundary road network was modelled in Synchro 11 using existing roadway geometrics, collected traffic data and signal timings from the provided timing plans.

As 407 ETR did not provide signal timing plans for the Highway 407 ramp terminals, signal timings were estimated by viewing the camera footage collected during the traffic counts.

The results for signalized intersection operations were derived from Synchro. The results for unsignalized intersection operations were derived using HCM2000 methodology. 95th percentile queue lengths were derived from Synchro. The Level of Service (LOS) definitions for signalized and unsignalized intersections are included in **Appendix E**.

The intersection of Foxwood Avenue and Ninth Line was modelled with an exclusive outbound left-turn and right-turn lane despite the movements not being designated separately by pavement markings nor signage. The width of the roadway is wide enough that left-turning vehicles and right-turning vehicles can wait for a gap in traffic without queuing in front of each other, thus operating similarly to an approach with exclusive left and right-turn lanes. This operation was confirmed through review of camera footage.

3.7.1. City of Mississauga Modelling Guidelines

The intersections under the jurisdiction of the City of Mississauga were modelled in Synchro 11 in conformance with the modelling guidelines per the City of Mississauga's "Traffic Impact Study Guidelines." **Table 7** summarizes the Synchro modelling parameters set out by the City's guidelines.

Table 7: City of Mississauga Synchro Modelling Parameters

Parameter	Value
Ideal (base) saturation flow rate	Protected left-turn: 1,860 veh/hr/lane Exclusive through: 1,900 veh/hr/lane Exclusive right-turn: 1,640 veh/hr/lane
Lost Time [1]	Protected left-turn: 1.0 s Back-to-back left-turns: 1.0 s Main Phase: 5.0 s
Peak Hour Factor	As calculated
Lane widths	As measured

Note 1: Lost time refers to the total lost time for the respective phase (intergreen minus lost time adjustment). Lost time adjustments were calculated so that the total lost time for the respective phases are equal to the values set out in the City's guidelines.

The modelling guidelines outlined above were applied to the following intersections:

- Winston Churchill Boulevard and Highway 401 West Ramp Terminal
- Winston Churchill Boulevard and Highway 401 West Ramp Terminal
- Ninth Line and Doug Leavens Boulevard
- Ninth Line and Foxwood Avenue
- Ninth Line and Osprey Boulevard

The off-ramp approaches were modelled with an ideal (base) saturation flow rate of 1,900 veh/hr/lane (similar to through movements) given that the approaches operate with no opposing traffic nor pedestrian interference.

Intersection analysis was conducted utilizing peak hour factors (PHFs) as calculated for each intersection during each time period.

3.7.2. Region of Peel Modelling Guidelines

The intersections under the jurisdiction of the Region of Peel were modelled in Synchro 11 in conformance with the modelling guidelines per the Region of Peel's "Regional Guidelines for Using Synchro Version 7.73 Rev 8." **Table 8** summarizes the Synchro modelling parameters set out by the Region's guidelines.

Table 8: Region of Peel Synchro Modelling Parameters

Parameter	Value
Ideal (base) saturation flow rate	1,900 veh/hr/lane
Lost Time	No parameters specified
Peak Hour Factor	1.00 for all intersection movements
Lane width	3.7 metres for through and shared through/turn lanes 3.5 metres for exclusive turn lanes

The modelling guidelines outlined above were applied to the following intersections:

- Derry Road West and Highway 407 West Ramp Terminal
- Derry Road West and Highway 407 East Ramp Terminal
- Derry Road West and Ninth Line
- Ninth Line and Britannia Road West
- Britannia Road West and Highway 407 West Ramp Terminal
- Britannia Road West and Highway 407 East Ramp Terminal

3.7.3. Critical Volume-To-Capacity Thresholds

The MTO considers a movement to be critical when the volume-to-capacity exceeds 0.75 for an off-ramp approach at a ramp terminal or exceeds 0.85 for all other movements at an intersection under MTO jurisdiction. The Highway 401 and Highway 407 ramp terminals were evaluated using these thresholds.

The Region's guidelines set out thresholds for critical volume-to-capacity ratios for through/shared through movements, and for exclusive turning movements, with thresholds of 0.90 and 1.00 for a through/shared through or exclusive turning movement, respectively. The intersections of Ninth Line and Derry Road West, and Ninth Line and Britannia Road West were evaluated using these thresholds.

The City of Mississauga consider a movement to be critical when the volume-to-capacity exceeds 0.85 for any intersection movement. The intersections of Ninth Line and Doug Leavens Boulevard, Ninth Line and Foxwood Avenue, and Ninth Line and Osprey Boulevard were evaluated using this threshold.

3.7.4. Ramp Terminal Right-Turn on Red Adjustments

The Highway 401 off-ramp terminals at Winston Churchill Boulevard consist of an exclusive left-turn lane, a shared left-turn/right-turn lane, and an exclusive right-turn lane. The ramp terminals were modelled with these existing geometrics. However, it was observed from the camera footage collected at the Highway 401 ramp terminals during the traffic counts that most of the right-turn movements are occurring in the exclusive right-turn curb lane, and that the shared left-turn/right-turn lane primarily consists of left-turn movements. Therefore, the Synchro modelling of the off-ramp approaches was calibrated to reflect observed operations.

The observed operations suggest that the actual Saturation Flow Rate for Right-turn on Reds (RTORs) is higher than the default calculated Saturation Flow Rate for RTORs in Synchro.

The following formula from the Highway Capacity Manual (HCM) is used to calculate Saturation Flow Rate for ROTRs:

*sRTOR = vRTOR * C/r*

Where;
sRTOR = Saturation Flow Rate for RTOR (veh/hr)
vRTOR = observed RTOR volume (veh/hr)
C = cycle length
R = red time

For the westbound ramp terminal, the existing cycle length is 160 seconds (resulting in 22 cycles per hour) and the total red time for the off-ramp approach is 101 seconds during the critical weekday

p.m. peak period. Observations of the camera footage indicate an average of approximately 10 vehicles per cycle conducting a RTOR movement, primarily in the curb lane (which is equivalent to approximately 220 vehicles per hour). Using the formula above, the Saturation Flow Rate for RTORs would be approximately 349 vehicles per hour which is higher than the default calculated Saturation Flow Rate of 68 vehicles per hour for RTORs.

For the eastbound ramp terminal, the existing cycle length is 160 seconds (resulting in 22 cycles per hour) and the total red time for the off-ramp approach is 118 seconds during the critical weekday p.m. peak period. Observations of the camera footage also indicate an average of approximately 5 vehicles per cycle conducting a RTOR movement, primarily in the curb lane (which is equivalent to approximately 110 vehicles per hour). Using the formula above, the Saturation Flow Rate for RTORs would be approximately 149 vehicles per hour which is higher than the default calculated Saturation Flow Rate of 46 vehicles per hour for RTORs.

Accordingly, this adjustment was applied to the Highway 401 ramp terminals at Winston Churchill Boulevard during the weekday p.m. peak period for all scenarios. Where signal timings were optimized under future background and total conditions, the RTOR Saturation Flow Rate was re-calculated using the red time from the optimized signal timings.

3.8 Intersection Operations

The existing intersection operations at the study intersections were analyzed using the existing traffic volumes illustrated in **Figure 2.** Detailed capacity analysis worksheets are included in **Appendix F**.

Table 9 outlines the 2019 existing traffic operations.

Table 9: 2019 Existing Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Derry Road West and 407 North Ramp Terminal	Signal	A.M.	A	6.3 s	0.68 (NBR)	None
		P.M.	A	6.4 s	0.63 (NBR)	None
Derry Road West and 407 South Ramp Terminal	Signal	A.M.	A	4.2 s	0.50 (EBT)	None
		P.M.	C	23.3 s	0.86 (SBR)	129.9 m > 120 m (SBR)
Derry Road West and Ninth Line	Signal	A.M.	D	37.0 s	0.86 (SBT)	93.7 m > 75 m (EBL)
		P.M.	C	34.2 s	0.84 (SBT)	None
Ninth Line and Doug Leavens Boulevard	Signal	A.M.	B	10.0 s	0.61 (NBT)	None
		P.M.	A	8.3 s	0.53 (SBT)	None
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	C	16.3 s	0.16 (WBR)	None
		P.M.	C	17.3 s	0.08 (WBL)	None
Ninth Line and Osprey Boulevard	Signal	A.M.	B	10.4 s	0.55 (NBT)	31.4 m > 15 m (WBL)
		P.M.	B	10.0 s	0.65 (NBT)	19.9 m > 15 m (WBL)
Britannia Road West and Ninth Line	Signal	A.M.	E	57.0 s	0.99 (EBTR) 0.95 (SBTR)	None
		P.M.	D	49.3 s	0.97 (NBTR)	None
Britannia Road West and 407 North Ramp Terminal	Signal	A.M.	A	7.3 s	0.73 (NBR)	None
		P.M.	A	5.6 s	0.54 (NBR)	None
Britannia Road West and 407 South Ramp Terminal	Signal	A.M.	A	5.0 s	0.40 (SBL)	None
		P.M.	B	11.6 s	0.69 (SBL)	None
Winston Churchill Boulevard and 401 East Ramp Terminal	Signal	A.M.	B	13.6 s	0.63 (EBL)	None
		P.M.	B	16.2 s	0.70 (EBL)	None
Winston Churchill Boulevard and 401 West Ramp Terminal	Signal	A.M.	B	12.5 s	0.68 (WBL)	None
		P.M.	C	28.3 s	0.84 (WBL)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2000).

*Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection where the maximum v/c ratio does not exceed the critical thresholds. All v/c ratios that exceed the critical thresholds outlined in **Section 3.7.3** are outlined and highlighted.*

Note 3: 95th percentile queue lengths which exceed the designated storage length of the turn lane but can be accommodated by a centre turn lane were not documented in this table.

The boundary road network is currently operating at LOS "D" or better during the weekday a.m. and p.m. peak hours, with the exception of the intersection of Britannia Road West and Ninth Line which is currently operating at LOS "E" during the weekday a.m. peak hour. These operations are attributed to the eastbound through/right-turn and southbound through/right-turn movements operating near capacity. The eastbound and southbound through movements experience heavy volumes during the weekday a.m. peak hour. Additionally, the northbound through/right-turn movement is operating

near capacity during the weekday p.m. peak hour. These operations are not uncommon at urban signalized arterial intersections.

The 95th percentile queue length for the northbound left-turn movement at the intersection of Britannia Road West and Ninth Line currently extends beyond the designated storage length during the weekday a.m. and p.m. peak hours but were not observed to interfere with through traffic on Ninth Line. This is because Ninth Line has a painted centre median area that allows vehicles to queue beyond the designated storage length. Queues were observed to generally dissipate within one cycle length, which is reflected in the Synchro traffic operations as this movement is not operating near capacity.

The 95th percentile queue length for the eastbound left-turn movement at the intersection of Derry Road West and Ninth Line currently extends beyond the designated storage length during the weekday a.m. peak hour but is contained within the left-turn lane taper. Queues were observed to generally dissipate within one cycle length, which is reflected in the Synchro traffic operations as these movements are not operating near capacity. Additionally, the eastbound left-turn movement is currently operating as a permissive turn type during the weekday a.m. peak hour. If the movement were to operate with a protected-permissive turn type, the 95th percentile queue length is expected to decrease.

The 95th percentile queue length for the westbound left-turn movement at the intersection of Ninth Line and Osprey Boulevard currently extends beyond the designated storage length during the weekday a.m. and p.m. peak hours. However, the road width of Osprey Boulevard east of the westbound left-turn lane was observed to allow for separation of queued westbound left-turn vehicles from westbound right-turn vehicles.

The southbound right-turn movement at the Highway 407 West Ramp Terminal at Derry Road West is operating above the MTO critical volume-to-capacity ratio of 0.75 during the weekday p.m. peak hour. This movement experiences heavy southbound right-turn volumes during the weekday p.m. peak hour. However, the existing queue lengths at the off-ramp approaches of the ramp terminals do not extend to the freeway segment of Highway 407 and are thus contained within the off-ramp segments. The distance from the gore area of the freeway segment to the stop bar at the ramp terminal is approximately 500 metres.

The westbound left-turn movement at the Highway 401 West Ramp Terminal at Winston Churchill Boulevard is operating above the MTO critical volume-to-capacity ratio of 0.75 during the weekday p.m. peak hour. The off-ramp approach experiences heavy volumes exiting Highway 401 westbound during the weekday p.m. peak hour. However, Winston Churchill Boulevard is planned to be widened to six lanes in the short-term horizon, which is expected to increase intersection capacity and improve traffic operations. Additionally, the existing queue lengths at the off-ramp approaches of the ramp terminals do not extend to the freeway segment of Highway 401 and are thus contained within the off-ramp segments. The distance from the gore area of the freeway segment to the stop bar at the ramp terminal is approximately 560 metres.

Overall, the boundary road network is currently operating at acceptable levels of service.

4.0 Future Background Conditions

4.1 Horizon Years

Based on information received from the proponent, the proposed development is expected to be built in two primary phases. The first phase consist of the southern portion of the development proposal (anticipated buildout by 2028), while for the purposes of this study, the remainder of the development is expected to be built out by 2031.In addition to analysis of the horizon year for each phase of the development, the MTO's guidelines require analysis of the five-year and ten-year horizons beyond the estimated year of full build-out. Furthermore, the City has requested analysis of a scenario without the planned Ninth Line widening. Therefore, the following horizon years and corresponding scenarios were analyzed:

- The 2026 horizon (South Draft Plan buildout without Ninth Line Widening). This scenario is considered as the proponent advised some Phase 1 occupancy may occur in 2026.
- The 2028 horizon (South Draft Plan Buildout under Ninth Line Widening)
- The 2031 horizon (Full Buildout of development proposal under Ninth Line Widening)
- The 2036 horizon (5-years beyond Full Buildout)
- The 2041 horizon (10-years beyond Full Buildout)

4.2 Planned Roadway Improvements

The City of Mississauga completed a Municipal Class Environmental Assessment for the widening of Ninth Line from Eglinton Avenue West to Derry Road West in June 2021. The study outlines transportation improvements along the Ninth Line corridor, including road widening from two to four travel lanes and active transportation facilities such as bike lanes and a continuous sidewalk and multi-use trail. Under previous submissions, improvements were assumed to be implemented in 2023 and/or 2024 per "Section 12.3 Timing of Improvements" of the Environmental Study Report. However, City staff have noted that implementation and full operation of Ninth Line widening will likely be delayed to beyond 2026.

In addition to the widening of Ninth Line, other roadway improvements have been identified in the study area by the Region of Halton. **Table 10** summarizes the future roadway improvements in the study area.

Table 10: Planned Roadway Improvements in Study Area

Roadway	Segment or Intersection	Jurisdiction	Improvement	Anticipated Year of Completion
Ninth Line	Eglinton Avenue West to Derry Road West	City of Mississauga	Widen to five lanes and provide urban cross-section	Before 2028 [1]
Derry Road West	Tremaine Road to Highway 407	Region of Halton	Widen to six lanes and provide urban cross-section	2028 - 2031 [2]
Britannia Road West	Tremaine Road to Highway 407	Region of Halton	Widen to six lanes and provide urban cross-section	December 2024 [3]

Note 1: Assumed based on information provided by City staff.
Note 2: Source: Halton Region Budget and Business Plan, 2019.
Note 3: Currently under construction, completion date according to Britannia Road Corridor Improvements Website.

For the purposes of properly calibrating the Synchro traffic model, the future lane configurations and auxiliary turn lane storage lengths at the Ninth Line study intersections were obtained from the preliminary design plates in Appendix M of the Environmental Study Report for Ninth Line movements, and from "Section 4.5 Preferred Alternative" of the Ninth Line EA Transportation Report. The noted improvements at the Winston Churchill Boulevard study intersections were also applied in the future scenarios. The other noted roadway improvements do not change the configuration of the study intersections but may impact current travel patterns (refer to the discussion on growth rates in **Section 4.3**).

Figure 3 outlines the future background boundary road network, which is applicable for all future horizon years analyzed herein except the 2026 horizon year, which uses the existing lane configurations in **Figure 1.** In addition, due to capacity constraints at the Derry Road West and Britannia Road West intersections with Ninth Line, widening of Britannia Road West and Derry Road West from four to six travel lanes per the recommendations of the MMM study was also considered as a sensitivity analysis for the 2041 horizon only to assess operations under these potential additional improvements' scenario. This scenario used the same lane configurations as **Figure 3** with two additional travel lanes added to Derry Road West and Britannia Road West.

Appendix H contains excerpts from the Ninth Line EA study. **Appendix I** contains excerpts on future roadway improvement information from the other sources noted in **Table 10**.

4.3 Growth Rates

4.3.1. City and Regional Arterial Roads

The Ninth Line Corridor Study Transportation Assessment prepared by MMM Group (July 2017, herein referred to as the "MMM study") for the City of Mississauga forecasted future background traffic volumes on arterial roads in the surrounding area using compounded growth rates provided by City staff from the City's EMME model projections. The City provided growth rates for Ninth Line, Winston Churchill Boulevard, Derry Road West, and Britannia Road West in support of the study. Apart from Ninth Line, the growth rates listed in the MMM study for each of the noted arterial roadways were applied to the 2019 traffic data to determine future background traffic growth. The roadway improvements noted in **Section 4.2** were accounted for in the City's growth rates provided for the MMM study.

Due to the City request to analyze traffic operations at the study intersections both prior to and after the Ninth Line road widening is implemented, growth rates were reconfirmed with the City both with and without Ninth Line widening. In addition, the vehicle trips associated with the background developments along Ninth Line are already incorporated in this study through the "Emerging Land Use Concept" background development (refer to **Section 4.4**). Therefore, the growth rates were adjusted by the City to remove vehicle traffic associated with these developments to avoid double counting future vehicle trips. These growth rates were deemed to be more accurate than the MMM study rates and were applied as such in this study.

Table 11 outlines the growth rates on the boundary road network for the arterial roadways.

Table 11: Boundary Road Network Growth Rates

Street	**Winston Churchill Boulevard**			
	2021-2031 (with and without Ninth Line widening)		2031-2041	
Direction	**NB**	**SB**	**NB**	**SB**
A.M. Peak Hour	1.15%	2.76%	1.15%	2.76%
P.M. Peak Hour	3.37%	1.30%	3.37%	1.30%
Street	**Derry Road West**			
	2021-2031 (with and without Ninth Line widening)		2031-2041	
Direction	**EB**	**WB**	**EB**	**WB**
A.M. Peak Hour	1.94%	2.04%	1.94%	2.04%
P.M. Peak Hour	1.67%	1.45%	1.67%	1.45%
Street	**Britannia Road West**			
	2021-2031 (with and without Ninth Line widening)		2031-2041	
Direction	**EB**	**WB**	**EB**	**WB**
A.M. Peak Hour	2.71%	2.04%	2.71%	2.04%
P.M. Peak Hour	1.85%	2.39%	1.85%	2.39%

Street	**Ninth Line**					
	2021-2031 (w/o Ninth Line widening)		2021-2031 (with Ninth Line widening)		2031-2041	
Direction	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**
A.M. Peak Hour	1.50%	1.00%	2.50%	2.50%	0.50%	0.50%
P.M. Peak Hour	1.00%	0.50%	2.00%	2.50%	0.50%	1.00%

Appendix G contains excerpts from the MMM study. The relevant discussion on growth rate revisions with City of Mississauga Traffic Modelling can be found in the terms of reference correspondence, included in **Appendix B**.

4.3.2. City Collector Roads

At the Ninth Line intersections of Doug Leavens Boulevard, Foxwood Avenue and Osprey Boulevard, the growth rates outlined in **Table 11** were applied to through movements only. A growth rate of 0.5% compounded annually was applied to movements entering and exiting the local roads, as the surrounding residential neighbourhood east of Ninth Line is fully built-out and thus would not be expected to experience significant background traffic growth.

4.3.3. Highway 401 and 407 Ramp Terminals

As stated in the MMM study, the MTO instructed MMM to apply a growth rate of 2% compounded annually at the off-ramp approaches at ramp terminals. For consistency, this growth rate was applied to the off-ramp approaches at the Highway 401 and Highway 407 ramp terminals in this analysis.

4.4 Background Developments

Background developments were identified in the study area from the MMM study, and thus were accounted for under future background conditions. The developments are outlined in **Table 12.**

Table 12: Background Developments

Development	Location	Development Proposal	Statistics
Erin Mills Development	North-east quadrant of Highway 403 and Highway 407	Industrial Park including retail and office uses	112,630 sq. m of industrial park 6,762 sq. m of retail 8,074 sq. m of office
407 Transitway	Future stations in study area: Britannia Road and Derry Road	Provincial transit system with exclusive right-of-way parallel to Highway 407; includes running way, stations, platforms, parking, and passenger pick-up and drop-off facilities.	Britannia Station – 640 parking spaces Derry Station – 2,160 spaces (interim); 3,360 spaces (ultimate)
Emerging Land Use Concept	Ninth Line (west side) from Highway 403 to Highway 401	Greenfield community consisting of residential, commercial retail, general office and general light industrial uses divided into seven zones along Ninth Line.	3,543 residential units 5,467 sq. ft of retail 40,009 sq. ft of general office 296,191 sq. ft of general light industrial

The MMM study forecasts traffic on the boundary road network generated by the developments outlined above. The background development traffic added to the boundary road network in the MMM study was applied to this analysis. **Appendix G** contains excerpts from the MMM study on the background developments.

4.4.1. Timing of Developments

The timing of the Erin Mills development is unknown, although a review of the google street view near the background development showed ongoing construction within the site footprint with portions currently built. Therefore, this development was accounted for under future background conditions during all horizon years.

At the time of the writing of this report, the timing of 407 Transitway implementation is unknown. However, the first phase of the project is not expected to include the segment west of Hurontario

Street. In addition, no mention of funding for the project is outlined in the 2022 Ontario and Region of Peel budgets, and the project is not outlined in the Region of Peel's 2021-2030 Capital Budget Map for the City of Mississauga (included in **Appendix I**, herein). Based on this review, it is assumed that the 407 Transitway background development will be implemented no earlier than 2031. Therefore, the 407 Transitway background development traffic volumes were not included in the traffic volumes projection herein.

The Emerging Land Use Concept for Ninth Line aims to achieve the City's population and employment growth targets by 2031. Per the "Ninth Line Lands Municipal Comprehensive Review" prepared for Peel Region by Macaulay Shiomi Lowson Ltd. (May 2017), it is anticipated that the Ninth Line lands will be developed prior to 2031.

While the exact timing of the Ninth Line lands build-out is unknown, it was assumed that the lands will be partially built-out by both 2026 and 2028. For analyses of study horizons herein, it is assumed that approximately 50% of the Emerging Land Use Concept will be build-out by 2026, approximately 70% of the Emerging Land Use Concept will be built-out by 2028 and will be fully built-out for the 2031, 2036 and 2041 horizons.

4.4.2. Development Traffic

The MMM study forecasted traffic for the Emerging Land Use Concept for various non-auto modal split scenarios: 5%, 10%, 15%, and 20%. For the purposes of conservative analysis, the site traffic volumes for the lowest non-auto modal split scenario (5%) were applied to this analysis.

Zone "5" of the Emerging Land Use Concept spans from Britannia Road West to Derry Road West and includes the subject property (see **Appendix G** for excerpts from the MMM study). The background site traffic associated with the area of Zone "5" that overlaps the subject property was removed from the site accesses to the Zone "5" property: Doug Leavens Boulevard and Osprey Boulevard. However, for the purposes of conservative analysis, these site traffic volumes were not subtracted on the greater boundary road network.

Figure 4 illustrates the background traffic associated with the Erin Mills development. **Figure 5** illustrates the background traffic associated with the Britannia Road and Derry Road stations of the 407 Transitway initiative. **Figure 6** illustrates the 2026 background traffic associated with the assumed 25% build-out of the Emerging Land Use Concept. **Figure 7** illustrates the 2028 background traffic associated with the assumed 50% build-out of the Emerging Land Use Concept. **Figure 8** illustrates the 2031, 2036 and 2041 background traffic associated with the full build-out of the Emerging Land Use Concept.

4.5 Intersection Modelling

Under 2026 future background conditions, signal timing plan splits were optimized for the projected traffic volumes at the Ninth Line study intersections. Otherwise, intersection modelling remained consistent with the existing conditions for this future background scenario.

The signal timing plans used for the Ninth Line EA Transportation Report were reviewed to inform the creation of signal timing plans for the 2028, 2031, 2036 and 2041 future background analysis scenarios. The following previously permissive left-turn movements under 2019 existing conditions were modelled as protected-permissive under the future conditions to match the configuration either under existing 2023 or as outlined in the Ninth Line EA:

- Eastbound left-turn at Derry Road West and Ninth Line;
- Westbound left-turn at Derry Road West and Ninth Line;
- Westbound left-turn at Britannia Road West and Ninth Line; and
- Southbound left-turn at Ninth Line and Doug Leavens Boulevard

In addition, under cursory analysis, a need for a southbound left-turn protected permissive phase at the intersection of Ninth Line and Derry Road was identified in the future background scenarios to maintain acceptable operations for the southbound left-turn movement. Though this movement was not modelled in the Ninth Line EA study, the existing 2019 traffic data obtained for this movement recorded more traffic volume than what was projected in the Ninth Line EA. With further traffic growth expected in the future, it is recommended that the City implement a southbound left-turn protected-permissive phase at the intersection of Ninth Line and Derry Road to accommodate the future projected traffic volumes. This left-turn phase can be sequenced partially or fully with existing northbound left-turn phase to optimize traffic movements at the intersection.

With the widening and urbanization of Ninth Line, the signalized intersections of Ninth Line and Doug Leavens Boulevard, and Ninth Line and Osprey Boulevard may be co-ordinated and expected to operate under a semi-actuated mode of control (with Ninth Line operating as the major street). Therefore, these intersections were modelled under future background conditions with a semi-actuated mode of control and a cycle length of 100 seconds. A semi-actuated mode of control at the noted study intersections is consistent with the approach used in the Ninth Line EA.

4.6 Intersection Operations

Table 13 outlines the 2026 future background traffic operations without Ninth Line widening. **Tables 14-17** outline the 2028, 2031, 2036 and 2041 future background traffic operations. **Table 18** outlines the 2041 future background traffic operations with additional improvements (Derry Road West and Britannia Road West widening within the City of Mississauga). The volumes used for analysis for the 2026, 2028, 2031, 2036, and 2041 future background scenarios are outlined in **Figures 9 to 13**, respectively. **Appendix F** contains the detailed capacity analysis reports.

Table 13: 2026 Future Background Traffic Operations (Pre-Widening of Ninth Line)

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and Ninth Line	Signal	A.M.	F	95.8 s	1.19 (EBT)	129.8 m > 50.0 m (NBL)
		P.M.	E	58.6 s	0.98 (NBT)	80.3 m > 60.0 m (EBL) 70.4 m > 60.0 m (WBL) 83.7 m > 50.0 m (NBL)
Ninth Line and Osprey Boulevard	Signal	A.M.	B	12.7 s	0.64 (NBT)	None
		P.M.	B	12.5 s	0.73 (NBT)	None
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	C	19.9 s	0.54 (NB)	None
		P.M.	C	22.0 s	0.58 (NB)	None
Ninth Line and Doug Leavens Boulevard	Signal	A.M.	B	11.9 s	0.67 (NBT)	None
		P.M.	B	11.7 s	0.68 (WBL)	None
Derry Road West and Ninth Line	Signal	A.M.	D	51.0 s	0.97 (NBL)	119.6 m > 110.0 m (NBL)
		P.M.	E	57.8 s	1.01 (WBT)	110.5 m > 75.0 m (EBL) 62.2 m > 60.0 m (SBL)

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2000).

*Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection where the maximum v/c ratio does not exceed the critical thresholds. All v/c ratios that exceed the critical thresholds outlined in **Section 3.7.3** are outlined and highlighted.*

Note 3: 95th percentile queue lengths which exceed the designated storage length of the turn lane but can be accommodated by a centre turn lane were not documented in this table.

Table 14: 2028 Future Background Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and 407 South Ramp Terminal	Signal	A.M.	C	28.2 s	0.90 (SBL)	None
		P.M.	C	23.7 s	0.87 (SBL)	None
Britannia Road West and 407 North Ramp Terminal	Signal	A.M.	B	14.9 s	0.81 (NBR)	87.1 m > 70 m (NBR)
		P.M.	A	5.9 s	0.59 (NBR)	None
Britannia Road West and Ninth Line	Signal	A.M.	D	51.8 s	1.07 (NBL) 0.90 (SBT)	63.9 m > 60.0 m (EBR) 116.8 m > 75.0 m (NBL)
		P.M.	D	42.2 s	0.90 (NBT)	None
Ninth Line and Osprey Boulevard	Signal	A.M.	A	9.1 s	0.58 (WBL)	39.1 m > 15.0 m (WBL)
		P.M.	A	7.2 s	0.48 (NBT)	27.3 m > 15.0 m (WBL)
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	B	13.6 s	0.39 (NB)	None
		P.M.	B	14.7 s	0.41 (NB)	None
Ninth Line and Doug Leavens Boulevard	Signal	A.M.	B	11.1 s	0.57 (WBL)	None
		P.M.	A	9.5 s	0.52 (WBL)	None
Derry Road West and Ninth Line	Signal	A.M.	D	40.2 s	0.87 (SBT)	45.9 m > 40.0 m (NBR)
		P.M.	D	45.1 s	0.99 (EBL) 0.91 (WBT)	110.7 m > 75.0 m (EBL) 44.6 m > 40.0 m (NBR)
Derry Road West and 407 North Ramp Terminal	Signal	A.M.	B	10.0 s	0.76 (NBR)	None
		P.M.	A	7.8 s	0.70 (NBR)	None
Derry Road West and 407 South Ramp Terminal	Signal	A.M.	A	5.0 s	0.66 (EBT)	None
		P.M.	C	30.6 s	0.92 (SBR) 0.79 (WBT)	180.3 m > 120 m (SBR)
Winston Churchill Boulevard and 401 East Ramp Terminal	Signal	A.M.	B	16.4 s	0.66 (EBL)	None
		P.M.	B	17.9 s	0.72 (EBL)	None
Winston Churchill Boulevard and 401 West Ramp Terminal	Signal	A.M.	B	15.4 s	0.70 (WBL)	None
		P.M.	C	31.3 s	0.84 (WBL)	None

*Ditto Notes **Table 13**.*

Table 15: 2031 Future Background Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and 407 South Ramp Terminal	Signal	A.M.	C	28.6 s	0.91 (SBL)	None
		P.M.	C	25.0 s	0.88 (SBL)	None
Britannia Road West and 407 North Ramp Terminal	Signal	A.M.	B	17.0 s	0.82 (NBR)	96.8 m > 70 m (NBR)
		P.M.	A	6.8 s	0.66 (NBR)	None
Britannia Road West and Ninth Line	Signal	A.M.	E	66.7 s	1.12 (NBL) 0.97 (SBT)	69.9 m > 60.0 m (EBR) 123.7 m > 75.0 m (NBL)
		P.M.	E	57.3 s	1.00 (EBL) 1.00 (NBT) 1.00 (SBL)	91.5 m > 60.0 m (EBL) 108.2 m > 75.0 m (NBL)
Ninth Line and Osprey Boulevard	Signal	A.M.	A	9.8 s	0.58 (WBL)	39.7 m > 15.0 m (WBL)
		P.M.	A	7.8 s	0.56 (NBT)	27.5 m > 15.0 m (WBL)
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	C	15.8 s	0.51 (NB)	None
		P.M.	C	17.1 s	0.49 (NB)	None
Ninth Line and Doug Leavens Boulevard	Signal	A.M.	B	13.6 s	0.70 (NBT)	None
		P.M.	B	10.4 s	0.56 (NBT)	None
Derry Road West and Ninth Line	Signal	A.M.	E	55.5 s	0.95 (SBT)	135.1 m > 75.0 m (EBL) 68.4 m > 40.0 m (NBR)
		P.M.	E	69.4 s	1.19 (SBL) 1.11 (EBL) 1.04 (SBT) 1.02 (NBT) 1.01 (WBT)	122.6 m > 75.0 m (EBL) 59.5 m > 40.0 m (NBR) 159.5 m > 60.0 m (SBL)
Derry Road West and 407 North Ramp Terminal	Signal	A.M.	B	12.3 s	0.77 (NBR)	None
		P.M.	A	9.9 s	0.76 (NBR)	None
Derry Road West and 407 South Ramp Terminal	Signal	A.M.	A	5.9 s	0.73 (EBT)	None
		P.M.	D	37.7 s	0.94 (SBR) 0.87 (WBT)	201.8 m > 120 m (SBR)
Winston Churchill Boulevard and 401 East Ramp Terminal	Signal	A.M.	B	17.4 s	0.67 (EBL)	None
		P.M.	B	18.8 s	0.73 (EBL)	None
Winston Churchill Boulevard and 401 West Ramp Terminal	Signal	A.M.	B	16.7 s	0.71 (WBL) 0.71 (WBR)	None
		P.M.	C	34.0 s	0.88 (WBL)	None

Ditto Notes **Table 13**.

Table 16: 2036 Future Background Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and 407 South Ramp Terminal	Signal	A.M.	C	29.6 s	0.91 (SBL)	None
		P.M.	C	27.0 s	0.88 (SBL)	None
Britannia Road West and 407 North Ramp Terminal	Signal	A.M.	C	20.7 s	0.85 (NBR) 0.75 (EBT)	111.7 m > 70 m (NBR)
		P.M.	A	8.5 s	0.73 (NBR)	None
Britannia Road West and Ninth Line	Signal	A.M.	E	71.1 s	1.16 (NBL) 1.00 (EBT) 0.90 (NBT) 0.99 (SBT)	75.8 m > 60.0 m (EBR) 129.1 m > 75.0 m (NBL)
		P.M.	E	62.1 s	1.10 (EBL) 1.03 (NBT) 1.00 (SBL) 1.00 (NBL) 0.91 (NBT) 0.90 (SBT)	102.9 m > 60.0 m (EBL) 112.4 m > 75.0 m (NBL)
Ninth Line and Osprey Boulevard	Signal	A.M.	B	10.0 s	0.58 (WBL)	40.3 m > 15.0 m (WBL)
		P.M.	A	8.1 s	0.58 (NBT)	27.9 m > 15.0 m (WBL)
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	C	16.0 s	0.52 (NB)	None
		P.M.	C	17.5 s	0.50 (NB)	None
Ninth Line and Doug Leavens Boulevard	Signal	A.M.	B	14.0 s	0.71 (NBT)	None
		P.M.	B	10.7 s	0.58 (NBT)	None
Derry Road West and Ninth Line	Signal	A.M.	E	68.4 s	0.97 (SBT) 0.91 (EBT)	156.4 m > 75.0 m (EBL) 70.0 m > 40.0 m (NBR)
		P.M.	E	77.8 s	1.20 (SBL) 1.12 (EBL) 1.07 (WBT) 1.06 (SBT) 1.04 (NBT)	126.8 m > 75.0 m (EBL) 47.1 m > 45.0 m (EBR) 60.5 m > 40.0 m (NBR) 160.9 m > 60.0 m (SBL)
Derry Road West and 407 North Ramp Terminal	Signal	A.M.	B	15.0 s	0.79 (NBR)	None
		P.M.	B	13.5 s	0.81 (NBR)	None
Derry Road West and 407 South Ramp Terminal	Signal	A.M.	A	8.0 s	0.82 (EBT)	None
		P.M.	E	60.1 s	0.98 (SBR) 0.96 (WBT)	237.5 m > 120 m (SBR)
Winston Churchill Boulevard and 401 East Ramp Terminal	Signal	A.M.	B	19.2 s	0.68 (EBR)	None
		P.M.	C	21.8 s	0.75 (EBL)	None
Winston Churchill Boulevard and 401 West Ramp Terminal	Signal	A.M.	B	18.9 s	0.74 (WBR)	None
		P.M.	D	40.0 s	0.94 (WBL) 0.88 (NBT) 0.80 (WBR)	None

Ditto Notes **Table 13**.

Table 17: 2041 Future Background Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and 407 South Ramp Terminal	Signal	A.M.	C	31.7 s	0.91 (SBL) 0.80 (SBT)	None
		P.M.	C	29.8 s	0.89 (SBL)	None
Britannia Road West and 407 North Ramp Terminal	Signal	A.M.	C	28.9 s	0.88 (NBR) 0.85 (EBT)	128.5 m > 70 m (NBR)
		P.M.	B	10.8 s	0.78 (NBR)	None
Britannia Road West and Ninth Line	Signal	A.M.	E	75.0 s	1.19 (NBL) 1.13 (EBT) 1.01 (SBT) 0.92 (NBT)	81.3 m > 60.0 m (EBR) 132.6 m > 75.0 m (NBL)
		P.M.	E	69.5 s	1.12 (EBL) 1.05 (NBT) 1.02 (NBL) 1.02 (WBT) 1.01 (SBL) 0.94 (SBT)	105.9 m > 60.0 m (EBL) 115.2 m > 75.0 m (NBL)
Ninth Line and Osprey Boulevard	Signal	A.M.	B	10.2 s	0.59 (WBL) 0.59 (NBT)	41.2 m > 15.0 m (WBL)
		P.M.	A	8.3 s	0.59 (NBT)	28.5 m > 15.0 m (WBL)
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	C	16.2 s	0.53 (NB)	None
		P.M.	C	18.1 s	0.51 (NB)	None
Ninth Line and Doug Leavens Boulevard	Signal	A.M.	B	14.4 s	0.73 (NBT)	None
		P.M.	B	11.1 s	0.60 (SBT)	None
Derry Road West and Ninth Line	Signal	A.M.	E	74.7 s	1.00 (SBT) 1.00 (EBT) 0.91 (WBT)	169.6 m > 75.0 m (EBL) 71.8 m > 40.0 m (NBR)
		P.M.	F	89.5 s	1.20 (SBL) 1.16 (EBL) 1.15 (WBT) 1.09 (SBT) 1.06 (NBT)	131.6 m > 75.0 m (EBL) 52.6 m > 45.0 m (EBR) 62.1 m > 40.0 m (NBR) 161.6 m > 60.0 m (SBL) 92.1 m > 90.0 m (SBR)
Derry Road West and 407 North Ramp Terminal	Signal	A.M.	B	18.7 s	0.83 (NBR) 0.80 (EBT)	None
		P.M.	C	20.8 s	0.84 (NBR) 0.81 (WBT)	None
Derry Road West and 407 South Ramp Terminal	Signal	A.M.	B	11.3 s	0.90 (EBT)	None
		P.M.	E	69.2 s	1.09 (SBR) 1.03 (WBT)	276.2 m > 120 m (SBR)
Winston Churchill Boulevard and 401 East Ramp Terminal	Signal	A.M.	C	21.3 s	0.71 (EBR)	None
		P.M.	C	25.0 s	0.78 (EBL)	None
Winston Churchill Boulevard and 401 West Ramp Terminal	Signal	A.M.	C	21.7 s	0.76 (WBR)	None
		P.M.	E	56.5 s	1.04 (WBL) 1.03 (NBT) 0.88 (WBR)	None

*Ditto Notes **Table 13**.*

Table 18: 2041 Future Background Traffic Operations – Additional Improvements

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and Ninth Line	Signal	A.M.	E	55.0s	0.96 (SBT) 0.92 (NBL) 0.90 (EBT)	79.2m > 60.0m (EBR) 111.7m > 75.0m (NBL)
		P.M.	D	54.3s	0.97 (NBT) 0.91 (EBL) 0.91 (SBL) 0.88 (SBT) 0.87 (NBL) 0.86 (WBT)	95.0m > 60.0m (EBL) 94.5m > 75.0m (NBL)
Derry Road West and Ninth Line	Signal	A.M.	D	48.4s	0.89 (EBL) 0.88 (SBT) 0.85 (NBL)	138.6m > 75.0m (EBL) 66.8m > 40.0m (NBR)
		P.M.	E	55.4s	0.97 (SBL) 0.95 (NBT) 0.95 (EBL) 0.91 (SBT) 0.85 (NBL)	114.4m > 75.0m (EBL) 60.0m > 40.0m (NBR) 141.5m > 60.0m (SBL)

Ditto Notes **Table 13**.

The following intersections are forecast to have some movements operate near or at capacity during the weekday a.m. and p.m. peak hours under 2041 future background conditions:

- Britannia Road West and 407 South Ramp Terminal
- Britannia Road West and 407 North Ramp Terminal
- Britannia Road West and Ninth Line
- Derry Road West and Ninth Line
- Derry Road West and 407 North Ramp Terminal
- Derry Road West and 407 South Ramp Terminal
- Winston Churchill Boulevard and 401 East Ramp Terminal
- Winston Churchill Boulevard and 401 West Ramp Terminal

These intersections are expected to operate with some movements exceeding the critical volume-to-capacity thresholds, as well as the 95th percentile queue lengths for turning movements exceeding their designated storage length. These operations are attributed to the high volumes forecasted on the Derry Road West and Britannia Road West corridors under 2041 future background conditions.

The forecasted 95th percentile queue lengths for the off-ramp approaches at the Highway 401 and 407 ramp terminals is not expected to extend to the freeway segments of Highway 401 and 407 as the off-ramp lengths are 500 metres or more.

The intersections on Ninth Line are expected to operate at a LOS "C" or better under 2041 future background conditions, with minor control delays and no critical volume-to-capacity ratios. The 95th percentile queue length for the westbound left-turn movement at the intersection of Ninth Line and Osprey Boulevard is expected to extend beyond the designated storage length during the weekday a.m. and p.m. peak hours, as consistent with existing conditions. However, the road width of Osprey Boulevard east of the westbound left-turn lane was observed to allow for separation of queued westbound left-turn vehicles from westbound right-turn vehicles.

The intersection of Britannia Road West and Ninth Line is expected to operate at a LOS "E" during both weekday a.m. and p.m. peak hours. A maximum intersection control delay of 75.0 seconds and volume-to-capacity ratio of 1.19 in the a.m. peak hour is projected.

The intersection of Derry Road West and Ninth Line is projected to operate at a LOS "E" and "F" during the weekday a.m. and p.m. peak hours, respectively, with a maximum intersection control delay of 89.5 seconds and volume-to-capacity ratio of 1.20 in the p.m. peak hour.

These operations indicate that the widening of Derry Road West and Britannia Road West within the City of Mississauga (i.e., 407 to Winston Churchill Boulevard) would improve future background traffic operations, as recommended in the MMM study. The results of the operational analysis testing this scenario in **Table 18** confirm that operations improve to more acceptable levels under 2041 future background conditions.

It should be noted that the operations outlined above can still be considered conservative, as the background traffic associated with the Emerging Land Use Scenario Zone "5" that overlaps the subject property was not removed from the Derry Road West and Britannia Road West intersections.

The study intersections are forecast to operate similarly or better under the 2026, 2028, 2031 and 2036 horizons compared to the ultimate 2041 horizon.

5.0 Site Generated Traffic

The proposed development will result in additional vehicles on the boundary road network that would otherwise not exist. The proposed development will also result in additional turning movements at the study intersections.

5.1 Trip Generation

The trip generation forecast for the proposed development under this latest submission used published data from the latest Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. The ITE Trip Generation Manual is a compendium of industry collected trip generation data across North America for a variety of land uses and is used industry-wide as a source for trip generation forecasts.

The following Land Use Categories (LUC) were applied to the proposed development:

- LUC 210 "Single-Family Detached Housing" was applied to the rear-lane detached units;
- LUC 220 "Multifamily Housing (Low-Rise)" was applied to the townhouse and condominium duplex units; and
- LUC 222 "Multifamily Housing (High-Rise)" was applied to the high-density condominium apartment units.
- LUC 520 "Elementary School" was applied to the proposed elementary school.

Except for LUC 520, a fitted curve equation is provided for land use categories outlined above, and the number of data plot points exceeds 15 data points. Therefore, the average rate methodology was used to forecast school trips, while the fitted curve equation was used to forecast trip generation for the remaining land uses. These trip generation equations were applied by development phase to the development statistics outlined in **Section 2.2** to develop vehicle trip forecasts for each of future horizon considered in this study. In addition, 200 residential apartment dwelling units were assumed for the lot at the southwest corner of Ninth Line and Osprey Boulevard; this development yield is consistent with previous submissions of this study.

Through coordination with the Peel District School Board (PDSB) staff, it is estimated that the elementary school will have a capacity of 850 students. The catchment area for the school as confirmed with the PDSB staff is expected to include the entire north and south draft plans and the residential community west of Ninth Line. For the analysis herein, we have assumed that 50% of the school trips will be from the proposed draft plans, therefore, will be internal trips. The remaining 50% of the school's capacity is external and assumed to be from communities outside the Draft Plan area.

Table 19 outlines the trip generation for the proposed development by development phase.

Table 19: Trip Generation

South Phase (2026-2028)					
ITE Land Use Category	**Units**	**Peak Hour**	**Trips Generated**		
			Inbound	**Outbound**	**Total**
LUC 220 "Multifamily Housing (Low-Rise)"	498	A.M.	43	134	177
		P.M.	148	87	325
Total	**498**	**A.M.**	**43**	**134**	**177**
		P.M.	**148**	**87**	**325**
North Phase and Future Development (2031)					
ITE Land Use Category	**Units**	**Peak Hour**	**Trips Generated**		
			Inbound	**Outbound**	**Total**
LUC 222 "Multifamily Housing (High-Rise)"	200 [1]	A.M.	16	47	63
		P.M.	47	28	75
LUC 210 "Single-Family Detached Housing"	27	A.M.	6	17	23
		P.M.	18	11	29
LUC 220 "Multifamily Housing (Low-Rise)"	303	A.M.	28	89	117
		P.M.	95	56	151
LUC 222 "Multifamily Housing (High-Rise)"[1]	650 [2]	A.M.	46	134	180
		P.M.	134	82	216
LUC 520 "Elementary School"	425 Students (External)[3]	A.M.	170	145	315
		P.M.	31	37	68
Total	**1180**	**A.M.**	**266**	**432**	**698**
		P.M.	**325**	**214**	**539**
Full Build-Out (2031)					
ITE Land Use Category		**Peak Hour**	**Trips Generated**		
			Inbound	**Outbound**	**Total**
Entire Development Total		**A.M.**	**309**	**566**	**875**
		P.M.	**473**	**301**	**774**

Note 1: These units apply to the future residential development located at the southwest corner of Ninth Line and Osprey Boulevard / Street "A" (South).

Note 2: These units apply to the residential townhouse/apartments proposed in the northwest and southwest corners of Ninth Line and Doug Leavens Boulevard / Street "B".

Note 3: The school capacity as forecasted by Peel District School Board is 850 students with 50% assumed as generated within the Draft Plans.

The full build-out of the proposed development (including the school) and future lands is expected to generate a total of 875 and 774 total two-way trips during the weekday a.m. and p.m. peak hours, respectively.

5.2 Trip Distribution

The trips generated by the proposed development were distributed to the boundary road network based on 2016 Transportation Tomorrow Survey (TTS) data. TTS is a comprehensive survey of transportation characteristics of households in the Greater Toronto Area (GTA) and surrounding areas.

For the proposed development, TTS results were filtered to auto trips exiting 2006 GTA Zones 3615, 3616, 3809, 3810 and 3811 during the weekday a.m. peak period. These zones consist of the residential zones along the Ninth Line corridor, and thus were considered to be appropriate for trip distribution analysis. The row variable was set to "Planning District of Destination" and the column variable was set to "Use of 407" to quantify the number of trips travelling to each destination that use Highway 407 ETR.

From this query, trip destinations were determined, and percentage of trips assigned to each destination was accounted for. Trips were assumed to travel to and from their destination points based on the most convenient route, considering trips using Highway 407 ETR and trips not using Highway 407 ETR.

It was determined that approximately 65% of the total outbound trips exiting the study area during the weekday a.m. peak period are internal to Mississauga. Accordingly, trip distribution internal to Mississauga was determined using a combination of existing travel patterns, expected destinations, and TTS results for trips travelling within Planning District "Mississauga."

The MTO has requested that the Highway 401 ramp terminals at Winston Churchill Boulevard be analyzed. From the trip distribution analysis, it was assumed that approximately 30% of the site generated traffic would arrive from and depart to the east via Derry Road West. These trips are primarily assigned to and from Meadowvale West, the employment areas surrounding Highway 401, and Highway 401 (east). Trips accessing Highway 401(east) are primarily expected to do so at the Mississauga Road interchange via Derry Road West. However, for the purposes of conservative analysis, it was assumed that half of the 30% of trips to and from the east via Derry Road West would access Highway 401 via the Winston Churchill Boulevard interchange.

The resultant trip distribution is outlined in **Table 20.** The breakdown of trips arriving from and departing to the east via Derry Road West is outlined to quantify trips that are assumed to access Highway 401 via the Winston Churchill Boulevard interchange.

Table 20: Trip Distribution

Arriving From / Departing To	Percentage
Derry Road West (east)	**30%**
Meadowvale, Employment Areas, and Highway 401 (east) via Mississauga Road	*15%*
Highway 401 (east) via Winston Churchill Boulevard	*15%*
Derry Road West (west)	**5%**
Ninth Line (north)	**10%**
Ninth Line (south)	**30%**
Highway 407 (north)	**10%**
Highway 407 (south)	**5%**
Britannia Road West (east)	**5%**
Doug Leavens Boulevard (east)	**5%**
Total	**100%**

Figures 14 and 15 outline the trip distribution for both the south and north development phases, respectively. The trips associated with the Condominium Block 5 future development and the future southern apartment development assumed the north and south development phases' trip distributions, respectively. The trip distributions for the external school trips was determined separately and is presented in **Figure 16**. The TTS data is included in **Appendix J**.

5.3 Trip Assignment

The trip distribution outlined in **Section 5.2** was applied to the site trip generation to calculate the trip assignment for both Draft Plans. Trips were assumed to travel to and from their destination points based on the most convenient route.

Figure 17 outlines the trip assignment for the first phase (southern development only). **Figure 18** outlines the trip assignment for the future southern residential apartment development adjacent to Street A (south connection to Ninth Line). **Figure 19** outlines the trip assignment for the second phase (northern development), including the future Block 5 Condominium units. **Figure 20** describes the external school trip assignment. The full build-out trip assignment is provided in **Figure 21**, which is a summation of **Figures 17-20**.

6.0 Future Total Conditions

6.1 Basis of Assessment

The site generated traffic volumes for the first southern development phase, in **Figure 17,** were added to the 2026 and 2028 future background traffic volumes in **Figures 9 and 10**, respectively, to determine 2026 and 2028 future total traffic volumes, respectively. **Figure 22** illustrates the 2026 future total traffic volumes, while **Figure 23** illustrates the 2028 future total traffic volumes.

The site generated traffic volumes for the full buildout, as illustrated in **Figure 21,** were added to the 2031, 2036 and 2041 future background traffic volumes in **Figures 11-13** to determine 2031, 2036 and 2041 future total traffic volumes. **Figures 24, 25, and 26** illustrate the 2031, 2036 and 2041 future total traffic volumes, respectively.

6.2 Signal Warrant Analysis

A signal warrant analysis was conducted for the unsignalized Street "A" North site access to Ninth Line) under 2041 future total conditions. The analysis followed the procedures specified in Chapter 4 of the "Ontario Traffic Manual – Book 12", March 2012. Justifications 1 (Minimum Vehicular Volume), 2 (Delay to Cross Traffic), 3 (Combination of Justifications 1 and 2), 4 (4-Hour Volume), and 5 (Collision Experience) were selected as the most appropriate warrants with which to assess the site connections. Signal warrants were not evaluated at the Doug Leavens Boulevard / Street "B" and the Osprey Boulevard / Street "A" site access intersections with Ninth Line as there are existing signals at these locations and these locations are planned to remain signalized in the future as part of the Ninth Line road widening project.

The average hour volume was determined using the following formula from OTM Book 12:

AHV = (amPHV + pmPHV) / 4

Where;

AHV = average hour volume
PHV = peak hour volume

Despite the existing speed limit of 70 km/h on Ninth Line being considered "free flow" in the signal warrant analysis, an "urban" operating environment was applied to the signal warrant analysis to reflect the future urbanization of Ninth Line and surrounding future developments.

The City has previously provided the following comments on the signal warrant analysis and were incorporated accordingly:

- The warrant analysis should include through traffic on the side streets;
- The warrant analysis should include pedestrian volumes crossing Ninth Line given the schools in the existing residential neighbourhood east of Ninth Line; and
- The warrant analysis should include collision frequency for collisions susceptible to correction by a traffic signal.

Given that the sole signal warrant evaluation required under the latest plans of the development proposal is for a three-legged intersection, through traffic from side streets is not required for the signal warrant evaluation herein.

6.2.1. Pedestrian Volumes

To account for pedestrian volumes crossing Ninth Line at the proposed site accesses, person trips were forecasted using published data from the ITE Trip Generation Manual, 11th Edition. The Land Use Categories and unit yields used for trip generation in **Section 5.1** were applied herein to calculate person trip generation herein, apart from the 27 rear lane detached dwelling units that were evaluated under LUC 210 – Single-Family Detached Housing for vehicle trip generation. Given a person trip generation option is not available for this land use category in the 11th Edition of the ITE Trip Generation Manual, LUC 220 was applied to these units instead.

Per the ITE Trip Generation Handbook, 3rd Edition, person trips include trips made by all modes of transportation. Therefore, to calculate pedestrian trips, the combined pedestrian and transit modal

split of approximately 25% in the study area (as outlined in the TDM plan prepared by Crozier in June 2019) was applied to the forecasted person trips.

Table 21 outlines the pedestrian trip generation for the full buildout of the Draft Plan.

Table 21: Pedestrian Trip Generation

Unit Yield	**Trip Generation / Land Use**		
828 dwelling units	**LUC 220 – Multifamily Housing (Low-Rise)**		
Peak Hour	**Trips Generated**		
	Inbound	**Outbound**	**Total**
A.M.	17	62	79
P.M.	71	41	112
850 dwelling units	**LUC 222 – Multifamily Housing (High-Rise)**		
Peak Hour	**Trips Generated**		
	Inbound	**Outbound**	**Total**
A.M.	18	54	72
P.M.	65	33	88
850 students	**LUC 520 – Elementary School[1]**		
Peak Hour	**Trips Generated**		
	Inbound	**Outbound**	**Total**
A.M.	71	61	132
P.M.	32	38	70
1678 dwelling units & 850 students	**Full Draft Plan Buildout**		
Peak Hour	**Trips Generated**		
	Inbound	**Outbound**	**Total**
A.M.	**106**	**177**	**283**
P.M.	**168**	**112**	**280**

Note 1: Person trips for the elementary school were calculated by adding vehicle trips from **Section 5.1** to the a.m. peak hour "Walk+Bike+Transit" trip type option In ITE for both peak hours in place of person trips which were not available for LUC 520. The same directional distribution from vehicle trip generation was applied to the "Walk+Bike+Transit" trips.

Pedestrian trips were distributed to the site accesses based on the location of the site accesses relative to the densities of the proposed development and at the locations of available pedestrian crossing at the signalized intersections of Street "B" and Street "A" (South) with Ninth Line and at the midblock pedestrian signal planned as part of the Ninth Line road widening project near Cordingley Park.

The analysis is conservative as it assumes that all pedestrians generated by the development would actually cross Ninth Line whereas not all pedestrians are expected to cross the roadway. For example, pedestrians travelling to and from the future transitway stations on Derry Road or Britannia Road would not need to cross to the east side of Ninth Line.

Appendix K contains the pedestrian volume analysis.

6.2.2. Collision Analysis

The City provided Crozier with historical collision data on Ninth Line between Beacham Street and Foxwood Avenue from 2015-2019 (included in **Appendix L**). Per Justification 5 (Collision Experience) from OTM Book 12, traffic signals are warranted if the frequency of reportable collisions that are susceptible to correction by a traffic signal (i.e., turning movement and angle collisions) meets the minimum warrant value of 15 over a consecutive three-year period.

The intersections and roadway segments at or near the proposed unsignalized site accesses were analyzed for collision frequency. These locations include:

- Ninth Line and Beacham Street
- Ninth Line between Beacham Street and Doug Leavens Boulevard
- Ninth Line between Doug Leavens Boulevard and Foxwood Avenue
- Ninth Line and Foxwood Avenue
- Ninth Line between Foxwood Avenue and Osprey Boulevard

Table 22 outlines the total collision frequency from 2015-2019 at each location listed above, as well as the frequency of collisions susceptible to correction by a traffic signal.

Table 22: Collision Analysis (2015-2019)

Location	Collision Frequency (Total)	Collision Frequency (Susceptible to correction by a traffic signal) [1]	OTM Threshold Satisfied?
Ninth Line and Beacham Street	1	0	No
Ninth Line between Beacham Street and Doug Leavens Boulevard	1	0	No
Ninth Line between Doug Leavens Boulevard and Foxwood Avenue	8	0	No
Ninth Line and Foxwood Avenue	1	1	No
Ninth Line between Foxwood Avenue and Osprey Boulevard	3	0	No

Note 1: These collisions include turning movement and angle collisions.

A review of the historical collision data on Ninth Line at the proposed site accesses indicates a minimal number of collisions over the last five years near the subject site. Further, only one collision that is susceptible to correction by a traffic signal was identified. This collision frequency does not meet the minimum OTM threshold for traffic signal installation.

Therefore, traffic signals are not warranted at the unsignalized site access per Justification 5.

6.2.3. Signal Warrant Analysis Results

Table 23 outlines the results of the signal warrant analysis.

Table 23: Signal Warrant Analysis Results

Location	Operating Environment	Horizon Year	Number of lanes on major road	Traffic Signals Warranted?
Street "A" (North) and Ninth Line	Urban	2041 Future Total	Four	No

The results of the signal warrant analysis indicate that traffic signals are not warranted at the proposed Street "A" (north) connection to Ninth Line. **Appendix M** contains the signal warrant sheets.

6.3 Auxiliary Left-Turn Lane Analysis – Unsignalized Intersections

Given the Street A (North) connection to Ninth Line is now proposed as a right-in right-out and no vehicular roadway connection to Ninth Line opposite Foxwood Avenue is proposed, no auxiliary left turn storage lanes are required from Ninth Line at the unsignalized intersection. Therefore, no left-turn lane warrants have been conducted for unsignalized intersections.

6.4 Auxiliary Left-Turn Lane Analysis – Signalized Intersections

Ultimate auxiliary northbound left-turn lane requirements were analyzed at the proposed site connections to the signalized intersections on Ninth Line at Doug Leavens Boulevard and Osprey Boulevard.

Analysis of 95th percentile queue lengths under the ultimate 2041 future conditions scenario for the northbound left-turn movement at the aforementioned intersections under 2041 future total conditions indicates that a northbound left-turn lane with designated storage lengths of 30 metres and 15 metres should be sufficient to accommodate left-turn lane requirements at the Doug Leavens Boulevard / Street "B" and Osprey Boulevard / Street "A" intersections with Ninth Line, respectively.

The northbound left-turn lanes must provide a taper length between 85-95 metres and a deceleration length of 95 metres per TAC GDGCR or a minimum of 80 metres taper per the City of Mississauga standard drawing #2211.200. Based on a review Appendix M of the Ninth Line Environmental Study Report design plates, there is adequate space to provide the required northbound left-turn storage lanes at both noted intersections. Therefore, it is recommended that auxiliary northbound left-turn storage lanes of lengths 30m and 15m or longer be implemented at the Osprey Boulevard / Street "A" and Doug Leavens Boulevard / Street "B" intersections with Ninth Line, respectively, as part of the Ninth Line. Taper lengths can be finalized when detailed design is pursued for the project.

Auxiliary northbound left-turn lane requirements were also analyzed at the Doug Leavens Boulevard / Street "B" and the Osprey Boulevard / Street "A" intersections with Ninth Line under 2026 future total conditions assuming the existing two-lane cross-section on Ninth Line. This analysis was conducted to determine northbound left-turn lane requirements on Ninth Line at Doug Leavens Boulevard prior to the road widening. It was determined that a northbound left-turn lane with a designated storage length of 15 metres should be sufficient to accommodate left-turn lane requirements at both intersections. These auxiliary storage lanes can be provided by repurposing the existing runout lane at the south approach of Ninth Line at Doug Leavens Boulevard via pavement marking revisions, and by changing the pavement markings of the current two-way left-turn lane to an exclusive northbound left-turn lane at Osprey Boulevard / Street "A". Therefore, it is recommended that 15m northbound left-turn storage lanes be implemented at both signalized intersections in the interim prior to Ninth Line

widening. No road widenings are required under 2026 future total conditions in the interim scenario, rather, pavement marking revisions to the existing roadway shall suffice.

6.5 Right-Turn Lane Warrant Analysis

Auxiliary right-turn lane warrant analysis was conducted at the proposed site connections to Ninth Line under 2041 future total conditions. As the proposed site accesses will be located on the west side Ninth Line, the southbound right-turn movements were analyzed for right-turn lane requirements.

Per the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GFGCR), June 2017, a right-turn auxiliary lane on an urban or rural road should be implemented at unsignalized intersections when the volume of decelerating or accelerating vehicles compared with the through traffic volume causes undue hazard as well as operational issues to the intersection's capacity.

Table 24 summarizes the right-turn lane warrant evaluation at the four site access connections to Ninth Line. While the warrant is intended for unsignalized intersections, the formula was nevertheless applied at the signalized access connections to inform on whether right-turn storage lanes should be explored at these intersections, which is appropriate given that right-turns will be permitted the entire time, similar to the unsignalized situation, given that right-turns are expected to be permitted on red signal indications.

Table 24: Right-Turn Lane Warrant Analysis Results – 2041 Future Total

Intersection	Movement	Peak Hour Volume[1] (veh/hr)	Right-Turn Storage Lane?
Ninth Line and Street "A" (RIRO)	SBR	88	Maybe
Ninth Line and Doug Leavens Boulevard / Street "B"	SBR	112	Maybe
Ninth Line and Osprey Boulevard / Street "A"	SBR	53	No

Note 1: Peak Hour Volume refers to highest of the a.m. and p.m. peak hour volumes projected for the movement.

Based on the right-turn volumes above, the volume threshold of 60 vehicles is exceeded at the intersections of Ninth Line and Street "A" and Ninth Line and Doug Leavens Boulevard / Street "B". Therefore, right-turn lanes can be considered at these locations, dependent on operational issues.

However, the traffic operational analysis results (discussed in **Section 6.7**), which modelled both the Street "A" and Doug Leavens Boulevard / Street "B" intersections at Ninth Line without southbound right-turn lanes. Traffic operations under the ultimate 2041 future total conditions scenario are projected to be acceptable under this configuration, at a LOS "C" or better during the peak hours with no movements exceeding the critical volume-to-capacity thresholds. Furthermore, the transportation report associated with the Ninth Line EA focused on accommodating traffic operations with respect to determining need for right-turn storage lanes, and also may not have included right-turn storage lanes where right-of-way constraints did not permit their inclusion. As an example, a right-turn lane is not included in the Ninth Line EA preferred design for the northbound right-turn movement

at the Ninth Line and Doug Leavens Boulevard intersection, despite the movement possessing a maximum peak hour volume projection of 136 vehicles per hour (142 in this study), which is higher than any of the development attributable right-turn movements. Similarly, no northbound right-turn lane is included in the Ninth Line EA design at Ninth Line and Britannia Road, although unlike the Doug Leavens Boulevard example, right-of-way constraints may prevent the implementation of a right-turn storage without impacting the other planned infrastructure for the corridor, including bus stops, cycling tracks and sidewalks.

Therefore, based on the above discussion and similar to the findings of the Ninth Line EA, southbound right turn lanes at the connections are not required, but the improvement may be considered by the City as desired.

In addition, right-turn warrants were checked for the 2026 future total scenario to understand requirements prior to Ninth Line widening. A maximum of 43 vehicles have been projected in any of the peak hours for each of the southbound right-turn movements into the site. Therefore, no right-turn lane improvements are required in the interim before Ninth Line widening.

Should southbound right-turn lanes be pursued, the southbound right-turn lane is also required to provide a deceleration lane and taper. Per Chapter 10 of the TAC GDGCR for a design speed of 90 km/h, the auxiliary southbound right-turn lane must provide a taper of 80 metres and a deceleration lane ranging from 150-195 metres to allow vehicles to decelerate from operating speed to a stop condition. The City of Mississauga standard drawing however indicates provision of a minimum 80 metres taper. A final determination on taper and deceleration lane length can be made during the detailed design of the Ninth Line widening project.

6.6 Site Access Configuration

The proposed site connections to Ninth Line at the existing signalized intersections of Doug Leavens Boulevard and Osprey Boulevard should mirror the cross-section of the existing roadways. Therefore, at both intersections, provision of one outbound left-turn storage lane and one outbound through/right-turn lane on site connections (Street "B" and Street "A" South) is recommended. The necessary storage lengths for the eastbound left-turn lanes were determined based on 95th percentile queuing results of the traffic operational analysis in **Section 6.7**. A maximum 95th percentile queue of 76.3m and 13.3m was recorded for the eastbound left-turn movement for Street "B" and Street "A" South, respectively. Therefore, it is recommended that a minimum of 80m and 30m of storage be provided for the eastbound left-turn movements at Street "B" and the southern Street "A" connections to Ninth Line, respectively.

Furthermore, one inbound and one outbound lane is adequate for the stop-controlled, right-in right-out intersection of Street "A" (North) and Ninth Line.

Under an earlier version of the Draft Plan, a configuration with four site accesses was planned, including an access opposite Foxwood Avenue, which has now been removed. The rational for eliminating this access was described in the Draft Plan Roadway Changes letter (Crozier; March 1, 2023), and can be summarized per the following:

- Immaterial Impact on Traffic Operations: No material change in Level of Service in the boundary road network is projected (refer to **Section 6.7**). Development triggered improvements at the three other accesses remain the same with or without the access opposite Foxwood Avenue.

- Improvement on Operational Safety: Elimination of the access promotes traffic flow on Ninth Line corridor, and diverts vehicle to signalized intersection where conflict between vehicles and other vehicles, cyclists and pedestrians can be controlled.
- Maintains Transit / Active Transportation connectivity: Improved walking and cycling experience with the replacement of road to a sidewalk connection to Ninth Line. Transit infrastructure is not affected by the change.
- Consistent with Shaping Ninth Line Guidelines: Change promotes goals of pedestrian supportive streets, inclusion of mid-block connections.

The auxiliary turn lane conceptual drawings provided in **Appendix N** also illustrate the recommended configurations of the proposed site connections to Ninth Line.

6.7 Intersection Operations

Tables 25-29 outline the 2026, 2028, 2031. 2036 and 2041 future total traffic operations. **Table 30** outlines the 2041 future total traffic operations with additional background improvements (Derry Road West and Britannia Road West widening within the City of Mississauga). Detailed capacity analysis worksheets are included in **Appendix F**.

Table 25: 2026 Future Total Traffic Operations (Pre-Widening of Ninth Line)

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and Ninth Line	Signal	A.M.	F	99.6 s	1.24 (NBL) 1.19 (SBT) 1.19 (EBT)	133.7 m > 50.0 m (NBL)
		P.M.	E	61.9 s	0.98 (NBT) 0.94 (EBT) 0.92 (EBL) 0.90 (WBT)	87.7 m > 60.0 m (EBL) 70.0 m > 60.0 m (WBL) 82.5 m > 50.0 m (NBL) 55.4 m > 55.0 m (SBL)
Ninth Line and Street "A"/ Osprey Boulevard	Signal	A.M.	B	14.8 s	0.70 (WBL)	48.0 m > 15.0 m (WBL)
		P.M.	B	14.3 s	0.73 (NBT)	27.6 m > 15.0 m (WBL)
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	D	26.5 s	0.55 (NB)	None
		P.M.	C	23.4 s	0.60 (NB)	None
Ninth Line and Street "B"/Doug Leavens Boulevard	Signal	A.M.	B	19.6 s	0.82 (NBT)	None
		P.M.	B	16.2 s	0.71 (SBT)	None
Derry Road West and Ninth Line	Signal	A.M.	D	54.1 s	1.00 (NBL) 0.96 (SBT) 0.95 (EBT)	83.3 m > 80.0 m (WBL) 136.3 m > 110.0 m (NBL)
		P.M.	E	59.5 s	1.01 (WBT) 1.00 (NBT)	108.9 m > 75.0 m (EBL) 85.2 m > 80.0 m (WBL) 61.9 m > 60.0 m (SBL)

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2000).

*Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection where the maximum v/c ratio does not exceed the critical thresholds. All v/c ratios that exceed the critical thresholds outlined in **Section 3.7.3** are outlined and highlighted.*

Note 3: 95th percentile queue lengths which exceed the designated storage length of the turn lane but can be accommodated by a centre turn lane were not documented in this table.

Table 26: 2028 Future Total Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and 407 South Ramp Terminal	Signal	A.M.	C	28.2 s	0.90 (SBL)	None
		P.M.	C	23.7 s	0.87 (SBL)	None
Britannia Road West and 407 North Ramp Terminal	Signal	A.M.	B	15.0 s	0.82 (NBR)	87.9 m > 70 m (NBR)
		P.M.	A	6.1 s	0.61 (NBR)	None
Britannia Road West and Ninth Line	Signal	A.M.	D	53.8 s	1.08 (NBL) 0.92 (SBT)	63.9 m > 60.0 m (EBR) 118.0 m > 75.0 m (NBL)
		P.M.	D	43.4 s	0.92 (NBT)	None
Ninth Line and Street "A"/ Osprey Boulevard	Signal	A.M.	B	11.0 s	0.63 (WBL)	40.3 m > 15.0 m (WBL)
		P.M.	A	8.9 s	0.51 (WBL)	27.8 m > 15.0 m (WBL)
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	B	14.9 s	0.40 (NB)	None
		P.M.	C	15.6 s	0.43 (NB)	None
Ninth Line and Street "B"/Doug Leavens Boulevard	Signal	A.M.	B	13.4 s	0.54 (NBT)	None
		P.M.	B	11.8 s	0.60 (WBL)	None
Derry Road West and Ninth Line	Signal	A.M.	D	41.7 s	0.88 (SBT)	54.8 m > 40.0 m (NBR)
		P.M.	D	45.6 s	0.99 (EBL) 0.91 (WBT)	110.6 m > 75.0 m (EBL) 55.4 m > 40.0 m (NBR)
Derry Road West and 407 North Ramp Terminal	Signal	A.M.	B	10.1 s	0.76 (NBR)	None
		P.M.	A	8.1 s	0.71 (NBR)	None
Derry Road West and 407 South Ramp Terminal	Signal	A.M.	A	5.2 s	0.66 (EBT)	None
		P.M.	C	30.7 s	0.92 (SBR)	180.3 m > 120 m (SBR)
Winston Churchill Boulevard and 401 East Ramp Terminal	Signal	A.M.	B	16.4 s	0.66 (EBL)	None
		P.M.	B	17.9 s	0.72 (EBL)	None
Winston Churchill Boulevard and 401 West Ramp Terminal	Signal	A.M.	B	15.6 s	0.70 (WBL)	None
		P.M.	C	31.8 s	0.84 (WBL)	None

Ditto Notes **Table 26**.

Table 27: 2031 Future Total Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and 407 South Ramp Terminal	Signal	A.M.	C	28.6 s	0.91 (SBL)	None
		P.M.	C	25.0 s	0.88 (SBL)	None
Britannia Road West and 407 North Ramp Terminal	Signal	A.M.	B	17.4 s	0.83 (NBR)	99.9 m > 70 m (NBR)
		P.M.	A	7.7 s	0.72 (NBR)	None
Britannia Road West and Ninth Line	Signal	A.M.	E	75.1 s	1.12 (NBL) 1.09 (SBT) 0.95 (NBT) 0.90 (EBT)	69.9 m > 60.0 m (EBR) 123.2 m > 75.0 m (NBL)
		P.M.	E	68.9 s	1.12 (EBL) 1.11 (NBT) 1.09 (SBL) 0.93 (SBT)	109.1 m > 60.0 m (EBL) 108.2 m > 75.0 m (NBL)
Ninth Line and Street "A"/ Osprey Boulevard	Signal	A.M.	B	14.1 s	0.65 (WBL)	41.7 m > 15.0 m (WBL)
		P.M.	B	11.7 s	0.65 (SBT)	28.3 m > 15.0 m (WBL)
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	C	18.4 s	0.55 (NB)	None
		P.M.	C	19.3 s	0.55 (NB)	None
Ninth Line and Street "B"/Doug Leavens Boulevard	Signal	A.M.	C	28.9 s	0.94 (EBL)	None
		P.M.	B	18.1 s	0.77 (SBT)	None
Ninth Line and Street "A" North	Stop (Minor)	A.M.	B	12.7 s	0.50 (NB)	None
		P.M.	C	18.9 s	0.70 (SB)	None
Derry Road West and Ninth Line	Signal	A.M.	E	65.2 s	1.08 (NBL) 1.04 (WBL) 0.99 (SBT)	134.5 m > 75.0 m (EBL) 114.7 m > 80.0 m (WBL) 116.7 m > 40.0 m (NBR)
		P.M.	E	75.3 s	1.19 (SBL) 1.10 (EBL) 1.09 (SBT) 1.09 (NBL) 1.06 (NBT) 1.01 (WBT)	123.6 m > 75.0 m (EBL) 60.6 m > 45.0 m (EBR) 97.9 m > 80.0 m (WBL) 92.0 m > 40.0 m (NBR) 159.5 m > 60.0 m (SBL)
Derry Road West and 407 North Ramp Terminal	Signal	A.M.	B	12.4 s	0.77 (NBR)	None
		P.M.	B	10.7 s	0.77 (NBR)	None
Derry Road West and 407 South Ramp Terminal	Signal	A.M.	A	6.9 s	0.76 (EBT)	None
		P.M.	D	38.6 s	0.94 (SBR) 0.88 (WBT)	202.3 m > 120 m (SBR)
Winston Churchill Boulevard and 401 East Ramp Terminal	Signal	A.M.	B	17.4 s	0.67 (EBL)	None
		P.M.	B	19.3 s	0.73 (EBL)	None
Winston Churchill Boulevard and 401 West Ramp Terminal	Signal	A.M.	B	17.8 s	0.72 (WBL) 0.72 (WBR)	None
		P.M.	D	35.3 s	0.90 (WBL) 0.75 (WBR)	None

Ditto Notes **Table 26**.

Table 28: 2036 Future Total Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and 407 South Ramp Terminal	Signal	A.M.	C	29.6 s	0.91 (SBL)	None
		P.M.	C	27.0 s	0.88 (SBL)	None
Britannia Road West and 407 North Ramp Terminal	Signal	A.M.	C	21.2 s	0.86 (NBR) 0.75 (EBT)	115.2 m > 70 m (NBR)
		P.M.	A	9.5 s	0.77 (NBR)	None
Britannia Road West and Ninth Line	Signal	A.M.	F	80.1 s	1.15 (NBL) 1.11 (SBT) 1.00 (EBT) 0.97 (NBT)	75.8 m > 60.0 m (EBR) 128.2 m > 75.0 m (NBL)
		P.M.	E	74.8 s	1.23 (EBL) 1.13 (NBT) 1.10 (SBL) 1.00 (NBL) 0.97 (SBT) 0.91 (WBT)	119.8 m > 60.0 m (EBL) 112.4 m > 75.0 m (NBL)
Ninth Line and Street "A"/ Osprey Boulevard	Signal	A.M.	B	14.5 s	0.65 (WBL)	42.6 m > 15.0 m (WBL)
		P.M.	B	12.1 s	0.67 (SBT)	29.0 m > 15.0 m (WBL)
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	C	18.8 s	0.56 (NB)	None
		P.M.	C	19.8 s	0.56 (NB)	None
Ninth Line and Street "B"/Doug Leavens Boulevard	Signal	A.M.	C	29.5 s	0.95 (EBL)	None
		P.M.	B	18.7 s	0.79 (SBT)	None
Ninth Line and Street "A" North	Stop (Minor)	A.M.	B	12.9 s	0.51 (NB)	None
		P.M.	C	19.5 s	0.72 (SB)	None
Derry Road West and Ninth Line	Signal	A.M.	E	76.2 s	1.10 (NBL) 1.06 (WBL) 1.01 (SBT) 0.93 (EBT) 0.91 (NBT)	156.4 m > 75.0 m (EBL) 116.9 m > 80.0 m (WBL) 119.1 m > 40.0 m (NBR)
		P.M.	F	84.6 s	1.20 (SBL) 1.12 (EBL) 1.12 (SBT) 1.11 (NBL) 1.08 (NBT) 1.07 (WBT)	126.3 m > 75.0 m (EBL) 65.4 m > 45.0 m (EBR) 114.8 m > 80.0 m (WBL) 93.7 m > 40.0 m (NBR) 160.9 m > 60.0 m (SBL) 90.6 m > 90.0 m (SBR)
Derry Road West and 407 North Ramp Terminal	Signal	A.M.	B	15.2 s	0.79 (NBR)	None
		P.M.	B	14.6 s	0.81 (NBR)	None
Derry Road West and 407 South Ramp Terminal	Signal	A.M.	A	8.5 s	0.83 (EBT)	None
		P.M.	E	61.2 s	0.98 (SBR) 0.97 (WBT)	237.5 m > 120 m (SBR)
Winston Churchill Boulevard and 401 East Ramp Terminal	Signal	A.M.	B	19.3 s	0.68 (EBR)	None
		P.M.	C	22.0 s	0.75 (EBL)	None
Winston Churchill Boulevard and 401 West Ramp Terminal	Signal	A.M.	C	20.1 s	0.75 (WBR)	None
		P.M.	D	41.8 s	0.97 (WBL) 0.88 (NBT) 0.82 (WBR)	None

Ditto Notes **Table 26**.

Table 29: 2041 Future Total Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West and 407 South Ramp Terminal	Signal	A.M.	C	31.7 s	0.91 (SBL)	None
		P.M.	C	29.8 s	0.89 (SBL)	None
Britannia Road West and 407 North Ramp Terminal	Signal	A.M.	C	29.7 s	0.89 (NBR) 0.86 (EBT)	136.8 m > 70.0 m (NBR)
		P.M.	B	12.1 s	0.80 (NBR)	None
Britannia Road West and Ninth Line	Signal	A.M.	F	84.5 s	1.18 (NBL) 1.13 (EBT) 1.13 (SBT) 0.99 (NBT)	81.3 m > 60.0 m (EBR) 131.7 m > 75.0 m (NBL)
		P.M.	F	82.9 s	1.25 (EBL) 1.16 (NBT) 1.10 (SBL) 1.02 (NBL) 1.02 (WBT) 1.00 (SBT)	122.8 m > 60.0 m (EBL) 115.2 m > 75.0 m (NBL)
Ninth Line and Street "A"/ Osprey Boulevard	Signal	A.M.	B	14.8 s	0.66 (WBL)	43.4 m > 15.0 m (WBL)
		P.M.	B	12.5 s	0.69 (SBT)	29.5 m > 15.0 m (WBL)
Ninth Line and Foxwood Avenue	Stop (Minor)	A.M.	C	19.4 s	0.57 (NB)	None
		P.M.	C	20.6 s	0.57 (NB)	None
Ninth Line and Street "B"/Doug Leavens Boulevard	Signal	A.M.	C	30.2 s	0.96 (NBT)	None
		P.M.	B	19.3 s	0.81 (SBT)	None
Ninth Line and Street "A" North	Stop (Minor)	A.M.	B	13.0 s	0.52 (NB)	None
		P.M.	C	20.1 s	0.74 (SB)	None
Derry Road West and Ninth Line	Signal	A.M.	F	80.6 s	1.12 (NBL) 1.07 (WBL) 1.03 (SBT) 1.03 (EBT) 0.99 (EBL) 0.92 (NBT) 0.91 (WBT)	169.6 m > 75.0 m (EBL) 113.5 m > 80.0 m (WBL) 117.1 m > 40.0 m (NBR)
		P.M.	F	96.6 s	1.20 (SBL) 1.15 (EBL) 1.15 (WBT) 1.14 (SBT) 1.13 (NBL) 1.10 (NBT)	128.7 m > 75.0 m (EBL) 70.8 m > 45.0 m (EBR) 144.1 m > 80.0 m (WBL) 96.3 m > 40.0 m (NBR) 161.6 m > 60.0 m (SBL) 94.3 m > 90.0 m (SBR)
Derry Road West and 407 North Ramp Terminal	Signal	A.M.	B	19.0 s	0.83 (NBR) 0.80 (EBT)	None
		P.M.	C	22.9 s	0.85 (NBR) 0.82 (WBT)	311.8 m > 210.0 m (NBL)
Derry Road West and 407 South Ramp Terminal	Signal	A.M.	B	11.9 s	0.91 (EBT)	None
		P.M.	E	68.7 s	1.09 (SBR) 1.03 (WBT)	276.2 m > 120.0 m (SBR)
Winston Churchill Boulevard and 401 East Ramp Terminal	Signal	A.M.	C	21.4 s	0.71 (EBR)	None
		P.M.	C	25.2 s	0.78 (EBL)	None
Winston Churchill Boulevard and 401 West Ramp Terminal	Signal	A.M.	C	22.9 s	0.76 (WBR)	None
		P.M.	E	59.1 s	1.06 (WBL) 1.03 (NBT) 0.91 (WBR)	None

Ditto Notes **Table 26**.

Table 30: 2041 Future Total Traffic Operations – Additional Improvements

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Britannia Road West (Widened) and Ninth Line	Signal	A.M.	E	61.2s	0.99 (SBT) 0.95 (NBL) 0.94 (EBT)	82.5m > 60.0m (EBR) 115.8m > 75.0m (NBL)
		P.M.	E	60.5s	1.00 (NBT) 0.97 (WBT) 0.96 (SBL) 0.95 (EBL) 0.88 (NBL) 0.87 (SBT)	106.2m > 60.0m (EBL) 95.9m > 75.0m (NBL)
Derry Road West and Ninth Line	Signal	A.M.	D	54.1s	0.93 (EBL) 0.92 (NBL) 0.91 (SBT) 0.91 (WBL) 0.86 (EBT)	152.1m > 75.0m (EBL) 103.8m > 80.0m (WBL) 107.3m > 40.0m (NBR)
		P.M.	E	61.5s	0.99 (SBL) 0.98 (WBT) 0.97 (SBT) 0.94 (EBL) 0.93 (NBT) 0.92 (NBL) 0.89 (WBL)	114.5m > 75.0m (EBL) 69.2m > 45.0m (EBR) 131.0m > 80.0m (WBL) 89.4m > 40.0m (NBR) 143.8m > 60.0m (SBL)

Ditto Notes **Table 26**.

As presented in **Table 29**, the following intersections are expected to operate with some turning movements near or at capacity during the weekday a.m. and p.m. peak hours under 2041 future total conditions:

- Britannia Road West and 407 South Ramp Terminal
- Britannia Road West and 407 North Ramp Terminal
- Britannia Road West and Ninth Line
- Derry Road West and Ninth Line
- Derry Road West and 407 North Ramp Terminal
- Derry Road West and 407 South Ramp Terminal
- Winston Churchill Boulevard and 401 East Ramp Terminal
- Winston Churchill Boulevard and 401 West Ramp Terminal

The above noted intersections are expected to operate with some movements exceeding critical volume-to-capacity thresholds, with the 95th percentile queue lengths for turning movements exceeding their designated storage length. These operations are consistent with 2041 future background conditions and are attributed to the high volumes forecasted on the Derry Road West and Britannia Road West corridors under 2041 future conditions.

The intersection of Britannia Road West and Ninth Line is expected to change from LOS "F" to "F" under future total conditions during both weekday a.m. and p.m. peak hours. However, the forecasted increase in intersection control delay at this intersection attributed to site traffic is 9.5 and 13.4 seconds during the weekday a.m. and p.m. peak hours, respectively. These impacts are considered to be relatively minor. The forecasted future operations with or without the subject development is common for high volume major arterial intersections during peak commuter hours

and operations are expected to be better outside the peak hours.
The intersection of Derry Road West and Ninth Line is projected to operate similarly to 2041 future background condition at a LOS "F" and "F" during the weekday a.m. and p.m. peak hours, respectively, with a maximum intersection control delay of 96.6 seconds and volume-to-capacity ratio of 1.20 in the p.m. peak hour. Compared to the 2041 future background condition, the addition of site trips from the proposed development amounts to an increase of 7.1 seconds for intersection control delay and no increase in maximum volume to capacity ratio.

Though the left and right turn queues are forecasted to exceed the turn lane storages at the intersections of Ninth Line with Derry Road West and Britannia Road West, the forecasted 95th percentile queue lengths for most of the turning movements are expected to be accommodated by the taper lengths and two-way centre turn-lane extensions from these turn lanes, and thus have impact on through traffic, similar to the future background conditions.

The impacts of site generated traffic at the Highway 401 and 407 ramp terminals are minimal, with a maximum forecasted increase in intersection control delay of 2.6 second or lower compared to 2041 future background conditions. The forecasted 95th percentile queue lengths for the off-ramp approaches at the Highway 401 and 407 ramp terminals will not extend to the freeway segments of Highway 401 and 407 as the off-ramp lengths are 500 metres or longer.

The signalized intersections of Ninth Line with Doug Leavens Boulevard and Osprey Boulevard are expected to operate at LOS "C" or better under the 2041 future total conditions with minor control delays. These operations indicate that the proposed site access (local road) connections to these existing intersections are not expected to significantly impact traffic operations.

The remaining site access connections to Ninth Line are expected to operate acceptably at LOS "C" or better under 2041 future total conditions with minor control delays and no movements operating near the critical volume-to-capacity ratios. Therefore, the proposed three connections can accommodate all site traffic without the Foxwood Drive connection proposed as part of the previous TIS submissions.

Similar to the findings and recommendations of the MMM study, the operations described above indicate that the widening of Derry Road West and Britannia Road West are required and should be considered by the City of Mississauga given it is a background issue. The results of the operational analysis testing this scenario in **Table 30** confirm that operations improve to more acceptable levels under 2041 future total conditions and similar can be expected.

Overall, the boundary road network is forecast to accommodate traffic demands under the ultimate 2041 study horizon. The boundary road network is expected to operate similarly or better under the 2026, 2028, 2031 and 2036 horizon years. Further, as highlighted by **Tables 13 and 25**, the existing roadway can accommodate the Phase 1 residential development should that portion be completed by 2026 without the Ninth Line widening in place.

Based on the analysis herein, the proposed development is not expected to significantly alter the traffic operations of the study intersections. The proposed development can be supported from a traffic operations perspective.

6.8 Sensitivity Analysis – No Street "A" (North) Access

As requested by the City of Mississauga, due to the uncertain timing of the proponent acquiring the MTO owned parcel of land containing the Street A (North) connection to Ninth Line, this sensitivity traffic analysis was conducted. This sensitivity analysis considers whether the two signalized access connections to Ninth Line can adequately service the development proposal if the Street "A" (North) access connection is not built.

Per the proponent construction plan, the intention is to build both Street A and Street B entirely as prior to build out of any residential units. Therefore, at minimum both the Street A (south) and Street B signalized connections are expected to exist in both development phases. Therefore, this sensitivity analysis only considers the ultimate 2041 future condition which represents the worst case traffic scenario. Therefore, the full development buildout site traffic volumes in **Figure 27** were revised to move all traffic using the Street "A" (North) access to the next nearest access connection to Ninth Line, at Street "B". It is noted that while the full development proposal trip generation was maintained for this sensitivity analysis, if the Street "A" (North) connection were not implemented, the developments within the MTO parcel would also not be implemented, meaning trip generation is slightly overestimated in this scenario.

Given trip distribution from **Section 5.2** was maintained for this sensitivity analysis, the only location where the traffic volume projection has changed compared to the 2041 future traffic volumes in **Figure 27** would be at the intersection of Ninth Line and Doug Leavens Boulevard. Therefore, only this intersection was considered for the sensitivity analysis. **Figure 27** outlines the sensitivity analysis 2041 future total traffic volumes considering no Street "A" (North) connection to Ninth Line.

Table 31 outlines the sensitivity analysis future total traffic operations at the intersection of Ninth Line and Doug Leavens Boulevard / Street "B". Detailed capacity analysis worksheets are included in **Appendix F**.

Table 31: Sensitivity – 2041 Future Total Traffic Operations (Without North Street "A" Access to Ninth Line)

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length [3]
Ninth Line and Doug Leavens Boulevard / Street "B"	Signal	A.M.	C	30.2s	0.90 (NBT) 0.86 (EBL)	76.3m (EBL)
		P.M.	C	20.2s	0.85 (SBT)	27.0m (NBL) 46.9m (EBL)

The results of the sensitivity analysis indicate traffic operations are projected to marginally deteriorate compared to the baseline 2041 future total traffic analysis. However, the intersection is projected to operate at a LOS "C" or better during the peak hours, or the same as the corresponding baseline scenario considered (i.e., with Street A north connection). The turn lane requirements of a 30m northbound left-turn lane with a protected-permissive phase, and an 80m eastbound left-turn lane on the access road approaching Ninth Line remains adequate under this sensitivity scenario. Therefore, should the completion of the Street "A" (North) access connection to Ninth Line be delayed, it is projected that the two signalized site access connections to Ninth Line can accommodate the future traffic demands forecast for the area.

7.0 Safety Review

Per the City of Mississauga's guidelines, a safety review of the proposed development is required. The purpose of the safety review is to identify any safety deficiencies for auto drivers, pedestrians and cyclists for the proposed development, and to identify how the development proposes to maximize safety for all road users.

7.1 Access Spacing

The development proposes three site connections on Ninth Line between Britannia Road West and Derry Road West. The proposed site connections are fairly evenly spaced out at the site frontage and are spaced over 250 metres from each other.

The Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), June 2017, suggests a minimum intersection spacing of 200 metres along minor arterial roadways. Thus, the proposed site connection spacing is greater than the minimum suggested intersection spacing per the TAC GDGCR.

7.2 Sight Distance Analysis

The available sightlines at the proposed Ninth Line connections were measured and compared to the standards set out in the TAC GDGCR. Sight distance was measured from the proposed site accesses using the following assumptions:

- A standard driver eye height of 1.08 metres for a passenger car, and
- A 4.4 metre setback from the approximate extension of the outer curb to represent a vehicle waiting to exit the site.

Intersection sight distance is calculated using equation 9.9.1 from the GDGCR as outlined below:

*ISD = 0.278 * V major * tg*

Where;
ISD = Intersection Sight Distance
V major = design speed of roadway (km/h)
tg = assumed time gap for vehicles to turn from stop onto roadway (s)

The design speed of a roadway in an urban environment is typically 10-20 km/h greater than the posted speed limit. The posted speed limit on Ninth Line is 70 km/h. It is unknown if the speed limit will decrease with the widening of Ninth Line. Therefore, a conservative design speed of 90 km/h was assumed for the sight distance analysis.

Table 31 outlines the sight distance analysis for the proposed Ninth Line connections.

Table 32: Sight Distance Analysis

Feature	Street "A" (North)	Street "B"	Street "A" (South)
Access Type	Full-Moves	Full-Moves (opposite Doug Leavens Boulevard)	Full-Moves (opposite Osprey Boulevard)
Intersection Control	Stop (Minor Street)	Signals	Signals
Posted Speed Limit of Roadway	70 km/h	70 km/h	70 km/h
Assumed Design Speed	90 km/h	90 km/h	90 km/h
Base Time Gap	7.5 s [1]	7.5 s [1]	7.5 s [1]
Additional Time Gap	1.0 (time to cross additional through lane and centre turn lane)	1.0 (time to cross additional through lane and centre turn lane)	1.0 (time to cross additional through lane and centre turn lane)
Grade of Roadway	Less than 3%	Less than 3%	Less than 3%
Horizontal Alignment of Roadway	Straight	Straight	Straight
Sight Distance Required	215 m [2]	215 m [2]	215 m [2]
Measured Sight Distance	> 400 m (to north and south)	> 400 m (to north and south)	> 400 m (to north and south)
Minimum Sight Distance Satisfied?	Yes	Yes	Yes

Note 1: Time gap for left-turning vehicles from a stop onto a two-lane highway with no median and with a grade less than 3%. Value from Table 9.9.3 in the GDGCR.
Note 2: Sight distance values calculated from Intersection Sight Distance equation 9.9.1 in the GDGCR.

As outlined in **Table 31**, minimum sight distance requirements are satisfied at the proposed Ninth Line connections. Therefore, the proposed development is supportable from a sight distance perspective.

7.3 Roadway Alignment

The horizontal alignment of the boundary road network in the study area is relatively straight, and the vertical alignment of the boundary road network is relatively flat. Therefore, roadway alignment is not considered to be a traffic safety concern for the proposed development.

7.4 Clear Throat Length

Minimum recommended clear throat lengths were analyzed for the site connections to Ninth Line. Per the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), Table 8.9.3 "Suggested Minimum Clear Throat Lengths for Major Driveways" indicates that a minimum clear throat length for "apartment" developments exceeding 200 units of 40 metres from arterial roads.

The measured clear throat lengths at the site connections all exceed 40 metres. Therefore, the clear throat lengths of the proposed site access connections to Ninth Line are adequate and forecast to operate without safety or operational impacts to Ninth Line from a clear throat perspective.

In the latest round of comments from the City, a request to provide sufficient clear throat lengths at the condo road accesses to Street "A" was made. While there are no specific requirement for low-rise residential condo road clear throat length requirements, the requirement for the most comparable land use type and development size was reviewed. Table 8.9.3 of the Clear Throat Length requirements specify a minimum clear throat length of 8m for an apartment building with less than 100 units accessing a collector roadway. The clear throat lengths at Condo Roads "E", "L", "N", "P", and "R" to Street "A" all contain one or two condo road visitor parking spaces within the noted 8m clear throat. Removing the parking spaces will result in a deficiency of the City by-law visitor parking spaces required; hence, the reason for assessing the adequacy of the parking spaces within the clear throat segment.

While the condo roads are theoretically deficient of the TAC-GDGCR clear throat length requirements due to the parking spaces, this situation is not expected to be practically of great concern for traffic operations or safety at these intersections. The vehicle parking spaces are not expected to generate significant frequency of events slowing ingress traffic from Street A, therefore, a minor impact on Street A. Further, volumes along all segments of Street A are expected to be low (i.e., below 500 trips/hour) during the peak hours, with much lower volumes ingressing these condo roads. As such the impact of the visitor vehicle parking spaces on Street A is comparable to permitting onstreet parking on Street A which helps with traffic calming without creating significant delays to traffic flow.

From a safety perspective, the parking spaces in the throat length are not expected to impede sightlines for both vehicle traffic and pedestrians. Figures showing visibility of roadway and pedestrians at the subject condo road intersections are included in **Appendix O**

The purpose of a clear throat is to reduce potential queuing impact onto a roadway with significant traffic. Given the above, no significant traffic operations or safety impacts are expected due to the parking spaces within the 8m throat lengths of Condo Roads "E", "L", "N", "P", and "R".

7.5 Internal Site Circulation

Vehicle turning analysis was conducted for the most constrained vehicle profiles expected to navigate through the site: a standard pumper firetruck and a Region of Peel side-load waste collection truck. The vehicle turning analysis indicates that there are no expected maneuverability constraints within the Plan of Subdivision for firetrucks or waste collection trucks.

The City has specified in their comments that turning movements cannot overlap adjacent lanes or curbs. However, accommodating this condition would result in excessive roadway and intersection widths and radii which would conflict with desired safety aspects within the site such as traffic calming and pedestrian and cycling provisions. Therefore, the vehicle maneuvering has allowed for some overlap at intersections as is typical for larger trucks. Simultaneous movements without overlap for a passenger car is the typical and not for occasional trucks like the fire and garbage removal trucks. **Appendix P** contains the vehicle turning diagrams for each vehicle profile.

7.6 Traffic Calming Measures

To support traffic safety within the subdivision for all modes of transportation and particularly in close proximity to the proposed elementary school and local park, traffic calming measures consistent with the selected traffic control and the City's preferences should be considered.

It is best practice to reduce the speed limits within school zones and along the frontages of parks. A reduced speed limit (near school & park) and measures such as the noted pedestrian crossings (and speed humps, if necessary) are expected to help with pedestrian safety and should be confirmed during the Site Plan application process for the School. Further, provision of on-street parking and curb extensions near intersections will function as a traffic calming measure to reduce speeds and shorten pedestrian crossing distances. The pavement marking and signage plans in **Appendix Q** further highlights the proposed measures to enhance a safe and convenient shared use of the roadway. A right of way letter under a separate cover further highlights the various elements proposed to enhance multimodal road usage within the subdivision.

8.0 Parking Review

8.1 Vehicle Parking Spaces

The City of Mississauga Zoning By-Law minimum vehicle and bicycle parking requirements were recently updated and came into effect on July 6, 2022. Parking supply for tenant uses for the various townhouses satisfying Table 3.1.2.1 of the By-Law 0117-2022 will be provided accordingly as further details of the development are confirmed at a later stage. Off-street visitor parking as identified on the Draft Plan are satisfactory for the noted condominium blocks. In addition, on-street parking on Street A is expected to further accommodate any demand deficiencies that arise for any block.

Details regarding parking requirements and proposed parking supply for blocks 9N, 15S and the future development lot on the southwest corner of Ninth Line and Street A (South) will be confirmed at a later stage as part of site plan applications for those developments.

8.2 Electric Vehicle Ready Parking Spaces

In accordance with Section 3.1.1.12 of the City of Mississauga Zoning By-Law 0117-2022, it is understood that certain built forms will be required to provide a minimum number of electric vehicle (EV) ready parking spaces. Those built forms which will require a percentage of EV-ready parking spaces to be provided are the freehold street townhouses, back-to-back townhouses and apartments. Table 3.1.1.12 of the By-law outlines the EV-ready parking space requirements and will be provided as applicable to the subject development. Further details of the development and EV-ready parking spaces will be provided at the future detailed design (Site Plan Approval) stage.

8.3 Bicycle Parking Spaces

Section 3.1.6.5 of the Zoning By-Law 0118-2022 outlines that certain uses are required to provide a combination of secure indoor (Class A) and secure outdoor (Class B) parking spaces. Based on the proposed development and the in-effect bicycle parking standards, it is reasonable to assume that the standards outlined in Table 3.1.6.5.1 can be satisfied. Further detail on the development's proposed bicycle parking supply and location of bicycle parking spaces will be identified during the future detailed design stage.

9.0 Conclusions & Recommendations

9.1 Conclusions

The analysis contained within this report has resulted in the following key findings:

- Analysis of 2019 existing traffic operations indicates that the boundary road network is currently operating at LOS "D" or better during the weekday a.m. and p.m. peak hours, with the exception of the intersection of Britannia Road West and Ninth Line which is currently operating at LOS "E" during the weekday a.m. peak hour.
    - The Britannia Road West and Ninth Line operations are attributed to the eastbound through/right-turn and southbound through/right-turn movements operating near capacity. The eastbound and southbound through movements experience heavy volumes during the weekday a.m. peak hour. Additionally, the northbound through/right-turn movement is operating near capacity during the weekday p.m. peak hour. These operations are not uncommon at urban signalized arterial intersections.
    - The off-ramp approaches at the Highway 407 West Terminal at Derry Road West, and Highway 401 West Ramp Terminal at Winston Churchill Boulevard are operating near capacity during the p.m. peak hour. However, queue lengths at the off-ramp approaches of the ramp terminals do not extend to the freeway segments of Highway 407 nor Highway 401 and are thus contained within the off-ramp segments.
- The 2026 future background traffic operations (i.e., prior to Ninth Line widening) indicate similar operational metrics except at the Britannia Road West and Derry Road West intersections with Ninth Line.
    - Traffic operations at the intersection of Britannia Road West and Ninth Line are forecast to deteriorate to a LOS "F" and LOS "E" in the a.m. and p.m. peak hours, respectively. The eastbound through movement in the a.m. peak hour projects to be over capacity, while the northbound through movement in the p.m. peak hour is forecast to be near or at capacity. The 95th percentile queues indicate that several turning movements may exceed the auxiliary turn lanes during the peak hours. These operational metrics are typical of high volume arterial road intersections, but nevertheless support the need for Ninth Line roadway improvements.
    - At the intersection of Derry Road West and Ninth Line, traffic operations in the p.m. peak hour deteriorate to a LOS "E" compared to a LOS "C" in the 2019 existing conditions scenario. In addition, a few movements are near or at capacity and/or experience 95th percentile queuing beyond existing storage.
- Analysis of 2041 future background traffic operations indicates that traffic operations will worsen moderately throughout the boundary road network compared to existing conditions, even with the planned Ninth Line EA road widening. It is noted that traffic operational impacts herein may be overstated, primarily due to higher than expected growth rates being applied particularly for Derry Road West and Britannia Road West traffic, as well as impact industry work flexibility on work-home travel during peak commuter hours.

- The following intersections are projected to operate near or at capacity during either of the a.m. or p.m. peak hours:
    - Britannia Road West and 407 South Ramp Terminal
    - Britannia Road West and 407 North Ramp Terminal
    - Britannia Road West and Ninth Line
    - Derry Road West and Ninth Line
    - Derry Road West and 407 North Ramp Terminal
    - Derry Road West and 407 South Ramp Terminal
    - Winston Churchill Boulevard and 401 East Ramp Terminal
    - Winston Churchill Boulevard and 401 West Ramp Terminal
- These intersections, as well as the other Highway 407 ramp terminals on Derry Road West and Britannia Road West, are expected to operate with movements exceeding critical volume-to-capacity thresholds, as well as 95th percentile queue lengths for turning movements exceeding their designated storage length. These operations are attributed to the high volumes forecasted on the Derry Road West and Britannia Road West corridors under 2041 future background conditions and with no roadway improvements to the aforementioned corridors within the City of Mississauga.

- The full build-out of the proposed development is expected to generate a total of 875 and 774 total two-way trips during the weekday a.m. and p.m. peak hours, respectively.

- As part of the proposed development, the following intersections and configurations based on assessed requirements were applied to the future total analysis:
    - Traffic signals are not warranted at the proposed Street "A" (North) intersection with Ninth Line. Assessed as unsignalized, right-in/right-out and with a single outbound lane.
    - To match the opposite street configuration, the proposed site connections to Ninth Line should consist of one outbound left-turn storage lane and one outbound shared through/ right-turn lane for Street "B" and Street "A" (south) to the existing signalized intersections.

- Traffic operations under 2026 future total conditions are forecast to be similar to those projected in the future background. No change in Level of Service is forecast during the peak hours, with volume-to-capacity ratios and 95th percentile queues remaining largely similar to the 2026 future background scenario. The maximum intersection control delay increment attributable to site traffic is forecast to be 3.4s at the intersection of Ninth Line Doug Leavens Boulevard in the a.m. peak hour. At the operationally constrained intersections of Britannia Road and Derry Road West with Ninth Line, intersection control delay increases by no more than 5 seconds as a result of additional site traffic in the peak hours.
    - The 95th percentile queues for the northbound left-turn movements serving site traffic at the Doug Leavens Boulevard / Street "B" and Osprey Boulevard / Street "A" (South) connections to Ninth Line were forecasted to be below 15m during the 2026 future total peak hours.

- Under the ultimate 2041 future total conditions, the boundary road network is projected to operate similarly compared to the corresponding 2041 future background scenario, with minor additional delays attributable to site traffic. Similar to the future background, it is noted that

traffic operational impacts may be overstated due to the likely higher than expected traffic growth forecasted on Derry Road West and Britannia Road West and that the background traffic associated with the Emerging Land Use Scenario Zone "5" that overlaps the subject property was not removed from the traffic volume forecast.

- The following study intersections are forecast to incur a drop in Level of Service compared to corresponding 2041 future background conditions. The intersection delay increments as a result of site traffic are below 14 seconds for all cases:
  - Britannia Road West and Ninth Line (a.m. and p.m. peak hours)
  - Ninth Line and Street "A" / Osprey Boulevard (p.m. peak hour)
  - Ninth Line and Street "B" / Doug Leavens Boulevard (a.m. peak hour)
  - Derry Road West and Ninth Line (a.m. peak hour)
- At the intersection of Britannia Road West and Ninth Line, the intersection is forecast to operate at a LOS "F" during both peak hours. The intersection control delay increment attributable to site traffic is forecast to be at most 14 seconds in both peak hours, with minor increases to the volume-to-capacity ratios of the critical movements.
- Operations at the remaining study intersections are projected to remain similar to the corresponding years' future background conditions, with no change in the Level of Service during the peak hours being forecast. The Winston Churchill Boulevard / Highway 401 west ramp terminal intersection along with the Ninth Line and Derry Road West intersection are projected to experience constrained operations with several movements at capacity according to the volume-to-capacity ratios, and occasional queuing exceedances of the auxiliary turn lanes according to the 95th percentile queuing results.
- The potential future road widening improvement to Derry Road West and Britannia Road West identified for the future background would further improve traffic operations at the Ninth Line intersections with Britannia Road West and Derry Road West.
- The proposed Ninth Line and Street "A" (North) intersection is forecast to operate under capacity at a LOS "C" or better during the peak hours.
- The 95th percentile queues for left-turning traffic ingressing and egressing the site during the critical peak hour at the Doug Leavens Boulevard / Street "B" and the Osprey Boulevard / Street "A" (South) connections to Ninth Line were forecasted to be below 15m in the peak hours except for the eastbound left-turn movement serving site traffic egressing at Street "B". This movement had a maximum 95th percentile queue forecasted at 76.3m in the peak hours.
- Overall, the noted future total operations are generally consistent with future background operations, indicating that the addition of site traffic to the boundary road network is not expected to significantly impact traffic operations. Therefore, the proposed development is supportable from a traffic operations perspective, with the implementation of the noted recommendations.
- While the proposed right-in right-out Street A north access connection to Ninth Line is ideal for the development, based on sensitivity analysis, the proposed Subdivision is

expected to function adequately from a traffic perspective without it.

- Analysis of safety components associated with the proposed development indicate the following:
    - The proposed site access spacing exceeds 250 metres on Ninth Line along the site frontage. which will reduce the potential for weaving or merging conflicts associated with traffic entering and exiting at the site accesses.
    - The proposed site access spacing exceeds recommended minimum intersection spacing guidelines set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), June 2017.
    - The available sight distance at the proposed site connections exceeds the minimum sight distance requirements set out in the TAC GDGCR.
    - The provided clear throat lengths for the roadway connections to Ninth Line exceed the minimum recommended clear throat lengths set out in the TAC GDGCR.
    - There are no expected maneuverability constraints within the Plan of Subdivision for fire trucks nor waste collection trucks.
- The City of Mississauga Zoning By-Law minimum vehicle and bicycle parking requirements were recently updated and came into effect on July 6, 2022. Parking supply for tenant uses and off-street visitor parking as identified on the Draft Plan are provided accordingly for the condominium blocks, with further on-street parking along Street A supplementing this supply.

9.2 Recommendations

It is recommended that the Region consider widening Britannia Road West and Derry Road West from four to six travel lanes between Highway 407 and Winston Churchill Boulevard to improve traffic operations in the future, particularly at the intersections with Ninth Line. These improvements would be in-line with the planned road widening for the noted roadways to six travel lanes in Halton Region.

The conclusions arising from this analysis have resulted in the following development-triggered recommendations to support the proposed development as outlined in **Table 32.**

Table 33: Recommended Development Triggered Ninth Line Widening Improvements

Location	Development Phase	Improvement	Recommended Storage Length
Ninth Line and Street "B" opposite Doug Leavens Boulevard	Southern Phase 1 (2026-2028)	Auxiliary northbound left-turn lane	30 metres
Ninth Line and Street "A" opposite Osprey Boulevard	Southern Phase 1 (2026-2028)	Auxiliary northbound left-turn lane	15 metres

In addition, similar to the findings of the Ninth Line EA, southbound right turn lanes at the Street "A" (North) and Street "B" connections to Ninth Line are not required, but the improvement may be considered by the City as desired.

Despite the noted recommendations above, as part of the phase 1 buildout, prior to widening of Ninth Line, the existing runout lane at the south approach on Ninth Line at the Street "B"/ Doug Leavens Boulevard can be repurposed by repainting the pavement markings to function as a northbound left-turn lane in the interim condition prior to the widening of Ninth Line. Similarly, the existing northbound left turn on Ninth Line at Street A (south)/ Osprey Boulevard can be retained in the interim. Furthermore, no auxiliary right-turn storage lanes are required prior to Ninth Line widening. Therefore, no road widenings are required for the interim functionality of the Phase 1 (i.e. Prior to Ninth Line widening) development in 2026. Only interim updates to the traffic signal infrastructure is required.

In addition to the external roadway improvements outlined above, the Street "B" and Street "A" south site access connections to Ninth Line should consist of one outbound auxiliary left-turn storage lane and one outbound shared through/ right-turn lane for Street "B" and Street "A" (South). The minimum recommended storage lengths for the outbound auxiliary left-turn lanes for Street "B" and Street "A" (South) are 80m and 30m, respectively. A single inbound lane and a single outbound lane is adequate for the Street "A" (north) connection to Ninth Line.

Figure 27 outlines the recommended road improvements needed to support the proposed development as well as external improvements to be considered by the Region for future optimal boundary intersection operations.

In conclusion, the Draft Plan Application can be supported from a transportation operations and safety perspective, and the phased build-out of the proposed development can also be supported from a transportation operations and safety perspective with the implementation of the noted recommendations.

Sincerely,

C.F. CROZIER & ASSOCIATES INC.

Peter Apasnore MASc., P.Eng., PTOE
Project Manager, Transportation

LICENSED PROFESSIONAL ENGINEER
P. A. APASNORE
100521492
PROVINCE OF ONTARIO

C.F. CROZIER & ASSOCIATES INC.

Aidan Hallsworth, EIT
Engineering Intern, Transportation

J:\700\780 - Mattamy Development\5227-Ninth Line\Reports\5227_TIS\2023_September 5th Submission\2023.09.15_TIS_Ninth Line.docx

APPENDIX A

Draft Plans

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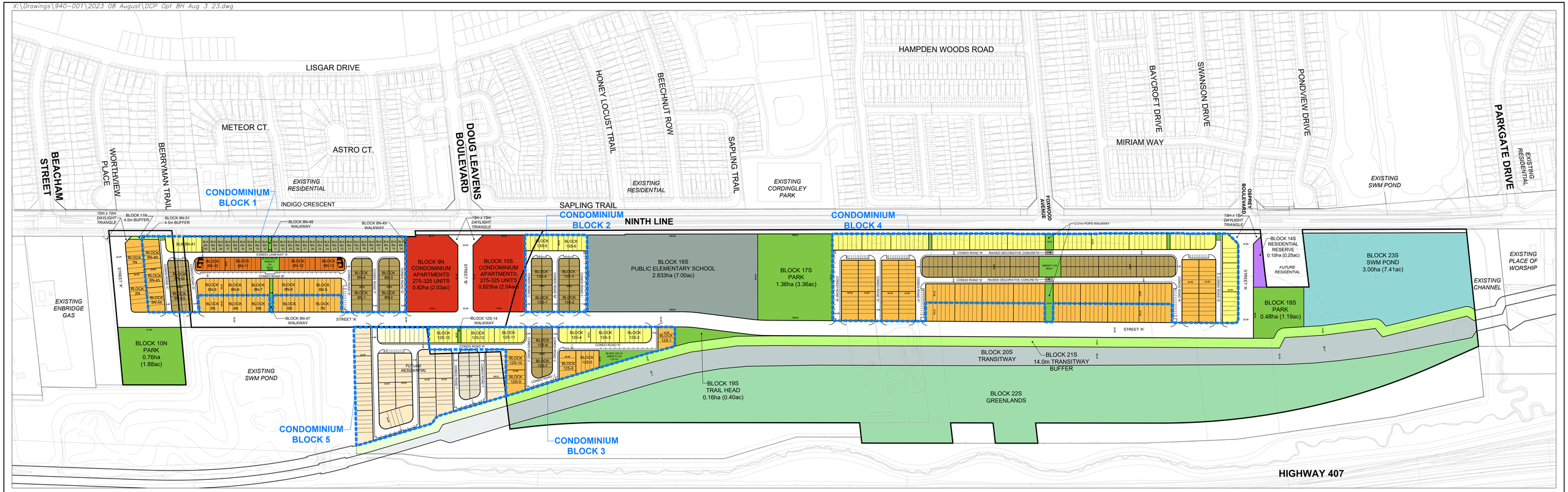


DERRY BRITANNIA DEVELOPMENTS LIMITED DEVELOPMENT CONCEPT PLAN (NORTH & SOUTH PROPERTIES) OPTION 8H

PART OF LOTS 6,7,8 & 9, CONCESSION 9, N.S.
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEEL

CONDOMINIUM BLOCK 1	
TOTAL AREA	3.65ha (9.02ac)
SITE DENSITY	45.8upha
UNIT COUNTS:	
REAR LANE DETACHED - 10.7m (35')	27
DUAL FRONTAGE TOWNHOUSE - 6.4m (21')	7
BACK-TO-BACK TOWNHOUSE - 6.4m (21')	60
REAR LANE TOWNHOUSE - 6.05m (20')	28
STREET TOWNHOUSE - 6.0m (20')	45
TOTAL UNITS	**167**
VISITOR PARKING STATISTICS:	
VISITOR PARKING REQUIRED *(0.25 / UNIT)*	42 SPACES
VISITOR PARKING PROVIDED	42 SPACES
AMENITY OPEN SPACE STATISTICS:	
REQUIRED *(5% OF B2B TH AREA)*	345m²
PROVIDED	522m²

CONDOMINIUM BLOCKS 2 & 3	BLOCK 2 STATS	BLOCK 3 STATS
TOTAL AREA	1.00ha (2.47ac)	1.91ha (4.72ac)
SITE DENSITY	53upha	38upha
UNIT COUNTS:		
DUAL FRONTAGE TOWNHOUSE - 6.4m (21')	13	37
BACK-TO-BACK TOWNHOUSE - 6.4m (21')	40	18
STREET TOWNHOUSE - 6.0m (20')	-	22
TOTAL UNITS	**53**	**77**
TOWNHOUSE VISITOR PARKING STATISTICS:		
VISITOR PARKING REQUIRED *(0.25 / UNIT)*	34 SPACES	
VISITOR PARKING PROVIDED	34 SPACES	
AMENITY OPEN SPACE STATISTICS:		
REQUIRED *(5% OF B2B TH AREA)*	341m²	
PROVIDED	1,071m²	

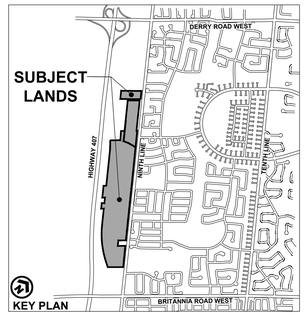
CONDOMINIUM BLOCK 4	
TOTAL AREA	6.57ha (16.23ac)
SITE DENSITY	48.4upha
UNIT COUNTS:	
DUAL FRONTAGE TOWNHOUSE - 6.4m (21')	92
BACK-TO-BACK TOWNHOUSE - 6.4m (21')	96
STREET TOWNHOUSE - 6.0m (20')	130
TOTAL UNITS	**318**
VISITOR PARKING STATISTICS:	
VISITOR PARKING REQUIRED *(0.25 / UNIT)*	80 SPACES
VISITOR PARKING PROVIDED	80 SPACES
AMENITY OPEN SPACE STATISTICS:	
REQUIRED AREA *(5% OF B2B TH AREA)*	504m²
PROVIDED AREA	960m²

FREEHOLD STATISTICS	
UNIT COUNTS:	
STREET TOWNHOUSE - 6.0m (20')	97

CONDOMINIUM APARTMENTS	
TOTAL AREA	1.65ha (4.08ac)
SITE DENSITY	333 - 394upha
UNIT COUNTS:	
CONDOMINIUM APARTMENTS (UNITS / BLOCK)	275-350
TOTAL UNITS	**550-650**

TOTAL CONDOMINIUM PARKING & AMENITY OPEN SPACE	
VISITOR PARKING STATISTICS:	
VISITOR PARKING REQUIRED *(0.25 / UNIT)*	154 SPACES
VISITOR PARKING PROVIDED	156 SPACES
AMENITY OPEN SPACE STATISTICS:	
REQUIRED AREA *(5% OF B2B TH AREA)*	1,180m²
PROVIDED AREA	2,604m²

TOTAL OVERALL UNIT COUNT	
FREEHOLD UNITS:	
STREET TOWNHOUSE - 6.0m (20')	97
TOTAL FREEHOLD UNITS:	**97**
CONDOMINIUM UNITS:	
REAR LANE DETACHED - 10.7m (35')	27
DUAL FRONTAGE TOWNHOUSE - 6.4m (21')	149
BACK-TO-BACK TOWNHOUSE - 6.4m (21')	214
REAR LANE TOWNHOUSE - 6.05m (20')	28
STREET TOWNHOUSE - 6.0m (20')	197
CONDOMINIUM APARTMENTS	550-650
TOTAL CONDOMINIUM UNITS:	**1165-1265**
TOTAL CONDOMINIUM & FREEHOLD UNITS:	**1262-1362**



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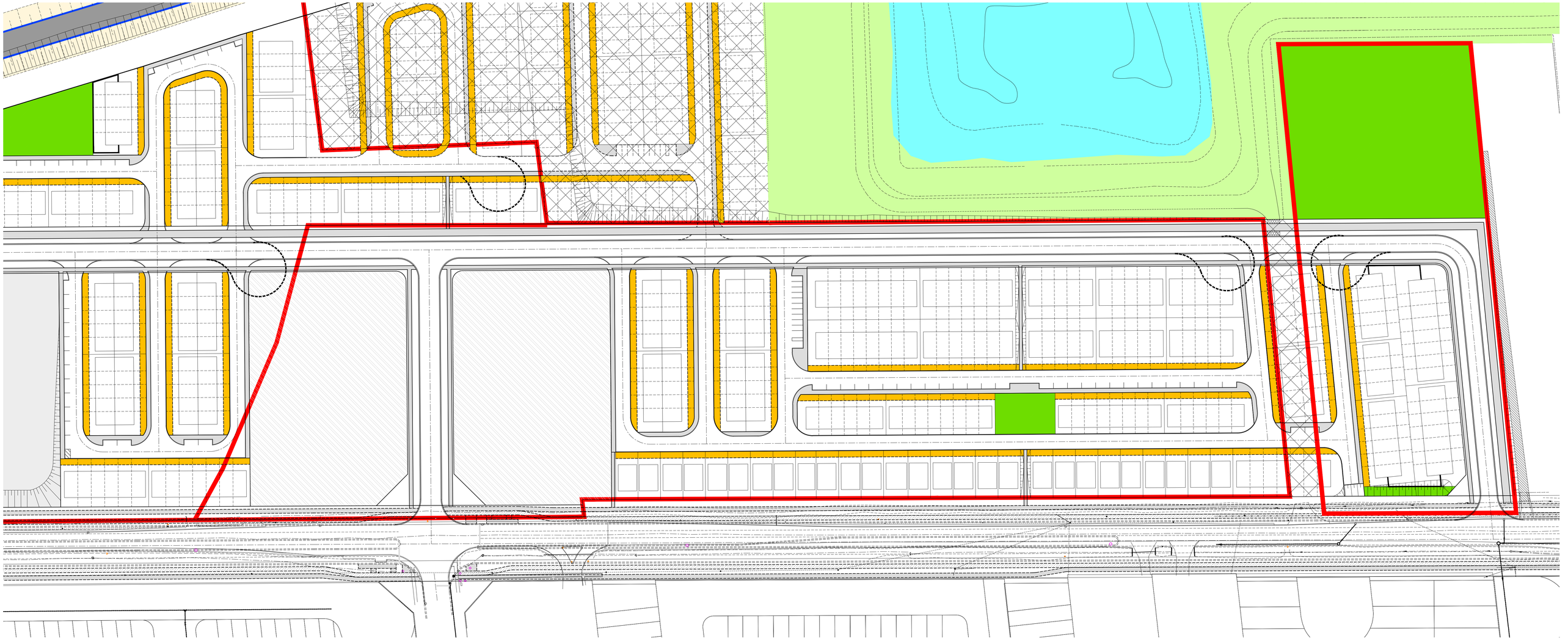
AUGUST 3, 2023

mattamyHOMES

GSAI
Glen Schnarr & Associates Inc.



APPENDIX B

Correspondence and Draft Plan Revisions Letter

Darren Loro

From: Lagakos, Ted (MTO) <Ted.Lagakos@ontario.ca>
Sent: April-12-19 8:26 AM
To: Darren Loro
Cc: eric.mueller@mattamycorp.com; zain.zia@mississauga.ca
Subject: RE: Ninth Line Draft Plan of Subdivision TIS Terms of Reference

Morning Darren,

Our Traffic Office has reviewed your terms of reference for a possible future Traffic Impact Study submission and we offer the following comments:

- Include Highway 401 and Winston Churchill Blvd (North & South Ramp Terminal) in the analysis. In addition, ensure you include ministry data when finalizing the study.
- Complete existing, future background and future total traffic operations analysis using Synchro 10.

I hope this helps. Please call me if you have any questions.

Take care,
Ted Lagakos
Senior Project Manager
Highway Corridor Management Section – Central Region

Ministry of Transportation
159 Sir William Hearst Avenue, 7th Floor
Toronto, ON M3M 0B7
Tel. (416) 235-3593

E-Mail: ted.lagakos@ontario.ca
Web: www.mto.gov.on.ca/english/engineering/management/corridor

Highway Corridor Management

From: Lagakos, Ted (MTO)
Sent: April-01-19 9:14 AM
To: dloro@cfcrozier.ca
Cc: Shen, Rey (MTO) <Rey.Shen@ontario.ca>; Iannacito, Phil (MTO) <Phil.Iannacito@ontario.ca>; Pekar, Nataliya (MTO) <Nataliya.Pekar@ontario.ca>; eric.mueller@mattamycorp.com; DeRose, Graham (MTO) <Graham.DeRose@ontario.ca>; zain.zia@mississauga.ca
Subject: RE: Ninth Line Draft Plan of Subdivision TIS Terms of Reference

Good morning Darren,

Phil has forwarded your request to my attention. I will be the main ministry contact for any future proposed Subdivision application.

As per our discussion, I will circulate the subject Terms of Reference for review and comment by our Traffic Office. All ministry comments for this file will be **preliminary only** as the site is located within the Parkway Belt West Plan/407 Transitway EA study. Please note that the alignment for the 407 Transitway is still under evaluation, a preferred alternative design will not be available to the public until late 2019, with approval anticipated in or around mid 2020.

I trust that this explains our position on this matter. I will send you our preliminary comments as soon as I hear back from the Traffic Office (typical turnaround for comments is 3 to 4 weeks depending on workload). If you have any further questions, please do not hesitate to contact me at the number below.

Take care,
Ted Lagakos
Senior Project Manager
Highway Corridor Management Section – Central Region

Ministry of Transportation
159 Sir William Hearst Avenue, 7th Floor
Toronto, ON M3M 0B7
Tel. (416) 235-3593

E-Mail: ted.lagakos@ontario.ca
Web: www.mto.gov.on.ca/english/engineering/management/corridor

Highway Corridor Management

From: Darren Loro <dloro@cfcrozier.ca>
Sent: March-28-19 1:39 PM
To: Iannacito, Phil (MTO) <Phil.Iannacito@ontario.ca>; Zain Zia <Zain.Zia@mississauga.ca>
Cc: Alex Fleming <afleming@cfcrozier.ca>
Subject: Ninth Line Draft Plan of Subdivision TIS Terms of Reference

Good morning Phil and Zain,

Hope all is well on your end.

We have been retained by Mattamy Homes to prepare a TIS for the Draft Plan of Subdivision application (plan attached) for the site located on Ninth Line in the City of Mississauga, Regional Municipality of Peel. The subject property is located in a residential neighbourhood and is bound by a Union Gas Limited building to the north, an existing church to the south, Ninth Line to the east, and Parkland Belt lands and Highway 407 to the west.

Table 1 outlines the proposed development statistics.

Table 1
Proposed Development Statistics

Housing Type	Unit Type	Total Units
Freehold	Rear Lane Detached	61
	Street Townhouse	195
	Rear Lane Townhouse	248
	Total	**504**
Condo	Rear Lane Duplex	98
	Rear Lane Townhouse	18
	Back-To-Back Townhouse	88
	Apartments	336
	Total	**540**

We would like to circulate our proposed Terms of Reference with the MTO and City for review and comment. The proposed Terms of Reference is outlined below:

1. The TIS will analyze traffic impacts during the weekday a.m and p.m. peak hours.

2. The following intersections will be analyzed:
    a. Derry Road West and Highway 407 West Ramp Terminal
    b. Derry Road West and Highway 407 East Ramp Terminal
    c. Derry Road West and Ninth Line
    d. Ninth Line and Street "L"
    e. Ninth Line and Doug Leavens Boulevard / Street "B"
    f. Ninth Line and Foxwood Avenue / Street "C"
    g. Ninth Line and Osprey Boulevard / Street "A"
    h. Ninth Line and Britannia Road West
    i. Britannia Road West and Highway 407 West Ramp Terminal
    j. Britannia Road West and Highway 407 East Ramp Terminal

3. Traffic counts will be commissioned at the aforementioned intersection on a typical weekday between the hours of 6:00 a.m. – 10:00 a.m. and 3:00 p.m. – 7:00 p.m.

4. Existing, future background and future total traffic operations will be analyzed using Synchro 9.0. Standard traffic operations metrics for signalized and unsignalized intersections including delays, volume-to-capacity ratios, and 95th percentile queue length will be analyzed and reported on.

5. The development is expected to be fully built-out within seven years (i.e. by 2026). Per the MTO's TIS guidelines, the year of full build-out (2026), five-year horizon (2031) and ten-year horizon (2036) will be analyzed. Additionally, each year of major phases of the proposed development will be analyzed.

6. Background traffic growth will be calculated using the growth rates from the Ninth Line Corridor Study Transportation Assessment prepared for the City of Mississauga by MMM Group (July 2017). MMM applied a growth rate of 2% compounded annually at the off-ramp approaches at 400-series ramp terminals as instructed by the MTO. For consistency, this growth rate will be applied to the off-ramp approaches at Highway 407 ramp terminals in our analysis.

7. Trip generation will be forecasted using the ITE Trip Generation Manual, 10th Edition. Preliminary trip generation estimates indicate that the proposed development is expected to generate in the order of 450-550 total two-way trips during the critical weekday a.m. and p.m. peak hours.

8. Trip distribution will be derived from a combination of 2016 Transportation Tomorrow Survey (TTS) data and existing travel patterns.

9. Future total traffic operations will be compared to future background traffic operations under full build-out conditions to determine what mitigation measures are required on the boundary road network to accommodate the full build-out of the development. These mitigation measures include auxiliary turn lanes, signalization, etc.

10. Auxiliary left-turn lane requirements will be analyzed using the MTO's "Design Supplement for the Geometric Design Guide for Canadian Roads" and traffic signal requirements will be analyzed using the warrants set out in the Ontario Traffic Manual (OTM) Book 12 "Traffic Signals";

11. Future total traffic operations will then be compared to future background traffic operations for each phase of the proposed development to determine the timing of the full build-out improvements;

12. A functional design plan will be prepared for all recommended roadway improvements;

13. The proposed development will be reviewed from a transportation safety perspective to identify any issues pertaining to weaving, merging, queueing, and vehicle turning constraints within the site.

14. Existing and future Transportation Demand Management (TDM) opportunities will be evaluated to reduce auto share and promote non-auto transportation. This will include the impacts arising from the future 407 transitway running parallel to Highway 407.

Please review and comment on the terms of reference as outlined above. If this is satisfactory, we will begin our analysis immediately.

If you want to discuss further, please do not hesitate to give me a call.

Cheers,
Darren

Darren Loro C.E.T. | Technologist
C.F. Crozier & Associates Consulting Engineers
40 Huron Street, Suite 301 | Collingwood, ON L9Y 4R3
cfcrozier.ca | dloro@cfcrozier.ca
tel: 705.446.3510 ext: 142

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Darren Loro

From: Greg Borys <Gregory.Borys@mississauga.ca>
Sent: April-08-19 3:41 PM
To: Darren Loro
Subject: RE: Ninth Line Draft Plan of Subdivision TIS Terms of Reference

Good morning Darren,

Thank you for providing the Terms of Reference for the Mattamy Homes development, please find below comments:

- The Traffic consultant is to contact Emily Pelleja (Emily.pelleja@mississauga.ca)in regards to the Ninth Line EA to determine timings and scope of work;
- Should any changes occur to the proposed site plan, the Traffic Impact Study will be required to be updated accordingly

Additionally, the MTO may have further comments regarding the ToR for the proposed development.

Regards,

From: Darren Loro [mailto:dloro@cfcrozier.ca]
Sent: Thursday, March 28, 2019 1:39 PM
To: Phil Iannacito; Zain Zia
Cc: Alex Fleming
Subject: Ninth Line Draft Plan of Subdivision TIS Terms of Reference

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Please review and comment on the terms of reference as outlined above. If this is satisfactory, we will begin our analysis immediately.

If you want to discuss further, please do not hesitate to give me a call.

Cheers,
Darren

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Darren Loro

From: Emily Pelleja <Emily.Pelleja@mississauga.ca>
Sent: April-15-19 11:30 AM
To: Darren Loro
Cc: Greg Borys
Subject: RE: Ninth Line Draft Plan of Subdivision TIS Terms of Reference

Hi Darren,
Nice to email-meet you as well. To clarify, the City *will be* undertaking a Class EA for the Widening of Ninth Line from Eglinton Avenue West to Derry Road West. The study will officially commence in Q1 of 2020, with construction forecasted for 2023. I don't have any hard defined improvements beyond that it will be widened. I will keep you as a stakeholder.

If I can clarify anything, please don't hesitate to reach out.

Thanks,

Emily Pellejà, P.Eng.
Transportation Project Engineer
T 905-615-3200 ext.3699
C 437-779-7894
emily.pelleja@mississauga.ca

City of Mississauga | Transportation and Works Department
Engineering and Construction Division

Please consider the environment before printing.

From: Darren Loro [mailto:dloro@cfcrozier.ca]
Sent: Thursday, April 11, 2019 4:53 PM
To: Emily Pelleja
Cc: Greg Borys
Subject: RE: Ninth Line Draft Plan of Subdivision TIS Terms of Reference

Good afternoon Emily,

I am e-mailing you from Crozier & Associates Consulting Engineers. I don't believe we've ever spoke before, so it's nice to meet you – even if it is over e-mail!

Greg Borys has directed me to you to confirm details from the Ninth Line EA regarding the timing and scope of work for the future Ninth Line improvements. As part of our Traffic Impact Study that Greg provided comments on (see below), we need to account for the future Ninth Line improvements in our analysis. Would you be able to provide us with these details on timing and scope of work for the Ninth Line improvements?

If you have any questions or wish to discuss further, please do not hesitate to give me a call.

Thanks,
Darren

Darren Loro C.E.T. | Technologist
C.F. Crozier & Associates Consulting Engineers
40 Huron Street, Suite 301 | Collingwood, ON L9Y 4R3
cfcrozier.ca | dloro@cfcrozier.ca
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From: Greg Borys <Gregory.Borys@mississauga.ca>
Sent: April-08-19 3:41 PM
To: Darren Loro <dloro@cfcrozier.ca>
Subject: RE: Ninth Line Draft Plan of Subdivision TIS Terms of Reference

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Regards,

From: Darren Loro [mailto:dloro@cfcrozier.ca]
Sent: Thursday, March 28, 2019 1:39 PM
To: Phil Iannacito; Zain Zia
Cc: Alex Fleming
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    j. Britannia Road West and Highway 407 East Ramp Terminal

3. Traffic counts will be commissioned at the aforementioned intersection on a typical weekday between the hours of 6:00 a.m. – 10:00 a.m. and 3:00 p.m. – 7:00 p.m.

4. Existing, future background and future total traffic operations will be analyzed using Synchro 9.0. Standard traffic operations metrics for signalized and unsignalized intersections including delays, volume-to-capacity ratios, and 95th percentile queue length will be analyzed and reported on.

5. The development is expected to be fully built-out within seven years (i.e. by 2026). Per the MTO’s TIS guidelines, the year of full build-out (2026), five-year horizon (2031) and ten-year horizon (2036) will be analyzed. Additionally, each year of major phases of the proposed development will be analyzed.

6. Background traffic growth will be calculated using the growth rates from the Ninth Line Corridor Study Transportation Assessment prepared for the City of Mississauga by MMM Group (July 2017). MMM applied a growth rate of 2% compounded annually at the off-ramp approaches at 400-series ramp terminals as instructed by the MTO. For consistency, this growth rate will be applied to the off-ramp approaches at Highway 407 ramp terminals in our analysis.

7. Trip generation will be forecasted using the ITE Trip Generation Manual, 10th Edition. Preliminary trip generation estimates indicate that the proposed development is expected to generate in the order of 450-550 total two-way trips during the critical weekday a.m. and p.m. peak hours.

8. Trip distribution will be derived from a combination of 2016 Transportation Tomorrow Survey (TTS) data and existing travel patterns.

9. Future total traffic operations will be compared to future background traffic operations under full build-out conditions to determine what mitigation measures are required on the boundary road network to accommodate the full build-out of the development. These mitigation measures include auxiliary turn lanes, signalization, etc.

10. Auxiliary left-turn lane requirements will be analyzed using the MTO's "Design Supplement for the Geometric Design Guide for Canadian Roads" and traffic signal requirements will be analyzed using the warrants set out in the Ontario Traffic Manual (OTM) Book 12 "Traffic Signals";
11. Future total traffic operations will then be compared to future background traffic operations for each phase of the proposed development to determine the timing of the full build-out improvements;

12. A functional design plan will be prepared for all recommended roadway improvements;

13. The proposed development will be reviewed from a transportation safety perspective to identify any issues pertaining to weaving, merging, queueing, and vehicle turning constraints within the site.

14. Existing and future Transportation Demand Management (TDM) opportunities will be evaluated to reduce auto share and promote non-auto transportation. This will include the impacts arising from the future 407 transitway running parallel to Highway 407.

Please review and comment on the terms of reference as outlined above. If this is satisfactory, we will begin our analysis immediately.

If you want to discuss further, please do not hesitate to give me a call.

Cheers,
Darren

Darren Loro C.E.T. | Technologist
C.F. Crozier & Associates Consulting Engineers
40 Huron Street, Suite 301 | Collingwood, ON L9Y 4R3
cfcrozier.ca | dloro@cfcrozier.ca
tel: 705.446.3510 ext: 142

MARCH 1, 2023

780-5227

SENT BY E-MAIL:
C/O FLORA.TANG@MATTAMYCORP.COM

City of Mississauga
201 City Centre Drive
Mississauga, ON L5B 2T4

Attention: **Matthew Shilton, MCIP, RPP**
Planner, Development North

RE: **DRAFT PLAN ROADWAY CHANGES**
PART OF LOTS 6, 7, 8 & 9 CONCESSION 9
NORTH AND SOUTH DRAFT PLAN OF SUBDIVISIONS (21T-M 19003 & 21T-M 19004 W10)
CITY OF MISSISSAUGA, REGIONAL MUNICIPALITY OF PEEL

Dear Matthew,

Crozier Consulting Engineers (Crozier) has been retained by Derry-Britannia Developments Ltd (proponent) to prepare a Transportation Impact Study (TIS) for the proposed Draft Plan and advise on transportation engineering matters.

This letter is to provide a summary of proposed changes to the draft plan road layout and right of way (ROW) cross section elements following the meeting on February 14, 2023, between City of Mississauga staff, Mattamy and their consulting staff.

Though several items were discussed, this letter outlines the proposed changes to the Draft Plan of Subdivision and standard City 22m ROW cross section in addressing the following questions raised at the noted meeting:

- Can the proposed private access to Ninth Line at Foxwood Avenue be eliminated, and if not, is the access appropriate as a private right-of-way; acknowledging the City's preference for public designation if retained.

- What are the proposed cross sectional elements for Street A and Street B.

1.0 PROPOSED ROW CROSS SECTION MODIFICATION

Following previous discussions and City comments, the proponent has provided the requested 22m ROW for the proposed Street A and Street B collector roads as highlighted in the Draft Plan (DP) used for discussions in the February 14 meeting with City staff (refer to **Attachment A-1** for the DP).

To address and incorporate the City comments regarding the ideal elements to be included in the cross section of the collector roadway, the following modifications to the standard City 22m ROW cross section #2211.080 for various segments are proposed.

2800 High Point Dr., Suite 101
Milton, ON L9T 6P4
T. 905.875.0026
F. 905.875.4915
cfcrozier.ca

CROZIER
CONSULTING ENGINEERS

Segment 1: Street A's entire north-south stretch and east-west segment connecting to Ninth Line on the northside of the Draft Plan. The cross section presented in **Attachment B** is proposed for this segment, capturing the 3.5m multi-use trail and tree corridors on both sides of the multi-use trail, as requested by City staff. Therefore, the only difference from the standard City 22m ROW cross section #2211.080 is the 3.5m multi-use trail on the west side of the Street as well as the tree corridors of 2.5m and 2m on the east and west sides of the multi-use trail, respectively.

The proposed cross section has been designed to ensure consistency with the City's Standard 22m Right-of-Way cross section 2211.080. There are no functional differences in the proposed engineering servicing and multi-modal traffic operations. Furthermore, the proposed cross section was also designed with consideration for the subdivision layout to enhance site servicing and best serve non-auto traffic. Note that the engineering services are on the east side to easily service the proposed residential development.

Segment 2: Street B and Street A (only east-west segment connecting to Ninth Line/Osprey Boulevard). These roadway segments are proposed to retain the standard City 22m ROW cross-section with left-turn storage lanes incorporated as shown in the functional sketches included in **Attachment C**.

2.0 ELIMINATION OF THE PRIVATE ACCESS TO NINTH LINE

Given the aforementioned question regarding the proposed private access to Ninth Line at Foxwood Avenue, Crozier reviewed the impacts of eliminating the proposed access. Based on the findings of our review summarized below, we recommend removal of the subject vehicular access and to provide a multiuse path connection instead.

2.1 Immaterial Impact on Traffic Operations

The subject access is intended to be stop-controlled and expected to largely serve trips from a portion of the proposed condominium block immediately adjacent to this access. The forecasted two-way vehicle trips in the 2041 future horizon year is low, at 55 and 76 two-way vehicle trips in the a.m. and p.m. peak hours, respectively. Furthermore, a traffic operations assessment indicates the proposed Street A and Street B signalized connections to Ninth Line can accommodate additional traffic from this location with no material change in Level of Service. The assessment was based on peak a.m. and p.m. traffic volumes as is typical for a residential development and has provided consideration for an ultimate 10-year horizon from an anticipated 2031 full build-out (i.e., 2041 future horizon year), consistent with what is being included in the TIS. Details of traffic volumes, analysis and traffic operational results will be included as part of the TIS for the formal resubmission.

2.2 Improvement in Operational Safety

It is expected that the removal of the access at Foxwood Avenue will promote traffic safety within the proposed subdivision and at the subject intersection. The removal of the access reduces the number of accesses onto Ninth Line and eliminates conflicts that are associated with a stop controlled access. Trips will divert to the Street "B" and Street "A" (at Osprey Boulevard) intersections with Ninth Line. These two intersections are signal controlled, which largely removes conflicting movements from occurring simultaneously, thus improving traffic safety. Conflict between vehicles and pedestrian/ cycling traffic on the west side of Ninth Line is also eliminated with the removal of the access. Further, the provision for fewer access points to Ninth Line, which is classified as an Arterial Road, should promote traffic flow on the corridor by reducing the number of vehicles slowing down upstream traffic due to turning movements at the intersection.

2.3 Maintains Optimal transit access and active transportation connectivity

Additionally, non-vehicular active transportation (walking and cycling) in addition to transit infrastructure is expected to be improved by the removal of the access and replacement with an active transportation multiuse path from Ninth Line. The path will enhance pedestrian and cyclist connectivity with a short and direct access to the condominium block units immediately adjacent to this location. Further, the proposed path will ensure all dwelling units in the southern portion of the development remain within approximately 400m walking distance to transit for commute in either southbound or northbound direction given the following per the Ninth Line EA:

- A bus stop (both directions) is identified at the now expected multiuse pathway/ Foxwood Avenue intersection with Ninth Line.
- A signalized pedestrian crossing with a bus stop on Ninth Line is identified near the southern limits of Sapling Trail.
- A traffic signal and bus stop (both directions) at the Street A/ Osprey Boulevard is identified.

Therefore, though the vehicle private access is to be eliminated, replacing with the multiuse path along with maintaining the transit stop as identified in the Ninth Line EA is recommended to enhance active transportation and transit.

2.4 Consistent with Shaping Ninth Line Guidelines

In addition to the above discussion in support of eliminating the vehicular access to Ninth Line across Foxwood Avenue, the replacement with a multi-use trail connection further enhances the hierarchical network of trails and connections across the Ninth Line lands and provides a key gateway for direct pedestrian access. The integration of multi-modal nodes at this access promotes pedestrian supportive streets and provides an enhanced connection between the residential blocks. The proposed access will be visible from Ninth Line and within the development through a linkage of mid-block connections to reinforce a connected network of open spaces. This design reinforces a well-connected grid system to both sides of Ninth Line that encourages pedestrian permeability into the neighbourhood.

Based on the above analysis on traffic operations, capabilities for multi-modal transportation access, compatibilities with the ultimate Ninth Line widening, and the key urban design impacts to the overall development, the proposed multi-use trail connection to Ninth Line across Foxwood Avenue is aligned with the vision of the "Shaping Ninth Line Urban Design Guidelines (2017)".

The current Draft Plan showing the proposed replacement of the vehicular access to Ninth Line (across Foxwood Avenue) with a multiuse trail is presented in **Attachment A-2**.

3.0 CONCLUSION

We trust that this Letter is satisfactory in establishing an understanding and consensus pertaining to the proposed cross section elements for the proposed collector Streets 'A' and 'B'.

Further, we trust that the above justification provides sufficient support for replacement of the vehicular access to Ninth Line (across Foxwood Avenue) with a multiuse trail. By integrating a multiuse trail connection, the concept plan further establishes a hierarchal network of trails and reinforces pedestrian supportive streets.

A future TIS will incorporate these changes if the City agree with these proposed improvements. Should you have any questions or require any further information, please contact the undersigned.

Sincerely,

C.F. CROZIER & ASSOCIATES INC.

Peter Apasnore MASc., P.Eng., PTOE
Project Manager

C.F. CROZIER & ASSOCIATES INC.

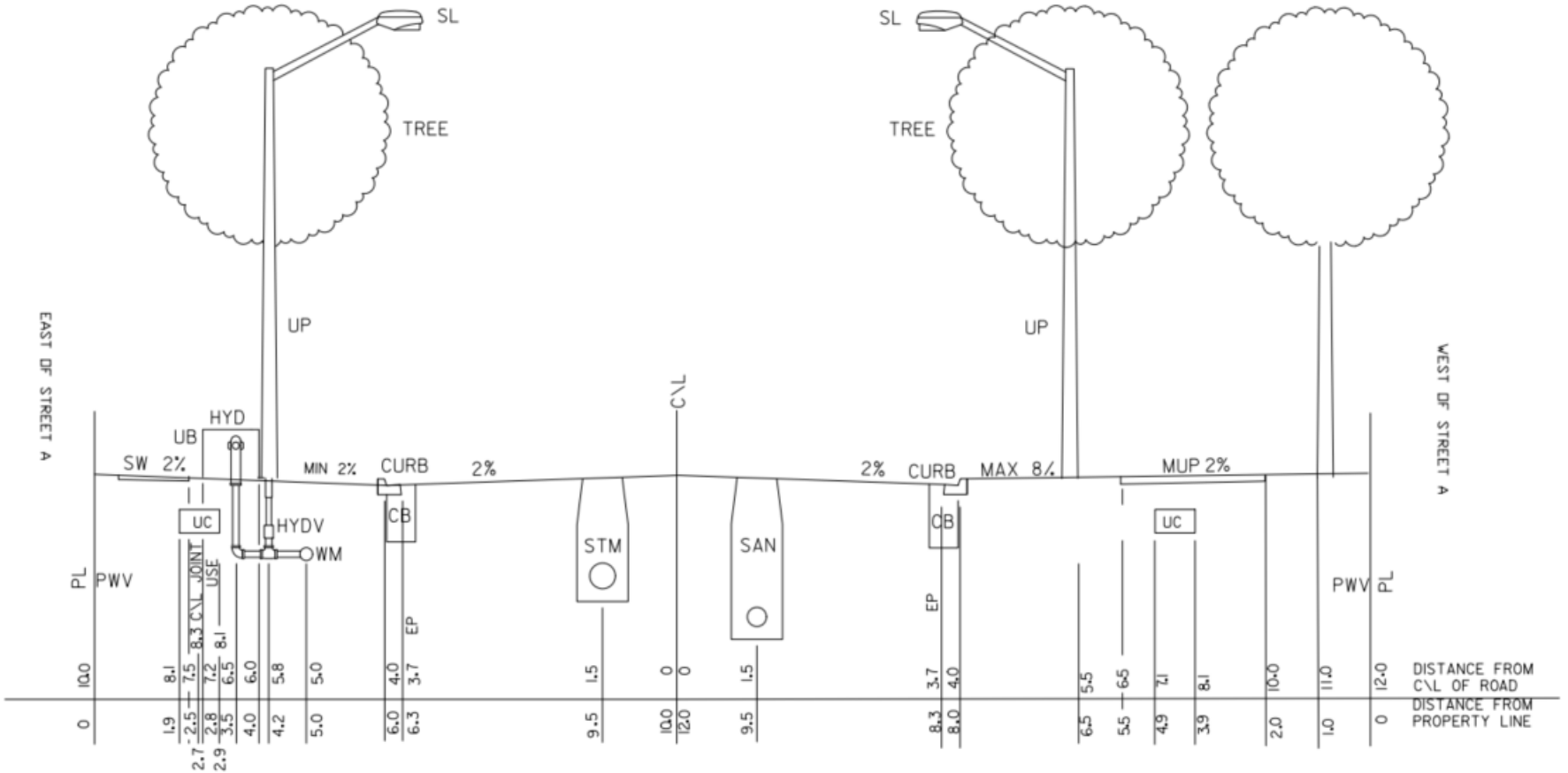
Alexander Fleming, MBA, P. Eng.
Director, Transportation

Attachments
Attachment A1 – Draft Plan (original to be modified)
Attachment A2 – Draft Plan (current)
Attachment B – Segment 1 Cross Section
Attachment C – Segment 2 Functional Sketches
Attachment D – City Standard Excerpts

\\crozier-files\Projects\700\780 - Mattamy Development\5227-Ninth Line\Letters\2023\2023.02.24 DP Roadway Revisions Letter.docx

METRIC

ALL DIMENSIONS IN METRES



NOTES:

1. THE FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR DISCUSSION	02/17/2023

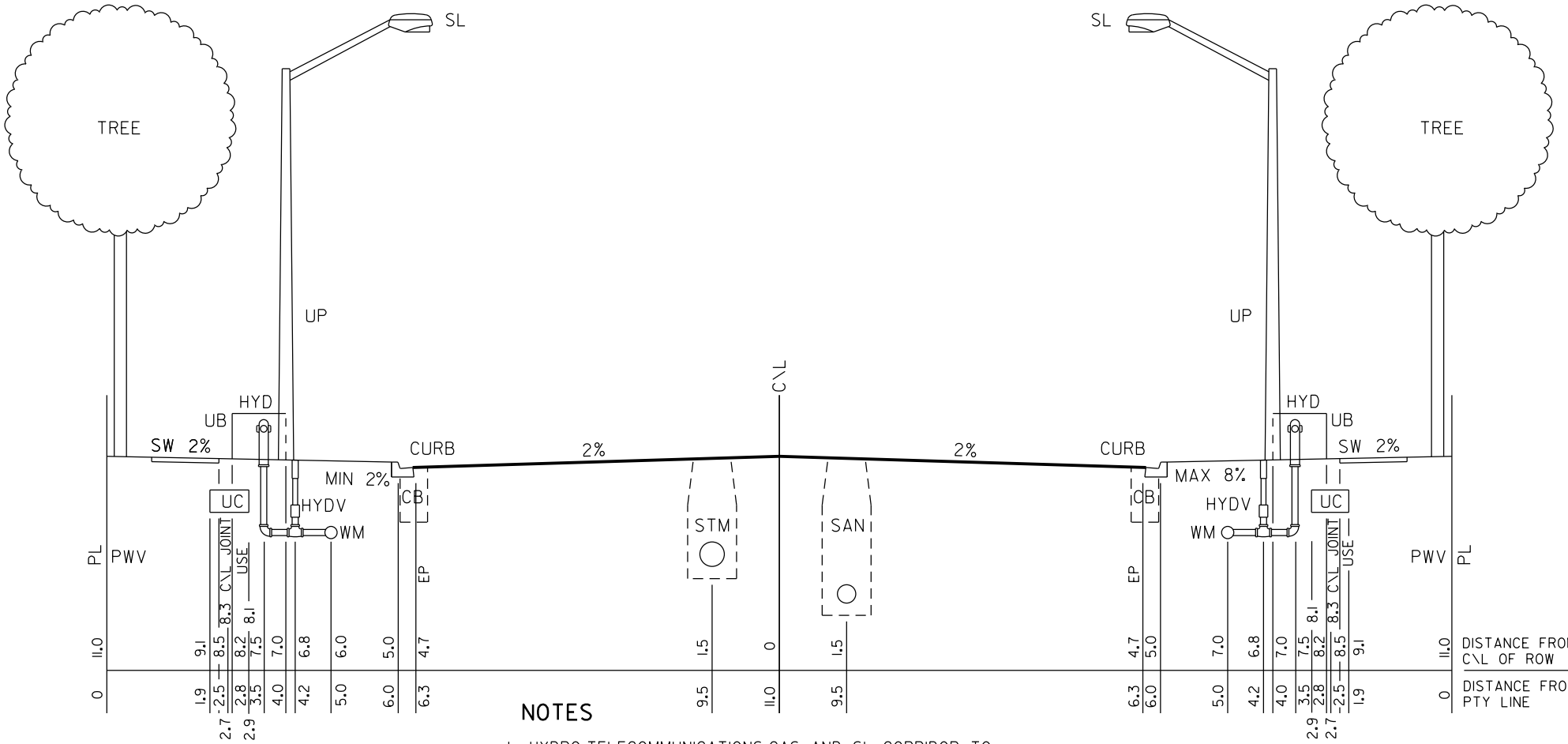
Project: NINTH LINE (DERRY–BRITANNIA)
CITY OF MISSISSAUGA

Drawing: CONCEPTUAL 22m RIGHT–OF–WAY
OPTION 1A

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

Drawn By	N.F./J.L.	Design By		Project	0780–5227
Check By	P.A./A.H.	Check By		Scale	N.T.S.
				Drawing	ROW (OPTION 1A)

METRIC
ALL DIMENSIONS IN METRES



LEGEND

EP - EDGE OF PAVEMENT
CB - CATCH BASIN
CURB - CURB OR CURB AND GUTTER
C/L - CENTRELINE
GAS - GAS MAIN
HYD - FIRE HYDRANT
HYDV - FIRE HYDRANT VALVE
PWV - PRIVATE WATER VALVE
PL - PROPERTY LINE
SL - STREETLIGHT
SW - SIDEWALK
SAN - SANITARY SEWER
STM - STORM SEWER
UB - UTIITY BOX (HYDRO,TELECOMMUNICATIONS)
UC - UTILITY CORRIDOR (HYDRO,TELECOMM,GAS,SL)
UP - UTILITY POLE
WM - WATERMAIN

NOTES

1. HYDRO,TELECOMMUNICATIONS,GAS AND SL CORRIDOR TO HAVE A MINIMUM COVER OF 0.965 m.
2. WATERMAIN TO HAVE A MINIMUM COVER OF 1.7m.
3. IF UTILITIES CANNOT BE INSTALLED ACCORDING TO THIS STANDARD THEY ARE TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE PRESCRIBED LOCATION SUBJECT TO THE APPROVAL OF THE TRANSPORTATION AND WORKS DEPARTMENT OF THE CITY OF MISSISSAUGA.
4. A 0.4m - 0.6m CLEARANCE MUST BE MAINTAINED BETWEEN CABLES AND HYDRANTS
5. A 0.3m CLEARANCE MUST BE MAINTAINED BETWEEN WATERMAINS AND UTILITY POLES
6. ROAD WIDTH IS MEASURED FROM FACE OF CURB TO FACE OF CURB AS DEFINED ON OPSD STD. 600.040 CURB & GUTTER. PAVEMENT WIDTH IS MEASURED FROM EDGE OF PAVEMENT (EP) TO EDGE OF PAVEMENT (EP).
7. FOR LOCATION OF GAS MAIN WITHIN UTILITY CORRIDOR REFER TO STD. 2211.280

MISSISSAUGA

STANDARD
MINOR RESIDENTIAL COLLECTOR ROAD 10m ROAD ON 22m ROW

EFF. DATE		2002-01-01	SCALE	N.T.S.
REV.	9	2015-06-05	STANDARD No.	2211.080

APPENDIX C

Transit Information

Schedules

Schedules | Plan a trip | More

STOP SCHEDULES

Powered by Triplin

chedules By Stop

miWAY

Lisgar Dr At Doug Leavens Blvd MISSISSAUGA

39 Britannia

Towards Renforth Station East Platform 7

Date: Monday, 2/6/2023

New search | Route schedules

Change direction

Show on the map

ate

Monday, February 6, 2023 | Ok

Scheduled Departure Times from this Stop

Renforth Station East Platform 7

Morning

4am	5am	6am	7am	8am	9am	10am	11am	12pm
	5:17 am	6:12 am	7:08 am	8:05 am	9:01 am	10:05 am	11:14 am	12:02 pm
	5:35 am	6:30 am	7:27 am	8:23 am	9:22 am	10:28 am	11:38 am	12:26 pm
	5:54 am	6:49 am	7:46 am	8:42 am	9:43 am	10:51 am		12:50 pm

Afternoon/Evening

1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm
1:15 pm	2:04 pm	3:14 pm	4:11 pm	5:12 pm	6:14 pm	7:16 pm	8:00 pm	9:10 pm
1:40 pm	2:28 pm	3:32 pm	4:32 pm	5:32 pm	6:35 pm	7:38 pm	8:22 pm	9:40 pm
	2:52 pm	3:52 pm	4:52 pm	5:52 pm	6:55 pm		8:44 pm	

Evening

Schedules | Plan a trip | More

STOP SCHEDULES

Powered by Triplin

Schedules By Stop

MiWAY

Lisgar Dr At Doug Leavens Blvd MISSISSAUGA

39 Britannia

Towards Meadowvale Town Centre Drop Off

Date: Monday, 2/6/2023

New search | Route schedules

Change direction

Show on the map

ate

Monday, February 6, 2023 | Ok

Scheduled Departure Times from this Stop

Meadowvale Town Centre Drop Off

Morning

4am	5am	6am	7am	8am	9am	10am	11am	12pm
	5:22 am	6:18 am	7:15 am	8:11 am	9:10 am	10:06 am	11:07 am	12:16 pm
	5:40 am	6:37 am	7:35 am	8:30 am	9:30 am	10:23 am	11:30 am	12:40 pm
	5:59 am	6:57 am	7:53 am	8:50 am	9:47 am	10:44 am	11:53 am	

Afternoon/Evening

1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm
1:04 pm	2:16 pm	3:17 pm	4:00 pm	5:05 pm	6:05 pm	7:17 pm	8:16 pm	9:11 pm
1:28 pm	2:45 pm	3:39 pm	4:22 pm	5:25 pm	6:24 pm	7:32 pm	8:41 pm	9:43 pm
1:52 pm	2:54 pm		4:42 pm	5:45 pm	6:43 pm	7:53 pm		
					6:59 pm			

21

Route number
Nombre d'itinéraire

Milton

CONTACT US

1-888-438-6646
416-869-3200
TTY: #711 or call
1-800-855-0511

gotransit.com/schedules

@GOtransitBus

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Say Something.

24/7 Transit Safety Dispatch:
1-877-297-0642

prestocard.ca

Sign-up for email or text alerts/ Inscrivez-vous pour recevoir des alertes par courriel ou message texte.
gotransit.com/OnTheGO

Milton

GO Train and Bus Schedule/
Horaire des trains et des autobus GO

METROLINX

MI 21

- Milton GO
- Lisgar GO
- Derry at 9th Line
- Meadowvale GO
- Meadowvale Town
- Streetsville GO
- Erindale GO
- Cooksville GO
- Square One GO Terminal
- Dixie GO
- Kipling GO
- Union Station

Daily / Quotidiennement

Includes GO Bus routes 21 / Inclut les routes 21 d'autobus GO

Effective / À partir de:
7 JANUARY JANVIER 2023

How to read our schedules

Step 1
Find the station or terminal you are departing from. Stops are listed across the top in the order they are served.

Step 2
The upper left corner tells you what day the schedule is for and the direction of travel.

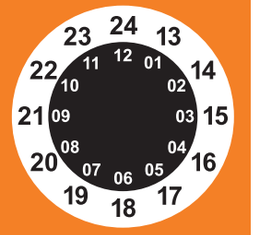
Step 3
Look across the rows for available departure times.

Step 4
Not all trains or buses stop at every station. If you see → the train or bus will not stop at that station.

Schedule times shown in 24-hour clock

Midnight to noon
00 01 - 12 00

Noon to midnight
12 01 - 24 00



Legend

- Train trips
- Bus trips
- → Trip does not serve this location.
- GO Bus service is accessible to passengers using mobility devices at this location.
- GO Train & GO Bus service is accessible to passengers using mobility devices at this location.
- GO Train service is accessible to passengers using mobility devices at this location.
- Parking available.

For the latest schedule information and updates, please visit gotransit.com/schedules.

Notes

Bicycles

1. Bicycles are not allowed in Union Station or on-board trains during morning rush hour (6:30-9:30) and evening rush hour (15:30-18:30), Monday to Friday.
2. Foldable bicycles are allowed on-board trains at all times.

Comment lire nos horaires

Étape 1
Trouvez votre gare ou terminus de départ. La liste des arrêts est donnée en haut dans l'ordre dans lequel ils sont desservis.

Étape 2
Le coin supérieur gauche vous indique le jour pour lequel l'horaire est donné et la direction de circulation.

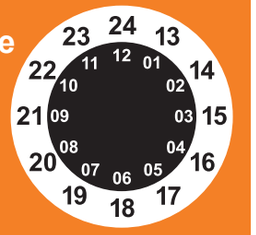
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

Étape 4
Les trains ou les autobus ne s'arrêtent pas tous à chaque gare. Si vous voyez le symbole → le train ou l'autobus ne s'arrêtera pas à cette gare.

Indications selon un système horaire de 24 heures

De minuit à midi:
00 01 - 12 00

De midi à minuit:
12 01 - 24 00



Légende

- Horaire des trains
- Horaire des autobus
- → Trajet ne sert pas cette station.
- Service d'autobus GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.
- Les services de trains et d'autobus GO sont accessibles aux utilisateurs d'un appareil d'aide à la mobilité à cet endroit.
- Service de trains GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.
- Stationnement disponible.

Pour consulter les horaires les plus récents et les mises à jour, veuillez visiter gotransit.com/schedules.

Notes

Vélos

1. Les vélos ne sont pas autorisés dans la gare Union ou à bord des trains du lundi au vendredi, pendant l'heure de pointe (6:30-9:30) et pendant l'heure de pointe du soir (15:30-18:30).
2. Les vélos pliables sont permis à bord des trains en tout temps.

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Milton 24 Dp — Milton GO	Mississauga 23 Dp — Lisgar GO	Mississauga 22 — Derry Rd. W. @ Ninth Line	Mississauga 22 — Aquitane Ave. @ Meadowvale Town Centre Circle	Mississauga 22 — Meadowvale GO	Mississauga 21 — Streetsville GO	Mississauga 40 — Erindale GO	Mississauga 20 Dp — Square One	Mississauga 11 — Cooksville GO	Mississauga 11 — Dixie GO	Etobicoke 3 — Kipling GO	Toronto 2 Ar — Union Station
21T	21060								05 05	→	05 15	→	→	05 40
21B	21062		04 50	→	05 01	05 05	05 15	→	→	→	→	→	→	05 50
21E	21072			05 00	→	→	→	05 15	→	→	→	→	→	05 55
21B	21080		05 10	→	05 21	05 25	05 35	→	→	→	→	→	→	06 15
21D	21092			05 20	→	→	→	05 35	05 50	→	→	→	→	06 25
21H	21090									05 50	06 00	06 10	→	06 40
21B	21104		05 30	→	05 41	05 45	05 55	→	→	→	→	→	→	06 40
	2706		05 59	06 08	→	→	06 13	06 20	06 25	→	06 31	06 36	06 42	07 03
	2712		06 44	06 53	→	→	06 58	07 05	07 10	→	07 16	07 21	07 27	07 48
	2716		07 14	07 23	→	→	07 28	07 35	07 40	→	07 46	07 51	07 57	08 18
	2718		07 29	07 38	→	→	07 43	07 50	07 55	→	08 01	08 06	08 12	08 33
	2720		07 44	07 53	→	→	07 58	08 05	08 10	→	08 16	08 21	08 27	08 48
	2726		08 29	08 38	→	→	08 43	08 50	08 55	→	09 01	09 06	09 12	09 33
21H	21280									09 05	09 15	09 25	→	10 00
21B	21284		09 00	→	09 14	09 21	09 30	→	→	→	→	→	→	10 20
21H	21300									09 35	09 45	09 55	→	10 30
21D	21302			09 15	→	→	→	09 32	09 50	→	→	→	→	10 35
21B	21304		09 20	→	09 34	09 41	09 50	→	→	→	→	→	→	10 40
21H	21310									10 00	10 10	10 20	→	10 55
21D	21322			09 40	→	→	→	09 57	10 15	→	→	→	→	11 00
21B	21320		09 50	→	10 04	10 11	10 20	→	→	→	→	→	→	11 05
21H	21330									10 25	10 37	10 50	→	11 20
21B	21344		10 20	→	10 34	10 41	10 50	→	→	→	→	→	→	11 35
21H	21350									10 55	11 07	11 20	→	11 50
21D	21360			10 40	→	→	→	10 57	11 15	→	→	→	→	12 00
21B	21362		10 50	→	11 04	11 11	11 20	→	→	→	→	→	→	12 05
21H	21370									11 25	11 37	11 50	→	12 20
21B	21384		11 25	→	11 39	11 46	11 55	→	→	→	→	→	→	12 40

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Milton 24 Dp — Milton GO	Mississauga 23 Dp — Lisgar GO	Mississauga 22 — Derry Rd. W. @ Ninth Line	Mississauga 22 — Aquitane Ave. @ Meadowvale Town Centre Circle	Mississauga 22 — Meadowvale GO	Mississauga 21 — Streetsville GO	Mississauga 40 — Erindale GO	Mississauga 20 Dp — Square One	Mississauga 11 — Cooksville GO	Mississauga 11 — Dixie GO	Etobicoke 3 — Kipling GO	Toronto 2 Ar — Union Station
21H	21390									11 55	12 07	12 20	→	12 50
21B	21400		11 55	→	12 09	12 16	12 25	→	→	→	→	→	→	13 10
21W	21392			11 35	→	→	→	11 52	12 10	12 25	12 37	12 50	→	13 20
21B	21424		12 25	→	12 39	12 46	12 55	→	→	→	→	→	→	13 40
21H	21430									12 55	13 07	13 20	→	13 50
21B	21440		12 55	→	13 09	13 16	13 25	→	→	→	→	→	→	14 10
21W	21432			12 35	→	→	→	12 52	13 10	13 25	13 37	13 50	→	14 20
21B	21464		13 25	→	13 39	13 46	13 55	→	→	→	→	→	→	14 40
21H	21470									14 00	14 12	14 25	→	14 55
21W	21472			13 40	→	→	→	13 57	14 15	14 30	14 42	14 55	→	15 30
21B	21514		14 20	→	14 34	14 41	14 50	→	→	→	→	→	→	15 40
21H	21540									15 00	15 12	15 25	→	16 10
21W	21532			14 40	→	→	→	14 57	15 15	15 30	15 42	15 55	→	16 40
21B	21604		15 20	→	15 34	15 41	15 50	→	→	→	→	→	→	16 55
21H	21606									16 00	16 12	16 25	→	17 10
21W	21602			15 40	→	→	→	15 57	16 15	16 30	16 42	16 55	→	17 40
21B	21664		16 25	→	16 39	16 46	16 55	→	→	→	→	→	→	18 00
21H	21670									17 00	17 12	17 25	→	18 20
21W	21662			16 40	→	→	→	16 59	17 20	17 35	17 47	18 00	→	18 55
21B	21702		17 20	→	17 34	17 41	17 50	→	→	→	→	→	→	18 55
21W	21692			17 40	→	→	→	17 59	18 20	18 35	18 47	19 00	→	19 40
21	21742		18 20	→	18 34	18 41	18 50	19 00	19 15	19 30	19 40	19 50	→	20 20
21	21780		19 20	→	19 34	19 41	19 50	20 00	20 15	20 30	20 40	20 50	→	21 20
21	21820		20 25	→	20 36	20 40	20 50	21 00	21 15	21 25	21 35	21 45	→	22 15
21	21850		21 25	→	21 36	21 40	21 50	22 00	22 15	22 25	22 35	22 45	→	23 15
21	21880		22 25	→	22 36	22 40	22 50	22 58	23 11	23 20	23 30	23 40	→	00 05
21	21910		23 30	→	23 40	23 43	23 50	23 58	00 11	00 20	00 30	00 40	→	01 05
21	21940		00 30	→	00 40	00 43	00 50	00 58	01 11	01 20	01 30	01 40	→	02 00

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Toronto 2 Dp	Etobicoke 3	Mississauga 11	Mississauga 11	Mississauga 20 Ar	Mississauga 40	Mississauga 21	Mississauga 22	Mississauga 22	Mississauga 23 Ar	Mississauga 22	Milton 24 Ar
			Union Station	Kipling GO	Dixie GO	Cooksville GO	Square One	Erindale GO	Streetsville GO	Meadowvale GO	Aquitaine Ave. @ Formentera Ave. Meadowvale Town Centre	Lisgar GO	Derry Rd. W. @ Ninth Line	Milton GO
21H	21071		05 55	→	06 12	06 22	06 40							
21	21091		06 20	→	06 37	06 47	07 05	07 12	07 27	07 40	07 42	→	07 48	08 10
21H	21121		06 55	→	07 12	07 22	07 45							
21	21153		07 20	→	07 45	07 57	08 15	08 25	08 40	08 55	08 57	→	09 03	09 25
21H	21181		07 55	→	08 25	08 37	09 00							
21	21213		08 20	→	08 50	09 02	09 20	09 30	09 45	10 00	10 02	→	10 08	10 30
21H	21231		08 55	→	09 25	09 37	10 00							
21	21253		09 20	→	09 40	09 52	10 10	10 20	10 35	10 50	10 52	→	10 58	11 20
21H	21271		09 55	→	10 12	10 22	10 45							
21	21293		10 20	→	10 37	10 47	11 05	11 15	11 30	11 45	11 47	→	11 53	12 15
21H	21311		10 55	→	11 15	11 27	11 50							
21W	21333		11 20	→	11 40	11 52	12 10	12 20	12 35	→	→	12 55		
21B	21335		11 25	→	→	→	→	→	→	12 05	12 07	→	12 13	12 35
21H	21351		11 55	→	12 15	12 27	12 50							
21B	21361		12 05	→	→	→	→	→	→	12 45	12 47	→	12 53	13 15
21W	21373		12 20	→	12 45	12 57	13 15	13 25	13 40	→	→	14 00		
21B	21385		12 35	→	→	→	→	→	→	13 15	13 17	→	13 23	13 45
21H	21391		12 55	→	13 20	13 32	13 55							
21B	21401		13 05	→	→	→	→	→	→	13 45	13 47	→	13 53	14 15
21D	21411		13 20	→	→	→	→	13 55	14 10	→	→	14 35		
21H	21413		13 25	→	13 50	14 02	14 25							
21B	21425		13 35	→	→	→	→	→	→	14 25	14 27	→	14 33	14 55
21H	21431		13 55	→	14 20	14 32	14 55							
21B	21441		14 05	→	→	→	→	→	→	15 00	15 02	→	15 08	15 30
21D	21453		14 20	→	→	→	→	15 00	15 15	→	→	15 45		
21H	21451		14 25	→	14 55	15 07	15 30							
21B	21465		14 35	→	→	→	→	→	→	15 30	15 32	→	15 38	16 05
21H	21471		14 50	→	15 20	15 32	16 00							
21D	21473		14 55	→	→	→	→	15 45	16 00	→	→	16 30		
21B	21485		15 00	→	→	→	→	→	→	15 55	15 57	→	16 03	16 30

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Toronto 2 Dp	Etobicoke 3	Mississauga 11	Mississauga 11	Mississauga 20 Ar	Mississauga 40	Mississauga 21	Mississauga 22	Mississauga 22	Mississauga 23 Ar	Mississauga 22	Milton 24 Ar
			Union Station	Kipling GO	Dixie GO	Cooksville GO	Square One	Erindale GO	Streetsville GO	Meadowvale GO	Aquitaine Ave. @ Formentera Ave. Meadowvale Town Centre	Lisgar GO	Derry Rd. W. @ Ninth Line	Milton GO
	2723		15 40	15 58	16 04	16 10	→	16 16	16 22	16 28	→	16 33	→	16 42
	2729		16 25	16 43	16 49	16 55	→	17 01	17 07	17 13	→	17 18	→	17 27
	2735		17 10	17 28	17 34	17 40	→	17 46	17 52	17 58	→	18 03	→	18 12
	2737		17 25	17 43	17 49	17 55	→	18 01	18 07	18 13	→	18 18	→	18 27
	2741		17 55	18 13	18 19	18 25	→	18 31	18 37	18 43	→	18 48	→	18 57
	2749		19 10	19 28	19 34	19 40	→	19 46	19 52	19 58	→	20 03	→	20 12
21B	21721		19 30	→	→	→	→	→	→	20 10	20 12	→	20 18	20 40
21D	21723		19 35	→	→	→	→	20 10	20 25	→	→	20 50		
21H	21725		19 40	→	20 05	20 17	20 40							
21B	21741		20 00	→	→	→	→	→	→	20 40	20 42	→	20 48	21 10
21D	21743		20 05	→	→	→	→	20 40	20 55	→	→	21 20		
21H	21745		20 10	→	20 30	20 42	21 05							
21B	21761		20 30	→	→	→	→	→	→	21 05	21 07	→	21 13	21 35
21D	21763		20 35	→	→	→	→	21 05	21 20	→	→	21 45		
21H	21765		20 40	→	21 00	21 12	21 35							
21B	21781		21 00	→	→	→	→	→	→	21 35	21 37	→	21 43	22 05
21D	21783		21 05	→	→	→	→	21 35	21 50	→	→	22 15		
21H	21785		21 10	→	21 30	21 40	22 00							
21B	21801		21 30	→	→	→	→	→	→	22 05	22 07	→	22 13	22 35
21W	21803		21 35	→	21 55	22 05	22 23	22 33	22 48	→	→	23 10		
21B	21821		22 00	→	→	→	→	→	→	22 35	22 37	→	22 43	23 05
21W	21823		22 05	→	22 25	22 35	22 53	23 03	23 18	→	→	23 40		
21B	21831		22 30	→	→	→	→	→	→	23 05	23 07	→	23 13	23 35
21W	21833		22 35	→	22 55	23 05	23 23	23 33	23 48	→	→	00 10		
21B	21861		23 30	→	→	→	→	→	→	00 05	00 07	→	00 13	00 35
21W	21863		23 35	→	23 55	00 05	00 23	00 33	00 48	→	→	01 10		
21	21891		00 20	→	00 37	00 47	01 05	01 10	01 22	01 30	01 32	→	01 36	01 55
21	21921		01 20	→	01 35	01 42	02 00	02 05	02 17	02 25	02 27	→	02 31	02 50
21	21951		02 20	→	02 35	02 42	03 00	03 05	03 17	03 25	03 27	→	03 31	03 45

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Milton 24 Dp — Milton GO	Mississauga 22 — Derry Rd. W. @ Ninth Line	Mississauga 22 — Aquitane Ave. @ Meadowvale Town Centre Circle	Mississauga 22 Dp — Meadowvale GO	Mississauga 21 — Streetsville GO	Mississauga 40 — Erindale GO	Mississauga 20 — Square One	Mississauga 11 — Cooksville GO	Toronto 2 Ar — Union Station Bus Terminal
21B	21090		05 25	05 36	05 40	05 50	→	→	→	→	06 25
21P	21132					05 50	06 00	06 15	06 25	06 35	07 05
21B	21150		06 25	06 36	06 40	06 50	→	→	→	→	07 25
21P	21192					06 50	07 00	07 15	07 25	07 35	08 05
21P	21230					07 30	07 40	07 55	08 05	08 15	08 45
21B	21210		07 25	07 36	07 40	07 50	→	→	→	→	08 25
21P	21240					07 55	08 05	08 20	08 30	08 40	09 10
21P	21270					08 30	08 40	08 55	09 05	09 15	09 45
21B	21250		08 25	08 36	08 40	08 50	→	→	→	→	09 30
21P	21280					08 55	09 05	09 20	09 30	09 40	10 15
21P	21290					09 15	09 25	09 40	09 50	10 00	10 40
21P	21320					09 35	09 45	10 00	10 10	10 20	11 00
21B	21304		09 25	09 37	09 42	09 50	→	→	→	→	10 35
21P	21340					10 05	10 15	10 30	10 45	10 55	11 35
21P	21360					10 45	10 55	11 10	11 25	11 35	12 15
21P	21370					10 25	10 35	10 50	11 05	11 15	11 56
21B	21344		10 25	10 38	10 43	10 55	→	→	→	→	11 40
21P	21380					11 00	11 10	11 25	11 40	11 50	12 35
21P	21400					11 25	11 35	11 50	12 05	12 15	13 00
21P	21410					11 45	11 55	12 10	12 25	12 35	13 20
21B	21384		11 25	11 38	11 43	11 55	→	→	→	→	12 45
21P	21420					12 00	12 10	12 25	12 40	12 50	13 35
21P	21440					12 25	12 35	12 50	13 05	13 15	14 00
21P	21450					12 45	12 55	13 10	13 25	13 35	14 20
21B	21424		12 25	12 38	12 43	12 55	→	→	→	→	13 45
21P	21460					13 00	13 10	13 25	13 40	13 50	14 35
21P	21470					13 20	13 30	13 45	14 00	14 10	14 55

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Milton 24 Dp — Milton GO	Mississauga 22 — Derry Rd. W. @ Ninth Line	Mississauga 22 — Aquitane Ave. @ Meadowvale Town Centre Circle	Mississauga 22 Dp — Meadowvale GO	Mississauga 21 — Streetsville GO	Mississauga 40 — Erindale GO	Mississauga 20 — Square One	Mississauga 11 — Cooksville GO	Toronto 2 Ar — Union Station Bus Terminal
21P	21480					13 40	13 50	14 05	14 20	14 30	15 20
21B	21464		13 25	13 38	13 43	13 55	→	→	→	→	14 45
21P	21490					14 00	14 10	14 25	14 40	14 50	15 40
21P	21540					14 25	14 35	14 50	15 05	15 15	16 05
21B	21514		14 25	14 38	14 43	14 55	→	→	→	→	15 45
21P	21550					15 00	15 10	15 25	15 40	15 50	16 40
21P	21600					15 25	15 35	15 50	16 05	16 15	17 05
21B	21574		15 25	15 38	15 43	15 55	→	→	→	→	16 45
21P	21610					16 00	16 10	16 25	16 40	16 50	17 40
21P	21660					16 25	16 35	16 50	17 05	17 15	18 05
21B	21634		16 25	16 38	16 43	16 55	→	→	→	→	17 45
21P	21680					17 00	17 10	17 25	17 40	17 50	18 45
21P	21700					17 20	17 30	17 45	18 00	18 10	19 05
21B	21690		17 30	17 43	17 48	18 00	→	→	→	→	18 50
21P	21720					18 05	18 15	18 30	18 45	18 55	19 45
21B	21730		18 30	18 43	18 48	19 00	→	→	→	→	19 45
21P	21760					19 05	19 15	19 30	19 45	19 55	20 35
21B	21764		19 30	19 43	19 48	20 00	→	→	→	→	20 40
21P	21800					20 05	20 15	20 30	20 45	20 55	21 30
21B	21804		20 30	20 41	20 45	20 55	→	→	→	→	21 35
21P	21830					21 05	21 15	21 30	21 45	21 55	22 25
21A	21850		21 25	21 36	21 40	21 50	22 00	22 15	22 25	22 35	23 05
21A	21880		22 30	22 41	22 45	22 55	23 03	23 16	23 25	23 35	00 05
21A	21910		23 35	23 45	23 48	23 55	00 03	00 16	00 25	00 35	01 00
21A	21940		00 35	00 45	00 48	00 55	01 03	01 16	01 25	01 35	02 00

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Toronto 2 Dp	Mississauga 11	Mississauga 20	Mississauga 40	Mississauga 21	Mississauga 22 Ar	Mississauga 22	Mississauga 22	Milton 24 Ar
			Union Station Bus Terminal	Ⓟ Cooksville GO	Ⓟ Square One	Ⓟ Erindale GO	Ⓟ Streetsville GO	Ⓟ Meadowvale GO	Aquitane Ave. @ Formentera Ave. Meadowvale Town Centre	Derry Rd. W. @ Ninth Line	Ⓟ Milton GO
21P	21153		07 20	07 42	07 55	08 02	08 15	08 30			
21B	21195		08 00	→	→	→	→	08 35	08 37	08 43	09 05
21P	21211		08 20	08 42	08 55	09 02	09 15	09 30			
21B	21245		09 00	→	→	→	→	09 35	09 37	09 43	10 05
21P	21251		09 25	09 47	10 05	10 12	10 25	10 40			
21P	21271		09 50	10 12	10 30	10 37	10 50	11 05			
21B	21285		10 00	→	→	→	→	10 40	10 42	10 48	11 10
21P	21291		10 30	10 52	11 15	11 22	11 35	11 50			
21P	21311		10 50	11 12	11 35	11 42	11 55	12 10			
21B	21325		11 05	→	→	→	→	11 45	11 47	11 53	12 15
21P	21331		11 20	11 47	12 10	12 17	12 30	12 45			
21P	21351		11 50	12 17	12 40	12 47	13 00	13 15			
21B	21365		12 00	→	→	→	→	12 45	12 47	12 53	13 15
21P	21371		12 20	12 47	13 15	13 22	13 35	13 50			
21P	21391		12 50	13 17	13 45	13 52	14 05	14 20			
21B	21405		13 00	→	→	→	→	13 45	13 47	13 53	14 15
21P	21411		13 20	13 47	14 15	14 22	14 35	14 50			
21P	21431		13 50	14 17	14 45	14 52	15 05	15 20			
21B	21445		14 05	→	→	→	→	14 50	14 52	14 58	15 20
21P	21451		14 20	14 47	15 15	15 22	15 35	15 50			
21P	21471		14 50	15 17	15 45	15 52	16 05	16 20			
21B	21485		15 05	→	→	→	→	15 50	15 52	15 58	16 20
21P	21501		15 20	15 47	16 15	16 22	16 35	16 50			
21P	21531		15 55	16 22	16 50	16 57	17 10	17 25			
21B	21545		16 00	→	→	→	→	16 50	16 52	16 58	17 20
21P	21561		16 20	16 47	17 15	17 22	17 35	17 50			
21P	21591		16 55	17 27	17 55	18 02	18 15	18 30			
21B	21605		17 00	→	→	→	→	17 50	17 52	17 58	18 20

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Toronto 2 Dp	Mississauga 11	Mississauga 20	Mississauga 40	Mississauga 21	Mississauga 22 Ar	Mississauga 22	Mississauga 22	Milton 24 Ar
			Union Station Bus Terminal	Ⓟ Cooksville GO	Ⓟ Square One	Ⓟ Erindale GO	Ⓟ Streetsville GO	Ⓟ Meadowvale GO	Aquitane Ave. @ Formentera Ave. Meadowvale Town Centre	Derry Rd. W. @ Ninth Line	Ⓟ Milton GO
21P	21621		17 20	17 52	18 20	18 27	18 40	18 55			
21P	21631		17 40	18 07	18 35	18 42	18 55	19 10			
21P	21651		17 55	18 22	18 50	18 57	19 10	19 25			
21B	21665		18 00	→	→	→	→	18 50	18 52	18 58	19 20
21P	21671		18 20	18 47	19 15	19 22	19 35	19 50			
21P	21681		18 40	19 07	19 30	19 37	19 50	20 05			
21P	21691		19 00	19 27	19 50	19 57	20 10	20 25			
21B	21705		19 05	→	→	→	→	19 50	19 52	19 58	20 20
21P	21711		19 20	19 47	20 10	20 17	20 30	20 45			
21P	21721		19 40	20 07	20 30	20 37	20 50	21 05			
21P	21731		20 00	20 27	20 50	20 57	21 10	21 25			
21B	21741		20 05	→	→	→	→	20 45	20 47	20 53	21 15
21P	21751		20 20	20 42	21 05	21 12	21 25	21 40			
21P	21761		20 40	21 02	21 25	21 32	21 45	22 00			
21P	21771		21 00	21 22	21 40	21 47	22 00	22 15			
21B	21785		21 05	→	→	→	→	21 45	21 47	21 53	22 15
21P	21791		21 20	21 42	22 00	22 07	22 20	22 35			
21P	21801		21 40	22 02	22 20	22 27	22 40	22 55			
21P	21811		22 00	22 22	22 40	22 47	23 00	23 15			
21B	21825		22 05	→	→	→	→	22 40	22 42	22 48	23 10
21P	21831		22 20	22 42	23 00	23 07	23 20	23 30			
21P	21841		22 40	23 02	23 20	23 27	23 40	23 50			
21P	21851		22 55	23 17	23 35	23 42	23 55	00 05			
21B	21855		23 00	→	→	→	→	23 35	23 37	23 41	00 00
21P	21861		23 20	23 42	00 00	00 07	00 20	00 30			
21A	21871		23 50	00 12	00 30	00 37	00 50	01 00	01 02	01 06	01 25
21A	21891		00 20	00 42	01 00	01 07	01 20	01 30	01 32	01 36	01 55
21A	21921		01 20	01 40	01 55	02 02	02 15	02 25	02 27	02 31	02 50
21A	21951		02 20	02 40	02 50	02 57	03 10	03 20	03 22	03 26	03 45

27 Route number / Nombre d'itinéraire

Milton/North York

CONTACT US

1-888-438-6646
416-869-3200
TTY: #711 or call
1-800-855-0511

gotransit.com/schedules

@GOtransitBus

See Something?
Say Something.
24/7 Transit Safety Dispatch:
1-877-297-0642

prestocard.ca

Sign-up for email or text alerts/ Inscrivez-vous pour recevoir des alertes par courriel ou message texte.
gotransit.com/OnTheGO

Milton/ North York

GO Bus Schedule/
Horaire des autobus GO

METROLINX

27

- Finch Bus Terminal
- York Mills Bus Terminal
- Yorkdale Bus Terminal
- Keele @ Hwy.401
- Meadowvale Business Park
- Erin Mills Pkwy/ Miss. Rd.
- Meadowvale GO
- Meadowvale Town Centre
- Derry @ 9th Line
- Derry @ Thompson
- Milton GO

Daily / Quotidiennement
Includes GO Bus routes 27 / Inclut les routes 27 d'autobus GO

Effective / À partir de:
7 JANUARY JANVIER 2023

How to read our schedules

Step 1
Find the station or terminal you are departing from. Stops are listed across the top in the order they are served.

Step 2
The upper left corner tells you what day the schedule is for and the direction of travel.

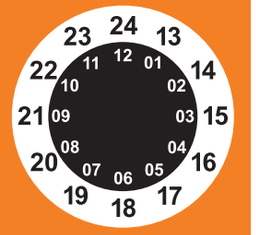
Step 3
Look across the rows for available departure times.

Step 4
Not all trains or buses stop at every station. If you see → the train or bus will not stop at that station.

Schedule times shown in 24-hour clock

Midnight to noon
00 01 - 12 00

Noon to midnight
12 01 - 24 00



Legend

Bus trips

→ Trip does not serve this location.

GO Bus service is accessible to passengers using mobility devices at this location.

Parking available.

Notes

D Stops to let off passengers on request ONLY.

Bicycles

1. Bicycles are not allowed in Union Station or on-board trains during morning rush hour (6:30-9:30) and evening rush hour (15:30-18:30), Monday to Friday.

2. Foldable bicycles are allowed on-board trains at all times.

For the latest schedule information and updates, please visit gotransit.com/schedules.

Comment lire nos horaires

Étape 1
Trouvez votre gare ou terminus de départ. La liste des arrêts est donnée en haut dans l'ordre dans lequel ils sont desservis.

Étape 2
Le coin supérieur gauche vous indique le jour pour lequel l'horaire est donné et la direction de circulation.

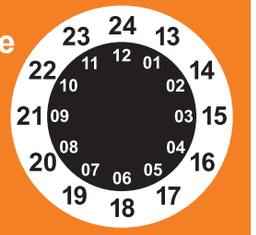
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

Étape 4
Les trains ou les autobus ne s'arrêtent pas tous à chaque gare. Si vous voyez le symbole → le train ou l'autobus ne s'arrêtera pas à cette gare.

Indications selon un système horaire de 24 heures

De minuit à midi:
00 01 - 12 00

De midi à minuit:
12 01 - 24 00



Légende

Horaire des autobus

→ Trajet ne sert pas cette station.

Service d'autobus GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.

Stationnement disponible.

Notes

D Arrêt sur demande SEULEMENT.

Vélos

1. Les vélos ne sont pas autorisés dans la gare Union ou à bord des trains du lundi au vendredi, pendant l'heure de pointe (6:30-9:30) et pendant l'heure de pointe du soir (15:30-18:30).

2. Les vélos pliables sont permis à bord des trains en tout temps.

Pour consulter les horaires les plus récents et les mises à jour, veuillez visiter gotransit.com/schedules.

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Milton 24 Dp	Milton 24	Mississauga 22	Mississauga 22	Mississauga 22 Dp	Mississauga 22	Mississauga 22	North York 5	North York 5	North York 5 Ar	North York 5	North York 5 Ar
			Ⓟ ♿ Milton GO	Derry Rd. @ Thompson Rd. S.	Derry Rd. W. @ Ninth Line	Aquitane Ave. @ Meadowvale Town Centre Circle	Ⓟ ♿ Meadowvale GO	Mississauga Rd. @ Mississauga Rd.	♿ Syntex Crt. @ Financial Dr.	Keele St. @ Hwy. 401 D	♿ Yorkdale Bus Terminal	♿ York Mills Bus Terminal	♿ Yonge St. @ Sheppard Ave.	♿ Finch Bus Terminal
27	27060		05 10	05 13	05 21	05 27	05 35	05 38	→	06 00	06 05	→	06 11	06 20
27	27070		05 35	05 38	05 46	05 52	06 00	06 03	→	06 30	06 35	→	06 45	06 55
27	27100		05 55	05 58	06 06	06 12	06 20	06 23	→	06 55	07 00	→	07 10	07 20
27	27130		06 30	06 33	06 43	06 50	07 00	07 03	→	07 40	07 45	→	07 55	08 05
27	27140		06 45	06 48	06 58	07 05	07 15	07 18	→	08 00	08 05	→	08 15	08 25
27	27160		07 00	07 03	07 13	07 20	07 30	07 33	→	08 18	08 23	→	08 33	08 45
27	27190		07 25	07 28	07 41	07 49	08 00	08 03	→	08 48	08 53	→	09 03	09 15
27F	27220						08 30	08 33	08 38	09 20	09 25	→	09 35	09 45
27	27240		08 25	08 28	08 41	08 49	09 00	09 03	→	09 40	09 45	→	09 55	10 05
27F	27280						10 00	10 03	10 08	10 40	10 45	→	10 55	11 05
27F	27320						11 00	11 03	11 08	11 40	11 45	→	11 55	12 05
27F	27360						12 00	12 03	12 08	12 40	12 45	→	12 55	13 05
27F	27400						13 00	13 03	13 08	13 40	13 45	→	13 55	14 05
27F	27440						14 00	14 03	14 08	14 40	14 45	→	14 55	15 05
27F	27480						14 55	14 59	15 05	15 43	15 48	→	15 58	16 10
27F	27510						15 25	15 29	15 35	16 13	16 18	→	16 28	16 40
27F	27540						15 55	15 59	16 07	01 48	16 53	→	17 03	17 15
27F	27560						16 25	16 29	16 37	17 18	17 23	→	17 33	17 45
27A	27600		16 25	16 28	16 38	16 45	16 55	16 59	17 07	17 48	17 58	→	18 08	18 20
27F	27630						17 30	17 34	17 42	18 23	18 28	→	18 38	18 50
27A	27660		17 30	17 33	17 43	17 50	18 00	18 04	18 12	18 48	18 53	→	19 03	19 15
27F	27700						19 00	19 03	19 08	19 40	19 45	→	19 55	20 05
27F	27740						20 00	20 03	20 08	20 35	20 40	→	20 50	21 00
27F	27780						21 00	21 03	21 08	21 35	21 40	→	21 46	21 55
27F	27850						23 00	23 03	23 08	23 30	23 35	→	23 41	23 50

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	North York 5 Dp	North York 5	North York 5 Dp	North York 5	North York 5	North York 5	Mississauga 22	Mississauga 22	Mississauga 22 Ar	Mississauga 22	Mississauga 22	Milton 24	Milton 24 Ar
			♿ Finch Bus Terminal	♿ Yonge St. @ Sheppard Ave.	♿ York Mills Bus Terminal	♿ Yorkdale Bus Terminal	♿ Hwy. 401 @ Keele St.	♿ Financial Dr. @ Syntex Crt.	Erin Mills Pkwy. @ Turner Valley Rd.	Ⓟ ♿ Meadowvale GO	Aquitane Ave. @ Formentera Ave.	Derry Rd. W. @ Ninth Line	Derry Rd. @ Thompson Rd. S.	Ⓟ ♿ Milton GO	
27F	27051		05 30	05 35	→	05 45	05 50	06 10	06 15	06 20					
27F	27101		06 30	06 37	→	06 50	06 55	07 17	07 22	07 30					
27F	27131		07 00	07 07	→	07 20	07 25	07 50	07 57	08 05					
27F	27161		07 30	07 37	→	07 55	08 00	08 25	08 32	08 40					
27F	27171		07 45	07 52	→	08 10	08 15	08 40	08 47	08 55					
27F	27201		08 15	08 22	→	08 40	08 45	09 10	09 17	09 25					
27F	27231		08 45	08 52	→	09 10	09 15	09 40	09 47	09 55					
27F	27251		09 15	09 22	→	09 40	09 45	10 07	10 12	10 20					
27F	27291		10 15	10 22	→	10 35	10 40	11 00	11 05	11 10					
27F	27331		11 15	11 22	→	11 35	11 40	12 00	12 05	12 10					
27F	27371		12 15	12 22	→	12 35	12 40	13 00	13 05	13 10					
27F	27411		13 15	13 22	→	13 35	13 40	14 02	14 07	14 15					
27F	27451		14 15	14 22	→	14 35	14 40	15 05	15 12	15 20					
27A	27501		15 15	15 22	→	15 40	15 45	16 18	16 25	16 35	16 38	16 45	16 55	17 10	
27A	27521		15 55	16 02	→	16 20	16 25	16 58	17 05	17 15	17 18	17 25	17 35	17 50	
27A	27551		16 25	16 32	→	16 50	16 55	17 28	17 35	17 45	17 48	17 55	18 05	18 20	
27A	27581		16 55	17 02	→	17 20	17 25	17 58	18 05	18 15	18 18	18 25	18 35	18 50	
27A	27621		17 30	17 37	→	17 55	18 00	18 30	18 35	18 45	18 48	18 55	19 05	19 20	
27A	27651		17 55	18 02	→	18 20	18 25	18 50	18 55	19 05	19 08	19 15	19 25	19 35	
27A	27671		18 30	18 37	→	18 50	18 55	19 20	19 25	19 30	19 33	19 40	19 50	20 05	
27A	27701		19 15	19 22	→	19 35	19 40	20 00	20 05	20 10	20 13	20 20	20 30	20 40	
27F	27741		20 15	20 20	→	20 30	20 35	20 55	21 00	21 05					
27F	27781		21 15	21 20	→	21 30	21 35	21 55	22 00	22 05					
27F	27821		22 15	22 20	→	22 30	22 35	22 55	23 00	23 05					
27F	27881		00 15	00 20	→	00 30	00 35	00 55	01 00	01 05					

Saturday and Sunday
Samedi et Dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Mississauga 22 Dp	Mississauga 22	Mississauga 22	North York 5	North York 5	North York 5	North York 5 Ar
			Meadowvale GO	Mississauga Rd. @ Mississauga Rd.	Syntex Crt. @ Financial Dr.	Keele St. @ Hwy. 401 D	Yorkdale Bus Terminal	Yonge St. @ Sheppard Ave.	Finch Bus Terminal
27F	27070		06 00b	06 03	06 08	06 30	06 35	06 41	06 50
27F	27130		07 00b	07 03	07 08	07 30	07 35	07 41	07 50
27F	27190		08 00b	08 03	08 08	08 30	08 35	08 41	08 50
27F	27240		09 00b	09 03	09 08	09 30	09 35	09 41	09 50
27F	27280		10 00b	10 03	10 08	10 30	10 35	10 43	10 55
27F	27320		11 00b	11 03	11 08	11 35	11 45	11 53	12 05
27F	27360		12 00b	12 03	12 08	12 40	12 50	12 58	13 10
27F	27400		13 00b	13 03	13 08	13 45	13 55	14 03	14 15
27F	27440		14 00b	14 03	14 08	14 45	14 55	15 03	15 15
27F	27480		15 00b	15 03	15 08	15 45	15 55	16 03	16 15
27F	27540		16 00b	16 03	16 08	16 45	16 55	17 03	17 15
27F	27600		17 00b	17 03	17 08	17 40	17 50	17 58	18 10
27F	27660		18 00b	18 03	18 08	18 40	18 50	18 58	19 10
27F	27700		19 00b	19 03	19 08	19 40	19 50	19 58	20 10
27F	27740		20 00b	20 03	20 08	20 35	20 45	20 53	21 05
27F	27780		21 00b	21 03	21 08	21 30	21 35	21 43	21 55
27F	27820		22 00b	22 03	22 08	22 30	22 35	22 43	22 55
27F	27850		23 00b	23 03	23 08	23 30	23 35	23 41	23 50

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	North York 5 Dp	North York 5	North York 5	North York 5	Mississauga 22	Mississauga 22	Mississauga 22 Ar
			Finch Bus Terminal	Yonge St. @ Sheppard Ave.	Yorkdale Bus Terminal	Hwy. 401 @ Keele St.	Financial Dr. @ Syntex Crt.	Erin Mills Pkwy. @ Turner Valley Rd.	Meadowvale GO
27F	27101		06 30	06 35	06 45	06 50	07 10	07 15	07 20
27F	27161		07 30	07 35	07 45	07 50	08 10	08 15	08 20
27F	27221		08 30	08 37	08 50	08 55	09 15	09 20	09 25
27F	27261		09 30	09 37	09 50	09 55	10 15	10 20	10 25
27F	27301		10 30	10 37	10 50	10 55	11 15	11 20	11 30
27F	27341		11 30	11 37	11 50	11 55	12 15	12 20	12 30
27F	27381		12 30	12 37	12 55	13 00	13 25	13 30	13 40
27F	27421		13 30	13 37	13 55	14 00	14 25	14 30	14 40
27F	27461		14 30	14 37	14 55	15 00	15 25	15 30	15 40
27F	27511		15 30	15 37	15 55	16 00	16 20	16 25	16 35
27F	27571		16 30	16 37	16 55	17 00	17 20	17 25	17 35
27F	27631		17 30	17 37	17 55	18 00	18 20	18 25	18 35
27F	27681		18 30	18 37	18 55	19 00	19 20	19 25	19 35
27F	27721		19 30	19 37	19 50	19 55	20 15	20 20	20 30
27F	27761		20 30	20 35	20 45	20 50	21 10	21 15	21 25
27F	27801		21 30	21 35	21 45	21 50	22 10	22 15	22 25
27F	27831		22 30	22 35	22 45	22 50	23 10	23 15	23 20
27F	27861		23 30	23 35	23 45	23 50	00 10	00 15	00 20

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- By creating a My PRESTO Account and setting up Autoload
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- At select Shoppers Drug Mart locations in the GTHA or select Fortinos locations in Hamilton.
- At ticket counters in GO stations, GO Bus terminals, and at participating ticket agencies
- By phone at 1-877-378-6123

ÉCONOMISEZ AVEC PRESTO!

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- En créant un compte PRESTO et en configurant le chargement automatique
- À partir d'une borne de rechargement libre-service PRESTO
- Dans certains magasins Shoppers Drug Mart dans la RGTH ou dans certains établissements Fortinos à Hamilton
- À une billetterie dans une gare GO ou une station d'autobus GO, ou à une billetterie participante
- Par téléphone au 1-877-378-6123

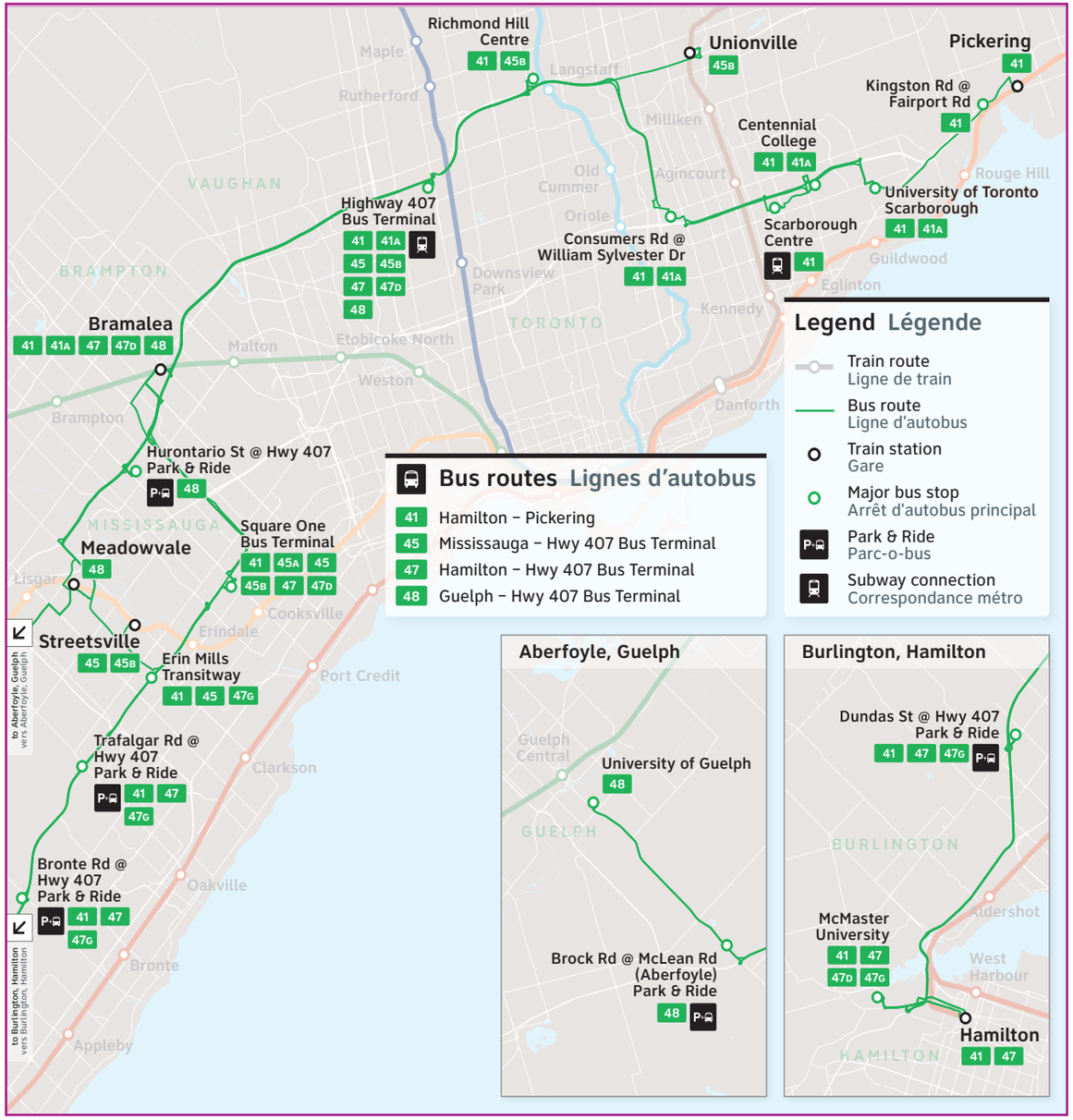
For more information please visit
gotransit.com/PRESTO

Pour en savoir davantage,
veuillez visiter le site
gotransit.com/fr/PRESTO

41-45-47-48

Route number
Numéro du trajet

Hamilton/Pickering



CONTACT US

1-888-438-6646
416-869-3200
TTY/ATS:
1-800-387-3652

gotransit.com/schedules

@GOtransitBus

See Something?
Say Something.

24/7 Transit Safety Dispatch:
1-877-297-0642

prestocard.ca

Sign-up for email or text alerts/ Inscrivez-vous pour recevoir des alertes par courriel ou message texte.
gotransit.com/OnTheGO

Hamilton/ Pickering

GO Bus Schedule/
Horaire des autobus GO

METROLINX

41 45 47 48

- Hamilton
- Burlington
- Oakville
- Mississauga
- Brampton
- Vaughan
- Richmond Hill
- Markham
- Scarborough
- Pickering

Daily / Quotidiennement
Includes GO Bus routes 41, 45, 47, 48 / Inclut les trajets 41, 45, 47, 48 d'autobus GO

Effective / À partir de:
7 JANUARY JANVIER 2023

How to read our schedules

Step 1
Find the station or terminal you are departing from. Stops are listed across the top in the order they are served.

Step 2
The upper left corner tells you what day the schedule is for and the direction of travel.

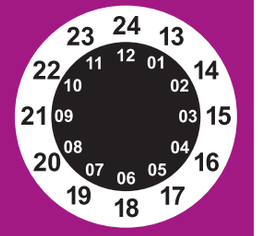
Step 3
Look across the rows for available departure times.

Step 4
Not all trains or buses stop at every station. If you see → the train or bus will not stop at that station.

Schedule times shown in 24-hour clock

Midnight to noon
00 01 - 12 00

Noon to midnight
12 01 - 24 00



Legend

- Bus trips
- → Trip does not serve this location.
- GO Bus service is accessible to passengers using mobility devices at this location.
- Parking available.

Bicycles

1. Bicycles are not allowed in Union Station or on-board trains during morning rush hour (6:30-9:30) and evening rush hour (15:30-18:30), Monday to Friday.

2. Foldable bicycles are allowed on-board trains at all times.

Notes

For the latest schedule information and updates, please visit gotransit.com/schedules.

Comment lire nos horaires

Étape 1
Trouvez votre gare ou terminus de départ. La liste des arrêts est donnée en haut dans l'ordre dans lequel ils sont desservis.

Étape 2
Le coin supérieur gauche vous indique le jour pour lequel l'horaire est donné et la direction de circulation.

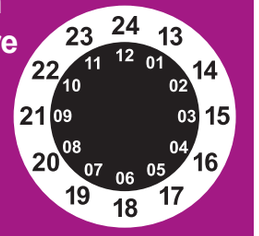
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

Étape 4
Les trains ou les autobus ne s'arrêtent pas tous à chaque gare. Si vous voyez le symbole → le train ou l'autobus ne s'arrêtera pas à cette gare.

Indications selon un système horaire de 24 heures

De minuit à midi:
00 01 - 12 00

De midi à minuit:
12 01 - 24 00



Légende

- Horaire des autobus
- → Trajet ne sert pas cette station.
- Service d'autobus GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.
- Stationnement disponible.

Vélos

1. Les vélos ne sont pas autorisés dans la gare Union ou à bord des trains du lundi au vendredi, pendant l'heure de pointe (6:30-9:30) et pendant l'heure de pointe du soir (15:30-18:30).

2. Les vélos pliables sont permis à bord des trains en tout temps.

Notes

Pour consulter les horaires les plus récents et les mises à jour, veuillez visiter gotransit.com/schedules.

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet		Zone→	Guelph 39	Puslinch 39	Hamilton 18	Hamilton 18	Burlington 16	Oakville 14	Oakville 13	Mississauga 22	Mississauga 22	Mississauga 21	Mississauga 20	Brampton 32	Vaughan 19	Vaughan 19	Richmond Hill 60	North York 5	Markham 71	Scarborough 7	Scarborough 89	Scarborough 89	Pickering 91	Pickering 91
Trip Number / Numéro du parcours			Dp	Dp											Ar	Dp								Ar
			University of Guelph	(P)	Brock Rd. @ McLean Rd. (Aberfoyle)	Hamilton GO Centre	McMaster University	(P) Dundas St. @ Hwy. 407	(P) Bronte Rd. @ Hwy. 407	(P) Trafalgar Rd. @ Hwy. 407	(P) Meadowvale GO	(P) Hurontario St. @ Hwy. 407	(P) Streetsville GO	(P) Erin Mills Transitway Station	(P) Square One	(P) Bramalea GO	(P) Hwy. 407 Bus Terminal	(P) Hwy. 407 Bus Terminal	Richmond Hill Centre	Consumers Rd. Business Park	(P) Unionville GO	Scarborough Centre Bus Terminal	Centennial College	University of Toronto Scarborough	(P) Kingston Rd. @ Fairport Rd.	(P) Pickering GO
41	41020				04 40	04 52	05 09	05 16	05 24	→	→	→	05 32	05 45	06 02	06 20	06 25	06 35	06 53	→	07 05	07 12	07 22	07 33	07 40
48	48100	05 00	05 15		→	→	→	→	→	05 50	06 04	→	→	→	06 15	06 35									
45B	45100											05 35	05 45	06 00	→	06 25	06 25	06 35	→	06 50					
41	41030				05 05	05 17	05 37	05 44	05 52	→	→	→	06 00	06 15	06 32	06 50	06 55	07 05	07 25	→	07 40	07 47	08 02	08 13	08 20
41A	41042													06 25	06 42	07 00	07 00	→	07 23	→	→	07 38	07 50		
45B	45130											06 05	06 15	06 30	→	07 00	07 00	07 10	→	07 25					
41A	41044													06 40	06 57	07 15	07 15	→	07 40	→	→	07 55	08 10		
41	41050				05 30	05 42	06 02	06 10	06 19	→	→	→	06 27	06 45	07 02	07 20	07 25	07 35	07 58	→	08 15	08 22	08 37	08 48	08 55
41A	41052													06 55	07 10	07 30	07 30	→	07 58	→	→	08 15	08 30		
41A	41062													07 05	07 22	07 40	07 40	→	08 08	→	→	08 25	08 40		
48	48160	05 50	06 05		→	→	→	→	→	06 45	06 59	→	→	→	07 10	07 30									
41	41060				05 55	06 07	06 27	06 35	06 44	→	→	→	06 52	07 10	07 30	07 50	07 55	08 05	08 28	→	08 45	08 52	09 07	09 18	09 25
41A	41072													07 20	07 40	08 00	08 00	→	08 28	→	→	08 45	09 00		
45B	45190											06 55	07 07	07 25	→	07 55	07 55	08 05	→	08 20					
41A	41092													07 35	07 55	08 15	08 15	→	08 43	→	→	09 00	09 15		
48	48220	06 35	06 50		→	→	→	→	→	07 35	07 54	→	→	→	08 05	08 25									
41	41100				06 25	06 37	07 00	07 08	07 17	→	→	→	07 27	07 45	08 05	08 25	08 30	08 40	09 00	→	09 15	09 22	09 37	09 48	09 55
41A	41112													08 10	08 30	08 50	08 50	→	09 15	→	→	09 32	09 45		
41	41120				06 55	07 07	07 30	07 38	07 47	→	→	→	07 57	08 15	08 35	08 55	09 00	09 10	09 30	→	09 45	09 52	10 07	10 18	10 25
45B	45240											07 50	08 07	08 25	→	08 55	08 55	09 05	→	09 20					
41A	41132													08 40	09 00	09 20	09 20	→	09 45	→	→	10 02	10 15		
41	41140				07 25	07 42	08 05	08 13	08 22	→	→	→	08 32	08 50	09 10	09 30	09 35	09 45	10 05	→	10 20	10 27	10 37	10 48	10 55
48	48260	07 25	07 40		→	→	→	→	→	08 35	08 54	→	→	→	09 05	09 25									
41A	41152													09 10	09 30	09 50	09 50	→	10 15	→	→	10 32	10 45		
41	41170				07 55	08 12	08 35	08 43	08 52	→	→	→	09 02	09 20	09 40	10 00	10 05	10 15	10 35	→	10 50	10 57	11 07	11 18	11 25
45B	45280											08 55	09 07	09 25	→	09 55	09 55	10 05	→	10 20					
41A	41192													09 35	09 55	10 15	10 15	→	10 37	→	→	10 52	11 05		
48	48300	08 35	08 50		→	→	→	→	→	09 35	09 54	→	→	→	10 05	10 25									
41	41210				08 30	08 47	09 10	09 17	09 25	→	→	→	09 35	09 50	10 07	10 25	10 30	10 40	11 00	→	11 15	11 22	11 32	11 43	11 50
41A	41212													10 10	10 27	10 45	10 45	→	11 07	→	→	11 22	11 35		
41	41230				08 55	09 12	09 35	09 42	09 50	→	→	→	10 00	10 15	10 32	10 50	10 55	11 05	11 25	→	11 40	11 47	11 57	12 08	12 15
45B	45320											10 05	10 15	10 30	→	10 55	10 55	11 05	→	11 20					
41A	41252													10 40	10 57	11 15	11 15	→	11 37	→	→	11 52	12 05		
41	41260				09 30	09 47	10 07	10 14	10 22	→	→	→	10 30	10 45	11 02	11 20	11 25	11 35	11 53	→	12 05	12 12	12 27	12 38	12 45
48	48340	09 50	10 05		→	→	→	→	→	10 45	10 59	→	→	→	11 10	11 30									
41A	41272													11 10	11 27	11 45	11 45	→	12 07	→	→	12 22	12 35		
41	41280				10 00	10 17	10 37	10 44	10 52	→	→	→	11 00	11 15	11 32	11 50	11 55	12 05	12 23	→	12 35	12 42	12 57	13 08	13 15
45B	45360											11 05	11 15	11 30	→	11 55	11 55	12 05	→	12 20					
41A	41292													11 35	11 55	12 15	12 15	→	12 37	→	→	12 52	13 05		
41	41300				10 25	10 42	11 02	11 09	11 17	→	→	→	11 25	11 40	12 00	12 20	12 25	12 35	12 53	→	13 05	13 12	13 27	13 38	13 45
48	48380	10 45	11 00		→	→	→	→	→	11 40	11 59	→	→	→	12 10	12 30									
41A	41320													12 10	12 30	12 50	12 50	→	13 12	→	→	13 27	13 40		
41	41320				11 00	11 17	11 37	11 44	11 52	→	→	→	12 00	12 15	12 35	12 55	13 00	13 10	13 28	→	13 40	13 57	14 02	14 13	14 20
45B	45400											12 05	12 15	12 30	→	12 55	12 55	13 05	→	13 20					
47D	47352					12 00	→	→	→	→	→	→	→	12 35	12 55	13 15									
41	41340				11 25	11 42	12 02	12 09	12 17	→	→	→	12 25	12 40	13 00	13 20	13 25	13 35	13 53	→	14 05	14 12	14 27	14 38	14 45
48	48420	11 45	12 00		→	→	→	→	→	12 40	12 59	→	→	→	13 10	13 30									
41	41360				11 55	12 12	12 32	12 39	12 47	→	→	→	12 55	13 10	13 30	13 50	13 55	14 05	14 25	→	14 40	14 47	15 02	15 13	15 20
47D	47372					12 30	→	→	→	→	→	→	→	13 05	13 25	13 45									
45B	45440											13 05	13 15	13 30	→	13 55	13 55	14 05	→	14 20					
41	41380				12 25	12 42	13 02	13 09	13 17	→	→	→	13 25	13 40	14 00	14 20	14 25	14 35	14 55	→	15 10	15 17	15 32	15 43	15 50
47D	47392					13 00	→	→	→	→	→	→	→	13 35	13 55	14 15									
48	48460	12 45	13 00		→	→	→	→	→	13 40	13 59	→	→	→	14 10	14 30									
41	41400				12 55	13 12	13 32	13 39	13 47	→	→	→	13 55	14 10	14 30	14 50	14 55	15 05	15 25	→	15 40	15 47	16 02	16 13	16 20
47D	47712					13 30	→	→	→	→	→	→	→	14 05	14 25	14 45									
45B	45480											14 05	14 15	14 30	→	14 55	14 55	15 05	→	15 20					
47G	47414					13 35	13 55	14 02	14 10	→	→	→	14 20												
41	41420				13 25	13 42	14 02	14 09	14 17	→	→	→	14 25	14 40	15 00	15 20	15 25	15 35	15 55	→	16 10	16 17	16 32	16 43	16 50
47D	47422					13 55	→	→	→	→	→	→	→	14 35	14 55	15 15									
47G	47424					14 05	14 25	14 32	14 40	→	→	→	14 50												
48	48510	13 45	14 00		→	→	→	→	→	14 40	14 59	→	→	→	15 10	15 30									
41	41430				13 55	14 12	14 32	14 39	14 47	→	→	→	14 55	15 10	15 30	15 50	15 55	16 05	16 28	→	16 45	16 52	17 07	17 20	17 30
47D	47442					14 25	→	→	→	→	→	→	→	15 05	15 25	15 45									
45B	45540											15 00	15 10	15 25	→	15 55	15 55	16 05	→	16 20					
47G	47444					14 35	14 55	15 03	15 11	→	→	→	15 25												
47D	47446					14 45	→	→	→	→	→	→	→	15 25	15 45	16 05									

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet		Zone→	Guelph 39	Puslinch 39	Hamilton 18	Hamilton 18	Burlington 16	Oakville 14	Oakville 13	Mississauga 22	Mississauga 22	Mississauga 21	Mississauga 21	Mississauga 20	Brampton 32	Vaughan 19	Vaughan 19	Richmond Hill 60	North York 5	Markham 71	Scarborough 7	Scarborough 89	Scarborough 89	Pickering 91	Pickering 91
Trip Number / Numéro du parcours			Dp	Dp												Ar	Dp								Ar
			University of Guelph	(P)	Brock Rd. @ McLean Rd. (Aberfoyle)	Hamilton GO Centre	McMaster University	(P) Dundas St. @ Hwy. 407	(P) Bronte Rd. @ Hwy. 407	(P) Trafalgar Rd. @ Hwy. 407	(P) Meadowvale GO	(P) Hurontario St. @ Hwy. 407	(P) Streetsville GO	(P) Erin Mills Transitway Station	(P) Square One	(P) Bramalea GO	(P) Hwy. 407 Bus Terminal	(P) Hwy. 407 Bus Terminal	Richmond Hill Centre	Consumers Rd. Business Park	(P) Unionville GO	Scarborough Centre Bus Terminal	Centennial College	University of Toronto Scarborough	(P) Kingston Rd. @ Fairport Rd.	(P) Pickering GO
41	41450					14 25	14 44	15 04	15 12	15 20	→	→	→	15 30	15 45	16 05	16 25	16 30	16 40	17 03	→	17 20	17 27	17 42	17 55	18 05
47D	47462						15 00	→	→	→	→	→	→	→	15 40	16 00	16 20									
47G	47464						15 05	15 25	15 33	15 41	→	→	→	15 55												
48	48570	14 35	14 50		→	→	→	→	→	15 40	15 59	→	→	→	16 10	16 30									
47D	47466						15 15	→	→	→	→	→	→	→	15 55	16 20	16 40									
45B	45600													15 55	16 05	16 20	→	16 55	16 55	17 05	→	17 20			
41	41470					14 55	15 14	15 34	15 42	15 50	→	→	→	16 00	16 15	16 40	17 00	17 05	17 15	17 38	→	17 55	18 02	18 17	18 30	18 40
47D	47482						15 30	→	→	→	→	→	→	→	16 10	16 35	16 55									
47G	47484						15 35	15 55	16 03	16 11	→	→	→	16 25												
47G	47472						15 45	16 00	16 08	16 16	→	→	→	16 30												
47D	47492						15 45	→	→	→	→	→	→	→	16 25	16 50	17 10									
41	41490					15 25	15 44	16 04	16 12	16 20	→	→	→	16 30	16 45	17 10	17 30	17 35	17 45	18 08	→	18 25	18 32	18 47	19 00	19 10
47D	47512						16 00	→	→	→	→	→	→	→	16 40	17 05	17 25									
47G	47514						16 05	16 25	16 33	16 41	→	→	→	16 55												
48	48630	15 35	15 50		→	→	→	→	→	16 40	16 59	→	→	→	17 10	17 30									
47D	47522						16 15	→	→	→	→	→	→	→	16 55	17 20	17 40									
45B	45660													16 55	17 05	17 20	→	17 50	17 50	18 00	→	18 15			
41	41530					15 55	16 14	16 34	16 42	16 50	→	→	→	17 00	17 15	17 40	18 00	18 05	18 15	18 38	→	18 55	19 02	19 17	19 30	19 40
47D	47542						16 25	→	→	→	→	→	→	→	17 05	17 30	17 50									
47G	47544						16 35	16 58	17 06	17 14	→	→	→	17 30												
47D	47546						16 40	→	→	→	→	→	→	→	17 20	17 45	18 05									
47G	47554						16 40	17 03	17 11	17 19	→	→	→	17 35												
47D	47552						16 45	→	→	→	→	→	→	→	17 25	17 50	18 10									
48	48680	16 35	16 50		→	→	→	→	→	17 35	17 54	→	→	→	18 05	18 25	c									
41	41550					16 25	16 46	17 09	17 17	17 25	→	→	→	17 35	17 50	18 15	18 35	18 40	18 50	19 10	→	19 25	19 32	19 47	19 58	20 05
47D	47562						17 05	→	→	→	→	→	→	→	17 45	18 10	18 30									
47G	47564						17 05	17 28	17 36	17 44	→	→	→	18 00												
47D	47652						17 15	→	→	→	→	→	→	→	17 55	18 20	18 40									
47D	47572						17 20	→	→	→	→	→	→	→	18 00	18 25	18 45									
45B	45700													18 00	18 10	18 25	→	18 55	18 55	19 05	→	19 20			
41	41580					17 00	17 21	17 44	17 52	18 00	→	→	→	18 10	18 25	18 45	19 05	19 10	19 20	19 40	→	19 55	20 02	20 17	20 28	20 35
47D	47602						17 30	→	→	→	→	→	→	→	18 10	18 30	18 50									
47G	47604						17 40	18 03	18 11	18 19	→	→	→	18 30												
47D	47612						17 40	→	→	→	→	→	→	→	18 20	18 40	19 00									
47G	47594						17 50	18 13	18 21	18 29	→	→	→	18 40												
47D	47592						17 55	→	→	→	→	→	→	→	18 35	18 55	19 15									
48	48720	17 40	17 55		→	→	→	→	→	18 40	18 59	→	→	→	19 07	19 25									
41	41620					17 35	17 56	18 19	18 27	18 35	→	→	→	18 45	19 00	19 17	19 35	19 40	19 50	20 10	→	20 25	20 32	20 42	20 53	21 00
47G	47624						18 10	18 30	18 38	18 46	→	→	→	18 55												
47D	47632						18 15	→	→	→	→	→	→	→	18 55	19 12	19 30									
47G	47634						18 15	18 35	18 43	18 51	→	→	→	19 00												
47D	47642						18 25	→	→	→	→	→	→	→	19 05	19 22	19 40									
41	41650					18 05	18 26	18 46	18 54	19 02	→	→	→	19 10	19 25	19 42	20 00	20 05	20 15	20 33	→	20 45	20 52	21 02	21 13	21 20
47D	47682						18 35	→	→	→	→	→	→	→	19 15	19 32	19 50									
47D	47672						18 40	→	→	→	→	→	→	→	19 20	19 37	19 55									
41	41680					18 30	18 51	19 11	19 19	19 27	→	→	→	19 35	19 50	20 07	20 25	20 30	20 40	20 58	→	21 10	21 17	21 27	21 38	21 45
47D	47692						19 15	→	→	→	→	→	→	→	19 55	20 12	20 30									
47G	47694						19 15	19 35	19 43	19 51	→	→	→	20 00												
48	48760	18 50	19 05		→	→	→	→	→	19 45	19 59	→	→	→	20 07	20 25									
41	41700					19 00	19 21	19 41	19 49	19 57	→	→	→	20 05	20 20	20 37	20 55	21 00	21 10	21 28	→	21 40	21 47	21 57	22 08	22 15
47D	47732						19 35	→	→	→	→	→	→	→	20 15	20 32	20 50									
47	47790					19 30	19 47	20 07	20 14	20 22	→	→	→	20 30	20 45	21 02	21 20									
48	48800	19 50	20 05		→	→	→	→	→	20 45	20 59	→	→	→	21 07	21 25									
47G	47744						20 10	20 30	20 38	20 46	→	→	→	20 55												
47D	47742						20 15	→	→	→	→	→	→	→	20 55	21 12	21 30									
41	41740					20 00	20 17	20 37	20 44	20 52	→	→	→	21 00	21 15	21 32	21 50	21 55	22 05	22 23	→	22 35	22 42	22 52	23 03	23 10
48	48830	20 50	21 05		→	→	→	→	→	21 45	21 59	→	→	→	22 07	22 25									
47D	47752						20 40	→	→	→	→	→	→	→	21 20	21 37	21 55									
47G	47754						20 40	21 00	21 08	21 16	→	→	→	21 25												
47	47830					20 30	20 47	21 07	21 14	21 22	→	→	→	21 30	21 45	22 02	22 20									
47G	47834						21 10	21 30	21 38	21 46	→	→	→	21 55												
47D	47832						21 15	→	→	→	→	→	→	→	21 55	22 12	22 30									
41	41780					21 00	21 17	21 37	21 44	21 52	→	→	→	22 00	22 15	22 32	22 50	22 55	23 05	23 23	→	23 35	23 41	23 50	00 00	00 05
47	47860					21 30	21 47	22 07	22 14	22 22	→	→	→	22 30	22 45	23 02	23 20									
48	48860	21 55	22 10		→	→	→	→	→	22 45	22 59	→	→	→	23 07	23 25									
41	41820					22 00	22 17	22 37	22 44	22 52	→	→	→	23 00	23 15	23 32	23 50	23 55	00 05	00 20	→	00 30	00 36	00 45	00 55	01 00
48	48890	22 55	23 10		→	→	→	→	→	23 45	23 59	→	→	→	00 07	00 25									
47	47910					23 00	23 12	23 32	23 39	23 47	→	→	→	23 55	00 10	00 27	00 45								

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Pickering 91 Dp	Pickering 91	Scarborough 89	Scarborough 89	Scarborough 7	Markham 71	North York 5	Richmond Hill 60	Vaughan 19 Ar	Vaughan 19 Dp	Brampton 32	Mississauga 20	Mississauga 21	Mississauga 21 Ar	Mississauga 22	Mississauga 22	Oakville 13	Oakville 14	Burlington 16	Hamilton 18	Hamilton 18	Puslinch 39	Guelph 39 Ar
			Pickering GO	Kingston Rd. @ Fairport Rd.	University of Toronto Scarborough	Centennial College	Scarborough Centre Bus Terminal	Unionville GO	Consumers Rd. Business Park	Richmond Hill Centre	Hwy. 407 Bus Terminal	Hwy. 407 Bus Terminal	Bramalea GO	Square One	Erin Mills Transitway Station	Streetsville GO	Meadowvale GO	Hurontario St. @ Hwy. 407	Trafalgar Rd. @ Hwy. 407	Bronte Rd. @ Hwy. 407	Dundas St. @ Hwy. 407	McMaster University	Hamilton GO Centre	Brock Rd. @ McLean Rd. (Aberfoyle)	University of Guelph
47	47021											04 40	04 55	05 20	05 28	→	→	→	05 35	05 43	05 51	06 10	06 25		
47	47061											05 40	05 55	06 20	06 28	→	→	→	06 38	06 46	06 56	07 15	07 30		
48	48061											05 45	06 00	→	→	→	06 12	06 35	→	→	→	→	→	07 05	07 25
47	47071											06 00	06 15	06 40	06 48	→	→	→	06 58	07 06	07 16	07 40	07 55		
47G	47035														07 00	→	→	→	07 10	07 18	07 28	07 50			
41	41041	05 00	05 05	05 15	05 25	05 35	→	05 47	06 02	06 15		06 20	06 35	07 00	07 08	→	→	→	07 18	07 26	07 36	08 00	08 15		
47D	47043											06 40	06 57	07 25	→	→	→	→	→	→	→	08 05			
47G	47045														07 20	→	→	→	07 30	07 38	07 48	08 10			
48	48121											06 45	07 02	→	→	→	07 17	07 40	→	→	→	→	→	08 20	08 40
47D	47053											06 45	07 02	07 30	→	→	→	→	→	→	→	08 10			
47G	47055														07 30	→	→	→	07 40	07 48	07 58	08 20			
47G	47065														07 40	→	→	→	07 50	07 58	08 08	08 30			
41	41061	05 25	05 30	05 40	05 52	06 05	→	06 17	06 32	06 45		06 50	07 07	07 35	07 43	→	→	→	07 53	08 01	08 11	08 40	08 55		
47D	47083											07 05	07 22	07 50	→	→	→	→	→	→	→	08 30			
45B	45141							06 45	→	06 57	07 10	07 10	→	07 40	07 48	08 00									
47D	47093											07 10	07 27	07 55	→	→	→	→	→	→	→	08 35			
47G	47085														07 55	→	→	→	08 05	08 13	08 23	08 45			
47G	47095														08 05	→	→	→	08 15	08 23	08 33	08 55			
41	41091	05 50	05 55	06 05	06 17	06 30	→	06 42	06 57	07 10		07 15	07 32	08 00	08 08	→	→	→	08 18	08 26	08 36	09 05	09 20		
47D	47103											07 30	07 47	08 15	→	→	→	→	→	→	→	08 55			
47G	47105														08 25	→	→	→	08 35	08 43	08 53	09 15			
47G	47115														08 35	→	→	→	08 45	08 53	09 03	09 25			
48	48181											07 45	08 02	→	→	→	08 17	08 40	→	→	→	→	→	09 25	09 45
47D	47113											07 45	08 02	08 30	→	→	→	→	→	→	→	09 10			
41	41111	06 25	06 30	06 40	06 52	07 05	→	07 17	07 32	07 45		07 50	08 07	08 35	08 43	→	→	→	08 53	09 01	09 11	09 40	09 55		
45B	45231							07 30	→	07 42	07 55	07 55	→	08 25	08 33	08 45									
47D	47123											08 05	08 22	08 50	→	→	→	→	→	→	→	09 30			
47G	47105														08 55	→	→	→	09 05	09 13	09 23	09 45			
47G	47135														09 10	→	→	→	09 20	09 28	09 38	10 00			
41	41141	06 50	06 55	07 07	07 21	07 35	→	07 50	08 07	08 20		08 25	08 42	09 10	09 18	→	→	→	09 28	09 36	09 46	10 15	10 30		
47D	47153											08 40	08 55	09 20	→	→	→	→	→	→	→	10 00			
48	48231											08 45	09 02	→	→	→	09 17	09 40	→	→	→	→	→	10 15	10 35
47G	47185														09 35	→	→	→	09 45	09 53	10 03	10 25			
41	41161	07 20	07 25	07 37	07 51	08 05	→	08 20	08 37	08 50		08 55	09 10	09 35	09 43	→	→	→	09 53	10 01	10 11	10 35	10 50		
45B	45271							08 30	→	08 42	08 55	08 55	→	09 25	09 33	09 45									
47D	47183											09 10	09 25	09 25	→	→	→	→	→	→	→	10 30			
47G	47193														10 05	→	→	→	10 15	10 23	10 33	10 55			
41	41191	07 50	07 55	08 07	08 21	08 35	→	08 50	09 07	09 20		09 25	09 40	10 05	10 13	→	→	→	10 23	10 31	10 41	11 05	11 20		
47D	47203											09 45	10 00	10 25	→	→	→	→	→	→	→	11 05			
48	48271											09 45	10 00	→	→	→	10 12	10 35	→	→	→	→	→	11 10	11 30
45B	45311							09 30	→	09 42	09 55	09 55	→	10 25	10 33	10 45									
47G	47213														10 40	→	→	→	10 50	10 58	11 08	11 30			
41	41211	08 25	08 30	08 42	08 56	09 10	→	09 25	09 42	09 55		10 00	10 15	10 40	10 48	→	→	→	10 58	11 06	11 16	11 40	11 55		
47D	47233											10 10	10 25	10 50	→	→	→	→	→	→	→	11 30			
47G	47215														11 05	→	→	→	11 15	11 23	11 33	11 55			
41	41241	09 00	09 05	09 15	09 27	09 40	→	09 52	10 07	10 20		10 25	10 40	11 05	11 13	→	→	→	11 23	11 31	11 41	12 05	12 20		
47D	47253											10 45	11 00	11 25	→	→	→	→	→	→	→	12 05			
48	48311											10 45	11 00	→	→	→	11 12	11 35	→	→	→	→	→	12 10	12 30
45B	45351							10 30	→	10 42	10 55	10 55	→	11 25	11 33	11 45									
47G	47255														11 40	→	→	→	11 50	11 58	12 08	12 30			
41	41261	09 35	09 40	09 50	10 02	10 15	→	10 27	10 42	10 55		11 00	11 15	11 40	11 48	→	→	→	11 58	12 06	12 16	12 40	12 55		
47D	47263											11 25	11 40	12 05	→	→	→	→	→	→	→	12 45			
47G	47265														12 10	→	→	→	12 20	12 28	12 38	13 00			
41	41281	10 05	10 10	10 20	10 32	10 45	→	10 57	11 12	11 25		11 30	11 45	12 10	12 18	→	→	→	12 28	12 36	12 46	13 10	13 25		
48	48351											11 45	12 00	→	→	→	12 12	12 35	→	→	→	→	→	13 10	13 30
47D	47293											11 55	12 10	12 35	→	→	→	→	→	→	→	13 15			
45B	45391							11 30	→	11 42	→	11 55	→	12 25	12 33	12 45									
47G	47295														12 40	→	→	→	12 50	12 58	13 08	13 30			
41	41301	10 35	10 40	10 50	11 02	11 15	→	11 27	11 42	11 55		12 00	12 15	12 40	12 48	→	→	→	12 58	13 06	13 16	13 40	13 55		
41	41321	11 05	11 10	11 20	11 32	11 45	→	11 57	12 12	12 25		12 30	12 45	13 10	13 18	→	→	→	13 28	13 36	13 46	14 05	14 20		
48	48391											12 45	13 00	→	→	→	13 12	13 35	→	→	→	→	→	14 10	14 30
45B	45431							12 30	→	12 42	12 55	12 55	→	13 25	13 33	13 45									

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Pickering 91 Dp	Pickering 91	Scarborough 89	Scarborough 89	Scarborough 7	Markham 71	North York 5	Richmond Hill 60	Vaughan 19 Ar	Vaughan 19 Dp	Brampton 32	Mississauga 20	Mississauga 21	Mississauga 21 Ar	Mississauga 22	Mississauga 22	Oakville 13	Oakville 14	Burlington 16	Hamilton 18	Hamilton 18	Puslinch 39	Guelph 39 Ar
			Pickering GO	Kingston Rd. @ Fairport Rd.	University of Toronto Scarborough	Centennial College	Scarborough Centre Bus Terminal	Unionville GO	Consumers Rd. Business Park	Richmond Hill Centre	Hwy. 407 Bus Terminal	Hwy. 407 Bus Terminal	Bramalea GO	Square One	Erin Mills Transitway Station	Streetsville GO	Hurontario St. @ Hwy. 407	Meadowvale GO	Trafalgar Rd. @ Hwy. 407	Bronte Rd. @ Hwy. 407	Dundas St. @ Hwy. 407	McMaster University	Hamilton GO Centre	Brock Rd. @ McLean Rd. (Aberfoyle)	University of Guelph
41	41341		11 35	11 40	11 50	12 02	12 15	→	12 27	12 42	12 55	13 00	13 15	13 40	13 48	→	→	→	13 58	14 06	14 16	14 40	14 55		
41	41361		12 05	12 10	12 20	12 32	12 45	→	12 57	13 12	13 25	13 30	13 45	14 10	14 18	→	→	→	14 28	14 36	14 46	15 10	15 25		
48	48431											13 45	14 00	→	→	→	14 12	14 35	→	→	→	→	→	15 15	15 35
45B	45471							13 30	→	13 45	13 55	13 55	→	14 25	14 33	14 45									
41	41371	12 30	12 35	12 45	12 57	13 10	→	13 22	13 37	13 50	13 55	14 10	14 35	14 43	→	→	→	14 53	15 01	15 11	15 35	15 50		
41	41391	13 00	13 05	13 15	13 27	13 40	→	13 52	14 07	14 20	14 25	14 40	15 10	15 18	→	→	→	15 28	15 36	15 46	16 10	16 25		
48	48471											14 45	15 05	→	→	→	15 17	15 40	→	→	→	→	→	16 20	16 40
41	41411	13 25	13 30	13 40	13 52	14 05	→	14 17	14 32	14 45	14 50	15 05	15 35	15 43	→	→	→	15 53	16 01	16 11	16 40	16 55		
45B	45521							14 30	→	14 42	14 55	14 55	→	15 25	15 33	15 45									
41A	41423				13 50	14 02	→	→	14 17	→	14 40	14 40	14 55	15 25											
41	41431	13 50	13 55	14 05	14 17	14 30	→	14 42	14 57	15 10	15 15	15 30	16 05	16 13	→	→	→	16 23	16 31	16 41	17 10	17 25		
41A	41443				14 35	14 47	→	→	15 02	→	15 25	15 25	15 40	16 15											
48	48531											15 45	16 05	→	→	→	16 17	16 40	→	→	→	→	→	17 20	17 40
45B	45581							15 30	→	15 42	15 55	15 55	→	16 30	16 38	16 55									
41	41451	14 25	14 30	14 42	14 56	15 10	→	15 22	15 37	15 50	15 55	16 15	16 50	16 58	→	→	→	17 08	17 16	17 26	17 55	18 10		
41A	41463			15 00	15 14	→	→	15 32	→	16 00	16 00	16 20	16 55												
41	41471	14 55	15 00	15 12	15 26	15 40	→	15 53	16 12	16 25	16 30	16 55	17 30	17 38	→	→	→	17 48	17 56	18 06	18 35	18 50		
41A	41493			15 35	15 49	→	→	16 07	→	16 35	16 35	17 00	17 35												
48	48591											16 45	17 10	→	→	→	17 22	17 45	→	→	→	→	→	18 25	18 45
45B	45641							16 30	→	16 42	16 55	16 55	→	17 30	17 38	17 55									
41	41501	15 25	15 30	15 42	15 56	16 10	→	16 23	16 42	16 55	17 00	17 25	18 00	18 08	→	→	→	18 18	18 26	18 36	19 05	19 20		
41A	41513			16 10	16 24	→	→	16 43	→	17 15	17 15	17 40	18 10												
41	41521	16 00	16 05	16 17	16 31	16 45	→	16 58	17 17	17 30	17 35	18 00	18 30	18 38	→	→	→	18 48	18 56	19 06	19 30	19 45		
48	48651											17 45	18 05	→	→	→	18 17	18 40	→	→	→	→	→	19 15	19 35
41A	41533			16 45	17 00	→	→	17 20	→	17 45	17 45	18 05	18 35												
45B	45691							17 35	→	17 47	18 00	18 00	→	18 35	18 43	18 55									
41	41541	16 30	16 35	16 50	17 05	17 20	→	17 33	17 52	18 05	18 10	18 30	19 00	19 08	→	→	→	19 18	19 26	19 36	19 55	20 10		
41A	41573			17 15	17 30	→	→	17 50	→	18 15	18 15	18 35	19 05												
41	41601	17 00	17 05	17 20	17 35	17 50	→	18 02	18 17	18 30	18 35	18 50	19 20	19 28	→	→	→	19 38	19 46	19 56	20 15	20 30		
48	48691											18 45	19 00	→	→	→	19 12	19 35	→	→	→	→	→	20 10	20 30
41A	41633			17 45	18 00	→	→	18 20	→	18 45	18 45	19 05	19 35												
45B	45731							18 35	→	18 47	19 00	19 00	→	19 30	19 38	19 50									
41	41641	17 35	17 40	17 52	18 06	18 20	→	18 32	18 47	19 00	19 05	19 20	19 50	19 58	→	→	→	20 08	20 16	20 26	20 45	21 00		
41A	41663			18 20	18 32	→	→	18 47	→	19 10	19 10	19 25	19 55												
41	41671	18 10	18 15	18 27	18 41	18 55	→	19 07	19 22	19 35	19 40	19 55	20 25	20 33	→	→	→	20 43	20 51	21 01	21 20	21 35		
48	48731											19 45	20 00	→	→	→	20 12	20 35	→	→	→	→	→	21 05	21 25
45B	45771							19 30	→	19 42	19 55	19 55	→	20 25	20 33	20 45									
41A	41703			19 20	19 32	→	→	19 47	→	20 10	20 10	20 25	20 50												
41	41711	19 10	19 15	19 25	19 37	19 50	→	20 02	20 17	20 30	20 35	20 50	21 15	21 23	→	→	→	21 33	21 41	21 51	22 10	22 25		
48	48771											20 45	21 00	→	→	→	21 12	21 35	→	→	→	→	→	22 05	22 25
41A	41743			20 20	20 32	→	→	20 47	→	21 10	21 10	21 25	21 50												
41	41751	20 10	20 15	20 25	20 37	20 50	→	21 02	21 17	21 30	21 35	21 50	22 15	22 23	→	→	→	22 33	22 41	22 51	23 10	23 25		
48	48811											21 45	22 00	→	→	→	22 12	22 30	→	→	→	→	→	23 00	23 20
41	41781	21 10	21 15	21 25	21 35	21 45	→	21 55	22 07	22 20	22 25	22 40	23 05	23 13	→	→	→	23 20	23 28	23 36	23 55	00 10		
48	48841											22 45	23 00	→	→	→	23 12	23 30	→	→	→	→	→	00 00	00 20
41	41811	22 10	22 15	22 25	22 35	22 45	→	22 55	23 07	23 20	23 25	23 40	00 05	00 13	→	→	→	00 20	00 28	00 36	00 55	01 10		
48	48871											23 45	00 00	→	→	→	00 12	00 30	→	→	→	→	→	01 00	01 20
47	47881											00 10	00 25	00 50	00 58	→	→	→	01 05	01 13	01 21	01 40	01 55		
48	48901											00 45	01 00	→	→	→	01 12	01 30	→	→	→	→	→	02 00	02 20
47	47921											01 10	01 25	01 50	01 58	→	→	→	02 05	02 13	02 21	02 40	02 55		

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Zone→	Hamilton 18 Dp	Hamilton 18	Burlington 16	Oakville 14	Oakville 13	Mississauga 21	Mississauga 20	Brampton 32	Vaughan 19
	Trip Number / Numéro du parcours	**Hamilton GO Centre**	**McMaster University**	**Dundas St. @ Hwy. 407**	**Bronte Rd. @ Hwy. 407**	**Trafalgar Rd. @ Hwy. 407**	**Erin Mills Transitway Station**	**Square One**	**Bramalea GO**	**Hwy. 407 Bus Terminal**
47	47090	04 40	04 52	05 09	05 16	05 24	05 32	05 45	06 02	06 20
47	47120	05 10	05 22	05 39	05 46	05 54	06 02	06 15	06 32	06 50
47	47180	06 10	06 22	06 39	06 46	06 54	07 02	07 15	07 32	07 50
47	47230	07 05	07 22	07 39	07 46	07 54	08 02	08 15	08 32	08 50
47	47270	08 05	08 22	08 39	08 46	08 54	09 02	09 15	09 32	09 50
47	47310	09 00	09 17	09 37	09 44	09 52	10 00	10 15	10 32	10 50
47	47350	10 00	10 17	10 37	10 44	10 52	11 00	11 15	11 32	11 50
47	47390	11 00	11 17	11 37	11 44	11 52	12 00	12 15	12 32	12 50
47	47410	11 30	11 47	12 07	12 14	12 22	12 30	12 45	13 02	13 20
47	47430	12 00	12 17	12 37	12 44	12 52	13 00	13 15	13 32	13 50
47	47450	12 30	12 47	13 07	13 14	13 22	13 30	13 45	14 02	14 20
47	47470	13 00	13 17	13 37	13 44	13 52	14 00	14 15	14 32	14 50
47	47500	13 30	13 47	14 07	14 14	14 22	14 30	14 45	15 02	15 20
47	47530	13 55	14 15	14 35	14 43	14 51	15 00	15 15	15 32	15 50
47	47560	14 25	14 45	15 05	15 13	15 21	15 30	15 45	16 02	16 20
47	47590	14 55	15 15	15 35	15 43	15 51	16 00	16 15	16 32	16 50
47	47620	15 25	15 45	16 05	16 13	16 21	16 30	16 45	17 02	17 20
47	47650	15 55	16 15	16 35	16 43	16 51	17 00	17 15	17 32	17 50
47	47670	16 25	16 45	17 05	17 13	17 21	17 30	17 45	18 02	18 20
47	47690	16 55	17 15	17 35	17 43	17 51	18 00	18 15	18 32	18 50
47	47710	17 25	17 45	18 05	18 13	18 21	18 30	18 45	19 02	19 20
47	47730	17 55	18 15	18 35	18 43	18 51	19 00	19 15	19 32	19 50
47	47750	18 25	18 45	19 05	19 13	19 21	19 30	19 45	20 02	20 20
47	47770	18 55	19 15	19 35	19 43	19 51	20 00	20 15	20 32	20 50
47	47810	20 00	20 17	20 37	20 44	20 52	21 00	21 15	21 32	21 50
47	47840	21 00	21 17	21 37	21 44	21 52	22 00	22 15	22 32	22 50
47	47880	22 00	22 17	22 37	22 44	22 52	23 00	23 15	23 32	23 50
47	47910	23 05	23 17	23 37	23 44	23 52	00 00	00 15	00 32	00 50

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Zone→	Vaughan 19	Brampton 32	Mississauga 20	Mississauga 21	Oakville 13	Oakville 14	Burlington 16	Hamilton 18	Hamilton 18 Ar
	Trip Number / Numéro du parcours	**Hwy. 407 Bus Terminal**	**Bramalea GO**	**Square One**	**Erin Mills Transitway Station**	**Trafalgar Rd. @ Hwy. 407**	**Bronte Rd. @ Hwy. 407**	**Dundas St. @ Hwy. 407**	**McMaster University**	**Hamilton GO Centre**
47	47111	06 40	06 55	07 20	07 28	07 35	07 43	07 51	08 10	08 25
47	47141	07 10	07 25	07 50	07 58	08 05	08 13	08 21	08 40	08 55
47	47201	08 10	08 25	08 50	08 58	09 05	09 13	09 21	09 40	09 55
47	47251	09 10	09 25	09 50	09 58	10 05	10 13	10 21	10 40	10 55
47	47291	10 10	10 25	10 50	10 58	11 05	11 13	11 21	11 40	11 55
47	47331	11 10	11 25	11 50	11 58	12 05	12 13	12 23	12 45	13 00
47	47371	12 10	12 25	12 55	13 03	13 10	13 18	13 28	13 50	14 00
47	47411	13 10	13 25	13 55	14 03	14 10	14 18	14 28	14 50	15 05
47	47431	13 40	13 55	14 25	14 33	14 40	14 48	14 58	15 20	15 35
47	47451	14 10	14 25	14 55	15 03	15 10	15 18	15 28	15 50	16 05
47	47471	14 40	14 55	15 25	15 33	15 40	15 48	15 58	16 20	16 35
47	47491	15 10	15 25	15 55	16 03	16 10	16 18	16 28	16 50	17 05
47	47521	15 40	15 55	16 25	16 33	16 40	16 48	16 58	17 20	17 35
47	47551	16 10	16 25	16 55	17 03	17 12	17 20	17 30	17 55	18 10
47	47581	16 40	16 55	17 25	17 33	17 42	17 50	18 00	18 25	18 40
47	47611	17 10	17 25	17 55	18 03	18 12	18 20	18 30	18 55	19 10
47	47641	17 40	17 55	18 25	18 33	18 42	18 50	19 00	19 25	19 40
47	47671	18 10	18 25	18 55	19 03	19 12	19 20	19 30	19 55	20 10
47	47691	18 40	18 55	19 25	19 33	19 42	19 50	20 00	20 25	20 40
47	47711	19 10	19 25	19 55	20 03	20 12	20 20	20 30	20 55	21 10
47	47731	19 40	19 55	20 20	20 28	20 37	20 45	20 55	21 20	21 35
47	47751	20 10	20 25	20 50	20 58	21 07	21 15	21 25	21 50	22 05
47	47781	20 40	20 55	21 20	21 28	21 37	21 45	21 55	22 20	22 35
47	47791	21 10	21 25	21 50	21 58	22 05	22 13	22 23	22 45	23 00
47	47831	22 10	22 25	22 50	22 58	23 05	23 13	23 21	23 40	23 55
47	47851	23 10	23 25	23 50	23 58	00 05	00 13	00 21	00 40	00 55
47	47881	00 10	00 25	00 50	00 58	01 05	01 13	01 21	01 40	01 55
47	47911	01 10	01 25	01 50	01 58	02 05	02 13	02 21	02 40	02 55

APPENDIX D

Traffic Data

Turning Movement Count (2 . DERRY RD W & HWY 407 EAST RAMP TERMINAL)

Start Time	N Approach HWY 407 EAST RAMP TERMINAL					E Approach DERRY RD W					W Approach DERRY RD W					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	U-Turn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	3	5	0	0	8	0	67	0	0	67	166	0	0	0	166	241	
06:15:00	7	2	0	0	9	0	83	0	0	83	222	0	0	0	222	314	
06:30:00	14	3	0	0	17	0	92	0	0	92	344	0	0	0	344	453	
06:45:00	11	0	0	0	11	0	75	0	0	75	386	0	0	0	386	472	1480
07:00:00	18	1	0	0	19	0	81	0	0	81	417	0	0	0	417	517	1756
07:15:00	6	9	0	0	15	0	137	0	0	137	438	0	0	0	438	590	2032
07:30:00	18	7	0	0	25	0	141	0	0	141	459	0	0	0	459	625	2204
07:45:00	7	8	0	0	15	0	139	0	0	139	447	0	0	0	447	601	2333
08:00:00	15	7	0	0	22	0	167	0	0	167	408	0	0	0	408	597	2413
08:15:00	16	7	0	0	23	0	133	0	0	133	411	0	0	0	411	567	2390
08:30:00	11	9	0	0	20	0	171	0	0	171	430	0	0	0	430	621	2386
08:45:00	16	9	0	0	25	0	126	0	0	126	394	0	0	0	394	545	2330
09:00:00	15	5	0	0	20	0	116	0	0	116	361	0	0	0	361	497	2230
09:15:00	8	11	0	0	19	0	113	0	0	113	301	0	0	0	301	433	2096
09:30:00	9	13	0	0	22	0	96	0	0	96	226	0	0	0	226	344	1819
09:45:00	11	14	0	0	25	0	88	0	0	88	188	0	0	0	188	301	1575
BREAK																	
15:00:00	33	20	0	0	53	0	221	1	0	222	155	0	0	0	155	430	
15:15:00	31	21	0	0	52	0	297	0	0	297	165	0	0	0	165	514	
15:30:00	44	15	0	0	59	0	268	0	0	268	125	0	0	0	125	452	
15:45:00	52	19	0	0	71	0	288	0	0	288	129	0	0	0	129	488	1884
16:00:00	57	18	0	0	75	0	306	0	0	306	160	0	0	0	160	541	1995
16:15:00	80	35	0	0	115	0	355	0	0	355	153	0	0	0	153	623	2104
16:30:00	73	32	0	0	105	0	391	0	0	391	164	0	0	0	164	660	2312

16:45:00	91	44	0	0	135	0	406	1	0	407	194	0	0	0	194	736	2560
17:00:00	85	44	0	0	129	0	414	0	0	414	181	0	0	0	181	724	2743
17:15:00	98	60	0	0	158	0	367	0	0	367	211	0	0	0	211	736	2856
17:30:00	86	42	0	0	128	0	317	0	0	317	182	0	0	0	182	627	2823
17:45:00	87	34	0	0	121	0	287	0	0	287	167	0	0	0	167	575	2662
18:00:00	45	35	0	0	80	0	314	0	0	314	167	0	0	0	167	561	2499
18:15:00	38	29	0	0	67	0	254	0	0	254	141	0	0	0	141	462	2225
18:30:00	29	22	0	0	51	0	248	0	0	248	142	0	0	0	142	441	2039
18:45:00	21	12	0	0	33	0	223	0	0	223	129	0	0	0	129	385	1849
Grand Total	1135	592	0	0	1727	0	6781	2	0	6783	8163	0	0	0	8163	**16673**	-
Approach%	65.7%	34.3%	0%		-	0%	100%	0%		-	100%	0%	0%		-	**-**	-
Totals %	6.8%	3.6%	0%		10.4%	0%	40.7%	0%		40.7%	49%	0%	0%		49%	**-**	-
Heavy	49	22	0		-	0	178	0		-	190	0	0		-	**-**	-
Heavy %	4.3%	3.7%	0%		-	0%	2.6%	0%		-	2.3%	0%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

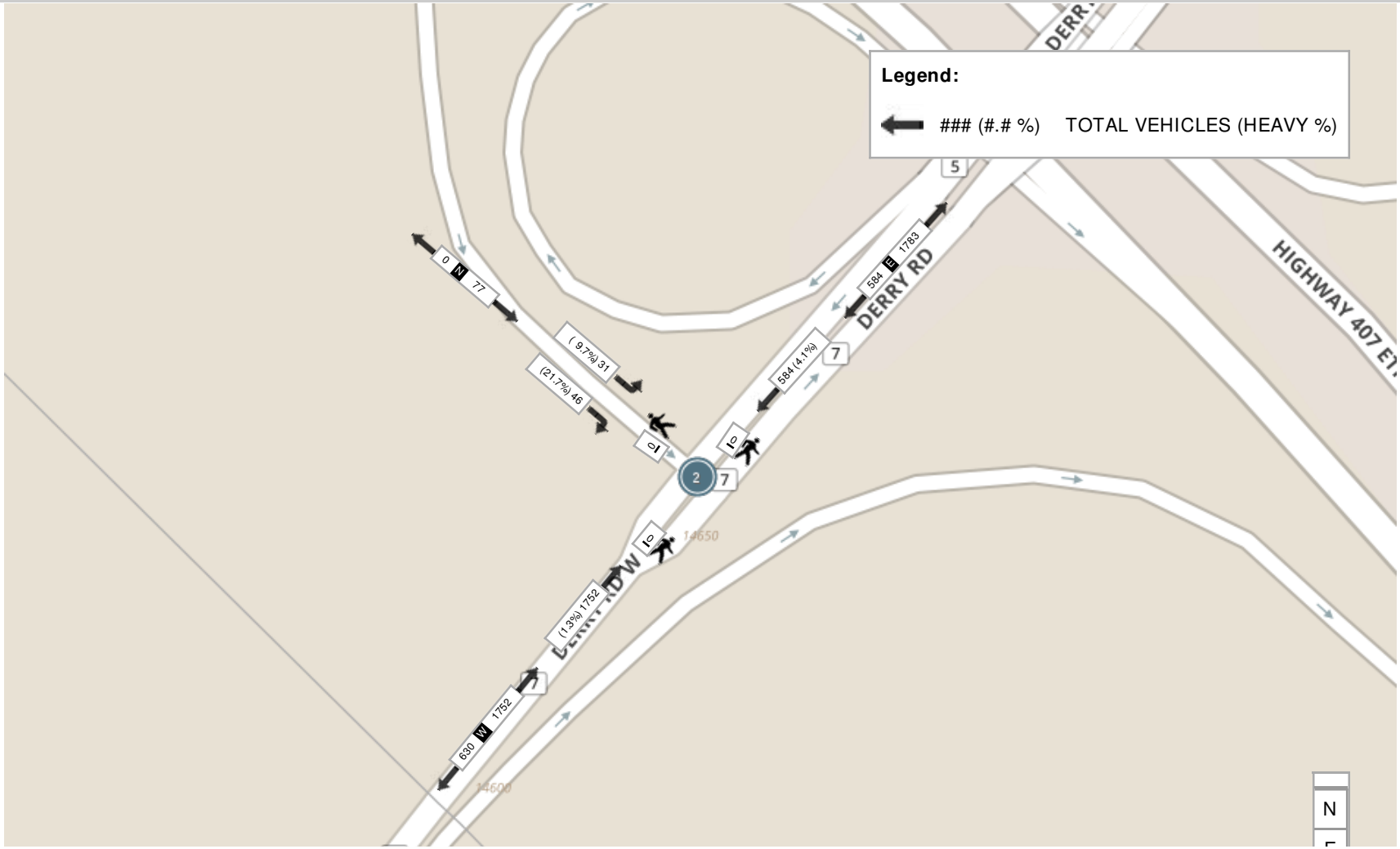
Peak Hour: 07:15 AM - 08:15 AM Weather: Mist (3.37 °C)

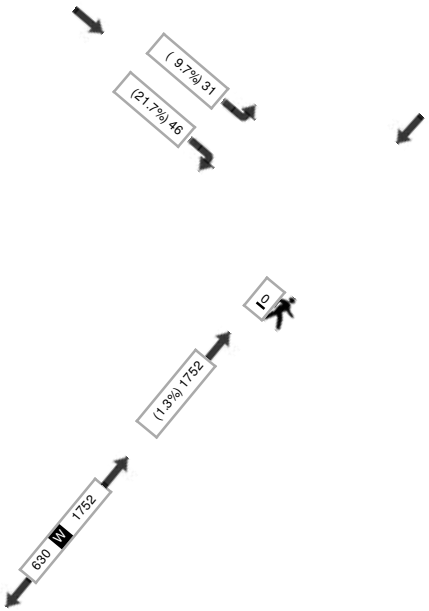
Start Time	N Approach HWY 407 EAST RAMP TERMINAL					E Approach DERRY RD W					W Approach DERRY RD W					Int. Total (15 min)
	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	
07:15:00	6	9	0	0	15	0	137	0	0	137	438	0	0	0	438	590
07:30:00	18	7	0	0	25	0	141	0	0	141	459	0	0	0	459	625
07:45:00	7	8	0	0	15	0	139	0	0	139	447	0	0	0	447	601
08:00:00	15	7	0	0	22	0	167	0	0	167	408	0	0	0	408	597
Grand Total	46	31	0	0	77	0	584	0	0	584	1752	0	0	0	1752	**2413**
Approach%	59.7%	40.3%	0%		-	0%	100%	0%		-	100%	0%	0%		-	**-**
Totals %	1.9%	1.3%	0%		3.2%	0%	24.2%	0%		24.2%	72.6%	0%	0%		72.6%	**-**
PHF	0.64	0.86	0		0.77	0	0.87	0		0.87	0.95	0	0		0.95	**-**
Heavy	10	3	0		13	0	24	0		24	23	0	0		23	**-**
Heavy %	21.7%	9.7%	0%		16.9%	0%	4.1%	0%		4.1%	1.3%	0%	0%		1.3%	**-**
Lights	36	28	0		64	0	559	0		559	1728	0	0		1728	**-**
Lights %	78.3%	90.3%	0%		83.1%	0%	95.7%	0%		95.7%	98.6%	0%	0%		98.6%	**-**
Single-Unit Trucks	8	1	0		9	0	15	0		15	14	0	0		14	**-**
Single-Unit Trucks %	17.4%	3.2%	0%		11.7%	0%	2.6%	0%		2.6%	0.8%	0%	0%		0.8%	**-**
Buses	0	2	0		2	0	5	0		5	3	0	0		3	**-**
Buses %	0%	6.5%	0%		2.6%	0%	0.9%	0%		0.9%	0.2%	0%	0%		0.2%	**-**
Articulated Trucks	2	0	0		2	0	4	0		4	6	0	0		6	**-**
Articulated Trucks %	4.3%	0%	0%		2.6%	0%	0.7%	0%		0.7%	0.3%	0%	0%		0.3%	**-**
Bicycles on Road	0	0	0		0	0	1	0		1	1	0	0		1	**-**
Bicycles on Road %	0%	0%	0%		0%	0%	0.2%	0%		0.2%	0.1%	0%	0%		0.1%	**-**

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (8.8 °C)

Start Time	N Approach HWY 407 EAST RAMP TERMINAL					E Approach DERRY RD W					W Approach DERRY RD W					Int. Total (15 min)
	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	
16:30:00	73	32	0	0	105	0	391	0	0	391	164	0	0	0	164	660
16:45:00	91	44	0	0	135	0	406	1	0	407	194	0	0	0	194	736
17:00:00	85	44	0	0	129	0	414	0	0	414	181	0	0	0	181	724
17:15:00	98	60	0	0	158	0	367	0	0	367	211	0	0	0	211	736
Grand Total	347	180	0	0	527	0	1578	1	0	1579	750	0	0	0	750	**2856**
Approach%	65.8%	34.2%	0%		-	0%	99.9%	0.1%		-	100%	0%	0%		-	**-**
Totals %	12.1%	6.3%	0%		18.5%	0%	55.3%	0%		55.3%	26.3%	0%	0%		26.3%	**-**
PHF	0.89	0.75	0		0.83	0	0.95	0.25		0.95	0.89	0	0		0.89	**-**
Heavy	0	1	0		1	0	19	0		19	30	0	0		30	**-**
Heavy %	0%	0.6%	0%		0.2%	0%	1.2%	0%		1.2%	4%	0%	0%		4%	**-**
Lights	347	179	0		526	0	1559	1		1560	720	0	0		720	**-**
Lights %	100%	99.4%	0%		99.8%	0%	98.8%	100%		98.8%	96%	0%	0%		96%	**-**
Single-Unit Trucks	0	0	0		0	0	8	0		8	19	0	0		19	**-**
Single-Unit Trucks %	0%	0%	0%		0%	0%	0.5%	0%		0.5%	2.5%	0%	0%		2.5%	**-**
Buses	0	1	0		1	0	5	0		5	4	0	0		4	**-**
Buses %	0%	0.6%	0%		0.2%	0%	0.3%	0%		0.3%	0.5%	0%	0%		0.5%	**-**
Articulated Trucks	0	0	0		0	0	6	0		6	7	0	0		7	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0.4%	0%		0.4%	0.9%	0%	0%		0.9%	**-**
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**

Peak Hour: 07:15 AM - 08:15 AM Weather: Mist (3.37 °C)




(9.7%) 31
(21.7%) 46
0
(1.3%) 1752
630
W
1752

Turning Movement Count (1 . DERRY RD W & HWY 407 WEST RAMP TERMINAL)

Start Time	E Approach DERRY RD W					S Approach HWY 407 WEST RAMP TERMINAL					W Approach DERRY RD W					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	U-Turn W:W	Peds W:	Approach Total		
06:00:00	77	0	0	0	77	8	0	0	0	8	0	149	0	0	149	234	
06:15:00	93	0	0	0	93	10	0	0	0	10	0	207	0	0	207	310	
06:30:00	105	0	0	0	105	11	3	0	0	14	0	266	0	0	266	385	
06:45:00	81	0	0	0	81	16	2	0	0	18	0	308	0	0	308	407	1336
07:00:00	105	0	0	0	105	11	0	0	0	11	1	341	0	0	342	458	1560
07:15:00	168	0	0	0	168	17	1	0	0	18	0	380	0	0	380	566	1816
07:30:00	166	0	0	0	166	26	2	0	0	28	0	343	0	0	343	537	1968
07:45:00	186	0	0	0	186	32	4	0	0	36	0	360	0	0	360	582	2143
08:00:00	208	0	0	0	208	41	2	0	0	43	0	309	0	0	309	560	2245
08:15:00	181	0	0	0	181	34	1	0	0	35	0	327	0	0	327	543	2222
08:30:00	215	0	0	0	215	32	4	0	0	36	0	320	0	0	320	571	2256
08:45:00	146	0	0	0	146	36	8	0	0	44	0	374	0	0	374	564	2238
09:00:00	124	0	0	0	124	26	1	0	0	27	0	287	0	0	287	438	2116
09:15:00	138	0	0	0	138	26	5	0	0	31	0	250	0	0	250	419	1992
09:30:00	114	0	0	0	114	24	5	0	0	29	0	212	0	0	212	355	1776
09:45:00	94	0	0	0	94	15	3	0	0	18	0	170	0	0	170	282	1494
BREAK																	
15:00:00	230	0	0	0	230	26	6	0	0	32	0	160	0	0	160	422	
15:15:00	296	0	0	0	296	21	15	0	0	36	0	167	1	0	168	500	
15:30:00	292	0	0	0	292	20	9	0	0	29	0	136	0	0	136	457	
15:45:00	289	0	0	0	289	22	12	0	0	34	0	138	0	0	138	461	1840
16:00:00	327	0	0	0	327	20	12	0	0	32	0	155	0	0	155	514	1932
16:15:00	393	0	0	0	393	25	15	0	0	40	0	171	0	0	171	604	2036
16:30:00	378	0	0	0	378	27	8	0	0	35	0	173	0	0	173	586	2165

16:45:00	473	0	0	0	473	47	10	0	0	57	0	214	0	0	214	744	2448
17:00:00	416	0	0	0	416	34	14	0	0	48	0	217	0	0	217	681	2615
17:15:00	388	0	0	0	388	37	23	0	0	60	0	246	0	0	246	694	2705
17:30:00	334	0	0	0	334	36	20	0	0	56	0	204	0	0	204	594	2713
17:45:00	307	0	0	0	307	29	7	0	0	36	0	197	0	0	197	540	2509
18:00:00	326	0	0	0	326	30	15	0	0	45	0	179	0	0	179	550	2378
18:15:00	275	0	0	0	275	31	6	0	0	37	0	160	0	0	160	472	2156
18:30:00	259	0	0	0	259	23	6	0	0	29	0	154	0	0	154	442	2004
18:45:00	229	0	0	0	229	20	9	0	0	29	0	141	0	0	141	399	1863
Grand Total	7413	0	0	0	7413	813	228	0	0	1041	1	7415	1	0	7417	**15871**	-
Approach%	100%	0%	0%		-	78.1%	21.9%	0%		-	0%	100%	0%		-	**-**	-
Totals %	46.7%	0%	0%		46.7%	5.1%	1.4%	0%		6.6%	0%	46.7%	0%		46.7%	**-**	-
Heavy	177	0	0		-	26	17	0		-	0	161	0		-	**-**	-
Heavy %	2.4%	0%	0%		-	3.2%	7.5%	0%		-	0%	2.2%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

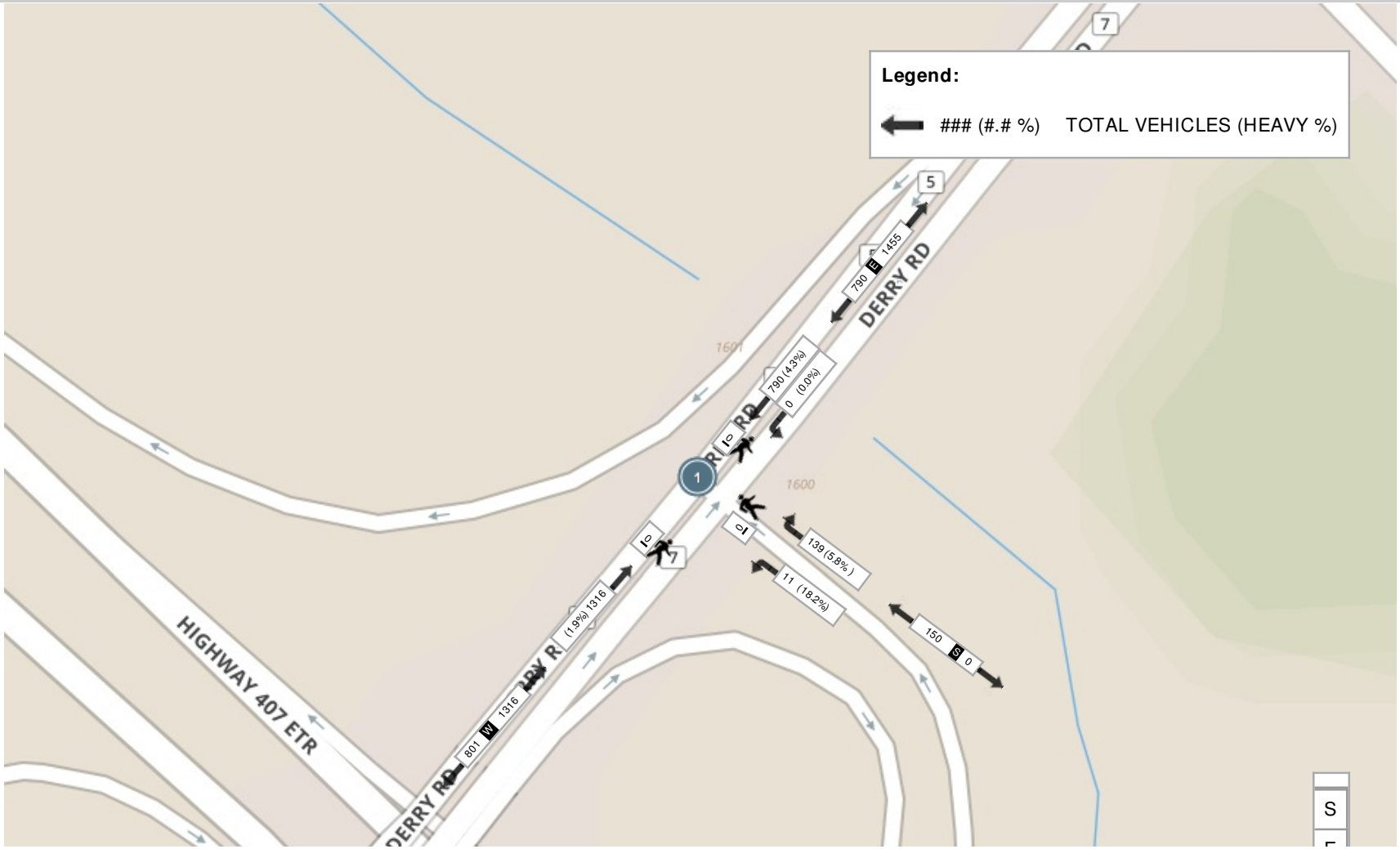
Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)

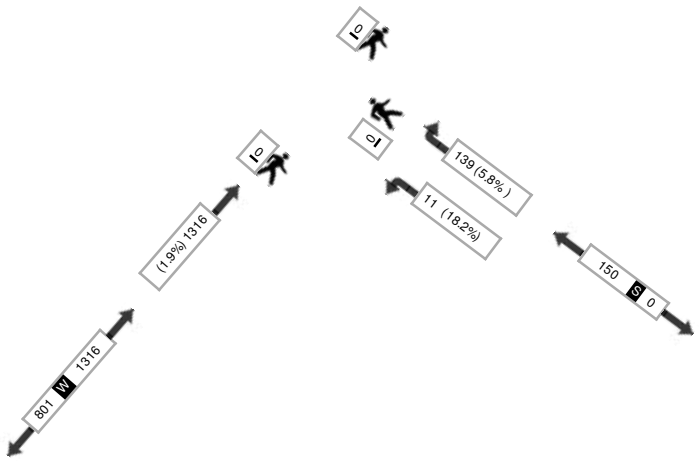
Start Time	E Approach DERRY RD W					S Approach HWY 407 WEST RAMP TERMINAL					W Approach DERRY RD W					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
07:45:00	186	0	0	0	186	32	4	0	0	36	0	360	0	0	360	582
08:00:00	208	0	0	0	208	41	2	0	0	43	0	309	0	0	309	560
08:15:00	181	0	0	0	181	34	1	0	0	35	0	327	0	0	327	543
08:30:00	215	0	0	0	215	32	4	0	0	36	0	320	0	0	320	571
Grand Total	790	0	0	0	790	139	11	0	0	150	0	1316	0	0	1316	**2256**
Approach%	100%	0%	0%		-	92.7%	7.3%	0%		-	0%	100%	0%		-	-
Totals %	35%	0%	0%		35%	6.2%	0.5%	0%		6.6%	0%	58.3%	0%		58.3%	-
PHF	0.92	0	0		0.92	0.85	0.69	0		0.87	0	0.91	0		0.91	-
Heavy	34	0	0		34	8	2	0		10	0	25	0		25	-
Heavy %	4.3%	0%	0%		4.3%	5.8%	18.2%	0%		6.7%	0%	1.9%	0%		1.9%	-
Lights	755	0	0		755	131	9	0		140	0	1291	0		1291	-
Lights %	95.6%	0%	0%		95.6%	94.2%	81.8%	0%		93.3%	0%	98.1%	0%		98.1%	-
Single-Unit Trucks	22	0	0		22	6	1	0		7	0	17	0		17	-
Single-Unit Trucks %	2.8%	0%	0%		2.8%	4.3%	9.1%	0%		4.7%	0%	1.3%	0%		1.3%	-
Buses	6	0	0		6	0	0	0		0	0	2	0		2	-
Buses %	0.8%	0%	0%		0.8%	0%	0%	0%		0%	0%	0.2%	0%		0.2%	-
Articulated Trucks	6	0	0		6	2	1	0		3	0	6	0		6	-
Articulated Trucks %	0.8%	0%	0%		0.8%	1.4%	9.1%	0%		2%	0%	0.5%	0%		0.5%	-
Bicycles on Road	1	0	0		1	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0.1%	0%	0%		0.1%	0%	0%	0%		0%	0%	0%	0%		0%	-

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (8.8 °C)

Start Time	E Approach DERRY RD W					S Approach HWY 407 WEST RAMP TERMINAL					W Approach DERRY RD W					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
16:45:00	473	0	0	0	473	47	10	0	0	57	0	214	0	0	214	744
17:00:00	416	0	0	0	416	34	14	0	0	48	0	217	0	0	217	681
17:15:00	388	0	0	0	388	37	23	0	0	60	0	246	0	0	246	694
17:30:00	334	0	0	0	334	36	20	0	0	56	0	204	0	0	204	594
Grand Total	1611	0	0	0	1611	154	67	0	0	221	0	881	0	0	881	**2713**
Approach%	100%	0%	0%		-	69.7%	30.3%	0%		-	0%	100%	0%		-	**-**
Totals %	59.4%	0%	0%		59.4%	5.7%	2.5%	0%		8.1%	0%	32.5%	0%		32.5%	**-**
PHF	0.85	0	0		0.85	0.82	0.73	0		0.92	0	0.9	0		0.9	**-**
Heavy	19	0	0		19	0	2	0		2	0	21	0		21	**-**
Heavy %	1.2%	0%	0%		1.2%	0%	3%	0%		0.9%	0%	2.4%	0%		2.4%	**-**
Lights	1591	0	0		1591	154	65	0		219	0	859	0		859	**-**
Lights %	98.8%	0%	0%		98.8%	100%	97%	0%		99.1%	0%	97.5%	0%		97.5%	**-**
Single-Unit Trucks	8	0	0		8	0	2	0		2	0	8	0		8	**-**
Single-Unit Trucks %	0.5%	0%	0%		0.5%	0%	3%	0%		0.9%	0%	0.9%	0%		0.9%	**-**
Buses	5	0	0		5	0	0	0		0	0	7	0		7	**-**
Buses %	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0%	0.8%	0%		0.8%	**-**
Articulated Trucks	6	0	0		6	0	0	0		0	0	6	0		6	**-**
Articulated Trucks %	0.4%	0%	0%		0.4%	0%	0%	0%		0%	0%	0.7%	0%		0.7%	**-**
Bicycles on Road	1	0	0		1	0	0	0		0	0	1	0		1	**-**
Bicycles on Road %	0.1%	0%	0%		0.1%	0%	0%	0%		0%	0%	0.1%	0%		0.1%	**-**

Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)




0
1
0
139 (5.8%)
11 (18.2%)
(1.9%) 1316
150 S 0
801 W 1316

Turning Movement Count (3 . DERRY RD W & NINTH LINE) CustID: 00522012 MioID: 648539

Start Time	N Approach NINTH LINE						E Approach DERRY RD W						S Approach NINTH LINE						W Approach DERRY RD W						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	16	23	0	0	0	39	2	60	11	0	0	73	16	9	12	0	0	37	2	134	18	0	0	154	303	
06:15:00	35	52	4	0	0	91	3	59	12	0	0	74	16	27	19	0	0	62	9	176	17	0	0	202	429	
06:30:00	39	69	4	0	0	112	7	65	15	0	0	87	11	37	28	0	0	76	7	233	22	0	0	262	537	
06:45:00	16	66	10	0	0	92	8	68	22	0	0	98	26	43	16	0	0	85	11	288	32	0	0	331	606	1875
07:00:00	42	82	3	0	0	127	3	77	22	0	0	102	29	55	19	0	0	103	18	254	38	1	0	311	643	2215
07:15:00	55	104	2	0	0	161	6	109	27	0	0	142	25	71	39	0	0	135	17	346	37	0	0	400	838	2624
07:30:00	54	122	7	0	0	183	8	131	33	0	0	172	34	90	43	0	1	167	18	300	57	0	0	375	897	2984
07:45:00	61	104	7	0	0	172	13	123	26	0	0	162	47	95	56	0	0	198	31	281	50	0	0	362	894	3272
08:00:00	73	103	5	0	0	181	11	152	33	1	0	197	40	81	50	0	0	171	27	301	55	0	0	383	932	3561
08:15:00	61	107	4	0	0	172	12	135	22	0	0	169	51	114	50	0	0	215	13	277	47	0	0	337	893	3616
08:30:00	70	85	8	0	0	163	6	145	31	0	0	182	37	90	41	0	0	168	12	293	55	0	0	360	873	3592
08:45:00	50	73	9	0	0	132	7	107	19	1	0	134	38	75	39	0	0	152	21	356	58	0	0	435	853	3551
09:00:00	25	72	8	0	0	105	13	94	32	0	0	139	33	65	19	0	0	117	16	237	47	1	0	301	662	3281
09:15:00	55	58	2	0	0	115	7	83	22	0	0	112	32	39	13	0	0	84	16	216	31	0	0	263	574	2962
09:30:00	32	49	5	0	0	86	4	71	20	0	0	95	24	45	18	0	0	87	16	181	44	0	0	241	509	2598
09:45:00	29	53	6	0	0	88	10	72	14	0	0	96	24	41	24	0	0	89	9	144	34	0	0	187	460	2205
BREAK																										
15:00:00	43	61	6	0	0	110	7	183	33	0	0	223	28	71	23	0	0	122	26	117	44	0	0	187	642	
15:15:00	45	64	11	0	0	120	9	219	28	0	0	256	30	92	33	0	0	155	24	100	48	0	0	172	703	
15:30:00	52	53	9	0	0	114	13	224	30	0	0	267	31	80	21	0	0	132	26	102	38	0	0	166	679	
15:45:00	38	75	7	0	2	120	7	234	26	0	0	267	26	122	30	0	0	178	22	94	44	0	2	160	725	2749
16:00:00	49	83	14	0	0	146	9	261	36	0	0	306	28	103	24	0	0	155	22	95	43	0	0	160	767	2874
16:15:00	47	81	10	0	0	138	16	341	39	0	0	396	20	106	25	0	0	151	30	129	37	0	0	196	881	3052
16:30:00	46	102	5	0	0	153	12	319	37	0	0	368	25	123	16	0	0	164	26	130	42	0	0	198	883	3256
16:45:00	58	66	8	0	0	132	10	412	33	0	2	455	36	123	24	0	0	183	36	164	39	0	0	239	1009	3540
17:00:00	59	101	16	0	0	176	17	349	45	0	0	411	33	121	22	0	0	176	48	172	42	0	0	262	1025	3798
17:15:00	63	118	15	0	0	196	3	300	50	0	0	353	31	140	23	0	0	194	50	163	39	0	0	252	995	3912
17:30:00	54	98	17	0	0	169	15	296	37	0	0	348	40	104	16	0	0	160	51	167	53	0	0	271	948	3977
17:45:00	44	107	19	0	0	170	11	238	36	0	0	285	27	116	17	0	0	160	37	136	53	0	0	226	841	3809
18:00:00	40	92	6	0	0	138	8	267	40	0	0	315	38	91	16	0	0	145	24	130	61	0	0	215	813	3597
18:15:00	38	68	7	0	0	113	11	228	33	0	0	272	39	93	26	0	0	158	30	111	45	0	0	186	729	3331

18:30:00	38	75	6	0	0	119	10	195	42	0	0	247	44	107	28	0	0	179	25	99	49	0	0	173	718	3101
18:45:00	25	71	12	0	0	108	7	196	33	0	0	236	26	72	18	0	0	116	28	106	37	0	0	171	631	2891
Grand Total	1452	2537	252	0	2	4241	285	5813	939	2	2	7039	985	2641	848	0	1	4474	748	6032	1356	2	2	8138	**23892**	-
Approach%	34.2%	59.8%	5.9%	0%		-	4%	82.6%	13.3%	0%		-	22%	59%	19%	0%		-	9.2%	74.1%	16.7%	0%		-	**-**	-
Totals %	6.1%	10.6%	1.1%	0%		17.8%	1.2%	24.3%	3.9%	0%		29.5%	4.1%	11.1%	3.5%	0%		18.7%	3.1%	25.2%	5.7%	0%		34.1%	**-**	-
Heavy	28	36	6	0		-	8	141	16	0		-	23	51	22	0		-	6	146	33	1		-	**-**	-
Heavy %	1.9%	1.4%	2.4%	0%		-	2.8%	2.4%	1.7%	0%		-	2.3%	1.9%	2.6%	0%		-	0.8%	2.4%	2.4%	50%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

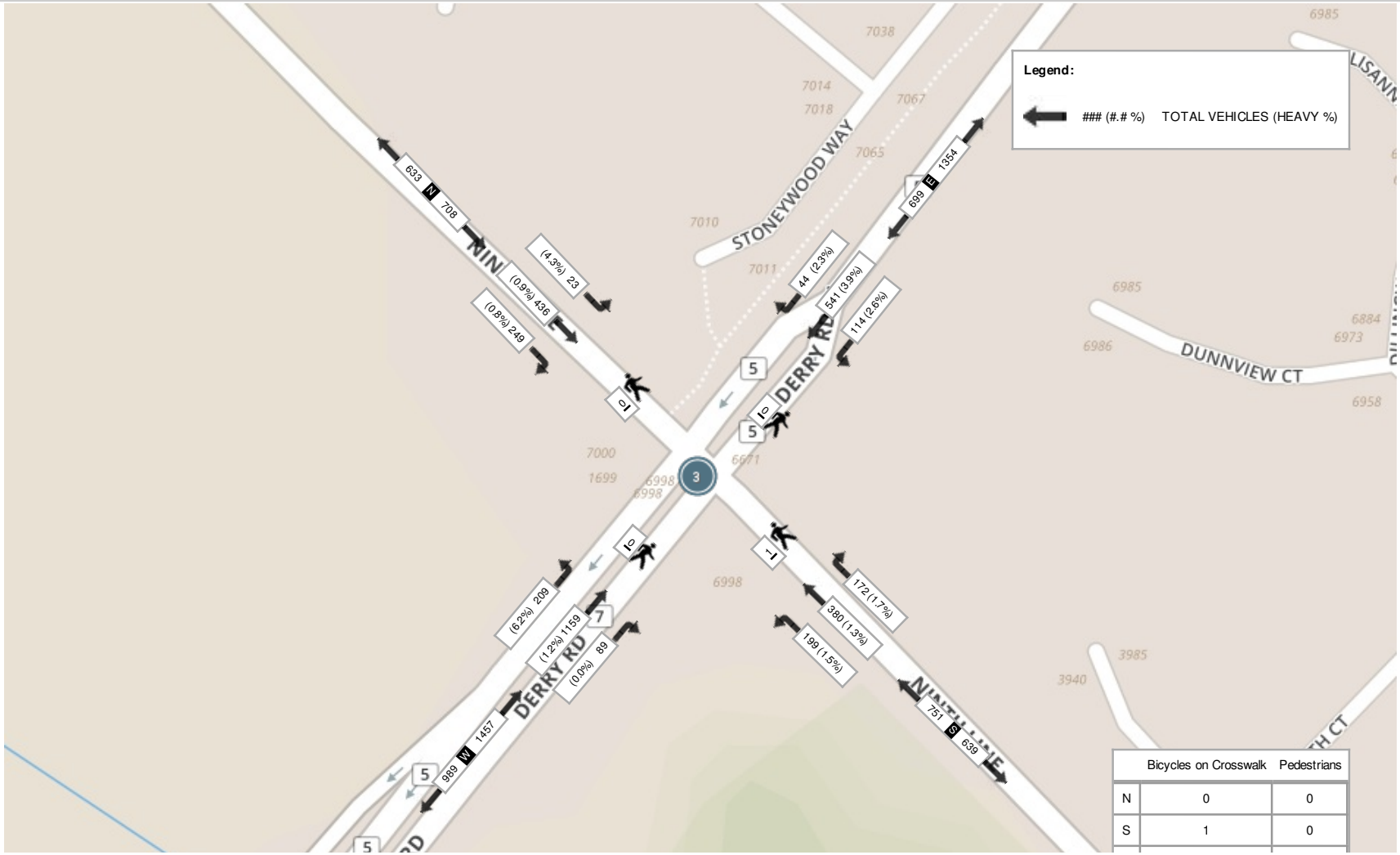
Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (3.37 °C)

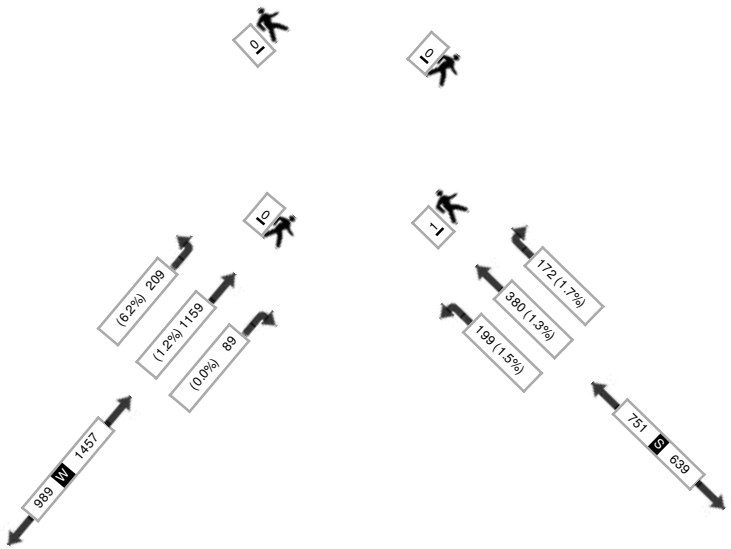
Start Time	N Approach NINTH LINE						E Approach DERRY RD W						S Approach NINTH LINE						W Approach DERRY RD W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
07:30:00	54	122	7	0	0	183	8	131	33	0	0	172	34	90	43	0	1	167	18	300	57	0	0	375	897
07:45:00	61	104	7	0	0	172	13	123	26	0	0	162	47	95	56	0	0	198	31	281	50	0	0	362	894
08:00:00	73	103	5	0	0	181	11	152	33	1	0	197	40	81	50	0	0	171	27	301	55	0	0	383	932
08:15:00	61	107	4	0	0	172	12	135	22	0	0	169	51	114	50	0	0	215	13	277	47	0	0	337	893
Grand Total	249	436	23	0	0	708	44	541	114	1	0	700	172	380	199	0	1	751	89	1159	209	0	0	1457	**3616**
Approach%	35.2%	61.6%	3.2%	0%		-	6.3%	77.3%	16.3%	0.1%		-	22.9%	50.6%	26.5%	0%		-	6.1%	79.5%	14.3%	0%		-	-
Totals %	6.9%	12.1%	0.6%	0%		19.6%	1.2%	15%	3.2%	0%		19.4%	4.8%	10.5%	5.5%	0%		20.8%	2.5%	32.1%	5.8%	0%		40.3%	-
PHF	0.85	0.89	0.82	0		0.97	0.85	0.89	0.86	0.25		0.89	0.84	0.83	0.89	0		0.87	0.72	0.96	0.92	0		0.95	-
Heavy	2	4	1	0		7	1	21	3	0		25	3	5	3	0		11	0	14	13	0		27	-
Heavy %	0.8%	0.9%	4.3%	0%		1%	2.3%	3.9%	2.6%	0%		3.6%	1.7%	1.3%	1.5%	0%		1.5%	0%	1.2%	6.2%	0%		1.9%	-
Lights	247	432	22	0		701	43	520	111	1		675	169	375	196	0		740	89	1145	196	0		1430	-
Lights %	99.2%	99.1%	95.7%	0%		99%	97.7%	96.1%	97.4%	100%		96.4%	98.3%	98.7%	98.5%	0%		98.5%	100%	98.8%	93.8%	0%		98.1%	-
Single-Unit Trucks	2	3	1	0		6	1	9	1	0		11	2	2	2	0		6	0	7	12	0		19	-
Single-Unit Trucks %	0.8%	0.7%	4.3%	0%		0.8%	2.3%	1.7%	0.9%	0%		1.6%	1.2%	0.5%	1%	0%		0.8%	0%	0.6%	5.7%	0%		1.3%	-
Buses	0	1	0	0		1	0	7	2	0		9	0	2	1	0		3	0	3	0	0		3	-
Buses %	0%	0.2%	0%	0%		0.1%	0%	1.3%	1.8%	0%		1.3%	0%	0.5%	0.5%	0%		0.4%	0%	0.3%	0%	0%		0.2%	-
Articulated Trucks	0	0	0	0		0	0	5	0	0		5	1	1	0	0		2	0	4	1	0		5	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.7%	0.6%	0.3%	0%	0%		0.3%	0%	0.3%	0.5%	0%		0.3%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		-

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (8.8 °C)

Start Time	N Approach NINTH LINE						E Approach DERRY RD W						S Approach NINTH LINE						W Approach DERRY RD W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:45:00	58	66	8	0	0	132	10	412	33	0	2	455	36	123	24	0	0	183	36	164	39	0	0	239	1009
17:00:00	59	101	16	0	0	176	17	349	45	0	0	411	33	121	22	0	0	176	48	172	42	0	0	262	1025
17:15:00	63	118	15	0	0	196	3	300	50	0	0	353	31	140	23	0	0	194	50	163	39	0	0	252	995
17:30:00	54	98	17	0	0	169	15	296	37	0	0	348	40	104	16	0	0	160	51	167	53	0	0	271	948
Grand Total	234	383	56	0	0	673	45	1357	165	0	2	1567	140	488	85	0	0	713	185	666	173	0	0	1024	**3977**
Approach%	34.8%	56.9%	8.3%	0%		-	2.9%	86.6%	10.5%	0%		-	19.6%	68.4%	11.9%	0%		-	18.1%	65%	16.9%	0%		-	**-**
Totals %	5.9%	9.6%	1.4%	0%		16.9%	1.1%	34.1%	4.1%	0%		39.4%	3.5%	12.3%	2.1%	0%		17.9%	4.7%	16.7%	4.4%	0%		25.7%	**-**
PHF	0.93	0.81	0.82	0		0.86	0.66	0.82	0.83	0		0.86	0.88	0.87	0.89	0		0.92	0.91	0.97	0.82	0		0.94	**-**
Heavy	3	5	0	0		8	1	18	1	0		20	1	3	1	0		5	0	19	1	0		20	**-**
Heavy %	1.3%	1.3%	0%	0%		1.2%	2.2%	1.3%	0.6%	0%		1.3%	0.7%	0.6%	1.2%	0%		0.7%	0%	2.9%	0.6%	0%		2%	**-**
Lights	231	378	56	0		665	44	1338	164	0		1546	139	485	84	0		708	185	646	172	0		1003	**-**
Lights %	98.7%	98.7%	100%	0%		98.8%	97.8%	98.6%	99.4%	0%		98.7%	99.3%	99.4%	98.8%	0%		99.3%	100%	97%	99.4%	0%		97.9%	**-**
Single-Unit Trucks	3	4	0	0		7	0	5	0	0		5	0	3	1	0		4	0	8	0	0		8	**-**
Single-Unit Trucks %	1.3%	1%	0%	0%		1%	0%	0.4%	0%	0%		0.3%	0%	0.6%	1.2%	0%		0.6%	0%	1.2%	0%	0%		0.8%	**-**
Buses	0	1	0	0		1	0	6	0	0		6	0	0	0	0		0	0	7	0	0		7	**-**
Buses %	0%	0.3%	0%	0%		0.1%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		0.7%	**-**
Articulated Trucks	0	0	0	0		0	1	7	1	0		9	1	0	0	0		1	0	4	1	0		5	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	2.2%	0.5%	0.6%	0%		0.6%	0.7%	0%	0%	0%		0.1%	0%	0.6%	0.6%	0%		0.5%	**-**
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (3.37 °C)




T
T
T
T
(6.2%) 209
(1.2%) 1159
(0.0%) 89
989
W
1457
172 (1.7%)
380 (13%)
199 (1.5%)
751
S
639

Turning Movement Count (4 . NINTH LINE & DOUG LEAVENS BLVD)

Start Time	N Approach NINTH LINE					E Approach DOUG LEAVENS BLVD					S Approach NINTH LINE					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	U-Turn S:S	Peds S:	Approach Total		
06:00:00	42	3	0	0	45	18	7	0	0	25	1	24	0	0	25	95	
06:15:00	71	2	0	0	73	10	7	0	0	17	3	51	0	0	54	144	
06:30:00	84	3	0	0	87	11	17	0	0	28	2	52	0	0	54	169	
06:45:00	119	1	0	0	120	18	22	0	0	40	7	75	0	0	82	242	650
07:00:00	99	3	0	0	102	17	23	0	0	40	8	72	0	0	80	222	777
07:15:00	159	5	0	0	164	25	23	0	0	48	11	121	0	0	132	344	977
07:30:00	171	10	0	0	181	30	28	0	0	58	16	133	0	0	149	388	1196
07:45:00	133	20	0	0	153	30	36	0	0	66	27	175	0	0	202	421	1375
08:00:00	160	22	0	0	182	35	31	0	0	66	35	173	0	0	208	456	1609
08:15:00	126	11	0	0	137	40	32	0	1	72	18	179	0	0	197	406	1671
08:30:00	148	9	0	0	157	29	21	0	0	50	17	151	0	0	168	375	1658
08:45:00	107	11	0	0	118	29	26	0	0	55	18	132	0	0	150	323	1560
09:00:00	110	7	0	0	117	9	19	0	1	28	18	102	0	0	120	265	1369
09:15:00	102	6	0	0	108	19	10	0	0	29	13	80	0	0	93	230	1193
09:30:00	97	6	0	0	103	6	21	0	0	27	17	84	0	0	101	231	1049
09:45:00	71	4	0	0	75	10	15	0	0	25	7	77	0	0	84	184	910
BREAK																	
15:00:00	117	15	0	0	132	11	17	0	0	28	21	112	0	0	133	293	
15:15:00	105	12	0	0	117	17	22	0	0	39	33	145	0	0	178	334	
15:30:00	97	15	0	0	112	23	15	0	0	38	23	147	0	0	170	320	
15:45:00	109	18	0	0	127	17	28	0	0	45	23	136	0	0	159	331	1278
16:00:00	130	23	0	0	153	6	18	0	0	24	16	177	0	0	193	370	1355
16:15:00	140	10	0	0	150	15	13	0	0	28	21	156	0	0	177	355	1376
16:30:00	139	23	0	0	162	16	15	0	0	31	24	152	0	0	176	369	1425

16:45:00	125	17	0	0	142	15	27	0	0	42	28	186	0	0	214	398	1492
17:00:00	168	24	0	0	192	15	31	0	0	46	30	169	0	0	199	437	1559
17:15:00	177	31	0	0	208	8	25	0	0	33	33	174	0	0	207	448	1652
17:30:00	172	27	0	0	199	16	23	0	0	39	31	173	0	0	204	442	1725
17:45:00	168	16	0	0	184	15	21	0	2	36	29	149	0	0	178	398	1725
18:00:00	126	21	0	0	147	12	13	0	0	25	27	151	0	0	178	350	1638
18:15:00	117	25	0	0	142	15	31	0	0	46	30	171	0	0	201	389	1579
18:30:00	119	12	0	0	131	21	26	0	0	47	27	159	0	0	186	364	1501
18:45:00	131	16	0	0	147	11	19	0	0	30	31	109	0	0	140	317	1420
Grand Total	3939	428	0	0	4367	569	682	0	4	1251	645	4147	0	0	4792	**10410**	-
Approach%	90.2%	9.8%	0%		-	45.5%	54.5%	0%		-	13.5%	86.5%	0%		-	**-**	-
Totals %	37.8%	4.1%	0%		42%	5.5%	6.6%	0%		12%	6.2%	39.8%	0%		46%	**-**	-
Heavy	60	3	0		-	16	10	0		-	16	96	0		-	**-**	-
Heavy %	1.5%	0.7%	0%		-	2.8%	1.5%	0%		-	2.5%	2.3%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

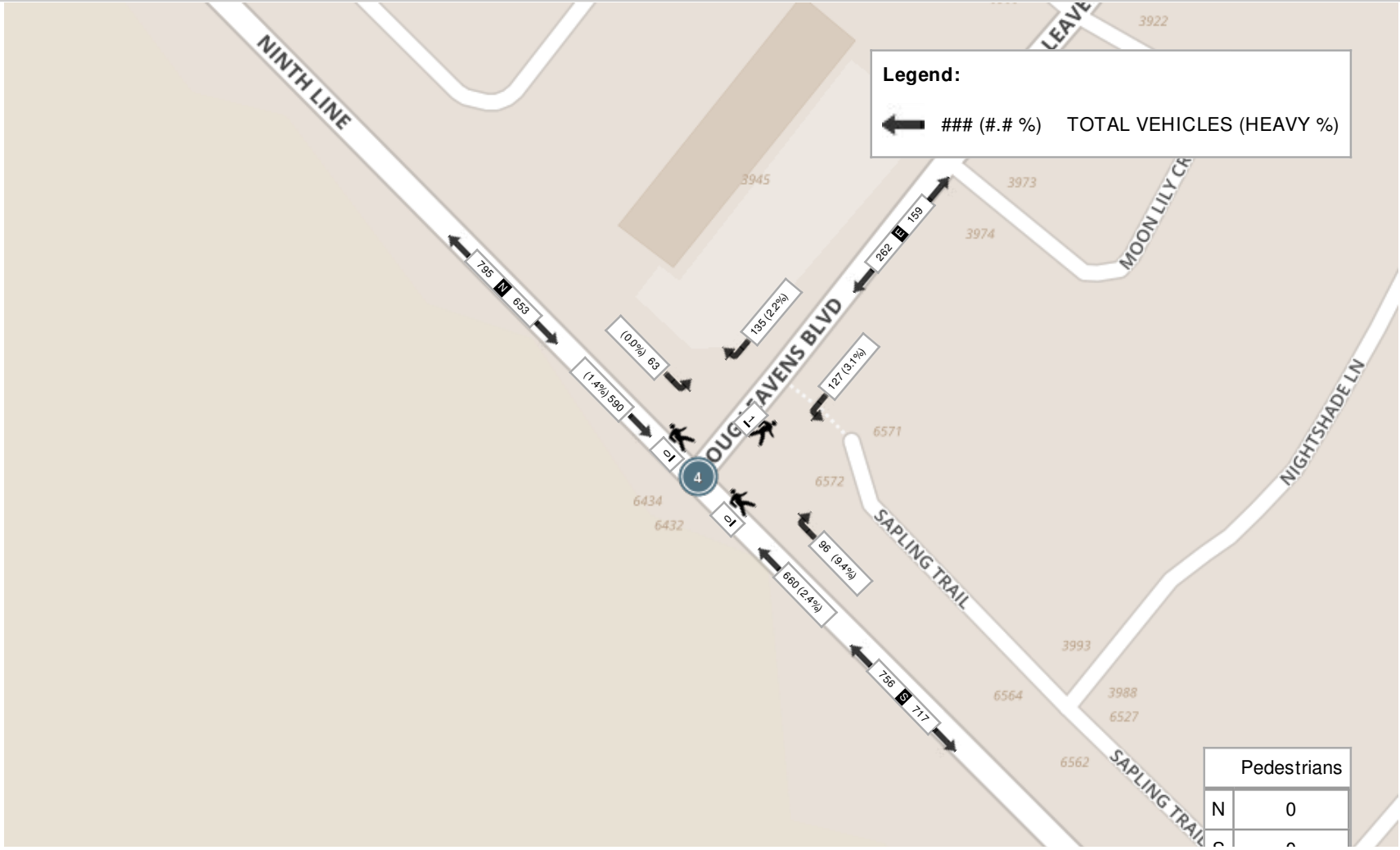
Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (3.37 °C)

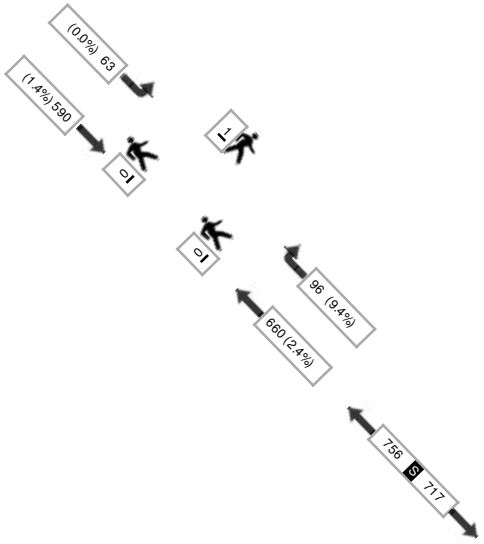
Start Time	N Approach NINTH LINE					E Approach DOUG LEAVENS BLVD					S Approach NINTH LINE					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
07:30:00	171	10	0	0	181	30	28	0	0	58	16	133	0	0	149	388
07:45:00	133	20	0	0	153	30	36	0	0	66	27	175	0	0	202	421
08:00:00	160	22	0	0	182	35	31	0	0	66	35	173	0	0	208	456
08:15:00	126	11	0	0	137	40	32	0	1	72	18	179	0	0	197	406
Grand Total	590	63	0	0	653	135	127	0	1	262	96	660	0	0	756	**1671**
Approach%	90.4%	9.6%	0%		-	51.5%	48.5%	0%		-	12.7%	87.3%	0%		-	-
Totals %	35.3%	3.8%	0%		39.1%	8.1%	7.6%	0%		15.7%	5.7%	39.5%	0%		45.2%	-
PHF	0.86	0.72	0		0.9	0.84	0.88	0		0.91	0.69	0.92	0		0.91	-
Heavy	8	0	0		8	3	4	0		7	9	16	0		25	-
Heavy %	1.4%	0%	0%		1.2%	2.2%	3.1%	0%		2.7%	9.4%	2.4%	0%		3.3%	-
Lights	582	63	0		645	132	123	0		255	87	644	0		731	-
Lights %	98.6%	100%	0%		98.8%	97.8%	96.9%	0%		97.3%	90.6%	97.6%	0%		96.7%	-
Single-Unit Trucks	4	0	0		4	1	0	0		1	0	5	0		5	-
Single-Unit Trucks %	0.7%	0%	0%		0.6%	0.7%	0%	0%		0.4%	0%	0.8%	0%		0.7%	-
Buses	4	0	0		4	2	4	0		6	9	9	0		18	-
Buses %	0.7%	0%	0%		0.6%	1.5%	3.1%	0%		2.3%	9.4%	1.4%	0%		2.4%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	2	0		2	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.3%	0%		0.3%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%		-	-	-	100%		-	-	-	0%		-

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (8.8 °C)

Start Time	N Approach NINTH LINE					E Approach DOUG LEAVENS BLVD					S Approach NINTH LINE					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
17:00:00	168	24	0	0	192	15	31	0	0	46	30	169	0	0	199	437
17:15:00	177	31	0	0	208	8	25	0	0	33	33	174	0	0	207	448
17:30:00	172	27	0	0	199	16	23	0	0	39	31	173	0	0	204	442
17:45:00	168	16	0	0	184	15	21	0	2	36	29	149	0	0	178	398
Grand Total	685	98	0	0	783	54	100	0	2	154	123	665	0	0	788	**1725**
Approach%	87.5%	12.5%	0%		-	35.1%	64.9%	0%		-	15.6%	84.4%	0%		-	-
Totals %	39.7%	5.7%	0%		45.4%	3.1%	5.8%	0%		8.9%	7.1%	38.6%	0%		45.7%	-
PHF	0.97	0.79	0		0.94	0.84	0.81	0		0.84	0.93	0.96	0		0.95	-
Heavy	4	0	0		4	0	0	0		0	0	6	0		6	-
Heavy %	0.6%	0%	0%		0.5%	0%	0%	0%		0%	0%	0.9%	0%		0.8%	-
Lights	681	98	0		779	54	100	0		154	123	659	0		782	-
Lights %	99.4%	100%	0%		99.5%	100%	100%	0%		100%	100%	99.1%	0%		99.2%	-
Single-Unit Trucks	3	0	0		3	0	0	0		0	0	5	0		5	-
Single-Unit Trucks %	0.4%	0%	0%		0.4%	0%	0%	0%		0%	0%	0.8%	0%		0.6%	-
Buses	1	0	0		1	0	0	0		0	0	0	0		0	-
Buses %	0.1%	0%	0%		0.1%	0%	0%	0%		0%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	1	0		1	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.2%	0%		0.1%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%		-	-	-	100%		-	-	-	0%		-

Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (3.37 °C)




(0.0%) 63
(1.4%) 590
1
1
1
96 (9.4%)
660 (2.4%)
756
SB
717

Turning Movement Count (5 . NINTH LINE & FOXWOOD AVE)

Start Time	N Approach NINTH LINE					E Approach FOXWOOD AVE					S Approach NINTH LINE					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	U-Turn S:S	Peds S:	Approach Total		
06:00:00	47	1	0	0	48	6	5	0	0	11	0	20	0	0	20	79	
06:15:00	71	1	0	0	72	10	10	0	0	20	2	43	0	0	45	137	
06:30:00	108	1	0	0	109	7	15	0	0	22	0	56	0	0	56	187	
06:45:00	128	3	0	0	131	15	9	0	0	24	0	69	0	0	69	224	627
07:00:00	127	2	0	0	129	8	10	0	0	18	3	80	0	0	83	230	778
07:15:00	169	3	0	0	172	15	13	0	0	28	2	112	0	0	114	314	955
07:30:00	199	8	0	0	207	6	14	0	0	20	8	162	0	0	170	397	1165
07:45:00	168	7	0	0	175	19	8	0	0	27	5	167	0	0	172	374	1315
08:00:00	167	9	0	0	176	20	11	0	0	31	6	199	0	0	205	412	1497
08:15:00	166	6	0	0	172	22	13	0	0	35	16	172	0	0	188	395	1578
08:30:00	172	2	0	0	174	18	12	0	0	30	13	150	0	0	163	367	1548
08:45:00	122	4	0	0	126	8	10	0	0	18	5	137	0	0	142	286	1460
09:00:00	124	4	0	0	128	11	11	0	0	22	8	110	0	0	118	268	1316
09:15:00	102	5	0	0	107	11	11	0	0	22	3	74	0	0	77	206	1127
09:30:00	109	8	0	0	117	3	4	0	0	7	7	97	0	0	104	228	988
09:45:00	96	0	0	0	96	6	6	1	0	13	2	78	0	0	80	189	891
BREAK																	
15:00:00	136	5	0	0	141	7	9	0	0	16	10	124	0	0	134	291	
15:15:00	117	6	0	0	123	14	12	0	0	26	8	168	0	0	176	325	
15:30:00	102	4	0	0	106	2	13	0	0	15	15	157	0	0	172	293	
15:45:00	139	6	0	0	145	4	4	0	0	8	8	162	0	0	170	323	1232
16:00:00	146	4	0	0	150	6	4	0	0	10	8	160	0	0	168	328	1269
16:15:00	136	10	0	0	146	4	3	0	0	7	19	178	0	0	197	350	1294
16:30:00	151	8	0	0	159	4	8	0	0	12	11	177	0	0	188	359	1360

16:45:00	152	7	0	0	159	1	8	0	0	9	12	197	0	0	209	377	1414
17:00:00	184	10	0	0	194	6	5	0	0	11	13	193	0	0	206	411	1497
17:15:00	193	11	0	0	204	2	5	0	0	7	15	207	0	0	222	433	1580
17:30:00	188	7	0	0	195	4	8	0	0	12	16	198	0	0	214	421	1642
17:45:00	180	14	0	0	194	5	4	0	0	9	16	175	0	0	191	394	1659
18:00:00	133	8	0	0	141	8	9	0	0	17	16	174	0	0	190	348	1596
18:15:00	139	6	0	0	145	7	8	0	0	15	10	192	0	0	202	362	1525
18:30:00	140	12	0	0	152	5	11	0	0	16	13	175	0	0	188	356	1460
18:45:00	135	17	0	0	152	6	7	0	0	13	11	134	0	0	145	310	1376
Grand Total	4446	199	0	0	4645	270	280	1	0	551	281	4497	0	0	4778	**9974**	-
Approach%	95.7%	4.3%	0%		-	49%	50.8%	0.2%		-	5.9%	94.1%	0%		-	**-**	-
Totals %	44.6%	2%	0%		46.6%	2.7%	2.8%	0%		5.5%	2.8%	45.1%	0%		47.9%	**-**	-
Heavy	71	3	0		-	1	5	1		-	13	109	0		-	**-**	-
Heavy %	1.6%	1.5%	0%		-	0.4%	1.8%	100%		-	4.6%	2.4%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

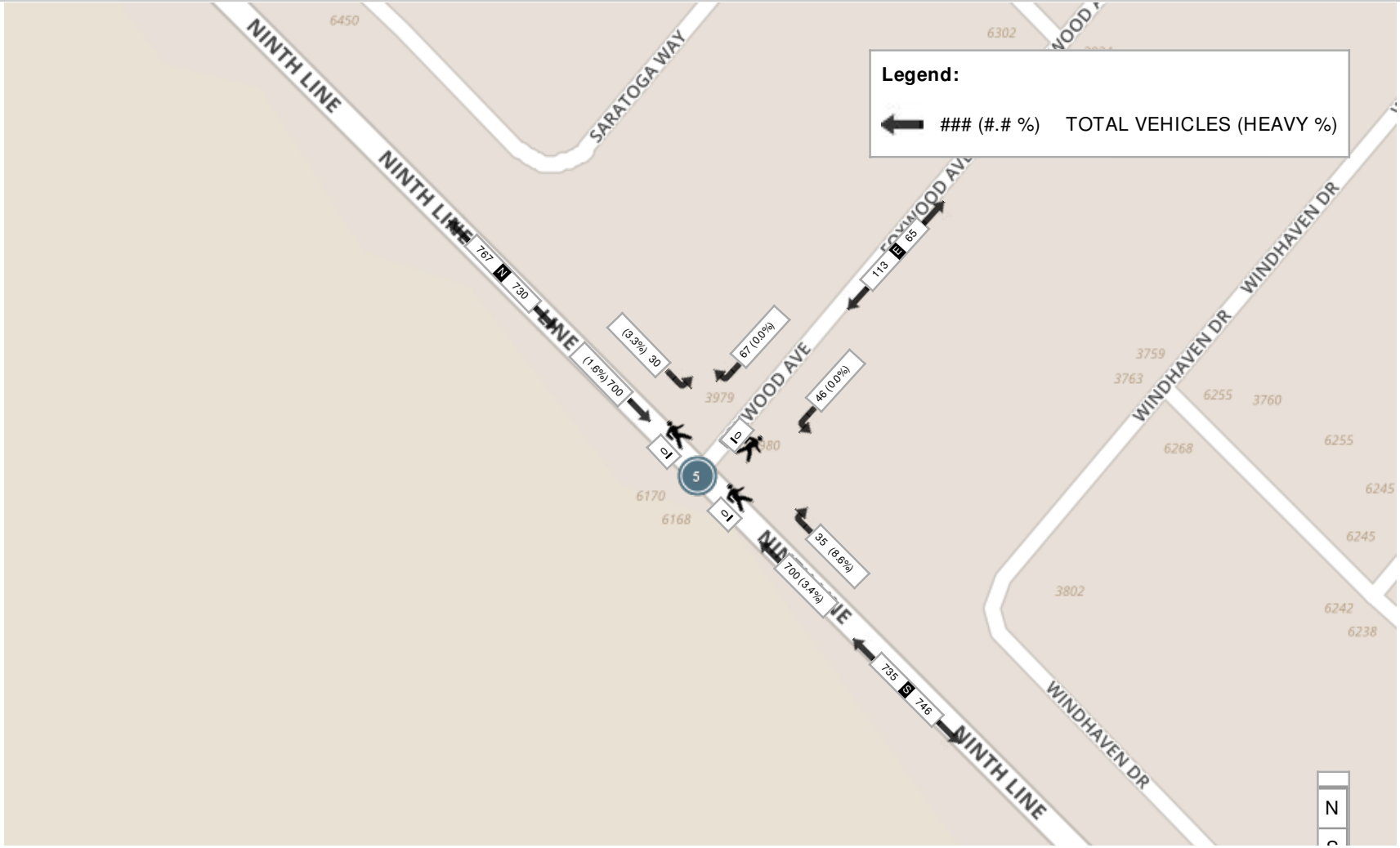
Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (3.37 °C)

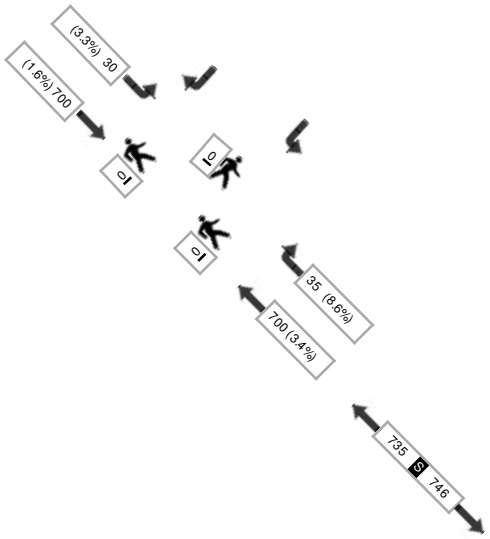
Start Time	N Approach NINTH LINE					E Approach FOXWOOD AVE					S Approach NINTH LINE					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
07:30:00	199	8	0	0	207	6	14	0	0	20	8	162	0	0	170	397
07:45:00	168	7	0	0	175	19	8	0	0	27	5	167	0	0	172	374
08:00:00	167	9	0	0	176	20	11	0	0	31	6	199	0	0	205	412
08:15:00	166	6	0	0	172	22	13	0	0	35	16	172	0	0	188	395
Grand Total	700	30	0	0	730	67	46	0	0	113	35	700	0	0	735	**1578**
Approach%	95.9%	4.1%	0%		-	59.3%	40.7%	0%		-	4.8%	95.2%	0%		-	-
Totals %	44.4%	1.9%	0%		46.3%	4.2%	2.9%	0%		7.2%	2.2%	44.4%	0%		46.6%	-
PHF	0.88	0.83	0		0.88	0.76	0.82	0		0.81	0.55	0.88	0		0.9	-
Heavy	11	1	0		12	0	0	0		0	3	24	0		27	-
Heavy %	1.6%	3.3%	0%		1.6%	0%	0%	0%		0%	8.6%	3.4%	0%		3.7%	-
Lights	689	29	0		718	67	46	0		113	32	676	0		708	-
Lights %	98.4%	96.7%	0%		98.4%	100%	100%	0%		100%	91.4%	96.6%	0%		96.3%	-
Single-Unit Trucks	4	0	0		4	0	0	0		0	1	4	0		5	-
Single-Unit Trucks %	0.6%	0%	0%		0.5%	0%	0%	0%		0%	2.9%	0.6%	0%		0.7%	-
Buses	7	1	0		8	0	0	0		0	2	18	0		20	-
Buses %	1%	3.3%	0%		1.1%	0%	0%	0%		0%	5.7%	2.6%	0%		2.7%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	2	0		2	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.3%	0%		0.3%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (8.8 °C)

Start Time	N Approach NINTH LINE					E Approach FOXWOOD AVE					S Approach NINTH LINE					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
17:00:00	184	10	0	0	194	6	5	0	0	11	13	193	0	0	206	411
17:15:00	193	11	0	0	204	2	5	0	0	7	15	207	0	0	222	433
17:30:00	188	7	0	0	195	4	8	0	0	12	16	198	0	0	214	421
17:45:00	180	14	0	0	194	5	4	0	0	9	16	175	0	0	191	394
Grand Total	745	42	0	0	787	17	22	0	0	39	60	773	0	0	833	**1659**
Approach%	94.7%	5.3%	0%		-	43.6%	56.4%	0%		-	7.2%	92.8%	0%		-	-
Totals %	44.9%	2.5%	0%		47.4%	1%	1.3%	0%		2.4%	3.6%	46.6%	0%		50.2%	-
PHF	0.97	0.75	0		0.96	0.71	0.69	0		0.81	0.94	0.93	0		0.94	-
Heavy	3	1	0		4	0	0	0		0	0	8	0		8	-
Heavy %	0.4%	2.4%	0%		0.5%	0%	0%	0%		0%	0%	1%	0%		1%	-
Lights	742	41	0		783	17	22	0		39	60	765	0		825	-
Lights %	99.6%	97.6%	0%		99.5%	100%	100%	0%		100%	100%	99%	0%		99%	-
Single-Unit Trucks	2	1	0		3	0	0	0		0	0	7	0		7	-
Single-Unit Trucks %	0.3%	2.4%	0%		0.4%	0%	0%	0%		0%	0%	0.9%	0%		0.8%	-
Buses	1	0	0		1	0	0	0		0	0	0	0		0	-
Buses %	0.1%	0%	0%		0.1%	0%	0%	0%		0%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	1	0		1	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.1%	0%		0.1%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (3.37 °C)




(3.3%) 30
(1.6%) 700
0
1
0
1
35 (8.6%)
700 (3.4%)
735
S
746

Turning Movement Count (6 . NINTH LINE & OSPREY BLVD)

Start Time	N Approach NINTH LINE					E Approach OSPREY BLVD					S Approach NINTH LINE					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	U-Turn S:S	Peds S:	Approach Total		
06:00:00	49	2	0	0	51	3	5	0	0	8	1	18	0	0	19	78	
06:15:00	80	1	0	0	81	2	8	0	0	10	3	44	0	0	47	138	
06:30:00	115	0	0	0	115	3	22	0	0	25	3	49	0	0	52	192	
06:45:00	140	2	0	0	142	8	14	0	0	22	3	61	0	0	64	228	636
07:00:00	135	3	0	0	138	10	17	0	0	27	5	74	0	0	79	244	802
07:15:00	172	4	0	0	176	9	23	0	0	32	5	104	0	0	109	317	981
07:30:00	207	4	0	0	211	9	33	0	0	42	13	160	0	0	173	426	1215
07:45:00	177	5	1	0	183	12	30	0	0	42	16	160	0	0	176	401	1388
08:00:00	170	5	0	0	175	21	25	0	0	46	27	188	0	0	215	436	1580
08:15:00	171	6	0	0	177	16	34	0	0	50	33	167	0	0	200	427	1690
08:30:00	168	6	0	0	174	12	34	0	0	46	13	151	0	0	164	384	1648
08:45:00	145	4	0	0	149	6	27	0	0	33	7	137	0	0	144	326	1573
09:00:00	134	2	0	0	136	7	5	0	0	12	16	113	0	0	129	277	1414
09:15:00	101	2	0	0	103	4	18	0	0	22	7	73	0	0	80	205	1192
09:30:00	119	5	0	0	124	6	13	0	0	19	4	98	0	0	102	245	1053
09:45:00	100	3	0	0	103	3	7	0	0	10	6	78	0	0	84	197	924
BREAK																	
15:00:00	130	10	0	0	140	3	23	0	1	26	14	135	0	0	149	315	
15:15:00	125	9	0	0	134	7	23	0	0	30	25	173	0	0	198	362	
15:30:00	109	1	0	2	110	1	11	0	3	12	20	179	0	0	199	321	
15:45:00	140	6	0	0	146	10	20	0	0	30	15	166	0	0	181	357	1355
16:00:00	140	9	0	0	149	3	4	0	1	7	23	158	0	0	181	337	1377
16:15:00	131	7	0	0	138	0	14	0	0	14	30	205	0	0	235	387	1402
16:30:00	156	7	0	0	163	1	16	0	0	17	27	176	0	0	203	383	1464

16:45:00	153	10	0	0	163	3	21	0	0	24	17	205	0	0	222	409	1516
17:00:00	177	7	0	0	184	5	20	0	0	25	23	214	0	0	237	446	1625
17:15:00	185	12	0	0	197	7	16	0	0	23	22	211	0	0	233	453	1691
17:30:00	187	11	0	0	198	4	11	0	0	15	31	220	0	0	251	464	1772
17:45:00	174	13	0	0	187	13	21	0	1	34	24	179	0	0	203	424	1787
18:00:00	128	11	0	0	139	9	10	0	0	19	14	176	0	0	190	348	1689
18:15:00	138	10	0	0	148	6	18	0	1	24	21	199	0	0	220	392	1628
18:30:00	143	6	0	0	149	6	18	0	1	24	24	181	0	0	205	378	1542
18:45:00	134	8	0	0	142	8	12	0	0	20	21	135	0	0	156	318	1436
Grand Total	4533	191	1	2	4725	217	573	0	8	790	513	4588	0	0	5100	**10615**	-
Approach%	95.9%	4%	0%		-	27.5%	72.5%	0%		-	10.1%	90%	0%		-	**-**	-
Totals %	42.7%	1.8%	0%		44.5%	2%	5.4%	0%		7.4%	4.8%	43.2%	0%		48%	**-**	-
Heavy	74	2	0		-	6	37	0		-	36	120	0		-	**-**	-
Heavy %	1.6%	1%	0%		-	2.8%	6.5%	0%		-	7%	2.6%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

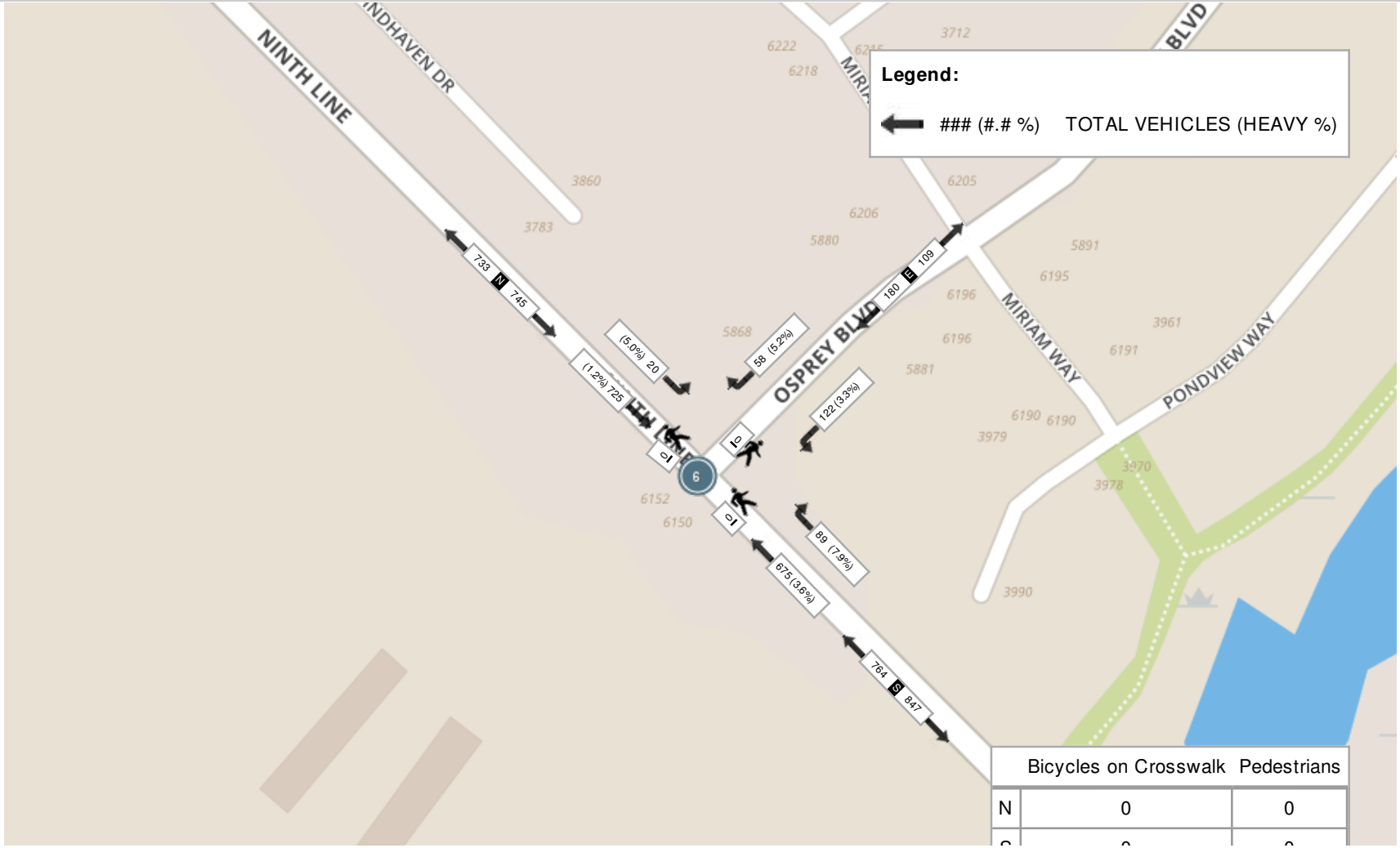
Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (3.37 °C)

Start Time	N Approach NINTH LINE					E Approach OSPREY BLVD					S Approach NINTH LINE					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
07:30:00	207	4	0	0	211	9	33	0	0	42	13	160	0	0	173	426
07:45:00	177	5	1	0	183	12	30	0	0	42	16	160	0	0	176	401
08:00:00	170	5	0	0	175	21	25	0	0	46	27	188	0	0	215	436
08:15:00	171	6	0	0	177	16	34	0	0	50	33	167	0	0	200	427
Grand Total	725	20	1	0	746	58	122	0	0	180	89	675	0	0	764	**1690**
Approach%	97.2%	2.7%	0.1%		-	32.2%	67.8%	0%		-	11.6%	88.4%	0%		-	-
Totals %	42.9%	1.2%	0.1%		44.1%	3.4%	7.2%	0%		10.7%	5.3%	39.9%	0%		45.2%	-
PHF	0.88	0.83	0.25		0.88	0.69	0.9	0		0.9	0.67	0.9	0		0.89	-
Heavy	9	1	0		10	3	4	0		7	7	24	0		31	-
Heavy %	1.2%	5%	0%		1.3%	5.2%	3.3%	0%		3.9%	7.9%	3.6%	0%		4.1%	-
Lights	716	19	1		736	55	118	0		173	82	651	0		733	-
Lights %	98.8%	95%	100%		98.7%	94.8%	96.7%	0%		96.1%	92.1%	96.4%	0%		95.9%	-
Single-Unit Trucks	3	0	0		3	1	0	0		1	0	4	0		4	-
Single-Unit Trucks %	0.4%	0%	0%		0.4%	1.7%	0%	0%		0.6%	0%	0.6%	0%		0.5%	-
Buses	6	1	0		7	2	4	0		6	7	18	0		25	-
Buses %	0.8%	5%	0%		0.9%	3.4%	3.3%	0%		3.3%	7.9%	2.7%	0%		3.3%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	2	0		2	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.3%	0%		0.3%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-

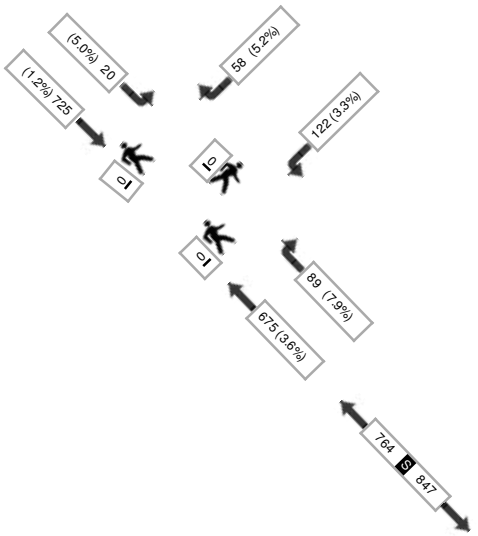
Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (8.8 °C)

Start Time	N Approach NINTH LINE					E Approach OSPREY BLVD					S Approach NINTH LINE					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
17:00:00	177	7	0	0	184	5	20	0	0	25	23	214	0	0	237	446
17:15:00	185	12	0	0	197	7	16	0	0	23	22	211	0	0	233	453
17:30:00	187	11	0	0	198	4	11	0	0	15	31	220	0	0	251	464
17:45:00	174	13	0	0	187	13	21	0	1	34	24	179	0	0	203	424
Grand Total	723	43	0	0	766	29	68	0	1	97	100	824	0	0	924	**1787**
Approach%	94.4%	5.6%	0%		-	29.9%	70.1%	0%		-	10.8%	89.2%	0%		-	-
Totals %	40.5%	2.4%	0%		42.9%	1.6%	3.8%	0%		5.4%	5.6%	46.1%	0%		51.7%	-
PHF	0.97	0.83	0		0.97	0.56	0.81	0		0.71	0.81	0.94	0		0.92	-
Heavy	3	0	0		3	1	5	0		6	2	7	0		9	-
Heavy %	0.4%	0%	0%		0.4%	3.4%	7.4%	0%		6.2%	2%	0.8%	0%		1%	-
Lights	720	43	0		763	28	63	0		91	98	817	0		915	-
Lights %	99.6%	100%	0%		99.6%	96.6%	92.6%	0%		93.8%	98%	99.2%	0%		99%	-
Single-Unit Trucks	2	0	0		2	1	2	0		3	0	6	0		6	-
Single-Unit Trucks %	0.3%	0%	0%		0.3%	3.4%	2.9%	0%		3.1%	0%	0.7%	0%		0.6%	-
Buses	1	0	0		1	0	3	0		3	2	0	0		2	-
Buses %	0.1%	0%	0%		0.1%	0%	4.4%	0%		3.1%	2%	0%	0%		0.2%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	1	0		1	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.1%	0%		0.1%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	100%		-	-	-	0%		-

Peak Hour: 07:30 AM - 08:30 AM Weather: Mist (3.37 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0


(5.0%) 20
58 (5.2%)
(1.2%) 725
122 (3.3%)
89 (7.9%)
675 (3.6%)
764
847

Turning Movement Count (7 . NINTH LINE & BRITANNIA RD W) CustID: 00310242 MioID: 648560

Start Time	N Approach NINTH LINE						E Approach BRITANNIA RD W						S Approach NINTH LINE						W Approach BRITANNIA RD W						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	4	52	6	0	0	62	7	16	6	0	0	29	7	9	13	0	0	29	9	40	2	0	0	51	171	
06:15:00	6	79	2	0	0	87	7	34	1	0	0	42	4	38	18	0	0	60	15	75	2	0	0	92	281	
06:30:00	13	110	15	0	0	138	4	56	6	0	0	66	7	39	29	0	0	75	19	99	6	0	0	124	403	
06:45:00	11	131	13	0	0	155	7	50	12	0	0	69	10	42	24	0	0	76	21	126	5	0	0	152	452	1307
07:00:00	19	109	12	0	0	140	6	65	11	0	0	82	11	59	30	0	0	100	19	170	11	0	0	200	522	1658
07:15:00	15	169	12	0	0	196	8	67	18	0	0	93	21	87	33	0	0	141	29	179	19	0	0	227	657	2034
07:30:00	21	168	12	0	0	201	20	119	33	0	1	172	20	115	45	0	0	180	39	209	18	0	0	266	819	2450
07:45:00	17	186	14	0	0	217	16	133	20	0	0	169	28	116	40	0	0	184	50	212	27	0	0	289	859	2857
08:00:00	26	175	11	0	0	212	30	110	21	0	1	161	32	134	51	0	0	217	49	237	31	0	0	317	907	3242
08:15:00	19	167	17	0	0	203	25	137	21	0	0	183	34	134	56	0	0	224	35	223	19	0	0	277	887	3472
08:30:00	23	169	11	0	0	203	12	118	15	0	1	145	32	115	52	0	0	199	35	221	18	0	0	274	821	3474
08:45:00	24	138	18	0	0	180	11	86	18	0	0	115	29	124	37	0	0	190	35	236	17	0	0	288	773	3388
09:00:00	9	94	6	0	0	109	10	74	14	0	1	98	28	88	47	0	0	163	25	162	14	0	0	201	571	3052
09:15:00	8	117	20	0	0	145	17	57	17	0	0	91	15	57	23	0	0	95	22	107	6	0	0	135	466	2631
09:30:00	9	105	15	0	0	129	17	51	17	0	0	85	16	78	27	0	0	121	15	90	11	0	0	116	451	2261
09:45:00	12	94	9	0	0	115	6	56	18	0	0	80	9	69	29	0	0	107	19	92	10	0	0	121	423	1911
BREAK																										
15:00:00	14	104	21	0	0	139	22	130	17	0	0	169	20	119	34	0	0	173	26	67	9	0	0	102	583	
15:15:00	17	99	20	0	0	136	26	155	13	0	0	194	17	146	39	0	0	202	27	70	14	0	0	111	643	
15:30:00	21	99	10	0	0	130	28	152	21	0	3	201	23	145	46	0	0	214	29	72	18	0	0	119	664	
15:45:00	14	109	18	0	0	141	30	195	28	0	0	253	24	137	41	0	0	202	46	80	12	0	0	138	734	2624
16:00:00	14	132	9	0	0	155	16	172	23	0	0	211	27	163	52	0	0	242	27	78	13	0	0	118	726	2767
16:15:00	21	109	14	0	0	144	26	214	19	0	2	259	18	175	53	0	0	246	33	96	21	0	0	150	799	2923
16:30:00	13	130	12	0	0	155	20	173	25	0	0	218	22	174	62	0	0	258	32	91	22	0	0	145	776	3035
16:45:00	21	132	14	0	0	167	24	231	38	0	0	293	19	172	43	0	0	234	58	123	22	0	0	203	897	3198
17:00:00	18	163	19	0	0	200	27	198	20	0	0	245	31	193	48	0	0	272	40	141	29	0	0	210	927	3399
17:15:00	19	144	16	0	0	179	22	224	20	0	2	266	19	165	45	0	0	229	70	133	36	0	0	239	913	3513
17:30:00	14	165	22	0	0	201	25	171	26	0	1	222	29	187	40	0	0	256	35	112	31	0	0	178	857	3594
17:45:00	21	138	17	0	0	176	23	174	31	0	0	228	29	139	29	0	0	197	70	148	27	0	0	245	846	3543
18:00:00	12	120	7	0	0	139	19	139	34	0	1	192	27	157	44	0	0	228	47	86	25	0	0	158	717	3333
18:15:00	15	119	15	0	0	149	24	119	31	0	1	174	21	172	31	0	0	224	43	108	17	0	0	168	715	3135

18:30:00	15	133	12	0	0	160	24	117	19	0	0	160	22	153	36	0	0	211	46	71	15	0	0	132	663	2941
18:45:00	7	101	19	0	0	127	17	130	18	0	0	165	24	130	30	0	0	184	31	87	13	0	0	131	607	2702
Grand Total	492	4060	438	0	0	4990	576	3923	631	0	14	5130	675	3831	1227	0	0	5733	1096	4041	540	0	0	5677	**21530**	-
Approach%	9.9%	81.4%	8.8%	0%		-	11.2%	76.5%	12.3%	0%		-	11.8%	66.8%	21.4%	0%		-	19.3%	71.2%	9.5%	0%		-	**-**	-
Totals %	2.3%	18.9%	2%	0%		23.2%	2.7%	18.2%	2.9%	0%		23.8%	3.1%	17.8%	5.7%	0%		26.6%	5.1%	18.8%	2.5%	0%		26.4%	**-**	-
Heavy	10	63	30	0		-	44	44	8	0		-	6	90	21	0		-	28	42	8	0		-	**-**	-
Heavy %	2%	1.6%	6.8%	0%		-	7.6%	1.1%	1.3%	0%		-	0.9%	2.3%	1.7%	0%		-	2.6%	1%	1.5%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

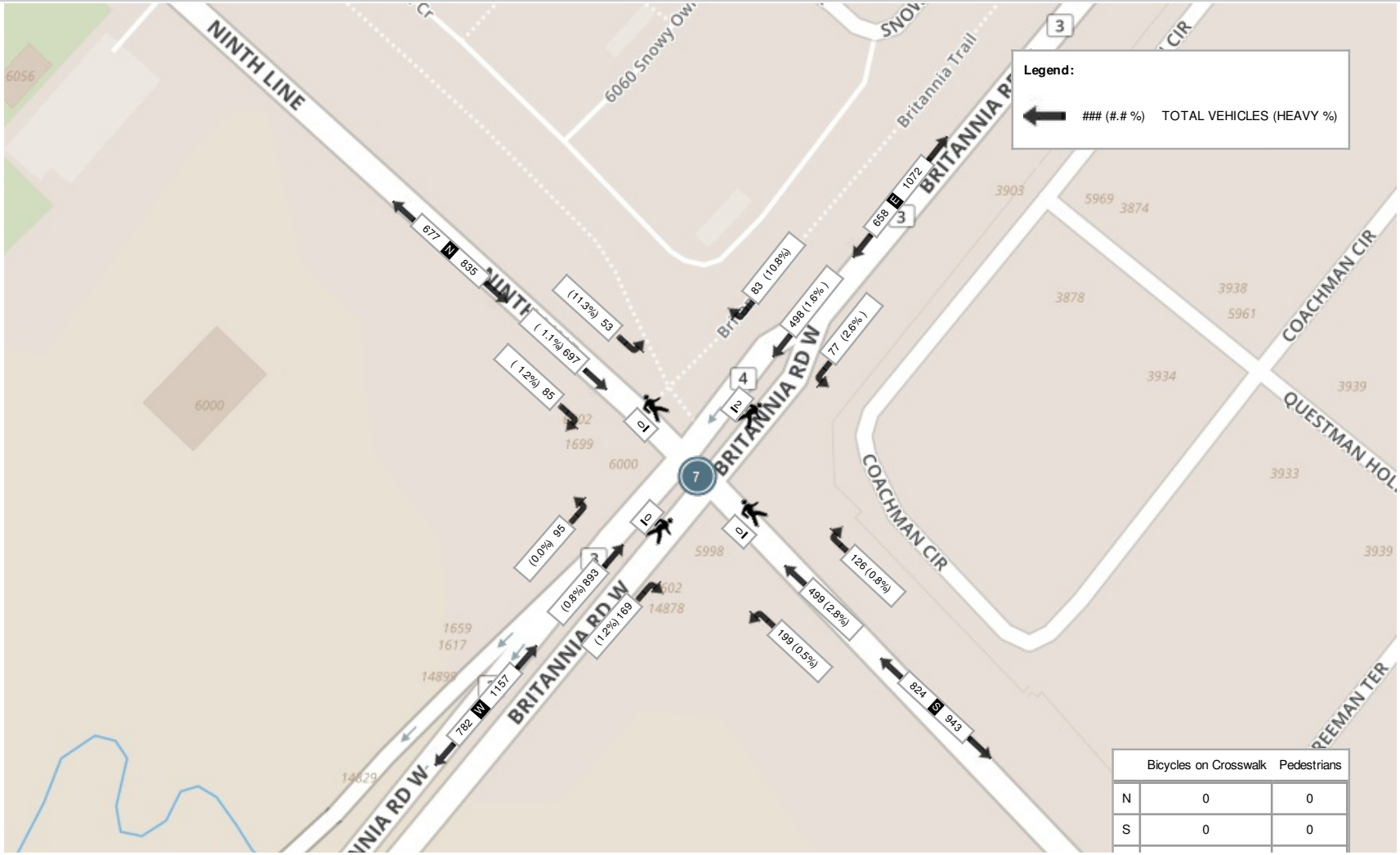
Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)

Start Time	N Approach NINTH LINE						E Approach BRITANNIA RD W						S Approach NINTH LINE						W Approach BRITANNIA RD W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
07:45:00	17	186	14	0	0	217	16	133	20	0	0	169	28	116	40	0	0	184	50	212	27	0	0	289	859
08:00:00	26	175	11	0	0	212	30	110	21	0	1	161	32	134	51	0	0	217	49	237	31	0	0	317	907
08:15:00	19	167	17	0	0	203	25	137	21	0	0	183	34	134	56	0	0	224	35	223	19	0	0	277	887
08:30:00	23	169	11	0	0	203	12	118	15	0	1	145	32	115	52	0	0	199	35	221	18	0	0	274	821
Grand Total	85	697	53	0	0	835	83	498	77	0	2	658	126	499	199	0	0	824	169	893	95	0	0	1157	**3474**
Approach%	10.2%	83.5%	6.3%	0%		-	12.6%	75.7%	11.7%	0%		-	15.3%	60.6%	24.2%	0%		-	14.6%	77.2%	8.2%	0%		-	**-**
Totals %	2.4%	20.1%	1.5%	0%		24%	2.4%	14.3%	2.2%	0%		18.9%	3.6%	14.4%	5.7%	0%		23.7%	4.9%	25.7%	2.7%	0%		33.3%	**-**
PHF	0.82	0.94	0.78	0		0.96	0.69	0.91	0.92	0		0.9	0.93	0.93	0.89	0		0.92	0.85	0.94	0.77	0		0.91	**-**
Heavy	1	8	6	0		15	9	8	2	0		19	1	14	1	0		16	2	7	0	0		9	**-**
Heavy %	1.2%	1.1%	11.3%	0%		1.8%	10.8%	1.6%	2.6%	0%		2.9%	0.8%	2.8%	0.5%	0%		1.9%	1.2%	0.8%	0%	0%		0.8%	**-**
Lights	84	689	47	0		820	74	490	75	0		639	125	485	198	0		808	167	886	95	0		1148	**-**
Lights %	98.8%	98.9%	88.7%	0%		98.2%	89.2%	98.4%	97.4%	0%		97.1%	99.2%	97.2%	99.5%	0%		98.1%	98.8%	99.2%	100%	0%		99.2%	**-**
Single-Unit Trucks	1	3	2	0		6	0	6	0	0		6	1	3	1	0		5	2	6	0	0		8	**-**
Single-Unit Trucks %	1.2%	0.4%	3.8%	0%		0.7%	0%	1.2%	0%	0%		0.9%	0.8%	0.6%	0.5%	0%		0.6%	1.2%	0.7%	0%	0%		0.7%	**-**
Buses	0	5	4	0		9	9	0	2	0		11	0	9	0	0		9	0	0	0	0		0	**-**
Buses %	0%	0.7%	7.5%	0%		1.1%	10.8%	0%	2.6%	0%		1.7%	0%	1.8%	0%	0%		1.1%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	2	0	0		2	0	1	0	0		1	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.3%	0%	0.4%	0%	0%		0.2%	0%	0.1%	0%	0%		0.1%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

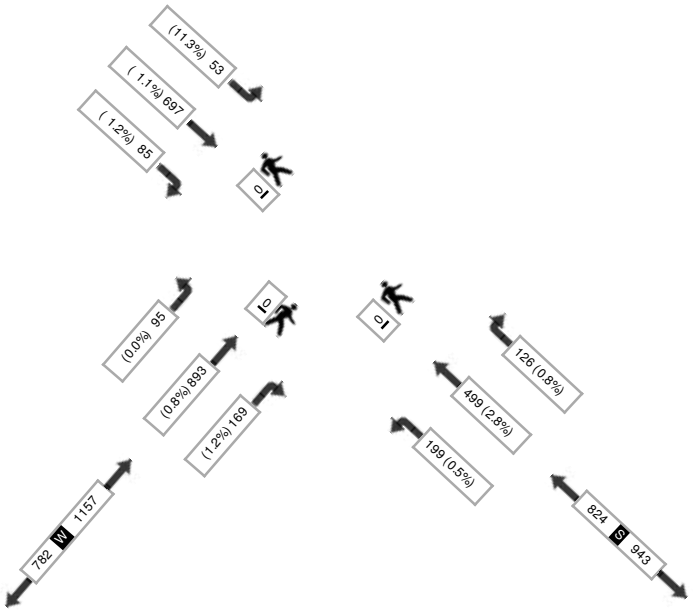
Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (8.8 °C)

Start Time	N Approach NINTH LINE						E Approach BRITANNIA RD W						S Approach NINTH LINE						W Approach BRITANNIA RD W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:45:00	21	132	14	0	0	167	24	231	38	0	0	293	19	172	43	0	0	234	58	123	22	0	0	203	897
17:00:00	18	163	19	0	0	200	27	198	20	0	0	245	31	193	48	0	0	272	40	141	29	0	0	210	927
17:15:00	19	144	16	0	0	179	22	224	20	0	2	266	19	165	45	0	0	229	70	133	36	0	0	239	913
17:30:00	14	165	22	0	0	201	25	171	26	0	1	222	29	187	40	0	0	256	35	112	31	0	0	178	857
Grand Total	72	604	71	0	0	747	98	824	104	0	3	1026	98	717	176	0	0	991	203	509	118	0	0	830	**3594**
Approach%	9.6%	80.9%	9.5%	0%		-	9.6%	80.3%	10.1%	0%		-	9.9%	72.4%	17.8%	0%		-	24.5%	61.3%	14.2%	0%		-	**-**
Totals %	2%	16.8%	2%	0%		20.8%	2.7%	22.9%	2.9%	0%		28.5%	2.7%	19.9%	4.9%	0%		27.6%	5.6%	14.2%	3.3%	0%		23.1%	**-**
PHF	0.86	0.92	0.81	0		0.93	0.91	0.89	0.68	0		0.88	0.79	0.93	0.92	0		0.91	0.73	0.9	0.82	0		0.87	**-**
Heavy	3	4	3	0		10	3	5	0	0		8	0	6	2	0		8	1	4	0	0		5	**-**
Heavy %	4.2%	0.7%	4.2%	0%		1.3%	3.1%	0.6%	0%	0%		0.8%	0%	0.8%	1.1%	0%		0.8%	0.5%	0.8%	0%	0%		0.6%	**-**
Lights	69	600	68	0		737	95	819	104	0		1018	98	711	174	0		983	202	505	118	0		825	**-**
Lights %	95.8%	99.3%	95.8%	0%		98.7%	96.9%	99.4%	100%	0%		99.2%	100%	99.2%	98.9%	0%		99.2%	99.5%	99.2%	100%	0%		99.4%	**-**
Single-Unit Trucks	2	2	0	0		4	0	2	0	0		2	0	5	2	0		7	0	3	0	0		3	**-**
Single-Unit Trucks %	2.8%	0.3%	0%	0%		0.5%	0%	0.2%	0%	0%		0.2%	0%	0.7%	1.1%	0%		0.7%	0%	0.6%	0%	0%		0.4%	**-**
Buses	0	2	3	0		5	3	0	0	0		3	0	0	0	0		0	0	1	0	0		1	**-**
Buses %	0%	0.3%	4.2%	0%		0.7%	3.1%	0%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	**-**
Articulated Trucks	1	0	0	0		1	0	3	0	0		3	0	1	0	0		1	1	0	0	0		1	**-**
Articulated Trucks %	1.4%	0%	0%	0%		0.1%	0%	0.4%	0%	0%		0.3%	0%	0.1%	0%	0%		0.1%	0.5%	0%	0%	0%		0.1%	**-**
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0


(11.3%) 53
(1.1%) 697
(1.2%) 85
0
1
(0.0%) 95
(0.8%) 893
(1.2%) 169
0
1
126 (0.8%)
499 (2.8%)
199 (0.5%)
824
S
943
782
W
1157

Turning Movement Count (9 . BRITANNIA RD W & HWY 407 EAST RAMP TERMINAL)

Start Time	N Approach HWY 407 EAST RAMP TERMINAL					E Approach BRITANNIA RD W					W Approach BRITANNIA RD W					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	U-Turn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	2	0	0	0	2	0	20	0	0	20	52	0	0	0	52	74	
06:15:00	2	2	0	0	4	0	36	0	0	36	87	0	0	0	87	127	
06:30:00	2	2	0	0	4	0	58	0	0	58	124	0	0	0	124	186	
06:45:00	8	3	0	0	11	0	59	0	0	59	145	0	0	0	145	215	602
07:00:00	6	6	0	0	12	0	77	0	0	77	175	0	0	0	175	264	792
07:15:00	6	8	0	0	14	0	79	0	0	79	211	0	0	0	211	304	969
07:30:00	3	3	0	0	6	0	104	0	0	104	231	0	0	0	231	341	1124
07:45:00	9	15	0	0	24	0	125	0	0	125	242	0	0	0	242	391	1300
08:00:00	6	12	0	0	18	0	101	0	0	101	255	0	0	0	255	374	1410
08:15:00	2	13	0	0	15	0	123	0	0	123	227	0	0	0	227	365	1471
08:30:00	2	8	0	0	10	0	119	0	0	119	231	0	0	0	231	360	1490
08:45:00	6	12	0	0	18	0	97	0	0	97	248	0	0	0	248	363	1462
09:00:00	5	4	0	0	9	0	85	0	0	85	158	0	0	0	158	252	1340
09:15:00	6	8	0	0	14	0	67	0	0	67	123	0	0	0	123	204	1179
09:30:00	3	5	0	0	8	0	68	0	0	68	120	0	0	0	120	196	1015
09:45:00	6	6	0	0	12	0	68	0	0	68	90	0	0	0	90	170	822
BREAK																	
15:00:00	6	9	0	0	15	0	163	2	0	165	87	0	0	0	87	267	
15:15:00	3	18	0	0	21	0	182	0	0	182	80	0	0	0	80	283	
15:30:00	7	18	0	0	25	0	202	0	0	202	91	0	0	0	91	318	
15:45:00	6	19	0	0	25	0	217	0	0	217	104	0	0	0	104	346	1214
16:00:00	9	21	0	0	30	0	223	1	0	224	75	0	0	0	75	329	1276
16:15:00	11	26	0	0	37	0	232	0	0	232	101	0	0	0	101	370	1363
16:30:00	11	26	0	0	37	0	230	0	0	230	113	0	0	0	113	380	1425

16:45:00	13	42	0	0	55	0	222	0	0	222	126	0	0	0	126	403	1482
17:00:00	13	39	0	0	52	0	262	0	0	262	159	0	0	0	159	473	1626
17:15:00	12	55	0	0	67	0	248	0	0	248	145	0	0	0	145	460	1716
17:30:00	12	28	0	0	40	0	204	0	0	204	144	0	0	0	144	388	1724
17:45:00	13	41	0	0	54	0	180	0	0	180	161	0	0	0	161	395	1716
18:00:00	8	31	0	0	39	0	186	0	0	186	101	0	0	0	101	326	1569
18:15:00	9	26	0	0	35	0	143	0	0	143	116	0	0	0	116	294	1403
18:30:00	8	25	0	0	33	0	150	0	0	150	93	0	0	0	93	276	1291
18:45:00	4	20	0	0	24	0	127	0	0	127	95	0	0	0	95	246	1142
Grand Total	219	551	0	0	770	0	4457	3	0	4460	4510	0	0	0	4510	**9740**	-
Approach%	28.4%	71.6%	0%		-	0%	99.9%	0.1%		-	100%	0%	0%		-	**-**	-
Totals %	2.2%	5.7%	0%		7.9%	0%	45.8%	0%		45.8%	46.3%	0%	0%		46.3%	**-**	-
Heavy	22	25	0		-	0	54	0		-	54	0	0		-	**-**	-
Heavy %	10%	4.5%	0%		-	0%	1.2%	0%		-	1.2%	0%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

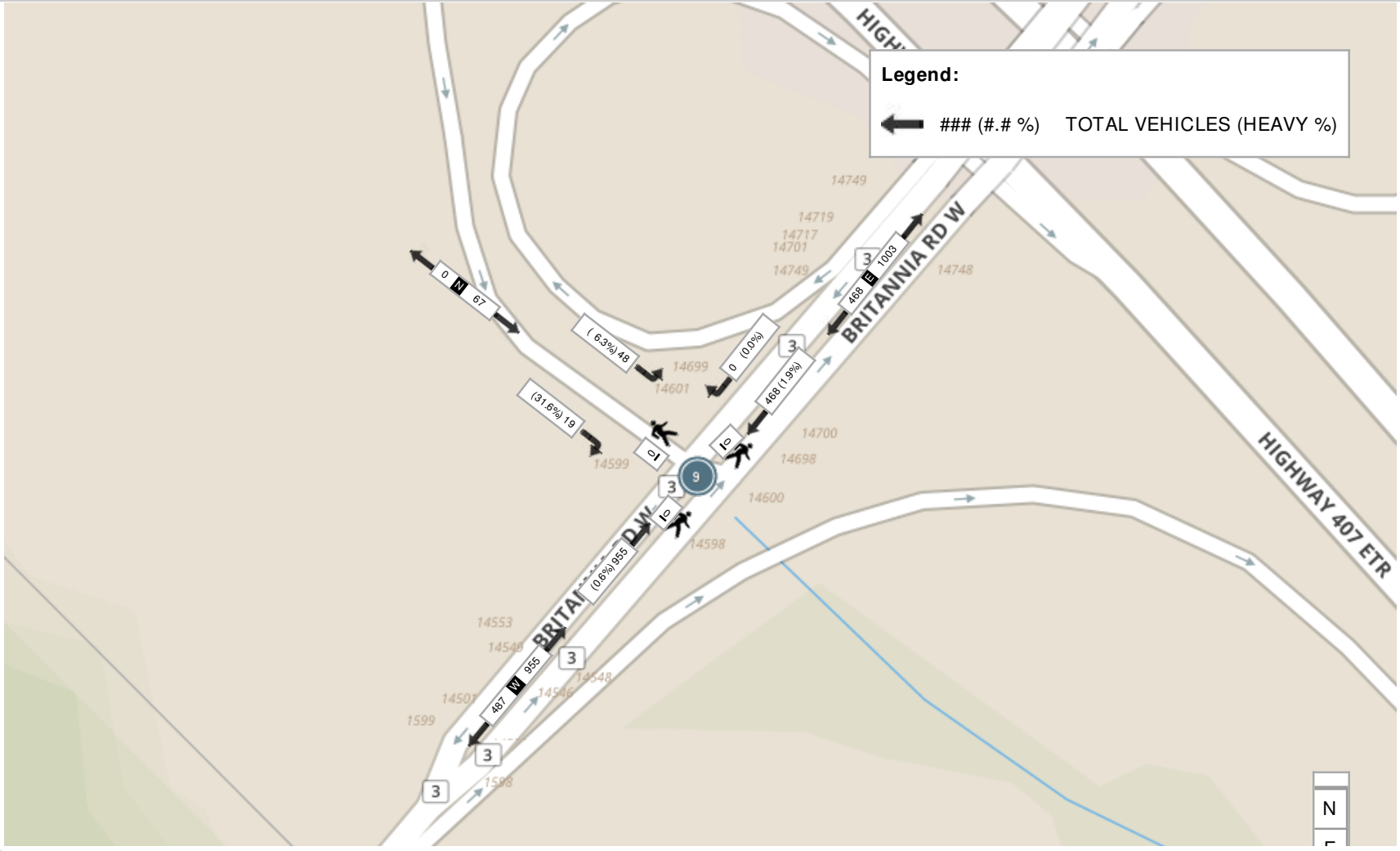
Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)

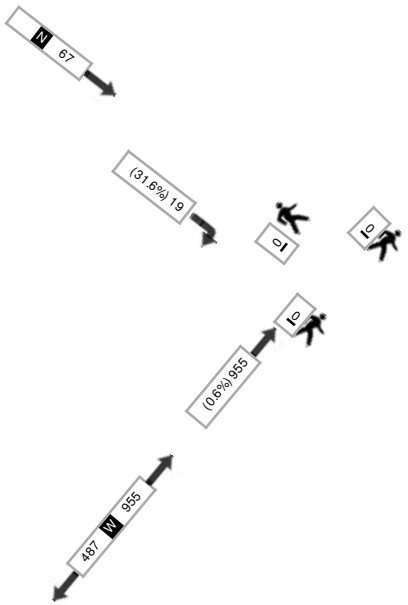
Start Time	N Approach HWY 407 EAST RAMP TERMINAL					E Approach BRITANNIA RD W					W Approach BRITANNIA RD W					Int. Total (15 min)
	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	
07:45:00	9	15	0	0	24	0	125	0	0	125	242	0	0	0	242	391
08:00:00	6	12	0	0	18	0	101	0	0	101	255	0	0	0	255	374
08:15:00	2	13	0	0	15	0	123	0	0	123	227	0	0	0	227	365
08:30:00	2	8	0	0	10	0	119	0	0	119	231	0	0	0	231	360
Grand Total	19	48	0	0	67	0	468	0	0	468	955	0	0	0	955	**1490**
Approach%	28.4%	71.6%	0%		-	0%	100%	0%		-	100%	0%	0%		-	**-**
Totals %	1.3%	3.2%	0%		4.5%	0%	31.4%	0%		31.4%	64.1%	0%	0%		64.1%	**-**
PHF	0.53	0.8	0		0.7	0	0.94	0		0.94	0.94	0	0		0.94	**-**
Heavy	6	3	0		9	0	9	0		9	6	0	0		6	**-**
Heavy %	31.6%	6.3%	0%		13.4%	0%	1.9%	0%		1.9%	0.6%	0%	0%		0.6%	**-**
Lights	13	45	0		58	0	459	0		459	949	0	0		949	**-**
Lights %	68.4%	93.8%	0%		86.6%	0%	98.1%	0%		98.1%	99.4%	0%	0%		99.4%	**-**
Single-Unit Trucks	6	3	0		9	0	6	0		6	6	0	0		6	**-**
Single-Unit Trucks %	31.6%	6.3%	0%		13.4%	0%	1.3%	0%		1.3%	0.6%	0%	0%		0.6%	**-**
Buses	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	0	0		0	0	3	0		3	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0.6%	0%		0.6%	0%	0%	0%		0%	**-**

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (8.8 °C)

Start Time	N Approach HWY 407 EAST RAMP TERMINAL					E Approach BRITANNIA RD W					W Approach BRITANNIA RD W					Int. Total (15 min)
	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	
16:45:00	13	42	0	0	55	0	222	0	0	222	126	0	0	0	126	403
17:00:00	13	39	0	0	52	0	262	0	0	262	159	0	0	0	159	473
17:15:00	12	55	0	0	67	0	248	0	0	248	145	0	0	0	145	460
17:30:00	12	28	0	0	40	0	204	0	0	204	144	0	0	0	144	388
Grand Total	50	164	0	0	214	0	936	0	0	936	574	0	0	0	574	**1724**
Approach%	23.4%	76.6%	0%		-	0%	100%	0%		-	100%	0%	0%		-	**-**
Totals %	2.9%	9.5%	0%		12.4%	0%	54.3%	0%		54.3%	33.3%	0%	0%		33.3%	**-**
PHF	0.96	0.75	0		0.8	0	0.89	0		0.89	0.9	0	0		0.9	**-**
Heavy	2	2	0		4	0	9	0		9	4	0	0		4	**-**
Heavy %	4%	1.2%	0%		1.9%	0%	1%	0%		1%	0.7%	0%	0%		0.7%	**-**
Lights	48	162	0		210	0	927	0		927	570	0	0		570	**-**
Lights %	96%	98.8%	0%		98.1%	0%	99%	0%		99%	99.3%	0%	0%		99.3%	**-**
Single-Unit Trucks	2	1	0		3	0	6	0		6	2	0	0		2	**-**
Single-Unit Trucks %	4%	0.6%	0%		1.4%	0%	0.6%	0%		0.6%	0.3%	0%	0%		0.3%	**-**
Buses	0	0	0		0	0	0	0		0	2	0	0		2	**-**
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0.3%	0%	0%		0.3%	**-**
Articulated Trucks	0	1	0		1	0	3	0		3	0	0	0		0	**-**
Articulated Trucks %	0%	0.6%	0%		0.5%	0%	0.3%	0%		0.3%	0%	0%	0%		0%	**-**

Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)




N
67
(31.6%) 19
12
0
0
0
(0.6%) 955
487
W
955

Turning Movement Count (8 . BRITANNIA RD W & HWY 407 WEST RAMP TERMINAL)

Start Time	E Approach BRITANNIA RD W					S Approach HWY 407 WEST RAMP TERMINAL					W Approach BRITANNIA RD W					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	U-Turn W:W	Peds W:	Approach Total		
06:00:00	25	0	0	0	25	3	1	0	0	4	0	49	0	0	49	78	
06:15:00	47	0	0	0	47	3	0	0	0	3	0	92	0	0	92	142	
06:30:00	75	0	0	0	75	11	1	0	0	12	0	123	0	0	123	210	
06:45:00	71	0	0	0	71	12	5	0	0	17	0	145	0	0	145	233	663
07:00:00	98	0	0	0	98	14	2	0	0	16	0	175	0	0	175	289	874
07:15:00	91	0	0	0	91	22	3	0	0	25	0	212	0	0	212	328	1060
07:30:00	144	0	0	0	144	40	1	0	0	41	0	218	0	0	218	403	1253
07:45:00	149	0	0	0	149	43	2	0	0	45	0	245	0	0	245	439	1459
08:00:00	142	0	0	0	142	55	4	0	0	59	0	252	0	0	252	453	1623
08:15:00	144	0	0	0	144	44	6	0	0	50	0	242	0	0	242	436	1731
08:30:00	151	0	0	0	151	49	6	0	0	55	0	225	0	0	225	431	1759
08:45:00	113	0	0	0	113	41	4	0	0	45	0	255	0	0	255	413	1733
09:00:00	99	0	0	0	99	29	2	0	0	31	0	162	0	0	162	292	1572
09:15:00	80	0	0	0	80	12	1	0	0	13	0	122	0	0	122	215	1351
09:30:00	75	0	0	0	75	8	7	0	0	15	0	120	0	0	120	210	1130
09:45:00	82	0	0	0	82	18	2	0	0	20	0	96	0	0	96	198	915
BREAK																	
15:00:00	168	0	0	0	168	10	11	0	0	21	0	96	0	0	96	285	
15:15:00	196	0	0	0	196	16	10	0	0	26	0	91	0	0	91	313	
15:30:00	216	0	0	0	216	19	8	0	0	27	0	105	0	0	105	348	
15:45:00	242	0	0	0	242	20	8	0	0	28	0	118	0	0	118	388	1334
16:00:00	231	0	0	0	231	32	11	0	0	43	0	98	0	0	98	372	1421
16:15:00	267	0	0	0	267	21	8	0	0	29	0	123	0	0	123	419	1527
16:30:00	236	0	0	0	236	26	15	0	0	41	0	137	0	0	137	414	1593

16:45:00	267	0	0	0	267	26	9	0	0	35	0	164	0	0	164	466	1671
17:00:00	253	0	0	0	253	31	13	0	0	44	0	189	0	0	189	486	1785
17:15:00	267	0	0	0	267	30	16	0	0	46	0	194	0	0	194	507	1873
17:30:00	221	0	0	0	221	31	7	0	0	38	0	165	0	0	165	424	1883
17:45:00	199	0	0	0	199	37	9	0	0	46	0	195	0	0	195	440	1857
18:00:00	198	0	0	0	198	30	8	0	0	38	0	137	0	0	137	373	1744
18:15:00	157	0	0	0	157	16	7	0	0	23	0	138	0	0	138	318	1555
18:30:00	162	0	0	0	162	23	12	0	0	35	0	117	0	0	117	314	1445
18:45:00	141	0	0	0	141	14	7	0	0	21	0	112	0	0	112	274	1279
Grand Total	5007	0	0	0	5007	786	206	0	0	992	0	4912	0	0	4912	**10911**	-
Approach%	100%	0%	0%		-	79.2%	20.8%	0%		-	0%	100%	0%		-	**-**	-
Totals %	45.9%	0%	0%		45.9%	7.2%	1.9%	0%		9.1%	0%	45%	0%		45%	**-**	-
Heavy	56	0	0		-	18	8	0		-	0	61	0		-	**-**	-
Heavy %	1.1%	0%	0%		-	2.3%	3.9%	0%		-	0%	1.2%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

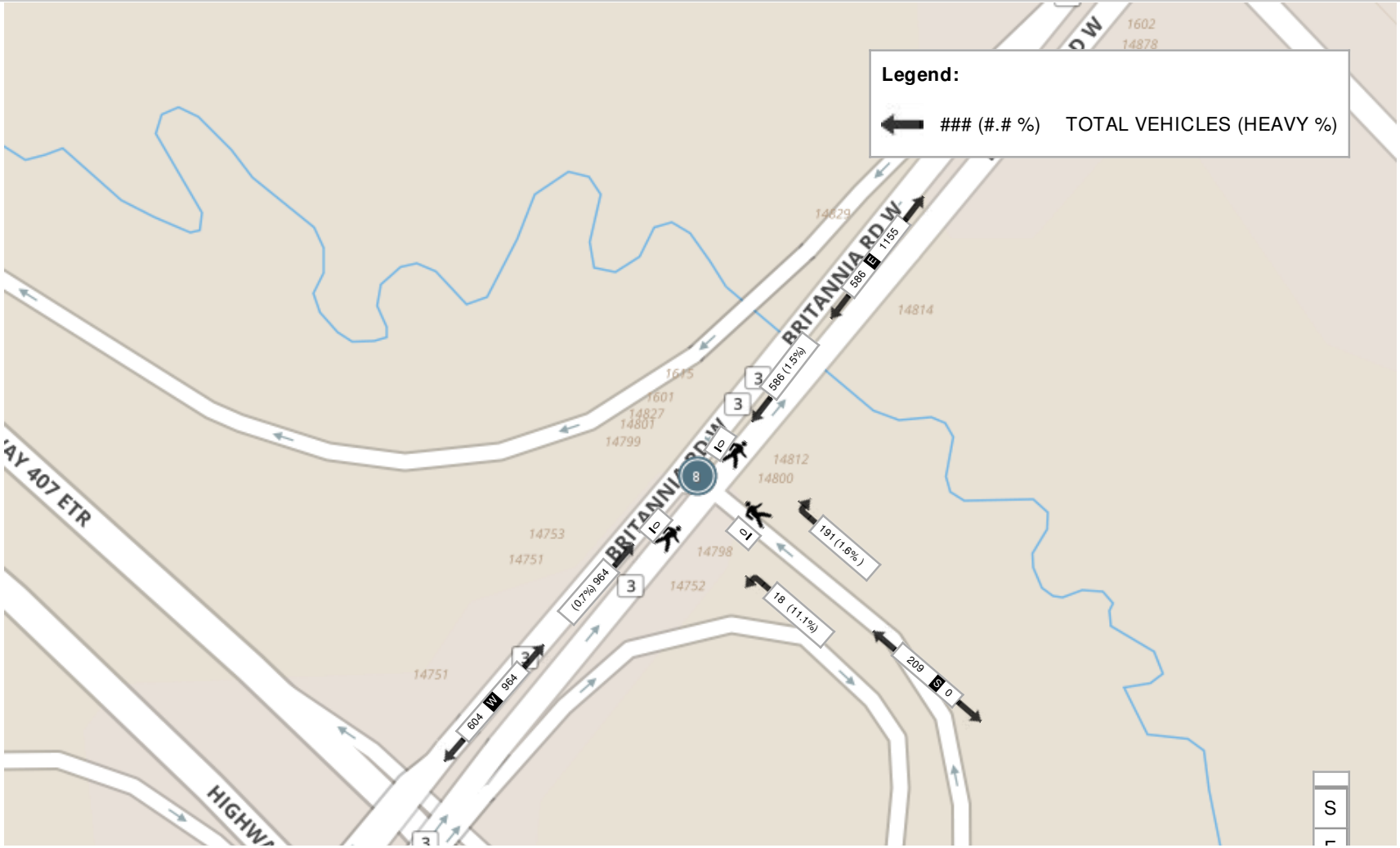
Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)

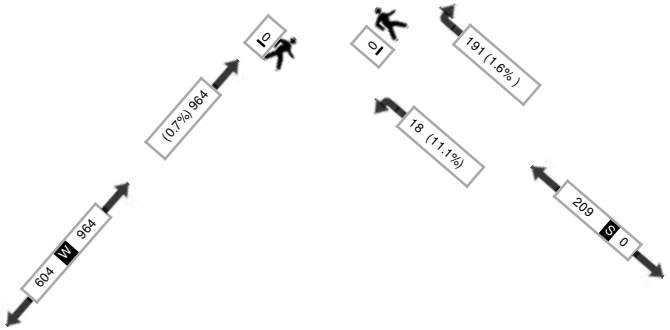
Start Time	E Approach BRITANNIA RD W					S Approach HWY 407 WEST RAMP TERMINAL					W Approach BRITANNIA RD W					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
07:45:00	149	0	0	0	149	43	2	0	0	45	0	245	0	0	245	439
08:00:00	142	0	0	0	142	55	4	0	0	59	0	252	0	0	252	453
08:15:00	144	0	0	0	144	44	6	0	0	50	0	242	0	0	242	436
08:30:00	151	0	0	0	151	49	6	0	0	55	0	225	0	0	225	431
Grand Total	586	0	0	0	586	191	18	0	0	209	0	964	0	0	964	**1759**
Approach%	100%	0%	0%		-	91.4%	8.6%	0%		-	0%	100%	0%		-	**-**
Totals %	33.3%	0%	0%		33.3%	10.9%	1%	0%		11.9%	0%	54.8%	0%		54.8%	**-**
PHF	0.97	0	0		0.97	0.87	0.75	0		0.89	0	0.96	0		0.96	**-**
Heavy	9	0	0		9	3	2	0		5	0	7	0		7	**-**
Heavy %	1.5%	0%	0%		1.5%	1.6%	11.1%	0%		2.4%	0%	0.7%	0%		0.7%	**-**
Lights	577	0	0		577	188	16	0		204	0	957	0		957	**-**
Lights %	98.5%	0%	0%		98.5%	98.4%	88.9%	0%		97.6%	0%	99.3%	0%		99.3%	**-**
Single-Unit Trucks	7	0	0		7	3	1	0		4	0	6	0		6	**-**
Single-Unit Trucks %	1.2%	0%	0%		1.2%	1.6%	5.6%	0%		1.9%	0%	0.6%	0%		0.6%	**-**
Buses	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Articulated Trucks	2	0	0		2	0	1	0		1	0	1	0		1	**-**
Articulated Trucks %	0.3%	0%	0%		0.3%	0%	5.6%	0%		0.5%	0%	0.1%	0%		0.1%	**-**

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (8.8 °C)

Start Time	E Approach BRITANNIA RD W					S Approach HWY 407 WEST RAMP TERMINAL					W Approach BRITANNIA RD W					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
16:45:00	267	0	0	0	267	26	9	0	0	35	0	164	0	0	164	466
17:00:00	253	0	0	0	253	31	13	0	0	44	0	189	0	0	189	486
17:15:00	267	0	0	0	267	30	16	0	0	46	0	194	0	0	194	507
17:30:00	221	0	0	0	221	31	7	0	0	38	0	165	0	0	165	424
Grand Total	1008	0	0	0	1008	118	45	0	0	163	0	712	0	0	712	**1883**
Approach%	100%	0%	0%		-	72.4%	27.6%	0%		-	0%	100%	0%		-	-
Totals %	53.5%	0%	0%		53.5%	6.3%	2.4%	0%		8.7%	0%	37.8%	0%		37.8%	-
PHF	0.94	0	0		0.94	0.95	0.7	0		0.89	0	0.92	0		0.92	-
Heavy	8	0	0		8	1	1	0		2	0	4	0		4	-
Heavy %	0.8%	0%	0%		0.8%	0.8%	2.2%	0%		1.2%	0%	0.6%	0%		0.6%	-
Lights	1000	0	0		1000	117	44	0		161	0	708	0		708	-
Lights %	99.2%	0%	0%		99.2%	99.2%	97.8%	0%		98.8%	0%	99.4%	0%		99.4%	-
Single-Unit Trucks	5	0	0		5	1	1	0		2	0	2	0		2	-
Single-Unit Trucks %	0.5%	0%	0%		0.5%	0.8%	2.2%	0%		1.2%	0%	0.3%	0%		0.3%	-
Buses	0	0	0		0	0	0	0		0	0	1	0		1	-
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.1%	0%		0.1%	-
Articulated Trucks	3	0	0		3	0	0	0		0	0	1	0		1	-
Articulated Trucks %	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0%	0.1%	0%		0.1%	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)




0
0
191 (1.6%)
18 (11.1%)
(0.7%) 964
209
S
0
964
W
604

Turning Movement Count (10 . WINSTON CHURCHILL BLVD & HWY 401 EAST RAMP TERMINAL)

Start Time	N Approach WINSTON CHURCHILL BLVD					S Approach WINSTON CHURCHILL BLVD					W Approach HWY 401 EAST RAMP TERMINAL					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	U-Turn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	0	109	16	0	125	115	0	0	0	115	25	46	0	0	71	311	
06:15:00	0	105	9	0	114	109	0	0	0	109	43	54	0	0	97	320	
06:30:00	0	120	0	0	120	149	0	0	0	149	61	105	0	0	166	435	
06:45:00	0	155	0	0	155	153	0	0	0	153	82	112	0	0	194	502	1568
07:00:00	0	171	0	0	171	164	0	1	0	165	61	65	0	0	126	462	1719
07:15:00	0	184	0	0	184	181	0	0	0	181	74	70	0	0	144	509	1908
07:30:00	0	222	0	0	222	194	0	0	0	194	69	68	0	0	137	553	2026
07:45:00	0	220	0	0	220	260	0	0	0	260	67	79	0	0	146	626	2150
08:00:00	0	201	0	0	201	211	0	0	0	211	69	75	0	0	144	556	2244
08:15:00	0	209	0	0	209	270	0	0	0	270	71	65	0	0	136	615	2350
08:30:00	0	187	1	0	188	256	0	1	0	257	47	86	0	0	133	578	2375
08:45:00	0	183	0	0	183	227	0	0	0	227	58	89	0	0	147	557	2306
09:00:00	0	172	0	0	172	179	0	0	0	179	41	50	0	0	91	442	2192
09:15:00	0	157	0	0	157	134	0	0	0	134	39	54	0	0	93	384	1961
09:30:00	0	132	0	0	132	118	0	0	1	118	57	45	0	0	102	352	1735
09:45:00	0	145	1	1	146	116	0	1	0	117	64	50	0	1	114	377	1555
BREAK																	
15:00:00	0	232	0	0	232	168	0	0	0	168	52	66	0	0	118	518	
15:15:00	0	206	1	0	207	183	0	0	0	183	42	49	0	2	91	481	
15:30:00	0	219	0	0	219	190	0	0	0	190	51	67	0	0	118	527	
15:45:00	0	231	0	0	231	194	0	1	0	195	37	58	0	0	95	521	2047
16:00:00	0	272	0	0	272	234	0	0	0	234	52	82	0	0	134	640	2169
16:15:00	0	251	1	0	252	223	0	0	0	223	60	87	0	0	147	622	2310
16:30:00	0	374	0	0	374	259	0	0	0	259	65	74	0	0	139	772	2555

16:45:00	0	364	0	0	364	285	0	0	0	285	76	103	0	0	179	828	2862
17:00:00	0	431	0	0	431	271	0	0	0	271	57	87	0	0	144	846	3068
17:15:00	0	404	0	0	404	259	0	0	0	259	74	102	0	0	176	839	3285
17:30:00	0	350	0	0	350	237	0	0	0	237	67	76	0	0	143	730	3243
17:45:00	0	324	0	0	324	206	0	0	0	206	56	70	0	0	126	656	3071
18:00:00	0	284	1	0	285	258	0	0	0	258	43	82	0	0	125	668	2893
18:15:00	0	289	0	0	289	195	0	0	0	195	78	74	0	0	152	636	2690
18:30:00	0	239	1	0	240	187	0	0	0	187	54	44	0	1	98	525	2485
18:45:00	0	227	0	0	227	172	0	0	0	172	44	61	0	0	105	504	2333
Grand Total	0	7369	31	1	7400	6357	0	4	1	6361	1836	2295	0	4	4131	**17892**	-
Approach%	0%	99.6%	0.4%		-	99.9%	0%	0.1%		-	44.4%	55.6%	0%		-	**-**	-
Totals %	0%	41.2%	0.2%		41.4%	35.5%	0%	0%		35.6%	10.3%	12.8%	0%		23.1%	**-**	-
Heavy	0	293	0		-	243	0	0		-	54	184	0		-	**-**	-
Heavy %	0%	4%	0%		-	3.8%	0%	0%		-	2.9%	8%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

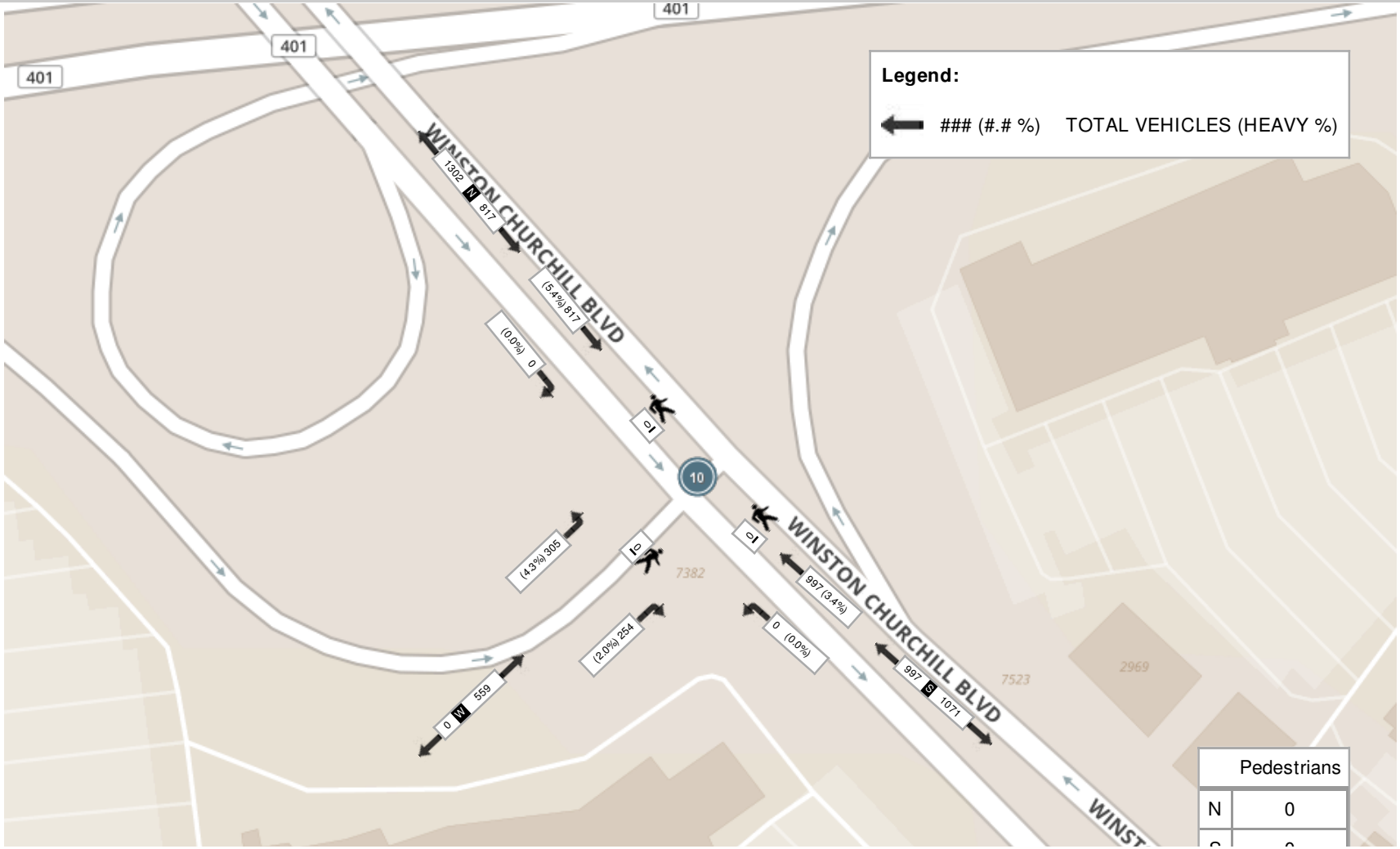
Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)

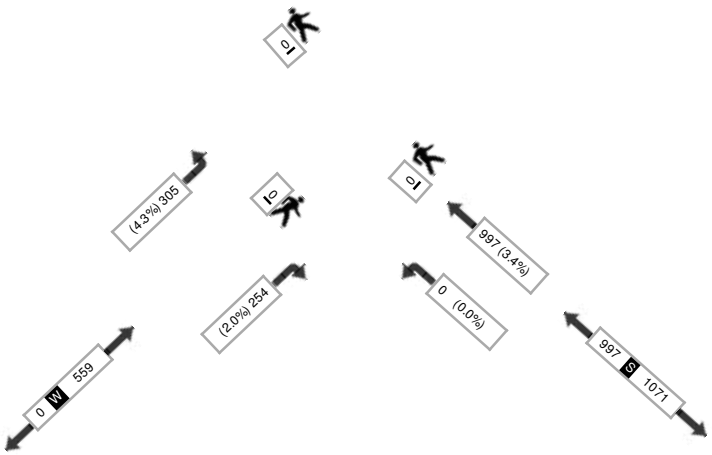
Start Time	N Approach WINSTON CHURCHILL BLVD					S Approach WINSTON CHURCHILL BLVD					W Approach HWY 401 EAST RAMP TERMINAL					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
07:45:00	0	220	0	0	220	260	0	0	0	260	67	79	0	0	146	626
08:00:00	0	201	0	0	201	211	0	0	0	211	69	75	0	0	144	556
08:15:00	0	209	0	0	209	270	0	0	0	270	71	65	0	0	136	615
08:30:00	0	187	1	0	188	256	0	1	0	257	47	86	0	0	133	578
Grand Total	0	817	1	0	818	997	0	1	0	998	254	305	0	0	559	**2375**
Approach%	0%	99.9%	0.1%		-	99.9%	0%	0.1%		-	45.4%	54.6%	0%		-	**-**
Totals %	0%	34.4%	0%		34.4%	42%	0%	0%		42%	10.7%	12.8%	0%		23.5%	**-**
PHF	0	0.93	0.25		0.93	0.92	0	0.25		0.92	0.89	0.89	0		0.96	**-**
Heavy	0	44	0		44	34	0	0		34	5	13	0		18	**-**
Heavy %	0%	5.4%	0%		5.4%	3.4%	0%	0%		3.4%	2%	4.3%	0%		3.2%	**-**
Lights	0	773	1		774	963	0	1		964	249	292	0		541	**-**
Lights %	0%	94.6%	100%		94.6%	96.6%	0%	100%		96.6%	98%	95.7%	0%		96.8%	**-**
Single-Unit Trucks	0	21	0		21	17	0	0		17	2	8	0		10	**-**
Single-Unit Trucks %	0%	2.6%	0%		2.6%	1.7%	0%	0%		1.7%	0.8%	2.6%	0%		1.8%	**-**
Buses	0	9	0		9	7	0	0		7	0	0	0		0	**-**
Buses %	0%	1.1%	0%		1.1%	0.7%	0%	0%		0.7%	0%	0%	0%		0%	**-**
Articulated Trucks	0	14	0		14	10	0	0		10	3	5	0		8	**-**
Articulated Trucks %	0%	1.7%	0%		1.7%	1%	0%	0%		1%	1.2%	1.6%	0%		1.4%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (8.8 °C)

Start Time	N Approach WINSTON CHURCHILL BLVD					S Approach WINSTON CHURCHILL BLVD					W Approach HWY 401 EAST RAMP TERMINAL					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
16:30:00	0	374	0	0	374	259	0	0	0	259	65	74	0	0	139	772
16:45:00	0	364	0	0	364	285	0	0	0	285	76	103	0	0	179	828
17:00:00	0	431	0	0	431	271	0	0	0	271	57	87	0	0	144	846
17:15:00	0	404	0	0	404	259	0	0	0	259	74	102	0	0	176	839
Grand Total	0	1573	0	0	1573	1074	0	0	0	1074	272	366	0	0	638	**3285**
Approach%	0%	100%	0%		-	100%	0%	0%		-	42.6%	57.4%	0%		-	**-**
Totals %	0%	47.9%	0%		47.9%	32.7%	0%	0%		32.7%	8.3%	11.1%	0%		19.4%	**-**
PHF	0	0.91	0		0.91	0.94	0	0		0.94	0.89	0.89	0		0.89	**-**
Heavy	0	19	0		19	27	0	0		27	9	46	0		55	**-**
Heavy %	0%	1.2%	0%		1.2%	2.5%	0%	0%		2.5%	3.3%	12.6%	0%		8.6%	**-**
Lights	0	1554	0		1554	1047	0	0		1047	263	320	0		583	**-**
Lights %	0%	98.8%	0%		98.8%	97.5%	0%	0%		97.5%	96.7%	87.4%	0%		91.4%	**-**
Single-Unit Trucks	0	7	0		7	12	0	0		12	2	21	0		23	**-**
Single-Unit Trucks %	0%	0.4%	0%		0.4%	1.1%	0%	0%		1.1%	0.7%	5.7%	0%		3.6%	**-**
Buses	0	7	0		7	8	0	0		8	1	5	0		6	**-**
Buses %	0%	0.4%	0%		0.4%	0.7%	0%	0%		0.7%	0.4%	1.4%	0%		0.9%	**-**
Articulated Trucks	0	5	0		5	7	0	0		7	6	20	0		26	**-**
Articulated Trucks %	0%	0.3%	0%		0.3%	0.7%	0%	0%		0.7%	2.2%	5.5%	0%		4.1%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)




0
(4.3%) 305
(2.0%) 254
0 W 559
997 (3.4%)
0 (0.0%)
997 S 1071

Turning Movement Count (11 . WINSTON CHURCHILL BLVD & HWY 401 WEST RAMP TERMINAL)

Start Time	N Approach WINSTON CHURCHILL BLVD					E Approach HWY 401 WEST RAMP TERMINAL					S Approach WINSTON CHURCHILL BLVD					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	U-Turn S:S	Peds S:	Approach Total		
06:00:00	177	0	1	0	178	40	25	0	0	65	0	100	0	0	100	343	
06:15:00	164	0	3	0	167	71	22	0	0	93	0	133	0	0	133	393	
06:30:00	159	0	0	0	159	110	30	0	0	140	0	202	0	0	202	501	
06:45:00	182	0	0	0	182	105	56	0	0	161	0	205	0	0	205	548	1785
07:00:00	177	0	0	0	177	60	36	0	0	96	0	197	0	0	197	470	1912
07:15:00	253	0	0	0	253	84	38	0	0	122	0	184	0	0	184	559	2078
07:30:00	260	0	0	0	260	74	51	0	0	125	0	205	0	0	205	590	2167
07:45:00	283	0	0	0	283	94	44	0	0	138	0	270	0	0	270	691	2310
08:00:00	276	0	0	0	276	93	53	0	0	146	0	228	0	0	228	650	2490
08:15:00	285	0	0	0	285	78	48	0	0	126	1	304	0	0	305	716	2647
08:30:00	265	0	0	0	265	74	33	0	0	107	1	287	0	0	288	660	2717
08:45:00	254	0	0	0	254	86	40	0	1	126	0	248	0	0	248	628	2654
09:00:00	208	0	0	1	208	80	27	0	1	107	0	202	0	1	202	517	2521
09:15:00	214	0	0	0	214	44	43	0	0	87	0	154	0	0	154	455	2260
09:30:00	149	0	0	0	149	66	39	0	1	105	0	122	0	0	122	376	1976
09:45:00	135	0	0	0	135	76	58	0	0	134	0	148	0	0	148	417	1765
BREAK																	
15:00:00	190	0	0	0	190	89	104	0	0	193	0	173	0	0	173	556	
15:15:00	185	0	0	0	185	115	69	0	0	184	0	195	2	1	197	566	
15:30:00	200	0	0	0	200	96	99	0	0	195	0	218	0	0	218	613	
15:45:00	202	0	0	0	202	114	86	0	0	200	0	211	0	0	211	613	2348
16:00:00	238	0	0	0	238	139	101	0	0	240	0	262	0	0	262	740	2532
16:15:00	215	0	0	0	215	189	125	0	0	314	0	238	2	0	240	769	2735
16:30:00	320	0	0	0	320	156	138	0	0	294	0	295	2	0	297	911	3033

16:45:00	275	0	0	0	275	189	173	0	0	362	0	308	0	0	308	945	3365
17:00:00	349	0	0	0	349	174	183	0	0	357	0	263	0	0	263	969	3594
17:15:00	273	0	0	0	273	166	164	0	0	330	0	319	0	0	319	922	3747
17:30:00	252	0	0	0	252	150	169	0	0	319	0	236	0	0	236	807	3643
17:45:00	236	0	0	0	236	127	135	0	0	262	0	246	0	0	246	744	3442
18:00:00	210	0	0	0	210	117	138	0	0	255	0	272	0	0	272	737	3210
18:15:00	219	0	0	0	219	120	137	0	0	257	0	216	1	0	217	693	2981
18:30:00	200	0	0	0	200	106	105	0	0	211	0	182	0	0	182	593	2767
18:45:00	158	0	0	0	158	97	120	0	0	217	0	191	0	0	191	566	2589
Grand Total	7163	0	4	1	7167	3379	2689	0	3	6068	2	7014	7	2	7023	**20258**	-
Approach%	99.9%	0%	0.1%		-	55.7%	44.3%	0%		-	0%	99.9%	0.1%		-	**-**	-
Totals %	35.4%	0%	0%		35.4%	16.7%	13.3%	0%		30%	0%	34.6%	0%		34.7%	**-**	-
Heavy	456	0	0		-	324	109	0		-	0	378	0		-	**-**	-
Heavy %	6.4%	0%	0%		-	9.6%	4.1%	0%		-	0%	5.4%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

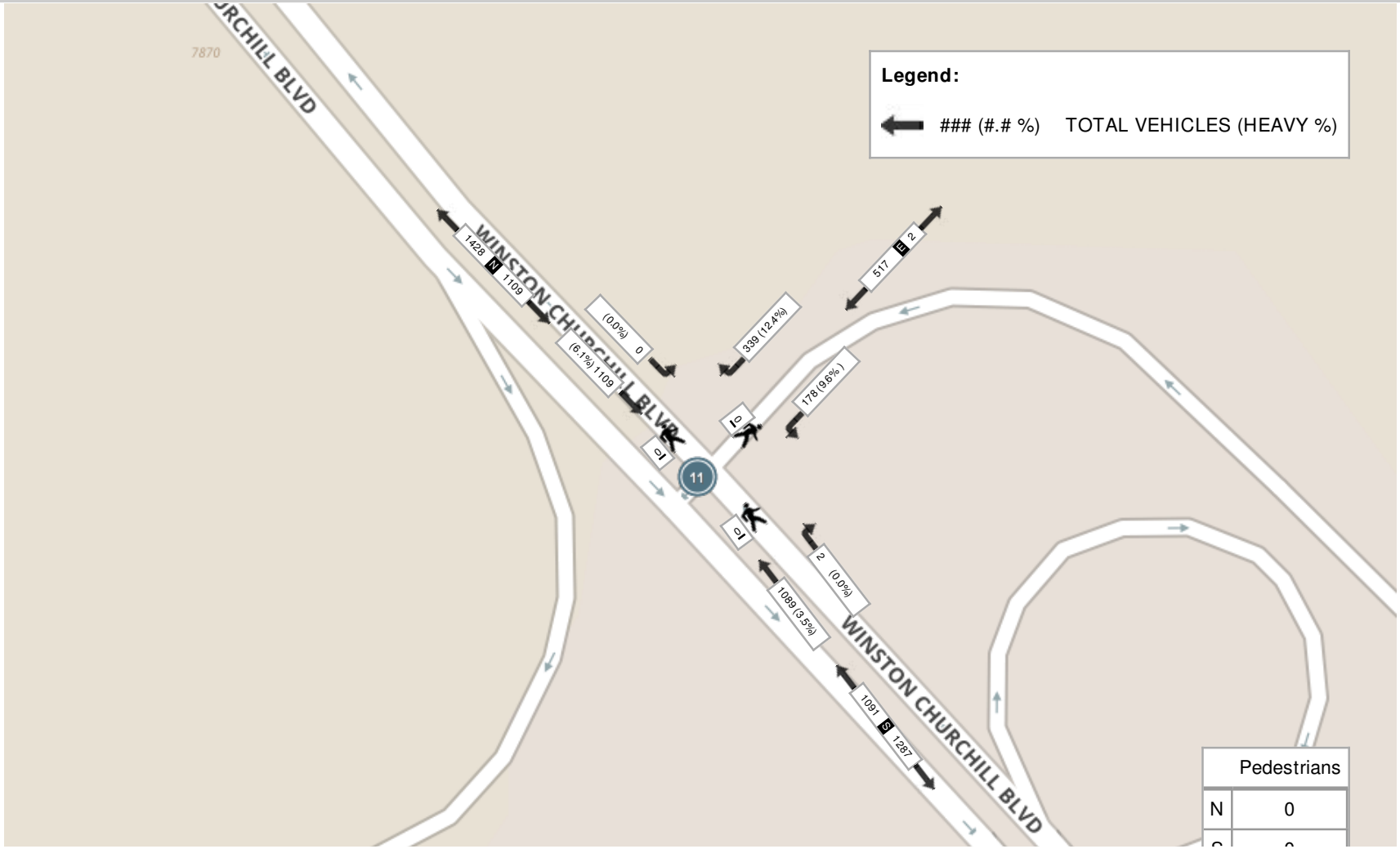
Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)

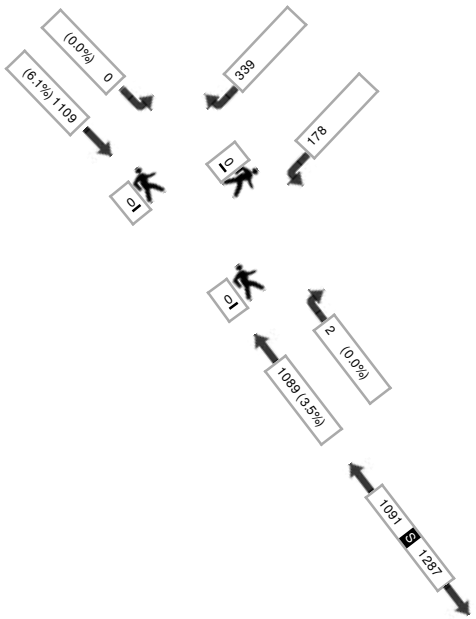
Start Time	N Approach WINSTON CHURCHILL BLVD					E Approach HWY 401 WEST RAMP TERMINAL					S Approach WINSTON CHURCHILL BLVD					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
07:45:00	283	0	0	0	283	94	44	0	0	138	0	270	0	0	270	691
08:00:00	276	0	0	0	276	93	53	0	0	146	0	228	0	0	228	650
08:15:00	285	0	0	0	285	78	48	0	0	126	1	304	0	0	305	716
08:30:00	265	0	0	0	265	74	33	0	0	107	1	287	0	0	288	660
Grand Total	1109	0	0	0	1109	339	178	0	0	517	2	1089	0	0	1091	**2717**
Approach%	100%	0%	0%		-	65.6%	34.4%	0%		-	0.2%	99.8%	0%		-	**-**
Totals %	40.8%	0%	0%		40.8%	12.5%	6.6%	0%		19%	0.1%	40.1%	0%		40.2%	**-**
PHF	0.97	0	0		0.97	0.9	0.84	0		0.89	0.5	0.9	0		0.89	**-**
Heavy	68	0	0		68	42	17	0		59	0	38	0		38	**-**
Heavy %	6.1%	0%	0%		6.1%	12.4%	9.6%	0%		11.4%	0%	3.5%	0%		3.5%	**-**
Lights	1041	0	0		1041	297	161	0		458	2	1051	0		1053	**-**
Lights %	93.9%	0%	0%		93.9%	87.6%	90.4%	0%		88.6%	100%	96.5%	0%		96.5%	**-**
Single-Unit Trucks	25	0	0		25	21	9	0		30	0	22	0		22	**-**
Single-Unit Trucks %	2.3%	0%	0%		2.3%	6.2%	5.1%	0%		5.8%	0%	2%	0%		2%	**-**
Buses	9	0	0		9	0	2	0		2	0	7	0		7	**-**
Buses %	0.8%	0%	0%		0.8%	0%	1.1%	0%		0.4%	0%	0.6%	0%		0.6%	**-**
Articulated Trucks	34	0	0		34	21	6	0		27	0	9	0		9	**-**
Articulated Trucks %	3.1%	0%	0%		3.1%	6.2%	3.4%	0%		5.2%	0%	0.8%	0%		0.8%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (8.8 °C)

Start Time	N Approach WINSTON CHURCHILL BLVD					E Approach HWY 401 WEST RAMP TERMINAL					S Approach WINSTON CHURCHILL BLVD					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
16:30:00	320	0	0	0	320	156	138	0	0	294	0	295	2	0	297	911
16:45:00	275	0	0	0	275	189	173	0	0	362	0	308	0	0	308	945
17:00:00	349	0	0	0	349	174	183	0	0	357	0	263	0	0	263	969
17:15:00	273	0	0	0	273	166	164	0	0	330	0	319	0	0	319	922
Grand Total	1217	0	0	0	1217	685	658	0	0	1343	0	1185	2	0	1187	**3747**
Approach%	100%	0%	0%		-	51%	49%	0%		-	0%	99.8%	0.2%		-	**-**
Totals %	32.5%	0%	0%		32.5%	18.3%	17.6%	0%		35.8%	0%	31.6%	0.1%		31.7%	**-**
PHF	0.87	0	0		0.87	0.91	0.9	0		0.93	0	0.93	0.25		0.93	**-**
Heavy	46	0	0		46	19	8	0		27	0	72	0		72	**-**
Heavy %	3.8%	0%	0%		3.8%	2.8%	1.2%	0%		2%	0%	6.1%	0%		6.1%	**-**
Lights	1171	0	0		1171	666	650	0		1316	0	1113	2		1115	**-**
Lights %	96.2%	0%	0%		96.2%	97.2%	98.8%	0%		98%	0%	93.9%	100%		93.9%	**-**
Single-Unit Trucks	17	0	0		17	4	4	0		8	0	36	0		36	**-**
Single-Unit Trucks %	1.4%	0%	0%		1.4%	0.6%	0.6%	0%		0.6%	0%	3%	0%		3%	**-**
Buses	7	0	0		7	0	0	0		0	0	12	0		12	**-**
Buses %	0.6%	0%	0%		0.6%	0%	0%	0%		0%	0%	1%	0%		1%	**-**
Articulated Trucks	22	0	0		22	15	4	0		19	0	24	0		24	**-**
Articulated Trucks %	1.8%	0%	0%		1.8%	2.2%	0.6%	0%		1.4%	0%	2%	0%		2%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 07:45 AM - 08:45 AM Weather: Mist (3.37 °C)




(0.0%) 0
(6.1%) 1109
339
178
0
1
1
1
2 (0.0%)
1089 (35%)
1091
S
1287

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**April 17, 2019**		**Prepared Date:**	**March 21, 2019**
Database Rev	**iNet**		**Completed By:**	**AP**
Timing Card / Field rev	**iNet**		**Checked By:**	**SL**

Location: **Britannia Rd at Nith Line Rd. W.**

Phase #	Direction	Vehicle Minimum (sec.)	Pedestrian Minimum (sec.) WALK	Pedestrian Minimum (sec.) FDWALK	Amber (sec.)	All Red (sec.)	TIME PERIOD (sec.) (Green+Amber+All Red) AM	OFF	PM	
1	Britannia Rd. - WB P.P. LT	5.0			3.0	-	13.0	10.0	-	
2	Britannia Rd. - EB	12.0	7.0	11.0	4.0	2.1	51.0	37.0	67.0	
3	Ninth Line - SB P.P. LT	5.0			3.0	-	13.0	10.0	13.0	
4	Ninth Line - NB	12.0	12.0	18.0	4.0	3.7	83.0	43.0	80.0	
5	Britannia Rd. - EB P.P. LT	5.0			3.0	-	10.0	10.0	13.0	
6	Britannia Rd. - EB	12.0	7.0	11.0	4.0	2.1	54.0	37.0	54.0	
7	Ninth Line - NB P.P. LT	5.0			3.0	-	14.0	10.0	13.0	
8	Ninth Line - SB	12.0	12.0	18.0	4.0	3.7	82.0	43.0	80.0	

System Control	Yes
Local Control	No
Semi-Actuated Mode	Yes

TIME (M-F)	PEAK	CYCLE LENGTH (sec.)	OFFSET (sec.)
06:00 - 09:30	**AM**	**160**	**142**
09:30 - 15:00	**OFF**	**100**	**14**
15:00 - 19:30	**PM**	**160**	**8**

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**April 17, 2019**		**Prepared Date:**	**April 18, 2019**
Database Rev	**iNet**		**Completed By:**	**AP**
Timing Card / Field rev	**iNet**		**Checked By:**	**SL**

Location: **Derry Rd at Ninth Line Rd. W.**

Phase #	Direction	Vehicle Minimum (sec.)	Pedestrian Minimum (sec.)		Amber (sec.)	All Red (sec.)	TIME PERIOD (sec.) (Green+Amber+All Red)			
			WALK	FDWALK			AM	OFF	PM	
1	Derry Rd. - WB P.P. LT	5.0			3.0		13.0			
2	Derry Rd. - EB	8.0	9.0	15.0	4.0	2.1	65.0	71.0	81.0	
3	Not in Use									
4	Ninth Line - NB	8.0	9.0	14.0	4.0	2.4	82.0	39.0	79.0	
5	Derry Rd. - EB P.P. LT	5.0			3.0				11.0	
6	Derry Rd. - WB	8.0	9.0	15.0	4.0	2.1	78.0	71.0	70.0	
7	Ninth Line - NB P.P. LT	5.0			3.0		18.0		18.0	
8	Ninth Line - SB	8.0	9.0	14.0	4.0	2.4	64.0	39.0	61.0	

System Control	Yes
Local Control	No
Semi-Actuated Mode	Yes

TIME (M-F)	PEAK	CYCLE LENGTH (sec.)	OFFSET (sec.)
06:00 - 09:30	**AM**	**160**	**42**
09:30 - 15:00	**OFF**	**110**	**43**
15:00 - 19:30	**PM**	**160**	**154**

Signal Timing Report

Runtime: 2019-04-17 12:35:47

Device: 5401

Region: Mississauga **Signal ID:** 5401 **Location:** WINSTON CHURCHILL BOULEVARD N at Highway 401/ Off-

Phase	**Units**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Walk	Sec	0	9	0	0	0	0	0	0
Ped Clear	Sec	0	12	0	0	0	0	0	0
Min Green	Sec	0	8	0	8	0	0	0	0
Passage	Sec	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	0	38	0	40	0	0	0	0
Maximum 2	Sec	0	38	0	40	0	0	0	0
Yellow Change	Sec	3.0	5.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	2.5	0.0	2.5	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0	0	0
[P2] Ring	Ring	0	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()	()	()

Coord Pattern	**Units**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	117	138	56	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1

Coord Split	**Units**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	112	0	48	0	0	0	0
Split 1 - Coord	Enum	false	true	false	false	false	false	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	104	0	56	0	0	0	0
Split 2 - Coord	Enum	false	true	false	false	false	false	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	99	0	61	0	0	0	0
Split 3 - Coord	Enum	false	true	false	false	false	false	false	false

TB Schedule	**Units**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F---------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	123456789012345678901234567890 1	123456789012345678901234567890 1	123456789012345678901234567890 1	1---------- ------	----------8------ -------	----------9---- --------	----------0----- ------	1---------- ------
Day Plan	Number	1	3	2	3	3	3	3	3

TB Schedule	**Units**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	----5---------- ------	-2---------- -------	------------4---------- ------	---------- 5------	---------- 6-----	---------- 4-------	0	0
Day Plan	Number	3	3	3	3	3	3	0	0

TB Dayplan	**Units**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	2	3	2	7	0	0
Plan 2 Hour	Hour	0	7	3	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	7	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	7	0	0	0	0

TB Action	**Units**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

Signal Timing Report

Runtime: 2019-04-17 12:38:03

Device: 5402

Region: Mississauga **Signal ID:** 5402 **Location:** WINSTON CHURCHILL BOULEVARD N at Highway 401/ Off-

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	8	0	0	0	0	0	0
Ped Clear	Sec	0	10	0	0	0	0	0	0
Min Green	Sec	0	8	0	8	0	0	0	0
Passage	Sec	0.0	3.0	0.0	4.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	0	40	0	40	0	0	0	0
Maximum 2	Sec	0	40	0	40	0	0	0	0
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	2.5	0.0	3.5	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0	0	0
[P2] Ring	Ring	0	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()	()	()

Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	106	131	37	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1

Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	96	0	64	0	0	0	0
Split 1 - Coord	Enum	false	true	false	false	false	false	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	104	0	56	0	0	0	0
Split 2 - Coord	Enum	false	true	false	false	false	false	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	115	0	45	0	0	0	0
Split 3 - Coord	Enum	false	true	false	false	false	false	false	false

TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F---------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	123456789012345678901234567890 1	123456789012345678901234567890 1	123456789012345678901234567890 1	1---------- ------	----------8------ -------	----------9---- --------	----------0----- ------	1---------- ------
Day Plan	Number	1	3	2	3	3	3	3	3

TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	--------A----	--------S---	---------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	----5---------- ------	-2---------- -------	------------4---------- ------	---------- 5------	---------- 6-----	---------- 4-------	0	0
Day Plan	Number	3	3	3	3	3	3	0	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	2	3	2	7	0	0
Plan 2 Hour	Hour	0	7	3	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	7	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	7	0	0	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

Signal Timing Report

Runtime: 2019-04-30 13:29:10

Device: 5608

Region: Mississauga **Signal ID:** 5608 **Location:** NINTH LINE N at Osprey Boulevard

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	8	0	8	0	0	0	0
Ped Clear	Sec	0	8	0	9	0	0	0	0
Min Green	Sec	5	8	0	8	0	0	0	0
Passage	Sec	2.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	10	37	0	25	0	0	0	0
Maximum 2	Sec	10	37	0	25	0	0	0	0
Yellow Change	Sec	3.0	5.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	phaseNotOn	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0	0	0
[P2] Ring	Ring	1	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()	()	()

TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F---------	---A-------	----M------	-----J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	123456789012345678901234567890 1	123456789012345678901234567890 1	123456789012345678901234567890 1	1---------- ------	----------8----- -------	----------9---- --------	----------0----- ------	1---------- ------
Day Plan	Number	1	3	2	3	3	3	3	3

TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	----5---------- ------	-2---------- -------	----------4---------- ------	---------- 5------	---------- 6-----	---------- 4-------	0	0
Day Plan	Number	3	3	3	3	3	3	0	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	3	0	0	0	0	0	0
Plan 1 Minute	Min	0	0	0	0	0	0	0	0
Plan 1 Action	Number	8	7	0	0	0	0	0	0
Plan 2 Hour	Hour	0	3	0	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	7	0	0	0	0	0	0
Plan 3 Hour	Hour	0	3	0	0	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	7	0	0	0	0	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

Signal Timing Report

Runtime: 2019-04-30 13:26:42

Device: 5612

Region: Mississauga **Signal ID:** 5612 **Location:** NINTH LINE N at Doug Leavens Boulevard

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	8	0	8	0	0	0	0
Ped Clear	Sec	0	10	0	8	0	0	0	0
Min Green	Sec	0	8	0	8	0	0	0	0
Passage	Sec	0.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	0	35	0	20	0	0	0	0
Maximum 2	Sec	0	35	0	20	0	0	0	0
Yellow Change	Sec	3.0	5.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	2.0	0.0	2.5	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0	0	0
[P2] Ring	Ring	0	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()	()	()

TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F---------	---A--------	----M-------	-----J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	123456789012345678901234567890 1	123456789012345678901234567890 1	123456789012345678901234567890 1	1---------- ------	----------8------ -------	----------9---- --------	----------0----- ------	1---------- ------
Day Plan	Number	1	3	2	3	3	3	3	3

TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	----5---------- ------	-2---------- -------	----------4---------- ------	---------- 5------	---------- 6-----	---------- 4-------	0	0
Day Plan	Number	3	3	3	3	3	3	0	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	3	0	0	0	0	0	0
Plan 1 Minute	Min	0	0	0	0	0	0	0	0
Plan 1 Action	Number	8	7	0	0	0	0	0	0
Plan 2 Hour	Hour	0	3	0	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	7	0	0	0	0	0	0
Plan 3 Hour	Hour	0	3	0	0	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	7	0	0	0	0	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

APPENDIX E

Level of Service Definitions

Level of Service Definitions

Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	> 10 and ≤ 15	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	> 15 and ≤ 25	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	> 25 and ≤ 35	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	> 35 and ≤ 50	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	> 50	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Level of Service Definitions

Signalized Intersections

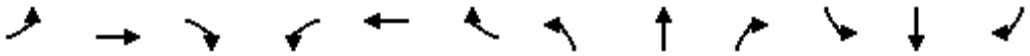
Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase. Most vehicles do not stop and short cycle lengths may contribute to low delay.
B	> 10 and ≤ 20	VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay.
C	> 20 and ≤ 35	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	> 35 and ≤ 55	FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression.
E	> 55 and ≤ 80	POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common.
F	> 80	UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

APPENDIX F

Detailed Capacity Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	1311	362	93	574	106	225	590	154	79	783	103
Future Volume (vph)	123	1311	362	93	574	106	225	590	154	79	783	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		0.0	60.0		60.0	50.0		50.0	55.0		60.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.98			
Frt		0.968				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3498	0	1733	3579	1439	1767	1865	1581	1608	1902	1581
Flt Permitted	0.322			0.066			0.066			0.188		
Satd. Flow (perm)	605	3498	0	120	3579	1439	123	1865	1557	318	1902	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26				114			82			103
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		191.5			244.1			195.1			633.8	
Travel Time (s)		8.6			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	123	1311	362	93	574	106	225	590	154	79	783	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1673	0	93	574	106	225	590	154	79	783	103
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			3.5			3.5	
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					Yes			Yes			Yes	
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template		Thru		Left	Thru	Right			Right			Right
Leading Detector (m)	25.0	10.0		2.0	10.0	2.0	25.0	10.0	2.0	25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0		0.0	0.0	0.0	15.0	-3.0	0.0	15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0		0.0	0.0	0.0	15.0	-3.0	0.0	15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6		2.0	0.6	2.0	10.0	10.0	2.0	10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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												

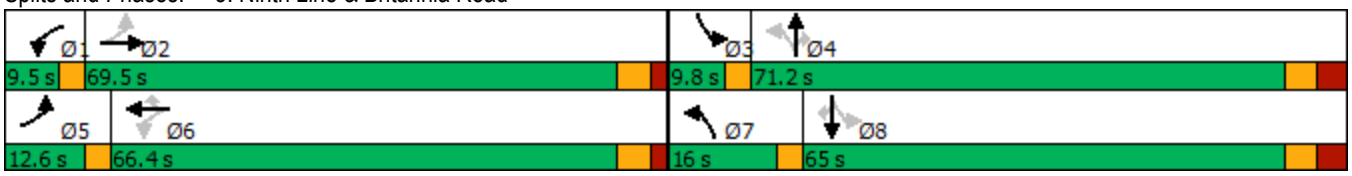


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0		5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	9.5	24.1		9.5	24.1	24.1	9.5	37.7	37.7	9.5	37.7	37.7
Total Split (s)	12.6	69.5		9.5	66.4	66.4	16.0	71.2	71.2	9.8	65.0	65.0
Total Split (%)	7.9%	43.4%		5.9%	41.5%	41.5%	10.0%	44.5%	44.5%	6.1%	40.6%	40.6%
Maximum Green (s)	9.6	63.4		6.5	60.3	60.3	13.0	63.5	63.5	6.8	57.3	57.3
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1		0.0	2.1	2.1	0.0	3.7	3.7	0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1		3.0	6.1	6.1	3.0	7.7	7.7	3.0	7.7	7.7
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		11.0			11.0	11.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	75.6	63.4		70.3	60.7	60.7	78.0	63.7	63.7	68.6	57.3	57.3
Actuated g/C Ratio	0.47	0.40		0.44	0.38	0.38	0.49	0.40	0.40	0.43	0.36	0.36
v/c Ratio	0.35	1.19		0.79	0.42	0.17	1.17	0.80	0.23	0.42	1.15	0.16
Control Delay	26.6	136.1		69.4	38.0	5.0	154.1	51.9	15.6	29.6	129.1	6.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	136.1		69.4	38.0	5.0	154.1	51.9	15.6	29.6	129.1	6.3
LOS	C	F		E	D	A	F	D	B	C	F	A
Approach Delay		128.6			37.3			69.9			107.9	
Approach LOS		F			D			E			F	
Queue Length 50th (m)	22.9	~353.1		17.0	74.9	0.0	~71.5	173.5	15.2	14.0	~306.9	0.0
Queue Length 95th (m)	36.7	#397.5		#47.2	92.8	11.5	#129.8	226.4	32.6	24.5	#388.7	13.7
Internal Link Dist (m)		167.5			220.1			171.1			609.8	
Turn Bay Length (m)	60.0			60.0		60.0	50.0		50.0	55.0		60.0
Base Capacity (vph)	358	1401		117	1357	616	193	742	669	191	681	632
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	1.19		0.79	0.42	0.17	1.17	0.80	0.23	0.41	1.15	0.16

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 95.8	Intersection LOS: F

Intersection Capacity Utilization 124.8% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	127	60	800	93	21	826
Future Volume (vph)	127	60	800	93	21	826
Ideal Flow (vphpl)	1640	1900	1900	1640	1860	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.6	3.6
Storage Length (m)	15.0	0.0		25.0	20.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1412	1436	1807	1276	1683	1881
Flt Permitted	0.950				0.249	
Satd. Flow (perm)	1412	1436	1807	1276	441	1881
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		62		43		
Link Speed (k/h)	50		70			70
Link Distance (m)	186.9		633.8			289.9
Travel Time (s)	13.5		32.6			14.9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	5%	4%	8%	5%	1%
Adj. Flow (vph)	131	62	825	96	22	852
Shared Lane Traffic (%)						
Lane Group Flow (vph)	131	62	825	96	22	852
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.31	1.09	1.01	1.22	1.03	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2	1	1	2
Detector Template			Thru	Right		Thru
Leading Detector (m)	9.0	9.0	10.0	2.0	20.0	10.0
Trailing Detector (m)	-1.0	-1.0	0.0	0.0	10.0	0.0
Detector 1 Position(m)	-1.0	-1.0	0.0	0.0	10.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6	2.0	10.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA	Perm	pm+pt	NA

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases			2		1	6
Permitted Phases	8	8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	24.0	24.0	25.0	25.0	9.5	25.0
Total Split (s)	25.0	25.0	65.0	65.0	10.0	75.0
Total Split (%)	25.0%	25.0%	65.0%	65.0%	10.0%	75.0%
Maximum Green (s)	19.0	19.0	58.0	58.0	7.0	68.0
Yellow Time (s)	4.0	4.0	5.0	5.0	3.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	1.0	5.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	2.0	3.0
Recall Mode	None	None	Max	Max	None	Max
Walk Time (s)	7.0	7.0	7.0	7.0		7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effct Green (s)	15.1	15.1	70.6	70.6	77.8	73.8
Actuated g/C Ratio	0.15	0.15	0.71	0.71	0.79	0.75
v/c Ratio	0.61	0.23	0.64	0.10	0.05	0.61
Control Delay	50.3	11.2	12.2	4.1	3.2	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	11.2	12.2	4.1	3.2	8.8
LOS	D	B	B	A	A	A
Approach Delay	37.7		11.3			8.7
Approach LOS	D		B			A
Queue Length 50th (m)	23.8	0.0	64.4	2.4	0.8	66.2
Queue Length 95th (m)	42.9	11.0	158.3	10.4	2.8	120.7
Internal Link Dist (m)	162.9		609.8			265.9
Turn Bay Length (m)	15.0			25.0	20.0	
Base Capacity (vph)	285	339	1289	922	459	1402
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	0.46	0.18	0.64	0.10	0.05	0.61

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 99			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 12.7		Intersection LOS: B	
Intersection Capacity Utilization 60.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Ninth Line & Osprey Boulevard

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	69	840	36	31	799
Future Volume (vph)	48	69	840	36	31	799
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.994			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1507	1809	0	1412	1842
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1454	1507	1809	0	1412	1842
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	50	72	875	38	32	832
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	72	913	0	32	832
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.3%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	69	840	36	31	799
Future Volume (Veh/h)	48	69	840	36	31	799
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	50	72	875	38	32	832
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			290			
pX, platoon unblocked	0.71	0.71			0.71	
vC, conflicting volume	1790	894			913	
vC1, stage 1 conf vol	894					
vC2, stage 2 conf vol	896					
vCu, unblocked vol	1911	642			669	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	79			95	
cM capacity (veh/h)	262	337			647	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	50	72	913	32	832
Volume Left	50	0	0	32	0
Volume Right	0	72	38	0	0
cSH	262	337	1700	647	1700
Volume to Capacity	0.19	0.21	0.54	0.05	0.49
Queue Length 95th (m)	5.5	6.4	0.0	1.2	0.0
Control Delay (s)	21.9	18.5	0.0	10.9	0.0
Lane LOS	C	C		B	
Approach Delay (s)	19.9		0.0	0.4	
Approach LOS	C				

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

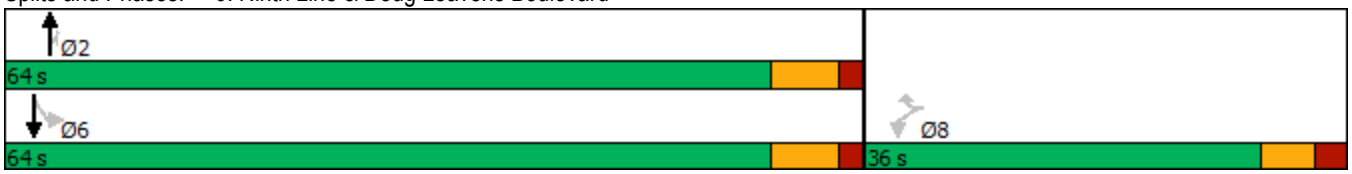
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	134	141	793	101	68	666
Future Volume (vph)	134	141	793	101	68	666
Ideal Flow (vphpl)	1640	1900	1900	1640	1860	1900
Lane Width (m)	3.0	3.3	3.5	3.2	3.0	3.5
Storage Length (m)	0.0	0.0		25.0	80.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.5				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98		
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1412	1531	1842	1222	1649	1860
Flt Permitted	0.950				0.237	
Satd. Flow (perm)	1412	1531	1842	1194	411	1860
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		153		46		
Link Speed (k/h)	50		70			70
Link Distance (m)	218.3		843.0			487.0
Travel Time (s)	15.7		43.4			25.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	9%	0%	1%
Adj. Flow (vph)	146	153	862	110	74	724
Shared Lane Traffic (%)						
Lane Group Flow (vph)	146	153	862	110	74	724
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.0			3.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.31	1.04	1.01	1.28	1.12	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2	1	1	2
Detector Template			Thru	Right	Left	Thru
Leading Detector (m)	7.0	7.0	10.0	2.0	2.0	10.0
Trailing Detector (m)	-3.0	-3.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	-3.0	-3.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6	2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

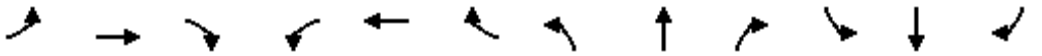
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			2			6
Permitted Phases	8	8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	24.5	24.5	26.0	26.0	26.0	26.0
Total Split (s)	36.0	36.0	64.0	64.0	64.0	64.0
Total Split (%)	36.0%	36.0%	64.0%	64.0%	64.0%	64.0%
Maximum Green (s)	29.5	29.5	57.0	57.0	57.0	57.0
Yellow Time (s)	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	11.0	11.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	15.8	15.8	60.5	60.5	60.5	60.5
Actuated g/C Ratio	0.18	0.18	0.70	0.70	0.70	0.70
v/c Ratio	0.57	0.38	0.67	0.13	0.26	0.56
Control Delay	40.4	7.9	11.4	3.6	8.6	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	7.9	11.4	3.6	8.6	9.1
LOS	D	A	B	A	A	A
Approach Delay	23.8		10.5			9.0
Approach LOS	C		B			A
Queue Length 50th (m)	22.8	0.0	70.8	3.0	4.0	51.7
Queue Length 95th (m)	41.4	15.0	141.2	10.0	13.3	101.3
Internal Link Dist (m)	194.3		819.0			463.0
Turn Bay Length (m)				25.0	80.0	
Base Capacity (vph)	507	648	1291	850	288	1304
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	0.29	0.24	0.67	0.13	0.26	0.56

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 86.3	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 11.9	Intersection LOS: B

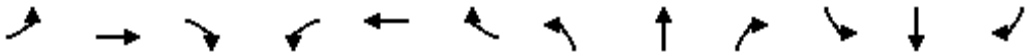
Intersection Capacity Utilization 69.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Doug Leavens Boulevard





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	1326	106	137	623	101	232	459	221	66	497	275
Future Volume (vph)	249	1326	106	137	623	101	232	459	221	66	497	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		50.0	80.0		50.0	110.0		110.0	60.0		70.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			80.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00										
Frt		0.989			0.979				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	3571	0	1733	3445	0	1750	1902	1566	1716	1902	1581
Flt Permitted	0.241			0.066			0.085			0.309		
Satd. Flow (perm)	427	3571	0	120	3445	0	157	1902	1566	558	1902	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			12				205			170
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		271.6			182.6			813.6			145.2	
Travel Time (s)		16.3			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	249	1326	106	137	623	101	232	459	221	66	497	275
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	1432	0	137	724	0	232	459	221	66	497	275
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template		Thru			Thru							
Leading Detector (m)	25.0	10.0		25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0		15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0		15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
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	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1		9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	30.2	74.0		14.0	57.8		20.0	62.4	62.4	9.6	52.0	52.0
Total Split (%)	18.9%	46.3%		8.8%	36.1%		12.5%	39.0%	39.0%	6.0%	32.5%	32.5%
Maximum Green (s)	27.2	67.9		11.0	51.7		17.0	56.0	56.0	6.6	45.6	45.6
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1		0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1		3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Walk Time (s)		9.0			9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0			15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	84.4	68.0		74.4	60.9		66.8	55.8	55.8	53.4	43.4	43.4
Actuated g/C Ratio	0.54	0.43		0.47	0.39		0.42	0.35	0.35	0.34	0.28	0.28
v/c Ratio	0.68	0.93		0.84	0.54		0.97	0.68	0.32	0.28	0.95	0.49
Control Delay	30.0	53.7		74.7	39.6		94.8	49.8	7.0	30.8	83.7	20.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	53.7		74.7	39.6		94.8	49.8	7.0	30.8	83.7	20.5
LOS	C	D		E	D		F	D	A	C	F	C
Approach Delay		50.2			45.2			50.9			58.8	
Approach LOS		D			D			D			E	
Queue Length 50th (m)	44.8	239.6		28.6	97.6		60.5	131.7	3.5	13.0	162.1	27.9
Queue Length 95th (m)	64.1	#289.5		#70.6	126.9		#119.6	174.2	23.1	23.5	#230.9	57.8
Internal Link Dist (m)		247.6			158.6			789.6			121.2	
Turn Bay Length (m)	75.0			80.0			110.0		110.0	60.0		70.0
Base Capacity (vph)	446	1545		170	1341		238	677	689	237	552	579
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.93		0.81	0.54		0.97	0.68	0.32	0.28	0.90	0.47

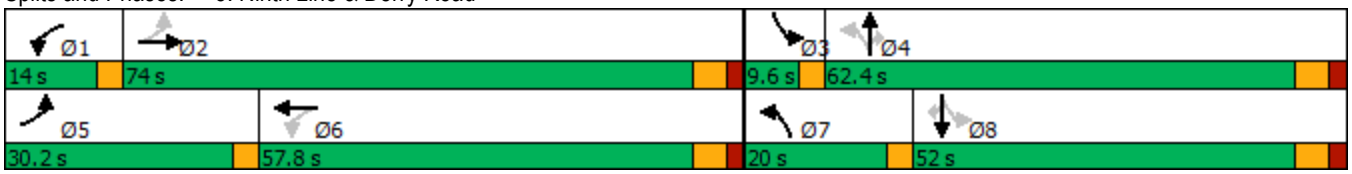
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 157.3			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 51.0		Intersection LOS: D	

Intersection Capacity Utilization 103.7% ICU Level of Service G

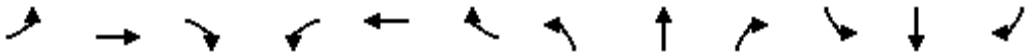
Analysis Period (min) 15

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

Splits and Phases: 8: Ninth Line & Derry Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	703	321	138	972	141	193	824	114	96	684	95
Future Volume (vph)	155	703	321	138	972	141	193	824	114	96	684	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		0.0	60.0		60.0	50.0		50.0	55.0		60.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.98			
Frt		0.953				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3455	0	1785	3614	1551	1767	1902	1597	1716	1902	1536
Flt Permitted	0.079			0.080			0.091			0.062		
Satd. Flow (perm)	148	3455	0	150	3614	1551	169	1902	1570	112	1902	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49				93			62			82
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		176.1			244.1			195.1			633.8	
Travel Time (s)		7.9			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	155	703	321	138	972	141	193	824	114	96	684	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	155	1024	0	138	972	141	193	824	114	96	684	95
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			3.6			3.6	
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					Yes			Yes			Yes	
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template		Thru		Left	Thru	Right			Right			Right
Leading Detector (m)	25.0	10.0		2.0	10.0	2.0	25.0	10.0	2.0	25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0		0.0	0.0	0.0	15.0	-3.0	0.0	15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0		0.0	0.0	0.0	15.0	-3.0	0.0	15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6		2.0	0.6	2.0	10.0	10.0	2.0	10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0		5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	9.5	24.1		9.5	24.1	24.1	9.5	37.7	37.7	9.5	37.7	37.7
Total Split (s)	14.0	57.0		13.0	56.0	56.0	16.0	80.0	80.0	10.0	74.0	74.0
Total Split (%)	8.8%	35.6%		8.1%	35.0%	35.0%	10.0%	50.0%	50.0%	6.3%	46.3%	46.3%
Maximum Green (s)	11.0	50.9		10.0	49.9	49.9	13.0	72.3	72.3	7.0	66.3	66.3
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1		0.0	2.1	2.1	0.0	3.7	3.7	0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1		3.0	6.1	6.1	3.0	7.7	7.7	3.0	7.7	7.7
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		11.0			11.0	11.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	65.0	50.9		63.0	49.9	49.9	85.0	70.3	70.3	76.3	64.6	64.6
Actuated g/C Ratio	0.41	0.32		0.40	0.32	0.32	0.54	0.44	0.44	0.48	0.41	0.41
v/c Ratio	0.89	0.89		0.85	0.85	0.25	0.89	0.98	0.16	0.77	0.88	0.14
Control Delay	80.3	59.6		73.6	59.2	16.3	66.0	68.1	12.7	63.8	57.0	7.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.3	59.6		73.6	59.2	16.3	66.0	68.1	12.7	63.8	57.0	7.8
LOS	F	E		E	E	B	E	E	B	E	E	A
Approach Delay		62.3			56.0			62.2			52.4	
Approach LOS		E			E			E			D	
Queue Length 50th (m)	34.5	166.6		28.9	161.9	11.5	36.7	264.1	9.8	15.2	208.3	2.6
Queue Length 95th (m)	#80.3	#205.7		#70.4	190.9	30.2	#83.7	#356.0	22.6	#46.8	#280.9	14.7
Internal Link Dist (m)		152.1			220.1			171.1			609.8	
Turn Bay Length (m)	60.0			60.0		60.0	50.0		50.0	55.0		60.0
Base Capacity (vph)	174	1146		163	1142	553	222	870	752	124	798	692
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.89		0.85	0.85	0.25	0.87	0.95	0.15	0.77	0.86	0.14

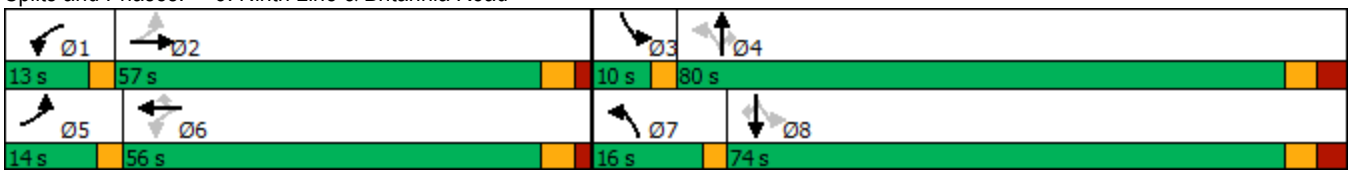
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 158			
Natural Cycle: 115			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 58.6		Intersection LOS: E	

Intersection Capacity Utilization 104.2% ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 3: Ninth Line & Britannia Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	71	30	960	105	45	840
Future Volume (vph)	71	30	960	105	45	840
Ideal Flow (vphpl)	1640	1900	1900	1640	1860	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.6	3.6
Storage Length (m)	15.0	0.0		25.0	20.0	
Storage Lanes	0	0		1	1	
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.98		
Frt	0.960			0.850		
Flt Protected	0.966				0.950	
Satd. Flow (prot)	1341	0	1860	1351	1767	1900
Flt Permitted	0.966				0.166	
Satd. Flow (perm)	1341	0	1860	1321	309	1900
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	19			42		
Link Speed (k/h)	50		70			70
Link Distance (m)	186.9		633.8			289.9
Travel Time (s)	13.5		32.6			14.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	3%	1%	2%	0%	0%
Adj. Flow (vph)	74	31	1000	109	47	875
Shared Lane Traffic (%)						
Lane Group Flow (vph)	105	0	1000	109	47	875
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.31	1.09	1.01	1.22	1.03	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1		2	1	1	2
Detector Template			Thru	Right		Thru
Leading Detector (m)	9.0		10.0	2.0	20.0	10.0
Trailing Detector (m)	-0.2		0.0	0.0	10.0	0.0
Detector 1 Position(m)	-0.2		0.0	0.0	10.0	0.0
Detector 1 Size(m)	9.2		0.6	2.0	10.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm		NA	Perm	pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8			2	6	
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0		8.0	8.0	5.0	8.0
Minimum Split (s)	24.0		25.0	25.0	9.5	25.0
Total Split (s)	24.0		66.0	66.0	10.0	76.0
Total Split (%)	24.0%		66.0%	66.0%	10.0%	76.0%
Maximum Green (s)	18.0		59.0	59.0	7.0	69.0
Yellow Time (s)	4.0		5.0	5.0	3.0	5.0
All-Red Time (s)	2.0		2.0	2.0	0.0	2.0
Lost Time Adjust (s)	-1.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0		5.0	5.0	1.0	5.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	None		Max	Max	None	Max
Walk Time (s)	7.0		7.0	7.0		7.0
Flash Dont Walk (s)	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)	0		0	0		0
Act Effct Green (s)	12.6		70.1	70.1	79.5	76.5
Actuated g/C Ratio	0.13		0.73	0.73	0.83	0.80
v/c Ratio	0.54		0.73	0.11	0.13	0.58
Control Delay	41.6		15.4	4.4	3.2	7.2
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	41.6		15.4	4.4	3.2	7.2
LOS	D		B	A	A	A
Approach Delay	41.6		14.3			7.0
Approach LOS	D		B			A
Queue Length 50th (m)	15.3		117.4	3.8	1.3	59.4
Queue Length 95th (m)	31.8		#230.6	11.6	4.6	118.3
Internal Link Dist (m)	162.9		609.8			265.9
Turn Bay Length (m)	15.0			25.0	20.0	
Base Capacity (vph)	282		1364	980	394	1521
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.37		0.73	0.11	0.12	0.58

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 95.6			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 12.5		Intersection LOS: B	

Intersection Capacity Utilization 65.5% ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 4: Ninth Line & Osprey Boulevard

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	18	889	62	43	862
Future Volume (vph)	23	18	889	62	43	862
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.940		0.991			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1400	0	1845	0	1426	1879
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1400	0	1845	0	1426	1879
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			265.1
Travel Time (s)	12.0		14.9			13.6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	24	19	926	65	45	898
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	991	0	45	898
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.5%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	18	889	62	43	862
Future Volume (Veh/h)	23	18	889	62	43	862
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	24	19	926	65	45	898
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			290			
pX, platoon unblocked	0.55	0.55			0.55	
vC, conflicting volume	1946	958			991	
vC1, stage 1 conf vol	958					
vC2, stage 2 conf vol	988					
vCu, unblocked vol	2308	520			579	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	94			92	
cM capacity (veh/h)	224	309			550	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	43	991	45	898
Volume Left	24	0	45	0
Volume Right	19	65	0	0
cSH	255	1700	550	1700
Volume to Capacity	0.17	0.58	0.08	0.53
Queue Length 95th (m)	4.8	0.0	2.1	0.0
Control Delay (s)	22.0	0.0	12.1	0.0
Lane LOS	C		B	
Approach Delay (s)	22.0	0.0	0.6	
Approach LOS	C			

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

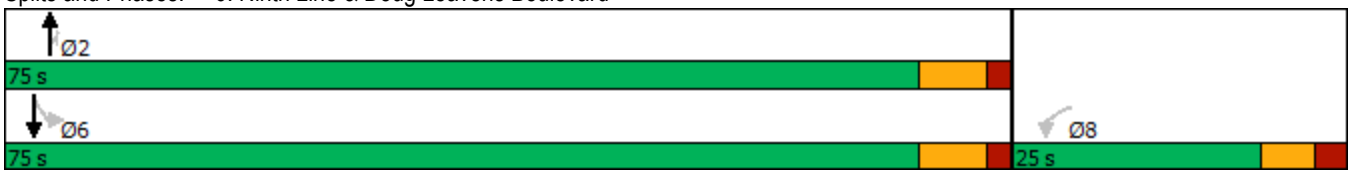
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	106	59	772	128	103	799
Future Volume (vph)	106	59	772	128	103	799
Ideal Flow (vphpl)	1640	1900	1900	1640	1860	1900
Lane Width (m)	3.0	3.3	3.5	3.2	3.0	3.5
Storage Length (m)	0.0	0.0		25.0	80.0	
Storage Lanes	1	0		1	1	
Taper Length (m)	7.5				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.97		
Frt	0.952			0.850		
Flt Protected	0.969				0.950	
Satd. Flow (prot)	1412	0	1860	1332	1649	1860
Flt Permitted	0.969				0.282	
Satd. Flow (perm)	1412	0	1860	1298	490	1860
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	25			82		
Link Speed (k/h)	50		70			70
Link Distance (m)	218.3		577.9			487.0
Travel Time (s)	15.7		29.7			25.0
Confl. Peds. (#/hr)				2	2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	110	61	804	133	107	832
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	0	804	133	107	832
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.0			3.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.31	1.04	1.01	1.28	1.12	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1		2	1	1	2
Detector Template			Thru	Right	Left	Thru
Leading Detector (m)	7.0		10.0	2.0	2.0	10.0
Trailing Detector (m)	-3.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	-3.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	10.0		0.6	2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm		NA	Perm	Perm	NA
Protected Phases			2			6
Permitted Phases	8			2	6	
Detector Phase	8		2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0		8.0	8.0	8.0	8.0
Minimum Split (s)	24.5		26.0	26.0	26.0	26.0
Total Split (s)	25.0		75.0	75.0	75.0	75.0
Total Split (%)	25.0%		75.0%	75.0%	75.0%	75.0%
Maximum Green (s)	18.5		68.0	68.0	68.0	68.0
Yellow Time (s)	4.0		5.0	5.0	5.0	5.0
All-Red Time (s)	2.5		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	Max
Walk Time (s)	7.0		8.0	8.0	8.0	8.0
Flash Dont Walk (s)	11.0		10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	16.5		73.7	73.7	73.7	73.7
Actuated g/C Ratio	0.16		0.74	0.74	0.74	0.74
v/c Ratio	0.68		0.59	0.14	0.30	0.61
Control Delay	46.4		8.9	2.4	7.8	9.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	46.4		8.9	2.4	7.8	9.3
LOS	D		A	A	A	A
Approach Delay	46.4		8.0			9.1
Approach LOS	D		A			A
Queue Length 50th (m)	27.0		66.2	2.5	6.4	70.4
Queue Length 95th (m)	49.4		109.7	8.4	16.3	116.7
Internal Link Dist (m)	194.3		553.9			463.0
Turn Bay Length (m)				25.0	80.0	
Base Capacity (vph)	301		1369	976	360	1369
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.57		0.59	0.14	0.30	0.61

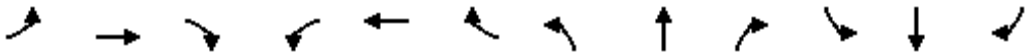
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 11.7		Intersection LOS: B	

Intersection Capacity Utilization 70.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Doug Leavens Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	748	229	215	1501	89	105	568	169	117	460	261
Future Volume (vph)	206	748	229	215	1501	89	105	568	169	117	460	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		50.0	80.0		50.0	110.0		110.0	60.0		70.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			80.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.98			
Frt		0.965			0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3443	0	1767	3583	0	1767	1902	1581	1785	1902	1581
Flt Permitted	0.057			0.170			0.180			0.081		
Satd. Flow (perm)	106	3443	0	316	3583	0	335	1902	1556	152	1902	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			5				142			180
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		271.6			182.6			813.6			145.2	
Travel Time (s)		16.3			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	206	748	229	215	1501	89	105	568	169	117	460	261
Shared Lane Traffic (%)												
Lane Group Flow (vph)	206	977	0	215	1590	0	105	568	169	117	460	261
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template		Thru			Thru							
Leading Detector (m)	25.0	10.0		25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0		15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0		15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
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	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1		9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	18.0	68.0		26.6	76.6		9.8	55.0	55.0	10.4	55.6	55.6
Total Split (%)	11.3%	42.5%		16.6%	47.9%		6.1%	34.4%	34.4%	6.5%	34.8%	34.8%
Maximum Green (s)	15.0	61.9		23.6	70.5		6.8	48.6	48.6	7.4	49.2	49.2
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1		0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1		3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Walk Time (s)		9.0			9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0			15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	88.2	70.5		87.8	70.5		58.8	48.6	48.6	60.0	49.2	49.2
Actuated g/C Ratio	0.55	0.44		0.55	0.44		0.37	0.30	0.30	0.38	0.31	0.31
v/c Ratio	0.96	0.64		0.70	1.01		0.57	0.98	0.30	0.89	0.79	0.43
Control Delay	96.8	36.6		29.2	67.9		46.1	88.4	10.7	87.9	61.6	15.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.8	36.6		29.2	67.9		46.1	88.4	10.7	87.9	61.6	15.9
LOS	F	D		C	E		D	F	B	F	E	B
Approach Delay		47.1			63.3			67.5			51.1	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	52.1	127.4		33.9	~281.2		22.7	189.8	6.4	25.5	141.3	19.9
Queue Length 95th (m)	#110.5	165.6		49.3	#336.0		37.5	#270.6	25.8	#62.2	186.8	47.1
Internal Link Dist (m)		247.6			158.6			789.6			121.2	
Turn Bay Length (m)	75.0			80.0			110.0		110.0	60.0		70.0
Base Capacity (vph)	214	1533		394	1581		183	577	571	132	584	610
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.64		0.55	1.01		0.57	0.98	0.30	0.89	0.79	0.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 57.8		Intersection LOS: E	

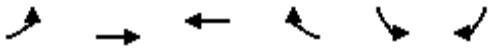
Intersection Capacity Utilization 109.2% ICU Level of Service H

Analysis Period (min) 15

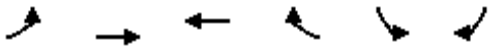
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 8: Ninth Line & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	1222	572	0	450	23
Future Volume (vph)	0	1222	572	0	450	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3579	0	1684	1210
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3579	0	1684	1210
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						17
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	0%	6%	32%
Adj. Flow (vph)	0	1222	572	0	450	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1222	572	0	450	23
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		96.0	96.0		64.0	64.0
Total Split (%)		60.0%	60.0%		40.0%	40.0%
Maximum Green (s)		90.0	90.0		57.0	57.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		90.4	90.4		43.6	43.6
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.55	0.26		0.90	0.06
Control Delay		18.8	14.4		71.6	17.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		18.8	14.4		71.6	17.3
LOS		B	B		E	B
Approach Delay		18.8	14.4		69.0	
Approach LOS		B	B		E	
Queue Length 50th (m)		110.2	40.6		132.4	1.3
Queue Length 95th (m)		160.6	63.2		178.0	8.2
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2221	2200		655	481
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.55	0.26		0.69	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 28.2		Intersection LOS: C	
Intersection Capacity Utilization 70.1%		ICU Level of Service C	
Analysis Period (min) 15			

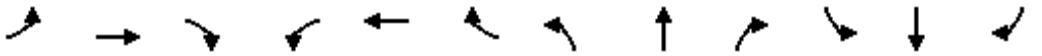
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1626	0	0	718	22	231
Future Volume (vph)	1626	0	0	718	22	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3579	1608	1566
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3579	1608	1566
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						43
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	2%	11%	2%
Adj. Flow (vph)	1626	0	0	718	22	231
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1626	0	0	718	22	231
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

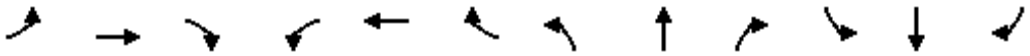
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	114.0			114.0	46.0	46.0
Total Split (%)	71.3%			71.3%	28.8%	28.8%
Maximum Green (s)	108.0			108.0	39.0	39.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	108.3			108.3	22.9	22.9
Actuated g/C Ratio	0.75			0.75	0.16	0.16
v/c Ratio	0.60			0.27	0.09	0.81
Control Delay	10.0			6.4	50.9	69.0
Queue Delay	0.4			0.0	0.0	0.0
Total Delay	10.5			6.4	50.9	69.0
LOS	B			A	D	E
Approach Delay	10.5			6.4	67.4	
Approach LOS	B			A	E	
Queue Length 50th (m)	103.0			31.3	5.7	55.7
Queue Length 95th (m)	160.2			51.6	14.0	87.1
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2713			2686	436	455
Starvation Cap Reductn	522			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.74			0.27	0.05	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 144.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 70.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1370	336	87	597	100	213	673	152	86	920	106
Future Volume (vph)	110	1370	336	87	597	100	213	673	152	86	920	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00		1.00		
Frt			0.850			0.850		0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1581	1733	3579	1439	1767	3447	0	1608	3614	1581
Flt Permitted	0.338			0.065			0.085			0.163		
Satd. Flow (perm)	635	3614	1581	119	3579	1439	158	3447	0	276	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			163			100		18				106
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	110	1370	336	87	597	100	213	673	152	86	920	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	1370	336	87	597	100	213	825	0	86	920	106
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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												

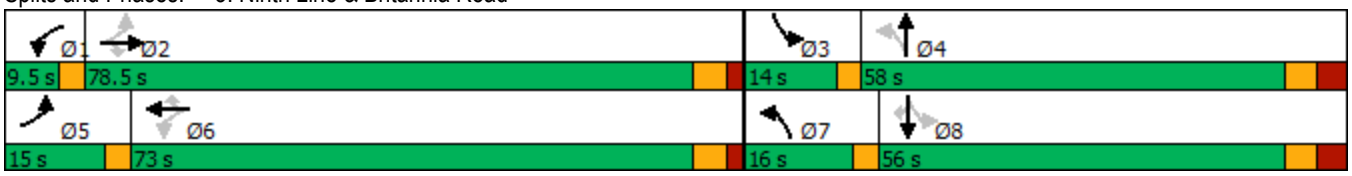


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	15.0	78.5	78.5	9.5	73.0	73.0	16.0	58.0		14.0	56.0	56.0
Total Split (%)	9.4%	49.1%	49.1%	5.9%	45.6%	45.6%	10.0%	36.3%		8.8%	35.0%	35.0%
Maximum Green (s)	12.0	72.4	72.4	6.5	66.9	66.9	13.0	50.3		11.0	48.3	48.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	84.2	72.5	72.5	79.1	69.5	69.5	64.4	47.8		58.1	44.1	44.1
Actuated g/C Ratio	0.54	0.47	0.47	0.51	0.45	0.45	0.41	0.31		0.37	0.28	0.28
v/c Ratio	0.27	0.82	0.41	0.69	0.37	0.14	1.07	0.77		0.48	0.90	0.20
Control Delay	19.7	41.5	15.5	49.3	30.4	5.3	121.5	53.7		36.8	66.3	7.7
Queue Delay	0.0	17.2	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	19.7	58.7	15.5	49.3	30.4	5.3	121.5	53.7		36.8	66.3	7.7
LOS	B	E	B	D	C	A	F	D		D	E	A
Approach Delay		48.3			29.3			67.6			58.4	
Approach LOS		D			C			E			E	
Queue Length 50th (m)	17.6	206.9	36.4	13.8	69.8	0.0	~58.9	126.9		17.2	152.6	0.0
Queue Length 95th (m)	29.4	242.7	63.9	#39.1	90.0	12.1	#116.8	154.5		29.4	180.7	14.9
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	435	1679	822	127	1596	697	199	1125		199	1120	563
Starvation Cap Reductn	0	335	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.25	1.02	0.41	0.69	0.37	0.14	1.07	0.73		0.43	0.82	0.19

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 155.9	
Natural Cycle: 105	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 51.8	Intersection LOS: D

Intersection Capacity Utilization 98.1% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	129	61	914	94	21	973
Future Volume (vph)	129	61	914	94	21	973
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.6	3.6
Storage Length (m)	15.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	15.0				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.986			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1412	1436	3372	0	1683	3574
Flt Permitted	0.950				0.236	
Satd. Flow (perm)	1412	1436	3372	0	418	3574
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		63	16			
Link Speed (k/h)	50		70			70
Link Distance (m)	186.9		633.8			289.9
Travel Time (s)	13.5		32.6			14.9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	5%	4%	8%	5%	1%
Adj. Flow (vph)	133	63	942	97	22	1003
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	63	1039	0	22	1003
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.09	1.01	1.01	1.03	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru			Thru
Leading Detector (m)	9.0	9.0	10.0		20.0	10.0
Trailing Detector (m)	-1.0	-1.0	0.0		10.0	0.0
Detector 1 Position(m)	-1.0	-1.0	0.0		10.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		10.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.0	24.0	25.0		9.5	25.0
Total Split (s)	34.0	34.0	56.0		10.0	66.0
Total Split (%)	34.0%	34.0%	56.0%		10.0%	66.0%
Maximum Green (s)	28.0	28.0	49.0		7.0	59.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		2.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	14.7	14.7	61.5		68.7	64.7
Actuated g/C Ratio	0.16	0.16	0.69		0.77	0.72
v/c Ratio	0.58	0.22	0.45		0.05	0.39
Control Delay	43.5	10.1	8.1		3.5	5.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	43.5	10.1	8.1		3.5	5.7
LOS	D	B	A		A	A
Approach Delay	32.7		8.1			5.7
Approach LOS	C		A			A
Queue Length 50th (m)	21.2	0.0	31.5		0.7	29.8
Queue Length 95th (m)	39.1	10.3	72.8		3.0	51.4
Internal Link Dist (m)	162.9		609.8			265.9
Turn Bay Length (m)	15.0				120.0	
Base Capacity (vph)	458	508	2325		448	2587
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.29	0.12	0.45		0.05	0.39

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 89.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 44.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ninth Line & Osprey Boulevard

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	70	962	37	31	942
Future Volume (vph)	48	70	962	37	31	942
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.994			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1507	3438	0	1412	3500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1454	1507	3438	0	1412	3500
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	50	73	1002	39	32	981
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	73	1041	0	32	981
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	70	962	37	31	942
Future Volume (Veh/h)	48	70	962	37	31	942
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	50	73	1002	39	32	981
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.88	0.88			0.88	
vC, conflicting volume	1576	520			1041	
vC1, stage 1 conf vol	1022					
vC2, stage 2 conf vol	554					
vCu, unblocked vol	1374	169			764	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	90			96	
cM capacity (veh/h)	320	746			734	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	50	73	668	373	32	490	490
Volume Left	50	0	0	0	32	0	0
Volume Right	0	73	0	39	0	0	0
cSH	320	746	1700	1700	734	1700	1700
Volume to Capacity	0.16	0.10	0.39	0.22	0.04	0.29	0.29
Queue Length 95th (m)	4.4	2.6	0.0	0.0	1.1	0.0	0.0
Control Delay (s)	18.3	10.4	0.0	0.0	10.1	0.0	0.0
Lane LOS	C	B			B		
Approach Delay (s)	13.6		0.0		0.3		
Approach LOS	B						

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

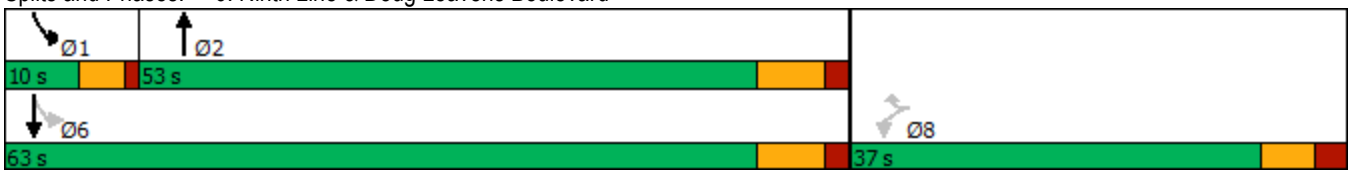
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	135	142	909	103	70	783
Future Volume (vph)	135	142	909	103	70	783
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.3	3.5	3.2	3.0	3.5
Storage Length (m)	0.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.985			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1412	1531	3416	0	1649	3535
Flt Permitted	0.950				0.192	
Satd. Flow (perm)	1412	1531	3416	0	333	3535
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		154	17			
Link Speed (k/h)	50		70			70
Link Distance (m)	218.3		843.0			487.0
Travel Time (s)	15.7		43.4			25.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	9%	0%	1%
Adj. Flow (vph)	147	154	988	112	76	851
Shared Lane Traffic (%)						
Lane Group Flow (vph)	147	154	1100	0	76	851
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.0			3.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.04	1.01	1.06	1.12	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru		Left	Thru
Leading Detector (m)	7.0	7.0	10.0		2.0	10.0
Trailing Detector (m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Position(m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

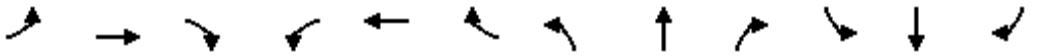
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.5	24.5	26.0		9.5	26.0
Total Split (s)	37.0	37.0	53.0		10.0	63.0
Total Split (%)	37.0%	37.0%	53.0%		10.0%	63.0%
Maximum Green (s)	30.5	30.5	46.0		5.5	56.0
Yellow Time (s)	4.0	4.0	5.0		3.5	5.0
All-Red Time (s)	2.5	2.5	2.0		1.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		2.5	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	8.0			8.0
Flash Dont Walk (s)	11.0	11.0	10.0			10.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	15.7	15.7	51.2		61.7	59.2
Actuated g/C Ratio	0.18	0.18	0.60		0.73	0.70
v/c Ratio	0.57	0.38	0.53		0.21	0.35
Control Delay	39.7	7.8	12.1		5.5	6.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	39.7	7.8	12.1		5.5	6.1
LOS	D	A	B		A	A
Approach Delay	23.4		12.1			6.0
Approach LOS	C		B			A
Queue Length 50th (m)	22.6	0.0	55.0		3.0	25.5
Queue Length 95th (m)	41.1	14.9	87.0		8.6	44.6
Internal Link Dist (m)	194.3		819.0			463.0
Turn Bay Length (m)					120.0	
Base Capacity (vph)	532	673	2068		358	2466
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.28	0.23	0.53		0.21	0.35

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 84.9			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 11.1		Intersection LOS: B	

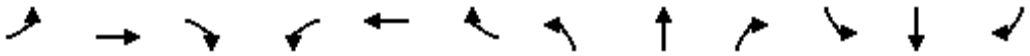
Intersection Capacity Utilization 52.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Doug Leavens Boulevard





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	1378	99	127	649	116	223	527	222	81	586	271
Future Volume (vph)	233	1378	99	127	649	116	223	527	222	81	586	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99									
Frt			0.850		0.977				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	3614	1597	1733	3439	0	1750	3614	1566	1716	3614	1581
Flt Permitted	0.265			0.086			0.127			0.399		
Satd. Flow (perm)	470	3614	1575	157	3439	0	234	3614	1566	721	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		15				147			271
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	233	1378	99	127	649	116	223	527	222	81	586	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	233	1378	99	127	765	0	223	527	222	81	586	271
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	32.0	82.5	82.5	17.0	67.5		23.5	49.0	49.0	11.5	37.0	37.0
Total Split (%)	20.0%	51.6%	51.6%	10.6%	42.2%		14.7%	30.6%	30.6%	7.2%	23.1%	23.1%
Maximum Green (s)	29.0	76.4	76.4	14.0	61.4		20.5	42.6	42.6	7.0	30.6	30.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	1.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	4.5	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	92.6	76.6	76.6	85.0	72.0		54.1	39.1	39.1	37.3	28.4	28.4
Actuated g/C Ratio	0.61	0.50	0.50	0.56	0.47		0.35	0.26	0.26	0.24	0.19	0.19
v/c Ratio	0.58	0.76	0.12	0.67	0.47		0.81	0.57	0.44	0.37	0.87	0.53
Control Delay	20.5	35.1	4.7	38.7	29.0		62.2	52.2	19.0	41.6	75.3	9.7
Queue Delay	0.0	3.6	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	38.7	4.7	38.7	29.0		62.2	52.2	19.0	41.6	75.3	9.7
LOS	C	D	A	D	C		E	D	B	D	E	A
Approach Delay		34.2			30.4			46.9			53.4	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	34.6	190.7	0.7	17.5	88.3		52.3	77.2	18.8	17.7	97.3	0.0
Queue Length 95th (m)	49.9	233.0	11.5	39.0	113.8		#96.7	100.3	45.9	32.2	#126.4	26.6
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	516	1813	837	235	1630		287	1011	543	221	726	534
Starvation Cap Reductn	0	339	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.93	0.12	0.54	0.47		0.78	0.52	0.41	0.37	0.81	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 152.7			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 40.2		Intersection LOS: D	

Intersection Capacity Utilization 90.8% ICU Level of Service E

Analysis Period (min) 15

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

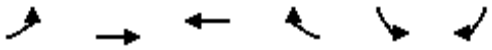
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1582	0	0	972	13	167
Future Volume (vph)	1582	0	0	972	13	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3510	2935	1507
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3510	2935	1507
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						56
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	4%	18%	6%
Adj. Flow (vph)	1582	0	0	972	13	167
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1582	0	0	972	13	167
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

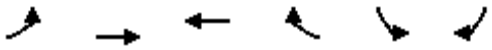
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	120.0			120.0	40.0	40.0
Total Split (%)	75.0%			75.0%	25.0%	25.0%
Maximum Green (s)	114.0			114.0	33.0	33.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	114.2			114.2	16.3	16.3
Actuated g/C Ratio	0.80			0.80	0.11	0.11
v/c Ratio	0.56			0.35	0.04	0.76
Control Delay	6.8			5.0	55.1	61.7
Queue Delay	0.3			0.3	0.0	0.0
Total Delay	7.1			5.2	55.1	61.7
LOS	A			A	E	E
Approach Delay	7.1			5.2	61.2	
Approach LOS	A			A	E	
Queue Length 50th (m)	77.4			36.6	1.8	32.8
Queue Length 95th (m)	123.1			60.1	5.3	59.1
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2847			2792	675	390
Starvation Cap Reductn	571			1028	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.70			0.55	0.02	0.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 143.5			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 10.0		Intersection LOS: B	
Intersection Capacity Utilization 74.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



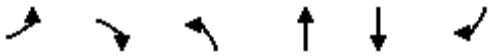
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2101	721	0	38	55
Future Volume (vph)	0	2101	721	0	38	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3510	0	3148	1309
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3510	0	3148	1309
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						55
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	4%	0%	10%	22%
Adj. Flow (vph)	0	2101	721	0	38	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2101	721	0	38	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		135.0	135.0		25.0	25.0
Total Split (%)		84.4%	84.4%		15.6%	15.6%
Maximum Green (s)		129.0	129.0		18.0	18.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		130.5	130.5		8.0	8.0
Actuated g/C Ratio		0.89	0.89		0.05	0.05
v/c Ratio		0.66	0.23		0.22	0.45
Control Delay		4.3	1.9		71.0	27.7
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.3	1.9		71.0	27.7
LOS		A	A		E	C
Approach Delay		4.3	1.9		45.4	
Approach LOS		A	A		D	
Queue Length 50th (m)		84.1	15.2		5.9	0.0
Queue Length 95th (m)		120.6	23.2		12.4	15.1
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		3204	3112		385	208
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.66	0.23		0.10	0.26

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147.2			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 5.0		Intersection LOS: A	
Intersection Capacity Utilization 74.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp

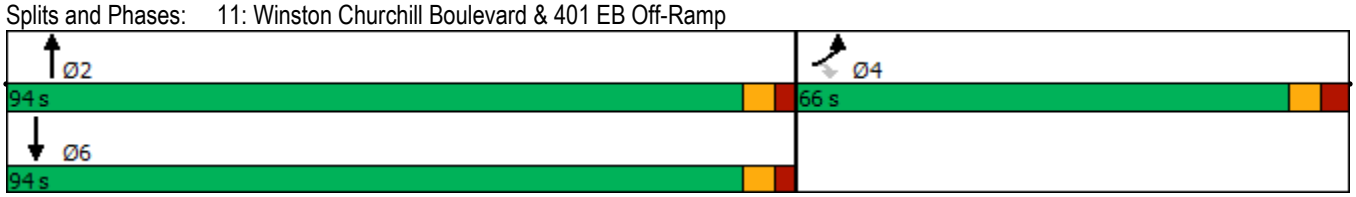


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	365	304	0	1105	1053	0
Future Volume (vph)	365	304	0	1105	1053	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.969	0.850				
Flt Protected	0.962					
Satd. Flow (prot)	3280	1425	0	4980	4885	0
Flt Permitted	0.962					
Satd. Flow (perm)	3280	1425	0	4980	4885	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	24	77				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	0%	3%	5%	0%
Adj. Flow (vph)	384	320	0	1163	1108	0
Shared Lane Traffic (%)		31%				
Lane Group Flow (vph)	483	221	0	1163	1108	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	66.0	66.0		94.0	94.0	
Total Split (%)	41.3%	41.3%		58.8%	58.8%	
Maximum Green (s)	58.5	58.5		87.5	87.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	27.5	27.5		89.1	89.1	
Actuated g/C Ratio	0.22	0.22		0.70	0.70	
v/c Ratio	0.66	0.60		0.33	0.32	
Control Delay	47.5	35.4		7.9	7.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	47.5	35.4		7.9	7.9	
LOS	D	D		A	A	
Approach Delay	43.7			7.9	7.9	
Approach LOS	D			A	A	
Queue Length 50th (m)	57.1	37.3		38.4	36.3	
Queue Length 95th (m)	75.4	67.2		56.7	53.8	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1594	727		3505	3438	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.30	0.30		0.33	0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 126.6			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp

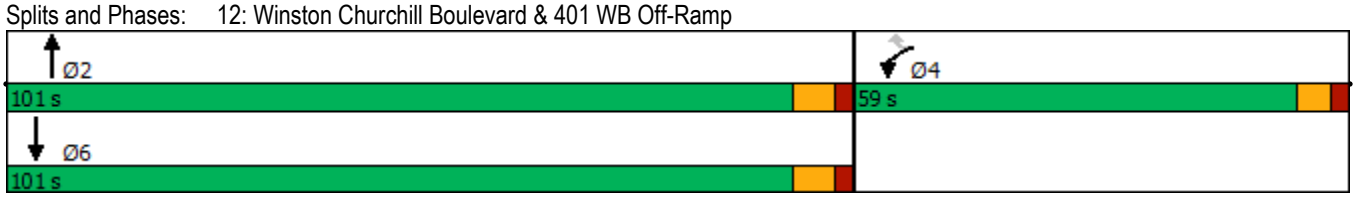


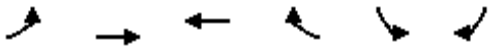
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	222	405	1207	0	0	1417
Future Volume (vph)	222	405	1207	0	0	1417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.929	0.850				
Flt Protected	0.974					
Satd. Flow (prot)	2973	1298	4980	0	0	4839
Flt Permitted	0.974					
Satd. Flow (perm)	2973	1298	4980	0	0	4839
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	64	64				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	12%	3%	0%	0%	6%
Adj. Flow (vph)	234	426	1271	0	0	1492
Shared Lane Traffic (%)		50%				
Lane Group Flow (vph)	447	213	1271	0	0	1492
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	59.0	59.0	101.0			101.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Maximum Green (s)	52.5	52.5	93.5			93.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	26.3	26.3	96.2			96.2
Actuated g/C Ratio	0.20	0.20	0.73			0.73
v/c Ratio	0.70	0.69	0.35			0.42
Control Delay	47.9	45.9	7.5			8.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	47.9	45.9	7.5			8.2
LOS	D	D	A			A
Approach Delay	47.3		7.5			8.2
Approach LOS	D		A			A
Queue Length 50th (m)	51.0	42.4	41.1			52.0
Queue Length 95th (m)	69.4	74.0	64.3			80.5
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1251	567	3615			3512
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.36	0.38	0.35			0.42

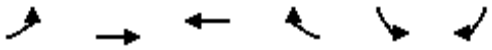
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 132.5			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 15.4		Intersection LOS: B	
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	699	1176	0	413	60
Future Volume (vph)	0	699	1176	0	413	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3614	0	1767	1536
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3614	0	1767	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						50
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	1%	4%
Adj. Flow (vph)	0	699	1176	0	413	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	699	1176	0	413	60
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		94.0	94.0		66.0	66.0
Total Split (%)		58.8%	58.8%		41.3%	41.3%
Maximum Green (s)		88.0	88.0		59.0	59.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		88.3	88.3		37.2	37.2
Actuated g/C Ratio		0.64	0.64		0.27	0.27
v/c Ratio		0.30	0.51		0.87	0.13
Control Delay		12.7	15.5		67.3	12.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		12.7	15.5		67.3	12.5
LOS		B	B		E	B
Approach Delay		12.7	15.5		60.4	
Approach LOS		B	B		E	
Queue Length 50th (m)		44.7	89.8		113.9	2.1
Queue Length 95th (m)		71.5	138.0		154.7	13.2
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2302	2302		754	684
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.30	0.51		0.55	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 138.6			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 23.7		Intersection LOS: C	
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

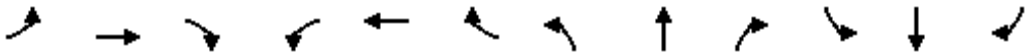
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1079	0	0	1269	54	147
Future Volume (vph)	1079	0	0	1269	54	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3614	1750	1581
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3614	1750	1581
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						147
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	1%	2%	1%
Adj. Flow (vph)	1079	0	0	1269	54	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1079	0	0	1269	54	147
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	121.0			121.0	39.0	39.0
Total Split (%)	75.6%			75.6%	24.4%	24.4%
Maximum Green (s)	115.0			115.0	32.0	32.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	115.0			115.0	9.8	9.8
Actuated g/C Ratio	0.83			0.83	0.07	0.07
v/c Ratio	0.36			0.42	0.44	0.59
Control Delay	3.2			3.5	72.3	19.1
Queue Delay	0.0			0.4	0.0	0.0
Total Delay	3.2			3.9	72.3	19.1
LOS	A			A	E	B
Approach Delay	3.2			3.9	33.4	
Approach LOS	A			A	C	
Queue Length 50th (m)	30.0			38.0	15.1	0.0
Queue Length 95th (m)	43.6			54.9	30.0	21.7
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	3016			3016	406	479
Starvation Cap Reductn	0			1098	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.36			0.66	0.13	0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 137.8			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 5.9		Intersection LOS: A	
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	724	305	129	1019	137	190	934	114	105	836	102
Future Volume (vph)	152	724	305	129	1019	137	190	934	114	105	836	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.984				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1597	1785	3614	1551	1767	3554	0	1716	3614	1536
Flt Permitted	0.137			0.260			0.138			0.088		
Satd. Flow (perm)	257	3614	1597	489	3614	1551	257	3554	0	159	3614	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			239			78		9				102
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	152	724	305	129	1019	137	190	934	114	105	836	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	724	305	129	1019	137	190	1048	0	105	836	102
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	13.0	63.5	63.5	15.5	66.0	66.0	17.5	63.0		18.0	63.5	63.5
Total Split (%)	8.1%	39.7%	39.7%	9.7%	41.3%	41.3%	10.9%	39.4%		11.3%	39.7%	39.7%
Maximum Green (s)	10.0	57.4	57.4	12.5	59.9	59.9	14.5	55.3		15.0	55.8	55.8
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	72.1	59.3	59.3	73.9	60.2	60.2	65.7	48.4		60.3	45.4	45.4
Actuated g/C Ratio	0.49	0.40	0.40	0.50	0.41	0.41	0.44	0.33		0.41	0.31	0.31
v/c Ratio	0.68	0.50	0.39	0.38	0.70	0.20	0.77	0.90		0.61	0.76	0.19
Control Delay	38.0	36.6	9.8	24.3	40.9	14.9	46.6	58.5		41.0	51.2	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	38.0	36.6	9.8	24.3	40.9	14.9	46.6	58.5		41.0	51.2	6.9
LOS	D	D	A	C	D	B	D	E		D	D	A
Approach Delay		29.8			36.5			56.7			45.9	
Approach LOS		C			D			E			D	
Queue Length 50th (m)	25.1	90.4	13.1	21.0	139.5	11.5	36.0	161.4		18.9	124.8	0.0
Queue Length 95th (m)	#47.5	123.5	40.8	38.1	183.1	29.4	#62.5	199.6		33.6	149.3	13.9
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	229	1443	781	358	1465	675	261	1335		227	1365	643
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.66	0.50	0.39	0.36	0.70	0.20	0.73	0.79		0.46	0.61	0.16

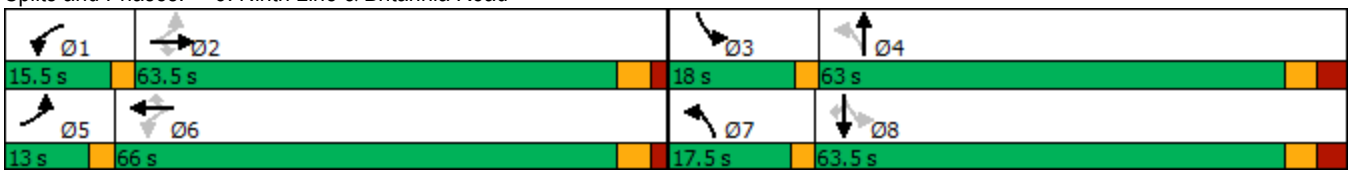
Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 148.4	
Natural Cycle: 85	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 42.2	Intersection LOS: D

Intersection Capacity Utilization 90.1% ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 3: Ninth Line & Britannia Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	30	1093	106	45	1030
Future Volume (vph)	72	30	1093	106	45	1030
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.6	3.6
Storage Length (m)	15.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	15.0				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.987			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1359	1463	3479	0	1767	3610
Flt Permitted	0.950				0.186	
Satd. Flow (perm)	1359	1463	3479	0	346	3610
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		31	19			
Link Speed (k/h)	50		70			70
Link Distance (m)	186.9		633.8			289.9
Travel Time (s)	13.5		32.6			14.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	3%	1%	2%	0%	0%
Adj. Flow (vph)	75	31	1139	110	47	1073
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	31	1249	0	47	1073
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.09	1.01	1.01	1.03	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru			Thru
Leading Detector (m)	9.0	9.0	10.0		20.0	10.0
Trailing Detector (m)	-0.2	-1.0	0.0		10.0	0.0
Detector 1 Position(m)	-0.2	-1.0	0.0		10.0	0.0
Detector 1 Size(m)	9.2	10.0	0.6		10.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.0	24.0	25.0		9.5	25.0
Total Split (s)	24.0	24.0	66.0		10.0	76.0
Total Split (%)	24.0%	24.0%	66.0%		10.0%	76.0%
Maximum Green (s)	18.0	18.0	59.0		7.0	69.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		2.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	11.7	11.7	70.9		80.2	77.3
Actuated g/C Ratio	0.12	0.12	0.74		0.84	0.81
v/c Ratio	0.45	0.15	0.48		0.12	0.37
Control Delay	46.9	14.2	7.6		2.8	3.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	46.9	14.2	7.6		2.8	3.9
LOS	D	B	A		A	A
Approach Delay	37.3		7.6			3.9
Approach LOS	D		A			A
Queue Length 50th (m)	13.3	0.0	52.5		1.2	27.6
Queue Length 95th (m)	27.3	8.1	81.4		4.0	46.2
Internal Link Dist (m)	162.9		609.8			265.9
Turn Bay Length (m)	15.0				120.0	
Base Capacity (vph)	271	316	2589		425	2923
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.28	0.10	0.48		0.11	0.37

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 95.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 7.2		Intersection LOS: A	

Intersection Capacity Utilization 51.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Ninth Line & Osprey Boulevard

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	18	1008	63	44	1057
Future Volume (vph)	23	18	1008	63	44	1057
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.991			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1507	3505	0	1426	3570
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1454	1507	3505	0	1426	3570
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	24	19	1050	66	46	1101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	19	1116	0	46	1101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	18	1008	63	44	1057
Future Volume (Veh/h)	23	18	1008	63	44	1057
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	24	19	1050	66	46	1101
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.86	0.86			0.86	
vC, conflicting volume	1726	558			1116	
vC1, stage 1 conf vol	1083					
vC2, stage 2 conf vol	642					
vCu, unblocked vol	1516	157			806	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	97			93	
cM capacity (veh/h)	291	745			699	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	24	19	700	416	46	550	550
Volume Left	24	0	0	0	46	0	0
Volume Right	0	19	0	66	0	0	0
cSH	291	745	1700	1700	699	1700	1700
Volume to Capacity	0.08	0.03	0.41	0.24	0.07	0.32	0.32
Queue Length 95th (m)	2.1	0.6	0.0	0.0	1.7	0.0	0.0
Control Delay (s)	18.5	10.0	0.0	0.0	10.5	0.0	0.0
Lane LOS	C	A			B		
Approach Delay (s)	14.7		0.0		0.4		
Approach LOS	B						

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

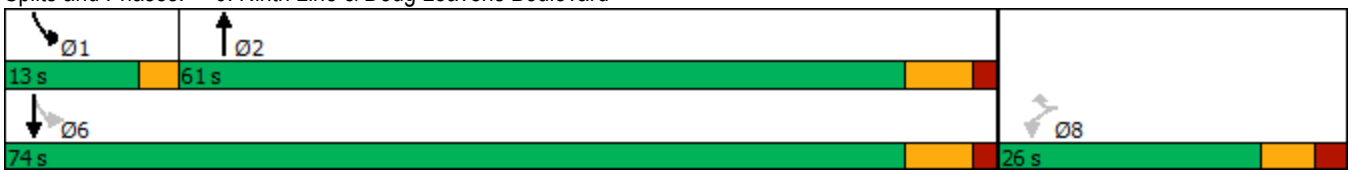
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	108	60	878	130	104	981
Future Volume (vph)	108	60	878	130	104	981
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.3	3.5	3.2	3.0	3.5
Storage Length (m)	0.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00		1.00	
Frt		0.850	0.981			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1561	3460	0	1649	3535
Flt Permitted	0.950				0.224	
Satd. Flow (perm)	1454	1561	3460	0	389	3535
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		63	26			
Link Speed (k/h)	50		70			70
Link Distance (m)	218.3		843.0			487.0
Travel Time (s)	15.7		43.4			25.0
Confl. Peds. (#/hr)				2	2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	113	63	915	135	108	1022
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	63	1050	0	108	1022
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.0			3.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.04	1.01	1.06	1.12	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru		Left	Thru
Leading Detector (m)	7.0	7.0	10.0		2.0	10.0
Trailing Detector (m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Position(m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.5	24.5	26.0		9.5	26.0
Total Split (s)	26.0	26.0	61.0		13.0	74.0
Total Split (%)	26.0%	26.0%	61.0%		13.0%	74.0%
Maximum Green (s)	19.5	19.5	54.0		10.0	67.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.5	2.5	2.0		0.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	8.0			8.0
Flash Dont Walk (s)	11.0	11.0	10.0			10.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	14.4	14.4	61.9		76.0	72.0
Actuated g/C Ratio	0.15	0.15	0.64		0.79	0.75
v/c Ratio	0.52	0.22	0.47		0.25	0.39
Control Delay	45.5	10.8	10.1		4.3	5.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	45.5	10.8	10.1		4.3	5.2
LOS	D	B	B		A	A
Approach Delay	33.1		10.1			5.2
Approach LOS	C		B			A
Queue Length 50th (m)	19.9	0.0	47.8		3.6	30.5
Queue Length 95th (m)	36.8	11.0	78.3		9.5	51.3
Internal Link Dist (m)	194.3		819.0			463.0
Turn Bay Length (m)					120.0	
Base Capacity (vph)	317	389	2231		463	2638
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.36	0.16	0.47		0.23	0.39

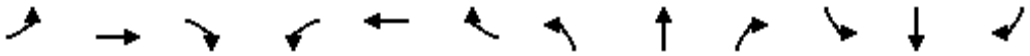
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 96.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 9.5		Intersection LOS: A	

Intersection Capacity Utilization 52.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Doug Leavens Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	197	773	222	219	1545	102	108	646	173	141	566	272
Future Volume (vph)	197	773	222	219	1545	102	108	646	173	141	566	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.98			
Frt			0.850		0.991				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3544	1597	1767	3579	0	1767	3614	1581	1785	3614	1581
Flt Permitted	0.051			0.284			0.270			0.116		
Satd. Flow (perm)	95	3544	1597	528	3579	0	502	3614	1556	218	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			129		6				103			189
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	197	773	222	219	1545	102	108	646	173	141	566	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	773	222	219	1647	0	108	646	173	141	566	272
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	16.0	65.5	65.5	34.5	84.0		12.0	40.0	40.0	20.0	48.0	48.0
Total Split (%)	10.0%	40.9%	40.9%	21.6%	52.5%		7.5%	25.0%	25.0%	12.5%	30.0%	30.0%
Maximum Green (s)	13.0	59.4	59.4	31.5	77.9		9.0	33.6	33.6	17.0	41.6	41.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	93.8	78.0	78.0	93.8	78.0		43.6	31.3	31.3	51.3	36.4	36.4
Actuated g/C Ratio	0.61	0.50	0.50	0.61	0.50		0.28	0.20	0.20	0.33	0.24	0.24
v/c Ratio	0.99	0.43	0.26	0.52	0.91		0.50	0.88	0.44	0.66	0.67	0.53
Control Delay	106.3	26.5	10.8	17.6	44.5		45.9	74.8	25.8	52.3	57.7	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.3	26.5	10.8	17.6	44.5		45.9	74.8	25.8	52.3	57.7	19.4
LOS	F	C	B	B	D		D	E	C	D	E	B
Approach Delay		36.8			41.4			62.3			46.3	
Approach LOS		D			D			E			D	
Queue Length 50th (m)	~49.9	85.1	16.2	30.3	261.5		24.8	108.3	19.2	33.0	88.2	22.1
Queue Length 95th (m)	#110.7	112.7	36.8	46.0	#326.3		40.6	#135.7	44.6	51.6	109.4	52.4
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	198	1785	868	583	1806		215	785	419	245	972	563
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.43	0.26	0.38	0.91		0.50	0.82	0.41	0.58	0.58	0.48

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 154.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 45.1		Intersection LOS: D	

Intersection Capacity Utilization 99.7% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

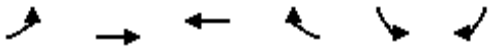
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1063	0	0	1877	80	189
Future Volume (vph)	1063	0	0	1877	80	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3614	3362	1597
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3614	3362	1597
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						170
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	1063	0	0	1877	80	189
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1063	0	0	1877	80	189
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

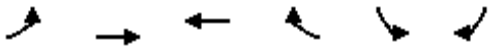
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	126.0			126.0	34.0	34.0
Total Split (%)	78.8%			78.8%	21.3%	21.3%
Maximum Green (s)	120.0			120.0	27.0	27.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	120.0			120.0	10.1	10.1
Actuated g/C Ratio	0.84			0.84	0.07	0.07
v/c Ratio	0.35			0.62	0.34	0.70
Control Delay	3.2			5.2	66.9	26.2
Queue Delay	0.0			0.9	0.0	0.0
Total Delay	3.2			6.1	66.9	26.2
LOS	A			A	E	C
Approach Delay	3.2			6.1	38.3	
Approach LOS	A			A	D	
Queue Length 50th (m)	28.1			72.7	11.9	5.4
Queue Length 95th (m)	48.4			121.7	20.7	31.3
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	3001			3031	634	439
Starvation Cap Reductn	0			779	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.35			0.83	0.13	0.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 143.1			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 7.8		Intersection LOS: A	
Intersection Capacity Utilization 87.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	908	1836	0	218	415
Future Volume (vph)	0	908	1836	0	218	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3510	3614	0	3429	1597
Flt Permitted					0.950	
Satd. Flow (perm)	0	3510	3614	0	3429	1597
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						18
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	0%	1%	0%
Adj. Flow (vph)	0	908	1836	0	218	415
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	908	1836	0	218	415
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm

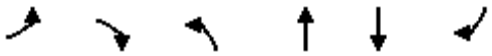


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		104.0	104.0		56.0	56.0
Total Split (%)		65.0%	65.0%		35.0%	35.0%
Maximum Green (s)		98.0	98.0		49.0	49.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		98.2	98.2		42.2	42.2
Actuated g/C Ratio		0.64	0.64		0.28	0.28
v/c Ratio		0.40	0.79		0.23	0.92
Control Delay		14.7	24.5		43.2	77.7
Queue Delay		0.0	1.8		0.0	0.0
Total Delay		14.7	26.3		43.2	77.7
LOS		B	C		D	E
Approach Delay		14.7	26.3		65.8	
Approach LOS		B	C		E	
Queue Length 50th (m)		74.5	227.1		27.9	124.8
Queue Length 95th (m)		95.5	278.3		39.5	#180.3
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		2247	2313		1098	523
Starvation Cap Reductn		0	304		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.40	0.91		0.20	0.79

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 153.4			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 30.6		Intersection LOS: C	
Intersection Capacity Utilization 87.3%		ICU Level of Service E	
Analysis Period (min) 15			

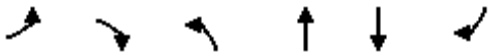
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	437	325	0	1447	1789	0
Future Volume (vph)	437	325	0	1447	1789	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.975	0.850				
Flt Protected	0.960					
Satd. Flow (prot)	3064	1411	0	4980	5079	0
Flt Permitted	0.960					
Satd. Flow (perm)	3064	1411	0	4980	5079	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	16	*134				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	13%	3%	0%	3%	1%	0%
Adj. Flow (vph)	451	335	0	1492	1844	0
Shared Lane Traffic (%)		27%				
Lane Group Flow (vph)	541	245	0	1492	1844	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

11: Winston Churchill Boulevard & 401 EB Off-Ramp

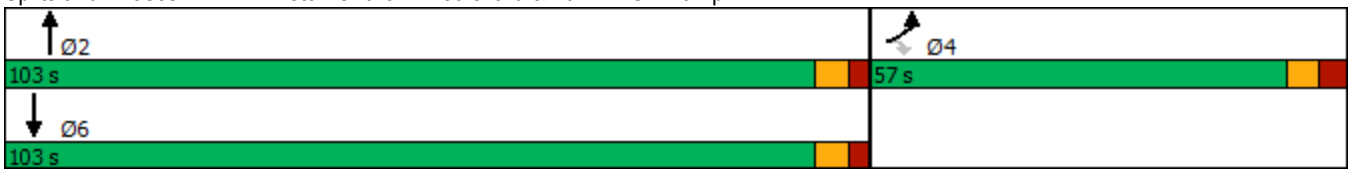


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	57.0	57.0		103.0	103.0	
Total Split (%)	35.6%	35.6%		64.4%	64.4%	
Maximum Green (s)	49.5	49.5		96.5	96.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	34.4	34.4		98.2	98.2	
Actuated g/C Ratio	0.24	0.24		0.69	0.69	
v/c Ratio	0.72	0.55		0.44	0.53	
Control Delay	53.9	25.4		10.9	12.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	53.9	25.4		10.9	12.1	
LOS	D	C		B	B	
Approach Delay	45.0			10.9	12.1	
Approach LOS	D			B	B	
Queue Length 50th (m)	74.3	31.0		66.9	91.0	
Queue Length 95th (m)	94.6	62.4		93.2	124.7	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1129	600		3429	3497	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.48	0.41		0.44	0.53	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 142.6			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 17.9		Intersection LOS: B	
Intersection Capacity Utilization 73.0%		ICU Level of Service C	
Analysis Period (min) 15			

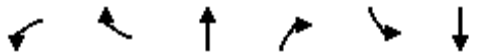
* User Entered Value

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	808	819	1597	0	0	1367
Future Volume (vph)	808	819	1597	0	0	1367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.959	0.850				
Flt Protected	0.965					
Satd. Flow (prot)	3322	1411	4839	0	0	4932
Flt Permitted	0.965					
Satd. Flow (perm)	3322	1411	4839	0	0	4932
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	13	*304				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	6%	0%	0%	4%
Adj. Flow (vph)	833	844	1646	0	0	1409
Shared Lane Traffic (%)		37%				
Lane Group Flow (vph)	1145	532	1646	0	0	1409
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

12: Winston Churchill Boulevard & 401 WB Off-Ramp

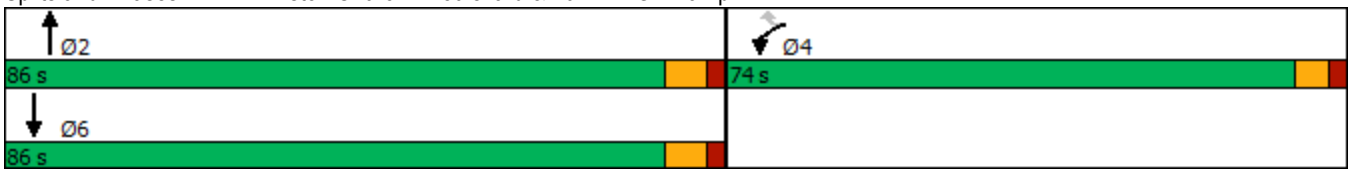


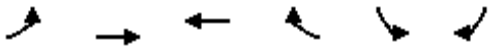
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	74.0	74.0	86.0			86.0
Total Split (%)	46.3%	46.3%	53.8%			53.8%
Maximum Green (s)	67.5	67.5	78.5			78.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	63.4	63.4	81.2			81.2
Actuated g/C Ratio	0.41	0.41	0.53			0.53
v/c Ratio	0.84	0.70	0.65			0.54
Control Delay	46.6	20.3	28.7			26.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	46.6	20.3	28.7			26.1
LOS	D	C	C			C
Approach Delay	38.3		28.7			26.1
Approach LOS	D		C			C
Queue Length 50th (m)	168.1	68.9	146.7			116.1
Queue Length 95th (m)	197.5	120.1	165.4			132.0
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1493	799	2540			2588
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.77	0.67	0.65			0.54

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 154.6			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 31.3		Intersection LOS: C	
Intersection Capacity Utilization 73.0%		ICU Level of Service C	
Analysis Period (min) 15			

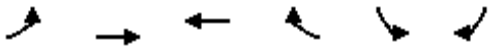
* User Entered Value

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	1358	612	0	456	24
Future Volume (vph)	0	1358	612	0	456	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3579	0	1684	1210
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3579	0	1684	1210
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						18
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	0%	6%	32%
Adj. Flow (vph)	0	1358	612	0	456	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1358	612	0	456	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		96.0	96.0		64.0	64.0
Total Split (%)		60.0%	60.0%		40.0%	40.0%
Maximum Green (s)		90.0	90.0		57.0	57.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		90.3	90.3		44.1	44.1
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.61	0.28		0.91	0.06
Control Delay		20.5	14.8		72.2	17.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		20.5	14.8		72.2	17.0
LOS		C	B		E	B
Approach Delay		20.5	14.8		69.4	
Approach LOS		C	B		E	
Queue Length 50th (m)		131.5	44.6		134.8	1.3
Queue Length 95th (m)		187.8	68.0		181.3	8.5
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2213	2192		653	480
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.61	0.28		0.70	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147.5			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 28.6		Intersection LOS: C	
Intersection Capacity Utilization 74.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

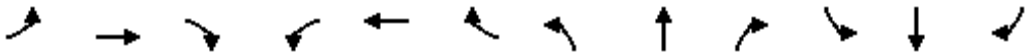
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1766	0	0	769	23	246
Future Volume (vph)	1766	0	0	769	23	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3579	1608	1566
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3579	1608	1566
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						32
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	2%	11%	2%
Adj. Flow (vph)	1766	0	0	769	23	246
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1766	0	0	769	23	246
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	114.0			114.0	46.0	46.0
Total Split (%)	71.3%			71.3%	28.8%	28.8%
Maximum Green (s)	108.0			108.0	39.0	39.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	108.2			108.2	25.5	25.5
Actuated g/C Ratio	0.74			0.74	0.17	0.17
v/c Ratio	0.66			0.29	0.08	0.82
Control Delay	12.4			7.4	49.9	72.5
Queue Delay	0.6			0.0	0.0	0.0
Total Delay	13.0			7.4	49.9	72.5
LOS	B			A	D	E
Approach Delay	13.0			7.4	70.6	
Approach LOS	B			A	E	
Queue Length 50th (m)	131.4			37.2	6.0	64.4
Queue Length 95th (m)	201.2			60.3	14.6	96.8
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2664			2638	428	440
Starvation Cap Reductn	475			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.81			0.29	0.05	0.56

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 146.8			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 17.0		Intersection LOS: B	
Intersection Capacity Utilization 74.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	1465	351	100	635	157	218	831	162	100	1050	114
Future Volume (vph)	137	1465	351	100	635	157	218	831	162	100	1050	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.976				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1581	1733	3579	1439	1767	3461	0	1608	3614	1581
Flt Permitted	0.309			0.058			0.079			0.087		
Satd. Flow (perm)	581	3614	1581	106	3579	1439	147	3461	0	147	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			154		15				102
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	137	1465	351	100	635	157	218	831	162	100	1050	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	1465	351	100	635	157	218	993	0	100	1050	114
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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												

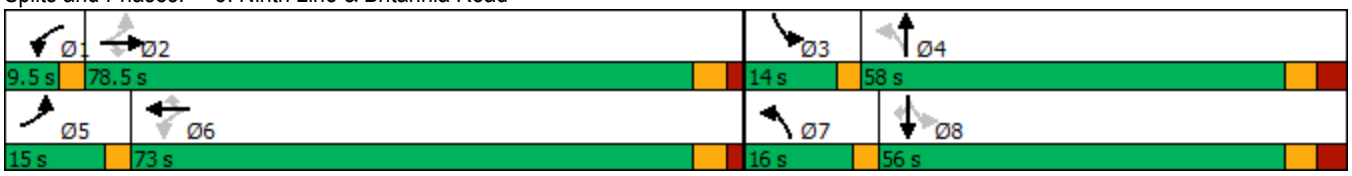


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	15.0	78.5	78.5	9.5	73.0	73.0	16.0	58.0		14.0	56.0	56.0
Total Split (%)	9.4%	49.1%	49.1%	5.9%	45.6%	45.6%	10.0%	36.3%		8.8%	35.0%	35.0%
Maximum Green (s)	12.0	72.4	72.4	6.5	66.9	66.9	13.0	50.3		11.0	48.3	48.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	84.6	72.4	72.4	78.0	68.4	68.4	68.1	51.1		62.4	47.9	47.9
Actuated g/C Ratio	0.53	0.45	0.45	0.49	0.43	0.43	0.43	0.32		0.39	0.30	0.30
v/c Ratio	0.35	0.89	0.44	0.85	0.41	0.22	1.12	0.89		0.68	0.97	0.21
Control Delay	21.7	48.4	17.3	80.1	33.0	4.9	138.6	61.5		53.5	75.3	10.0
Queue Delay	0.0	46.5	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	21.7	94.9	17.3	80.1	33.0	4.9	138.6	61.5		53.5	75.3	10.0
LOS	C	F	B	F	C	A	F	E		D	E	A
Approach Delay		75.8			33.3			75.4			67.7	
Approach LOS		E			C			E			E	
Queue Length 50th (m)	22.8	235.3	42.0	17.0	77.7	0.6	~66.0	165.8		20.2	183.0	2.8
Queue Length 95th (m)	35.5	270.5	69.9	#54.4	96.4	15.5	#123.7	#204.6		#37.6	#229.0	18.5
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	399	1639	803	117	1533	704	194	1119		159	1093	549
Starvation Cap Reductn	0	318	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.34	1.11	0.44	0.85	0.41	0.22	1.12	0.89		0.63	0.96	0.21

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 159.6			
Natural Cycle: 125			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 66.7		Intersection LOS: E	

Intersection Capacity Utilization 105.3% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	131	96	1168	96	21	1113
Future Volume (vph)	131	96	1168	96	21	1113
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.6	3.6
Storage Length (m)	15.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	15.0				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.989			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1412	1436	3385	0	1683	3574
Flt Permitted	0.950				0.163	
Satd. Flow (perm)	1412	1436	3385	0	289	3574
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		99	12			
Link Speed (k/h)	50		70			70
Link Distance (m)	186.9		633.8			289.9
Travel Time (s)	13.5		32.6			14.9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	5%	4%	8%	5%	1%
Adj. Flow (vph)	135	99	1204	99	22	1147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	135	99	1303	0	22	1147
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.09	1.01	1.01	1.03	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru			Thru
Leading Detector (m)	9.0	9.0	10.0		20.0	10.0
Trailing Detector (m)	-1.0	-1.0	0.0		10.0	0.0
Detector 1 Position(m)	-1.0	-1.0	0.0		10.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		10.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.0	24.0	25.0		9.5	25.0
Total Split (s)	34.0	34.0	56.0		10.0	66.0
Total Split (%)	34.0%	34.0%	56.0%		10.0%	66.0%
Maximum Green (s)	28.0	28.0	49.0		7.0	59.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		2.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	14.8	14.8	60.9		68.1	64.1
Actuated g/C Ratio	0.17	0.17	0.69		0.77	0.72
v/c Ratio	0.58	0.31	0.56		0.07	0.45
Control Delay	43.1	9.2	9.6		3.7	6.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	43.1	9.2	9.6		3.7	6.2
LOS	D	A	A		A	A
Approach Delay	28.8		9.6			6.2
Approach LOS	C		A			A
Queue Length 50th (m)	21.6	0.0	45.1		0.7	36.4
Queue Length 95th (m)	39.7	12.7	102.7		3.0	62.1
Internal Link Dist (m)	162.9		609.8			265.9
Turn Bay Length (m)	15.0				120.0	
Base Capacity (vph)	461	536	2323		362	2577
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.29	0.18	0.56		0.06	0.45

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 88.9			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 52.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ninth Line & Osprey Boulevard

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	71	1259	37	32	1079
Future Volume (vph)	49	71	1259	37	32	1079
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.996			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1507	3446	0	1412	3500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1454	1507	3446	0	1412	3500
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	51	74	1311	39	33	1124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	74	1350	0	33	1124
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	49	71	1259	37	32	1079
Future Volume (Veh/h)	49	71	1259	37	32	1079
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	51	74	1311	39	33	1124
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.80	0.80			0.80	
vC, conflicting volume	1958	675			1350	
vC1, stage 1 conf vol	1330					
vC2, stage 2 conf vol	628					
vCu, unblocked vol	1701	101			943	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	90			94	
cM capacity (veh/h)	243	755			575	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	51	74	874	476	33	562	562
Volume Left	51	0	0	0	33	0	0
Volume Right	0	74	0	39	0	0	0
cSH	243	755	1700	1700	575	1700	1700
Volume to Capacity	0.21	0.10	0.51	0.28	0.06	0.33	0.33
Queue Length 95th (m)	6.2	2.6	0.0	0.0	1.5	0.0	0.0
Control Delay (s)	23.7	10.3	0.0	0.0	11.6	0.0	0.0
Lane LOS	C	B			B		
Approach Delay (s)	15.8		0.0		0.3		
Approach LOS	C						

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

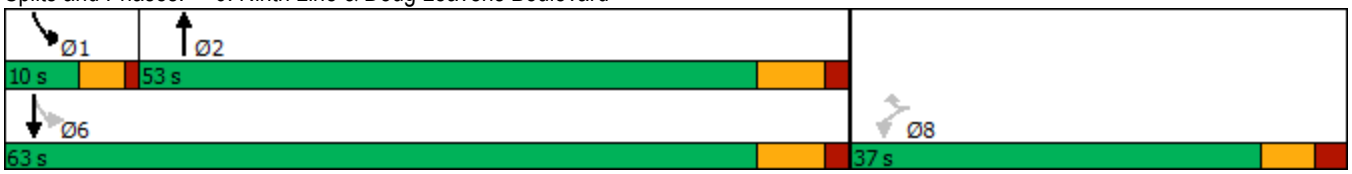
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	148	178	1202	106	72	890
Future Volume (vph)	148	178	1202	106	72	890
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.3	3.5	3.2	3.0	3.5
Storage Length (m)	0.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.988			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1412	1531	3432	0	1649	3535
Flt Permitted	0.950				0.108	
Satd. Flow (perm)	1412	1531	3432	0	187	3535
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		141	13			
Link Speed (k/h)	50		70			70
Link Distance (m)	218.3		843.0			487.0
Travel Time (s)	15.7		43.4			25.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	9%	0%	1%
Adj. Flow (vph)	161	193	1307	115	78	967
Shared Lane Traffic (%)						
Lane Group Flow (vph)	161	193	1422	0	78	967
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.0			3.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.04	1.01	1.06	1.12	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru		Left	Thru
Leading Detector (m)	7.0	7.0	10.0		2.0	10.0
Trailing Detector (m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Position(m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.5	24.5	26.0		9.5	26.0
Total Split (s)	37.0	37.0	53.0		10.0	63.0
Total Split (%)	37.0%	37.0%	53.0%		10.0%	63.0%
Maximum Green (s)	30.5	30.5	46.0		5.5	56.0
Yellow Time (s)	4.0	4.0	5.0		3.5	5.0
All-Red Time (s)	2.5	2.5	2.0		1.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		2.5	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	8.0			8.0
Flash Dont Walk (s)	11.0	11.0	10.0			10.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	16.5	16.5	50.5		60.9	58.4
Actuated g/C Ratio	0.19	0.19	0.59		0.72	0.69
v/c Ratio	0.59	0.47	0.70		0.30	0.40
Control Delay	39.9	13.4	15.7		7.4	6.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	39.9	13.4	15.7		7.4	6.8
LOS	D	B	B		A	A
Approach Delay	25.4		15.7			6.9
Approach LOS	C		B			A
Queue Length 50th (m)	25.0	7.4	85.5		3.3	31.8
Queue Length 95th (m)	44.6	25.5	134.4		9.2	55.1
Internal Link Dist (m)	194.3		819.0			463.0
Turn Bay Length (m)					120.0	
Base Capacity (vph)	533	666	2045		263	2430
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.30	0.29	0.70		0.30	0.40

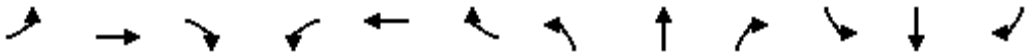
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 84.9			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 13.6		Intersection LOS: B	

Intersection Capacity Utilization 61.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Doug Leavens Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	1460	111	138	689	361	233	811	243	105	662	279
Future Volume (vph)	336	1460	111	138	689	361	233	811	243	105	662	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99									
Frt			0.850		0.948				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	3614	1597	1733	3349	0	1750	3614	1566	1716	3614	1581
Flt Permitted	0.111			0.068			0.120			0.134		
Satd. Flow (perm)	197	3614	1575	124	3349	0	221	3614	1566	242	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		69				105			273
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	336	1460	111	138	689	361	233	811	243	105	662	279
Shared Lane Traffic (%)												
Lane Group Flow (vph)	336	1460	111	138	1050	0	233	811	243	105	662	279
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	32.0	82.5	82.5	17.0	67.5		23.5	49.0	49.0	11.5	37.0	37.0
Total Split (%)	20.0%	51.6%	51.6%	10.6%	42.2%		14.7%	30.6%	30.6%	7.2%	23.1%	23.1%
Maximum Green (s)	29.0	76.4	76.4	14.0	61.4		20.5	42.6	42.6	7.0	30.6	30.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	1.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	4.5	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	94.5	76.9	76.9	76.9	62.3		56.2	41.2	41.2	39.1	30.2	30.2
Actuated g/C Ratio	0.60	0.49	0.49	0.49	0.40		0.36	0.26	0.26	0.25	0.19	0.19
v/c Ratio	0.92	0.82	0.14	0.77	0.77		0.87	0.85	0.50	0.83	0.95	0.53
Control Delay	65.9	39.6	6.0	63.7	43.2		70.6	64.9	31.0	85.8	86.2	10.4
Queue Delay	0.0	14.4	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	54.0	6.0	63.7	43.2		70.6	64.9	31.0	85.8	86.2	10.4
LOS	E	D	A	E	D		E	E	C	F	F	B
Approach Delay		53.3			45.6			59.5			65.9	
Approach LOS		D			D			E			E	
Queue Length 50th (m)	79.7	219.3	2.8	27.7	154.1		58.8	136.2	38.8	24.4	117.0	1.7
Queue Length 95th (m)	#135.1	255.4	14.4	#55.9	183.3		#106.6	163.2	68.4	#55.1	#157.4	29.2
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	394	1773	821	206	1372		279	984	502	126	706	529
Starvation Cap Reductn	0	329	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.85	1.01	0.14	0.67	0.77		0.84	0.82	0.48	0.83	0.94	0.53

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 156.7			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 55.5		Intersection LOS: E	

Intersection Capacity Utilization 97.5% ICU Level of Service F

Analysis Period (min) 15

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

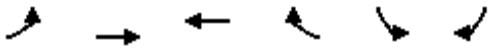
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1786	0	0	1042	14	178
Future Volume (vph)	1786	0	0	1042	14	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3510	2935	1507
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3510	2935	1507
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						37
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	4%	18%	6%
Adj. Flow (vph)	1786	0	0	1042	14	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1786	0	0	1042	14	178
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

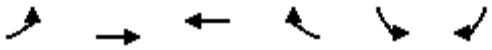
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	120.0			120.0	40.0	40.0
Total Split (%)	75.0%			75.0%	25.0%	25.0%
Maximum Green (s)	114.0			114.0	33.0	33.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	114.2			114.2	19.3	19.3
Actuated g/C Ratio	0.78			0.78	0.13	0.13
v/c Ratio	0.64			0.38	0.04	0.77
Control Delay	9.1			6.0	53.9	70.1
Queue Delay	0.5			0.3	0.0	0.0
Total Delay	9.6			6.3	53.9	70.1
LOS	A			A	D	E
Approach Delay	9.6			6.3	68.9	
Approach LOS	A			A	E	
Queue Length 50th (m)	109.7			45.6	1.9	42.4
Queue Length 95th (m)	170.1			72.8	5.6	70.4
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2788			2735	662	368
Starvation Cap Reductn	499			977	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.78			0.59	0.02	0.48

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 146.5			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 12.3		Intersection LOS: B	
Intersection Capacity Utilization 81.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



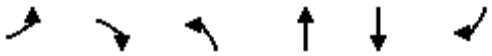
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2334	774	0	40	58
Future Volume (vph)	0	2334	774	0	40	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3510	0	3148	1309
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3510	0	3148	1309
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						58
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	4%	0%	10%	22%
Adj. Flow (vph)	0	2334	774	0	40	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2334	774	0	40	58
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		135.0	135.0		25.0	25.0
Total Split (%)		84.4%	84.4%		15.6%	15.6%
Maximum Green (s)		129.0	129.0		18.0	18.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		130.5	130.5		8.1	8.1
Actuated g/C Ratio		0.89	0.89		0.05	0.05
v/c Ratio		0.73	0.25		0.23	0.46
Control Delay		5.5	1.9		71.1	27.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		5.5	1.9		71.1	27.5
LOS		A	A		E	C
Approach Delay		5.5	1.9		45.3	
Approach LOS		A	A		D	
Queue Length 50th (m)		111.2	16.6		6.2	0.0
Queue Length 95th (m)		161.0	25.5		12.9	15.4
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		3202	3110		385	211
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.73	0.25		0.10	0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147.3			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 5.9		Intersection LOS: A	
Intersection Capacity Utilization 81.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp

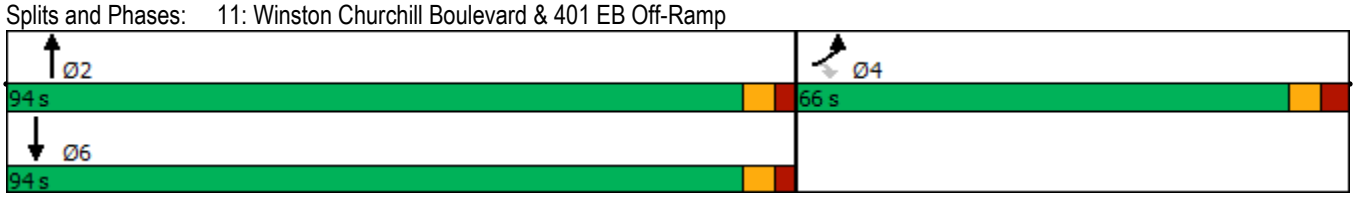


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	387	322	0	1144	1146	0
Future Volume (vph)	387	322	0	1144	1146	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.969	0.850				
Flt Protected	0.962					
Satd. Flow (prot)	3280	1425	0	4980	4885	0
Flt Permitted	0.962					
Satd. Flow (perm)	3280	1425	0	4980	4885	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	24	60				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	0%	3%	5%	0%
Adj. Flow (vph)	407	339	0	1204	1206	0
Shared Lane Traffic (%)		31%				
Lane Group Flow (vph)	512	234	0	1204	1206	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	66.0	66.0		94.0	94.0	
Total Split (%)	41.3%	41.3%		58.8%	58.8%	
Maximum Green (s)	58.5	58.5		87.5	87.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	29.1	29.1		89.1	89.1	
Actuated g/C Ratio	0.23	0.23		0.70	0.70	
v/c Ratio	0.67	0.63		0.35	0.36	
Control Delay	47.5	40.9		8.6	8.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	47.5	40.9		8.6	8.7	
LOS	D	D		A	A	
Approach Delay	45.4			8.6	8.7	
Approach LOS	D			A	A	
Queue Length 50th (m)	61.4	46.2		43.1	43.6	
Queue Length 95th (m)	80.2	77.5		62.1	62.7	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1575	710		3461	3396	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.33	0.33		0.35	0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 128.2			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 17.4		Intersection LOS: B	
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp



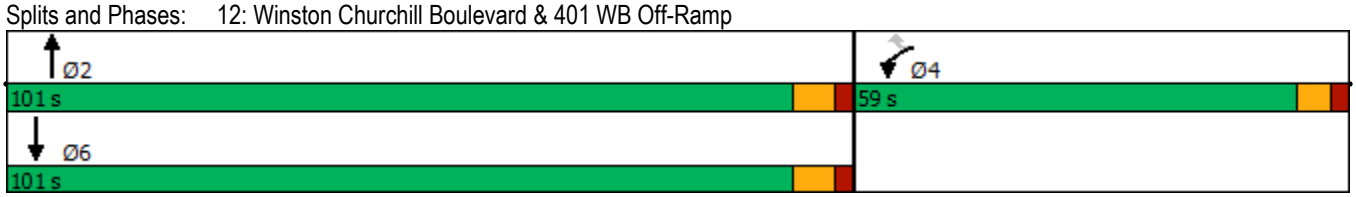
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	239	430	1249	0	0	1538
Future Volume (vph)	239	430	1249	0	0	1538
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.929	0.850				
Flt Protected	0.974					
Satd. Flow (prot)	2973	1298	4980	0	0	4839
Flt Permitted	0.974					
Satd. Flow (perm)	2973	1298	4980	0	0	4839
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	58	58				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	12%	3%	0%	0%	6%
Adj. Flow (vph)	252	453	1315	0	0	1619
Shared Lane Traffic (%)		50%				
Lane Group Flow (vph)	479	226	1315	0	0	1619
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

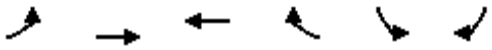
12: Winston Churchill Boulevard & 401 WB Off-Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	59.0	59.0	101.0			101.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Maximum Green (s)	52.5	52.5	93.5			93.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	28.5	28.5	96.3			96.3
Actuated g/C Ratio	0.21	0.21	0.71			0.71
v/c Ratio	0.71	0.71	0.37			0.47
Control Delay	49.0	48.4	8.4			9.5
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	49.0	48.4	8.4			9.5
LOS	D	D	A			A
Approach Delay	48.8		8.4			9.5
Approach LOS	D		A			A
Queue Length 50th (m)	57.0	48.6	45.8			62.4
Queue Length 95th (m)	75.8	81.3	73.3			98.5
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1229	556	3555			3455
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.39	0.41	0.37			0.47

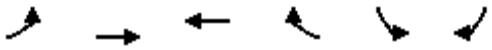
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 134.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	754	1338	0	430	63
Future Volume (vph)	0	754	1338	0	430	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3614	0	1767	1536
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3614	0	1767	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						41
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	1%	4%
Adj. Flow (vph)	0	754	1338	0	430	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	754	1338	0	430	63
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		94.0	94.0		66.0	66.0
Total Split (%)		58.8%	58.8%		41.3%	41.3%
Maximum Green (s)		88.0	88.0		59.0	59.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		88.3	88.3		39.0	39.0
Actuated g/C Ratio		0.63	0.63		0.28	0.28
v/c Ratio		0.33	0.59		0.88	0.14
Control Delay		13.7	17.8		67.5	16.3
Queue Delay		0.0	0.2		0.0	0.0
Total Delay		13.7	18.1		67.5	16.3
LOS		B	B		E	B
Approach Delay		13.7	18.1		61.0	
Approach LOS		B	B		E	
Queue Length 50th (m)		51.0	113.8		120.0	4.7
Queue Length 95th (m)		81.2	173.6		162.4	16.0
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2273	2273		745	671
Starvation Cap Reductn		0	310		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.33	0.68		0.58	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 140.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 25.0		Intersection LOS: C	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

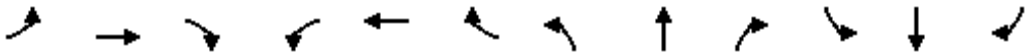
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1148	0	0	1439	57	159
Future Volume (vph)	1148	0	0	1439	57	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3614	1750	1581
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3614	1750	1581
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						133
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	1%	2%	1%
Adj. Flow (vph)	1148	0	0	1439	57	159
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1148	0	0	1439	57	159
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	121.0			121.0	39.0	39.0
Total Split (%)	75.6%			75.6%	24.4%	24.4%
Maximum Green (s)	115.0			115.0	32.0	32.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	115.1			115.1	10.3	10.3
Actuated g/C Ratio	0.83			0.83	0.07	0.07
v/c Ratio	0.38			0.48	0.44	0.66
Control Delay	3.5			4.1	71.5	28.3
Queue Delay	0.0			0.5	0.0	0.0
Total Delay	3.5			4.6	71.5	28.3
LOS	A			A	E	C
Approach Delay	3.5			4.6	39.7	
Approach LOS	A			A	D	
Queue Length 50th (m)	33.1			47.0	16.0	7.2
Queue Length 95th (m)	52.2			73.3	30.9	31.2
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	3004			3004	404	468
Starvation Cap Reductn	0			1009	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.38			0.72	0.14	0.34

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 138.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 6.8		Intersection LOS: A	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	758	315	141	1094	164	206	1100	138	209	1094	173
Future Volume (vph)	173	758	315	141	1094	164	206	1100	138	209	1094	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1597	1785	3614	1551	1767	3550	0	1716	3614	1536
Flt Permitted	0.085			0.216			0.072			0.072		
Satd. Flow (perm)	160	3614	1597	406	3614	1551	134	3550	0	130	3614	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			235			87		9				160
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	173	758	315	141	1094	164	206	1100	138	209	1094	173
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	758	315	141	1094	164	206	1238	0	209	1094	173
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	13.0	63.5	63.5	15.5	66.0	66.0	17.5	63.0		18.0	63.5	63.5
Total Split (%)	8.1%	39.7%	39.7%	9.7%	41.3%	41.3%	10.9%	39.4%		11.3%	39.7%	39.7%
Maximum Green (s)	10.0	57.4	57.4	12.5	59.9	59.9	14.5	55.3		15.0	55.8	55.8
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	71.5	58.4	58.4	74.5	59.9	59.9	74.5	55.3		75.5	55.8	55.8
Actuated g/C Ratio	0.45	0.36	0.36	0.47	0.37	0.37	0.47	0.35		0.47	0.35	0.35
v/c Ratio	1.00	0.57	0.43	0.49	0.81	0.26	0.98	1.00		1.00	0.87	0.27
Control Delay	102.9	43.1	11.8	30.1	50.6	17.0	99.4	77.9		103.4	57.2	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	102.9	43.1	11.8	30.1	50.6	17.0	99.4	77.9		103.4	57.2	7.3
LOS	F	D	B	C	D	B	F	E		F	E	A
Approach Delay		43.5			44.6			80.9			57.9	
Approach LOS		D			D			F			E	
Queue Length 50th (m)	~37.9	108.3	18.1	26.6	172.6	17.0	52.1	~219.3		53.6	180.2	2.9
Queue Length 95th (m)	#91.5	130.6	45.8	41.5	202.0	36.0	#108.2	#271.6		#111.5	210.8	20.4
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	173	1320	732	299	1352	635	210	1232		210	1260	639
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.00	0.57	0.43	0.47	0.81	0.26	0.98	1.00		1.00	0.87	0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 57.3		Intersection LOS: E	

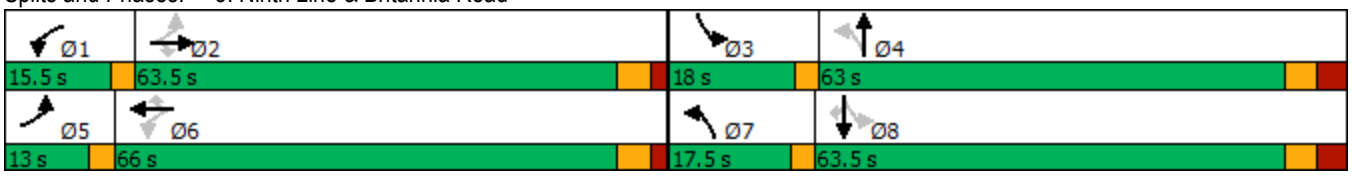
Intersection Capacity Utilization 104.4% ICU Level of Service G

Analysis Period (min) 15

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

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

Splits and Phases: 3: Ninth Line & Britannia Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	73	31	1296	107	46	1466
Future Volume (vph)	73	31	1296	107	46	1466
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.6	3.6
Storage Length (m)	15.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	15.0				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.989			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1359	1463	3487	0	1767	3610
Flt Permitted	0.950				0.138	
Satd. Flow (perm)	1359	1463	3487	0	257	3610
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		32	16			
Link Speed (k/h)	50		70			70
Link Distance (m)	186.9		633.8			289.9
Travel Time (s)	13.5		32.6			14.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	3%	1%	2%	0%	0%
Adj. Flow (vph)	76	32	1350	111	48	1527
Shared Lane Traffic (%)						
Lane Group Flow (vph)	76	32	1461	0	48	1527
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.09	1.01	1.01	1.03	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru			Thru
Leading Detector (m)	9.0	9.0	10.0		20.0	10.0
Trailing Detector (m)	-0.2	-1.0	0.0		10.0	0.0
Detector 1 Position(m)	-0.2	-1.0	0.0		10.0	0.0
Detector 1 Size(m)	9.2	10.0	0.6		10.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.0	24.0	25.0		9.5	25.0
Total Split (s)	24.0	24.0	66.0		10.0	76.0
Total Split (%)	24.0%	24.0%	66.0%		10.0%	76.0%
Maximum Green (s)	18.0	18.0	59.0		7.0	69.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		2.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	11.8	11.8	70.7		80.1	77.1
Actuated g/C Ratio	0.12	0.12	0.74		0.84	0.81
v/c Ratio	0.45	0.15	0.56		0.15	0.52
Control Delay	46.8	14.1	8.7		3.2	5.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	46.8	14.1	8.7		3.2	5.1
LOS	D	B	A		A	A
Approach Delay	37.1		8.7			5.0
Approach LOS	D		A			A
Queue Length 50th (m)	13.4	0.0	68.5		1.3	48.3
Queue Length 95th (m)	27.5	8.3	105.4		4.1	79.4
Internal Link Dist (m)	162.9		609.8			265.9
Turn Bay Length (m)	15.0				120.0	
Base Capacity (vph)	271	317	2591		358	2920
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.28	0.10	0.56		0.13	0.52

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 95.3			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 7.8		Intersection LOS: A	

Intersection Capacity Utilization 53.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Ninth Line & Osprey Boulevard

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	18	1197	64	45	1496
Future Volume (vph)	23	18	1197	64	45	1496
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.992			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1507	3508	0	1426	3570
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1454	1507	3508	0	1426	3570
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	24	19	1247	67	47	1558
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	19	1314	0	47	1558
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	18	1197	64	45	1496
Future Volume (Veh/h)	23	18	1197	64	45	1496
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	24	19	1247	67	47	1558
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.80	0.80			0.80	
vC, conflicting volume	2154	657			1314	
vC1, stage 1 conf vol	1280					
vC2, stage 2 conf vol	873					
vCu, unblocked vol	1946	83			901	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	98			92	
cM capacity (veh/h)	224	776			602	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	24	19	831	483	47	779	779
Volume Left	24	0	0	0	47	0	0
Volume Right	0	19	0	67	0	0	0
cSH	224	776	1700	1700	602	1700	1700
Volume to Capacity	0.11	0.02	0.49	0.28	0.08	0.46	0.46
Queue Length 95th (m)	2.8	0.6	0.0	0.0	2.0	0.0	0.0
Control Delay (s)	23.0	9.8	0.0	0.0	11.5	0.0	0.0
Lane LOS	C	A			B		
Approach Delay (s)	17.1		0.0		0.3		
Approach LOS	C						

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

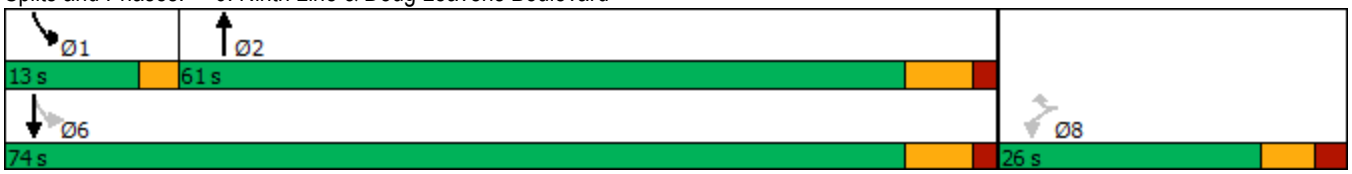
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	111	64	1050	141	129	1414
Future Volume (vph)	111	64	1050	141	129	1414
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.3	3.5	3.2	3.0	3.5
Storage Length (m)	0.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.982			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1561	3465	0	1649	3535
Flt Permitted	0.950				0.167	
Satd. Flow (perm)	1454	1561	3465	0	290	3535
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		67	24			
Link Speed (k/h)	50		70			70
Link Distance (m)	218.3		843.0			487.0
Travel Time (s)	15.7		43.4			25.0
Confl. Peds. (#/hr)				2	2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	116	67	1094	147	134	1473
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	67	1241	0	134	1473
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.0			3.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.04	1.01	1.06	1.12	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru		Left	Thru
Leading Detector (m)	7.0	7.0	10.0		2.0	10.0
Trailing Detector (m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Position(m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

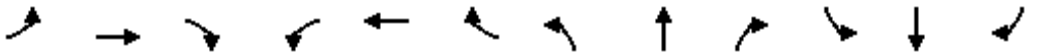
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.5	24.5	26.0		9.5	26.0
Total Split (s)	26.0	26.0	61.0		13.0	74.0
Total Split (%)	26.0%	26.0%	61.0%		13.0%	74.0%
Maximum Green (s)	19.5	19.5	54.0		10.0	67.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.5	2.5	2.0		0.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	8.0			8.0
Flash Dont Walk (s)	11.0	11.0	10.0			10.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	14.6	14.6	61.1		75.6	71.6
Actuated g/C Ratio	0.15	0.15	0.64		0.79	0.74
v/c Ratio	0.53	0.23	0.56		0.37	0.56
Control Delay	45.5	10.6	11.8		5.9	6.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	45.5	10.6	11.8		5.9	6.9
LOS	D	B	B		A	A
Approach Delay	32.7		11.8			6.8
Approach LOS	C		B			A
Queue Length 50th (m)	20.5	0.0	63.0		4.6	54.1
Queue Length 95th (m)	37.9	11.2	103.3		11.7	89.8
Internal Link Dist (m)	194.3		819.0			463.0
Turn Bay Length (m)					120.0	
Base Capacity (vph)	317	393	2210		397	2631
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.37	0.17	0.56		0.34	0.56

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 96.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 10.4		Intersection LOS: B	

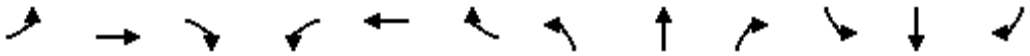
Intersection Capacity Utilization 59.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Doug Leavens Boulevard





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	212	812	238	243	1613	138	125	771	208	285	973	330
Future Volume (vph)	212	812	238	243	1613	138	125	771	208	285	973	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.98			
Frt			0.850		0.988				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3544	1597	1767	3568	0	1767	3614	1581	1785	3614	1581
Flt Permitted	0.052			0.249			0.119			0.109		
Satd. Flow (perm)	97	3544	1597	463	3568	0	221	3614	1556	205	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			132		8				103			170
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	212	812	238	243	1613	138	125	771	208	285	973	330
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	812	238	243	1751	0	125	771	208	285	973	330
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	16.0	65.5	65.5	34.5	84.0		12.0	40.0	40.0	20.0	48.0	48.0
Total Split (%)	10.0%	40.9%	40.9%	21.6%	52.5%		7.5%	25.0%	25.0%	12.5%	30.0%	30.0%
Maximum Green (s)	13.0	59.4	59.4	31.5	77.9		9.0	33.6	33.6	17.0	41.6	41.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	92.3	76.2	76.2	94.9	77.9		46.0	33.6	33.6	57.0	41.6	41.6
Actuated g/C Ratio	0.58	0.48	0.48	0.59	0.49		0.29	0.21	0.21	0.36	0.26	0.26
v/c Ratio	1.11	0.48	0.29	0.62	1.01		0.83	1.02	0.51	1.19	1.04	0.62
Control Delay	139.1	30.2	12.3	21.6	63.2		78.5	98.2	32.4	156.9	95.6	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.1	30.2	12.3	21.6	63.2		78.5	98.2	32.4	156.9	95.6	29.9
LOS	F	C	B	C	E		E	F	C	F	F	C
Approach Delay		45.1			58.1			83.6			93.0	
Approach LOS		D			E			F			F	
Queue Length 50th (m)	~63.6	95.6	19.6	35.7	~308.3		29.0	~142.9	30.9	~96.3	~183.6	47.6
Queue Length 95th (m)	#122.6	122.0	41.5	51.2	#364.6		#61.9	#186.0	59.5	#159.5	#227.8	84.1
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	191	1686	829	537	1741		150	758	408	240	939	536
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.48	0.29	0.45	1.01		0.83	1.02	0.51	1.19	1.04	0.62

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 120	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 69.4	Intersection LOS: E

Intersection Capacity Utilization 114.9% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

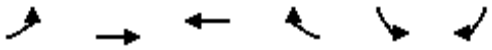
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1138	0	0	2029	85	202
Future Volume (vph)	1138	0	0	2029	85	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3614	3362	1597
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3614	3362	1597
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						148
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	1138	0	0	2029	85	202
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1138	0	0	2029	85	202
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

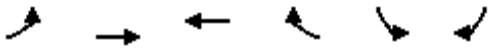
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	126.0			126.0	34.0	34.0
Total Split (%)	78.8%			78.8%	21.3%	21.3%
Maximum Green (s)	120.0			120.0	27.0	27.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	120.2			120.2	11.9	11.9
Actuated g/C Ratio	0.83			0.83	0.08	0.08
v/c Ratio	0.38			0.68	0.31	0.76
Control Delay	3.9			6.8	64.9	37.4
Queue Delay	0.0			1.3	0.0	0.0
Total Delay	3.9			8.2	64.9	37.4
LOS	A			A	E	D
Approach Delay	3.9			8.2	45.5	
Approach LOS	A			A	D	
Queue Length 50th (m)	34.7			96.4	12.6	15.8
Queue Length 95th (m)	61.9			167.7	21.7	44.3
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2963			2992	626	418
Starvation Cap Reductn	0			695	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.38			0.88	0.14	0.48

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 145.1			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 92.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	974	1985	0	232	440
Future Volume (vph)	0	974	1985	0	232	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3510	3614	0	3429	1597
Flt Permitted					0.950	
Satd. Flow (perm)	0	3510	3614	0	3429	1597
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						13
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	0%	1%	0%
Adj. Flow (vph)	0	974	1985	0	232	440
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	974	1985	0	232	440
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm

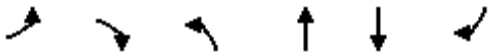


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		104.0	104.0		56.0	56.0
Total Split (%)		65.0%	65.0%		35.0%	35.0%
Maximum Green (s)		98.0	98.0		49.0	49.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		98.1	98.1		44.9	44.9
Actuated g/C Ratio		0.63	0.63		0.29	0.29
v/c Ratio		0.44	0.87		0.24	0.94
Control Delay		16.1	30.2		42.8	81.2
Queue Delay		0.0	7.8		0.0	0.0
Total Delay		16.1	38.0		42.8	81.2
LOS		B	D		D	F
Approach Delay		16.1	38.0		68.0	
Approach LOS		B	D		E	
Queue Length 50th (m)		88.3	288.6		29.9	137.3
Queue Length 95th (m)		104.4	328.5		41.8	#201.8
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		2207	2272		1078	511
Starvation Cap Reductn		0	272		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.44	0.99		0.22	0.86

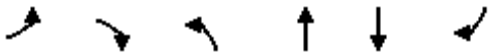
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 156			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 37.7		Intersection LOS: D	
Intersection Capacity Utilization 92.9%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	464	345	0	1599	1869	0
Future Volume (vph)	464	345	0	1599	1869	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.975	0.850				
Flt Protected	0.960					
Satd. Flow (prot)	3065	1411	0	4980	5079	0
Flt Permitted	0.960					
Satd. Flow (perm)	3065	1411	0	4980	5079	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	15	*171				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	13%	3%	0%	3%	1%	0%
Adj. Flow (vph)	478	356	0	1648	1927	0
Shared Lane Traffic (%)		27%				
Lane Group Flow (vph)	574	260	0	1648	1927	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

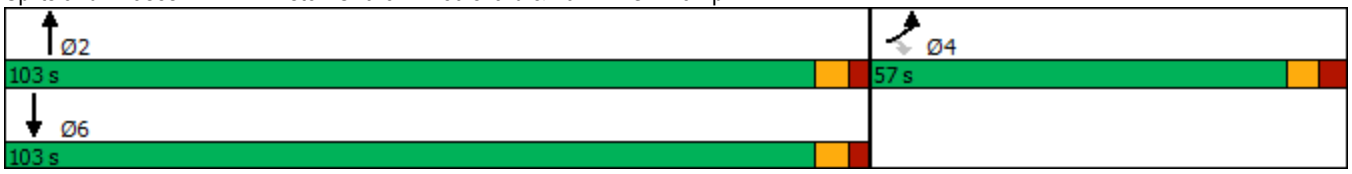


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	57.0	57.0		103.0	103.0	
Total Split (%)	35.6%	35.6%		64.4%	64.4%	
Maximum Green (s)	49.5	49.5		96.5	96.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	36.6	36.6		98.2	98.2	
Actuated g/C Ratio	0.25	0.25		0.68	0.68	
v/c Ratio	0.73	0.54		0.49	0.56	
Control Delay	54.0	19.7		12.4	13.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	54.0	19.7		12.4	13.5	
LOS	D	B		B	B	
Approach Delay	43.3			12.4	13.5	
Approach LOS	D			B	B	
Queue Length 50th (m)	80.2	24.1		81.0	102.1	
Queue Length 95th (m)	101.2	55.7		114.3	142.6	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1112	617		3377	3444	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.52	0.42		0.49	0.56	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 144.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 78.3%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	867	869	1764	0	0	1421
Future Volume (vph)	867	869	1764	0	0	1421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.959	0.850				
Flt Protected	0.965					
Satd. Flow (prot)	3322	1411	4839	0	0	4932
Flt Permitted	0.965					
Satd. Flow (perm)	3322	1411	4839	0	0	4932
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	8	*304				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	6%	0%	0%	4%
Adj. Flow (vph)	894	896	1819	0	0	1465
Shared Lane Traffic (%)		37%				
Lane Group Flow (vph)	1226	564	1819	0	0	1465
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

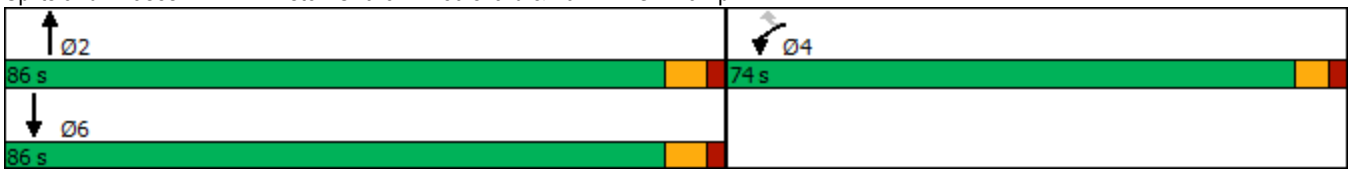
12: Winston Churchill Boulevard & 401 WB Off-Ramp

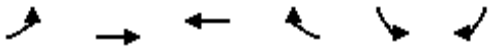
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	74.0	74.0	86.0			86.0
Total Split (%)	46.3%	46.3%	53.8%			53.8%
Maximum Green (s)	67.5	67.5	78.5			78.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	66.0	66.0	81.1			81.1
Actuated g/C Ratio	0.42	0.42	0.52			0.52
v/c Ratio	0.88	0.73	0.73			0.58
Control Delay	49.7	22.7	32.1			27.7
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	49.7	22.7	32.1			27.7
LOS	D	C	C			C
Approach Delay	41.2		32.1			27.7
Approach LOS	D		C			C
Queue Length 50th (m)	187.8	82.5	173.1			123.8
Queue Length 95th (m)	219.8	138.5	191.9			139.2
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1465	790	2497			2545
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.84	0.71	0.73			0.58

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 157.1			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 34.0		Intersection LOS: C	
Intersection Capacity Utilization 78.3%		ICU Level of Service D	
Analysis Period (min) 15			

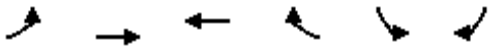
* User Entered Value

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	1547	676	0	462	27
Future Volume (vph)	0	1547	676	0	462	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3579	0	1684	1210
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3579	0	1684	1210
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						20
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	0%	6%	32%
Adj. Flow (vph)	0	1547	676	0	462	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1547	676	0	462	27
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		96.0	96.0		64.0	64.0
Total Split (%)		60.0%	60.0%		40.0%	40.0%
Maximum Green (s)		90.0	90.0		57.0	57.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		90.4	90.4		44.7	44.7
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.70	0.31		0.91	0.07
Control Delay		23.2	15.3		72.6	16.8
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		23.2	15.3		72.6	16.8
LOS		C	B		E	B
Approach Delay		23.2	15.3		69.5	
Approach LOS		C	B		E	
Queue Length 50th (m)		166.0	51.0		137.2	1.5
Queue Length 95th (m)		232.2	76.0		184.3	9.2
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2205	2183		650	479
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.70	0.31		0.71	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 148.1			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 29.6		Intersection LOS: C	
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

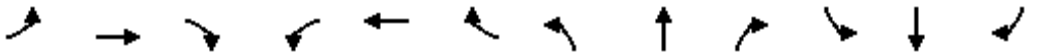
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1956	0	0	848	25	271
Future Volume (vph)	1956	0	0	848	25	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3579	1608	1566
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3579	1608	1566
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						21
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	2%	11%	2%
Adj. Flow (vph)	1956	0	0	848	25	271
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1956	0	0	848	25	271
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

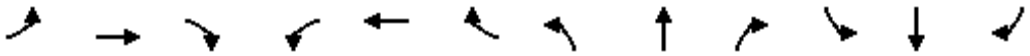
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	114.0			114.0	46.0	46.0
Total Split (%)	71.3%			71.3%	28.8%	28.8%
Maximum Green (s)	108.0			108.0	39.0	39.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	108.3			108.3	28.9	28.9
Actuated g/C Ratio	0.72			0.72	0.19	0.19
v/c Ratio	0.75			0.33	0.08	0.85
Control Delay	16.2			8.7	48.8	77.9
Queue Delay	1.3			0.0	0.0	0.0
Total Delay	17.6			8.7	48.8	77.9
LOS	B			A	D	E
Approach Delay	17.6			8.7	75.4	
Approach LOS	B			A	E	
Queue Length 50th (m)	181.3			47.2	6.5	77.0
Queue Length 95th (m)	261.0			71.3	15.4	111.7
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2604			2579	418	423
Starvation Cap Reductn	413			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.89			0.33	0.06	0.64

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.2			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 20.7		Intersection LOS: C	
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	1641	356	102	702	159	224	848	165	102	1074	117
Future Volume (vph)	139	1641	356	102	702	159	224	848	165	102	1074	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.976				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1581	1733	3579	1439	1767	3461	0	1608	3614	1581
Flt Permitted	0.274			0.059			0.078			0.083		
Satd. Flow (perm)	515	3614	1581	108	3579	1439	145	3461	0	140	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144			142		15				103
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	139	1641	356	102	702	159	224	848	165	102	1074	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	1641	356	102	702	159	224	1013	0	102	1074	117
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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												

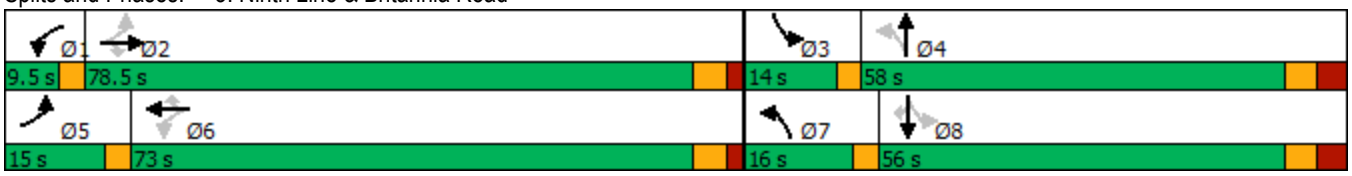


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	15.0	78.5	78.5	9.5	73.0	73.0	16.0	58.0		14.0	56.0	56.0
Total Split (%)	9.4%	49.1%	49.1%	5.9%	45.6%	45.6%	10.0%	36.3%		8.8%	35.0%	35.0%
Maximum Green (s)	12.0	72.4	72.4	6.5	66.9	66.9	13.0	50.3		11.0	48.3	48.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	84.7	72.4	72.4	77.9	68.3	68.3	68.4	51.4		62.9	48.3	48.3
Actuated g/C Ratio	0.53	0.45	0.45	0.49	0.43	0.43	0.43	0.32		0.39	0.30	0.30
v/c Ratio	0.39	1.00	0.45	0.86	0.46	0.23	1.16	0.90		0.70	0.99	0.21
Control Delay	22.5	66.3	19.0	81.7	34.1	6.5	150.9	63.2		56.2	78.8	10.3
Queue Delay	0.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	22.5	102.3	19.0	81.7	34.1	6.5	150.9	63.2		56.2	78.8	10.3
LOS	C	F	B	F	C	A	F	E		E	E	B
Approach Delay		83.2			34.6			79.1			70.8	
Approach LOS		F			C			E			E	
Queue Length 50th (m)	23.1	~289.0	47.2	17.4	88.1	3.3	~70.8	171.0		20.6	189.0	3.3
Queue Length 95th (m)	36.1	#344.3	75.8	#55.9	108.0	18.4	#129.1	#212.1		#42.2	#237.8	19.3
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	368	1635	794	118	1528	696	193	1121		156	1090	549
Starvation Cap Reductn	0	290	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.38	1.22	0.45	0.86	0.46	0.23	1.16	0.90		0.65	0.99	0.21

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 71.1		Intersection LOS: E	

Intersection Capacity Utilization 111.3% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	134	97	1191	99	22	1138
Future Volume (vph)	134	97	1191	99	22	1138
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.6	3.6
Storage Length (m)	15.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	15.0				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.988			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1412	1436	3381	0	1683	3574
Flt Permitted	0.950				0.156	
Satd. Flow (perm)	1412	1436	3381	0	276	3574
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		100	13			
Link Speed (k/h)	50		70			70
Link Distance (m)	186.9		633.8			289.9
Travel Time (s)	13.5		32.6			14.9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	5%	4%	8%	5%	1%
Adj. Flow (vph)	138	100	1228	102	23	1173
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	100	1330	0	23	1173
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.09	1.01	1.01	1.03	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru			Thru
Leading Detector (m)	9.0	9.0	10.0		20.0	10.0
Trailing Detector (m)	-1.0	-1.0	0.0		10.0	0.0
Detector 1 Position(m)	-1.0	-1.0	0.0		10.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		10.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.0	24.0	25.0		9.5	25.0
Total Split (s)	34.0	34.0	56.0		10.0	66.0
Total Split (%)	34.0%	34.0%	56.0%		10.0%	66.0%
Maximum Green (s)	28.0	28.0	49.0		7.0	59.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		2.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	15.0	15.0	60.9		68.0	64.0
Actuated g/C Ratio	0.17	0.17	0.68		0.76	0.72
v/c Ratio	0.58	0.31	0.57		0.07	0.46
Control Delay	43.3	9.1	9.9		3.8	6.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	43.3	9.1	9.9		3.8	6.4
LOS	D	A	A		A	A
Approach Delay	28.9		9.9			6.3
Approach LOS	C		A			A
Queue Length 50th (m)	22.1	0.0	47.1		0.8	38.0
Queue Length 95th (m)	40.3	12.7	107.0		3.2	64.9
Internal Link Dist (m)	162.9		609.8			265.9
Turn Bay Length (m)	15.0				120.0	
Base Capacity (vph)	460	535	2316		353	2571
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.30	0.19	0.57		0.07	0.46

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 89			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 10.0		Intersection LOS: B	
Intersection Capacity Utilization 53.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ninth Line & Osprey Boulevard

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	50	73	1283	38	33	1103
Future Volume (vph)	50	73	1283	38	33	1103
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.996			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1507	3446	0	1412	3500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1454	1507	3446	0	1412	3500
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	52	76	1336	40	34	1149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	76	1376	0	34	1149
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	50	73	1283	38	33	1103
Future Volume (Veh/h)	50	73	1283	38	33	1103
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	52	76	1336	40	34	1149
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.79	0.79			0.79	
vC, conflicting volume	1998	688			1376	
vC1, stage 1 conf vol	1356					
vC2, stage 2 conf vol	642					
vCu, unblocked vol	1737	84			952	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	90			94	
cM capacity (veh/h)	237	765			564	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	52	76	891	485	34	574	574
Volume Left	52	0	0	0	34	0	0
Volume Right	0	76	0	40	0	0	0
cSH	237	765	1700	1700	564	1700	1700
Volume to Capacity	0.22	0.10	0.52	0.29	0.06	0.34	0.34
Queue Length 95th (m)	6.5	2.6	0.0	0.0	1.5	0.0	0.0
Control Delay (s)	24.4	10.2	0.0	0.0	11.8	0.0	0.0
Lane LOS	C	B			B		
Approach Delay (s)	16.0		0.0		0.3		
Approach LOS	C						

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

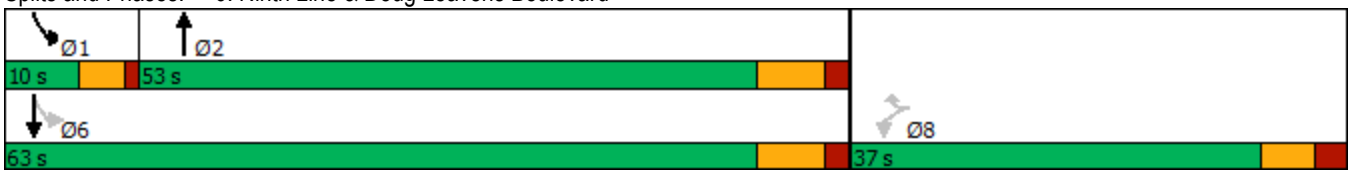
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	151	182	1224	108	74	911
Future Volume (vph)	151	182	1224	108	74	911
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.3	3.5	3.2	3.0	3.5
Storage Length (m)	0.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.988			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1412	1531	3432	0	1649	3535
Flt Permitted	0.950				0.102	
Satd. Flow (perm)	1412	1531	3432	0	177	3535
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		139	13			
Link Speed (k/h)	50		70			70
Link Distance (m)	218.3		843.0			487.0
Travel Time (s)	15.7		43.4			25.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	9%	0%	1%
Adj. Flow (vph)	164	198	1330	117	80	990
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	198	1447	0	80	990
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.0			3.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.04	1.01	1.06	1.12	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru		Left	Thru
Leading Detector (m)	7.0	7.0	10.0		2.0	10.0
Trailing Detector (m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Position(m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

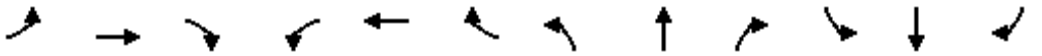
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.5	24.5	26.0		9.5	26.0
Total Split (s)	37.0	37.0	53.0		10.0	63.0
Total Split (%)	37.0%	37.0%	53.0%		10.0%	63.0%
Maximum Green (s)	30.5	30.5	46.0		5.5	56.0
Yellow Time (s)	4.0	4.0	5.0		3.5	5.0
All-Red Time (s)	2.5	2.5	2.0		1.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		2.5	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	8.0			8.0
Flash Dont Walk (s)	11.0	11.0	10.0			10.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	16.7	16.7	50.3		60.7	58.2
Actuated g/C Ratio	0.20	0.20	0.59		0.71	0.69
v/c Ratio	0.59	0.48	0.71		0.31	0.41
Control Delay	40.0	14.2	16.1		7.7	7.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	40.0	14.2	16.1		7.7	7.0
LOS	D	B	B		A	A
Approach Delay	25.9		16.1			7.0
Approach LOS	C		B			A
Queue Length 50th (m)	25.6	8.5	88.7		3.4	33.1
Queue Length 95th (m)	45.1	27.0	139.3		9.6	57.3
Internal Link Dist (m)	194.3		819.0			463.0
Turn Bay Length (m)					120.0	
Base Capacity (vph)	533	664	2040		257	2424
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.31	0.30	0.71		0.31	0.41

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 84.9			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 14.0		Intersection LOS: B	

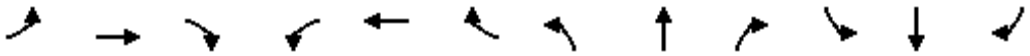
Intersection Capacity Utilization 62.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Doug Leavens Boulevard





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	341	1607	114	141	763	362	239	824	247	106	677	286
Future Volume (vph)	341	1607	114	141	763	362	239	824	247	106	677	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99									
Frt			0.850		0.952				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	3614	1597	1733	3362	0	1750	3614	1566	1716	3614	1581
Flt Permitted	0.079			0.065			0.119			0.131		
Satd. Flow (perm)	140	3614	1575	119	3362	0	219	3614	1566	237	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		57				105			274
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	341	1607	114	141	763	362	239	824	247	106	677	286
Shared Lane Traffic (%)												
Lane Group Flow (vph)	341	1607	114	141	1125	0	239	824	247	106	677	286
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	32.0	82.5	82.5	17.0	67.5		23.5	49.0	49.0	11.5	37.0	37.0
Total Split (%)	20.0%	51.6%	51.6%	10.6%	42.2%		14.7%	30.6%	30.6%	7.2%	23.1%	23.1%
Maximum Green (s)	29.0	76.4	76.4	14.0	61.4		20.5	42.6	42.6	7.0	30.6	30.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	1.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	4.5	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	95.5	77.6	77.6	76.3	61.4		56.8	41.9	41.9	39.5	30.6	30.6
Actuated g/C Ratio	0.60	0.49	0.49	0.48	0.39		0.36	0.26	0.26	0.25	0.19	0.19
v/c Ratio	0.96	0.91	0.14	0.80	0.84		0.89	0.86	0.50	0.85	0.97	0.54
Control Delay	81.9	46.0	6.3	68.7	48.8		74.9	65.9	31.7	89.6	90.0	11.1
Queue Delay	0.0	43.1	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.9	89.1	6.3	68.7	48.8		74.9	65.9	31.7	89.6	90.0	11.1
LOS	F	F	A	E	D		E	E	C	F	F	B
Approach Delay		83.4			51.0			61.1			68.9	
Approach LOS		F			D			E			E	
Queue Length 50th (m)	92.5	260.2	3.3	29.4	173.2		61.3	139.0	40.1	24.6	120.2	3.3
Queue Length 95th (m)	#156.4	#301.4	14.9	#60.2	204.5		#111.8	166.2	70.0	#55.8	#162.9	31.9
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	367	1771	820	201	1339		276	973	497	124	699	526
Starvation Cap Reductn	0	301	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.93	1.09	0.14	0.70	0.84		0.87	0.85	0.50	0.85	0.97	0.54

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 158.3			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 68.4		Intersection LOS: E	

Intersection Capacity Utilization 101.3% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

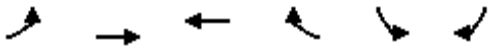
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1953	0	0	1149	15	197
Future Volume (vph)	1953	0	0	1149	15	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3510	2935	1507
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3510	2935	1507
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						27
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	4%	18%	6%
Adj. Flow (vph)	1953	0	0	1149	15	197
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1953	0	0	1149	15	197
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

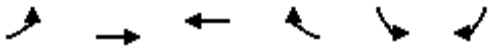
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	120.0			120.0	40.0	40.0
Total Split (%)	75.0%			75.0%	25.0%	25.0%
Maximum Green (s)	114.0			114.0	33.0	33.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	114.2			114.2	22.4	22.4
Actuated g/C Ratio	0.76			0.76	0.15	0.15
v/c Ratio	0.72			0.43	0.03	0.79
Control Delay	12.0			7.4	52.7	75.1
Queue Delay	0.8			0.4	0.0	0.0
Total Delay	12.9			7.8	52.7	75.1
LOS	B			A	D	E
Approach Delay	12.9			7.8	73.5	
Approach LOS	B			A	E	
Queue Length 50th (m)	147.8			58.7	2.1	52.2
Queue Length 95th (m)	226.2			92.2	5.7	81.5
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2731			2679	648	353
Starvation Cap Reductn	440			913	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.85			0.65	0.02	0.56

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 149.6			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 87.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



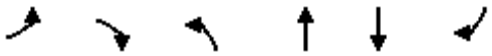
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2557	853	0	44	64
Future Volume (vph)	0	2557	853	0	44	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3510	0	3148	1309
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3510	0	3148	1309
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						64
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	4%	0%	10%	22%
Adj. Flow (vph)	0	2557	853	0	44	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2557	853	0	44	64
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		135.0	135.0		25.0	25.0
Total Split (%)		84.4%	84.4%		15.6%	15.6%
Maximum Green (s)		129.0	129.0		18.0	18.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		129.0	129.0		8.3	8.3
Actuated g/C Ratio		0.86	0.86		0.06	0.06
v/c Ratio		0.82	0.28		0.25	0.48
Control Delay		8.4	2.3		71.5	27.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		8.4	2.3		71.5	27.3
LOS		A	A		E	C
Approach Delay		8.4	2.3		45.3	
Approach LOS		A	A		D	
Queue Length 50th (m)		150.0	19.3		6.9	0.0
Queue Length 95th (m)		219.8	29.3		13.9	16.0
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		3102	3012		377	213
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.82	0.28		0.12	0.30

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.3			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 87.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp

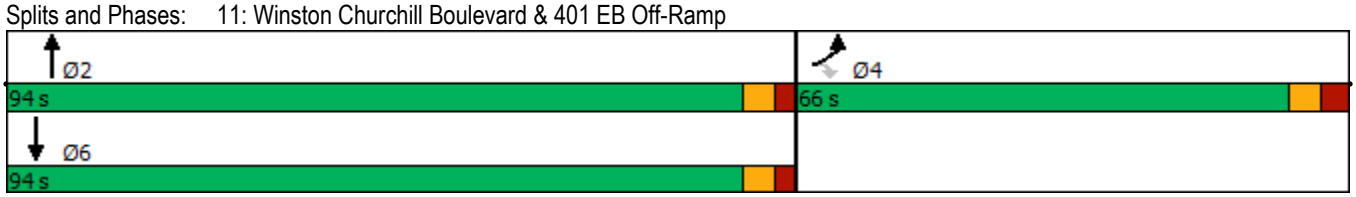


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	427	356	0	1211	1311	0
Future Volume (vph)	427	356	0	1211	1311	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.969	0.850				
Flt Protected	0.962					
Satd. Flow (prot)	3280	1425	0	4980	4885	0
Flt Permitted	0.962					
Satd. Flow (perm)	3280	1425	0	4980	4885	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	24	39				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	0%	3%	5%	0%
Adj. Flow (vph)	449	375	0	1275	1380	0
Shared Lane Traffic (%)		31%				
Lane Group Flow (vph)	565	259	0	1275	1380	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	66.0	66.0		94.0	94.0	
Total Split (%)	41.3%	41.3%		58.8%	58.8%	
Maximum Green (s)	58.5	58.5		87.5	87.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	32.6	32.6		89.2	89.2	
Actuated g/C Ratio	0.25	0.25		0.68	0.68	
v/c Ratio	0.68	0.68		0.38	0.42	
Control Delay	47.1	47.1		10.3	10.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	47.1	47.1		10.3	10.7	
LOS	D	D		B	B	
Approach Delay	47.1			10.3	10.7	
Approach LOS	D			B	B	
Queue Length 50th (m)	69.4	60.3		49.9	56.1	
Queue Length 95th (m)	88.8	93.9		77.1	86.0	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1533	681		3368	3304	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.37	0.38		0.38	0.42	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 131.9			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 19.2		Intersection LOS: B	
Intersection Capacity Utilization 54.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp

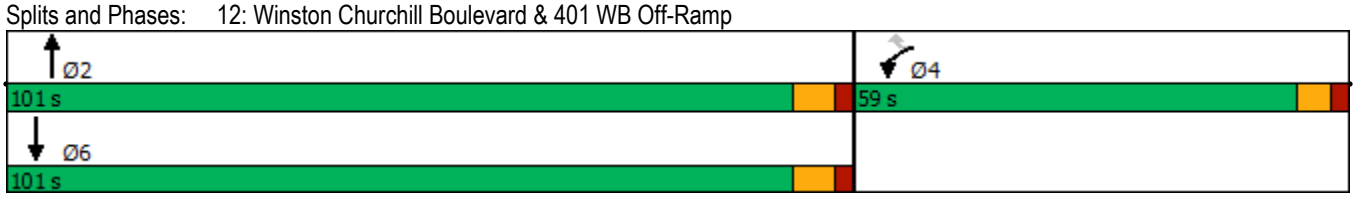


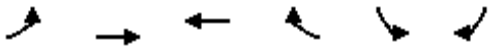
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	262	475	1323	0	0	1762
Future Volume (vph)	262	475	1323	0	0	1762
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.929	0.850				
Flt Protected	0.974					
Satd. Flow (prot)	2973	1298	4980	0	0	4839
Flt Permitted	0.974					
Satd. Flow (perm)	2973	1298	4980	0	0	4839
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	48	48				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	12%	3%	0%	0%	6%
Adj. Flow (vph)	276	500	1393	0	0	1855
Shared Lane Traffic (%)		50%				
Lane Group Flow (vph)	526	250	1393	0	0	1855
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	59.0	59.0	101.0			101.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Maximum Green (s)	52.5	52.5	93.5			93.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	32.5	32.5	96.3			96.3
Actuated g/C Ratio	0.23	0.23	0.69			0.69
v/c Ratio	0.72	0.74	0.40			0.55
Control Delay	49.9	52.5	10.1			12.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	49.9	52.5	10.1			12.1
LOS	D	D	B			B
Approach Delay	50.7		10.1			12.1
Approach LOS	D		B			B
Queue Length 50th (m)	66.1	60.2	55.7			86.7
Queue Length 95th (m)	85.8	95.2	88.3			134.8
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1189	535	3455			3357
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.44	0.47	0.40			0.55

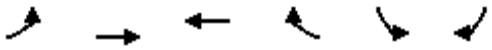
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 138.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 54.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	823	1493	0	452	70
Future Volume (vph)	0	823	1493	0	452	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3614	0	1767	1536
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3614	0	1767	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						28
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	1%	4%
Adj. Flow (vph)	0	823	1493	0	452	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	823	1493	0	452	70
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		94.0	94.0		66.0	66.0
Total Split (%)		58.8%	58.8%		41.3%	41.3%
Maximum Green (s)		88.0	88.0		59.0	59.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		88.4	88.4		41.5	41.5
Actuated g/C Ratio		0.62	0.62		0.29	0.29
v/c Ratio		0.37	0.67		0.88	0.15
Control Delay		15.2	21.0		67.3	23.3
Queue Delay		0.0	0.4		0.0	0.0
Total Delay		15.2	21.5		67.3	23.3
LOS		B	C		E	C
Approach Delay		15.2	21.5		61.4	
Approach LOS		B	C		E	
Queue Length 50th (m)		60.0	143.1		128.3	9.1
Queue Length 95th (m)		96.0	219.8		171.8	21.2
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2235	2235		732	653
Starvation Cap Reductn		0	282		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.37	0.76		0.62	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 143			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 27.0		Intersection LOS: C	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

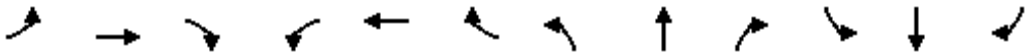
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1233	0	0	1607	63	174
Future Volume (vph)	1233	0	0	1607	63	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3614	1750	1581
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3614	1750	1581
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						113
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	1%	2%	1%
Adj. Flow (vph)	1233	0	0	1607	63	174
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1233	0	0	1607	63	174
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	121.0			121.0	39.0	39.0
Total Split (%)	75.6%			75.6%	24.4%	24.4%
Maximum Green (s)	115.0			115.0	32.0	32.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	115.1			115.1	12.0	12.0
Actuated g/C Ratio	0.82			0.82	0.09	0.09
v/c Ratio	0.42			0.54	0.42	0.73
Control Delay	4.2			5.2	68.9	41.1
Queue Delay	0.0			0.7	0.0	0.0
Total Delay	4.2			5.9	68.9	41.1
LOS	A			A	E	D
Approach Delay	4.2			5.9	48.5	
Approach LOS	A			A	D	
Queue Length 50th (m)	39.7			61.3	17.7	17.2
Queue Length 95th (m)	67.7			103.2	33.4	43.4
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2969			2969	400	448
Starvation Cap Reductn	0			912	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.42			0.78	0.16	0.39

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 140.1			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 8.5		Intersection LOS: A	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	819	320	144	1231	167	211	1123	141	211	1136	175
Future Volume (vph)	176	819	320	144	1231	167	211	1123	141	211	1136	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1597	1785	3614	1551	1767	3550	0	1716	3614	1536
Flt Permitted	0.068			0.186			0.072			0.072		
Satd. Flow (perm)	128	3614	1597	349	3614	1551	134	3550	0	130	3614	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			221			79		9				155
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	176	819	320	144	1231	167	211	1123	141	211	1136	175
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	819	320	144	1231	167	211	1264	0	211	1136	175
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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												

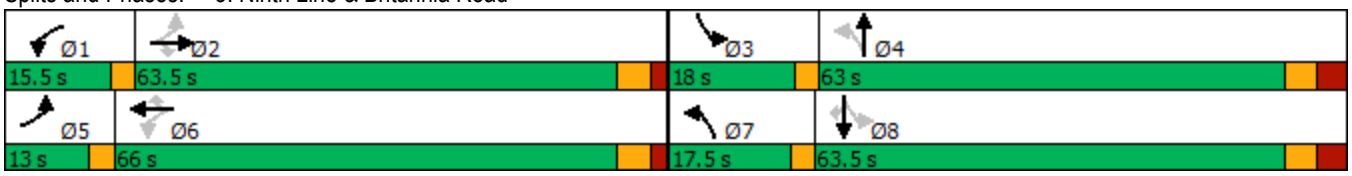


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	13.0	63.5	63.5	15.5	66.0	66.0	17.5	63.0		18.0	63.5	63.5
Total Split (%)	8.1%	39.7%	39.7%	9.7%	41.3%	41.3%	10.9%	39.4%		11.3%	39.7%	39.7%
Maximum Green (s)	10.0	57.4	57.4	12.5	59.9	59.9	14.5	55.3		15.0	55.8	55.8
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	71.5	58.4	58.4	74.5	59.9	59.9	74.5	55.3		75.5	55.8	55.8
Actuated g/C Ratio	0.45	0.36	0.36	0.47	0.37	0.37	0.47	0.35		0.47	0.35	0.35
v/c Ratio	1.10	0.62	0.44	0.54	0.91	0.27	1.00	1.03		1.00	0.90	0.28
Control Delay	136.9	44.4	13.6	32.0	58.4	19.0	105.6	82.7		105.8	60.2	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	136.9	44.4	13.6	32.0	58.4	19.0	105.6	82.7		105.8	60.2	8.2
LOS	F	D	B	C	E	B	F	F		F	E	A
Approach Delay		49.3			51.6			86.0			60.6	
Approach LOS		D			D			F			E	
Queue Length 50th (m)	~49.5	119.6	22.9	27.2	205.5	19.5	~54.3	~235.4		~54.8	190.3	4.4
Queue Length 95th (m)	#102.9	143.1	52.0	42.2	#239.2	38.9	#112.4	#280.8		#112.9	222.0	22.3
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	160	1318	722	276	1352	630	210	1232		210	1260	636
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.10	0.62	0.44	0.52	0.91	0.27	1.00	1.03		1.00	0.90	0.28

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 115	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 62.1	Intersection LOS: E

Intersection Capacity Utilization 109.2% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	75	32	1322	110	47	1516
Future Volume (vph)	75	32	1322	110	47	1516
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.6	3.6
Storage Length (m)	15.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	15.0				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.988			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1359	1463	3483	0	1767	3610
Flt Permitted	0.950				0.132	
Satd. Flow (perm)	1359	1463	3483	0	246	3610
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		33	16			
Link Speed (k/h)	50		70			70
Link Distance (m)	186.9		633.8			289.9
Travel Time (s)	13.5		32.6			14.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	3%	1%	2%	0%	0%
Adj. Flow (vph)	78	33	1377	115	49	1579
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	33	1492	0	49	1579
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.09	1.01	1.01	1.03	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru			Thru
Leading Detector (m)	9.0	9.0	10.0		20.0	10.0
Trailing Detector (m)	-0.2	-1.0	0.0		10.0	0.0
Detector 1 Position(m)	-0.2	-1.0	0.0		10.0	0.0
Detector 1 Size(m)	9.2	10.0	0.6		10.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.0	24.0	25.0		9.5	25.0
Total Split (s)	24.0	24.0	66.0		10.0	76.0
Total Split (%)	24.0%	24.0%	66.0%		10.0%	76.0%
Maximum Green (s)	18.0	18.0	59.0		7.0	69.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		2.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	11.8	11.8	70.4		79.8	76.9
Actuated g/C Ratio	0.12	0.12	0.74		0.84	0.81
v/c Ratio	0.46	0.16	0.58		0.15	0.54
Control Delay	47.0	14.1	9.0		3.3	5.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	47.0	14.1	9.0		3.3	5.3
LOS	D	B	A		A	A
Approach Delay	37.2		9.0			5.2
Approach LOS	D		A			A
Queue Length 50th (m)	13.8	0.0	71.5		1.3	51.6
Queue Length 95th (m)	27.9	8.3	110.5		4.2	84.9
Internal Link Dist (m)	162.9		609.8			265.9
Turn Bay Length (m)	15.0				120.0	
Base Capacity (vph)	271	318	2584		350	2917
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.29	0.10	0.58		0.14	0.54

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 95.1	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 8.1	Intersection LOS: A

Intersection Capacity Utilization 55.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Ninth Line & Osprey Boulevard

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	19	1222	65	46	1547
Future Volume (vph)	24	19	1222	65	46	1547
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.992			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1507	3508	0	1426	3570
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1454	1507	3508	0	1426	3570
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	25	20	1273	68	48	1611
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	20	1341	0	48	1611
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	24	19	1222	65	46	1547
Future Volume (Veh/h)	24	19	1222	65	46	1547
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	25	20	1273	68	48	1611
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.79	0.79			0.79	
vC, conflicting volume	2208	670			1341	
vC1, stage 1 conf vol	1307					
vC2, stage 2 conf vol	902					
vCu, unblocked vol	2003	66			911	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	97			92	
cM capacity (veh/h)	217	786			591	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	25	20	849	492	48	806	806
Volume Left	25	0	0	0	48	0	0
Volume Right	0	20	0	68	0	0	0
cSH	217	786	1700	1700	591	1700	1700
Volume to Capacity	0.12	0.03	0.50	0.29	0.08	0.47	0.47
Queue Length 95th (m)	3.1	0.6	0.0	0.0	2.1	0.0	0.0
Control Delay (s)	23.7	9.7	0.0	0.0	11.6	0.0	0.0
Lane LOS	C	A			B		
Approach Delay (s)	17.5		0.0		0.3		
Approach LOS	C						

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

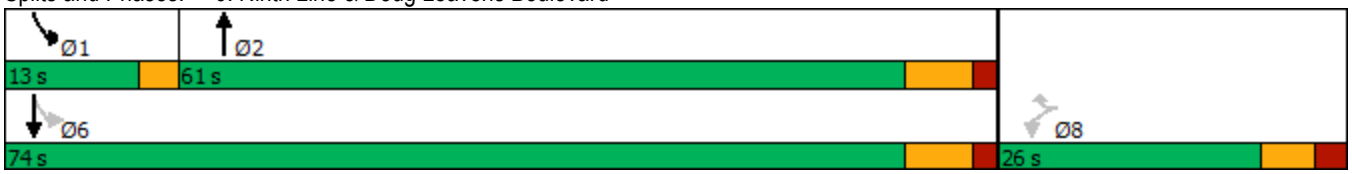
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	114	66	1072	144	132	1461
Future Volume (vph)	114	66	1072	144	132	1461
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.3	3.5	3.2	3.0	3.5
Storage Length (m)	0.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.982			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1561	3465	0	1649	3535
Flt Permitted	0.950				0.160	
Satd. Flow (perm)	1454	1561	3465	0	278	3535
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		69	24			
Link Speed (k/h)	50		70			70
Link Distance (m)	218.3		843.0			487.0
Travel Time (s)	15.7		43.4			25.0
Confl. Peds. (#/hr)				2	2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	119	69	1117	150	138	1522
Shared Lane Traffic (%)						
Lane Group Flow (vph)	119	69	1267	0	138	1522
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.0			3.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.04	1.01	1.06	1.12	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru		Left	Thru
Leading Detector (m)	7.0	7.0	10.0		2.0	10.0
Trailing Detector (m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Position(m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.5	24.5	26.0		9.5	26.0
Total Split (s)	26.0	26.0	61.0		13.0	74.0
Total Split (%)	26.0%	26.0%	61.0%		13.0%	74.0%
Maximum Green (s)	19.5	19.5	54.0		10.0	67.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.5	2.5	2.0		0.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	8.0			8.0
Flash Dont Walk (s)	11.0	11.0	10.0			10.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	14.7	14.7	60.7		75.2	71.2
Actuated g/C Ratio	0.15	0.15	0.63		0.78	0.74
v/c Ratio	0.53	0.23	0.58		0.39	0.58
Control Delay	45.6	10.5	12.1		6.2	7.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	45.6	10.5	12.1		6.2	7.2
LOS	D	B	B		A	A
Approach Delay	32.7		12.1			7.1
Approach LOS	C		B			A
Queue Length 50th (m)	21.1	0.0	65.7		4.9	57.9
Queue Length 95th (m)	38.5	11.4	107.7		12.2	96.1
Internal Link Dist (m)	194.3		819.0			463.0
Turn Bay Length (m)					120.0	
Base Capacity (vph)	318	395	2199		389	2623
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.37	0.17	0.58		0.35	0.58

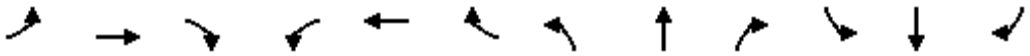
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 96			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 10.7		Intersection LOS: B	

Intersection Capacity Utilization 60.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Doug Leavens Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	883	243	248	1733	139	128	787	211	287	999	337
Future Volume (vph)	216	883	243	248	1733	139	128	787	211	287	999	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.98			
Frt			0.850		0.989				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3544	1597	1767	3572	0	1767	3614	1581	1785	3614	1581
Flt Permitted	0.053			0.215			0.119			0.109		
Satd. Flow (perm)	99	3544	1597	400	3572	0	221	3614	1556	205	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		7				103			167
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	216	883	243	248	1733	139	128	787	211	287	999	337
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	883	243	248	1872	0	128	787	211	287	999	337
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	16.0	65.5	65.5	34.5	84.0		12.0	40.0	40.0	20.0	48.0	48.0
Total Split (%)	10.0%	40.9%	40.9%	21.6%	52.5%		7.5%	25.0%	25.0%	12.5%	30.0%	30.0%
Maximum Green (s)	13.0	59.4	59.4	31.5	77.9		9.0	33.6	33.6	17.0	41.6	41.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	91.5	75.4	75.4	95.1	77.9		46.0	33.6	33.6	57.0	41.6	41.6
Actuated g/C Ratio	0.57	0.47	0.47	0.59	0.49		0.29	0.21	0.21	0.36	0.26	0.26
v/c Ratio	1.12	0.53	0.30	0.67	1.07		0.85	1.04	0.52	1.20	1.06	0.63
Control Delay	144.4	31.9	13.9	23.9	83.8		81.8	103.0	33.0	159.8	103.1	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	144.4	31.9	13.9	23.9	83.8		81.8	103.0	33.0	159.8	103.1	31.5
LOS	F	C	B	C	F		F	F	C	F	F	C
Approach Delay		46.7			76.8			87.5			98.3	
Approach LOS		D			E			F			F	
Queue Length 50th (m)	~65.8	107.1	22.3	36.5	~365.2		29.8	~148.7	31.9	~97.7	~193.1	51.1
Queue Length 95th (m)	#126.8	140.5	47.1	52.2	#408.4		#63.9	#191.8	60.5	#160.9	#237.6	88.1
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	192	1669	817	511	1742		150	758	408	240	939	534
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.53	0.30	0.49	1.07		0.85	1.04	0.52	1.20	1.06	0.63

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 140	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 77.8	Intersection LOS: E

Intersection Capacity Utilization 119.0% ICU Level of Service H

Analysis Period (min) 15

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

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

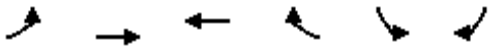
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1230	0	0	2172	94	223
Future Volume (vph)	1230	0	0	2172	94	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3614	3362	1597
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3614	3362	1597
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						125
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	1230	0	0	2172	94	223
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1230	0	0	2172	94	223
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

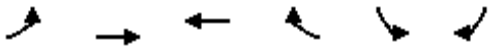
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	126.0			126.0	34.0	34.0
Total Split (%)	78.8%			78.8%	21.3%	21.3%
Maximum Green (s)	120.0			120.0	27.0	27.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	120.3			120.3	15.4	15.4
Actuated g/C Ratio	0.81			0.81	0.10	0.10
v/c Ratio	0.43			0.74	0.27	0.81
Control Delay	5.2			9.8	62.3	49.4
Queue Delay	0.0			2.7	0.0	0.0
Total Delay	5.2			12.5	62.3	49.4
LOS	A			B	E	D
Approach Delay	5.2			12.5	53.3	
Approach LOS	A			B	D	
Queue Length 50th (m)	48.6			141.3	14.0	30.2
Queue Length 95th (m)	82.9			235.8	23.2	61.2
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2894			2922	611	392
Starvation Cap Reductn	0			608	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.43			0.94	0.15	0.57

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 148.7			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 13.5		Intersection LOS: B	
Intersection Capacity Utilization 99.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1053	2125	0	256	486
Future Volume (vph)	0	1053	2125	0	256	486
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3510	3614	0	3429	1597
Flt Permitted					0.950	
Satd. Flow (perm)	0	3510	3614	0	3429	1597
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						9
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	0%	1%	0%
Adj. Flow (vph)	0	1053	2125	0	256	486
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1053	2125	0	256	486
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm

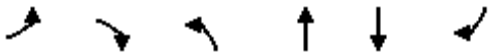


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		104.0	104.0		56.0	56.0
Total Split (%)		65.0%	65.0%		35.0%	35.0%
Maximum Green (s)		98.0	98.0		49.0	49.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		98.0	98.0		49.0	49.0
Actuated g/C Ratio		0.61	0.61		0.31	0.31
v/c Ratio		0.49	0.96		0.24	0.98
Control Delay		18.1	41.2		42.4	89.4
Queue Delay		0.0	35.1		0.0	0.0
Total Delay		18.1	76.3		42.4	89.4
LOS		B	E		D	F
Approach Delay		18.1	76.3		73.2	
Approach LOS		B	E		E	
Queue Length 50th (m)		98.4	337.8		33.2	159.8
Queue Length 95th (m)		115.6	#395.8		45.8	#237.5
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		2149	2213		1050	495
Starvation Cap Reductn		0	247		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.49	1.08		0.24	0.98

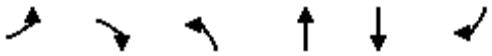
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 60.1		Intersection LOS: E	
Intersection Capacity Utilization 99.7%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	512	381	0	1887	1991	0
Future Volume (vph)	512	381	0	1887	1991	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.975	0.850				
Flt Protected	0.960					
Satd. Flow (prot)	3065	1411	0	4980	5079	0
Flt Permitted	0.960					
Satd. Flow (perm)	3065	1411	0	4980	5079	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	11	*134				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	13%	3%	0%	3%	1%	0%
Adj. Flow (vph)	528	393	0	1945	2053	0
Shared Lane Traffic (%)		27%				
Lane Group Flow (vph)	634	287	0	1945	2053	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

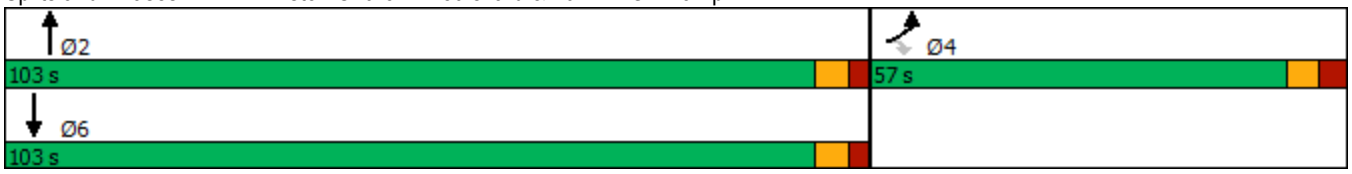


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	57.0	57.0		103.0	103.0	
Total Split (%)	35.6%	35.6%		64.4%	64.4%	
Maximum Green (s)	49.5	49.5		96.5	96.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	40.7	40.7		98.3	98.3	
Actuated g/C Ratio	0.27	0.27		0.66	0.66	
v/c Ratio	0.75	0.60		0.59	0.61	
Control Delay	54.4	29.1		15.9	16.3	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	54.4	29.1		15.9	16.3	
LOS	D	C		B	B	
Approach Delay	46.5			15.9	16.3	
Approach LOS	D			B	B	
Queue Length 50th (m)	91.7	45.4		116.9	126.2	
Queue Length 95th (m)	113.6	79.8		160.2	172.3	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1079	580		3284	3349	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.59	0.49		0.59	0.61	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 149			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	953	959	2082	0	0	1516
Future Volume (vph)	953	959	2082	0	0	1516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.959	0.850				
Flt Protected	0.965					
Satd. Flow (prot)	3322	1411	4839	0	0	4932
Flt Permitted	0.965					
Satd. Flow (perm)	3322	1411	4839	0	0	4932
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	3	*304				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	6%	0%	0%	4%
Adj. Flow (vph)	982	989	2146	0	0	1563
Shared Lane Traffic (%)		37%				
Lane Group Flow (vph)	1348	623	2146	0	0	1563
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

12: Winston Churchill Boulevard & 401 WB Off-Ramp

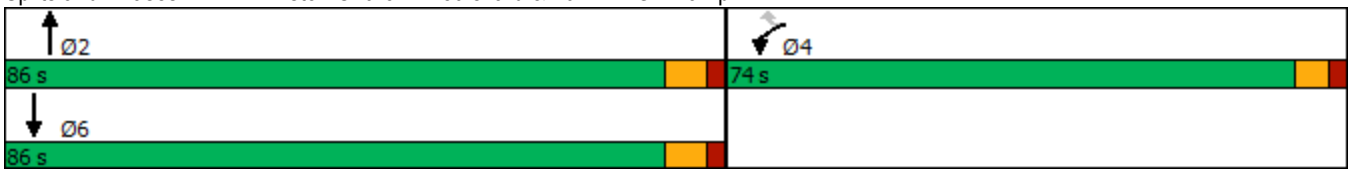
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	74.0	74.0	86.0			86.0
Total Split (%)	46.3%	46.3%	53.8%			53.8%
Maximum Green (s)	67.5	67.5	78.5			78.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	69.0	69.0	81.0			81.0
Actuated g/C Ratio	0.43	0.43	0.51			0.51
v/c Ratio	0.94	0.80	0.88			0.63
Control Delay	56.7	28.1	40.2			30.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	56.7	28.1	40.2			30.0
LOS	E	C	D			C
Approach Delay	47.7		40.2			30.0
Approach LOS	D		D			C
Queue Length 50th (m)	220.5	110.6	229.1			135.9
Queue Length 95th (m)	#269.3	178.4	251.1			151.9
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1434	781	2449			2496
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.94	0.80	0.88			0.63

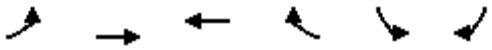
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 40.0		Intersection LOS: D	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

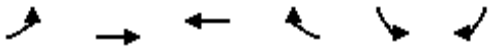
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	1762	746	0	469	29
Future Volume (vph)	0	1762	746	0	469	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3579	0	1684	1210
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3579	0	1684	1210
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						21
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	0%	6%	32%
Adj. Flow (vph)	0	1762	746	0	469	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1762	746	0	469	29
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		96.0	96.0		64.0	64.0
Total Split (%)		60.0%	60.0%		40.0%	40.0%
Maximum Green (s)		90.0	90.0		57.0	57.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		90.3	90.3		45.3	45.3
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.80	0.34		0.91	0.08
Control Delay		27.5	16.0		73.2	16.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		27.5	16.0		73.2	16.9
LOS		C	B		E	B
Approach Delay		27.5	16.0		69.9	
Approach LOS		C	B		E	
Queue Length 50th (m)		214.6	58.7		140.1	1.8
Queue Length 95th (m)		293.5	85.1		187.7	9.6
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2195	2174		647	478
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.80	0.34		0.72	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 148.7			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 31.7		Intersection LOS: C	
Intersection Capacity Utilization 89.4%		ICU Level of Service E	
Analysis Period (min) 15			

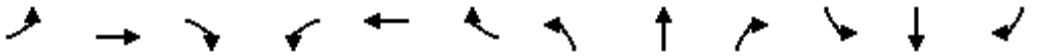
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2173	0	0	936	28	299
Future Volume (vph)	2173	0	0	936	28	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3579	1608	1566
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3579	1608	1566
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						13
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	2%	11%	2%
Adj. Flow (vph)	2173	0	0	936	28	299
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2173	0	0	936	28	299
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

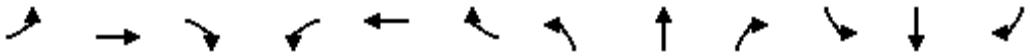
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	114.0			114.0	46.0	46.0
Total Split (%)	71.3%			71.3%	28.8%	28.8%
Maximum Green (s)	108.0			108.0	39.0	39.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	108.2			108.2	32.3	32.3
Actuated g/C Ratio	0.70			0.70	0.21	0.21
v/c Ratio	0.85			0.37	0.08	0.88
Control Delay	22.3			10.1	48.1	82.4
Queue Delay	6.8			0.4	0.0	0.0
Total Delay	29.2			10.5	48.1	82.4
LOS	C			B	D	F
Approach Delay	29.2			10.5	79.5	
Approach LOS	C			B	E	
Queue Length 50th (m)	259.6			60.3	7.3	90.2
Queue Length 95th (m)	333.6			80.8	16.5	128.5
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2547			2522	409	408
Starvation Cap Reductn	347			985	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.99			0.61	0.07	0.73

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 153.5			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 28.9		Intersection LOS: C	
Intersection Capacity Utilization 89.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	1842	361	104	777	162	229	865	169	103	1098	119
Future Volume (vph)	142	1842	361	104	777	162	229	865	169	103	1098	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.975				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1581	1733	3579	1439	1767	3458	0	1608	3614	1581
Flt Permitted	0.238			0.059			0.078			0.083		
Satd. Flow (perm)	447	3614	1581	108	3579	1439	145	3458	0	140	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130			130		15				102
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	142	1842	361	104	777	162	229	865	169	103	1098	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	1842	361	104	777	162	229	1034	0	103	1098	119
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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												

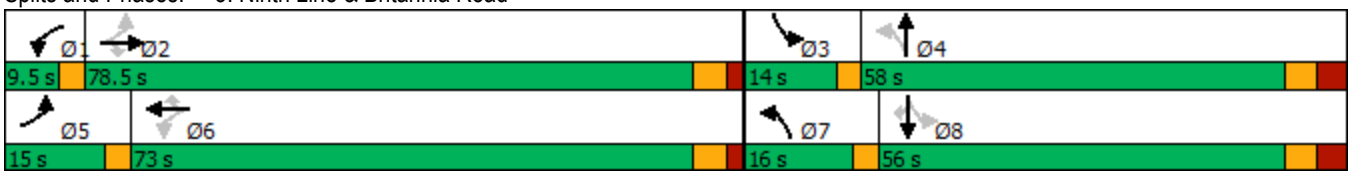


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	15.0	78.5	78.5	9.5	73.0	73.0	16.0	58.0		14.0	56.0	56.0
Total Split (%)	9.4%	49.1%	49.1%	5.9%	45.6%	45.6%	10.0%	36.3%		8.8%	35.0%	35.0%
Maximum Green (s)	12.0	72.4	72.4	6.5	66.9	66.9	13.0	50.3		11.0	48.3	48.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	84.7	72.4	72.4	77.9	68.3	68.3	68.4	51.3		63.0	48.3	48.3
Actuated g/C Ratio	0.53	0.45	0.45	0.49	0.43	0.43	0.43	0.32		0.39	0.30	0.30
v/c Ratio	0.44	1.13	0.46	0.88	0.51	0.24	1.19	0.92		0.71	1.01	0.22
Control Delay	23.5	105.9	20.7	85.4	35.3	8.1	159.7	65.6		56.7	83.8	10.8
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	23.5	106.5	20.7	85.4	35.3	8.1	159.7	65.6		56.7	83.8	10.8
LOS	C	F	C	F	D	A	F	E		E	F	B
Approach Delay		88.2			36.0			82.6			75.1	
Approach LOS		F			D			F			E	
Queue Length 50th (m)	23.7	~373.8	52.1	18.1	100.3	6.3	~74.4	176.2		20.8	~196.8	4.0
Queue Length 95th (m)	36.9	#416.6	81.3	#58.0	121.7	22.2	#132.6	#220.4		#42.9	#246.5	20.3
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	337	1635	786	118	1527	688	193	1119		156	1090	548
Starvation Cap Reductn	0	258	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.42	1.34	0.46	0.88	0.51	0.24	1.19	0.92		0.66	1.01	0.22

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 75.0		Intersection LOS: E	

Intersection Capacity Utilization 117.9% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	137	99	1214	101	22	1163
Future Volume (vph)	137	99	1214	101	22	1163
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.6	3.6
Storage Length (m)	15.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	15.0				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.988			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1412	1436	3381	0	1683	3574
Flt Permitted	0.950				0.149	
Satd. Flow (perm)	1412	1436	3381	0	264	3574
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		102	13			
Link Speed (k/h)	50		70			70
Link Distance (m)	186.9		633.8			289.9
Travel Time (s)	13.5		32.6			14.9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	5%	4%	8%	5%	1%
Adj. Flow (vph)	141	102	1252	104	23	1199
Shared Lane Traffic (%)						
Lane Group Flow (vph)	141	102	1356	0	23	1199
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.09	1.01	1.01	1.03	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru			Thru
Leading Detector (m)	9.0	9.0	10.0		20.0	10.0
Trailing Detector (m)	-1.0	-1.0	0.0		10.0	0.0
Detector 1 Position(m)	-1.0	-1.0	0.0		10.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		10.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.0	24.0	25.0		9.5	25.0
Total Split (s)	34.0	34.0	56.0		10.0	66.0
Total Split (%)	34.0%	34.0%	56.0%		10.0%	66.0%
Maximum Green (s)	28.0	28.0	49.0		7.0	59.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		2.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	15.2	15.2	60.8		68.0	64.0
Actuated g/C Ratio	0.17	0.17	0.68		0.76	0.72
v/c Ratio	0.59	0.31	0.59		0.07	0.47
Control Delay	43.4	9.0	10.2		3.9	6.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	43.4	9.0	10.2		3.9	6.6
LOS	D	A	B		A	A
Approach Delay	29.0		10.2			6.5
Approach LOS	C		B			A
Queue Length 50th (m)	22.6	0.0	49.2		0.8	39.7
Queue Length 95th (m)	41.2	12.7	111.6		3.2	67.8
Internal Link Dist (m)	162.9		609.8			265.9
Turn Bay Length (m)	15.0				120.0	
Base Capacity (vph)	460	536	2310		344	2564
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.31	0.19	0.59		0.07	0.47

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 89.2			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 53.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ninth Line & Osprey Boulevard

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	75	1308	39	33	1128
Future Volume (vph)	51	75	1308	39	33	1128
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.996			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1507	3446	0	1412	3500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1454	1507	3446	0	1412	3500
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	53	78	1363	41	34	1175
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	78	1404	0	34	1175
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	75	1308	39	33	1128
Future Volume (Veh/h)	51	75	1308	39	33	1128
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	53	78	1362	41	34	1175
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.78	0.78			0.78	
vC, conflicting volume	2038	702			1403	
vC1, stage 1 conf vol	1382					
vC2, stage 2 conf vol	656					
vCu, unblocked vol	1772	66			962	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	90			94	
cM capacity (veh/h)	232	776			553	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	53	78	908	495	34	588	588
Volume Left	53	0	0	0	34	0	0
Volume Right	0	78	0	41	0	0	0
cSH	232	776	1700	1700	553	1700	1700
Volume to Capacity	0.23	0.10	0.53	0.29	0.06	0.35	0.35
Queue Length 95th (m)	6.9	2.7	0.0	0.0	1.6	0.0	0.0
Control Delay (s)	25.1	10.2	0.0	0.0	11.9	0.0	0.0
Lane LOS	D	B			B		
Approach Delay (s)	16.2		0.0		0.3		
Approach LOS	C						

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

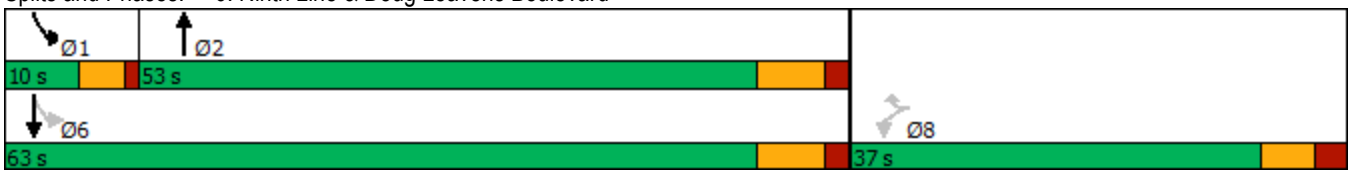
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	155	186	1247	111	75	931
Future Volume (vph)	155	186	1247	111	75	931
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.3	3.5	3.2	3.0	3.5
Storage Length (m)	0.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.988			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1412	1531	3432	0	1649	3535
Flt Permitted	0.950				0.095	
Satd. Flow (perm)	1412	1531	3432	0	165	3535
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		137	13			
Link Speed (k/h)	50		70			70
Link Distance (m)	218.3		843.0			487.0
Travel Time (s)	15.7		43.4			25.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	9%	0%	1%
Adj. Flow (vph)	168	202	1355	121	82	1012
Shared Lane Traffic (%)						
Lane Group Flow (vph)	168	202	1476	0	82	1012
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.0			3.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.04	1.01	1.06	1.12	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru		Left	Thru
Leading Detector (m)	7.0	7.0	10.0		2.0	10.0
Trailing Detector (m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Position(m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.5	24.5	26.0		9.5	26.0
Total Split (s)	37.0	37.0	53.0		10.0	63.0
Total Split (%)	37.0%	37.0%	53.0%		10.0%	63.0%
Maximum Green (s)	30.5	30.5	46.0		5.5	56.0
Yellow Time (s)	4.0	4.0	5.0		3.5	5.0
All-Red Time (s)	2.5	2.5	2.0		1.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		2.5	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	8.0			8.0
Flash Dont Walk (s)	11.0	11.0	10.0			10.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	16.9	16.9	50.3		60.6	58.1
Actuated g/C Ratio	0.20	0.20	0.59		0.71	0.68
v/c Ratio	0.60	0.49	0.73		0.33	0.42
Control Delay	40.0	14.8	16.7		8.2	7.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	40.0	14.8	16.7		8.2	7.2
LOS	D	B	B		A	A
Approach Delay	26.2		16.7			7.3
Approach LOS	C		B			A
Queue Length 50th (m)	26.3	9.4	92.5		3.5	34.6
Queue Length 95th (m)	46.2	28.2	145.7		9.9	59.9
Internal Link Dist (m)	194.3		819.0			463.0
Turn Bay Length (m)					120.0	
Base Capacity (vph)	532	662	2032		248	2414
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.32	0.31	0.73		0.33	0.42

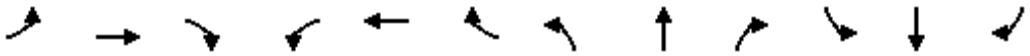
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 85.1			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 14.4		Intersection LOS: B	

Intersection Capacity Utilization 63.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Doug Leavens Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	1769	116	144	844	363	244	837	252	107	692	293
Future Volume (vph)	347	1769	116	144	844	363	244	837	252	107	692	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99									
Frt			0.850		0.955				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	3614	1597	1733	3371	0	1750	3614	1566	1716	3614	1581
Flt Permitted	0.062			0.065			0.119			0.131		
Satd. Flow (perm)	110	3614	1575	119	3371	0	219	3614	1566	237	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		49				105			274
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	347	1769	116	144	844	363	244	837	252	107	692	293
Shared Lane Traffic (%)												
Lane Group Flow (vph)	347	1769	116	144	1207	0	244	837	252	107	692	293
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	32.0	82.5	82.5	17.0	67.5		23.5	49.0	49.0	11.5	37.0	37.0
Total Split (%)	20.0%	51.6%	51.6%	10.6%	42.2%		14.7%	30.6%	30.6%	7.2%	23.1%	23.1%
Maximum Green (s)	29.0	76.4	76.4	14.0	61.4		20.5	42.6	42.6	7.0	30.6	30.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	1.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	4.5	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	96.5	78.4	78.4	76.5	61.4		57.0	42.1	42.1	39.5	30.6	30.6
Actuated g/C Ratio	0.61	0.49	0.49	0.48	0.38		0.36	0.26	0.26	0.25	0.19	0.19
v/c Ratio	0.99	1.00	0.14	0.81	0.91		0.90	0.88	0.51	0.87	1.00	0.56
Control Delay	93.5	60.6	6.5	70.5	55.5		78.0	67.6	32.5	92.8	97.2	12.1
Queue Delay	0.0	37.7	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.5	98.3	6.5	70.5	55.5		78.0	67.6	32.5	92.8	97.2	12.1
LOS	F	F	A	E	E		E	E	C	F	F	B
Approach Delay		92.8			57.1			62.9			74.0	
Approach LOS		F			E			E			E	
Queue Length 50th (m)	100.7	~329.5	3.7	30.4	194.8		63.2	141.8	41.8	24.9	~123.7	5.3
Queue Length 95th (m)	#169.6	#373.8	15.5	#62.3	#230.6		#115.4	169.6	71.8	#57.2	#168.4	35.0
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	352	1775	822	200	1327		274	965	494	123	693	524
Starvation Cap Reductn	0	272	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.99	1.18	0.14	0.72	0.91		0.89	0.87	0.51	0.87	1.00	0.56

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 159.5			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 74.7		Intersection LOS: E	

Intersection Capacity Utilization 106.6% ICU Level of Service G

Analysis Period (min) 15

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

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

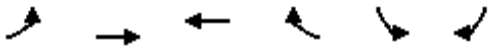
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2137	0	0	1267	17	217
Future Volume (vph)	2137	0	0	1267	17	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3510	2935	1507
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3510	2935	1507
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						18
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	4%	18%	6%
Adj. Flow (vph)	2137	0	0	1267	17	217
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2137	0	0	1267	17	217
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

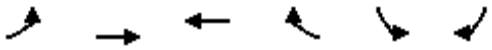
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	120.0			120.0	40.0	40.0
Total Split (%)	75.0%			75.0%	25.0%	25.0%
Maximum Green (s)	114.0			114.0	33.0	33.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	114.2			114.2	24.9	24.9
Actuated g/C Ratio	0.75			0.75	0.16	0.16
v/c Ratio	0.80			0.48	0.04	0.83
Control Delay	15.7			8.7	52.1	81.7
Queue Delay	2.0			0.5	0.0	0.0
Total Delay	17.6			9.2	52.1	81.7
LOS	B			A	D	F
Approach Delay	17.6			9.2	79.5	
Approach LOS	B			A	E	
Queue Length 50th (m)	201.8			75.3	2.3	62.2
Queue Length 95th (m)	282.7			107.7	6.1	94.0
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2686			2634	637	341
Starvation Cap Reductn	381			851	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.93			0.71	0.03	0.64

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 152.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 94.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



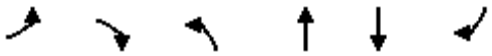
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2802	941	0	49	71
Future Volume (vph)	0	2802	941	0	49	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3510	0	3148	1309
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3510	0	3148	1309
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						71
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	4%	0%	10%	22%
Adj. Flow (vph)	0	2802	941	0	49	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2802	941	0	49	71
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		135.0	135.0		25.0	25.0
Total Split (%)		84.4%	84.4%		15.6%	15.6%
Maximum Green (s)		129.0	129.0		18.0	18.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		129.0	129.0		8.4	8.4
Actuated g/C Ratio		0.86	0.86		0.06	0.06
v/c Ratio		0.90	0.31		0.28	0.51
Control Delay		12.8	2.4		71.9	26.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		12.8	2.4		71.9	26.9
LOS		B	A		E	C
Approach Delay		12.8	2.4		45.3	
Approach LOS		B	A		D	
Queue Length 50th (m)		216.4	22.3		7.7	0.0
Queue Length 95th (m)		324.5	33.7		15.2	16.7
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		3099	3010		376	218
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.90	0.31		0.13	0.33

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.4			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 11.3		Intersection LOS: B	
Intersection Capacity Utilization 94.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



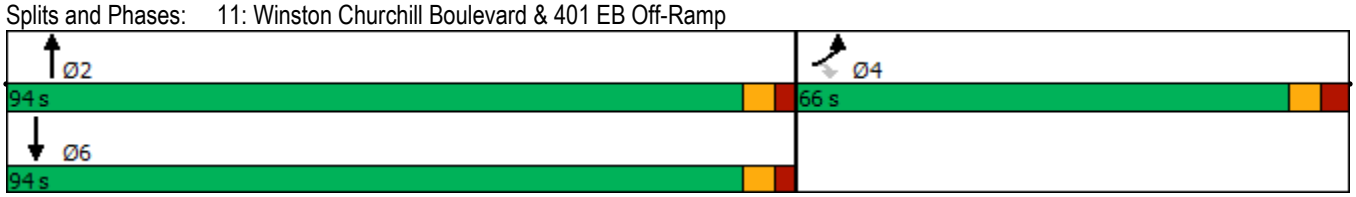
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	472	393	0	1282	1500	0
Future Volume (vph)	472	393	0	1282	1500	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.969	0.850				
Flt Protected	0.962					
Satd. Flow (prot)	3280	1425	0	4980	4885	0
Flt Permitted	0.962					
Satd. Flow (perm)	3280	1425	0	4980	4885	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	23	23				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	0%	3%	5%	0%
Adj. Flow (vph)	497	414	0	1349	1579	0
Shared Lane Traffic (%)		31%				
Lane Group Flow (vph)	625	286	0	1349	1579	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

11: Winston Churchill Boulevard & 401 EB Off-Ramp

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	66.0	66.0		94.0	94.0	
Total Split (%)	41.3%	41.3%		58.8%	58.8%	
Maximum Green (s)	58.5	58.5		87.5	87.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	36.9	36.9		89.3	89.3	
Actuated g/C Ratio	0.27	0.27		0.66	0.66	
v/c Ratio	0.69	0.71		0.41	0.49	
Control Delay	46.7	51.0		12.4	13.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	46.7	51.0		12.4	13.5	
LOS	D	D		B	B	
Approach Delay	48.1			12.4	13.5	
Approach LOS	D			B	B	
Queue Length 50th (m)	79.0	74.2		60.4	76.3	
Queue Length 95th (m)	99.1	110.2		94.1	117.3	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1486	652		3264	3202	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.42	0.44		0.41	0.49	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 136.3			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 21.3		Intersection LOS: C	
Intersection Capacity Utilization 61.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp



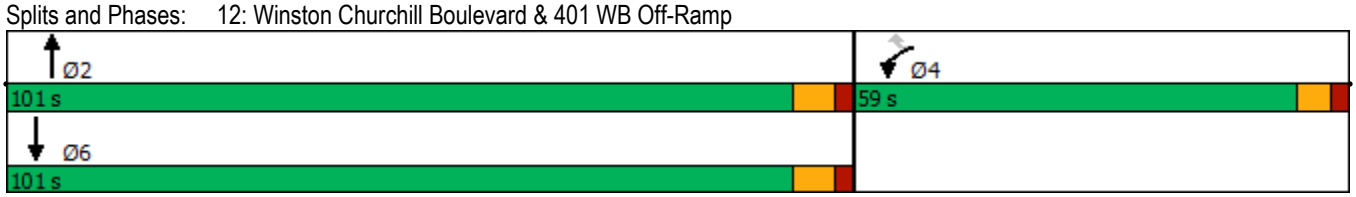
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	288	524	1400	0	0	2019
Future Volume (vph)	288	524	1400	0	0	2019
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.928	0.850				
Flt Protected	0.975					
Satd. Flow (prot)	2972	1298	4980	0	0	4839
Flt Permitted	0.975					
Satd. Flow (perm)	2972	1298	4980	0	0	4839
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	40	40				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	12%	3%	0%	0%	6%
Adj. Flow (vph)	303	552	1474	0	0	2125
Shared Lane Traffic (%)		50%				
Lane Group Flow (vph)	579	276	1474	0	0	2125
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

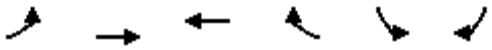
12: Winston Churchill Boulevard & 401 WB Off-Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	59.0	59.0	101.0			101.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Maximum Green (s)	52.5	52.5	93.5			93.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	37.0	37.0	96.4			96.4
Actuated g/C Ratio	0.26	0.26	0.67			0.67
v/c Ratio	0.73	0.76	0.44			0.65
Control Delay	50.3	55.2	12.4			16.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	50.3	55.2	12.4			16.1
LOS	D	E	B			B
Approach Delay	51.9		12.4			16.1
Approach LOS	D		B			B
Queue Length 50th (m)	76.3	72.4	67.1			121.5
Queue Length 95th (m)	96.8	109.6	107.6			190.6
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1148	515	3346			3252
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.50	0.54	0.44			0.65

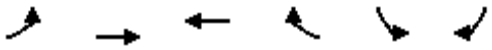
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 143.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 21.7		Intersection LOS: C	
Intersection Capacity Utilization 61.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	898	1669	0	476	77
Future Volume (vph)	0	898	1669	0	476	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3614	0	1767	1536
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3614	0	1767	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						17
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	1%	4%
Adj. Flow (vph)	0	898	1669	0	476	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	898	1669	0	476	77
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		94.0	94.0		66.0	66.0
Total Split (%)		58.8%	58.8%		41.3%	41.3%
Maximum Green (s)		88.0	88.0		59.0	59.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		88.4	88.4		43.8	43.8
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.41	0.76		0.89	0.16
Control Delay		16.6	25.2		68.4	28.4
Queue Delay		0.0	0.9		0.0	0.0
Total Delay		16.6	26.0		68.4	28.4
LOS		B	C		E	C
Approach Delay		16.6	26.0		62.8	
Approach LOS		B	C		E	
Queue Length 50th (m)		70.9	184.0		137.6	13.2
Queue Length 95th (m)		109.5	273.5		182.8	26.1
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2199	2199		721	636
Starvation Cap Reductn		0	253		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.41	0.86		0.66	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 145.2			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 29.8		Intersection LOS: C	
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

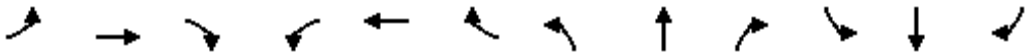
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1327	0	0	1796	70	191
Future Volume (vph)	1327	0	0	1796	70	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3614	1750	1581
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3614	1750	1581
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						94
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	1%	2%	1%
Adj. Flow (vph)	1327	0	0	1796	70	191
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1327	0	0	1796	70	191
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	121.0			121.0	39.0	39.0
Total Split (%)	75.6%			75.6%	24.4%	24.4%
Maximum Green (s)	115.0			115.0	32.0	32.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	115.2			115.2	14.7	14.7
Actuated g/C Ratio	0.81			0.81	0.10	0.10
v/c Ratio	0.46			0.62	0.39	0.78
Control Delay	5.3			7.1	65.5	51.9
Queue Delay	0.2			1.1	0.0	0.0
Total Delay	5.5			8.2	65.5	51.9
LOS	A			A	E	D
Approach Delay	5.5			8.2	55.6	
Approach LOS	A			A	E	
Queue Length 50th (m)	53.1			90.2	19.8	28.5
Queue Length 95th (m)	87.1			146.6	35.9	56.8
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2913			2913	392	427
Starvation Cap Reductn	719			801	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.60			0.85	0.18	0.45

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 142.9			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	886	326	147	1385	169	215	1147	143	213	1179	177
Future Volume (vph)	180	886	326	147	1385	169	215	1147	143	213	1179	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1597	1785	3614	1551	1767	3550	0	1716	3614	1536
Flt Permitted	0.069			0.155			0.072			0.072		
Satd. Flow (perm)	130	3614	1597	291	3614	1551	134	3550	0	130	3614	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			73		9				151
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	180	886	326	147	1385	169	215	1147	143	213	1179	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	886	326	147	1385	169	215	1290	0	213	1179	177
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	13.0	63.5	63.5	15.5	66.0	66.0	17.5	63.0		18.0	63.5	63.5
Total Split (%)	8.1%	39.7%	39.7%	9.7%	41.3%	41.3%	10.9%	39.4%		11.3%	39.7%	39.7%
Maximum Green (s)	10.0	57.4	57.4	12.5	59.9	59.9	14.5	55.3		15.0	55.8	55.8
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	71.4	58.3	58.3	74.6	59.9	59.9	74.5	55.3		75.5	55.8	55.8
Actuated g/C Ratio	0.45	0.36	0.36	0.47	0.37	0.37	0.47	0.35		0.47	0.35	0.35
v/c Ratio	1.12	0.67	0.46	0.60	1.02	0.27	1.02	1.05		1.01	0.94	0.28
Control Delay	142.5	46.1	15.5	35.0	79.4	20.5	110.2	88.4		108.1	64.3	8.9
Queue Delay	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	142.5	46.7	15.5	35.0	79.4	20.5	110.2	88.4		108.1	64.3	8.9
LOS	F	D	B	C	E	C	F	F		F	E	A
Approach Delay		51.8			69.7			91.5			64.0	
Approach LOS		D			E			F			E	
Queue Length 50th (m)	~51.8	132.6	28.1	27.8	~258.6	21.5	~58.4	~245.0		~56.4	201.0	5.8
Queue Length 95th (m)	#105.9	157.4	57.7	43.0	#303.5	41.0	#115.2	#290.5		#114.3	#245.2	24.2
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	161	1317	714	254	1352	626	210	1232		210	1260	634
Starvation Cap Reductn	0	159	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.12	0.77	0.46	0.58	1.02	0.27	1.02	1.05		1.01	0.94	0.28

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 125	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 69.5	Intersection LOS: E

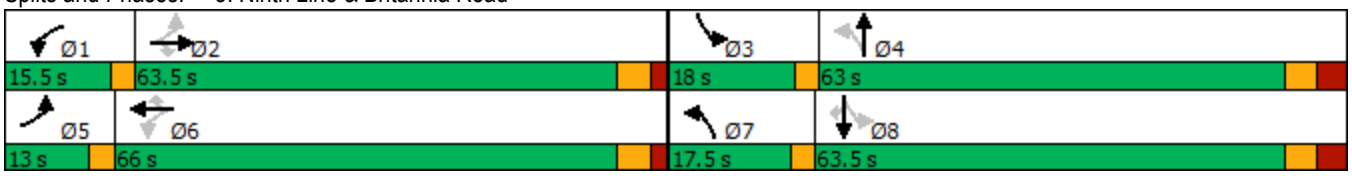
Intersection Capacity Utilization 114.5% ICU Level of Service H

Analysis Period (min) 15

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

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

Splits and Phases: 3: Ninth Line & Britannia Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	77	32	1349	113	48	1568
Future Volume (vph)	77	32	1349	113	48	1568
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.6	3.6
Storage Length (m)	15.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	15.0				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.988			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1359	1463	3483	0	1767	3610
Flt Permitted	0.950				0.125	
Satd. Flow (perm)	1359	1463	3483	0	232	3610
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		33	16			
Link Speed (k/h)	50		70			70
Link Distance (m)	186.9		633.8			289.9
Travel Time (s)	13.5		32.6			14.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	3%	1%	2%	0%	0%
Adj. Flow (vph)	80	33	1405	118	50	1633
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	33	1523	0	50	1633
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.09	1.01	1.01	1.03	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru			Thru
Leading Detector (m)	9.0	9.0	10.0		20.0	10.0
Trailing Detector (m)	-0.2	-1.0	0.0		10.0	0.0
Detector 1 Position(m)	-0.2	-1.0	0.0		10.0	0.0
Detector 1 Size(m)	9.2	10.0	0.6		10.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.0	24.0	25.0		9.5	25.0
Total Split (s)	24.0	24.0	66.0		10.0	76.0
Total Split (%)	24.0%	24.0%	66.0%		10.0%	76.0%
Maximum Green (s)	18.0	18.0	59.0		7.0	69.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		2.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	12.0	12.0	70.3		79.7	76.7
Actuated g/C Ratio	0.13	0.13	0.74		0.84	0.81
v/c Ratio	0.47	0.15	0.59		0.16	0.56
Control Delay	47.1	14.0	9.2		3.4	5.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	47.1	14.0	9.2		3.4	5.6
LOS	D	B	A		A	A
Approach Delay	37.4		9.2			5.5
Approach LOS	D		A			A
Queue Length 50th (m)	14.2	0.0	74.5		1.4	55.3
Queue Length 95th (m)	28.5	8.3	115.7		4.3	91.6
Internal Link Dist (m)	162.9		609.8			265.9
Turn Bay Length (m)	15.0				120.0	
Base Capacity (vph)	271	319	2579		339	2912
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.30	0.10	0.59		0.15	0.56

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 95.1	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 8.3	Intersection LOS: A

Intersection Capacity Utilization 56.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Ninth Line & Osprey Boulevard

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	19	1247	67	47	1601
Future Volume (vph)	25	19	1247	67	47	1601
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.992			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1507	3508	0	1426	3570
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1454	1507	3508	0	1426	3570
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	26	20	1299	70	49	1668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	20	1369	0	49	1668
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

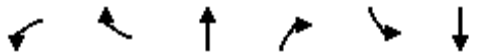
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	19	1247	67	47	1601
Future Volume (Veh/h)	25	19	1247	67	47	1601
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	26	20	1299	70	49	1668
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.78	0.78			0.78	
vC, conflicting volume	2266	684			1369	
vC1, stage 1 conf vol	1334					
vC2, stage 2 conf vol	932					
vCu, unblocked vol	2063	44			918	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	98			92	
cM capacity (veh/h)	210	801			579	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	26	20	866	503	49	834	834
Volume Left	26	0	0	0	49	0	0
Volume Right	0	20	0	70	0	0	0
cSH	210	801	1700	1700	579	1700	1700
Volume to Capacity	0.12	0.02	0.51	0.30	0.08	0.49	0.49
Queue Length 95th (m)	3.3	0.6	0.0	0.0	2.2	0.0	0.0
Control Delay (s)	24.6	9.6	0.0	0.0	11.8	0.0	0.0
Lane LOS	C	A			B		
Approach Delay (s)	18.1		0.0		0.3		
Approach LOS	C						

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	117	67	1094	147	134	1511
Future Volume (vph)	117	67	1094	147	134	1511
Ideal Flow (vphpl)	1640	1900	1900	1900	1860	1900
Lane Width (m)	3.0	3.3	3.5	3.2	3.0	3.5
Storage Length (m)	0.0	0.0		25.0	120.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	7.5				45.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.982			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1454	1561	3465	0	1649	3535
Flt Permitted	0.950				0.153	
Satd. Flow (perm)	1454	1561	3465	0	266	3535
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		70	24			
Link Speed (k/h)	50		70			70
Link Distance (m)	218.3		843.0			487.0
Travel Time (s)	15.7		43.4			25.0
Confl. Peds. (#/hr)				2	2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	122	70	1140	153	140	1574
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	70	1293	0	140	1574
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.0			3.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						Yes
Headway Factor	1.31	1.04	1.01	1.06	1.12	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template			Thru		Left	Thru
Leading Detector (m)	7.0	7.0	10.0		2.0	10.0
Trailing Detector (m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Position(m)	-3.0	-3.0	0.0		0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

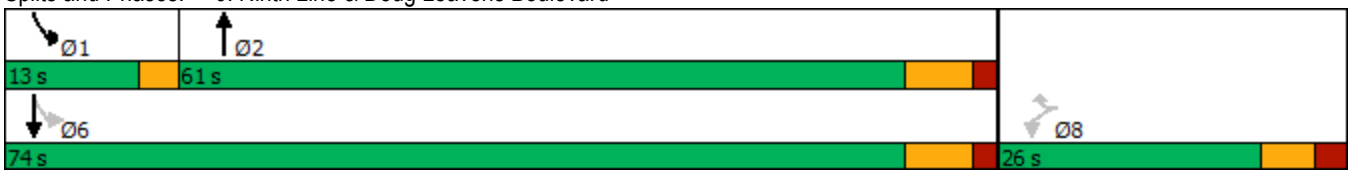


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1	6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0
Minimum Split (s)	24.5	24.5	26.0		9.5	26.0
Total Split (s)	26.0	26.0	61.0		13.0	74.0
Total Split (%)	26.0%	26.0%	61.0%		13.0%	74.0%
Maximum Green (s)	19.5	19.5	54.0		10.0	67.0
Yellow Time (s)	4.0	4.0	5.0		3.0	5.0
All-Red Time (s)	2.5	2.5	2.0		0.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		1.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	8.0			8.0
Flash Dont Walk (s)	11.0	11.0	10.0			10.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	15.0	15.0	60.4		75.0	71.0
Actuated g/C Ratio	0.16	0.16	0.63		0.78	0.74
v/c Ratio	0.54	0.23	0.59		0.40	0.60
Control Delay	45.6	10.4	12.6		6.6	7.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	45.6	10.4	12.6		6.6	7.6
LOS	D	B	B		A	A
Approach Delay	32.7		12.6			7.5
Approach LOS	C		B			A
Queue Length 50th (m)	21.6	0.0	68.9		5.1	62.4
Queue Length 95th (m)	39.4	11.5	113.0		12.5	103.3
Internal Link Dist (m)	194.3		819.0			463.0
Turn Bay Length (m)					120.0	
Base Capacity (vph)	318	396	2188		381	2615
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.38	0.18	0.59		0.37	0.60

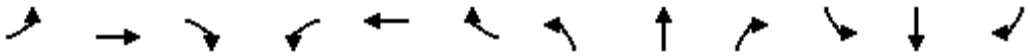
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 96			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 11.1		Intersection LOS: B	

Intersection Capacity Utilization 61.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Doug Leavens Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	959	248	252	1863	140	130	803	215	288	1027	343
Future Volume (vph)	221	959	248	252	1863	140	130	803	215	288	1027	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.98			
Frt			0.850		0.990				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3544	1597	1767	3575	0	1767	3614	1581	1785	3614	1581
Flt Permitted	0.054			0.179			0.119			0.109		
Satd. Flow (perm)	100	3544	1597	333	3575	0	221	3614	1556	205	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			116		7				103			164
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	221	959	248	252	1863	140	130	803	215	288	1027	343
Shared Lane Traffic (%)												
Lane Group Flow (vph)	221	959	248	252	2003	0	130	803	215	288	1027	343
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	16.0	65.5	65.5	34.5	84.0		12.0	40.0	40.0	20.0	48.0	48.0
Total Split (%)	10.0%	40.9%	40.9%	21.6%	52.5%		7.5%	25.0%	25.0%	12.5%	30.0%	30.0%
Maximum Green (s)	13.0	59.4	59.4	31.5	77.9		9.0	33.6	33.6	17.0	41.6	41.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	89.7	73.6	73.6	95.3	77.9		46.0	33.6	33.6	57.0	41.6	41.6
Actuated g/C Ratio	0.56	0.46	0.46	0.60	0.49		0.29	0.21	0.21	0.36	0.26	0.26
v/c Ratio	1.16	0.59	0.31	0.72	1.15		0.87	1.06	0.53	1.20	1.09	0.64
Control Delay	154.0	34.7	16.0	27.1	111.7		84.2	108.4	33.7	161.2	112.2	32.9
Queue Delay	0.0	0.5	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	154.0	35.2	16.0	27.1	111.7		84.2	108.4	33.7	161.2	112.2	32.9
LOS	F	D	B	C	F		F	F	C	F	F	C
Approach Delay		50.3			102.3			91.7			104.3	
Approach LOS		D			F			F			F	
Queue Length 50th (m)	~69.7	122.3	25.8	37.2	~413.3		30.3	~154.6	33.2	~98.4	~203.3	54.4
Queue Length 95th (m)	#131.6	162.1	52.6	53.9	#455.4		#66.0	#198.0	62.1	#161.6	#247.9	92.1
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	191	1631	797	484	1744		150	758	408	240	939	532
Starvation Cap Reductn	0	294	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.72	0.31	0.52	1.15		0.87	1.06	0.53	1.20	1.09	0.64

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 89.5		Intersection LOS: F	

Intersection Capacity Utilization 123.4% ICU Level of Service H

Analysis Period (min) 15

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

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

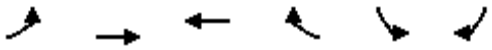
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1331	0	0	2325	104	245
Future Volume (vph)	1331	0	0	2325	104	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3614	3362	1597
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3614	3362	1597
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						104
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	1331	0	0	2325	104	245
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1331	0	0	2325	104	245
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

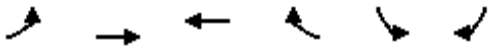
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	126.0			126.0	34.0	34.0
Total Split (%)	78.8%			78.8%	21.3%	21.3%
Maximum Green (s)	120.0			120.0	27.0	27.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	120.2			120.2	19.0	19.0
Actuated g/C Ratio	0.79			0.79	0.12	0.12
v/c Ratio	0.47			0.81	0.25	0.84
Control Delay	6.5			13.6	60.7	61.9
Queue Delay	0.3			9.1	0.0	0.0
Total Delay	6.8			22.7	60.7	61.9
LOS	A			C	E	E
Approach Delay	6.8			22.7	61.5	
Approach LOS	A			C	E	
Queue Length 50th (m)	66.2			203.7	15.6	45.4
Queue Length 95th (m)	97.3			295.5	25.4	78.7
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2825			2853	597	369
Starvation Cap Reductn	696			525	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.63			1.00	0.17	0.66

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 152.2			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 20.8		Intersection LOS: C	
Intersection Capacity Utilization 106.9%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1139	2275	0	282	536
Future Volume (vph)	0	1139	2275	0	282	536
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3510	3614	0	3429	1597
Flt Permitted					0.950	
Satd. Flow (perm)	0	3510	3614	0	3429	1597
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						6
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	0%	1%	0%
Adj. Flow (vph)	0	1139	2275	0	282	536
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1139	2275	0	282	536
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm

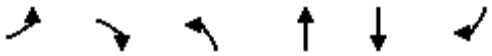


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		104.0	104.0		56.0	56.0
Total Split (%)		65.0%	65.0%		35.0%	35.0%
Maximum Green (s)		98.0	98.0		49.0	49.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		98.0	98.0		49.0	49.0
Actuated g/C Ratio		0.61	0.61		0.31	0.31
v/c Ratio		0.53	1.03		0.27	1.09
Control Delay		18.9	57.4		42.8	116.5
Queue Delay		0.0	29.1		0.0	0.0
Total Delay		18.9	86.5		42.8	116.5
LOS		B	F		D	F
Approach Delay		18.9	86.5		91.1	
Approach LOS		B	F		F	
Queue Length 50th (m)		110.5	~426.4		36.9	~199.6
Queue Length 95th (m)		129.2	#465.4		50.2	#276.2
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		2149	2213		1050	493
Starvation Cap Reductn		0	220		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.53	1.14		0.27	1.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 69.2		Intersection LOS: E	
Intersection Capacity Utilization 106.9%		ICU Level of Service G	
Analysis Period (min) 15			

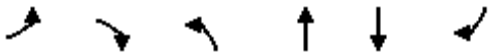
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	566	421	0	2227	2122	0
Future Volume (vph)	566	421	0	2227	2122	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.975	0.850				
Flt Protected	0.960					
Satd. Flow (prot)	3065	1411	0	4980	5079	0
Flt Permitted	0.960					
Satd. Flow (perm)	3065	1411	0	4980	5079	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8	*134				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	13%	3%	0%	3%	1%	0%
Adj. Flow (vph)	584	434	0	2296	2188	0
Shared Lane Traffic (%)		27%				
Lane Group Flow (vph)	701	317	0	2296	2188	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

11: Winston Churchill Boulevard & 401 EB Off-Ramp

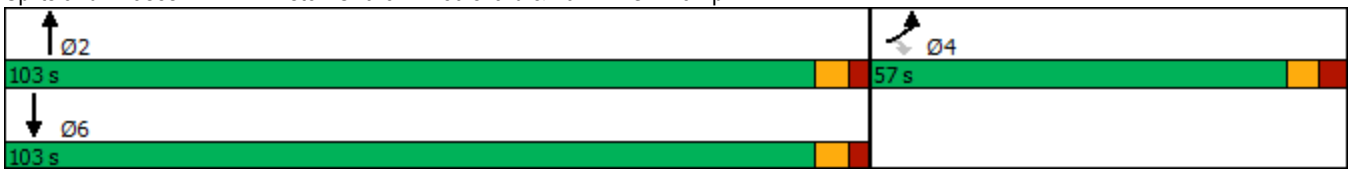


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	57.0	57.0		103.0	103.0	
Total Split (%)	35.6%	35.6%		64.4%	64.4%	
Maximum Green (s)	49.5	49.5		96.5	96.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	44.5	44.5		98.1	98.1	
Actuated g/C Ratio	0.29	0.29		0.64	0.64	
v/c Ratio	0.78	0.63		0.72	0.67	
Control Delay	55.5	31.8		20.5	19.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	55.5	31.8		20.5	19.1	
LOS	E	C		C	B	
Approach Delay	48.1			20.5	19.1	
Approach LOS	D			C	B	
Queue Length 50th (m)	104.8	56.2		170.7	153.9	
Queue Length 95th (m)	128.7	94.1		211.9	191.4	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1050	569		3200	3264	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.67	0.56		0.72	0.67	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 152.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 25.0		Intersection LOS: C	
Intersection Capacity Utilization 99.5%		ICU Level of Service F	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1049	1059	2457	0	0	1617
Future Volume (vph)	1049	1059	2457	0	0	1617
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.959	0.850				
Flt Protected	0.965					
Satd. Flow (prot)	3322	1411	4839	0	0	4932
Flt Permitted	0.965					
Satd. Flow (perm)	3322	1411	4839	0	0	4932
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	1	*304				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	6%	0%	0%	4%
Adj. Flow (vph)	1081	1092	2533	0	0	1667
Shared Lane Traffic (%)		37%				
Lane Group Flow (vph)	1485	688	2533	0	0	1667
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

12: Winston Churchill Boulevard & 401 WB Off-Ramp

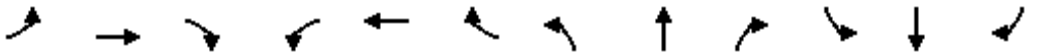
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	74.0	74.0	86.0			86.0
Total Split (%)	46.3%	46.3%	53.8%			53.8%
Maximum Green (s)	67.5	67.5	78.5			78.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	69.0	69.0	81.0			81.0
Actuated g/C Ratio	0.43	0.43	0.51			0.51
v/c Ratio	1.04	0.88	1.03			0.67
Control Delay	77.6	36.7	66.3			31.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	77.6	36.7	66.3			31.1
LOS	E	D	E			C
Approach Delay	64.7		66.3			31.1
Approach LOS	E		E			C
Queue Length 50th (m)	~274.8	146.9	~332.3			149.7
Queue Length 95th (m)	#319.0	#247.6	#357.7			166.4
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1433	781	2449			2496
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.04	0.88	1.03			0.67

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 56.5		Intersection LOS: E	
Intersection Capacity Utilization 99.5%		ICU Level of Service F	
Analysis Period (min) 15			

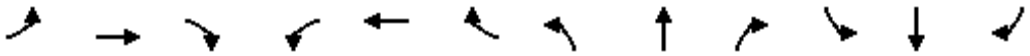
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	1311	362	93	574	108	225	603	154	86	823	110
Future Volume (vph)	125	1311	362	93	574	108	225	603	154	86	823	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		0.0	60.0		60.0	50.0		50.0	55.0		60.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.98			
Frt		0.968				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3498	0	1733	3579	1439	1767	1865	1581	1608	1902	1581
Flt Permitted	0.321			0.066			0.065			0.170		
Satd. Flow (perm)	603	3498	0	120	3579	1439	121	1865	1557	288	1902	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26				114			82			103
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		191.5			244.1			195.1			633.8	
Travel Time (s)		8.6			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	125	1311	362	93	574	108	225	603	154	86	823	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	1673	0	93	574	108	225	603	154	86	823	110
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			3.6			3.6	
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					Yes			Yes			Yes	
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template		Thru		Left	Thru	Right			Right			Right
Leading Detector (m)	25.0	10.0		2.0	10.0	2.0	25.0	10.0	2.0	25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0		0.0	0.0	0.0	15.0	-3.0	0.0	15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0		0.0	0.0	0.0	15.0	-3.0	0.0	15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6		2.0	0.6	2.0	10.0	10.0	2.0	10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0		5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	9.5	24.1		9.5	24.1	24.1	9.5	37.7	37.7	9.5	37.7	37.7
Total Split (s)	12.8	69.5		9.5	66.2	66.2	15.0	71.2	71.2	9.8	66.0	66.0
Total Split (%)	8.0%	43.4%		5.9%	41.4%	41.4%	9.4%	44.5%	44.5%	6.1%	41.3%	41.3%
Maximum Green (s)	9.8	63.4		6.5	60.1	60.1	12.0	63.5	63.5	6.8	58.3	58.3
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1		0.0	2.1	2.1	0.0	3.7	3.7	0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1		3.0	6.1	6.1	3.0	7.7	7.7	3.0	7.7	7.7
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		11.0			11.0	11.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	75.6	63.4		70.2	60.6	60.6	78.0	63.6	63.6	69.7	58.3	58.3
Actuated g/C Ratio	0.47	0.40		0.44	0.38	0.38	0.49	0.40	0.40	0.44	0.36	0.36
v/c Ratio	0.35	1.19		0.79	0.42	0.18	1.24	0.81	0.23	0.48	1.19	0.17
Control Delay	26.7	136.1		69.5	38.1	5.2	179.8	53.2	15.6	32.2	142.4	7.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	136.1		69.5	38.1	5.2	179.8	53.2	15.6	32.2	142.4	7.4
LOS	C	F		E	D	A	F	D	B	C	F	A
Approach Delay		128.5			37.3			76.3			118.5	
Approach LOS		F			D			E			F	
Queue Length 50th (m)	23.3	~353.1		17.0	75.1	0.0	~75.4	179.4	15.2	15.4	~330.5	1.5
Queue Length 95th (m)	37.1	#397.5		#47.3	93.0	12.2	#133.7	233.8	32.6	26.3	#413.0	15.6
Internal Link Dist (m)		167.5			220.1			171.1			609.8	
Turn Bay Length (m)	60.0			60.0		60.0	50.0		50.0	55.0		60.0
Base Capacity (vph)	358	1401		117	1354	615	182	741	668	181	693	641
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	1.19		0.79	0.42	0.18	1.24	0.81	0.23	0.48	1.19	0.17

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.24			
Intersection Signal Delay: 99.6		Intersection LOS: F	

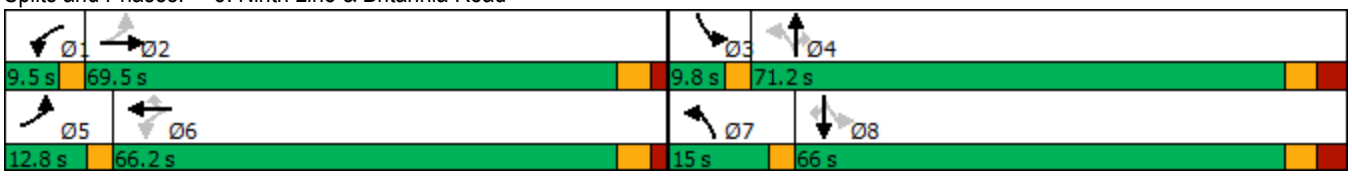
Intersection Capacity Utilization 126.9% ICU Level of Service H

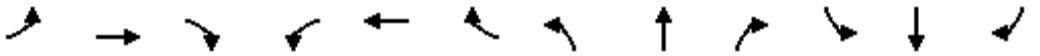
Analysis Period (min) 15

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

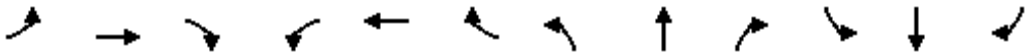
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	0	40	127	0	60	13	804	93	21	840	12
Future Volume (vph)	25	0	40	127	0	60	13	804	93	21	840	12
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1640	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	20.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			15.0			7.5			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850				0.850		0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1583	0	1412	1538	0	1732	1807	1276	1683	1877	0
Flt Permitted	0.717			0.730			0.213			0.235		
Satd. Flow (perm)	1153	1583	0	1085	1538	0	388	1807	1276	416	1877	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		257			270				71		1	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		122.1			186.9			633.8			289.9	
Travel Time (s)		8.8			13.5			32.6			14.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	2%	5%	2%	4%	8%	5%	1%	2%
Adj. Flow (vph)	26	0	41	131	0	62	13	829	96	22	866	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	41	0	131	62	0	13	829	96	22	878	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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								Yes			Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.22	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru			Thru		Left	Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0	2.0	20.0	10.0	
Trailing Detector (m)	0.0	0.0		-1.0	0.0		0.0	0.0	0.0	10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-1.0	0.0		0.0	0.0	0.0	10.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6	2.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	

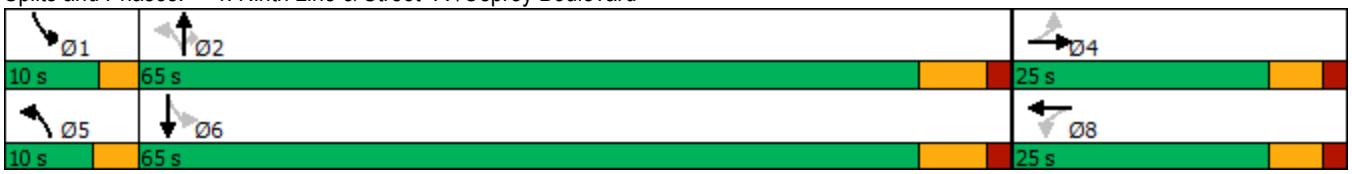


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	8.0	8.0	5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0	25.0	9.5	25.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	65.0	65.0	10.0	65.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		10.0%	65.0%	65.0%	10.0%	65.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.5	58.0	58.0	7.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.5	5.0	5.0	1.0	5.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0	0		0	
Act Effct Green (s)	16.1	16.1		16.1	16.1		70.2	63.7	63.7	70.2	64.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.76	0.69	0.69	0.76	0.70	
v/c Ratio	0.13	0.08		0.70	0.13		0.03	0.67	0.11	0.05	0.67	
Control Delay	33.5	0.3		56.0	0.5		3.6	13.6	3.0	3.6	12.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	33.5	0.3		56.0	0.5		3.6	13.6	3.0	3.6	12.7	
LOS	C	A		E	A		A	B	A	A	B	
Approach Delay		13.2			38.2			12.4			12.5	
Approach LOS		B			D			B			B	
Queue Length 50th (m)	3.8	0.0		21.2	0.0		0.5	70.3	1.2	0.8	75.6	
Queue Length 95th (m)	11.8	0.0		#45.7	0.0		2.1	160.6	8.0	2.8	179.4	
Internal Link Dist (m)		98.1			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0		25.0	20.0		
Base Capacity (vph)	249	543		234	544		417	1240	898	439	1313	
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	0.10	0.08		0.56	0.11		0.03	0.67	0.11	0.05	0.67	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 92.8			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 14.8		Intersection LOS: B	
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	69	869	36	31	825
Future Volume (vph)	48	69	869	36	31	825
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.920		0.995			
Flt Protected	0.980				0.950	
Satd. Flow (prot)	1380	0	1811	0	1412	1842
Flt Permitted	0.980				0.950	
Satd. Flow (perm)	1380	0	1811	0	1412	1842
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	50	72	905	38	32	859
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	0	943	0	32	859
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

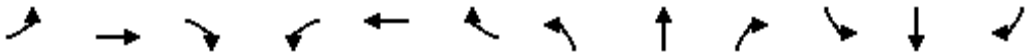
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	69	869	36	31	825
Future Volume (Veh/h)	48	69	869	36	31	825
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	50	72	905	38	32	859
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			290			
pX, platoon unblocked	0.68	0.68			0.68	
vC, conflicting volume	1847	924			943	
vC1, stage 1 conf vol	924					
vC2, stage 2 conf vol	923					
vCu, unblocked vol	2011	652			680	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	80	78			95	
cM capacity (veh/h)	249	320			616	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	122	943	32	859
Volume Left	50	0	32	0
Volume Right	72	38	0	0
cSH	287	1700	616	1700
Volume to Capacity	0.43	0.55	0.05	0.51
Queue Length 95th (m)	16.2	0.0	1.3	0.0
Control Delay (s)	26.5	0.0	11.2	0.0
Lane LOS	D		B	
Approach Delay (s)	26.5	0.0	0.4	
Approach LOS	D			

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	5	14	134	2	141	4	817	102	68	678	12
Future Volume (vph)	50	5	14	134	2	141	4	817	102	68	678	12
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1640	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.6	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	80.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			80.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.98			
Frt		0.887			0.852				0.850		0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1652	0	1412	1587	0	1732	1842	1222	1649	1854	0
Flt Permitted	0.598			0.744			0.282			0.139		
Satd. Flow (perm)	961	1652	0	1106	1587	0	514	1842	1194	241	1854	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			153				71		1	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		140.5			218.3			843.0			487.0	
Travel Time (s)		10.1			15.7			43.4			25.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	9%	0%	1%	2%
Adj. Flow (vph)	54	5	15	146	2	153	4	888	111	74	737	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	20	0	146	155	0	4	888	111	74	750	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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								Yes			Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.03	1.01	1.28	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0	8.0	5.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5		9.5	26.0	26.0	9.5	26.0	
Total Split (s)	36.0	36.0		36.0	36.0		10.0	54.0	54.0	10.0	54.0	
Total Split (%)	36.0%	36.0%		36.0%	36.0%		10.0%	54.0%	54.0%	10.0%	54.0%	
Maximum Green (s)	29.5	29.5		29.5	29.5		7.0	47.0	47.0	7.0	47.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0	5.0	1.0	5.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	
Walk Time (s)	8.0	8.0		7.0	7.0			8.0	8.0		8.0	
Flash Dont Walk (s)	8.0	8.0		11.0	11.0			10.0	10.0		10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0	0		0	
Act Effct Green (s)	18.0	18.0		18.0	18.0		60.6	50.7	50.7	62.2	56.6	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.70	0.59	0.59	0.72	0.66	
v/c Ratio	0.27	0.06		0.63	0.34		0.01	0.82	0.15	0.24	0.62	
Control Delay	31.7	14.9		43.9	7.2		5.0	25.0	5.4	6.5	13.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	31.7	14.9		43.9	7.2		5.0	25.0	5.4	6.5	13.6	
LOS	C	B		D	A		A	C	A	A	B	
Approach Delay		27.2			25.0			22.8			13.0	
Approach LOS		C			C			C			B	
Queue Length 50th (m)	8.0	0.7		23.4	0.3		0.2	120.9	2.9	3.1	61.9	
Queue Length 95th (m)	18.3	6.4		43.2	14.8		1.3	#245.5	12.6	9.6	163.1	
Internal Link Dist (m)		116.5			194.3			819.0			463.0	
Turn Bay Length (m)							15.0		25.0	80.0		
Base Capacity (vph)	347	607		399	671		495	1082	730	321	1216	
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	0.16	0.03		0.37	0.23		0.01	0.82	0.15	0.23	0.62	

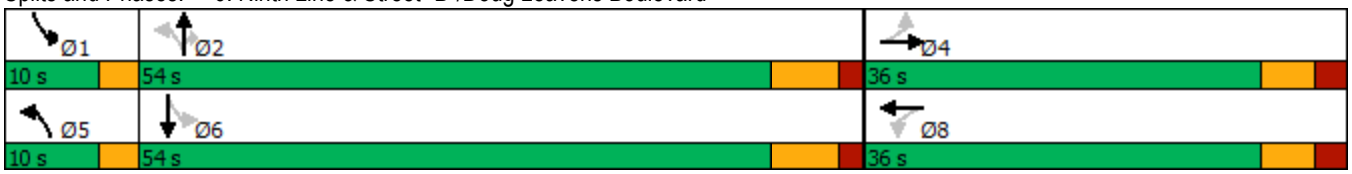
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 86.3			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 19.6		Intersection LOS: B	

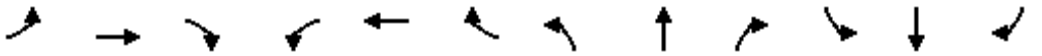
Intersection Capacity Utilization 78.5% ICU Level of Service D

Analysis Period (min) 15

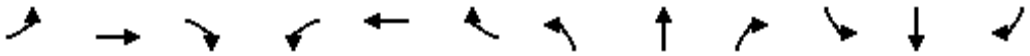
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	1326	112	151	623	101	252	472	262	66	501	275
Future Volume (vph)	249	1326	112	151	623	101	252	472	262	66	501	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		50.0	80.0		50.0	110.0		110.0	60.0		70.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			80.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00										
Frt		0.988			0.979				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	3567	0	1733	3445	0	1750	1902	1566	1716	1902	1581
Flt Permitted	0.239			0.066			0.086			0.283		
Satd. Flow (perm)	424	3567	0	120	3445	0	158	1902	1566	511	1902	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			12				211			167
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		271.6			182.6			813.6			145.2	
Travel Time (s)		16.3			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	249	1326	112	151	623	101	252	472	262	66	501	275
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	1438	0	151	724	0	252	472	262	66	501	275
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template		Thru			Thru							
Leading Detector (m)	25.0	10.0		25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0		15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0		15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
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	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1		9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	30.4	73.0		14.6	57.2		21.4	62.8	62.8	9.6	51.0	51.0
Total Split (%)	19.0%	45.6%		9.1%	35.8%		13.4%	39.3%	39.3%	6.0%	31.9%	31.9%
Maximum Green (s)	27.4	66.9		11.6	51.1		18.4	56.4	56.4	6.6	44.6	44.6
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1		0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1		3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Walk Time (s)		9.0			9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0			15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	84.0	66.9		74.8	60.5		68.2	55.2	55.2	53.3	43.4	43.4
Actuated g/C Ratio	0.53	0.42		0.47	0.38		0.43	0.35	0.35	0.34	0.27	0.27
v/c Ratio	0.68	0.95		0.89	0.55		1.00	0.71	0.38	0.30	0.96	0.50
Control Delay	30.8	58.3		83.3	40.4		100.4	51.8	10.1	31.2	87.4	21.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	58.3		83.3	40.4		100.4	51.8	10.1	31.2	87.4	21.5
LOS	C	E		F	D		F	D	B	C	F	C
Approach Delay		54.3			47.8			53.1			61.5	
Approach LOS		D			D			D			E	
Queue Length 50th (m)	45.1	244.2		33.7	98.0		~68.0	136.1	11.4	12.9	165.4	29.1
Queue Length 95th (m)	64.5	#296.4		#80.5	127.5		#130.0	180.1	34.9	23.4	#237.8	59.3
Internal Link Dist (m)		247.6			158.6			789.6			121.2	
Turn Bay Length (m)	75.0			80.0			110.0		110.0	60.0		70.0
Base Capacity (vph)	443	1510		174	1322		252	677	693	222	535	565
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.95		0.87	0.55		1.00	0.70	0.38	0.30	0.94	0.49

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 158.4			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 54.1		Intersection LOS: D	

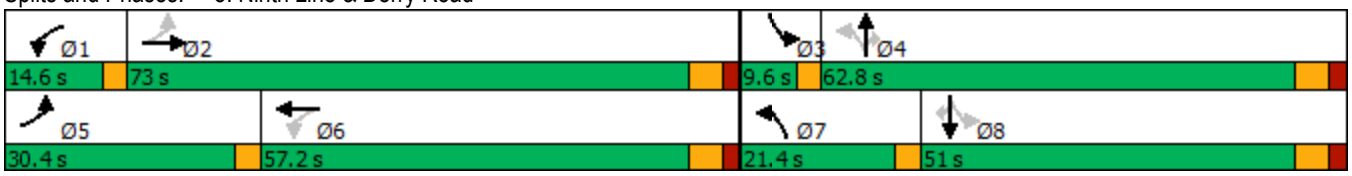
Intersection Capacity Utilization 106.0% ICU Level of Service G

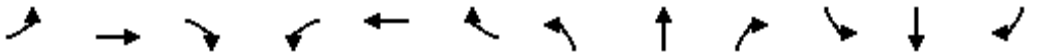
Analysis Period (min) 15

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

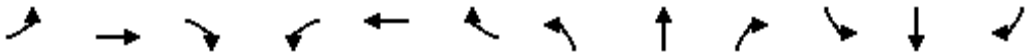
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Ninth Line & Derry Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	703	321	138	972	148	193	869	114	100	711	99
Future Volume (vph)	162	703	321	138	972	148	193	869	114	100	711	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		0.0	60.0		60.0	50.0		50.0	55.0		60.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.98			
Frt		0.953				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3455	0	1785	3614	1551	1767	1902	1597	1716	1902	1536
Flt Permitted	0.083			0.085			0.089			0.059		
Satd. Flow (perm)	156	3455	0	160	3614	1551	166	1902	1570	107	1902	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47				93			62			82
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		176.1			244.1			195.1			633.8	
Travel Time (s)		7.9			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	162	703	321	138	972	148	193	869	114	100	711	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	1024	0	138	972	148	193	869	114	100	711	99
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			3.6			3.6	
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					Yes			Yes			Yes	
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template		Thru		Left	Thru	Right			Right			Right
Leading Detector (m)	25.0	10.0		2.0	10.0	2.0	25.0	10.0	2.0	25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0		0.0	0.0	0.0	15.0	-3.0	0.0	15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0		0.0	0.0	0.0	15.0	-3.0	0.0	15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6		2.0	0.6	2.0	10.0	10.0	2.0	10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	5	2		1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0		5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	9.5	24.1		9.5	24.1	24.1	9.5	37.7	37.7	9.5	37.7	37.7
Total Split (s)	14.2	54.5		13.0	53.3	53.3	16.0	83.0	83.0	9.5	76.5	76.5
Total Split (%)	8.9%	34.1%		8.1%	33.3%	33.3%	10.0%	51.9%	51.9%	5.9%	47.8%	47.8%
Maximum Green (s)	11.2	48.4		10.0	47.2	47.2	13.0	75.3	75.3	6.5	68.8	68.8
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1		0.0	2.1	2.1	0.0	3.7	3.7	0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1		3.0	6.1	6.1	3.0	7.7	7.7	3.0	7.7	7.7
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		12.0	12.0		12.0	12.0
Flash Dont Walk (s)		11.0			11.0	11.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	62.7	48.4		60.3	47.2	47.2	88.0	73.8	73.8	78.8	67.6	67.6
Actuated g/C Ratio	0.40	0.31		0.38	0.30	0.30	0.56	0.47	0.47	0.50	0.43	0.43
v/c Ratio	0.92	0.94		0.85	0.90	0.28	0.88	0.98	0.15	0.85	0.88	0.14
Control Delay	86.1	67.6		74.4	65.9	18.3	64.8	67.5	11.8	77.5	55.0	7.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.1	67.6		74.4	65.9	18.3	64.8	67.5	11.8	77.5	55.0	7.9
LOS	F	E		E	E	B	E	E	B	E	D	A
Approach Delay		70.1			61.2			61.7			52.3	
Approach LOS		E			E			E			D	
Queue Length 50th (m)	36.9	171.0		29.8	166.0	13.5	36.2	279.9	9.4	16.2	215.1	3.3
Queue Length 95th (m)	#84.9	#216.1		#70.0	#204.7	33.4	#82.8	#375.5	21.8	#52.6	#282.7	15.3
Internal Link Dist (m)		152.1			220.1			171.1			609.8	
Turn Bay Length (m)	60.0			60.0		60.0	50.0		50.0	55.0		60.0
Base Capacity (vph)	177	1087		163	1076	527	223	904	778	118	825	713
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.94		0.85	0.90	0.28	0.87	0.96	0.15	0.85	0.86	0.14

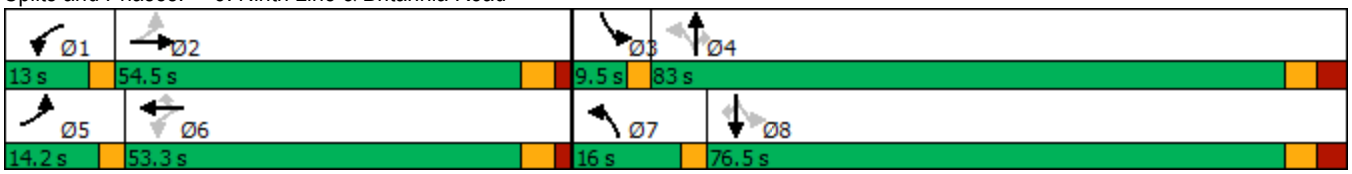
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 158.5			
Natural Cycle: 135			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 61.9		Intersection LOS: E	

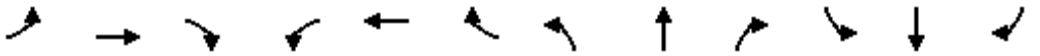
Intersection Capacity Utilization 106.8% ICU Level of Service G

Analysis Period (min) 15

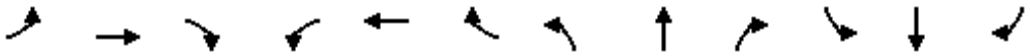
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	0	26	71	0	30	44	975	105	45	849	40
Future Volume (vph)	17	0	26	71	0	30	44	975	105	45	849	40
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1640	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	20.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			15.0			7.5			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.98			
Frt		0.850			0.850				0.850		0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1583	0	1359	1568	0	1732	1860	1351	1767	1885	0
Flt Permitted	0.737			0.740			0.201			0.165		
Satd. Flow (perm)	1185	1583	0	1059	1568	0	367	1860	1321	307	1885	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		261			223				65		4	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		103.4			186.9			633.8			289.9	
Travel Time (s)		7.4			13.5			32.6			14.9	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	7%	2%	3%	2%	1%	2%	0%	0%	2%
Adj. Flow (vph)	18	0	27	74	0	31	46	1016	109	47	884	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	27	0	74	31	0	46	1016	109	47	926	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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								Yes			Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.22	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru			Thru		Left	Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0	2.0	20.0	10.0	
Trailing Detector (m)	0.0	0.0		-0.2	0.0		0.0	0.0	0.0	10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-0.2	0.0		0.0	0.0	0.0	10.0	0.0	
Detector 1 Size(m)	2.0	0.6		9.2	0.6		2.0	0.6	2.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	8.0	8.0	5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0	25.0	9.5	25.0	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	66.0	66.0	10.0	66.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		10.0%	66.0%	66.0%	10.0%	66.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		7.0	59.0	59.0	7.0	59.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0	5.0	1.0	5.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0	0		0	
Act Effct Green (s)	12.5	12.5		12.6	12.6		75.9	68.3	68.3	74.5	67.6	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.83	0.74	0.74	0.81	0.74	
v/c Ratio	0.11	0.06		0.51	0.08		0.11	0.73	0.11	0.13	0.67	
Control Delay	35.9	0.3		49.5	0.4		3.1	15.2	3.4	3.4	13.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	35.9	0.3		49.5	0.4		3.1	15.2	3.4	3.4	13.4	
LOS	D	A		D	A		A	B	A	A	B	
Approach Delay		14.5			35.0			13.7			12.9	
Approach LOS		B			D			B			B	
Queue Length 50th (m)	3.0	0.0		13.1	0.0		1.3	123.2	2.5	1.4	103.5	
Queue Length 95th (m)	9.4	0.0		27.6	0.0		4.6	#262.9	9.7	4.7	194.4	
Internal Link Dist (m)		79.4			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0		25.0	20.0		
Base Capacity (vph)	246	535		220	502		437	1384	999	396	1388	
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	0.07	0.05		0.34	0.06		0.11	0.73	0.11	0.12	0.67	

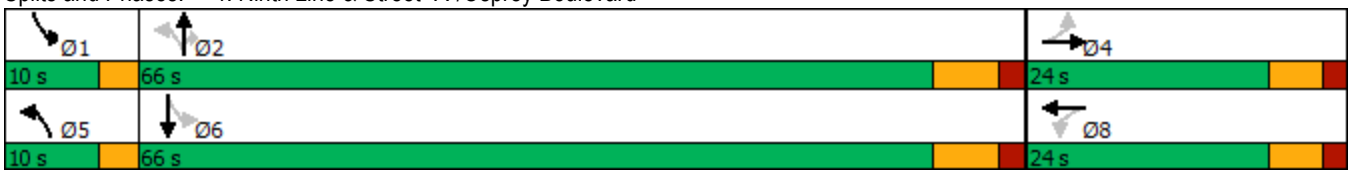
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 91.8			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 14.3		Intersection LOS: B	

Intersection Capacity Utilization 70.9% ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



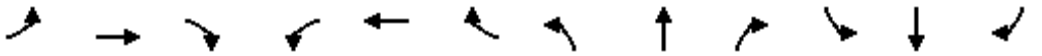
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	18	921	62	43	911
Future Volume (vph)	23	18	921	62	43	911
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.940		0.991			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1400	0	1845	0	1426	1879
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1400	0	1845	0	1426	1879
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			265.1
Travel Time (s)	12.0		14.9			13.6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	24	19	959	65	45	949
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	1024	0	45	949
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.2%		ICU Level of Service B	
Analysis Period (min) 15			

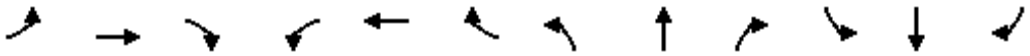
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	18	921	62	43	911
Future Volume (Veh/h)	23	18	921	62	43	911
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	24	19	959	65	45	949
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			290			
pX, platoon unblocked	0.52	0.52			0.52	
vC, conflicting volume	2030	992			1024	
vC1, stage 1 conf vol	992					
vC2, stage 2 conf vol	1039					
vCu, unblocked vol	2529	514			577	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	93			91	
cM capacity (veh/h)	208	291			514	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	43	1024	45	949
Volume Left	24	0	45	0
Volume Right	19	65	0	0
cSH	238	1700	514	1700
Volume to Capacity	0.18	0.60	0.09	0.56
Queue Length 95th (m)	5.2	0.0	2.3	0.0
Control Delay (s)	23.4	0.0	12.7	0.0
Lane LOS	C		B	
Approach Delay (s)	23.4	0.0	0.6	
Approach LOS	C			

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	3	9	107	6	59	15	788	129	103	838	43
Future Volume (vph)	32	3	9	107	6	59	15	788	129	103	838	43
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1640	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.6	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	80.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			80.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.97			
Frt		0.887			0.863				0.850		0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1652	0	1454	1637	0	1732	1860	1332	1649	1846	0
Flt Permitted	0.713			0.750			0.210			0.219		
Satd. Flow (perm)	1146	1652	0	1148	1637	0	383	1860	1298	380	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			61				71		5	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		111.4			218.3			577.9			487.0	
Travel Time (s)		8.0			15.7			29.7			25.0	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Adj. Flow (vph)	33	3	9	111	6	61	16	821	134	107	873	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	12	0	111	67	0	16	821	134	107	918	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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								Yes			Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.03	1.01	1.28	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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												

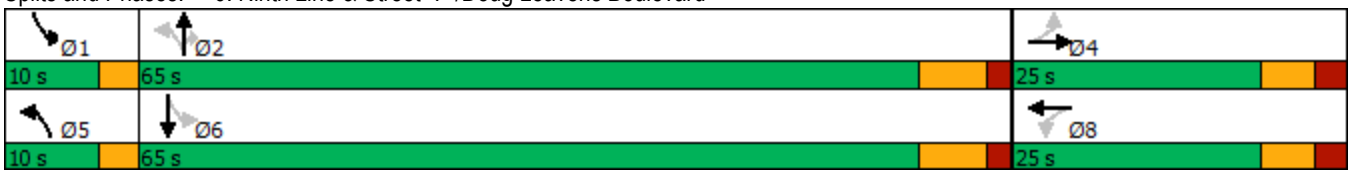


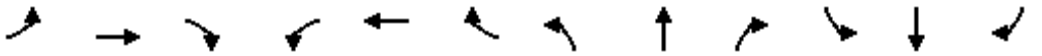
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0	8.0	5.0	8.0	
Minimum Split (s)	24.5	24.5		24.5	24.5		9.5	26.0	26.0	9.5	26.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	65.0	65.0	10.0	65.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		10.0%	65.0%	65.0%	10.0%	65.0%	
Maximum Green (s)	18.5	18.5		18.5	18.5		7.0	58.0	58.0	7.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0	5.0	1.0	5.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	
Walk Time (s)	8.0	8.0		7.0	7.0			8.0	8.0		8.0	
Flash Dont Walk (s)	8.0	8.0		11.0	11.0			10.0	10.0		10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0	0		0	
Act Effct Green (s)	15.5	15.5		15.5	15.5		74.7	62.9	62.9	76.5	69.0	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.76	0.64	0.64	0.78	0.70	
v/c Ratio	0.18	0.04		0.61	0.22		0.04	0.69	0.16	0.26	0.71	
Control Delay	36.4	20.8		52.2	12.2		3.4	16.1	4.6	4.7	14.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	36.4	20.8		52.2	12.2		3.4	16.1	4.6	4.7	14.6	
LOS	D	C		D	B		A	B	A	A	B	
Approach Delay		32.2			37.1			14.3			13.6	
Approach LOS		C			D			B			B	
Queue Length 50th (m)	5.6	0.5		20.2	1.0		0.6	97.7	4.4	4.1	80.4	
Queue Length 95th (m)	14.3	5.4		38.4	12.4		2.3	161.6	13.0	9.4	197.5	
Internal Link Dist (m)		87.4			194.3			553.9			463.0	
Turn Bay Length (m)							15.0		25.0	80.0		
Base Capacity (vph)	233	344		234	382		420	1193	857	413	1299	
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	0.14	0.03		0.47	0.18		0.04	0.69	0.16	0.26	0.71	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 98.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 16.2		Intersection LOS: B	

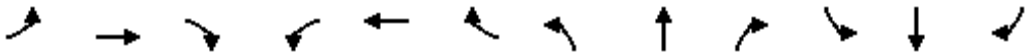
Intersection Capacity Utilization 76.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Street "F"/Doug Leavens Boulevard





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	748	251	259	1501	89	118	577	195	117	476	261
Future Volume (vph)	206	748	251	259	1501	89	118	577	195	117	476	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		50.0	80.0		50.0	110.0		110.0	60.0		70.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			80.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.98			
Frt		0.962			0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3434	0	1767	3583	0	1767	1902	1581	1785	1902	1581
Flt Permitted	0.059			0.146			0.148			0.083		
Satd. Flow (perm)	110	3434	0	272	3583	0	275	1902	1556	156	1902	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			5				161			172
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		271.6			182.6			813.6			145.2	
Travel Time (s)		16.3			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	206	748	251	259	1501	89	118	577	195	117	476	261
Shared Lane Traffic (%)												
Lane Group Flow (vph)	206	999	0	259	1590	0	118	577	195	117	476	261
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template		Thru			Thru							
Leading Detector (m)	25.0	10.0		25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0		15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0		15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
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	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1		9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	18.0	69.4		25.2	76.6		10.6	55.0	55.0	10.4	54.8	54.8
Total Split (%)	11.3%	43.4%		15.8%	47.9%		6.6%	34.4%	34.4%	6.5%	34.3%	34.3%
Maximum Green (s)	15.0	63.3		22.2	70.5		7.6	48.6	48.6	7.4	48.4	48.4
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1		0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1		3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		None	None	None	None	None	None
Walk Time (s)		9.0			9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0			15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	85.9	67.9		89.6	70.5		59.6	48.6	48.6	59.2	48.4	48.4
Actuated g/C Ratio	0.54	0.42		0.56	0.44		0.37	0.30	0.30	0.37	0.30	0.30
v/c Ratio	0.96	0.68		0.82	1.01		0.68	1.00	0.33	0.88	0.83	0.44
Control Delay	96.7	39.3		42.4	67.9		54.1	92.2	11.0	86.5	65.3	17.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.7	39.3		42.4	67.9		54.1	92.2	11.0	86.5	65.3	17.3
LOS	F	D		D	E		D	F	B	F	E	B
Approach Delay		49.1			64.3			69.3			53.6	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	52.5	137.5		42.1	~281.2		25.8	194.1	8.1	25.5	149.0	22.3
Queue Length 95th (m)	#109.5	170.8		74.3	#336.0		#45.2	#276.8	29.5	#61.9	#199.1	50.0
Internal Link Dist (m)		247.6			158.6			789.6			121.2	
Turn Bay Length (m)	75.0			80.0			110.0		110.0	60.0		70.0
Base Capacity (vph)	214	1476		363	1581		173	577	584	133	575	598
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.68		0.71	1.01		0.68	1.00	0.33	0.88	0.83	0.44

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 59.5		Intersection LOS: E	

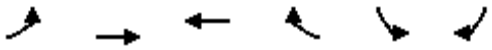
Intersection Capacity Utilization 109.7% ICU Level of Service H

Analysis Period (min) 15

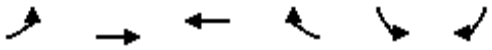
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 8: Ninth Line & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1222	572	0	450	23
Future Volume (vph)	0	1222	572	0	450	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3579	0	1684	1210
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3579	0	1684	1210
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						17
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	0%	6%	32%
Adj. Flow (vph)	0	1222	572	0	450	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1222	572	0	450	23
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		96.0	96.0		64.0	64.0
Total Split (%)		60.0%	60.0%		40.0%	40.0%
Maximum Green (s)		90.0	90.0		57.0	57.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		90.4	90.4		43.6	43.6
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.55	0.26		0.90	0.06
Control Delay		18.8	14.4		71.6	17.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		18.8	14.4		71.6	17.3
LOS		B	B		E	B
Approach Delay		18.8	14.4		69.0	
Approach LOS		B	B		E	
Queue Length 50th (m)		110.2	40.6		132.4	1.3
Queue Length 95th (m)		160.6	63.2		178.0	8.2
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2221	2200		655	481
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.55	0.26		0.69	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 28.2		Intersection LOS: C	
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

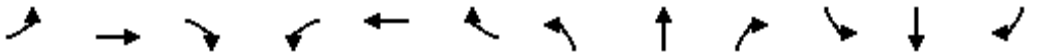
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1626	0	0	725	22	233
Future Volume (vph)	1626	0	0	725	22	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3579	1608	1566
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3579	1608	1566
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						43
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	2%	11%	2%
Adj. Flow (vph)	1626	0	0	725	22	233
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1626	0	0	725	22	233
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

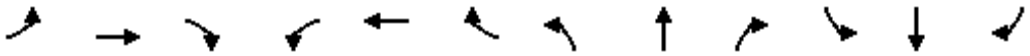
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	114.0			114.0	46.0	46.0
Total Split (%)	71.3%			71.3%	28.8%	28.8%
Maximum Green (s)	108.0			108.0	39.0	39.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	108.3			108.3	23.1	23.1
Actuated g/C Ratio	0.75			0.75	0.16	0.16
v/c Ratio	0.60			0.27	0.09	0.81
Control Delay	10.2			6.5	50.8	69.0
Queue Delay	0.4			0.0	0.0	0.0
Total Delay	10.6			6.5	50.8	69.0
LOS	B			A	D	E
Approach Delay	10.6			6.5	67.5	
Approach LOS	B			A	E	
Queue Length 50th (m)	104.1			32.0	5.7	56.4
Queue Length 95th (m)	161.2			52.6	14.0	87.9
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2709			2683	435	455
Starvation Cap Reductn	522			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.74			0.27	0.05	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 144.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	1370	336	87	597	102	213	686	152	93	960	113
Future Volume (vph)	112	1370	336	87	597	102	213	686	152	93	960	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00		1.00		
Frt			0.850			0.850		0.973				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1581	1733	3579	1439	1767	3451	0	1608	3614	1581
Flt Permitted	0.335			0.062			0.082			0.160		
Satd. Flow (perm)	629	3614	1581	113	3579	1439	153	3451	0	271	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			163			102		17				111
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	112	1370	336	87	597	102	213	686	152	93	960	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	1370	336	87	597	102	213	838	0	93	960	113
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			3.6			3.6	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	15.0	78.5	78.5	9.5	73.0	73.0	16.0	58.0		14.0	56.0	56.0
Total Split (%)	9.4%	49.1%	49.1%	5.9%	45.6%	45.6%	10.0%	36.3%		8.8%	35.0%	35.0%
Maximum Green (s)	12.0	72.4	72.4	6.5	66.9	66.9	13.0	50.3		11.0	48.3	48.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	84.3	72.5	72.5	79.0	69.4	69.4	66.0	49.2		59.9	45.7	45.7
Actuated g/C Ratio	0.54	0.46	0.46	0.50	0.44	0.44	0.42	0.31		0.38	0.29	0.29
v/c Ratio	0.28	0.82	0.41	0.71	0.38	0.15	1.08	0.77		0.51	0.92	0.21
Control Delay	20.2	42.6	15.8	54.2	31.2	5.2	125.8	53.6		37.9	67.7	7.9
Queue Delay	0.0	20.8	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	20.2	63.4	15.8	54.2	31.2	5.2	125.8	53.6		37.9	67.7	7.9
LOS	C	E	B	D	C	A	F	D		D	E	A
Approach Delay		52.0			30.3			68.2			59.5	
Approach LOS		D			C			E			E	
Queue Length 50th (m)	18.3	210.6	37.1	14.1	71.2	0.0	~60.6	130.4		18.6	161.6	0.5
Queue Length 95th (m)	30.0	242.7	63.9	#41.0	90.0	12.3	#118.0	157.8		31.5	191.0	15.9
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	427	1662	815	123	1576	690	197	1118		199	1109	561
Starvation Cap Reductn	0	333	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.26	1.03	0.41	0.71	0.38	0.15	1.08	0.75		0.47	0.87	0.20

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 157.5			
Natural Cycle: 105			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 53.8		Intersection LOS: D	

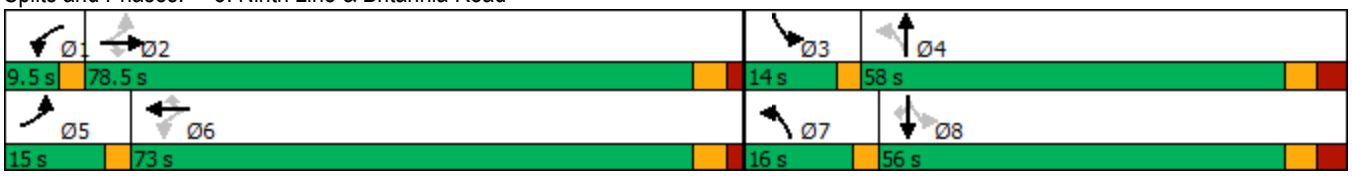
Intersection Capacity Utilization 99.2% ICU Level of Service F

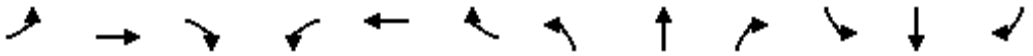
Analysis Period (min) 15

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

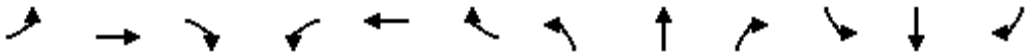
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





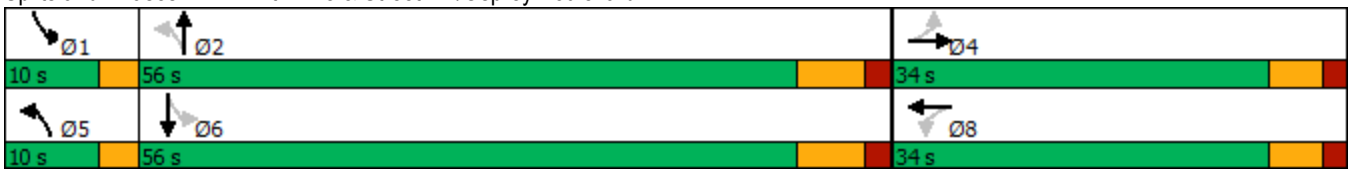
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	0	40	129	0	61	13	918	94	21	987	12
Future Volume (vph)	25	0	40	129	0	61	13	918	94	21	987	12
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			15.0			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.850			0.850			0.986			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1583	0	1412	1538	0	1732	3372	0	1683	3567	0
Flt Permitted	0.716			0.730			0.241			0.228		
Satd. Flow (perm)	1151	1583	0	1085	1538	0	439	3372	0	404	3567	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		203			218			16			2	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		122.1			186.9			633.8			289.9	
Travel Time (s)		8.8			13.5			32.6			14.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	2%	5%	2%	4%	8%	5%	1%	2%
Adj. Flow (vph)	26	0	41	133	0	63	13	946	97	22	1018	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	41	0	133	63	0	13	1043	0	22	1030	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.01	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0		20.0	10.0	
Trailing Detector (m)	0.0	0.0		-1.0	0.0		0.0	0.0		10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-1.0	0.0		0.0	0.0		10.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		10.0	0.6	
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	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0		9.5	25.0	
Total Split (s)	34.0	34.0		34.0	34.0		10.0	56.0		10.0	56.0	
Total Split (%)	34.0%	34.0%		34.0%	34.0%		10.0%	56.0%		10.0%	56.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		7.0	49.0		7.0	49.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	16.5	16.5		16.5	16.5		61.7	54.8		61.4	56.1	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.73	0.65		0.73	0.67	
v/c Ratio	0.12	0.09		0.63	0.13		0.03	0.47		0.05	0.43	
Control Delay	28.0	0.3		44.2	0.6		4.5	9.8		4.6	8.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.0	0.3		44.2	0.6		4.5	9.8		4.6	8.7	
LOS	C	A		D	A		A	A		A	A	
Approach Delay		11.1			30.1			9.8			8.6	
Approach LOS		B			C			A			A	
Queue Length 50th (m)	3.3	0.0		18.6	0.0		0.5	33.7		0.8	33.0	
Queue Length 95th (m)	10.5	0.0		40.3	0.0		2.5	84.0		3.6	83.5	
Internal Link Dist (m)		98.1			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0			120.0		
Base Capacity (vph)	399	681		376	676		460	2196		433	2374	
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	0.07	0.06		0.35	0.09		0.03	0.47		0.05	0.43	

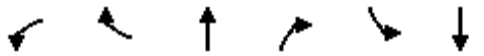
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 84.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 11.0		Intersection LOS: B	
Intersection Capacity Utilization 51.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	70	991	37	31	968
Future Volume (vph)	48	70	991	37	31	968
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.920		0.995			
Flt Protected	0.980				0.950	
Satd. Flow (prot)	1380	0	3441	0	1412	3500
Flt Permitted	0.980				0.950	
Satd. Flow (perm)	1380	0	3441	0	1412	3500
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	50	73	1032	39	32	1008
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	0	1071	0	32	1008
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.6%		ICU Level of Service A	
Analysis Period (min) 15			

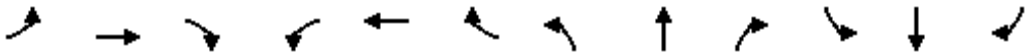


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	70	991	37	31	968
Future Volume (Veh/h)	48	70	991	37	31	968
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	50	73	1032	39	32	1008
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.86	0.86			0.86	
vC, conflicting volume	1620	536			1071	
vC1, stage 1 conf vol	1052					
vC2, stage 2 conf vol	568					
vCu, unblocked vol	1394	133			756	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	91			96	
cM capacity (veh/h)	315	772			726	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	123	688	383	32	504	504
Volume Left	50	0	0	32	0	0
Volume Right	73	0	39	0	0	0
cSH	486	1700	1700	726	1700	1700
Volume to Capacity	0.25	0.40	0.23	0.04	0.30	0.30
Queue Length 95th (m)	8.0	0.0	0.0	1.1	0.0	0.0
Control Delay (s)	14.9	0.0	0.0	10.2	0.0	0.0
Lane LOS	B			B		
Approach Delay (s)	14.9	0.0		0.3		
Approach LOS	B					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	5	14	135	2	142	4	933	104	70	795	12
Future Volume (vph)	50	5	14	135	2	142	4	933	104	70	795	12
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.0	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.887			0.852			0.985			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1652	0	1412	1587	0	1617	3416	0	1649	3527	0
Flt Permitted	0.714			0.632			0.309			0.183		
Satd. Flow (perm)	1148	1652	0	939	1587	0	526	3416	0	318	3527	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			154			16			2	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		140.5			218.3			843.0			487.0	
Travel Time (s)		10.1			15.7			43.4			25.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	9%	0%	1%	2%
Adj. Flow (vph)	54	5	15	147	2	154	4	1014	113	76	864	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	20	0	147	156	0	4	1127	0	76	877	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.0			3.0	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.12	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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												

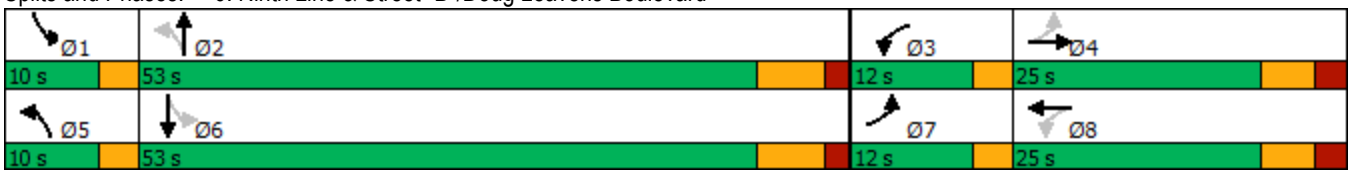


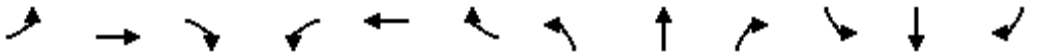
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	24.5		9.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	12.0	25.0		12.0	25.0		10.0	53.0		10.0	53.0	
Total Split (%)	12.0%	25.0%		12.0%	25.0%		10.0%	53.0%		10.0%	53.0%	
Maximum Green (s)	9.0	18.5		9.0	18.5		7.0	46.0		7.0	46.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-2.0	-1.5		-2.0	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	1.0	5.0		1.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		8.0			7.0			8.0			8.0	
Flash Dont Walk (s)		8.0			11.0			10.0			10.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	15.3	10.2		18.9	8.7		60.1	50.2		61.7	56.1	
Actuated g/C Ratio	0.18	0.12		0.23	0.10		0.72	0.60		0.74	0.68	
v/c Ratio	0.21	0.09		0.51	0.51		0.01	0.54		0.20	0.37	
Control Delay	28.4	21.2		33.1	13.2		4.8	12.9		5.6	8.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.4	21.2		33.1	13.2		4.8	12.9		5.6	8.1	
LOS	C	C		C	B		A	B		A	A	
Approach Delay		26.4			22.9			12.8			7.9	
Approach LOS		C			C			B			A	
Queue Length 50th (m)	8.7	0.8		21.0	0.3		0.2	62.1		3.3	30.6	
Queue Length 95th (m)	16.2	7.4		38.0	18.0		1.2	97.4		9.1	67.2	
Internal Link Dist (m)		116.5			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	281	413		290	502		507	2070		382	2385	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.19	0.05		0.51	0.31		0.01	0.54		0.20	0.37	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 83			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 12.6		Intersection LOS: B	

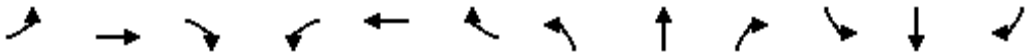
Intersection Capacity Utilization 63.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	1378	105	141	649	116	243	540	263	81	590	271
Future Volume (vph)	233	1378	105	141	649	116	243	540	263	81	590	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99									
Frt			0.850		0.977				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	3614	1597	1733	3439	0	1750	3614	1566	1716	3614	1581
Flt Permitted	0.264			0.081			0.126			0.396		
Satd. Flow (perm)	468	3614	1575	148	3439	0	232	3614	1566	715	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		15				170			271
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	233	1378	105	141	649	116	243	540	263	81	590	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	233	1378	105	141	765	0	243	540	263	81	590	271
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	32.0	82.5	82.5	17.0	67.5		23.5	49.0	49.0	11.5	37.0	37.0
Total Split (%)	20.0%	51.6%	51.6%	10.6%	42.2%		14.7%	30.6%	30.6%	7.2%	23.1%	23.1%
Maximum Green (s)	29.0	76.4	76.4	14.0	61.4		20.5	42.6	42.6	7.0	30.6	30.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	1.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	4.5	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	93.2	76.5	76.5	86.3	72.5		55.0	40.1	40.1	37.6	28.7	28.7
Actuated g/C Ratio	0.60	0.50	0.50	0.56	0.47		0.36	0.26	0.26	0.24	0.19	0.19
v/c Ratio	0.59	0.77	0.13	0.74	0.47		0.87	0.58	0.49	0.37	0.88	0.53
Control Delay	20.8	36.1	5.4	47.4	29.3		70.4	52.6	20.2	41.9	76.5	9.7
Queue Delay	0.0	4.4	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	40.5	5.4	47.4	29.3		70.4	52.6	20.2	41.9	76.5	9.7
LOS	C	D	A	D	C		E	D	C	D	E	A
Approach Delay		35.7			32.1			48.6			54.3	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	34.6	193.1	1.7	20.8	88.4		59.4	80.1	24.1	17.9	98.8	0.0
Queue Length 95th (m)	49.9	233.0	13.0	47.2	113.8		#113.2	103.0	54.8	32.2	#130.1	26.6
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	511	1792	828	229	1624		284	999	555	219	717	531
Starvation Cap Reductn	0	337	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.95	0.13	0.62	0.47		0.86	0.54	0.47	0.37	0.82	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 154.3			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 41.7		Intersection LOS: D	

Intersection Capacity Utilization 92.8% ICU Level of Service F

Analysis Period (min) 15

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

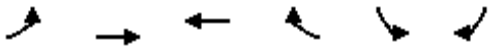
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1588	0	0	979	13	167
Future Volume (vph)	1588	0	0	979	13	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3510	2935	1507
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3510	2935	1507
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						55
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	4%	18%	6%
Adj. Flow (vph)	1588	0	0	979	13	167
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1588	0	0	979	13	167
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

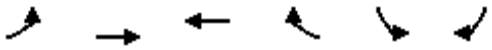
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	120.0			120.0	40.0	40.0
Total Split (%)	75.0%			75.0%	25.0%	25.0%
Maximum Green (s)	114.0			114.0	33.0	33.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	114.2			114.2	16.4	16.4
Actuated g/C Ratio	0.80			0.80	0.11	0.11
v/c Ratio	0.56			0.35	0.04	0.76
Control Delay	6.9			5.0	55.0	62.1
Queue Delay	0.3			0.3	0.0	0.0
Total Delay	7.2			5.3	55.0	62.1
LOS	A			A	D	E
Approach Delay	7.2			5.3	61.6	
Approach LOS	A			A	E	
Queue Length 50th (m)	78.2			37.1	1.8	33.1
Queue Length 95th (m)	124.1			60.8	5.3	59.4
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2845			2790	675	389
Starvation Cap Reductn	570			1024	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.70			0.55	0.02	0.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 143.6			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 74.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



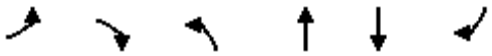
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰	↱
Traffic Volume (vph)	0	2103	728	0	42	55
Future Volume (vph)	0	2103	728	0	42	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3510	0	3148	1309
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3510	0	3148	1309
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						55
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	4%	0%	10%	22%
Adj. Flow (vph)	0	2103	728	0	42	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2103	728	0	42	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		135.0	135.0		25.0	25.0
Total Split (%)		84.4%	84.4%		15.6%	15.6%
Maximum Green (s)		129.0	129.0		18.0	18.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		130.5	130.5		8.1	8.1
Actuated g/C Ratio		0.89	0.89		0.05	0.05
v/c Ratio		0.66	0.23		0.24	0.44
Control Delay		4.4	1.9		71.4	27.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.4	1.9		71.4	27.5
LOS		A	A		E	C
Approach Delay		4.4	1.9		46.5	
Approach LOS		A	A		D	
Queue Length 50th (m)		85.7	15.6		6.6	0.0
Queue Length 95th (m)		121.0	23.4		13.6	15.1
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		3202	3110		385	208
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.66	0.23		0.11	0.26

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147.3			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 5.2		Intersection LOS: A	
Intersection Capacity Utilization 74.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp

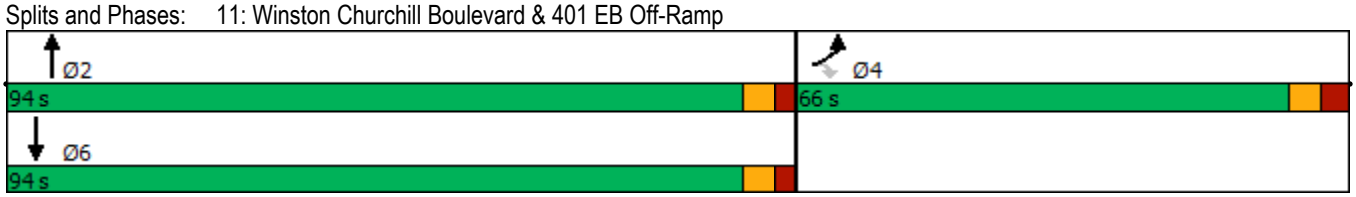


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	365	304	0	1105	1059	0
Future Volume (vph)	365	304	0	1105	1059	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.969	0.850				
Flt Protected	0.962					
Satd. Flow (prot)	3280	1425	0	4980	4885	0
Flt Permitted	0.962					
Satd. Flow (perm)	3280	1425	0	4980	4885	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	24	75				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	0%	3%	5%	0%
Adj. Flow (vph)	384	320	0	1163	1115	0
Shared Lane Traffic (%)		31%				
Lane Group Flow (vph)	483	221	0	1163	1115	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	66.0	66.0		94.0	94.0	
Total Split (%)	41.3%	41.3%		58.8%	58.8%	
Maximum Green (s)	58.5	58.5		87.5	87.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	27.5	27.5		89.1	89.1	
Actuated g/C Ratio	0.22	0.22		0.70	0.70	
v/c Ratio	0.66	0.60		0.33	0.32	
Control Delay	47.5	36.0		7.9	7.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	47.5	36.0		7.9	7.9	
LOS	D	D		A	A	
Approach Delay	43.9			7.9	7.9	
Approach LOS	D			A	A	
Queue Length 50th (m)	57.1	38.0		38.4	36.5	
Queue Length 95th (m)	75.4	67.8		56.7	54.1	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1594	726		3505	3438	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.30	0.30		0.33	0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 126.6			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp

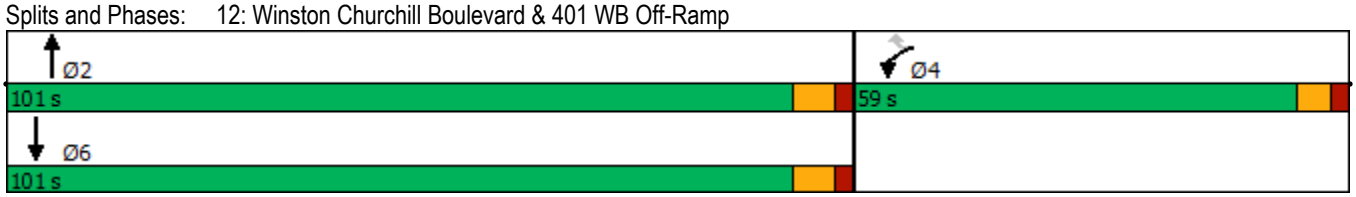


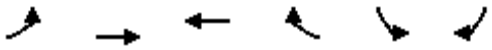
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	228	405	1207	0	0	1417
Future Volume (vph)	228	405	1207	0	0	1417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.929	0.850				
Flt Protected	0.974					
Satd. Flow (prot)	2973	1298	4980	0	0	4839
Flt Permitted	0.974					
Satd. Flow (perm)	2973	1298	4980	0	0	4839
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	64	64				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	12%	3%	0%	0%	6%
Adj. Flow (vph)	240	426	1271	0	0	1492
Shared Lane Traffic (%)		50%				
Lane Group Flow (vph)	453	213	1271	0	0	1492
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	59.0	59.0	101.0			101.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Maximum Green (s)	52.5	52.5	93.5			93.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	26.6	26.6	96.2			96.2
Actuated g/C Ratio	0.20	0.20	0.72			0.72
v/c Ratio	0.70	0.68	0.35			0.43
Control Delay	48.1	45.5	7.6			8.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	48.1	45.5	7.6			8.2
LOS	D	D	A			A
Approach Delay	47.3		7.6			8.2
Approach LOS	D		A			A
Queue Length 50th (m)	52.0	42.4	41.6			52.6
Queue Length 95th (m)	70.5	74.0	64.3			80.5
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1249	567	3608			3505
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.36	0.38	0.35			0.43

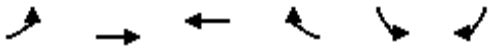
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 132.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	699	1176	0	413	60
Future Volume (vph)	0	699	1176	0	413	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3614	0	1767	1536
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3614	0	1767	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						50
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	1%	4%
Adj. Flow (vph)	0	699	1176	0	413	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	699	1176	0	413	60
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		94.0	94.0		66.0	66.0
Total Split (%)		58.8%	58.8%		41.3%	41.3%
Maximum Green (s)		88.0	88.0		59.0	59.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		88.3	88.3		37.2	37.2
Actuated g/C Ratio		0.64	0.64		0.27	0.27
v/c Ratio		0.30	0.51		0.87	0.13
Control Delay		12.7	15.5		67.3	12.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		12.7	15.5		67.3	12.5
LOS		B	B		E	B
Approach Delay		12.7	15.5		60.4	
Approach LOS		B	B		E	
Queue Length 50th (m)		44.7	89.8		113.9	2.1
Queue Length 95th (m)		71.5	138.0		154.7	13.2
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2302	2302		754	684
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.30	0.51		0.55	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 138.6			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 23.7		Intersection LOS: C	
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

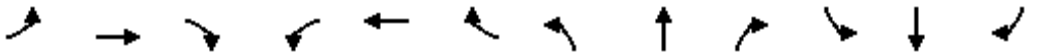
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1079	0	0	1273	54	154
Future Volume (vph)	1079	0	0	1273	54	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3614	1750	1581
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3614	1750	1581
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						151
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	1%	2%	1%
Adj. Flow (vph)	1079	0	0	1273	54	154
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1079	0	0	1273	54	154
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

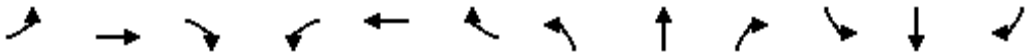
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	121.0			121.0	39.0	39.0
Total Split (%)	75.6%			75.6%	24.4%	24.4%
Maximum Green (s)	115.0			115.0	32.0	32.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	115.0			115.0	9.8	9.8
Actuated g/C Ratio	0.83			0.83	0.07	0.07
v/c Ratio	0.36			0.42	0.44	0.61
Control Delay	3.2			3.5	72.3	20.3
Queue Delay	0.0			0.4	0.0	0.0
Total Delay	3.2			3.9	72.3	20.3
LOS	A			A	E	C
Approach Delay	3.2			3.9	33.8	
Approach LOS	A			A	C	
Queue Length 50th (m)	30.0			38.2	15.1	0.8
Queue Length 95th (m)	43.6			55.1	30.0	23.0
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	3016			3016	406	482
Starvation Cap Reductn	0			1096	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.36			0.66	0.13	0.32

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 137.8			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	724	305	129	1019	144	190	979	114	109	863	106
Future Volume (vph)	159	724	305	129	1019	144	190	979	114	109	863	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.984				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1597	1785	3614	1551	1767	3554	0	1716	3614	1536
Flt Permitted	0.131			0.256			0.135			0.084		
Satd. Flow (perm)	246	3614	1597	481	3614	1551	251	3554	0	152	3614	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			239			82		9				106
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	159	724	305	129	1019	144	190	979	114	109	863	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	724	305	129	1019	144	190	1093	0	109	863	106
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			3.6			3.6	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	13.0	63.5	63.5	15.5	66.0	66.0	17.5	63.0		18.0	63.5	63.5
Total Split (%)	8.1%	39.7%	39.7%	9.7%	41.3%	41.3%	10.9%	39.4%		11.3%	39.7%	39.7%
Maximum Green (s)	10.0	57.4	57.4	12.5	59.9	59.9	14.5	55.3		15.0	55.8	55.8
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	72.3	59.3	59.3	74.0	60.1	60.1	67.9	50.5		63.1	47.8	47.8
Actuated g/C Ratio	0.48	0.39	0.39	0.49	0.40	0.40	0.45	0.33		0.42	0.32	0.32
v/c Ratio	0.73	0.51	0.40	0.39	0.71	0.22	0.78	0.92		0.63	0.75	0.19
Control Delay	43.2	37.8	10.0	25.2	42.4	15.2	47.4	60.2		42.6	50.9	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.2	37.8	10.0	25.2	42.4	15.2	47.4	60.2		42.6	50.9	6.8
LOS	D	D	B	C	D	B	D	E		D	D	A
Approach Delay		31.4			37.7			58.3			45.7	
Approach LOS		C			D			E			D	
Queue Length 50th (m)	27.8	94.5	13.7	22.1	145.5	12.6	36.0	172.0		19.7	130.1	0.0
Queue Length 95th (m)	#56.0	123.8	40.9	38.2	183.5	30.8	#64.4	211.7		36.0	155.1	13.9
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	220	1419	772	349	1439	667	259	1312		223	1340	636
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.72	0.51	0.40	0.37	0.71	0.22	0.73	0.83		0.49	0.64	0.17

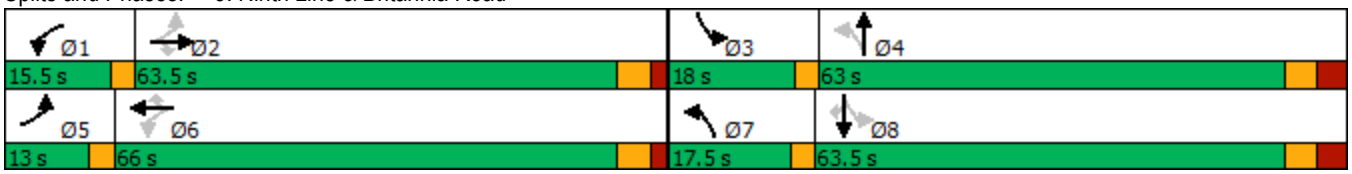
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.9			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 43.4		Intersection LOS: D	

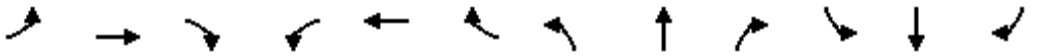
Intersection Capacity Utilization 91.9% ICU Level of Service F

Analysis Period (min) 15

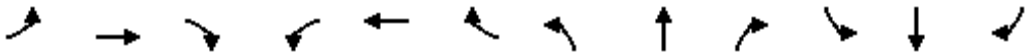
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	0	26	72	0	30	44	1108	106	45	1039	40
Future Volume (vph)	17	0	26	72	0	30	44	1108	106	45	1039	40
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			15.0			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt		0.850			0.850			0.987			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1583	0	1359	1568	0	1732	3479	0	1767	3586	0
Flt Permitted	0.737			0.740			0.217			0.186		
Satd. Flow (perm)	1185	1583	0	1059	1568	0	396	3479	0	346	3586	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		209			194			18			7	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		103.4			186.9			633.8			289.9	
Travel Time (s)		7.4			13.5			32.6			14.9	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	7%	2%	3%	2%	1%	2%	0%	0%	2%
Adj. Flow (vph)	18	0	27	75	0	31	46	1154	110	47	1082	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	27	0	75	31	0	46	1264	0	47	1124	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.01	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0		20.0	10.0	
Trailing Detector (m)	0.0	0.0		-0.2	0.0		0.0	0.0		10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-0.2	0.0		0.0	0.0		10.0	0.0	
Detector 1 Size(m)	2.0	0.6		9.2	0.6		2.0	0.6		10.0	0.6	
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												

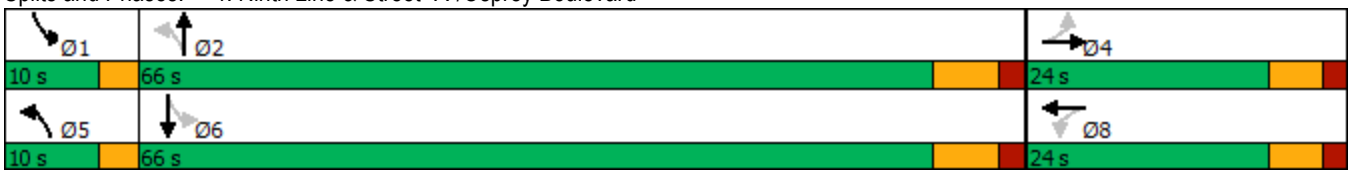


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0		9.5	25.0	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	66.0		10.0	66.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		10.0%	66.0%		10.0%	66.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		7.0	59.0		7.0	59.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	13.2	13.2		12.7	12.7		75.9	68.3		74.6	67.6	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.83	0.74		0.81	0.74	
v/c Ratio	0.11	0.07		0.51	0.08		0.10	0.49		0.12	0.43	
Control Delay	35.8	0.3		49.7	0.4		3.1	7.9		3.3	7.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.8	0.3		49.7	0.4		3.1	7.9		3.3	7.8	
LOS	D	A		D	A		A	A		A	A	
Approach Delay		14.5			35.3			7.8			7.6	
Approach LOS		B			D			A			A	
Queue Length 50th (m)	3.0	0.0		13.3	0.0		1.3	56.6		1.4	49.1	
Queue Length 95th (m)	9.4	0.0		27.8	0.0		4.6	90.4		4.7	79.2	
Internal Link Dist (m)		79.4			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0			120.0		
Base Capacity (vph)	246	494		220	479		458	2591		424	2638	
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	0.07	0.05		0.34	0.06		0.10	0.49		0.11	0.43	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 91.9			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 8.9		Intersection LOS: A	

Intersection Capacity Utilization 57.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



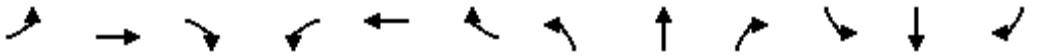
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	18	1040	63	44	1106
Future Volume (vph)	23	18	1040	63	44	1106
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.940		0.991			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1400	0	3505	0	1426	3570
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1400	0	3505	0	1426	3570
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	24	19	1083	66	46	1152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	1149	0	46	1152
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

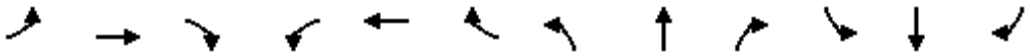
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	18	1040	63	44	1106
Future Volume (Veh/h)	23	18	1040	63	44	1106
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	24	19	1083	66	46	1152
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.85	0.85			0.85	
vC, conflicting volume	1784	574			1149	
vC1, stage 1 conf vol	1116					
vC2, stage 2 conf vol	668					
vCu, unblocked vol	1573	153			827	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	97			93	
cM capacity (veh/h)	280	743			681	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	43	722	427	46	576	576
Volume Left	24	0	0	46	0	0
Volume Right	19	0	66	0	0	0
cSH	386	1700	1700	681	1700	1700
Volume to Capacity	0.11	0.42	0.25	0.07	0.34	0.34
Queue Length 95th (m)	3.0	0.0	0.0	1.7	0.0	0.0
Control Delay (s)	15.5	0.0	0.0	10.7	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	15.5	0.0		0.4		
Approach LOS	C					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	3	9	109	6	60	15	894	131	104	1020	43
Future Volume (vph)	32	3	9	109	6	60	15	894	131	104	1020	43
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.6	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Frt		0.887			0.863			0.981			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1652	0	1454	1637	0	1732	3461	0	1649	3512	0
Flt Permitted	0.712			0.750			0.236			0.215		
Satd. Flow (perm)	1145	1652	0	1148	1637	0	430	3461	0	373	3512	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			63			26			7	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		111.4			218.3			843.0			487.0	
Travel Time (s)		8.0			15.7			43.4			25.0	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Adj. Flow (vph)	33	3	9	114	6	63	16	931	136	108	1063	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	12	0	114	69	0	16	1067	0	108	1108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.03	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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												

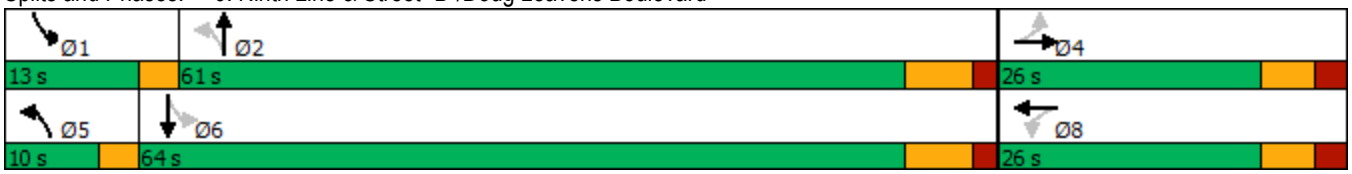


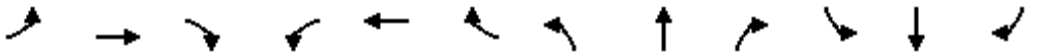
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	26.0	26.0		26.0	26.0		10.0	61.0		13.0	64.0	
Total Split (%)	26.0%	26.0%		26.0%	26.0%		10.0%	61.0%		13.0%	64.0%	
Maximum Green (s)	19.5	19.5		19.5	19.5		7.0	54.0		10.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	8.0	8.0		7.0	7.0			8.0			8.0	
Flash Dont Walk (s)	8.0	8.0		11.0	11.0			10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	15.7	15.7		15.7	15.7		71.0	59.3		73.4	65.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.75	0.62		0.77	0.69	
v/c Ratio	0.18	0.04		0.60	0.21		0.04	0.49		0.26	0.45	
Control Delay	34.8	20.2		49.8	11.7		3.6	11.2		4.8	8.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.8	20.2		49.8	11.7		3.6	11.2		4.8	8.5	
LOS	C	C		D	B		A	B		A	A	
Approach Delay		30.9			35.4			11.1			8.2	
Approach LOS		C			D			B			A	
Queue Length 50th (m)	5.3	0.5		19.7	1.0		0.6	52.1		4.1	37.3	
Queue Length 95th (m)	14.0	5.3		38.4	12.3		2.4	82.6		10.0	81.4	
Internal Link Dist (m)		87.4			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	253	372		254	411		449	2166		449	2436	
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	0.13	0.03		0.45	0.17		0.04	0.49		0.24	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 95.1			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 11.8		Intersection LOS: B	

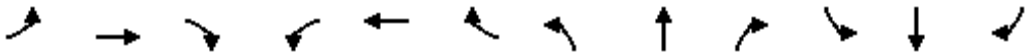
Intersection Capacity Utilization 60.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	197	773	244	263	1545	102	121	655	199	141	582	272
Future Volume (vph)	197	773	244	263	1545	102	121	655	199	141	582	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.98			
Frt			0.850		0.991				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3544	1597	1767	3579	0	1767	3614	1581	1785	3614	1581
Flt Permitted	0.053			0.272			0.255			0.116		
Satd. Flow (perm)	99	3544	1597	506	3579	0	474	3614	1556	218	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			142		6				103			184
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	197	773	244	263	1545	102	121	655	199	141	582	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	773	244	263	1647	0	121	655	199	141	582	272
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	16.0	65.5	65.5	34.5	84.0		12.0	40.0	40.0	20.0	48.0	48.0
Total Split (%)	10.0%	40.9%	40.9%	21.6%	52.5%		7.5%	25.0%	25.0%	12.5%	30.0%	30.0%
Maximum Green (s)	13.0	59.4	59.4	31.5	77.9		9.0	33.6	33.6	17.0	41.6	41.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	92.0	76.0	76.0	94.9	78.0		43.9	31.5	31.5	51.4	36.5	36.5
Actuated g/C Ratio	0.59	0.49	0.49	0.61	0.50		0.28	0.20	0.20	0.33	0.24	0.24
v/c Ratio	0.99	0.45	0.29	0.61	0.91		0.58	0.89	0.50	0.66	0.68	0.53
Control Delay	104.9	28.1	11.5	19.8	44.7		49.8	75.4	30.5	52.3	58.3	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.9	28.1	11.5	19.8	44.7		49.8	75.4	30.5	52.3	58.3	20.2
LOS	F	C	B	B	D		D	E	C	D	E	C
Approach Delay		37.2			41.3			63.1			47.1	
Approach LOS		D			D			E			D	
Queue Length 50th (m)	~49.2	87.4	18.3	37.4	261.5		28.0	110.2	27.2	33.0	91.2	23.6
Queue Length 95th (m)	#110.6	116.7	41.6	55.5	#326.3		44.8	#142.5	55.4	51.6	112.6	54.2
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	198	1736	854	573	1804		209	784	418	245	971	559
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.45	0.29	0.46	0.91		0.58	0.84	0.48	0.58	0.60	0.49

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 155			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 45.6		Intersection LOS: D	

Intersection Capacity Utilization 99.9% ICU Level of Service F

Analysis Period (min) 15

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

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

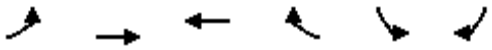
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1085	0	0	1881	80	189
Future Volume (vph)	1085	0	0	1881	80	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3614	3362	1597
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3614	3362	1597
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						163
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	1085	0	0	1881	80	189
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1085	0	0	1881	80	189
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

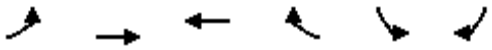
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	126.0			126.0	34.0	34.0
Total Split (%)	78.8%			78.8%	21.3%	21.3%
Maximum Green (s)	120.0			120.0	27.0	27.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	120.1			120.1	10.3	10.3
Actuated g/C Ratio	0.84			0.84	0.07	0.07
v/c Ratio	0.36			0.62	0.33	0.71
Control Delay	3.3			5.3	66.5	28.5
Queue Delay	0.0			0.9	0.0	0.0
Total Delay	3.3			6.3	66.5	28.5
LOS	A			A	E	C
Approach Delay	3.3			6.3	39.8	
Approach LOS	A			A	D	
Queue Length 50th (m)	29.0			72.9	11.9	7.5
Queue Length 95th (m)	51.2			125.7	20.7	33.8
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2996			3025	633	432
Starvation Cap Reductn	0			776	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.36			0.84	0.13	0.44

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 143.4			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 8.1		Intersection LOS: A	
Intersection Capacity Utilization 87.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰	↱
Traffic Volume (vph)	0	915	1840	0	233	415
Future Volume (vph)	0	915	1840	0	233	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3510	3614	0	3429	1597
Flt Permitted					0.950	
Satd. Flow (perm)	0	3510	3614	0	3429	1597
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						18
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	0%	1%	0%
Adj. Flow (vph)	0	915	1840	0	233	415
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	915	1840	0	233	415
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm

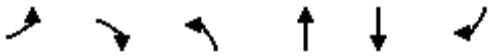


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		104.0	104.0		56.0	56.0
Total Split (%)		65.0%	65.0%		35.0%	35.0%
Maximum Green (s)		98.0	98.0		49.0	49.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		98.2	98.2		42.2	42.2
Actuated g/C Ratio		0.64	0.64		0.28	0.28
v/c Ratio		0.41	0.80		0.25	0.92
Control Delay		14.8	24.6		43.5	77.7
Queue Delay		0.0	1.8		0.0	0.0
Total Delay		14.8	26.5		43.5	77.7
LOS		B	C		D	E
Approach Delay		14.8	26.5		65.4	
Approach LOS		B	C		E	
Queue Length 50th (m)		75.3	228.2		30.0	124.8
Queue Length 95th (m)		96.2	280.2		42.0	#180.3
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		2247	2313		1098	523
Starvation Cap Reductn		0	304		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.41	0.92		0.21	0.79

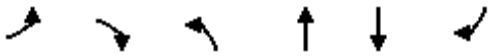
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 153.4			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 30.7		Intersection LOS: C	
Intersection Capacity Utilization 87.4%		ICU Level of Service E	
Analysis Period (min) 15			

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

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	437	325	0	1447	1811	0
Future Volume (vph)	437	325	0	1447	1811	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.975	0.850				
Flt Protected	0.960					
Satd. Flow (prot)	3064	1411	0	4980	5079	0
Flt Permitted	0.960					
Satd. Flow (perm)	3064	1411	0	4980	5079	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	16	*134				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	13%	3%	0%	3%	1%	0%
Adj. Flow (vph)	451	335	0	1492	1867	0
Shared Lane Traffic (%)		27%				
Lane Group Flow (vph)	541	245	0	1492	1867	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

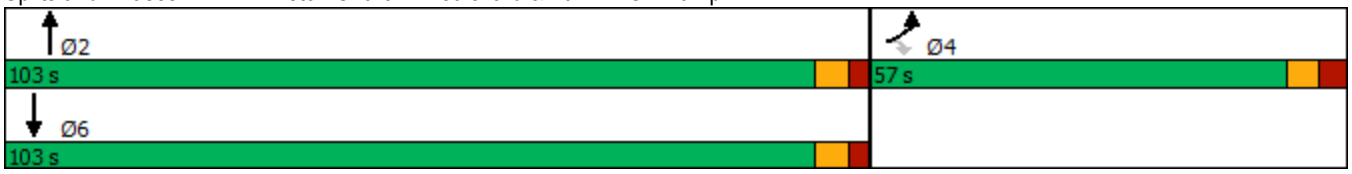


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	57.0	57.0		103.0	103.0	
Total Split (%)	35.6%	35.6%		64.4%	64.4%	
Maximum Green (s)	49.5	49.5		96.5	96.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	34.4	34.4		98.2	98.2	
Actuated g/C Ratio	0.24	0.24		0.69	0.69	
v/c Ratio	0.72	0.55		0.44	0.53	
Control Delay	53.9	25.4		10.9	12.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	53.9	25.4		10.9	12.2	
LOS	D	C		B	B	
Approach Delay	45.0			10.9	12.2	
Approach LOS	D			B	B	
Queue Length 50th (m)	74.3	31.0		66.9	92.7	
Queue Length 95th (m)	94.6	62.4		93.2	126.8	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1129	600		3429	3497	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.48	0.41		0.44	0.53	

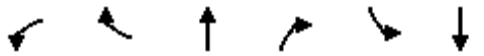
Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 142.6	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 17.9	Intersection LOS: B
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

* User Entered Value

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	830	819	1597	0	0	1367
Future Volume (vph)	830	819	1597	0	0	1367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.961	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3326	1411	4839	0	0	4932
Flt Permitted	0.964					
Satd. Flow (perm)	3326	1411	4839	0	0	4932
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	13	*304				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	6%	0%	0%	4%
Adj. Flow (vph)	856	844	1646	0	0	1409
Shared Lane Traffic (%)		36%				
Lane Group Flow (vph)	1160	540	1646	0	0	1409
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

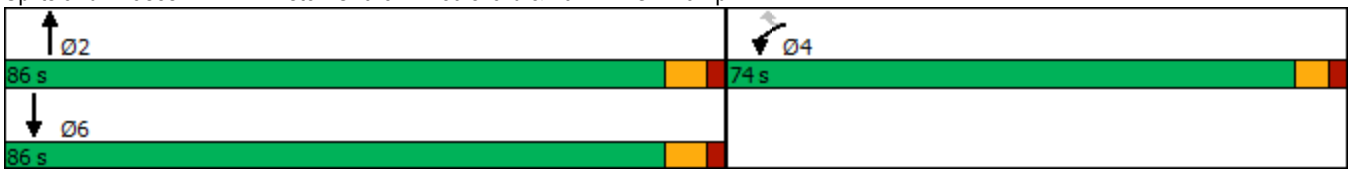


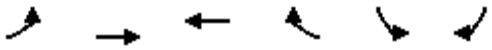
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	74.0	74.0	86.0			86.0
Total Split (%)	46.3%	46.3%	53.8%			53.8%
Maximum Green (s)	67.5	67.5	78.5			78.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	63.9	63.9	81.2			81.2
Actuated g/C Ratio	0.41	0.41	0.52			0.52
v/c Ratio	0.84	0.71	0.65			0.55
Control Delay	47.0	20.9	28.9			26.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	47.0	20.9	28.9			26.3
LOS	D	C	C			C
Approach Delay	38.7		28.9			26.3
Approach LOS	D		C			C
Queue Length 50th (m)	171.3	72.1	148.2			117.1
Queue Length 95th (m)	201.2	124.5	165.4			132.0
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1490	797	2532			2581
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.78	0.68	0.65			0.55

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 155.1			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 31.6		Intersection LOS: C	
Intersection Capacity Utilization 73.0%		ICU Level of Service C	
Analysis Period (min) 15			

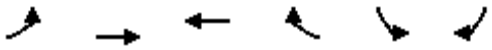
* User Entered Value

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	1358	612	0	456	24
Future Volume (vph)	0	1358	612	0	456	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3579	0	1684	1210
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3579	0	1684	1210
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						18
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	0%	6%	32%
Adj. Flow (vph)	0	1358	612	0	456	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1358	612	0	456	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		96.0	96.0		64.0	64.0
Total Split (%)		60.0%	60.0%		40.0%	40.0%
Maximum Green (s)		90.0	90.0		57.0	57.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		90.3	90.3		44.1	44.1
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.61	0.28		0.91	0.06
Control Delay		20.5	14.8		72.2	17.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		20.5	14.8		72.2	17.0
LOS		C	B		E	B
Approach Delay		20.5	14.8		69.4	
Approach LOS		C	B		E	
Queue Length 50th (m)		131.5	44.6		134.8	1.3
Queue Length 95th (m)		187.8	68.0		181.3	8.5
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2213	2192		653	480
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.61	0.28		0.70	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147.5			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 28.6		Intersection LOS: C	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			

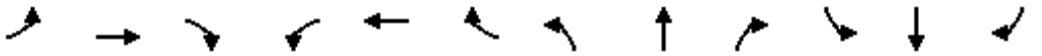
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1766	0	0	790	23	253
Future Volume (vph)	1766	0	0	790	23	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3579	1608	1566
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3579	1608	1566
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						32
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	2%	11%	2%
Adj. Flow (vph)	1766	0	0	790	23	253
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1766	0	0	790	23	253
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

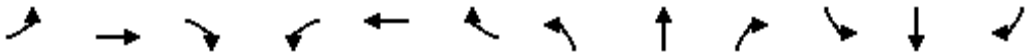
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	114.0			114.0	46.0	46.0
Total Split (%)	71.3%			71.3%	28.8%	28.8%
Maximum Green (s)	108.0			108.0	39.0	39.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	108.3			108.3	26.3	26.3
Actuated g/C Ratio	0.73			0.73	0.18	0.18
v/c Ratio	0.67			0.30	0.08	0.83
Control Delay	12.8			7.7	49.5	72.9
Queue Delay	0.6			0.0	0.0	0.0
Total Delay	13.4			7.7	49.5	72.9
LOS	B			A	D	E
Approach Delay	13.4			7.7	70.9	
Approach LOS	B			A	E	
Queue Length 50th (m)	134.3			39.4	6.0	66.9
Queue Length 95th (m)	206.3			63.7	14.6	99.9
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2650			2625	426	438
Starvation Cap Reductn	472			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.81			0.30	0.05	0.58

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147.6			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 17.4		Intersection LOS: B	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	1465	351	100	635	189	218	881	162	143	1184	135
Future Volume (vph)	144	1465	351	100	635	189	218	881	162	143	1184	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1581	1733	3579	1439	1767	3465	0	1608	3614	1581
Flt Permitted	0.308			0.059			0.080			0.083		
Satd. Flow (perm)	579	3614	1581	108	3579	1439	149	3465	0	140	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			186		14				107
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	144	1465	351	100	635	189	218	881	162	143	1184	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	144	1465	351	100	635	189	218	1043	0	143	1184	135
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			3.6			3.6	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	15.0	78.5	78.5	9.5	73.0	73.0	16.0	58.0		14.0	56.0	56.0
Total Split (%)	9.4%	49.1%	49.1%	5.9%	45.6%	45.6%	10.0%	36.3%		8.8%	35.0%	35.0%
Maximum Green (s)	12.0	72.4	72.4	6.5	66.9	66.9	13.0	50.3		11.0	48.3	48.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	84.7	72.4	72.4	77.8	68.2	68.2	68.0	50.3		64.0	48.3	48.3
Actuated g/C Ratio	0.53	0.45	0.45	0.49	0.43	0.43	0.42	0.31		0.40	0.30	0.30
v/c Ratio	0.37	0.90	0.44	0.85	0.42	0.26	1.12	0.95		0.92	1.09	0.25
Control Delay	22.1	48.8	17.3	78.4	33.3	4.7	139.2	70.1		89.7	105.2	12.3
Queue Delay	0.0	46.4	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	22.1	95.2	17.3	78.4	33.3	4.7	139.2	70.1		89.7	105.2	12.3
LOS	C	F	B	E	C	A	F	E		F	F	B
Approach Delay		75.9			32.3			82.1			95.1	
Approach LOS		E			C			F			F	
Queue Length 50th (m)	24.0	235.3	42.0	16.8	78.1	0.6	~65.6	178.4		31.8	~233.1	6.7
Queue Length 95th (m)	37.3	270.5	69.9	#53.7	96.4	16.4	#123.2	#223.5		#76.6	#278.0	24.2
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	398	1635	802	118	1525	720	194	1098		156	1090	551
Starvation Cap Reductn	0	318	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.36	1.11	0.44	0.85	0.42	0.26	1.12	0.95		0.92	1.09	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 135			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 75.1		Intersection LOS: E	

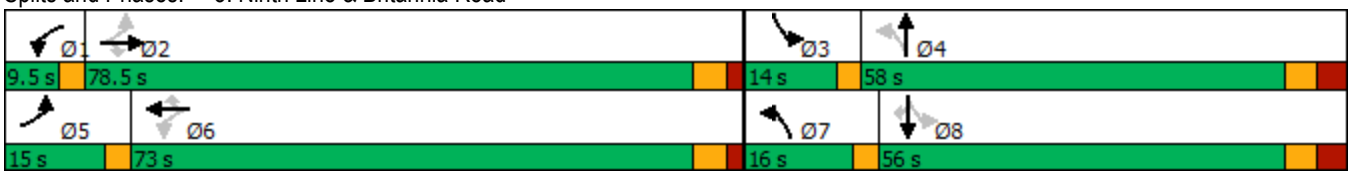
Intersection Capacity Utilization 109.0% ICU Level of Service H

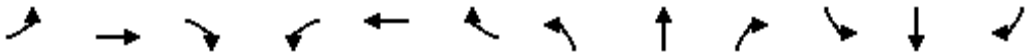
Analysis Period (min) 15

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

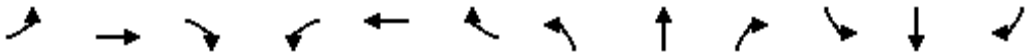
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





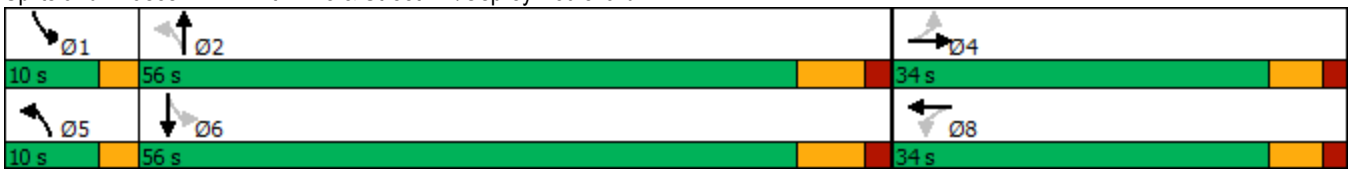
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	14	69	131	16	96	34	1223	96	21	1242	16
Future Volume (vph)	34	14	69	131	16	96	34	1223	96	21	1242	16
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			15.0			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.875			0.871			0.989			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1630	0	1412	1582	0	1732	3385	0	1683	3567	0
Flt Permitted	0.683			0.702			0.149			0.147		
Satd. Flow (perm)	1098	1630	0	1043	1582	0	272	3385	0	260	3567	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			99			12			2	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		122.1			186.9			633.8			289.9	
Travel Time (s)		8.8			13.5			32.6			14.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	2%	5%	2%	4%	8%	5%	1%	2%
Adj. Flow (vph)	35	14	71	135	16	99	35	1261	99	22	1280	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	85	0	135	115	0	35	1360	0	22	1296	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.01	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0		20.0	10.0	
Trailing Detector (m)	0.0	0.0		-1.0	0.0		0.0	0.0		10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-1.0	0.0		0.0	0.0		10.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		10.0	0.6	
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	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0		9.5	25.0	
Total Split (s)	34.0	34.0		34.0	34.0		10.0	56.0		10.0	56.0	
Total Split (%)	34.0%	34.0%		34.0%	34.0%		10.0%	56.0%		10.0%	56.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		7.0	49.0		7.0	49.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.4	17.4		17.4	17.4		63.6	56.6		62.2	54.1	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.73	0.65		0.71	0.62	
v/c Ratio	0.16	0.22		0.65	0.29		0.10	0.62		0.07	0.58	
Control Delay	29.6	10.9		46.6	10.0		5.2	12.3		5.1	13.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.6	10.9		46.6	10.0		5.2	12.3		5.1	13.1	
LOS	C	B		D	B		A	B		A	B	
Approach Delay		16.3			29.8			12.1			13.0	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	5.2	2.0		22.1	2.3		1.4	56.3		0.9	72.4	
Queue Length 95th (m)	13.3	13.5		41.7	15.6		5.3	129.8		3.8	121.9	
Internal Link Dist (m)		98.1			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0			120.0		
Base Capacity (vph)	369	595		350	597		351	2204		337	2220	
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	0.09	0.14		0.39	0.19		0.10	0.62		0.07	0.58	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 87			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



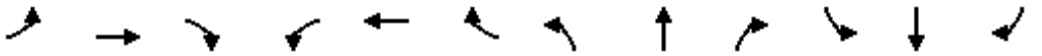
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	71	1348	37	32	1224
Future Volume (vph)	49	71	1348	37	32	1224
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.920		0.996			
Flt Protected	0.980				0.950	
Satd. Flow (prot)	1380	0	3447	0	1412	3500
Flt Permitted	0.980				0.950	
Satd. Flow (perm)	1380	0	3447	0	1412	3500
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	51	74	1404	39	33	1275
Shared Lane Traffic (%)						
Lane Group Flow (vph)	125	0	1443	0	33	1275
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			

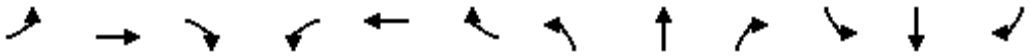
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	49	71	1348	37	32	1224
Future Volume (Veh/h)	49	71	1348	37	32	1224
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	51	74	1404	39	33	1275
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.76	0.76			0.76	
vC, conflicting volume	2127	722			1443	
vC1, stage 1 conf vol	1424					
vC2, stage 2 conf vol	704					
vCu, unblocked vol	1852	3			952	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	91			94	
cM capacity (veh/h)	223	826			541	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	125	936	507	33	638	638
Volume Left	51	0	0	33	0	0
Volume Right	74	0	39	0	0	0
cSH	393	1700	1700	541	1700	1700
Volume to Capacity	0.32	0.55	0.30	0.06	0.38	0.38
Queue Length 95th (m)	10.8	0.0	0.0	1.6	0.0	0.0
Control Delay (s)	18.4	0.0	0.0	12.1	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	18.4	0.0		0.3		
Approach LOS	C					

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	90	117	148	92	178	55	1235	107	74	918	59
Future Volume (vph)	228	90	117	148	92	178	55	1235	107	74	918	59
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.0	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.915			0.901			0.988			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1704	0	1412	1678	0	1617	3433	0	1649	3501	0
Flt Permitted	0.240			0.408			0.179			0.083		
Satd. Flow (perm)	386	1704	0	606	1678	0	305	3433	0	144	3501	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			87			12			9	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		140.5			218.3			843.0			487.0	
Travel Time (s)		10.1			15.7			43.4			25.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	9%	0%	1%	2%
Adj. Flow (vph)	248	98	127	161	100	193	60	1342	116	80	998	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	248	225	0	161	293	0	60	1458	0	80	1062	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.0			3.0	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.12	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	24.5		9.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	12.0	25.0		12.0	25.0		10.0	53.0		10.0	53.0	
Total Split (%)	12.0%	25.0%		12.0%	25.0%		10.0%	53.0%		10.0%	53.0%	
Maximum Green (s)	9.0	18.5		9.0	18.5		7.0	46.0		7.0	46.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-2.0	-1.5		-2.0	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	1.0	5.0		1.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		8.0			7.0			8.0			8.0	
Flash Dont Walk (s)		8.0			11.0			10.0			10.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	32.5	17.4		32.1	17.2		59.1	48.3		59.3	48.4	
Actuated g/C Ratio	0.34	0.18		0.34	0.18		0.62	0.51		0.62	0.51	
v/c Ratio	0.94	0.63		0.54	0.79		0.20	0.83		0.35	0.60	
Control Delay	71.1	35.3		31.0	42.0		8.9	26.7		12.7	19.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	71.1	35.3		31.0	42.0		8.9	26.7		12.7	19.2	
LOS	E	D		C	D		A	C		B	B	
Approach Delay		54.1			38.1			26.0			18.7	
Approach LOS		D			D			C			B	
Queue Length 50th (m)	38.2	30.8		23.4	39.7		4.4	134.5		5.9	80.7	
Queue Length 95th (m)	#78.5	56.0		40.5	#75.7		9.4	170.0		13.1	103.3	
Internal Link Dist (m)		116.5			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	264	405		298	423		314	1747		232	1783	
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	0.94	0.56		0.54	0.69		0.19	0.83		0.34	0.60	

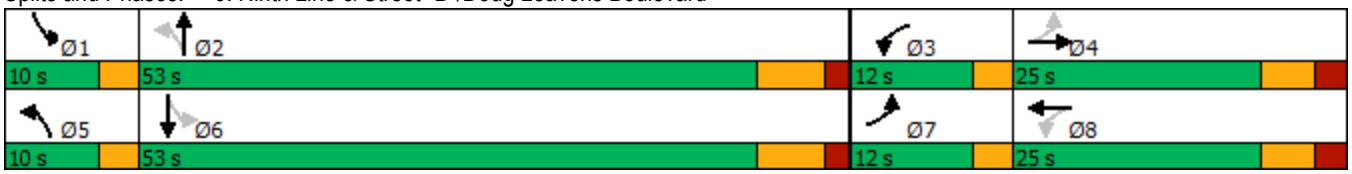
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 95.3			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 28.9		Intersection LOS: C	

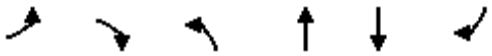
Intersection Capacity Utilization 87.1% ICU Level of Service E

Analysis Period (min) 15

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

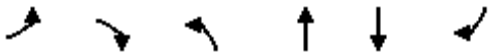
Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	14	0	1712	1063	37
Future Volume (vph)	0	14	0	1712	1063	37
Ideal Flow (vphpl)	1640	1640	1640	1900	1900	1900
Lane Width (m)	3.6	3.6	3.5	3.5	3.5	3.5
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.995	
Flt Protected						
Satd. Flow (prot)	0	1391	0	3500	3482	0
Flt Permitted						
Satd. Flow (perm)	0	1391	0	3500	3482	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	121.9			487.0	813.6	
Travel Time (s)	8.8			25.0	41.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	14	0	1712	1063	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	14	0	1712	1100	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.21	1.21	1.22	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

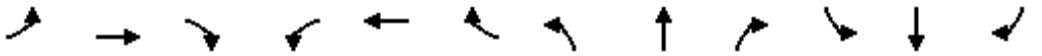
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.7%		ICU Level of Service A	
Analysis Period (min) 15			



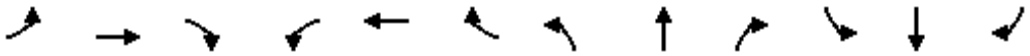
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	14	0	1712	1063	37
Future Volume (Veh/h)	0	14	0	1712	1063	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	14	0	1712	1063	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1938	550	1100			
vC1, stage 1 conf vol	1082					
vC2, stage 2 conf vol	856					
vCu, unblocked vol	1938	550	1100			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	228	479	630			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	14	856	856	709	391
Volume Left	0	0	0	0	0
Volume Right	14	0	0	0	37
cSH	479	1700	1700	1700	1700
Volume to Capacity	0.03	0.50	0.50	0.42	0.23
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0
Control Delay (s)	12.7	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.7	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	1460	131	207	689	361	296	860	392	105	685	279
Future Volume (vph)	336	1460	131	207	689	361	296	860	392	105	685	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99									
Frt			0.850		0.948				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	3614	1597	1733	3349	0	1750	3614	1566	1716	3614	1581
Flt Permitted	0.112			0.063			0.119			0.131		
Satd. Flow (perm)	199	3614	1575	115	3349	0	219	3614	1566	237	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		69				159			263
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	336	1460	131	207	689	361	296	860	392	105	685	279
Shared Lane Traffic (%)												
Lane Group Flow (vph)	336	1460	131	207	1050	0	296	860	392	105	685	279
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	32.0	82.5	82.5	17.0	67.5		23.5	49.0	49.0	11.5	37.0	37.0
Total Split (%)	20.0%	51.6%	51.6%	10.6%	42.2%		14.7%	30.6%	30.6%	7.2%	23.1%	23.1%
Maximum Green (s)	29.0	76.4	76.4	14.0	61.4		20.5	42.6	42.6	7.0	30.6	30.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	1.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	4.5	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	96.5	76.4	76.4	81.0	63.9		57.5	42.6	42.6	39.5	30.6	30.6
Actuated g/C Ratio	0.60	0.48	0.48	0.51	0.40		0.36	0.27	0.27	0.25	0.19	0.19
v/c Ratio	0.92	0.85	0.16	1.04	0.76		1.08	0.89	0.74	0.85	0.99	0.54
Control Delay	66.4	42.5	8.0	119.4	43.5		119.9	69.1	40.3	90.3	95.7	11.8
Queue Delay	0.0	22.9	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.4	65.4	8.0	119.4	43.5		119.9	69.1	40.3	90.3	95.7	11.8
LOS	E	E	A	F	D		F	E	D	F	F	B
Approach Delay		61.6			56.0			71.5			73.3	
Approach LOS		E			E			E			E	
Queue Length 50th (m)	79.3	222.4	6.4	~58.5	154.1		~92.2	147.0	74.1	24.4	122.0	4.4
Queue Length 95th (m)	#134.5	255.4	19.0	#114.7	183.3		#156.1	#182.1	116.7	#55.8	#165.8	33.0
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	389	1725	801	199	1378		274	962	533	123	691	515
Starvation Cap Reductn	0	319	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.86	1.04	0.16	1.04	0.76		1.08	0.89	0.74	0.85	0.99	0.54

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 65.2		Intersection LOS: E	

Intersection Capacity Utilization 104.2% ICU Level of Service G

Analysis Period (min) 15

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

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

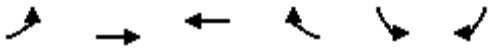
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1806	0	0	1063	14	178
Future Volume (vph)	1806	0	0	1063	14	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3510	2935	1507
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3510	2935	1507
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						36
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	4%	18%	6%
Adj. Flow (vph)	1806	0	0	1063	14	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1806	0	0	1063	14	178
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

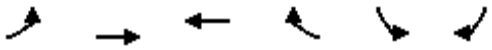
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	120.0			120.0	40.0	40.0
Total Split (%)	75.0%			75.0%	25.0%	25.0%
Maximum Green (s)	114.0			114.0	33.0	33.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	114.2			114.2	19.4	19.4
Actuated g/C Ratio	0.78			0.78	0.13	0.13
v/c Ratio	0.65			0.39	0.04	0.77
Control Delay	9.3			6.1	53.9	70.4
Queue Delay	0.5			0.3	0.0	0.0
Total Delay	9.8			6.4	53.9	70.4
LOS	A			A	D	E
Approach Delay	9.8			6.4	69.2	
Approach LOS	A			A	E	
Queue Length 50th (m)	112.8			47.0	1.9	42.7
Queue Length 95th (m)	174.6			75.1	5.6	70.7
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2787			2733	661	367
Starvation Cap Reductn	493			968	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.79			0.60	0.02	0.49

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 146.6			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 12.4		Intersection LOS: B	
Intersection Capacity Utilization 81.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



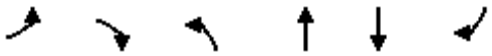
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰	↱
Traffic Volume (vph)	0	2341	795	0	53	58
Future Volume (vph)	0	2341	795	0	53	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3510	0	3148	1309
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3510	0	3148	1309
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						58
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	4%	0%	10%	22%
Adj. Flow (vph)	0	2341	795	0	53	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2341	795	0	53	58
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		135.0	135.0		25.0	25.0
Total Split (%)		84.4%	84.4%		15.6%	15.6%
Maximum Green (s)		129.0	129.0		18.0	18.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		129.0	129.0		8.4	8.4
Actuated g/C Ratio		0.86	0.86		0.06	0.06
v/c Ratio		0.76	0.26		0.30	0.46
Control Delay		6.4	2.3		72.5	27.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.4	2.3		72.5	27.1
LOS		A	A		E	C
Approach Delay		6.4	2.3		48.8	
Approach LOS		A	A		D	
Queue Length 50th (m)		116.7	18.1		8.4	0.0
Queue Length 95th (m)		162.0	26.3		16.0	15.4
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		3099	3009		376	207
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.76	0.26		0.14	0.28

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.4			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 6.9		Intersection LOS: A	
Intersection Capacity Utilization 81.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp

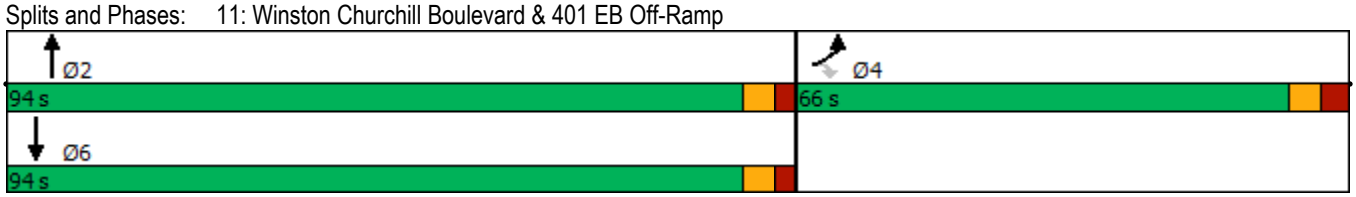


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	387	322	0	1144	1192	0
Future Volume (vph)	387	322	0	1144	1192	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.969	0.850				
Flt Protected	0.962					
Satd. Flow (prot)	3280	1425	0	4980	4885	0
Flt Permitted	0.962					
Satd. Flow (perm)	3280	1425	0	4980	4885	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	24	53				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	0%	3%	5%	0%
Adj. Flow (vph)	407	339	0	1204	1255	0
Shared Lane Traffic (%)		31%				
Lane Group Flow (vph)	512	234	0	1204	1255	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	66.0	66.0		94.0	94.0	
Total Split (%)	41.3%	41.3%		58.8%	58.8%	
Maximum Green (s)	58.5	58.5		87.5	87.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	29.2	29.2		89.2	89.2	
Actuated g/C Ratio	0.23	0.23		0.69	0.69	
v/c Ratio	0.67	0.64		0.35	0.37	
Control Delay	47.4	42.6		8.7	8.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	47.4	42.6		8.7	8.9	
LOS	D	D		A	A	
Approach Delay	45.9			8.7	8.9	
Approach LOS	D			A	A	
Queue Length 50th (m)	61.4	48.2		43.1	46.0	
Queue Length 95th (m)	80.2	79.7		63.1	67.0	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1573	705		3458	3393	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.33	0.33		0.35	0.37	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 128.4			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 17.4		Intersection LOS: B	
Intersection Capacity Utilization 50.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp

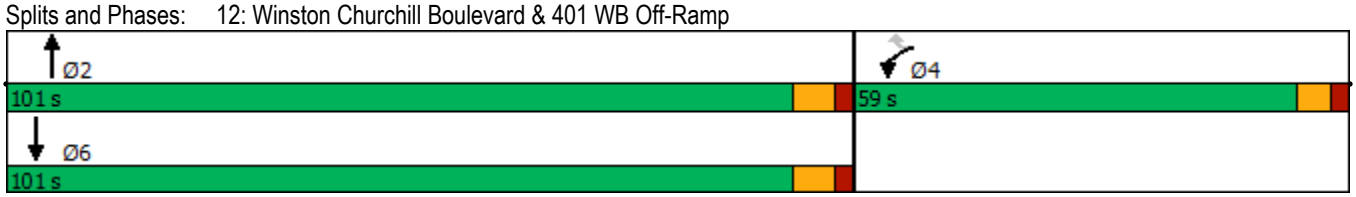


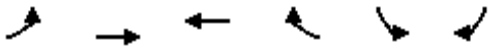
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	285	430	1249	0	0	1538
Future Volume (vph)	285	430	1249	0	0	1538
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.938	0.850				
Flt Protected	0.972					
Satd. Flow (prot)	2999	1298	4980	0	0	4839
Flt Permitted	0.972					
Satd. Flow (perm)	2999	1298	4980	0	0	4839
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	58	58				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	12%	3%	0%	0%	6%
Adj. Flow (vph)	300	453	1315	0	0	1619
Shared Lane Traffic (%)		47%				
Lane Group Flow (vph)	513	240	1315	0	0	1619
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	59.0	59.0	101.0			101.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Maximum Green (s)	52.5	52.5	93.5			93.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	30.4	30.4	96.2			96.2
Actuated g/C Ratio	0.22	0.22	0.70			0.70
v/c Ratio	0.72	0.72	0.38			0.48
Control Delay	49.2	49.3	9.1			10.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	49.2	49.3	9.1			10.3
LOS	D	D	A			B
Approach Delay	49.2		9.1			10.3
Approach LOS	D		A			B
Queue Length 50th (m)	62.4	53.5	49.6			67.5
Queue Length 95th (m)	81.9	87.5	77.1			103.8
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1222	548	3505			3406
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.42	0.44	0.38			0.48

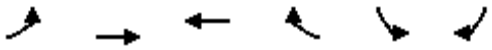
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 136.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 17.8		Intersection LOS: B	
Intersection Capacity Utilization 50.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	754	1338	0	430	63
Future Volume (vph)	0	754	1338	0	430	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3614	0	1767	1536
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3614	0	1767	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						41
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	1%	4%
Adj. Flow (vph)	0	754	1338	0	430	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	754	1338	0	430	63
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		94.0	94.0		66.0	66.0
Total Split (%)		58.8%	58.8%		41.3%	41.3%
Maximum Green (s)		88.0	88.0		59.0	59.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		88.3	88.3		39.0	39.0
Actuated g/C Ratio		0.63	0.63		0.28	0.28
v/c Ratio		0.33	0.59		0.88	0.14
Control Delay		13.7	17.8		67.5	16.3
Queue Delay		0.0	0.2		0.0	0.0
Total Delay		13.7	18.1		67.5	16.3
LOS		B	B		E	B
Approach Delay		13.7	18.1		61.0	
Approach LOS		B	B		E	
Queue Length 50th (m)		51.0	113.8		120.0	4.7
Queue Length 95th (m)		81.2	173.6		162.4	16.0
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2273	2273		745	671
Starvation Cap Reductn		0	310		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.33	0.68		0.58	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 140.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 25.0		Intersection LOS: C	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

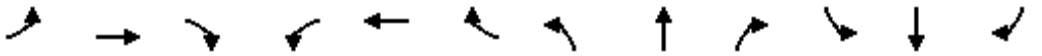
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1148	0	0	1451	57	180
Future Volume (vph)	1148	0	0	1451	57	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3614	1750	1581
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3614	1750	1581
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						133
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	1%	2%	1%
Adj. Flow (vph)	1148	0	0	1451	57	180
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1148	0	0	1451	57	180
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

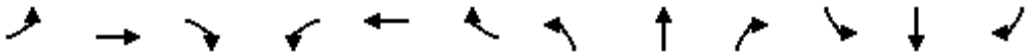
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	121.0			121.0	39.0	39.0
Total Split (%)	75.6%			75.6%	24.4%	24.4%
Maximum Green (s)	115.0			115.0	32.0	32.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	115.1			115.1	11.2	11.2
Actuated g/C Ratio	0.83			0.83	0.08	0.08
v/c Ratio	0.38			0.49	0.41	0.72
Control Delay	3.7			4.4	69.1	35.4
Queue Delay	0.0			0.6	0.0	0.0
Total Delay	3.7			5.0	69.1	35.4
LOS	A			A	E	D
Approach Delay	3.7			5.0	43.5	
Approach LOS	A			A	D	
Queue Length 50th (m)	33.1			47.6	16.0	13.1
Queue Length 95th (m)	58.6			83.3	30.9	39.5
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2986			2986	402	465
Starvation Cap Reductn	0			997	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.38			0.73	0.14	0.39

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 139.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	758	315	141	1094	189	206	1236	138	228	1177	185
Future Volume (vph)	194	758	315	141	1094	189	206	1236	138	228	1177	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1597	1785	3614	1551	1767	3557	0	1716	3614	1536
Flt Permitted	0.085			0.216			0.072			0.072		
Satd. Flow (perm)	160	3614	1597	406	3614	1551	134	3557	0	130	3614	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			235			100		8				159
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	194	758	315	141	1094	189	206	1236	138	228	1177	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	758	315	141	1094	189	206	1374	0	228	1177	185
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			3.6			3.6	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	13.0	63.5	63.5	15.5	66.0	66.0	17.5	63.0		18.0	63.5	63.5
Total Split (%)	8.1%	39.7%	39.7%	9.7%	41.3%	41.3%	10.9%	39.4%		11.3%	39.7%	39.7%
Maximum Green (s)	10.0	57.4	57.4	12.5	59.9	59.9	14.5	55.3		15.0	55.8	55.8
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	71.5	58.4	58.4	74.5	59.9	59.9	74.5	55.3		75.5	55.8	55.8
Actuated g/C Ratio	0.45	0.36	0.36	0.47	0.37	0.37	0.47	0.35		0.47	0.35	0.35
v/c Ratio	1.12	0.57	0.43	0.49	0.81	0.29	0.98	1.11		1.09	0.93	0.29
Control Delay	137.5	43.1	11.8	30.1	50.6	17.3	99.4	109.9		127.6	64.1	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	137.5	43.1	11.8	30.1	50.6	17.3	99.4	109.9		127.6	64.1	8.8
LOS	F	D	B	C	D	B	F	F		F	E	A
Approach Delay		49.8			44.2			108.6			66.8	
Approach LOS		D			D			F			E	
Queue Length 50th (m)	~53.6	108.3	18.1	26.6	172.6	19.7	52.1	~275.8		~68.0	200.5	5.8
Queue Length 95th (m)	#109.1	130.6	45.8	41.5	202.0	40.3	#108.2	#321.3		#126.3	#244.8	24.6
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	173	1320	732	299	1352	643	210	1234		210	1260	639
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.12	0.57	0.43	0.47	0.81	0.29	0.98	1.11		1.09	0.93	0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 105			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 68.9		Intersection LOS: E	

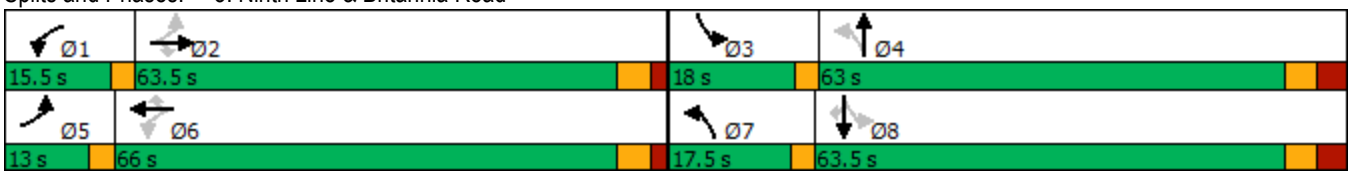
Intersection Capacity Utilization 110.4% ICU Level of Service H

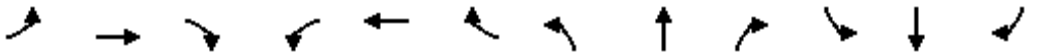
Analysis Period (min) 15

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

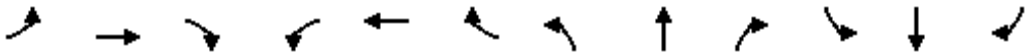
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	3	38	73	3	31	60	1418	107	46	1542	53
Future Volume (vph)	22	3	38	73	3	31	60	1418	107	46	1542	53
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			15.0			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.860			0.863			0.990			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1602	0	1359	1593	0	1732	3491	0	1767	3590	0
Flt Permitted	0.734			0.729			0.094			0.118		
Satd. Flow (perm)	1180	1602	0	1043	1593	0	171	3491	0	219	3590	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			32			14			6	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		103.4			186.9			633.8			289.9	
Travel Time (s)		7.4			13.5			32.6			14.9	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	7%	2%	3%	2%	1%	2%	0%	0%	2%
Adj. Flow (vph)	23	3	40	76	3	32	63	1477	111	48	1606	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	43	0	76	35	0	63	1588	0	48	1661	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.01	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0		20.0	10.0	
Trailing Detector (m)	0.0	0.0		-0.2	0.0		0.0	0.0		10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-0.2	0.0		0.0	0.0		10.0	0.0	
Detector 1 Size(m)	2.0	0.6		9.2	0.6		2.0	0.6		10.0	0.6	
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												

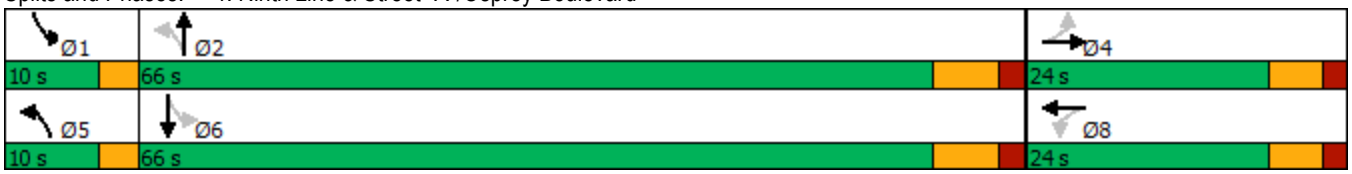


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0		9.5	25.0	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	66.0		10.0	66.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		10.0%	66.0%		10.0%	66.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		7.0	59.0		7.0	59.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	13.3	13.3		12.9	12.9		76.1	68.5		74.3	65.8	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.83	0.74		0.81	0.71	
v/c Ratio	0.14	0.16		0.52	0.14		0.22	0.61		0.16	0.65	
Control Delay	36.5	13.7		50.5	14.8		4.5	9.8		3.9	11.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.5	13.7		50.5	14.8		4.5	9.8		3.9	11.7	
LOS	D	B		D	B		A	A		A	B	
Approach Delay		21.6			39.2			9.6			11.5	
Approach LOS		C			D			A			B	
Queue Length 50th (m)	3.9	0.5		13.5	0.5		1.9	84.4		1.4	94.4	
Queue Length 95th (m)	11.1	9.9		28.3	9.0		5.8	133.1		4.7	148.2	
Internal Link Dist (m)		79.4			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0			120.0		
Base Capacity (vph)	244	363		215	355		294	2597		331	2565	
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	0.09	0.12		0.35	0.10		0.21	0.61		0.15	0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 92.2			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 11.7		Intersection LOS: B	

Intersection Capacity Utilization 70.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



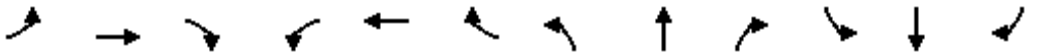
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	18	1341	64	45	1625
Future Volume (vph)	23	18	1341	64	45	1625
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.940		0.993			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1400	0	3511	0	1426	3570
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1400	0	3511	0	1426	3570
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	24	19	1397	67	47	1693
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	1464	0	47	1693
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.9%		ICU Level of Service A	
Analysis Period (min) 15			

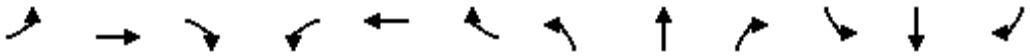
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	18	1341	64	45	1625
Future Volume (Veh/h)	23	18	1341	64	45	1625
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	24	19	1397	67	47	1693
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.76	0.76			0.76	
vC, conflicting volume	2371	732			1464	
vC1, stage 1 conf vol	1430					
vC2, stage 2 conf vol	940					
vCu, unblocked vol	2170	7			973	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	98			91	
cM capacity (veh/h)	196	819			534	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	43	931	533	47	846	846
Volume Left	24	0	0	47	0	0
Volume Right	19	0	67	0	0	0
cSH	295	1700	1700	534	1700	1700
Volume to Capacity	0.15	0.55	0.31	0.09	0.50	0.50
Queue Length 95th (m)	4.0	0.0	0.0	2.3	0.0	0.0
Control Delay (s)	19.3	0.0	0.0	12.4	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	19.3	0.0		0.3		
Approach LOS	C					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	29	68	113	35	64	122	1071	142	130	1473	112
Future Volume (vph)	132	29	68	113	35	64	122	1071	142	130	1473	112
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.6	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.895			0.902			0.982			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1667	0	1454	1702	0	1732	3465	0	1649	3493	0
Flt Permitted	0.690			0.692			0.076			0.152		
Satd. Flow (perm)	1109	1667	0	1059	1702	0	139	3465	0	264	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			67			23			14	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		111.4			218.3			843.0			487.0	
Travel Time (s)		8.0			15.7			43.4			25.0	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Adj. Flow (vph)	138	30	71	118	36	67	127	1116	148	135	1534	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	101	0	118	103	0	127	1264	0	135	1651	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.03	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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												

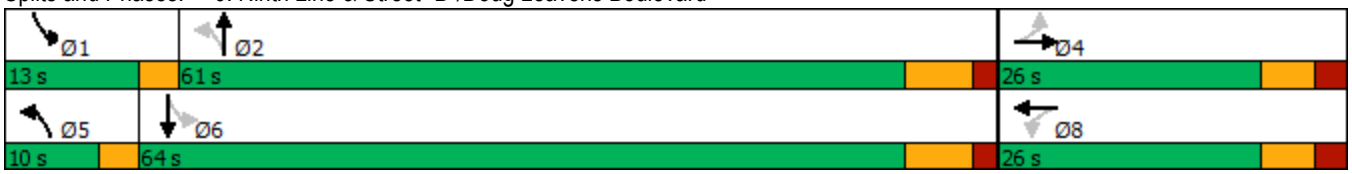


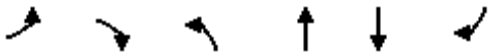
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	26.0	26.0		26.0	26.0		10.0	61.0		13.0	64.0	
Total Split (%)	26.0%	26.0%		26.0%	26.0%		10.0%	61.0%		13.0%	64.0%	
Maximum Green (s)	19.5	19.5		19.5	19.5		7.0	54.0		10.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	8.0	8.0		7.0	7.0			8.0			8.0	
Flash Dont Walk (s)	8.0	8.0		11.0	11.0			10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.2	17.2		17.2	17.2		70.9	58.2		72.4	59.1	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.74	0.61		0.75	0.61	
v/c Ratio	0.70	0.28		0.62	0.29		0.51	0.60		0.40	0.77	
Control Delay	56.0	15.1		51.5	16.4		18.8	13.8		7.1	17.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	56.0	15.1		51.5	16.4		18.8	13.8		7.1	17.1	
LOS	E	B		D	B		B	B		A	B	
Approach Delay		38.8			35.2			14.2			16.3	
Approach LOS		D			D			B			B	
Queue Length 50th (m)	25.6	5.0		21.6	6.0		5.7	76.2		6.1	118.6	
Queue Length 95th (m)	46.9	18.9		40.8	20.2		24.9	108.4		12.2	159.3	
Internal Link Dist (m)		87.4			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	242	420		232	425		252	2106		373	2155	
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	0.57	0.24		0.51	0.24		0.50	0.60		0.36	0.77	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 96.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 18.1		Intersection LOS: B	

Intersection Capacity Utilization 78.0% ICU Level of Service D
Analysis Period (min) 15

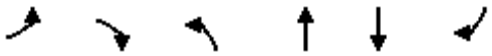
Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	9	0	1310	1774	88
Future Volume (vph)	0	9	0	1310	1774	88
Ideal Flow (vphpl)	1640	1640	1640	1900	1900	1900
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.993	
Flt Protected						
Satd. Flow (prot)	0	1391	0	3539	3514	0
Flt Permitted						
Satd. Flow (perm)	0	1391	0	3539	3514	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.7			487.0	813.6	
Travel Time (s)	7.3			25.0	41.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	9	0	1310	1774	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	9	0	1310	1862	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.21	1.21	1.21	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

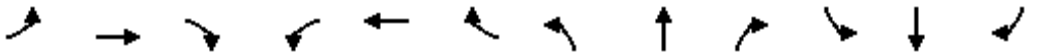
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		



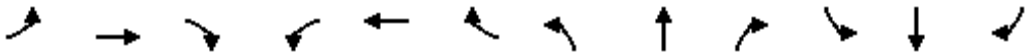
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	9	0	1310	1774	88
Future Volume (Veh/h)	0	9	0	1310	1774	88
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	9	0	1310	1774	88
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2473	931	1862			
vC1, stage 1 conf vol	1818					
vC2, stage 2 conf vol	655					
vCu, unblocked vol	2473	931	1862			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	109	268	320			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	9	655	655	1183	679
Volume Left	0	0	0	0	0
Volume Right	9	0	0	0	88
cSH	268	1700	1700	1700	1700
Volume to Capacity	0.03	0.39	0.39	0.70	0.40
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0
Control Delay (s)	18.9	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	18.9	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	212	812	304	380	1613	138	164	800	293	285	1021	330
Future Volume (vph)	212	812	304	380	1613	138	164	800	293	285	1021	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.98			
Frt			0.850		0.988				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3544	1597	1767	3568	0	1767	3614	1581	1785	3614	1581
Flt Permitted	0.060			0.218			0.119			0.109		
Satd. Flow (perm)	112	3544	1597	406	3568	0	221	3614	1556	205	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			169		8				119			163
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	212	812	304	380	1613	138	164	800	293	285	1021	330
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	812	304	380	1751	0	164	800	293	285	1021	330
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	16.0	65.5	65.5	34.5	84.0		12.0	40.0	40.0	20.0	48.0	48.0
Total Split (%)	10.0%	40.9%	40.9%	21.6%	52.5%		7.5%	25.0%	25.0%	12.5%	30.0%	30.0%
Maximum Green (s)	13.0	59.4	59.4	31.5	77.9		9.0	33.6	33.6	17.0	41.6	41.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	83.2	67.1	67.1	96.9	77.9		46.0	33.6	33.6	57.0	41.6	41.6
Actuated g/C Ratio	0.52	0.42	0.42	0.61	0.49		0.29	0.21	0.21	0.36	0.26	0.26
v/c Ratio	1.10	0.55	0.40	0.85	1.01		1.09	1.06	0.70	1.19	1.09	0.62
Control Delay	137.6	37.7	16.2	36.9	63.2		139.2	107.3	43.9	156.9	110.2	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	137.6	37.7	16.2	36.9	63.2		139.2	107.3	43.9	156.9	110.2	31.3
LOS	F	D	B	D	E		F	F	D	F	F	C
Approach Delay		48.7			58.5			96.7			102.4	
Approach LOS		D			E			F			F	
Queue Length 50th (m)	~62.8	106.7	29.3	61.4	~308.3		~43.4	~153.5	55.4	~96.3	~201.2	50.0
Queue Length 95th (m)	#123.6	139.7	60.6	97.9	#364.6		#95.5	#196.9	92.0	#159.5	#245.7	86.6
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	192	1485	767	514	1741		150	758	420	240	939	531
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.55	0.40	0.74	1.01		1.09	1.06	0.70	1.19	1.09	0.62

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 75.3		Intersection LOS: E	

Intersection Capacity Utilization 115.7% ICU Level of Service H

Analysis Period (min) 15

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

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

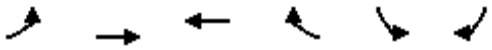
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1204	0	0	2041	85	202
Future Volume (vph)	1204	0	0	2041	85	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3614	3362	1597
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3614	3362	1597
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						131
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	1204	0	0	2041	85	202
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1204	0	0	2041	85	202
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

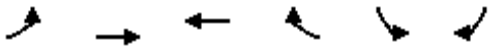
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	126.0			126.0	34.0	34.0
Total Split (%)	78.8%			78.8%	21.3%	21.3%
Maximum Green (s)	120.0			120.0	27.0	27.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	120.2			120.2	13.1	13.1
Actuated g/C Ratio	0.82			0.82	0.09	0.09
v/c Ratio	0.41			0.69	0.28	0.77
Control Delay	4.4			7.5	63.7	43.1
Queue Delay	0.0			1.5	0.0	0.0
Total Delay	4.4			9.0	63.7	43.1
LOS	A			A	E	D
Approach Delay	4.4			9.0	49.2	
Approach LOS	A			A	D	
Queue Length 50th (m)	41.2			106.5	12.6	21.0
Queue Length 95th (m)	71.5			180.6	21.5	50.4
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2940			2968	621	401
Starvation Cap Reductn	0			682	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.41			0.89	0.14	0.50

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 146.3			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 93.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	995	1997	0	277	440
Future Volume (vph)	0	995	1997	0	277	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3510	3614	0	3429	1597
Flt Permitted					0.950	
Satd. Flow (perm)	0	3510	3614	0	3429	1597
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						12
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	0%	1%	0%
Adj. Flow (vph)	0	995	1997	0	277	440
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	995	1997	0	277	440
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm

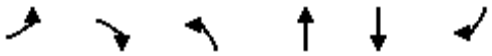


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		104.0	104.0		56.0	56.0
Total Split (%)		65.0%	65.0%		35.0%	35.0%
Maximum Green (s)		98.0	98.0		49.0	49.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		98.1	98.1		45.0	45.0
Actuated g/C Ratio		0.63	0.63		0.29	0.29
v/c Ratio		0.45	0.88		0.28	0.94
Control Delay		16.3	30.6		43.5	81.4
Queue Delay		0.0	8.9		0.0	0.0
Total Delay		16.3	39.5		43.5	81.4
LOS		B	D		D	F
Approach Delay		16.3	39.5		66.8	
Approach LOS		B	D		E	
Queue Length 50th (m)		91.0	292.3		36.2	137.6
Queue Length 95th (m)		107.3	332.4		49.2	#202.3
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		2206	2271		1077	510
Starvation Cap Reductn		0	270		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.45	1.00		0.26	0.86

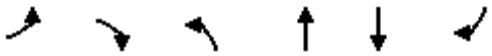
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 156.1			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 38.6		Intersection LOS: D	
Intersection Capacity Utilization 93.3%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	464	345	0	1599	1940	0
Future Volume (vph)	464	345	0	1599	1940	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.975	0.850				
Flt Protected	0.960					
Satd. Flow (prot)	3065	1411	0	4980	5079	0
Flt Permitted	0.960					
Satd. Flow (perm)	3065	1411	0	4980	5079	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	12	*134				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	13%	3%	0%	3%	1%	0%
Adj. Flow (vph)	478	356	0	1648	2000	0
Shared Lane Traffic (%)		27%				
Lane Group Flow (vph)	574	260	0	1648	2000	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

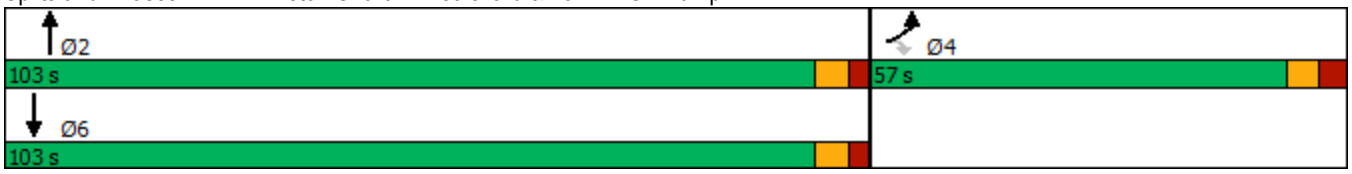


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	57.0	57.0		103.0	103.0	
Total Split (%)	35.6%	35.6%		64.4%	64.4%	
Maximum Green (s)	49.5	49.5		96.5	96.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	36.8	36.8		98.2	98.2	
Actuated g/C Ratio	0.25	0.25		0.68	0.68	
v/c Ratio	0.73	0.57		0.49	0.58	
Control Delay	54.2	26.8		12.5	14.0	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	54.2	26.8		12.5	14.0	
LOS	D	C		B	B	
Approach Delay	45.6			12.5	14.0	
Approach LOS	D			B	B	
Queue Length 50th (m)	80.6	36.1		81.2	108.8	
Queue Length 95th (m)	101.8	68.5		114.7	151.7	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1109	592		3373	3440	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.52	0.44		0.49	0.58	

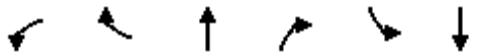
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 145			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 19.3		Intersection LOS: B	
Intersection Capacity Utilization 78.3%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	938	869	1764	0	0	1421
Future Volume (vph)	938	869	1764	0	0	1421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3334	1411	4839	0	0	4932
Flt Permitted	0.964					
Satd. Flow (perm)	3334	1411	4839	0	0	4932
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	8	*304				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	6%	0%	0%	4%
Adj. Flow (vph)	967	896	1819	0	0	1465
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	1281	582	1819	0	0	1465
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

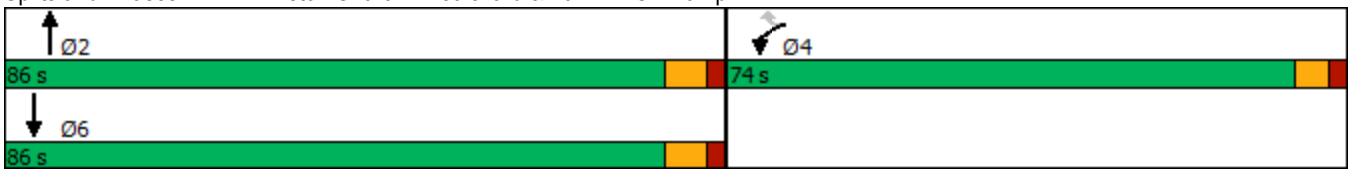


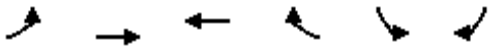
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	74.0	74.0	86.0			86.0
Total Split (%)	46.3%	46.3%	53.8%			53.8%
Maximum Green (s)	67.5	67.5	78.5			78.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	67.4	67.4	81.0			81.0
Actuated g/C Ratio	0.43	0.43	0.51			0.51
v/c Ratio	0.90	0.75	0.74			0.58
Control Delay	51.8	24.2	32.8			28.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	51.8	24.2	32.8			28.3
LOS	D	C	C			C
Approach Delay	43.2		32.8			28.3
Approach LOS	D		C			C
Queue Length 50th (m)	201.2	90.8	173.1			123.8
Queue Length 95th (m)	234.8	150.2	191.9			139.2
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1457	786	2474			2522
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.88	0.74	0.74			0.58

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 158.4			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 35.3		Intersection LOS: D	
Intersection Capacity Utilization 78.3%		ICU Level of Service D	
Analysis Period (min) 15			

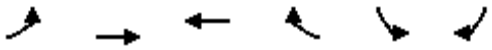
* User Entered Value

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	1547	676	0	462	27
Future Volume (vph)	0	1547	676	0	462	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3579	0	1684	1210
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3579	0	1684	1210
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						20
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	0%	6%	32%
Adj. Flow (vph)	0	1547	676	0	462	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1547	676	0	462	27
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		96.0	96.0		64.0	64.0
Total Split (%)		60.0%	60.0%		40.0%	40.0%
Maximum Green (s)		90.0	90.0		57.0	57.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		90.4	90.4		44.7	44.7
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.70	0.31		0.91	0.07
Control Delay		23.2	15.3		72.6	16.8
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		23.2	15.3		72.6	16.8
LOS		C	B		E	B
Approach Delay		23.2	15.3		69.5	
Approach LOS		C	B		E	
Queue Length 50th (m)		166.0	51.0		137.2	1.5
Queue Length 95th (m)		232.2	76.0		184.3	9.2
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2205	2183		650	479
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.70	0.31		0.71	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 148.1			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 29.6		Intersection LOS: C	
Intersection Capacity Utilization 82.1%		ICU Level of Service E	
Analysis Period (min) 15			

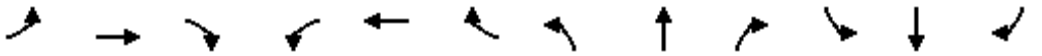
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1956	0	0	869	25	278
Future Volume (vph)	1956	0	0	869	25	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3579	1608	1566
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3579	1608	1566
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						21
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	2%	11%	2%
Adj. Flow (vph)	1956	0	0	869	25	278
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1956	0	0	869	25	278
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

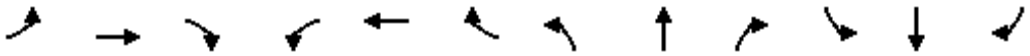
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	114.0			114.0	46.0	46.0
Total Split (%)	71.3%			71.3%	28.8%	28.8%
Maximum Green (s)	108.0			108.0	39.0	39.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	108.2			108.2	29.5	29.5
Actuated g/C Ratio	0.72			0.72	0.20	0.20
v/c Ratio	0.75			0.34	0.08	0.86
Control Delay	16.6			9.0	48.7	78.7
Queue Delay	1.4			0.3	0.0	0.0
Total Delay	18.0			9.3	48.7	78.7
LOS	B			A	D	E
Approach Delay	18.0			9.3	76.2	
Approach LOS	B			A	E	
Queue Length 50th (m)	185.2			49.8	6.5	79.5
Queue Length 95th (m)	261.0			73.5	15.4	115.2
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2594			2569	416	421
Starvation Cap Reductn	411			1028	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.90			0.56	0.06	0.66

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.8			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 21.2		Intersection LOS: C	
Intersection Capacity Utilization 82.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	1641	356	102	702	191	224	898	165	145	1208	138
Future Volume (vph)	146	1641	356	102	702	191	224	898	165	145	1208	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1581	1733	3579	1439	1767	3465	0	1608	3614	1581
Flt Permitted	0.273			0.059			0.080			0.083		
Satd. Flow (perm)	513	3614	1581	108	3579	1439	149	3465	0	140	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144			170		14				108
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	146	1641	356	102	702	191	224	898	165	145	1208	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	1641	356	102	702	191	224	1063	0	145	1208	138
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			3.6			3.6	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	15.0	78.5	78.5	9.5	73.0	73.0	16.0	58.0		14.0	56.0	56.0
Total Split (%)	9.4%	49.1%	49.1%	5.9%	45.6%	45.6%	10.0%	36.3%		8.8%	35.0%	35.0%
Maximum Green (s)	12.0	72.4	72.4	6.5	66.9	66.9	13.0	50.3		11.0	48.3	48.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	84.7	72.4	72.4	77.8	68.2	68.2	68.0	50.3		64.0	48.3	48.3
Actuated g/C Ratio	0.53	0.45	0.45	0.49	0.43	0.43	0.42	0.31		0.40	0.30	0.30
v/c Ratio	0.41	1.00	0.45	0.86	0.46	0.27	1.15	0.97		0.93	1.11	0.25
Control Delay	22.8	66.3	19.0	82.5	34.2	6.4	149.3	73.4		92.5	112.5	12.5
Queue Delay	0.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	22.8	102.3	19.0	82.5	34.2	6.4	149.3	73.4		92.5	112.5	12.5
LOS	C	F	B	F	C	A	F	E		F	F	B
Approach Delay		83.0			33.8			86.6			101.3	
Approach LOS		F			C			F			F	
Queue Length 50th (m)	24.4	~289.0	47.2	17.5	88.4	4.1	~69.9	183.5		32.5	~241.8	7.2
Queue Length 95th (m)	37.7	#344.3	75.8	#55.9	108.0	20.8	#128.2	#230.5		#78.7	#286.7	25.1
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	367	1635	794	118	1524	710	194	1098		156	1090	552
Starvation Cap Reductn	0	290	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.40	1.22	0.45	0.86	0.46	0.27	1.15	0.97		0.93	1.11	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 80.1		Intersection LOS: F	

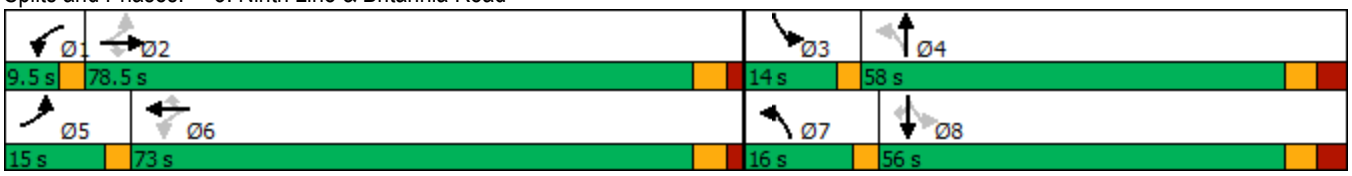
Intersection Capacity Utilization 115.0% ICU Level of Service H

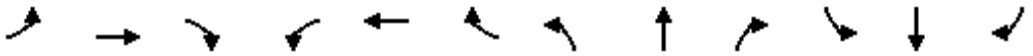
Analysis Period (min) 15

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

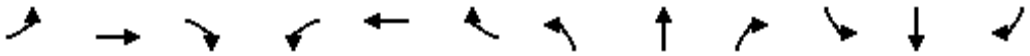
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





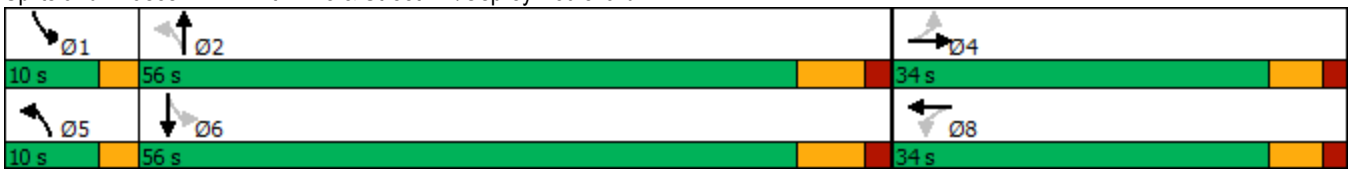
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	14	69	134	16	97	34	1246	99	22	1267	16
Future Volume (vph)	34	14	69	134	16	97	34	1246	99	22	1267	16
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			15.0			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.875			0.871			0.989			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1630	0	1412	1582	0	1732	3385	0	1683	3567	0
Flt Permitted	0.682			0.702			0.142			0.139		
Satd. Flow (perm)	1097	1630	0	1043	1582	0	259	3385	0	246	3567	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			100			12			2	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		122.1			186.9			633.8			289.9	
Travel Time (s)		8.8			13.5			32.6			14.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	2%	5%	2%	4%	8%	5%	1%	2%
Adj. Flow (vph)	35	14	71	138	16	100	35	1285	102	23	1306	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	85	0	138	116	0	35	1387	0	23	1322	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.01	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0		20.0	10.0	
Trailing Detector (m)	0.0	0.0		-1.0	0.0		0.0	0.0		10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-1.0	0.0		0.0	0.0		10.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		10.0	0.6	
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	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0		9.5	25.0	
Total Split (s)	34.0	34.0		34.0	34.0		10.0	56.0		10.0	56.0	
Total Split (%)	34.0%	34.0%		34.0%	34.0%		10.0%	56.0%		10.0%	56.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		7.0	49.0		7.0	49.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.7	17.7		17.7	17.7		63.5	56.4		62.1	54.0	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.73	0.65		0.71	0.62	
v/c Ratio	0.16	0.22		0.65	0.29		0.11	0.63		0.08	0.60	
Control Delay	29.5	10.8		46.6	10.0		5.3	12.8		5.3	13.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.5	10.8		46.6	10.0		5.3	12.8		5.3	13.5	
LOS	C	B		D	A		A	B		A	B	
Approach Delay		16.3			29.9			12.6			13.4	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	5.2	2.0		22.7	2.3		1.4	59.0		0.9	75.5	
Queue Length 95th (m)	13.3	13.5		42.6	15.6		5.4	136.2		4.1	127.2	
Internal Link Dist (m)		98.1			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0			120.0		
Base Capacity (vph)	368	593		349	597		342	2195		327	2211	
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	0.10	0.14		0.40	0.19		0.10	0.63		0.07	0.60	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 87.2			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 61.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



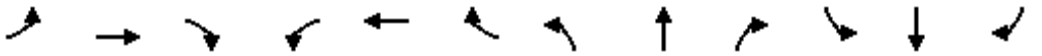
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	50	73	1372	38	33	1248
Future Volume (vph)	50	73	1372	38	33	1248
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.920		0.996			
Flt Protected	0.980				0.950	
Satd. Flow (prot)	1380	0	3447	0	1412	3500
Flt Permitted	0.980				0.950	
Satd. Flow (perm)	1380	0	3447	0	1412	3500
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	52	76	1429	40	34	1300
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	0	1469	0	34	1300
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

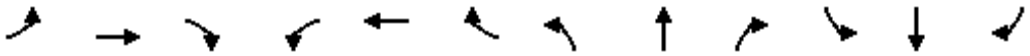
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	50	73	1372	38	33	1248
Future Volume (Veh/h)	50	73	1372	38	33	1248
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	52	76	1429	40	34	1300
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.75	0.75			0.75	
vC, conflicting volume	2167	734			1469	
vC1, stage 1 conf vol	1449					
vC2, stage 2 conf vol	718					
vCu, unblocked vol	1888	0			957	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	91			94	
cM capacity (veh/h)	218	817			531	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	128	953	516	34	650	650
Volume Left	52	0	0	34	0	0
Volume Right	76	0	40	0	0	0
cSH	387	1700	1700	531	1700	1700
Volume to Capacity	0.33	0.56	0.30	0.06	0.38	0.38
Queue Length 95th (m)	11.4	0.0	0.0	1.6	0.0	0.0
Control Delay (s)	18.8	0.0	0.0	12.2	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	18.8	0.0		0.3		
Approach LOS	C					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	90	117	151	92	182	55	1257	109	76	939	59
Future Volume (vph)	228	90	117	151	92	182	55	1257	109	76	939	59
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.0	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.915			0.900			0.988			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1704	0	1412	1676	0	1617	3433	0	1649	3501	0
Flt Permitted	0.231			0.409			0.171			0.083		
Satd. Flow (perm)	371	1704	0	608	1676	0	291	3433	0	144	3501	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			89			12			9	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		140.5			218.3			843.0			487.0	
Travel Time (s)		10.1			15.7			43.4			25.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	9%	0%	1%	2%
Adj. Flow (vph)	248	98	127	164	100	198	60	1366	118	83	1021	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	248	225	0	164	298	0	60	1484	0	83	1085	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.0			3.0	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.12	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	24.5		9.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	12.0	25.0		12.0	25.0		10.0	53.0		10.0	53.0	
Total Split (%)	12.0%	25.0%		12.0%	25.0%		10.0%	53.0%		10.0%	53.0%	
Maximum Green (s)	9.0	18.5		9.0	18.5		7.0	46.0		7.0	46.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-2.0	-1.5		-2.0	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	1.0	5.0		1.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		8.0			7.0			8.0			8.0	
Flash Dont Walk (s)		8.0			11.0			10.0			10.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	32.6	17.5		32.3	17.3		59.1	48.3		59.3	48.4	
Actuated g/C Ratio	0.34	0.18		0.34	0.18		0.62	0.51		0.62	0.51	
v/c Ratio	0.95	0.63		0.55	0.79		0.20	0.85		0.37	0.61	
Control Delay	73.7	35.1		31.2	42.3		9.0	27.6		13.3	19.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	73.7	35.1		31.2	42.3		9.0	27.6		13.3	19.5	
LOS	E	D		C	D		A	C		B	B	
Approach Delay		55.4			38.4			26.9			19.1	
Approach LOS		E			D			C			B	
Queue Length 50th (m)	38.2	30.8		23.9	40.4		4.5	139.4		6.2	83.6	
Queue Length 95th (m)	#80.0	56.0		41.3	#77.3		9.4	#180.7		14.2	106.2	
Internal Link Dist (m)		116.5			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	261	405		299	423		306	1744		232	1780	
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	0.95	0.56		0.55	0.70		0.20	0.85		0.36	0.61	

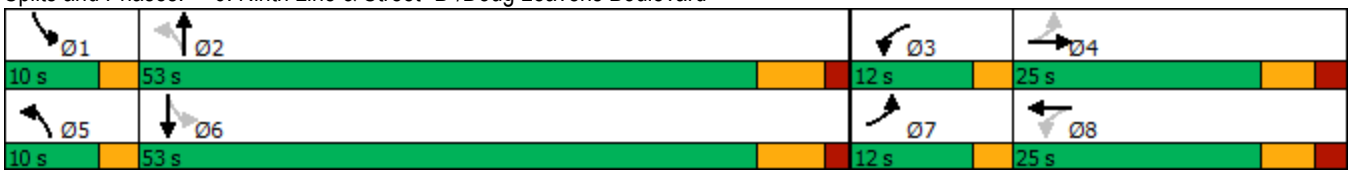
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 95.4			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 29.5		Intersection LOS: C	

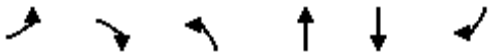
Intersection Capacity Utilization 88.2% ICU Level of Service E

Analysis Period (min) 15

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

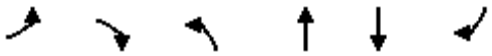
Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	14	0	1739	1085	37
Future Volume (vph)	0	14	0	1739	1085	37
Ideal Flow (vphpl)	1640	1640	1640	1900	1900	1900
Lane Width (m)	3.6	3.6	3.5	3.5	3.5	3.5
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.995	
Flt Protected						
Satd. Flow (prot)	0	1391	0	3500	3482	0
Flt Permitted						
Satd. Flow (perm)	0	1391	0	3500	3482	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	121.9			487.0	813.6	
Travel Time (s)	8.8			25.0	41.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	14	0	1739	1085	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	14	0	1739	1122	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.21	1.21	1.22	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

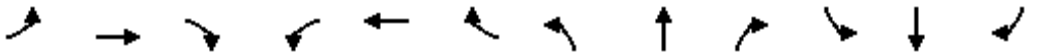
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		



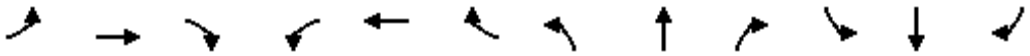
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	14	0	1739	1085	37
Future Volume (Veh/h)	0	14	0	1739	1085	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	14	0	1739	1085	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1973	561	1122			
vC1, stage 1 conf vol	1104					
vC2, stage 2 conf vol	870					
vCu, unblocked vol	1973	561	1122			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	222	471	618			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	14	870	870	723	399
Volume Left	0	0	0	0	0
Volume Right	14	0	0	0	37
cSH	471	1700	1700	1700	1700
Volume to Capacity	0.03	0.51	0.51	0.43	0.23
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0
Control Delay (s)	12.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	341	1607	134	210	763	362	302	873	396	106	700	286
Future Volume (vph)	341	1607	134	210	763	362	302	873	396	106	700	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99									
Frt			0.850		0.952				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	3614	1597	1733	3362	0	1750	3614	1566	1716	3614	1581
Flt Permitted	0.079			0.064			0.119			0.131		
Satd. Flow (perm)	140	3614	1575	117	3362	0	219	3614	1566	237	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		57				159			265
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	341	1607	134	210	763	362	302	873	396	106	700	286
Shared Lane Traffic (%)												
Lane Group Flow (vph)	341	1607	134	210	1125	0	302	873	396	106	700	286
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	32.0	82.5	82.5	17.0	67.5		23.5	49.0	49.0	11.5	37.0	37.0
Total Split (%)	20.0%	51.6%	51.6%	10.6%	42.2%		14.7%	30.6%	30.6%	7.2%	23.1%	23.1%
Maximum Green (s)	29.0	76.4	76.4	14.0	61.4		20.5	42.6	42.6	7.0	30.6	30.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	1.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	4.5	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	96.5	76.4	76.4	79.3	62.2		57.5	42.6	42.6	39.5	30.6	30.6
Actuated g/C Ratio	0.60	0.48	0.48	0.50	0.39		0.36	0.27	0.27	0.25	0.19	0.19
v/c Ratio	0.96	0.93	0.17	1.06	0.84		1.10	0.91	0.74	0.86	1.01	0.55
Control Delay	83.1	50.1	8.2	124.4	49.0		126.5	70.6	41.0	91.9	100.3	12.5
Queue Delay	0.0	45.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.1	95.1	8.2	124.4	49.0		126.5	70.6	41.0	91.9	100.3	12.5
LOS	F	F	A	F	D		F	E	D	F	F	B
Approach Delay		87.6			60.8			73.8			76.5	
Approach LOS		F			E			E			E	
Queue Length 50th (m)	92.5	262.6	6.9	~60.1	173.2		~96.4	149.9	75.7	24.6	~129.3	5.8
Queue Length 95th (m)	#156.4	#301.4	19.8	#116.9	204.5		#161.0	#187.2	119.1	#55.8	#171.3	35.3
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	364	1725	801	199	1342		274	962	533	123	691	516
Starvation Cap Reductn	0	295	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.12	0.17	1.06	0.84		1.10	0.91	0.74	0.86	1.01	0.55

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 76.2		Intersection LOS: E	

Intersection Capacity Utilization 109.2% ICU Level of Service H

Analysis Period (min) 15

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

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

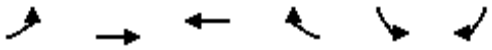
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1973	0	0	1170	15	197
Future Volume (vph)	1973	0	0	1170	15	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3510	2935	1507
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3510	2935	1507
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						26
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	4%	18%	6%
Adj. Flow (vph)	1973	0	0	1170	15	197
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1973	0	0	1170	15	197
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

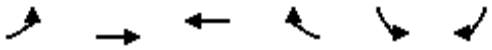
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	120.0			120.0	40.0	40.0
Total Split (%)	75.0%			75.0%	25.0%	25.0%
Maximum Green (s)	114.0			114.0	33.0	33.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	114.2			114.2	22.5	22.5
Actuated g/C Ratio	0.76			0.76	0.15	0.15
v/c Ratio	0.72			0.44	0.03	0.79
Control Delay	12.3			7.5	52.7	75.4
Queue Delay	0.9			0.4	0.0	0.0
Total Delay	13.2			7.9	52.7	75.4
LOS	B			A	D	E
Approach Delay	13.2			7.9	73.8	
Approach LOS	B			A	E	
Queue Length 50th (m)	151.9			60.5	2.1	52.5
Queue Length 95th (m)	232.3			94.7	5.7	81.9
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2730			2677	647	352
Starvation Cap Reductn	433			903	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.86			0.66	0.02	0.56

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 149.7			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 15.2		Intersection LOS: B	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



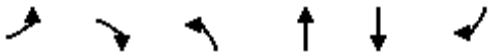
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰	↱
Traffic Volume (vph)	0	2564	874	0	57	64
Future Volume (vph)	0	2564	874	0	57	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3510	0	3148	1309
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3510	0	3148	1309
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						64
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	4%	0%	10%	22%
Adj. Flow (vph)	0	2564	874	0	57	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2564	874	0	57	64
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		135.0	135.0		25.0	25.0
Total Split (%)		84.4%	84.4%		15.6%	15.6%
Maximum Green (s)		129.0	129.0		18.0	18.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		129.0	129.0		8.6	8.6
Actuated g/C Ratio		0.86	0.86		0.06	0.06
v/c Ratio		0.83	0.29		0.32	0.48
Control Delay		8.7	2.4		72.8	26.8
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		8.7	2.4		72.8	26.8
LOS		A	A		E	C
Approach Delay		8.7	2.4		48.4	
Approach LOS		A	A		D	
Queue Length 50th (m)		157.5	20.6		9.0	0.0
Queue Length 95th (m)		221.5	30.3		16.9	16.0
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		3095	3006		376	212
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.83	0.29		0.15	0.30

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.6			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 8.5		Intersection LOS: A	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp

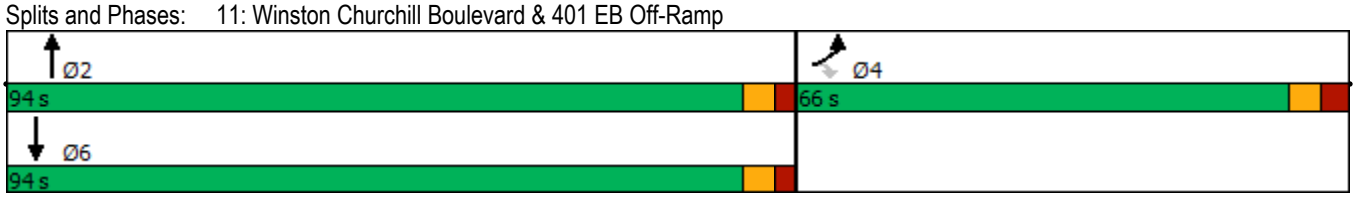


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	427	356	0	1211	1357	0
Future Volume (vph)	427	356	0	1211	1357	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.969	0.850				
Flt Protected	0.962					
Satd. Flow (prot)	3280	1425	0	4980	4885	0
Flt Permitted	0.962					
Satd. Flow (perm)	3280	1425	0	4980	4885	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	24	34				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	0%	3%	5%	0%
Adj. Flow (vph)	449	375	0	1275	1428	0
Shared Lane Traffic (%)		31%				
Lane Group Flow (vph)	565	259	0	1275	1428	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	66.0	66.0		94.0	94.0	
Total Split (%)	41.3%	41.3%		58.8%	58.8%	
Maximum Green (s)	58.5	58.5		87.5	87.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	32.8	32.8		89.3	89.3	
Actuated g/C Ratio	0.25	0.25		0.68	0.68	
v/c Ratio	0.68	0.68		0.38	0.43	
Control Delay	47.0	48.2		10.4	11.0	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	47.0	48.2		10.4	11.0	
LOS	D	D		B	B	
Approach Delay	47.4			10.4	11.0	
Approach LOS	D			B	B	
Queue Length 50th (m)	69.4	61.8		49.9	58.8	
Queue Length 95th (m)	88.8	95.6		77.8	90.8	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1531	678		3364	3300	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.37	0.38		0.38	0.43	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 132.1			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 19.3		Intersection LOS: B	
Intersection Capacity Utilization 56.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp

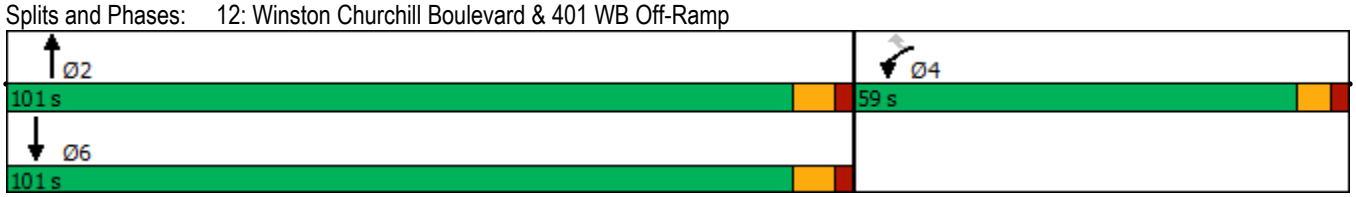


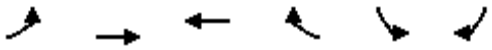
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	308	475	1323	0	0	1762
Future Volume (vph)	308	475	1323	0	0	1762
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.937	0.850				
Flt Protected	0.972					
Satd. Flow (prot)	2995	1298	4980	0	0	4839
Flt Permitted	0.972					
Satd. Flow (perm)	2995	1298	4980	0	0	4839
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	48	48				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	12%	3%	0%	0%	6%
Adj. Flow (vph)	324	500	1393	0	0	1855
Shared Lane Traffic (%)		47%				
Lane Group Flow (vph)	559	265	1393	0	0	1855
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	59.0	59.0	101.0			101.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Maximum Green (s)	52.5	52.5	93.5			93.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	34.7	34.7	96.4			96.4
Actuated g/C Ratio	0.25	0.25	0.68			0.68
v/c Ratio	0.72	0.75	0.41			0.56
Control Delay	49.8	53.0	11.1			13.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	49.8	53.0	11.1			13.3
LOS	D	D	B			B
Approach Delay	50.8		11.1			13.3
Approach LOS	D		B			B
Queue Length 50th (m)	71.5	65.7	58.4			90.8
Queue Length 95th (m)	91.5	102.3	94.8			144.6
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1180	528	3400			3304
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.47	0.50	0.41			0.56

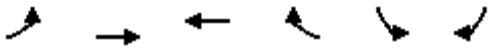
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 141.1			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 20.1		Intersection LOS: C	
Intersection Capacity Utilization 56.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	823	1493	0	452	70
Future Volume (vph)	0	823	1493	0	452	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3614	0	1767	1536
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3614	0	1767	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						28
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	1%	4%
Adj. Flow (vph)	0	823	1493	0	452	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	823	1493	0	452	70
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		94.0	94.0		66.0	66.0
Total Split (%)		58.8%	58.8%		41.3%	41.3%
Maximum Green (s)		88.0	88.0		59.0	59.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		88.4	88.4		41.5	41.5
Actuated g/C Ratio		0.62	0.62		0.29	0.29
v/c Ratio		0.37	0.67		0.88	0.15
Control Delay		15.2	21.0		67.3	23.3
Queue Delay		0.0	0.4		0.0	0.0
Total Delay		15.2	21.5		67.3	23.3
LOS		B	C		E	C
Approach Delay		15.2	21.5		61.4	
Approach LOS		B	C		E	
Queue Length 50th (m)		60.0	143.1		128.3	9.1
Queue Length 95th (m)		96.0	219.8		171.8	21.2
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2235	2235		732	653
Starvation Cap Reductn		0	282		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.37	0.76		0.62	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 143			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 27.0		Intersection LOS: C	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

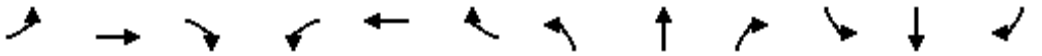
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1233	0	0	1619	63	195
Future Volume (vph)	1233	0	0	1619	63	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3614	1750	1581
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3614	1750	1581
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						113
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	1%	2%	1%
Adj. Flow (vph)	1233	0	0	1619	63	195
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1233	0	0	1619	63	195
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

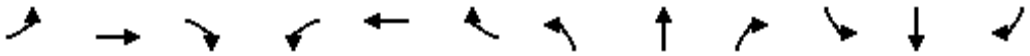
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	121.0			121.0	39.0	39.0
Total Split (%)	75.6%			75.6%	24.4%	24.4%
Maximum Green (s)	115.0			115.0	32.0	32.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	115.2			115.2	13.6	13.6
Actuated g/C Ratio	0.81			0.81	0.10	0.10
v/c Ratio	0.42			0.55	0.38	0.77
Control Delay	4.7			5.9	65.7	46.2
Queue Delay	0.0			0.8	0.0	0.0
Total Delay	4.7			6.6	65.7	46.2
LOS	A			A	E	D
Approach Delay	4.7			6.6	51.0	
Approach LOS	A			A	D	
Queue Length 50th (m)	44.3			69.4	17.7	23.7
Queue Length 95th (m)	74.8			115.8	33.1	51.7
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2935			2935	395	444
Starvation Cap Reductn	0			892	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.42			0.79	0.16	0.44

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 141.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 9.5		Intersection LOS: A	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	197	819	320	144	1231	192	211	1259	141	230	1219	187
Future Volume (vph)	197	819	320	144	1231	192	211	1259	141	230	1219	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1597	1785	3614	1551	1767	3557	0	1716	3614	1536
Flt Permitted	0.068			0.186			0.072			0.072		
Satd. Flow (perm)	128	3614	1597	349	3614	1551	134	3557	0	130	3614	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			221			91		8				155
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	197	819	320	144	1231	192	211	1259	141	230	1219	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	819	320	144	1231	192	211	1400	0	230	1219	187
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			3.6			3.6	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	13.0	63.5	63.5	15.5	66.0	66.0	17.5	63.0		18.0	63.5	63.5
Total Split (%)	8.1%	39.7%	39.7%	9.7%	41.3%	41.3%	10.9%	39.4%		11.3%	39.7%	39.7%
Maximum Green (s)	10.0	57.4	57.4	12.5	59.9	59.9	14.5	55.3		15.0	55.8	55.8
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	71.5	58.4	58.4	74.5	59.9	59.9	74.5	55.3		75.5	55.8	55.8
Actuated g/C Ratio	0.45	0.36	0.36	0.47	0.37	0.37	0.47	0.35		0.47	0.35	0.35
v/c Ratio	1.23	0.62	0.44	0.54	0.91	0.30	1.00	1.13		1.10	0.97	0.29
Control Delay	180.7	44.4	13.6	32.0	58.4	19.4	105.6	117.5		130.5	69.5	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	180.7	44.4	13.6	32.0	58.4	19.4	105.6	117.5		130.5	69.5	9.4
LOS	F	D	B	C	E	B	F	F		F	E	A
Approach Delay		57.2			51.2			116.0			71.2	
Approach LOS		E			D			F			E	
Queue Length 50th (m)	~64.3	119.6	22.9	27.2	205.5	22.8	~54.3	~285.4		~69.4	211.3	7.1
Queue Length 95th (m)	#119.8	143.1	52.0	42.2	#239.2	43.8	#112.4	#330.9		#127.7	#259.8	26.6
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	160	1318	722	276	1352	637	210	1234		210	1260	636
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.23	0.62	0.44	0.52	0.91	0.30	1.00	1.13		1.10	0.97	0.29

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 125	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 74.8	Intersection LOS: E

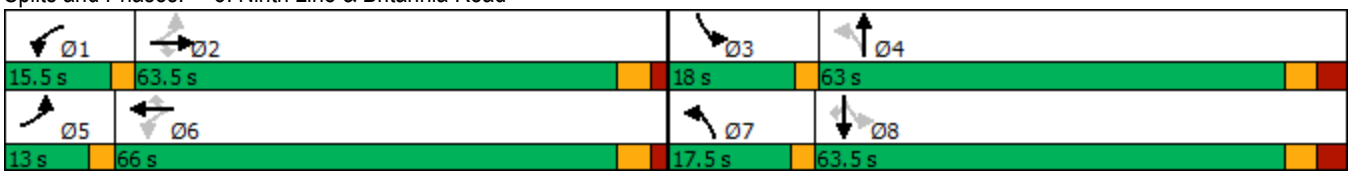
Intersection Capacity Utilization 115.2% ICU Level of Service H

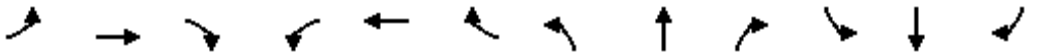
Analysis Period (min) 15

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

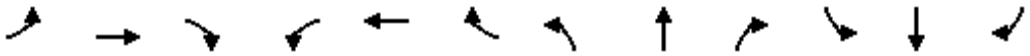
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	3	38	75	3	32	60	1444	110	47	1592	53
Future Volume (vph)	22	3	38	75	3	32	60	1444	110	47	1592	53
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			15.0			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.860			0.862			0.989			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1602	0	1359	1591	0	1732	3488	0	1767	3590	0
Flt Permitted	0.734			0.729			0.086			0.112		
Satd. Flow (perm)	1180	1602	0	1043	1591	0	157	3488	0	208	3590	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			33			14			6	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		103.4			186.9			633.8			289.9	
Travel Time (s)		7.4			13.5			32.6			14.9	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	7%	2%	3%	2%	1%	2%	0%	0%	2%
Adj. Flow (vph)	23	3	40	78	3	33	63	1504	115	49	1658	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	43	0	78	36	0	63	1619	0	49	1713	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.01	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0		20.0	10.0	
Trailing Detector (m)	0.0	0.0		-0.2	0.0		0.0	0.0		10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-0.2	0.0		0.0	0.0		10.0	0.0	
Detector 1 Size(m)	2.0	0.6		9.2	0.6		2.0	0.6		10.0	0.6	
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												

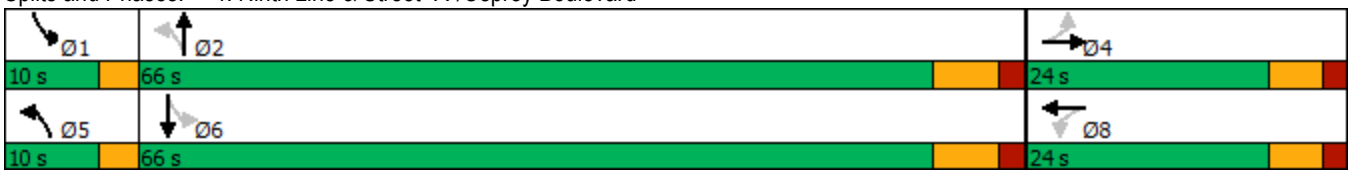


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0		9.5	25.0	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	66.0		10.0	66.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		10.0%	66.0%		10.0%	66.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		7.0	59.0		7.0	59.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	13.4	13.4		13.0	13.0		76.1	68.6		74.3	65.9	
Actuated g/C Ratio	0.15	0.15		0.14	0.14		0.82	0.74		0.80	0.71	
v/c Ratio	0.13	0.16		0.53	0.14		0.23	0.62		0.17	0.67	
Control Delay	36.4	13.6		50.8	14.5		4.7	10.1		4.0	12.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.4	13.6		50.8	14.5		4.7	10.1		4.0	12.2	
LOS	D	B		D	B		A	B		A	B	
Approach Delay		21.6			39.3			9.9			12.0	
Approach LOS		C			D			A			B	
Queue Length 50th (m)	3.9	0.5		13.9	0.5		1.9	88.0		1.5	100.6	
Queue Length 95th (m)	11.1	9.9		29.0	9.1		5.8	138.2		4.8	157.3	
Internal Link Dist (m)		79.4			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0			120.0		
Base Capacity (vph)	244	362		215	355		283	2592		323	2562	
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	0.09	0.12		0.36	0.10		0.22	0.62		0.15	0.67	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 92.4			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 12.1		Intersection LOS: B	

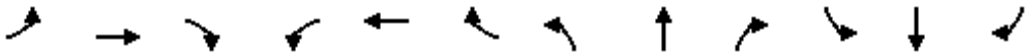
Intersection Capacity Utilization 70.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard

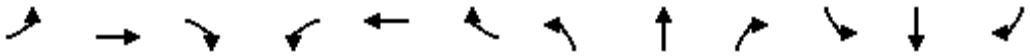


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	19	1366	65	46	1676
Future Volume (vph)	24	19	1366	65	46	1676
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.940		0.993			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1400	0	3511	0	1426	3570
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1400	0	3511	0	1426	3570
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	25	20	1423	68	48	1746
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	1491	0	48	1746
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.3%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	29	68	116	35	66	122	1093	145	133	1520	112
Future Volume (vph)	132	29	68	116	35	66	122	1093	145	133	1520	112
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.6	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.895			0.901			0.982			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1667	0	1454	1700	0	1732	3465	0	1649	3497	0
Flt Permitted	0.689			0.692			0.069			0.145		
Satd. Flow (perm)	1108	1667	0	1059	1700	0	126	3465	0	252	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			69			23			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		111.4			218.3			843.0			487.0	
Travel Time (s)		8.0			15.7			43.4			25.0	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Adj. Flow (vph)	138	30	71	121	36	69	127	1139	151	139	1583	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	101	0	121	105	0	127	1290	0	139	1700	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.03	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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												

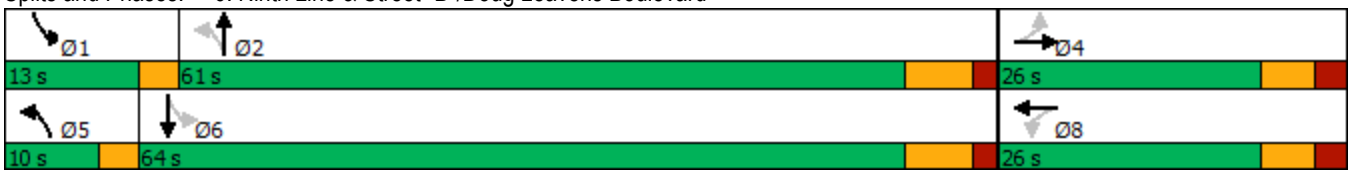


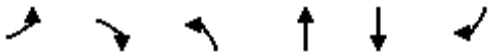
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	26.0	26.0		26.0	26.0		10.0	61.0		13.0	64.0	
Total Split (%)	26.0%	26.0%		26.0%	26.0%		10.0%	61.0%		13.0%	64.0%	
Maximum Green (s)	19.5	19.5		19.5	19.5		7.0	54.0		10.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	8.0	8.0		7.0	7.0			8.0			8.0	
Flash Dont Walk (s)	8.0	8.0		11.0	11.0			10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.2	17.2		17.2	17.2		70.8	58.1		72.5	59.1	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.74	0.60		0.75	0.61	
v/c Ratio	0.70	0.28		0.64	0.29		0.53	0.61		0.42	0.79	
Control Delay	56.0	15.1		52.5	16.2		21.6	14.1		7.5	17.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	56.0	15.1		52.5	16.2		21.6	14.1		7.5	17.9	
LOS	E	B		D	B		C	B		A	B	
Approach Delay		38.7			35.6			14.8			17.1	
Approach LOS		D			D			B			B	
Queue Length 50th (m)	25.6	5.0		22.2	6.0		6.4	78.6		6.3	125.3	
Queue Length 95th (m)	46.9	18.9		41.7	20.2		27.0	112.7		12.5	168.4	
Internal Link Dist (m)		87.4			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	242	420		232	426		243	2102		365	2156	
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	0.57	0.24		0.52	0.25		0.52	0.61		0.38	0.79	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 96.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 18.7		Intersection LOS: B	

Intersection Capacity Utilization 79.3% ICU Level of Service D
Analysis Period (min) 15

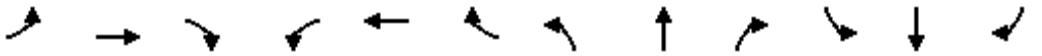
Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard



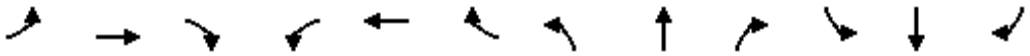


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	9	0	1333	1828	88
Future Volume (vph)	0	9	0	1333	1828	88
Ideal Flow (vphpl)	1640	1640	1640	1900	1900	1900
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.993	
Flt Protected						
Satd. Flow (prot)	0	1391	0	3539	3514	0
Flt Permitted						
Satd. Flow (perm)	0	1391	0	3539	3514	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.7			487.0	813.6	
Travel Time (s)	7.3			25.0	41.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	9	0	1333	1828	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	9	0	1333	1916	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.21	1.21	1.21	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	883	309	385	1733	139	167	816	296	287	1047	337
Future Volume (vph)	216	883	309	385	1733	139	167	816	296	287	1047	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.98			
Frt			0.850		0.989				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3544	1597	1767	3572	0	1767	3614	1581	1785	3614	1581
Flt Permitted	0.062			0.179			0.119			0.109		
Satd. Flow (perm)	115	3544	1597	333	3572	0	221	3614	1556	205	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			158		7				118			160
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	216	883	309	385	1733	139	167	816	296	287	1047	337
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	883	309	385	1872	0	167	816	296	287	1047	337
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	16.0	65.5	65.5	34.5	84.0		12.0	40.0	40.0	20.0	48.0	48.0
Total Split (%)	10.0%	40.9%	40.9%	21.6%	52.5%		7.5%	25.0%	25.0%	12.5%	30.0%	30.0%
Maximum Green (s)	13.0	59.4	59.4	31.5	77.9		9.0	33.6	33.6	17.0	41.6	41.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	80.9	64.8	64.8	97.0	77.9		46.0	33.6	33.6	57.0	41.6	41.6
Actuated g/C Ratio	0.51	0.40	0.40	0.61	0.49		0.29	0.21	0.21	0.36	0.26	0.26
v/c Ratio	1.12	0.62	0.42	0.89	1.07		1.11	1.08	0.71	1.20	1.12	0.64
Control Delay	144.5	40.9	18.6	46.6	83.8		145.1	113.2	44.8	159.8	119.1	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	144.5	40.9	18.6	46.6	83.8		145.1	113.2	44.8	159.8	119.1	32.8
LOS	F	D	B	D	F		F	F	D	F	F	C
Approach Delay		51.9			77.5			101.5			108.7	
Approach LOS		D			E			F			F	
Queue Length 50th (m)	~66.9	125.3	35.3	72.6	~365.2		~45.4	~159.3	56.9	~97.7	~210.6	53.5
Queue Length 95th (m)	#126.3	155.0	65.4	114.8	#408.4		#97.6	#202.7	93.7	#160.9	#255.2	90.6
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	192	1435	741	484	1742		150	758	419	240	939	529
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.62	0.42	0.80	1.07		1.11	1.08	0.71	1.20	1.12	0.64

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 84.6		Intersection LOS: F	

Intersection Capacity Utilization 119.8% ICU Level of Service H

Analysis Period (min) 15

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

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

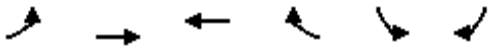
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1296	0	0	2184	94	223
Future Volume (vph)	1296	0	0	2184	94	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3614	3362	1597
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3614	3362	1597
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						111
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	1296	0	0	2184	94	223
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1296	0	0	2184	94	223
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

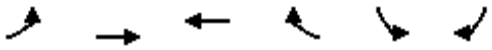
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	126.0			126.0	34.0	34.0
Total Split (%)	78.8%			78.8%	21.3%	21.3%
Maximum Green (s)	120.0			120.0	27.0	27.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	120.2			120.2	16.7	16.7
Actuated g/C Ratio	0.80			0.80	0.11	0.11
v/c Ratio	0.45			0.75	0.25	0.81
Control Delay	5.7			10.6	61.5	53.9
Queue Delay	0.0			3.2	0.0	0.0
Total Delay	5.7			13.8	61.5	53.9
LOS	A			B	E	D
Approach Delay	5.7			13.8	56.2	
Approach LOS	A			B	E	
Queue Length 50th (m)	56.1			152.6	14.0	35.0
Queue Length 95th (m)	93.5			250.2	23.2	66.3
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2870			2898	606	379
Starvation Cap Reductn	0			597	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.45			0.95	0.16	0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 149.9			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 14.6		Intersection LOS: B	
Intersection Capacity Utilization 100.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1074	2137	0	301	486
Future Volume (vph)	0	1074	2137	0	301	486
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3510	3614	0	3429	1597
Flt Permitted					0.950	
Satd. Flow (perm)	0	3510	3614	0	3429	1597
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						9
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	0%	1%	0%
Adj. Flow (vph)	0	1074	2137	0	301	486
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1074	2137	0	301	486
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm

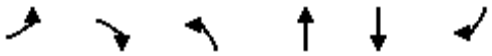


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		104.0	104.0		56.0	56.0
Total Split (%)		65.0%	65.0%		35.0%	35.0%
Maximum Green (s)		98.0	98.0		49.0	49.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		98.0	98.0		49.0	49.0
Actuated g/C Ratio		0.61	0.61		0.31	0.31
v/c Ratio		0.50	0.97		0.29	0.98
Control Delay		18.3	42.1		43.1	89.4
Queue Delay		0.0	36.7		0.0	0.0
Total Delay		18.3	78.8		43.1	89.4
LOS		B	E		D	F
Approach Delay		18.3	78.8		71.7	
Approach LOS		B	E		E	
Queue Length 50th (m)		101.4	342.7		39.6	159.8
Queue Length 95th (m)		118.9	#416.5		53.2	#237.5
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		2149	2213		1050	495
Starvation Cap Reductn		0	245		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.50	1.09		0.29	0.98

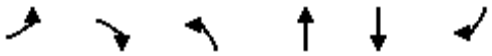
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 61.2		Intersection LOS: E	
Intersection Capacity Utilization 100.0%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	512	381	0	1887	2062	0
Future Volume (vph)	512	381	0	1887	2062	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.975	0.850				
Flt Protected	0.960					
Satd. Flow (prot)	3065	1411	0	4980	5079	0
Flt Permitted	0.960					
Satd. Flow (perm)	3065	1411	0	4980	5079	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	9	*134				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	13%	3%	0%	3%	1%	0%
Adj. Flow (vph)	528	393	0	1945	2126	0
Shared Lane Traffic (%)		27%				
Lane Group Flow (vph)	634	287	0	1945	2126	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

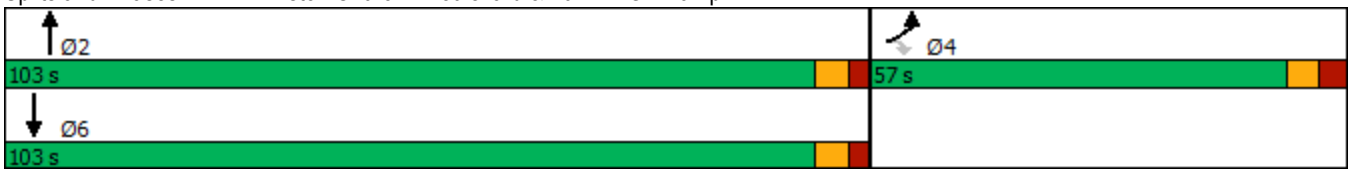


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	57.0	57.0		103.0	103.0	
Total Split (%)	35.6%	35.6%		64.4%	64.4%	
Maximum Green (s)	49.5	49.5		96.5	96.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	40.8	40.8		98.2	98.2	
Actuated g/C Ratio	0.27	0.27		0.66	0.66	
v/c Ratio	0.75	0.59		0.59	0.64	
Control Delay	54.6	29.1		15.9	16.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	54.6	29.1		15.9	16.8	
LOS	D	C		B	B	
Approach Delay	46.6			15.9	16.8	
Approach LOS	D			B	B	
Queue Length 50th (m)	92.0	45.4		117.2	134.3	
Queue Length 95th (m)	113.9	79.8		160.2	182.3	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1077	580		3282	3347	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.59	0.49		0.59	0.64	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 149			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 22.0		Intersection LOS: C	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1024	959	2082	0	0	1516
Future Volume (vph)	1024	959	2082	0	0	1516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3334	1411	4839	0	0	4932
Flt Permitted	0.964					
Satd. Flow (perm)	3334	1411	4839	0	0	4932
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	3	*304				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	6%	0%	0%	4%
Adj. Flow (vph)	1056	989	2146	0	0	1563
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	1402	643	2146	0	0	1563
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

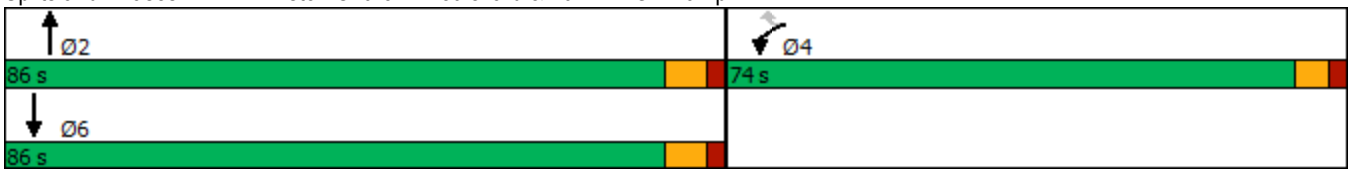
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	74.0	74.0	86.0			86.0
Total Split (%)	46.3%	46.3%	53.8%			53.8%
Maximum Green (s)	67.5	67.5	78.5			78.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	69.0	69.0	81.0			81.0
Actuated g/C Ratio	0.43	0.43	0.51			0.51
v/c Ratio	0.97	0.82	0.88			0.63
Control Delay	62.6	30.4	40.2			30.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	62.6	30.4	40.2			30.0
LOS	E	C	D			C
Approach Delay	52.4		40.2			30.0
Approach LOS	D		D			C
Queue Length 50th (m)	235.0	121.0	229.1			135.9
Queue Length 95th (m)	#287.9	193.4	251.1			151.9
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1439	781	2449			2496
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.97	0.82	0.88			0.63

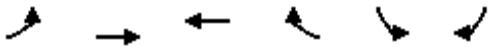
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 41.8		Intersection LOS: D	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

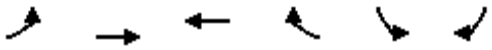
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	1762	746	0	469	29
Future Volume (vph)	0	1762	746	0	469	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3579	0	1684	1210
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3579	0	1684	1210
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						21
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	0%	6%	32%
Adj. Flow (vph)	0	1762	746	0	469	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1762	746	0	469	29
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		96.0	96.0		64.0	64.0
Total Split (%)		60.0%	60.0%		40.0%	40.0%
Maximum Green (s)		90.0	90.0		57.0	57.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		90.3	90.3		45.3	45.3
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.80	0.34		0.91	0.08
Control Delay		27.5	16.0		73.2	16.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		27.5	16.0		73.2	16.9
LOS		C	B		E	B
Approach Delay		27.5	16.0		69.9	
Approach LOS		C	B		E	
Queue Length 50th (m)		214.6	58.7		140.1	1.8
Queue Length 95th (m)		293.5	85.1		187.7	9.6
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2195	2174		647	478
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.80	0.34		0.72	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 148.7			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 31.7		Intersection LOS: C	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

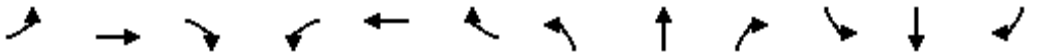
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2173	0	0	957	28	306
Future Volume (vph)	2173	0	0	957	28	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3579	1608	1566
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3579	1608	1566
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						13
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	2%	11%	2%
Adj. Flow (vph)	2173	0	0	957	28	306
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2173	0	0	957	28	306
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	114.0			114.0	46.0	46.0
Total Split (%)	71.3%			71.3%	28.8%	28.8%
Maximum Green (s)	108.0			108.0	39.0	39.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	108.2			108.2	32.9	32.9
Actuated g/C Ratio	0.70			0.70	0.21	0.21
v/c Ratio	0.86			0.38	0.08	0.89
Control Delay	22.7			10.4	48.0	83.3
Queue Delay	7.6			0.4	0.0	0.0
Total Delay	30.3			10.8	48.0	83.3
LOS	C			B	D	F
Approach Delay	30.3			10.8	80.3	
Approach LOS	C			B	F	
Queue Length 50th (m)	266.4			63.8	7.3	92.9
Queue Length 95th (m)	333.6			83.0	16.5	#136.8
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2536			2512	407	406
Starvation Cap Reductn	345			972	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.99			0.62	0.07	0.75

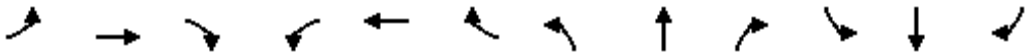
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 154.1			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 29.7		Intersection LOS: C	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

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

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1842	361	104	777	194	229	915	169	146	1232	140
Future Volume (vph)	149	1842	361	104	777	194	229	915	169	146	1232	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1581	1733	3579	1439	1767	3465	0	1608	3614	1581
Flt Permitted	0.237			0.059			0.080			0.083		
Satd. Flow (perm)	445	3614	1581	108	3579	1439	149	3465	0	140	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130			156		14				107
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	149	1842	361	104	777	194	229	915	169	146	1232	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	1842	361	104	777	194	229	1084	0	146	1232	140
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			3.6			3.6	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	15.0	78.5	78.5	9.5	73.0	73.0	16.0	58.0		14.0	56.0	56.0
Total Split (%)	9.4%	49.1%	49.1%	5.9%	45.6%	45.6%	10.0%	36.3%		8.8%	35.0%	35.0%
Maximum Green (s)	12.0	72.4	72.4	6.5	66.9	66.9	13.0	50.3		11.0	48.3	48.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	84.7	72.4	72.4	77.7	68.1	68.1	68.0	50.3		64.0	48.3	48.3
Actuated g/C Ratio	0.53	0.45	0.45	0.49	0.43	0.43	0.42	0.31		0.40	0.30	0.30
v/c Ratio	0.46	1.13	0.46	0.88	0.51	0.28	1.18	0.99		0.94	1.13	0.25
Control Delay	24.0	105.9	20.7	86.1	35.4	8.1	158.0	77.4		94.0	120.2	13.1
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	24.0	106.5	20.7	86.1	35.4	8.1	158.0	77.4		94.0	120.2	13.1
LOS	C	F	C	F	D	A	F	E		F	F	B
Approach Delay		88.1			35.4			91.5			107.8	
Approach LOS		F			D			F			F	
Queue Length 50th (m)	25.0	~373.8	52.1	18.2	100.8	7.5	~73.4	188.6		32.9	~250.5	7.9
Queue Length 95th (m)	38.5	#416.6	81.3	#58.0	121.7	25.4	#131.7	#238.7		#79.4	#295.5	26.0
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	336	1635	786	118	1523	701	194	1098		156	1090	551
Starvation Cap Reductn	0	258	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.44	1.34	0.46	0.88	0.51	0.28	1.18	0.99		0.94	1.13	0.25

Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 160	
Natural Cycle: 145	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 84.5	Intersection LOS: F

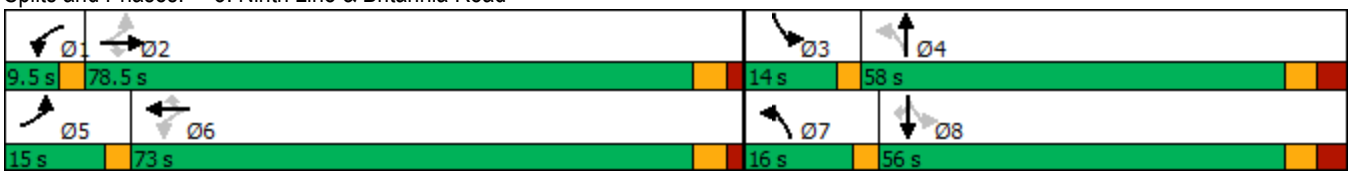
Intersection Capacity Utilization 121.6% ICU Level of Service H

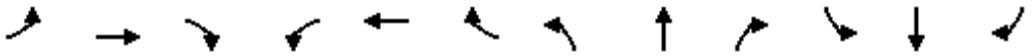
Analysis Period (min) 15

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

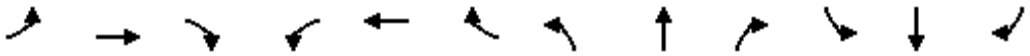
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





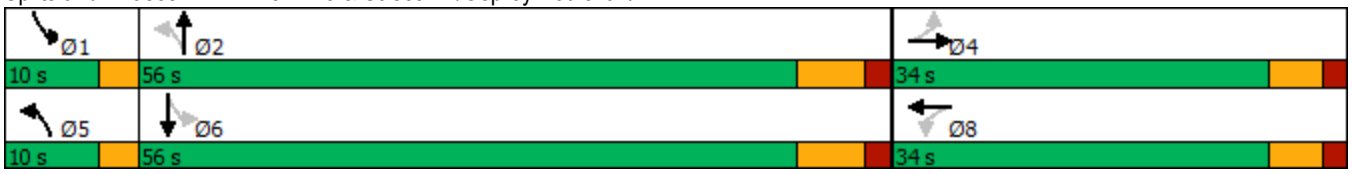
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	14	69	137	16	99	34	1269	101	22	1292	16
Future Volume (vph)	34	14	69	137	16	99	34	1269	101	22	1292	16
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			15.0			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.875			0.870			0.989			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1630	0	1412	1580	0	1732	3385	0	1683	3567	0
Flt Permitted	0.681			0.702			0.135			0.133		
Satd. Flow (perm)	1095	1630	0	1043	1580	0	246	3385	0	236	3567	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			102			12			2	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		122.1			186.9			633.8			289.9	
Travel Time (s)		8.8			13.5			32.6			14.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	2%	5%	2%	4%	8%	5%	1%	2%
Adj. Flow (vph)	35	14	71	141	16	102	35	1308	104	23	1332	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	85	0	141	118	0	35	1412	0	23	1348	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.01	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0		20.0	10.0	
Trailing Detector (m)	0.0	0.0		-1.0	0.0		0.0	0.0		10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-1.0	0.0		0.0	0.0		10.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		10.0	0.6	
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	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0		9.5	25.0	
Total Split (s)	34.0	34.0		34.0	34.0		10.0	56.0		10.0	56.0	
Total Split (%)	34.0%	34.0%		34.0%	34.0%		10.0%	56.0%		10.0%	56.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		7.0	49.0		7.0	49.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.9	17.9		17.9	17.9		63.3	56.3		61.9	53.9	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.73	0.64		0.71	0.62	
v/c Ratio	0.16	0.22		0.66	0.29		0.11	0.65		0.08	0.61	
Control Delay	29.3	10.7		46.7	9.8		5.5	13.2		5.4	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.3	10.7		46.7	9.8		5.5	13.2		5.4	13.9	
LOS	C	B		D	A		A	B		A	B	
Approach Delay		16.1			29.9			13.0			13.8	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	5.2	2.0		23.2	2.3		1.4	61.7		1.0	78.8	
Queue Length 95th (m)	13.3	13.5		43.4	15.6		5.5	141.9		4.1	132.7	
Internal Link Dist (m)		98.1			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0			120.0		
Base Capacity (vph)	367	593		349	597		332	2187		320	2203	
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	0.10	0.14		0.40	0.20		0.11	0.65		0.07	0.61	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 87.3			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 14.8		Intersection LOS: B	
Intersection Capacity Utilization 62.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



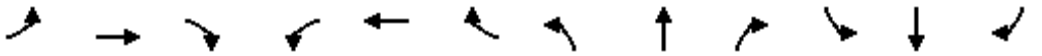
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	75	1397	39	33	1273
Future Volume (vph)	51	75	1397	39	33	1273
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.920		0.996			
Flt Protected	0.980				0.950	
Satd. Flow (prot)	1380	0	3447	0	1412	3500
Flt Permitted	0.980				0.950	
Satd. Flow (perm)	1380	0	3447	0	1412	3500
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	53	78	1455	41	34	1326
Shared Lane Traffic (%)						
Lane Group Flow (vph)	131	0	1496	0	34	1326
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			

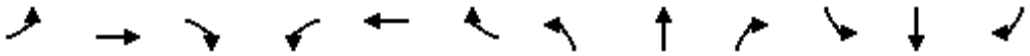
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	75	1397	39	33	1273
Future Volume (Veh/h)	51	75	1397	39	33	1273
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	53	78	1455	41	34	1326
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.74	0.74			0.74	
vC, conflicting volume	2206	748			1496	
vC1, stage 1 conf vol	1476					
vC2, stage 2 conf vol	731					
vCu, unblocked vol	1926	0			965	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	90			93	
cM capacity (veh/h)	213	806			520	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	131	970	526	34	663	663
Volume Left	53	0	0	34	0	0
Volume Right	78	0	41	0	0	0
cSH	380	1700	1700	520	1700	1700
Volume to Capacity	0.35	0.57	0.31	0.07	0.39	0.39
Queue Length 95th (m)	12.1	0.0	0.0	1.7	0.0	0.0
Control Delay (s)	19.4	0.0	0.0	12.4	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	19.4	0.0		0.3		
Approach LOS	C					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	90	117	155	92	186	55	1280	112	77	959	59
Future Volume (vph)	228	90	117	155	92	186	55	1280	112	77	959	59
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.0	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.915			0.900			0.988			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1704	0	1412	1676	0	1617	3433	0	1649	3501	0
Flt Permitted	0.213			0.506			0.156			0.085		
Satd. Flow (perm)	342	1704	0	752	1676	0	266	3433	0	148	3501	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			91			12			8	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		140.5			218.3			843.0			487.0	
Travel Time (s)		10.1			15.7			43.4			25.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	9%	0%	1%	2%
Adj. Flow (vph)	248	98	127	168	100	202	60	1391	122	84	1042	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	248	225	0	168	302	0	60	1513	0	84	1106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.0			3.0	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.12	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	24.5		9.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	14.0	27.4		11.4	24.8		9.6	51.6		9.6	51.6	
Total Split (%)	14.0%	27.4%		11.4%	24.8%		9.6%	51.6%		9.6%	51.6%	
Maximum Green (s)	11.0	20.9		8.4	18.3		6.6	44.6		6.6	44.6	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-2.0	-1.5		-2.0	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	1.0	5.0		1.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		8.0			7.0			8.0			8.0	
Flash Dont Walk (s)		8.0			11.0			10.0			10.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	35.4	20.0		31.8	17.3		57.5	46.9		57.6	47.0	
Actuated g/C Ratio	0.37	0.21		0.33	0.18		0.60	0.49		0.60	0.49	
v/c Ratio	0.86	0.56		0.52	0.80		0.22	0.90		0.38	0.64	
Control Delay	53.3	30.7		29.1	43.2		10.1	32.0		14.1	21.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.3	30.7		29.1	43.2		10.1	32.0		14.1	21.2	
LOS	D	C		C	D		B	C		B	C	
Approach Delay		42.5			38.1			31.1			20.7	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	37.0	29.3		23.8	41.0		4.7	148.6		6.7	88.9	
Queue Length 95th (m)	#76.3	53.7		40.9	#79.9		9.9	#202.7		14.5	112.6	
Internal Link Dist (m)		116.5			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	288	447		321	420		281	1687		224	1720	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.86	0.50		0.52	0.72		0.21	0.90		0.38	0.64	

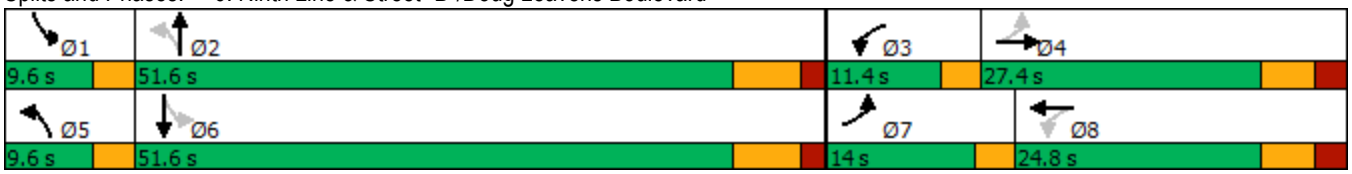
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 95.8			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 30.1		Intersection LOS: C	

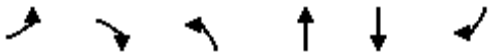
Intersection Capacity Utilization 89.2% ICU Level of Service E

Analysis Period (min) 15

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

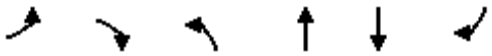
Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	14	0	1767	1108	37
Future Volume (vph)	0	14	0	1767	1108	37
Ideal Flow (vphpl)	1640	1640	1640	1900	1900	1900
Lane Width (m)	3.6	3.6	3.5	3.5	3.5	3.5
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.995	
Flt Protected						
Satd. Flow (prot)	0	1391	0	3500	3482	0
Flt Permitted						
Satd. Flow (perm)	0	1391	0	3500	3482	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	121.9			487.0	813.6	
Travel Time (s)	8.8			25.0	41.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	14	0	1767	1108	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	14	0	1767	1145	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.21	1.21	1.22	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

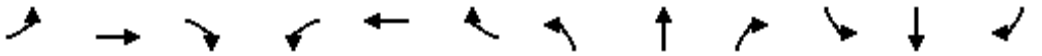
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.2%		ICU Level of Service A	
Analysis Period (min) 15			



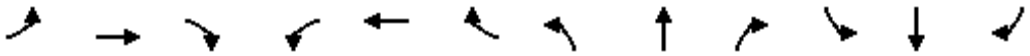
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	14	0	1767	1108	37
Future Volume (Veh/h)	0	14	0	1767	1108	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	14	0	1767	1108	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2010	572	1145			
vC1, stage 1 conf vol	1126					
vC2, stage 2 conf vol	884					
vCu, unblocked vol	2010	572	1145			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	217	463	606			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	14	884	884	739	406
Volume Left	0	0	0	0	0
Volume Right	14	0	0	0	37
cSH	463	1700	1700	1700	1700
Volume to Capacity	0.03	0.52	0.52	0.43	0.24
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0
Control Delay (s)	13.0	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	13.0	0.0		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	52.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	1769	136	213	844	363	307	886	401	107	715	293
Future Volume (vph)	347	1769	136	213	844	363	307	886	401	107	715	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99									
Frt			0.850		0.955				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	3614	1597	1733	3371	0	1750	3614	1566	1716	3614	1581
Flt Permitted	0.062			0.065			0.119			0.131		
Satd. Flow (perm)	110	3614	1575	119	3371	0	219	3614	1566	237	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		49				158			266
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	347	1769	136	213	844	363	307	886	401	107	715	293
Shared Lane Traffic (%)												
Lane Group Flow (vph)	347	1769	136	213	1207	0	307	886	401	107	715	293
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	32.0	82.5	82.5	17.0	67.5		23.5	49.0	49.0	11.5	37.0	37.0
Total Split (%)	20.0%	51.6%	51.6%	10.6%	42.2%		14.7%	30.6%	30.6%	7.2%	23.1%	23.1%
Maximum Green (s)	29.0	76.4	76.4	14.0	61.4		20.5	42.6	42.6	7.0	30.6	30.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	1.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	4.5	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	96.5	76.4	76.4	78.5	61.4		57.5	42.6	42.6	39.5	30.6	30.6
Actuated g/C Ratio	0.60	0.48	0.48	0.49	0.38		0.36	0.27	0.27	0.25	0.19	0.19
v/c Ratio	0.99	1.03	0.17	1.07	0.91		1.12	0.92	0.75	0.87	1.03	0.57
Control Delay	94.4	69.2	8.4	128.0	56.0		132.2	72.2	42.0	93.4	105.0	13.3
Queue Delay	0.0	29.7	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.4	98.9	8.4	128.0	56.0		132.2	72.2	42.0	93.4	105.0	13.3
LOS	F	F	A	F	E		F	E	D	F	F	B
Approach Delay		92.8			66.8			76.2			79.8	
Approach LOS		F			E			E			E	
Queue Length 50th (m)	100.7	~330.7	7.3	~61.6	194.8		~99.9	153.0	78.1	24.9	~134.8	7.5
Queue Length 95th (m)	#169.6	#373.8	20.2	#118.5	#230.6		#165.2	#191.6	121.8	#57.2	#177.5	38.1
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	351	1725	801	199	1323		274	962	532	123	691	517
Starvation Cap Reductn	0	270	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.99	1.22	0.17	1.07	0.91		1.12	0.92	0.75	0.87	1.03	0.57

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 80.6		Intersection LOS: F	

Intersection Capacity Utilization 114.6% ICU Level of Service H

Analysis Period (min) 15

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

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

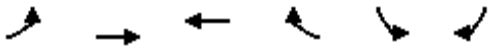
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2157	0	0	1288	17	217
Future Volume (vph)	2157	0	0	1288	17	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3510	2935	1507
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3510	2935	1507
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						18
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	4%	18%	6%
Adj. Flow (vph)	2157	0	0	1288	17	217
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2157	0	0	1288	17	217
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

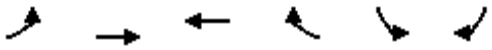
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	120.0			120.0	40.0	40.0
Total Split (%)	75.0%			75.0%	25.0%	25.0%
Maximum Green (s)	114.0			114.0	33.0	33.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	114.2			114.2	24.9	24.9
Actuated g/C Ratio	0.75			0.75	0.16	0.16
v/c Ratio	0.80			0.49	0.04	0.83
Control Delay	16.0			8.8	52.1	81.7
Queue Delay	2.2			0.6	0.0	0.0
Total Delay	18.2			9.4	52.1	81.7
LOS	B			A	D	F
Approach Delay	18.2			9.4	79.5	
Approach LOS	B			A	E	
Queue Length 50th (m)	206.4			77.5	2.3	62.2
Queue Length 95th (m)	289.4			110.4	6.1	94.0
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2686			2634	637	341
Starvation Cap Reductn	375			843	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.93			0.72	0.03	0.64

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 152.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 19.0		Intersection LOS: B	
Intersection Capacity Utilization 94.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



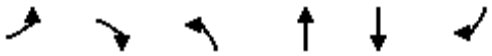
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2809	962	0	62	71
Future Volume (vph)	0	2809	962	0	62	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3510	0	3148	1309
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3510	0	3148	1309
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						71
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	4%	0%	10%	22%
Adj. Flow (vph)	0	2809	962	0	62	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2809	962	0	62	71
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		135.0	135.0		25.0	25.0
Total Split (%)		84.4%	84.4%		15.6%	15.6%
Maximum Green (s)		129.0	129.0		18.0	18.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		129.0	129.0		8.8	8.8
Actuated g/C Ratio		0.86	0.86		0.06	0.06
v/c Ratio		0.91	0.32		0.34	0.50
Control Delay		13.3	2.5		73.1	26.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		13.3	2.5		73.1	26.1
LOS		B	A		E	C
Approach Delay		13.3	2.5		48.0	
Approach LOS		B	A		D	
Queue Length 50th (m)		229.8	24.1		9.8	0.0
Queue Length 95th (m)		328.7	34.6		18.2	16.7
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		3091	3002		375	218
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.91	0.32		0.17	0.33

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.8			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 94.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp

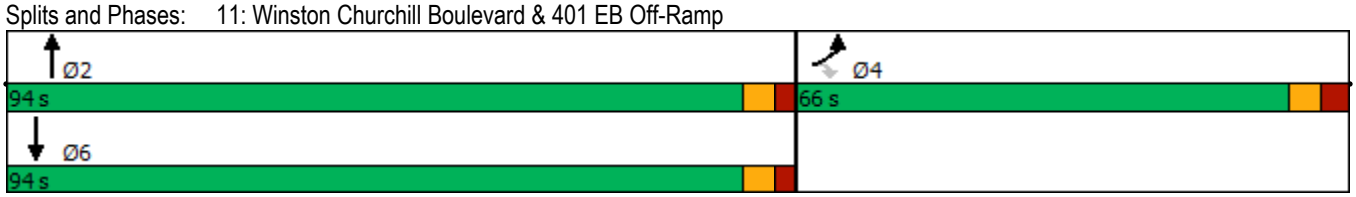


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	472	393	0	1282	1546	0
Future Volume (vph)	472	393	0	1282	1546	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.969	0.850				
Flt Protected	0.962					
Satd. Flow (prot)	3280	1425	0	4980	4885	0
Flt Permitted	0.962					
Satd. Flow (perm)	3280	1425	0	4980	4885	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	20	20				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	0%	3%	5%	0%
Adj. Flow (vph)	497	414	0	1349	1627	0
Shared Lane Traffic (%)		31%				
Lane Group Flow (vph)	625	286	0	1349	1627	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	66.0	66.0		94.0	94.0	
Total Split (%)	41.3%	41.3%		58.8%	58.8%	
Maximum Green (s)	58.5	58.5		87.5	87.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	37.1	37.1		89.3	89.3	
Actuated g/C Ratio	0.27	0.27		0.65	0.65	
v/c Ratio	0.69	0.71		0.41	0.51	
Control Delay	46.9	51.6		12.5	13.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	46.9	51.6		12.5	13.8	
LOS	D	D		B	B	
Approach Delay	48.4			12.5	13.8	
Approach LOS	D			B	B	
Queue Length 50th (m)	79.4	75.2		60.7	80.1	
Queue Length 95th (m)	99.4	111.2		94.5	123.0	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1482	650		3260	3198	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.42	0.44		0.41	0.51	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 136.4			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 21.4		Intersection LOS: C	
Intersection Capacity Utilization 62.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp

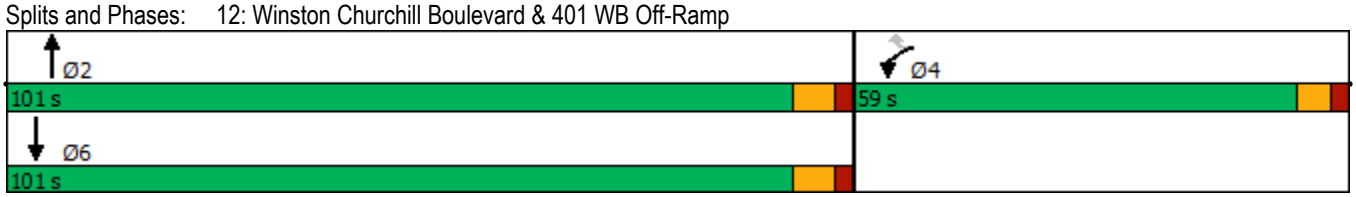


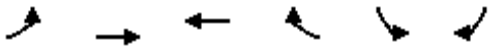
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	334	524	1400	0	0	2019
Future Volume (vph)	334	524	1400	0	0	2019
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.936	0.850				
Flt Protected	0.972					
Satd. Flow (prot)	2991	1298	4980	0	0	4839
Flt Permitted	0.972					
Satd. Flow (perm)	2991	1298	4980	0	0	4839
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	40	40				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	12%	3%	0%	0%	6%
Adj. Flow (vph)	352	552	1474	0	0	2125
Shared Lane Traffic (%)		48%				
Lane Group Flow (vph)	617	287	1474	0	0	2125
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	59.0	59.0	101.0			101.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Maximum Green (s)	52.5	52.5	93.5			93.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	38.9	38.9	96.4			96.4
Actuated g/C Ratio	0.27	0.27	0.66			0.66
v/c Ratio	0.75	0.76	0.45			0.66
Control Delay	50.9	55.3	13.1			17.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	50.9	55.3	13.1			17.1
LOS	D	E	B			B
Approach Delay	52.3		13.1			17.1
Approach LOS	D		B			B
Queue Length 50th (m)	82.9	76.7	71.2			128.9
Queue Length 95th (m)	104.2	115.1	111.0			196.5
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1141	509	3304			3210
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.54	0.56	0.45			0.66

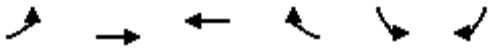
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 145.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 22.9		Intersection LOS: C	
Intersection Capacity Utilization 62.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	898	1669	0	476	77
Future Volume (vph)	0	898	1669	0	476	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3614	0	1767	1536
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3614	0	1767	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						17
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	1%	4%
Adj. Flow (vph)	0	898	1669	0	476	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	898	1669	0	476	77
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		94.0	94.0		66.0	66.0
Total Split (%)		58.8%	58.8%		41.3%	41.3%
Maximum Green (s)		88.0	88.0		59.0	59.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		88.4	88.4		43.8	43.8
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.41	0.76		0.89	0.16
Control Delay		16.6	25.2		68.4	28.4
Queue Delay		0.0	0.9		0.0	0.0
Total Delay		16.6	26.0		68.4	28.4
LOS		B	C		E	C
Approach Delay		16.6	26.0		62.8	
Approach LOS		B	C		E	
Queue Length 50th (m)		70.9	184.0		137.6	13.2
Queue Length 95th (m)		109.5	273.5		182.8	26.1
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2199	2199		721	636
Starvation Cap Reductn		0	253		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.41	0.86		0.66	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 145.2			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 29.8		Intersection LOS: C	
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

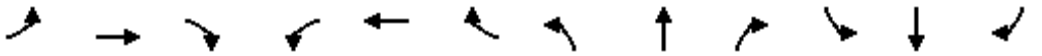
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1327	0	0	1808	70	212
Future Volume (vph)	1327	0	0	1808	70	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3614	1750	1581
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3614	1750	1581
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						94
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	1%	2%	1%
Adj. Flow (vph)	1327	0	0	1808	70	212
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1327	0	0	1808	70	212
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

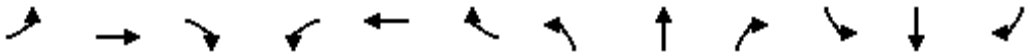
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	121.0			121.0	39.0	39.0
Total Split (%)	75.6%			75.6%	24.4%	24.4%
Maximum Green (s)	115.0			115.0	32.0	32.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	115.2			115.2	16.7	16.7
Actuated g/C Ratio	0.79			0.79	0.12	0.12
v/c Ratio	0.46			0.63	0.35	0.80
Control Delay	6.0			8.0	62.9	55.8
Queue Delay	0.2			1.3	0.0	0.0
Total Delay	6.2			9.3	62.9	55.8
LOS	A			A	E	E
Approach Delay	6.2			9.3	57.6	
Approach LOS	A			A	E	
Queue Length 50th (m)	58.2			100.3	19.8	35.5
Queue Length 95th (m)	95.6			162.9	35.6	65.5
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2872			2872	387	422
Starvation Cap Reductn	709			782	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.61			0.87	0.18	0.50

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 145			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	886	326	147	1385	194	215	1283	143	232	1262	189
Future Volume (vph)	201	886	326	147	1385	194	215	1283	143	232	1262	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	3614	1597	1785	3614	1551	1767	3557	0	1716	3614	1536
Flt Permitted	0.069			0.155			0.072			0.072		
Satd. Flow (perm)	130	3614	1597	291	3614	1551	134	3557	0	130	3614	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			81		8				151
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	201	886	326	147	1385	194	215	1283	143	232	1262	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	886	326	147	1385	194	215	1426	0	232	1262	189
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			3.6			3.6	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	13.0	63.5	63.5	15.5	66.0	66.0	17.5	63.0		18.0	63.5	63.5
Total Split (%)	8.1%	39.7%	39.7%	9.7%	41.3%	41.3%	10.9%	39.4%		11.3%	39.7%	39.7%
Maximum Green (s)	10.0	57.4	57.4	12.5	59.9	59.9	14.5	55.3		15.0	55.8	55.8
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	71.4	58.3	58.3	74.6	59.9	59.9	74.5	55.3		75.5	55.8	55.8
Actuated g/C Ratio	0.45	0.36	0.36	0.47	0.37	0.37	0.47	0.35		0.47	0.35	0.35
v/c Ratio	1.25	0.67	0.46	0.60	1.02	0.31	1.02	1.16		1.10	1.00	0.30
Control Delay	187.0	46.1	15.5	35.0	79.4	21.5	110.2	125.4		133.4	77.1	10.3
Queue Delay	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	187.0	46.7	15.5	35.0	79.4	21.5	110.2	125.4		133.4	77.1	10.3
LOS	F	D	B	C	E	C	F	F		F	E	B
Approach Delay		59.5			69.1			123.4			77.3	
Approach LOS		E			E			F			E	
Queue Length 50th (m)	~66.6	132.6	28.1	27.8	~258.6	25.8	~58.4	~295.1		~70.8	~223.2	8.5
Queue Length 95th (m)	#122.8	157.4	57.7	43.0	#303.5	47.4	#115.2	#340.5		#129.8	#275.5	28.0
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	161	1317	714	254	1352	631	210	1234		210	1260	634
Starvation Cap Reductn	0	159	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.25	0.77	0.46	0.58	1.02	0.31	1.02	1.16		1.10	1.00	0.30

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 115			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.25			
Intersection Signal Delay: 82.9		Intersection LOS: F	

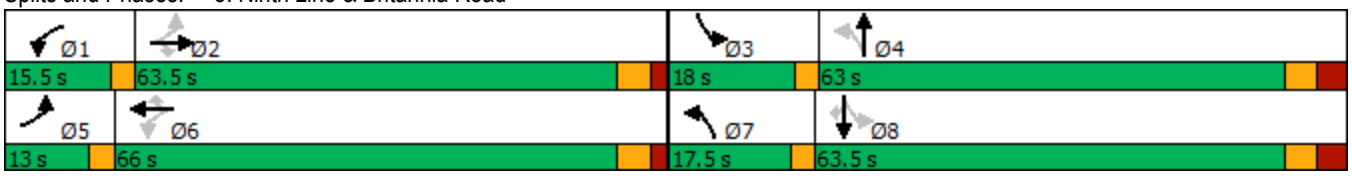
Intersection Capacity Utilization 120.5% ICU Level of Service H

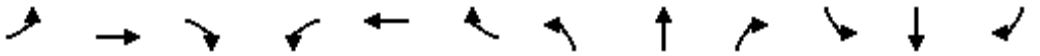
Analysis Period (min) 15

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

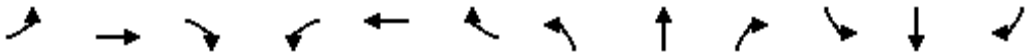
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	3	38	77	3	32	60	1471	113	48	1644	53
Future Volume (vph)	22	3	38	77	3	32	60	1471	113	48	1644	53
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			15.0			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.860			0.862			0.989			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1602	0	1359	1591	0	1732	3488	0	1767	3590	0
Flt Permitted	0.734			0.729			0.077			0.106		
Satd. Flow (perm)	1180	1602	0	1043	1591	0	140	3488	0	197	3590	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			33			15			6	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		103.4			186.9			633.8			289.9	
Travel Time (s)		7.4			13.5			32.6			14.9	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	7%	2%	3%	2%	1%	2%	0%	0%	2%
Adj. Flow (vph)	23	3	40	80	3	33	63	1532	118	50	1713	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	43	0	80	36	0	63	1650	0	50	1768	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.01	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0		20.0	10.0	
Trailing Detector (m)	0.0	0.0		-0.2	0.0		0.0	0.0		10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-0.2	0.0		0.0	0.0		10.0	0.0	
Detector 1 Size(m)	2.0	0.6		9.2	0.6		2.0	0.6		10.0	0.6	
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												

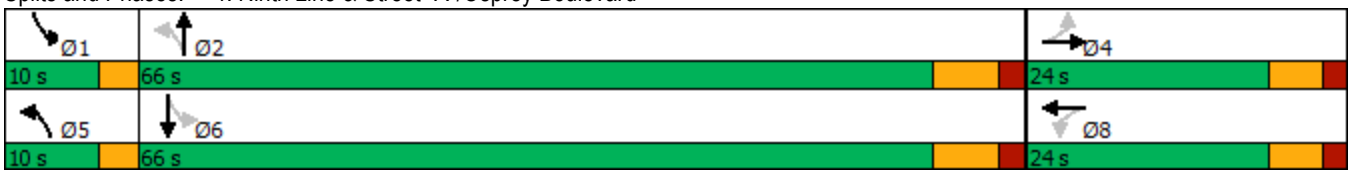


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0		9.5	25.0	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	66.0		10.0	66.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		10.0%	66.0%		10.0%	66.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		7.0	59.0		7.0	59.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	13.5	13.5		13.1	13.1		76.2	68.6		74.3	65.9	
Actuated g/C Ratio	0.15	0.15		0.14	0.14		0.82	0.74		0.80	0.71	
v/c Ratio	0.13	0.16		0.54	0.14		0.25	0.64		0.18	0.69	
Control Delay	36.3	13.6		51.2	14.5		5.0	10.4		4.1	12.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.3	13.6		51.2	14.5		5.0	10.4		4.1	12.8	
LOS	D	B		D	B		A	B		A	B	
Approach Delay		21.5			39.8			10.2			12.5	
Approach LOS		C			D			B			B	
Queue Length 50th (m)	3.9	0.5		14.3	0.5		2.0	92.1		1.5	108.2	
Queue Length 95th (m)	11.1	9.9		29.5	9.1		5.8	143.2		4.9	167.1	
Internal Link Dist (m)		79.4			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0			120.0		
Base Capacity (vph)	243	362		215	355		271	2590		315	2560	
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	0.09	0.12		0.37	0.10		0.23	0.64		0.16	0.69	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 92.5			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 12.5		Intersection LOS: B	

Intersection Capacity Utilization 70.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



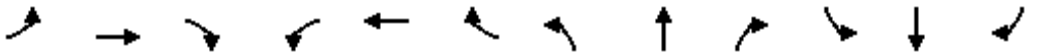
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	19	1391	67	47	1730
Future Volume (vph)	25	19	1391	67	47	1730
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.941		0.993			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1401	0	3511	0	1426	3570
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1401	0	3511	0	1426	3570
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	26	20	1449	70	49	1802
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	1519	0	49	1802
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.8%		ICU Level of Service B	
Analysis Period (min) 15			

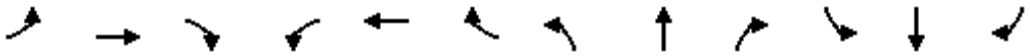
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	19	1391	67	47	1730
Future Volume (Veh/h)	25	19	1391	67	47	1730
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	26	20	1449	70	49	1802
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.74	0.74			0.74	
vC, conflicting volume	2483	760			1519	
vC1, stage 1 conf vol	1484					
vC2, stage 2 conf vol	999					
vCu, unblocked vol	2297	0			986	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	86	98			90	
cM capacity (veh/h)	184	802			512	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	46	966	553	49	901	901
Volume Left	26	0	0	49	0	0
Volume Right	20	0	70	0	0	0
cSH	276	1700	1700	512	1700	1700
Volume to Capacity	0.17	0.57	0.33	0.10	0.53	0.53
Queue Length 95th (m)	4.7	0.0	0.0	2.5	0.0	0.0
Control Delay (s)	20.6	0.0	0.0	12.8	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	20.6	0.0		0.3		
Approach LOS	C					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	29	68	119	35	67	122	1115	148	135	1570	112
Future Volume (vph)	132	29	68	119	35	67	122	1115	148	135	1570	112
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.6	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.895			0.901			0.982			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1667	0	1454	1700	0	1732	3465	0	1649	3497	0
Flt Permitted	0.689			0.692			0.069			0.139		
Satd. Flow (perm)	1108	1667	0	1059	1700	0	126	3465	0	241	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			70			23			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		111.4			218.3			843.0			487.0	
Travel Time (s)		8.0			15.7			43.4			25.0	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Adj. Flow (vph)	138	30	71	124	36	70	127	1161	154	141	1635	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	101	0	124	106	0	127	1315	0	141	1752	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.03	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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												

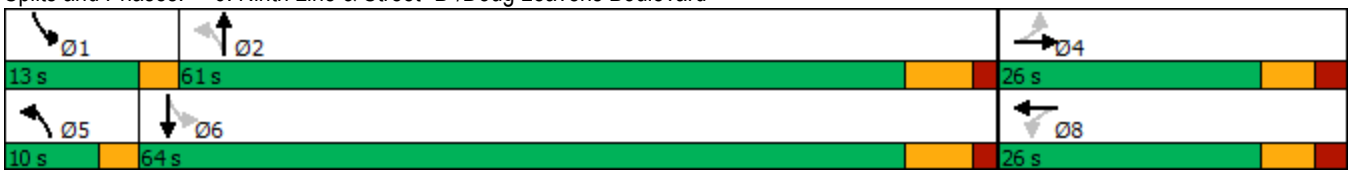


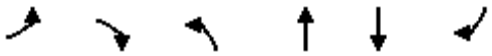
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	26.0	26.0		26.0	26.0		10.0	61.0		13.0	64.0	
Total Split (%)	26.0%	26.0%		26.0%	26.0%		10.0%	61.0%		13.0%	64.0%	
Maximum Green (s)	19.5	19.5		19.5	19.5		7.0	54.0		10.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	8.0	8.0		7.0	7.0			8.0			8.0	
Flash Dont Walk (s)	8.0	8.0		11.0	11.0			10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.2	17.2		17.2	17.2		70.8	58.0		72.5	59.1	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.74	0.60		0.75	0.61	
v/c Ratio	0.70	0.28		0.66	0.29		0.53	0.63		0.43	0.81	
Control Delay	56.0	15.1		53.6	16.1		21.6	14.4		7.8	18.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	56.0	15.1		53.6	16.1		21.6	14.4		7.8	18.8	
LOS	E	B		D	B		C	B		A	B	
Approach Delay		38.7			36.3			15.0			18.0	
Approach LOS		D			D			B			B	
Queue Length 50th (m)	25.6	5.0		22.8	6.0		6.4	81.4		6.5	133.3	
Queue Length 95th (m)	46.9	18.9		42.7	20.4		27.0	116.4		12.6	178.8	
Internal Link Dist (m)		87.4			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	242	420		232	427		243	2101		359	2156	
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	0.57	0.24		0.53	0.25		0.52	0.63		0.39	0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 96.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 19.3		Intersection LOS: B	

Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15

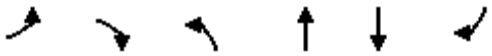
Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	9	0	1356	1884	88
Future Volume (vph)	0	9	0	1356	1884	88
Ideal Flow (vphpl)	1640	1640	1640	1900	1900	1900
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.993	
Flt Protected						
Satd. Flow (prot)	0	1391	0	3539	3514	0
Flt Permitted						
Satd. Flow (perm)	0	1391	0	3539	3514	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.7			487.0	813.6	
Travel Time (s)	7.3			25.0	41.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	9	0	1356	1884	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	9	0	1356	1972	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.21	1.21	1.21	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

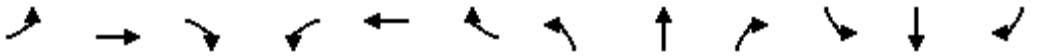
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		



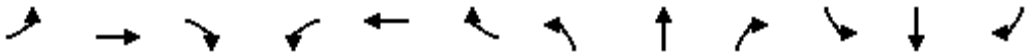
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	9	0	1356	1884	88
Future Volume (Veh/h)	0	9	0	1356	1884	88
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	9	0	1356	1884	88
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2606	986	1972			
vC1, stage 1 conf vol	1928					
vC2, stage 2 conf vol	678					
vCu, unblocked vol	2606	986	1972			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	95	247	290			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	9	678	678	1256	716
Volume Left	0	0	0	0	0
Volume Right	9	0	0	0	88
cSH	247	1700	1700	1700	1700
Volume to Capacity	0.04	0.40	0.40	0.74	0.42
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0
Control Delay (s)	20.1	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	20.1	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	959	314	389	1863	140	169	832	300	288	1075	343
Future Volume (vph)	221	959	314	389	1863	140	169	832	300	288	1075	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.98			
Frt			0.850		0.990				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	3544	1597	1767	3575	0	1767	3614	1581	1785	3614	1581
Flt Permitted	0.064			0.140			0.119			0.109		
Satd. Flow (perm)	119	3544	1597	260	3575	0	221	3614	1556	205	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			147		7				117			158
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	221	959	314	389	1863	140	169	832	300	288	1075	343
Shared Lane Traffic (%)												
Lane Group Flow (vph)	221	959	314	389	2003	0	169	832	300	288	1075	343
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	16.0	65.5	65.5	34.5	84.0		12.0	40.0	40.0	20.0	48.0	48.0
Total Split (%)	10.0%	40.9%	40.9%	21.6%	52.5%		7.5%	25.0%	25.0%	12.5%	30.0%	30.0%
Maximum Green (s)	13.0	59.4	59.4	31.5	77.9		9.0	33.6	33.6	17.0	41.6	41.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	78.7	62.6	62.6	97.0	77.9		46.0	33.6	33.6	57.0	41.6	41.6
Actuated g/C Ratio	0.49	0.39	0.39	0.61	0.49		0.29	0.21	0.21	0.36	0.26	0.26
v/c Ratio	1.15	0.69	0.44	0.92	1.15		1.13	1.10	0.72	1.20	1.14	0.65
Control Delay	152.7	44.5	21.0	59.4	111.7		149.2	119.6	45.8	161.2	129.4	34.1
Queue Delay	0.0	0.4	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.7	44.9	21.0	59.4	111.7		149.2	119.6	45.8	161.2	129.4	34.1
LOS	F	D	C	E	F		F	F	D	F	F	C
Approach Delay		55.8			103.2			106.4			115.6	
Approach LOS		E			F			F			F	
Queue Length 50th (m)	~71.1	145.5	41.3	87.3	~413.3		~46.8	~165.2	58.8	~98.4	~220.8	56.4
Queue Length 95th (m)	#128.7	172.1	70.8	#144.1	#455.4		#99.0	#208.6	96.3	#161.6	#265.7	94.3
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	192	1385	714	454	1744		150	758	419	240	939	527
Starvation Cap Reductn	0	104	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.75	0.44	0.86	1.15		1.13	1.10	0.72	1.20	1.14	0.65

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 96.6		Intersection LOS: F	

Intersection Capacity Utilization 124.4% ICU Level of Service H

Analysis Period (min) 15

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

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

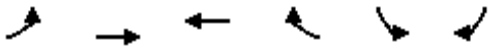
Splits and Phases: 8: Ninth Line & Derry Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1397	0	0	2337	104	245
Future Volume (vph)	1397	0	0	2337	104	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3614	3362	1597
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3614	3362	1597
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						92
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	1397	0	0	2337	104	245
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1397	0	0	2337	104	245
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

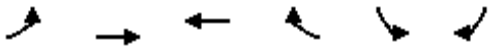
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	126.0			126.0	34.0	34.0
Total Split (%)	78.8%			78.8%	21.3%	21.3%
Maximum Green (s)	120.0			120.0	27.0	27.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	120.2			120.2	20.0	20.0
Actuated g/C Ratio	0.78			0.78	0.13	0.13
v/c Ratio	0.50			0.82	0.24	0.85
Control Delay	7.1			14.4	60.3	66.1
Queue Delay	0.3			11.5	0.0	0.0
Total Delay	7.3			26.0	60.3	66.1
LOS	A			C	E	E
Approach Delay	7.3			26.0	64.3	
Approach LOS	A			C	E	
Queue Length 50th (m)	74.8			216.3	15.6	49.6
Queue Length 95th (m)	105.1			300.4	25.4	83.2
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2807			2834	593	357
Starvation Cap Reductn	670			517	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.65			1.01	0.18	0.69

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 153.2			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 22.9		Intersection LOS: C	
Intersection Capacity Utilization 107.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰	↱
Traffic Volume (vph)	0	1160	2287	0	327	536
Future Volume (vph)	0	1160	2287	0	327	536
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3510	3614	0	3429	1597
Flt Permitted					0.950	
Satd. Flow (perm)	0	3510	3614	0	3429	1597
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						6
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	0%	1%	0%
Adj. Flow (vph)	0	1160	2287	0	327	536
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1160	2287	0	327	536
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



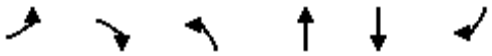
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		104.0	104.0		56.0	56.0
Total Split (%)		65.0%	65.0%		35.0%	35.0%
Maximum Green (s)		98.0	98.0		49.0	49.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		98.0	98.0		49.0	49.0
Actuated g/C Ratio		0.61	0.61		0.31	0.31
v/c Ratio		0.54	1.03		0.31	1.09
Control Delay		19.1	59.0		43.6	116.5
Queue Delay		0.0	27.2		0.0	0.0
Total Delay		19.1	86.3		43.6	116.5
LOS		B	F		D	F
Approach Delay		19.1	86.3		88.8	
Approach LOS		B	F		F	
Queue Length 50th (m)		113.6	~430.8		43.5	~199.6
Queue Length 95th (m)		132.5	#469.8		57.7	#276.2
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		2149	2213		1050	493
Starvation Cap Reductn		0	218		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.54	1.15		0.31	1.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 140			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 68.7		Intersection LOS: E	
Intersection Capacity Utilization 107.2%		ICU Level of Service G	
Analysis Period (min) 15			

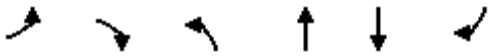
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	566	421	0	2227	2187	0
Future Volume (vph)	566	421	0	2227	2187	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	1.00
Frt	0.975	0.850				
Flt Protected	0.960					
Satd. Flow (prot)	3065	1411	0	4980	5079	0
Flt Permitted	0.960					
Satd. Flow (perm)	3065	1411	0	4980	5079	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	7	*134				
Link Speed (k/h)	60			60	60	
Link Distance (m)	186.5			202.1	230.4	
Travel Time (s)	11.2			12.1	13.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	13%	3%	0%	3%	1%	0%
Adj. Flow (vph)	584	434	0	2296	2255	0
Shared Lane Traffic (%)		27%				
Lane Group Flow (vph)	701	317	0	2296	2255	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template				Thru	Thru	
Leading Detector (m)	9.0	9.0		10.0	10.0	
Trailing Detector (m)	-1.0	-1.0		0.0	0.0	
Detector 1 Position(m)	-1.0	-1.0		0.0	0.0	
Detector 1 Size(m)	10.0	10.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	

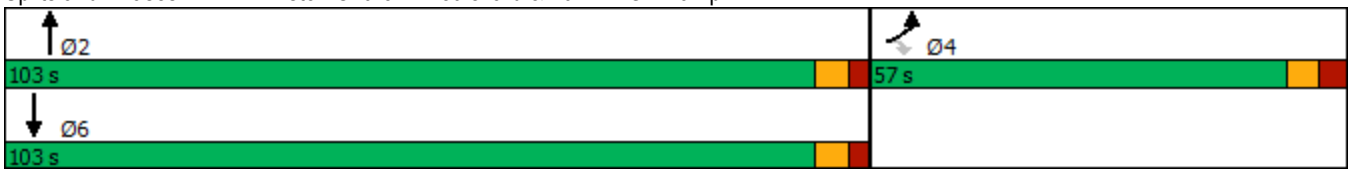


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5	
Total Split (s)	57.0	57.0		103.0	103.0	
Total Split (%)	35.6%	35.6%		64.4%	64.4%	
Maximum Green (s)	49.5	49.5		96.5	96.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	-2.5	-2.5		-1.5	-1.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0		3.0	3.0	
Recall Mode	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	44.6	44.6		98.2	98.2	
Actuated g/C Ratio	0.29	0.29		0.64	0.64	
v/c Ratio	0.78	0.63		0.72	0.69	
Control Delay	55.6	31.8		20.5	19.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	55.6	31.8		20.5	19.7	
LOS	E	C		C	B	
Approach Delay	48.2			20.5	19.7	
Approach LOS	D			C	B	
Queue Length 50th (m)	105.1	56.2		170.7	162.3	
Queue Length 95th (m)	128.9	94.1		211.9	201.5	
Internal Link Dist (m)	162.5			178.1	206.4	
Turn Bay Length (m)						
Base Capacity (vph)	1049	569		3200	3263	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.67	0.56		0.72	0.69	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 152.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 25.2		Intersection LOS: C	
Intersection Capacity Utilization 99.5%		ICU Level of Service F	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 11: Winston Churchill Boulevard & 401 EB Off-Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1114	1059	2457	0	0	1617
Future Volume (vph)	1114	1059	2457	0	0	1617
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	0.91	1.00	1.00	0.91
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3334	1411	4839	0	0	4932
Flt Permitted	0.964					
Satd. Flow (perm)	3334	1411	4839	0	0	4932
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	1	*304				
Link Speed (k/h)	60		60			60
Link Distance (m)	236.3		140.6			172.2
Travel Time (s)	14.2		8.4			10.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	6%	0%	0%	4%
Adj. Flow (vph)	1148	1092	2533	0	0	1667
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	1530	710	2533	0	0	1667
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.0		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template			Thru			Thru
Leading Detector (m)	10.0	10.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	10.0	10.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		2			6
Permitted Phases		4				
Detector Phase	4	4	2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	27.5	27.5	28.5			28.5
Total Split (s)	74.0	74.0	86.0			86.0
Total Split (%)	46.3%	46.3%	53.8%			53.8%
Maximum Green (s)	67.5	67.5	78.5			78.5
Yellow Time (s)	4.0	4.0	5.0			5.0
All-Red Time (s)	2.5	2.5	2.5			2.5
Lost Time Adjust (s)	-1.5	-1.5	-2.5			-2.5
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	4.0	4.0			4.0
Recall Mode	None	None	Max			Max
Walk Time (s)	9.0	9.0	9.0			9.0
Flash Dont Walk (s)	12.0	12.0	12.0			12.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	69.0	69.0	81.0			81.0
Actuated g/C Ratio	0.43	0.43	0.51			0.51
v/c Ratio	1.06	0.91	1.03			0.67
Control Delay	86.1	40.6	66.3			31.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	86.1	40.6	66.3			31.1
LOS	F	D	E			C
Approach Delay	71.7		66.3			31.1
Approach LOS	E		E			C
Queue Length 50th (m)	~290.2	160.8	~332.3			149.7
Queue Length 95th (m)	#334.3	#264.6	#357.7			166.4
Internal Link Dist (m)	212.3		116.6			148.2
Turn Bay Length (m)						
Base Capacity (vph)	1438	781	2449			2496
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.06	0.91	1.03			0.67

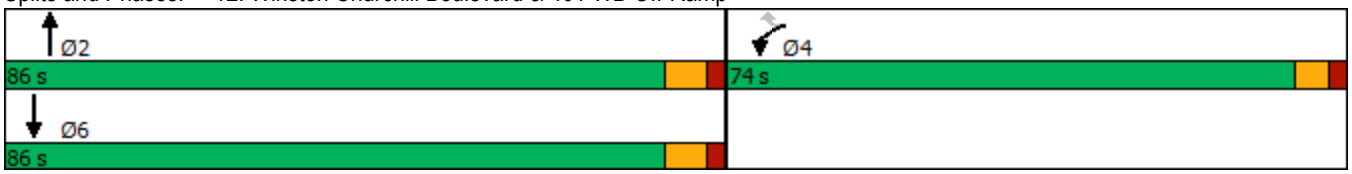
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay: 59.1		Intersection LOS: E	
Intersection Capacity Utilization 99.5%		ICU Level of Service F	
Analysis Period (min) 15			

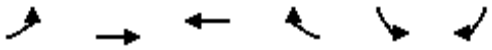
* User Entered Value

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

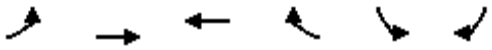
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Winston Churchill Boulevard & 401 WB Off-Ramp





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	1762	746	0	469	29
Future Volume (vph)	0	1762	746	0	469	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3579	0	1684	1210
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3579	0	1684	1210
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						21
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	0%	6%	32%
Adj. Flow (vph)	0	1762	746	0	469	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1762	746	0	469	29
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		96.0	96.0		64.0	64.0
Total Split (%)		60.0%	60.0%		40.0%	40.0%
Maximum Green (s)		90.0	90.0		57.0	57.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		90.3	90.3		45.3	45.3
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.80	0.34		0.91	0.08
Control Delay		27.5	16.0		73.2	16.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		27.5	16.0		73.2	16.9
LOS		C	B		E	B
Approach Delay		27.5	16.0		69.9	
Approach LOS		C	B		E	
Queue Length 50th (m)		214.6	58.7		140.1	1.8
Queue Length 95th (m)		293.5	85.1		187.7	9.6
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2195	2174		647	478
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.80	0.34		0.72	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 148.7			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 31.7		Intersection LOS: C	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

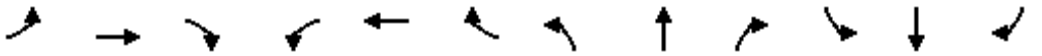
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2173	0	0	957	28	306
Future Volume (vph)	2173	0	0	957	28	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3579	1608	1566
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3579	1608	1566
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						13
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	2%	11%	2%
Adj. Flow (vph)	2173	0	0	957	28	306
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2173	0	0	957	28	306
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	114.0			114.0	46.0	46.0
Total Split (%)	71.3%			71.3%	28.8%	28.8%
Maximum Green (s)	108.0			108.0	39.0	39.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	108.2			108.2	32.9	32.9
Actuated g/C Ratio	0.70			0.70	0.21	0.21
v/c Ratio	0.86			0.38	0.08	0.89
Control Delay	22.7			10.4	48.0	83.3
Queue Delay	7.6			0.4	0.0	0.0
Total Delay	30.3			10.8	48.0	83.3
LOS	C			B	D	F
Approach Delay	30.3			10.8	80.3	
Approach LOS	C			B	F	
Queue Length 50th (m)	266.4			63.8	7.3	92.9
Queue Length 95th (m)	333.6			83.0	16.5	#136.8
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2536			2512	407	406
Starvation Cap Reductn	345			972	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.99			0.62	0.07	0.75

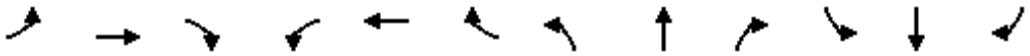
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 154.1			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 29.7		Intersection LOS: C	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

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

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1842	361	104	777	194	229	915	169	146	1232	140
Future Volume (vph)	149	1842	361	104	777	194	229	915	169	146	1232	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	5193	1581	1733	5142	1439	1767	3465	0	1608	3614	1581
Flt Permitted	0.250			0.071			0.069			0.103		
Satd. Flow (perm)	470	5193	1581	130	5142	1439	128	3465	0	174	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			165			194		15				114
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	3%	2%	11%	1%	3%	1%	11%	1%	1%
Adj. Flow (vph)	149	1842	361	104	777	194	229	915	169	146	1232	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	1842	361	104	777	194	229	1084	0	146	1232	140
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			3.6			3.6	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	15.3	66.8	66.8	10.0	61.5	61.5	20.2	66.4		16.8	63.0	63.0
Total Split (%)	9.6%	41.8%	41.8%	6.3%	38.4%	38.4%	12.6%	41.5%		10.5%	39.4%	39.4%
Maximum Green (s)	12.3	60.7	60.7	7.0	55.4	55.4	17.2	58.7		13.8	55.3	55.3
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	73.5	60.7	60.7	66.5	56.4	56.4	80.2	60.2		72.3	55.3	55.3
Actuated g/C Ratio	0.46	0.38	0.38	0.42	0.35	0.35	0.50	0.38		0.45	0.35	0.35
v/c Ratio	0.48	0.94	0.51	0.84	0.43	0.31	0.95	0.83		0.78	0.99	0.23
Control Delay	31.0	57.6	22.7	77.3	40.6	5.7	90.6	51.3		54.5	73.8	10.1
Queue Delay	0.0	25.2	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	31.0	82.8	22.7	77.3	40.6	5.7	90.6	51.3		54.5	73.8	10.1
LOS	C	F	C	E	D	A	F	D		D	E	B
Approach Delay		70.3			37.9			58.2			66.1	
Approach LOS		E			D			E			E	
Queue Length 50th (m)	29.0	216.7	49.9	19.7	73.4	0.0	59.4	173.1		26.3	215.7	5.8
Queue Length 95th (m)	44.8	238.9	82.5	#55.8	87.0	18.3	#115.8	203.6		#56.0	#266.6	22.3
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	317	1970	702	124	1812	633	240	1312		203	1249	621
Starvation Cap Reductn	0	220	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.47	1.05	0.51	0.84	0.43	0.31	0.95	0.83		0.72	0.99	0.23

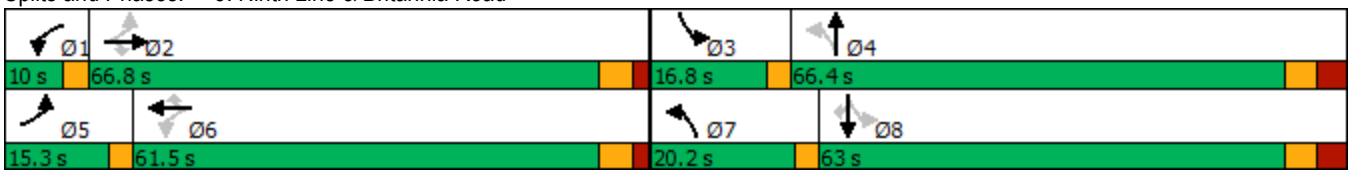
Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 125			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 61.2		Intersection LOS: E	

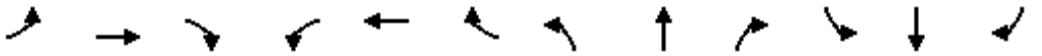
Intersection Capacity Utilization 106.3% ICU Level of Service G

Analysis Period (min) 15

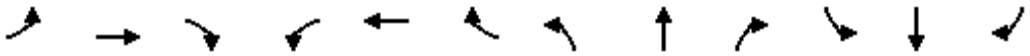
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





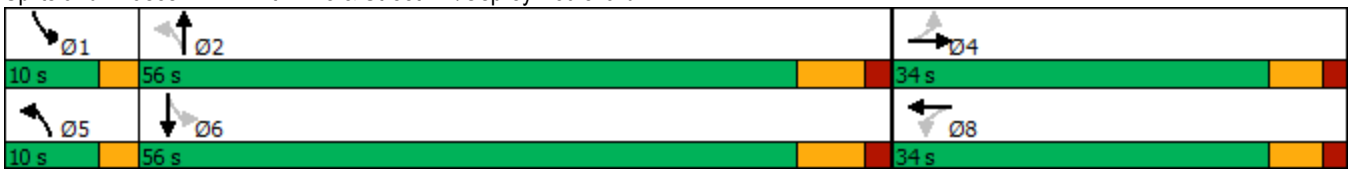
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	14	69	137	16	99	34	1269	101	22	1292	16
Future Volume (vph)	34	14	69	137	16	99	34	1269	101	22	1292	16
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			15.0			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.875			0.870			0.989			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1630	0	1412	1580	0	1732	3385	0	1683	3567	0
Flt Permitted	0.681			0.702			0.135			0.133		
Satd. Flow (perm)	1095	1630	0	1043	1580	0	246	3385	0	236	3567	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			102			12			2	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		122.1			186.9			633.8			289.9	
Travel Time (s)		8.8			13.5			32.6			14.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	2%	5%	2%	4%	8%	5%	1%	2%
Adj. Flow (vph)	35	14	71	141	16	102	35	1308	104	23	1332	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	85	0	141	118	0	35	1412	0	23	1348	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.01	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0		20.0	10.0	
Trailing Detector (m)	0.0	0.0		-1.0	0.0		0.0	0.0		10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-1.0	0.0		0.0	0.0		10.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		10.0	0.6	
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	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0		9.5	25.0	
Total Split (s)	34.0	34.0		34.0	34.0		10.0	56.0		10.0	56.0	
Total Split (%)	34.0%	34.0%		34.0%	34.0%		10.0%	56.0%		10.0%	56.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		7.0	49.0		7.0	49.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.9	17.9		17.9	17.9		63.3	56.3		61.9	53.9	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.73	0.64		0.71	0.62	
v/c Ratio	0.16	0.22		0.66	0.29		0.11	0.65		0.08	0.61	
Control Delay	29.3	10.7		46.7	9.8		5.5	13.2		5.4	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.3	10.7		46.7	9.8		5.5	13.2		5.4	13.9	
LOS	C	B		D	A		A	B		A	B	
Approach Delay		16.1			29.9			13.0			13.8	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	5.2	2.0		23.2	2.3		1.4	61.7		1.0	78.8	
Queue Length 95th (m)	13.3	13.5		43.4	15.6		5.5	141.9		4.1	132.7	
Internal Link Dist (m)		98.1			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0			120.0		
Base Capacity (vph)	367	593		349	597		332	2187		320	2203	
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	0.10	0.14		0.40	0.20		0.11	0.65		0.07	0.61	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 87.3			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 14.8		Intersection LOS: B	
Intersection Capacity Utilization 62.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



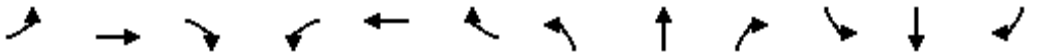
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	75	1397	39	33	1273
Future Volume (vph)	51	75	1397	39	33	1273
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.920		0.996			
Flt Protected	0.980				0.950	
Satd. Flow (prot)	1380	0	3447	0	1412	3500
Flt Permitted	0.980				0.950	
Satd. Flow (perm)	1380	0	3447	0	1412	3500
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	3%	9%	3%	2%
Adj. Flow (vph)	53	78	1455	41	34	1326
Shared Lane Traffic (%)						
Lane Group Flow (vph)	131	0	1496	0	34	1326
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			

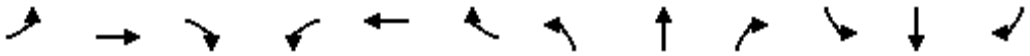
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	75	1397	39	33	1273
Future Volume (Veh/h)	51	75	1397	39	33	1273
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	53	78	1455	41	34	1326
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.74	0.74			0.74	
vC, conflicting volume	2206	748			1496	
vC1, stage 1 conf vol	1476					
vC2, stage 2 conf vol	731					
vCu, unblocked vol	1926	0			965	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	90			93	
cM capacity (veh/h)	213	806			520	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	131	970	526	34	663	663
Volume Left	53	0	0	34	0	0
Volume Right	78	0	41	0	0	0
cSH	380	1700	1700	520	1700	1700
Volume to Capacity	0.35	0.57	0.31	0.07	0.39	0.39
Queue Length 95th (m)	12.1	0.0	0.0	1.7	0.0	0.0
Control Delay (s)	19.4	0.0	0.0	12.4	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	19.4	0.0		0.3		
Approach LOS	C					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	90	117	155	92	186	55	1280	112	77	959	59
Future Volume (vph)	228	90	117	155	92	186	55	1280	112	77	959	59
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.0	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.915			0.900			0.988			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1704	0	1412	1676	0	1617	3433	0	1649	3501	0
Flt Permitted	0.224			0.410			0.163			0.083		
Satd. Flow (perm)	360	1704	0	609	1676	0	277	3433	0	144	3501	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			91			13			9	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		140.5			218.3			843.0			487.0	
Travel Time (s)		10.1			15.7			43.4			25.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	9%	0%	1%	2%
Adj. Flow (vph)	248	98	127	168	100	202	60	1391	122	84	1042	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	248	225	0	168	302	0	60	1513	0	84	1106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.0			3.0	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.12	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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												

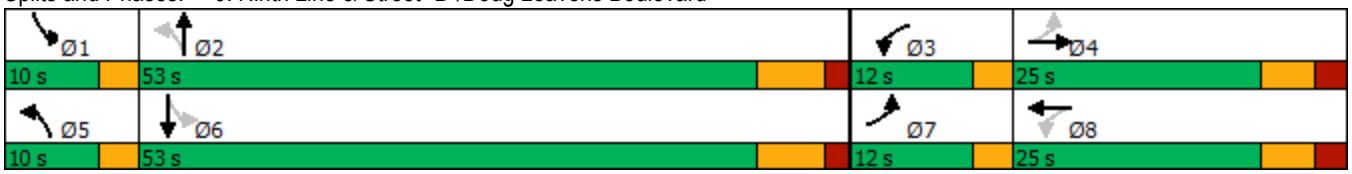


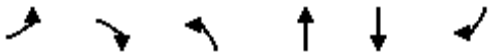
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	24.5		9.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	12.0	25.0		12.0	25.0		10.0	53.0		10.0	53.0	
Total Split (%)	12.0%	25.0%		12.0%	25.0%		10.0%	53.0%		10.0%	53.0%	
Maximum Green (s)	9.0	18.5		9.0	18.5		7.0	46.0		7.0	46.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-2.0	-1.5		-2.0	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	1.0	5.0		1.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		8.0			7.0			8.0			8.0	
Flash Dont Walk (s)		8.0			11.0			10.0			10.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	32.6	17.5		32.4	17.4		59.1	48.3		59.3	48.4	
Actuated g/C Ratio	0.34	0.18		0.34	0.18		0.62	0.51		0.62	0.51	
v/c Ratio	0.96	0.62		0.56	0.80		0.21	0.87		0.37	0.62	
Control Delay	76.3	35.1		31.7	42.6		9.1	28.7		13.5	19.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	76.3	35.1		31.7	42.6		9.1	28.7		13.5	19.8	
LOS	E	D		C	D		A	C		B	B	
Approach Delay		56.7			38.7			28.0			19.3	
Approach LOS		E			D			C			B	
Queue Length 50th (m)	38.2	30.8		24.6	40.9		4.5	144.2		6.3	86.0	
Queue Length 95th (m)	#82.4	56.0		42.2	#79.2		9.4	#197.1		14.4	109.1	
Internal Link Dist (m)		116.5			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	258	405		300	425		299	1743		232	1779	
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	0.96	0.56		0.56	0.71		0.20	0.87		0.36	0.62	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 95.5			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 30.2		Intersection LOS: C	

Intersection Capacity Utilization 89.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

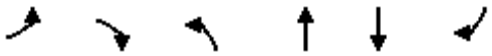
Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	14	0	1767	1108	37
Future Volume (vph)	0	14	0	1767	1108	37
Ideal Flow (vphpl)	1640	1640	1640	1900	1900	1900
Lane Width (m)	3.6	3.6	3.5	3.5	3.5	3.5
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.995	
Flt Protected						
Satd. Flow (prot)	0	1391	0	3500	3482	0
Flt Permitted						
Satd. Flow (perm)	0	1391	0	3500	3482	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	121.9			487.0	813.6	
Travel Time (s)	8.8			25.0	41.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	14	0	1767	1108	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	14	0	1767	1145	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.21	1.21	1.22	1.01	1.01	1.01
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

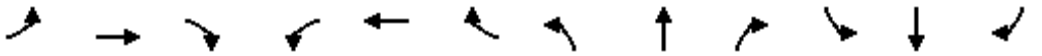
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.2%		ICU Level of Service A	
Analysis Period (min) 15			



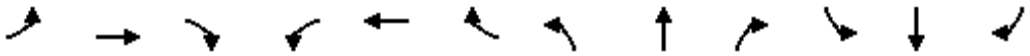
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	14	0	1767	1108	37
Future Volume (Veh/h)	0	14	0	1767	1108	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	14	0	1767	1108	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2010	572	1145			
vC1, stage 1 conf vol	1126					
vC2, stage 2 conf vol	884					
vCu, unblocked vol	2010	572	1145			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	217	463	606			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	14	884	884	739	406
Volume Left	0	0	0	0	0
Volume Right	14	0	0	0	37
cSH	463	1700	1700	1700	1700
Volume to Capacity	0.03	0.52	0.52	0.43	0.24
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0
Control Delay (s)	13.0	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	13.0	0.0		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	52.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	1769	136	213	844	363	307	886	401	107	715	293
Future Volume (vph)	347	1769	136	213	844	363	307	886	401	107	715	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99									
Frt			0.850		0.955				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	5193	1597	1733	4844	0	1750	3614	1566	1716	3614	1581
Flt Permitted	0.085			0.082			0.108			0.171		
Satd. Flow (perm)	151	5193	1575	150	4844	0	199	3614	1566	309	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		69				171			276
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	1%	0%	3%	4%	2%	2%	1%	2%	4%	1%	1%
Adj. Flow (vph)	347	1769	136	213	844	363	307	886	401	107	715	293
Shared Lane Traffic (%)												
Lane Group Flow (vph)	347	1769	136	213	1207	0	307	886	401	107	715	293
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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												

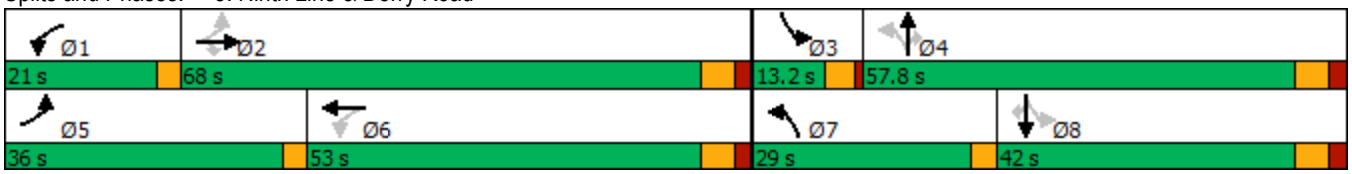


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	36.0	68.0	68.0	21.0	53.0		29.0	57.8	57.8	13.2	42.0	42.0
Total Split (%)	22.5%	42.5%	42.5%	13.1%	33.1%		18.1%	36.1%	36.1%	8.3%	26.3%	26.3%
Maximum Green (s)	33.0	61.9	61.9	18.0	46.9		26.0	51.4	51.4	8.7	35.6	35.6
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	1.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	4.5	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	84.8	62.1	62.1	68.6	48.8		65.6	49.1	49.1	44.5	34.1	34.1
Actuated g/C Ratio	0.54	0.40	0.40	0.44	0.31		0.42	0.31	0.31	0.28	0.22	0.22
v/c Ratio	0.93	0.86	0.20	0.91	0.77		0.92	0.78	0.66	0.65	0.91	0.52
Control Delay	75.8	49.0	11.7	84.0	50.9		77.5	54.5	31.5	51.3	76.0	10.5
Queue Delay	0.0	2.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.8	51.0	11.7	84.0	50.9		77.5	54.5	31.5	51.3	76.0	10.5
LOS	E	D	B	F	D		E	D	C	D	E	B
Approach Delay		52.4			55.9			53.1			56.4	
Approach LOS		D			E			D			E	
Queue Length 50th (m)	95.2	201.0	8.6	54.4	131.6		83.4	140.8	67.5	22.2	123.4	4.5
Queue Length 95th (m)	#152.1	222.1	24.2	#103.8	151.1		#142.7	167.2	107.3	#37.7	#156.9	32.7
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	406	2060	682	249	1559		341	1190	630	166	824	573
Starvation Cap Reductn	0	163	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.93	0.20	0.86	0.77		0.90	0.74	0.64	0.64	0.87	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 156.4			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 54.1		Intersection LOS: D	

Intersection Capacity Utilization 99.8% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Ninth Line & Derry Road

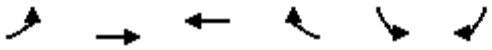


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2157	0	0	1288	17	217
Future Volume (vph)	2157	0	0	1288	17	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3510	2935	1507
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3510	2935	1507
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						18
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	4%	18%	6%
Adj. Flow (vph)	2157	0	0	1288	17	217
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2157	0	0	1288	17	217
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

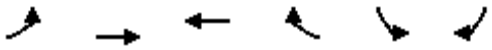
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	120.0			120.0	40.0	40.0
Total Split (%)	75.0%			75.0%	25.0%	25.0%
Maximum Green (s)	114.0			114.0	33.0	33.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	114.2			114.2	24.9	24.9
Actuated g/C Ratio	0.75			0.75	0.16	0.16
v/c Ratio	0.80			0.49	0.04	0.83
Control Delay	16.0			8.8	52.1	81.7
Queue Delay	2.2			0.6	0.0	0.0
Total Delay	18.2			9.4	52.1	81.7
LOS	B			A	D	F
Approach Delay	18.2			9.4	79.5	
Approach LOS	B			A	E	
Queue Length 50th (m)	206.4			77.5	2.3	62.2
Queue Length 95th (m)	289.4			110.4	6.1	94.0
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2686			2634	637	341
Starvation Cap Reductn	375			843	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.93			0.72	0.03	0.64

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 152.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 19.0		Intersection LOS: B	
Intersection Capacity Utilization 94.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



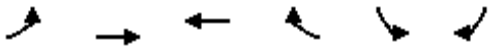
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2809	962	0	62	71
Future Volume (vph)	0	2809	962	0	62	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3510	0	3148	1309
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3510	0	3148	1309
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						71
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	4%	0%	10%	22%
Adj. Flow (vph)	0	2809	962	0	62	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2809	962	0	62	71
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



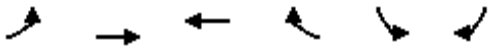
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		135.0	135.0		25.0	25.0
Total Split (%)		84.4%	84.4%		15.6%	15.6%
Maximum Green (s)		129.0	129.0		18.0	18.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		129.0	129.0		8.8	8.8
Actuated g/C Ratio		0.86	0.86		0.06	0.06
v/c Ratio		0.91	0.32		0.34	0.50
Control Delay		13.3	2.5		73.1	26.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		13.3	2.5		73.1	26.1
LOS		B	A		E	C
Approach Delay		13.3	2.5		48.0	
Approach LOS		B	A		D	
Queue Length 50th (m)		229.8	24.1		9.8	0.0
Queue Length 95th (m)		328.7	34.6		18.2	16.7
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		3091	3002		375	218
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.91	0.32		0.17	0.33

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.8			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 94.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (vph)	0	898	1669	0	476	77
Future Volume (vph)	0	898	1669	0	476	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	0.0	70.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3614	3614	0	1767	1536
Flt Permitted					0.950	
Satd. Flow (perm)	0	3614	3614	0	1767	1536
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						17
Link Speed (k/h)		80	80		60	
Link Distance (m)		264.8	303.1		178.8	
Travel Time (s)		11.9	13.6		10.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	1%	4%
Adj. Flow (vph)	0	898	1669	0	476	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	898	1669	0	476	77
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.5	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		94.0	94.0		66.0	66.0
Total Split (%)		58.8%	58.8%		41.3%	41.3%
Maximum Green (s)		88.0	88.0		59.0	59.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		88.4	88.4		43.8	43.8
Actuated g/C Ratio		0.61	0.61		0.30	0.30
v/c Ratio		0.41	0.76		0.89	0.16
Control Delay		16.6	25.2		68.4	28.4
Queue Delay		0.0	0.9		0.0	0.0
Total Delay		16.6	26.0		68.4	28.4
LOS		B	C		E	C
Approach Delay		16.6	26.0		62.8	
Approach LOS		B	C		E	
Queue Length 50th (m)		70.9	184.0		137.6	13.2
Queue Length 95th (m)		109.5	273.5		182.8	26.1
Internal Link Dist (m)		240.8	279.1		154.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)		2199	2199		721	636
Starvation Cap Reductn		0	253		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.41	0.86		0.66	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 145.2			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 29.8		Intersection LOS: C	
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

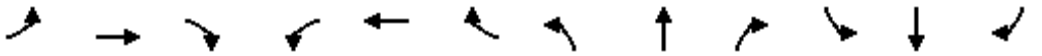
Splits and Phases: 1: Britannia Road & 407 SB Off-Ramp

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1327	0	0	1808	70	212
Future Volume (vph)	1327	0	0	1808	70	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		0.0	70.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3614	0	0	3614	1750	1581
Flt Permitted					0.950	
Satd. Flow (perm)	3614	0	0	3614	1750	1581
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						94
Link Speed (k/h)	80			80	60	
Link Distance (m)	303.1			216.6	147.8	
Travel Time (s)	13.6			9.7	8.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	0%	0%	1%	2%	1%
Adj. Flow (vph)	1327	0	0	1808	70	212
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1327	0	0	1808	70	212
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	10.0	10.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

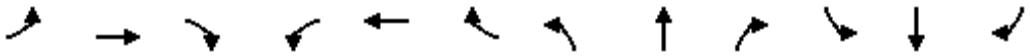
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	25.0			25.0	25.0	25.0
Total Split (s)	121.0			121.0	39.0	39.0
Total Split (%)	75.6%			75.6%	24.4%	24.4%
Maximum Green (s)	115.0			115.0	32.0	32.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	115.2			115.2	16.7	16.7
Actuated g/C Ratio	0.79			0.79	0.12	0.12
v/c Ratio	0.46			0.63	0.35	0.80
Control Delay	6.0			8.0	62.9	55.8
Queue Delay	0.2			1.3	0.0	0.0
Total Delay	6.2			9.3	62.9	55.8
LOS	A			A	E	E
Approach Delay	6.2			9.3	57.6	
Approach LOS	A			A	E	
Queue Length 50th (m)	58.2			100.3	19.8	35.5
Queue Length 95th (m)	95.6			162.9	35.6	65.5
Internal Link Dist (m)	279.1			192.6	123.8	
Turn Bay Length (m)						70.0
Base Capacity (vph)	2872			2872	387	422
Starvation Cap Reductn	709			782	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.61			0.87	0.18	0.50

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 145			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: 407 NB Off-Ramp & Britannia Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	886	326	147	1385	194	215	1283	143	232	1262	189
Future Volume (vph)	201	886	326	147	1385	194	215	1283	143	232	1262	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	60.0		60.0	60.0		60.0	75.0		50.0	175.0		115.0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (m)	85.0			80.0			25.0			30.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	5193	1597	1785	5193	1551	1767	3557	0	1716	3614	1536
Flt Permitted	0.088			0.184			0.063			0.063		
Satd. Flow (perm)	165	5193	1597	346	5193	1551	117	3557	0	114	3614	1536
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			263			101		9				161
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		216.6			244.1			195.1			633.8	
Travel Time (s)		9.7			11.0			10.0			32.6	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	0%	0%	1%	3%	1%	1%	0%	4%	1%	4%
Adj. Flow (vph)	201	886	326	147	1385	194	215	1283	143	232	1262	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	886	326	147	1385	194	215	1426	0	232	1262	189
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			3.6			3.6	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template		Thru	Right	Left	Thru	Right						Right
Leading Detector (m)	25.0	10.0	2.0	2.0	10.0	2.0	25.0	10.0		25.0	10.0	2.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0	0.0	15.0	-3.0		15.0	-3.0	0.0
Detector 1 Size(m)	10.0	0.6	2.0	2.0	0.6	2.0	10.0	10.0		10.0	10.0	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	1	6	6	7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	9.5	24.1	24.1	9.5	24.1	24.1	9.5	37.7		9.5	37.7	37.7
Total Split (s)	17.4	49.4	49.4	18.2	50.2	50.2	22.5	71.2		21.2	69.9	69.9
Total Split (%)	10.9%	30.9%	30.9%	11.4%	31.4%	31.4%	14.1%	44.5%		13.3%	43.7%	43.7%
Maximum Green (s)	14.4	43.3	43.3	15.2	44.1	44.1	19.5	63.5		18.2	62.2	62.2
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1	2.1	0.0	3.7		0.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1	6.1	3.0	7.7		3.0	7.7	7.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		12.0			12.0	12.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	62.4	45.3	45.3	60.4	44.1	44.1	85.7	63.5		86.2	63.9	63.9
Actuated g/C Ratio	0.39	0.28	0.28	0.38	0.28	0.28	0.54	0.40		0.54	0.40	0.40
v/c Ratio	0.96	0.60	0.51	0.59	0.97	0.39	0.88	1.00		0.96	0.87	0.27
Control Delay	93.5	51.8	13.3	41.2	73.6	24.4	76.8	72.1		94.8	52.4	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	93.5	51.8	13.3	41.2	73.6	24.4	76.8	72.1		94.8	52.4	7.7
LOS	F	D	B	D	E	C	E	E		F	D	A
Approach Delay		48.9			65.3			72.7			53.2	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	50.6	95.2	16.0	31.8	168.9	24.5	53.0	~253.2		61.4	208.2	5.8
Queue Length 95th (m)	#106.2	112.4	47.7	49.3	#201.2	49.3	#95.9	#306.3		#118.7	241.1	23.3
Internal Link Dist (m)		192.6			220.1			171.1			609.8	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	75.0			175.0		115.0
Base Capacity (vph)	210	1472	641	271	1433	501	265	1419		243	1445	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.96	0.60	0.51	0.54	0.97	0.39	0.81	1.00		0.95	0.87	0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 159.7			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 60.5		Intersection LOS: E	

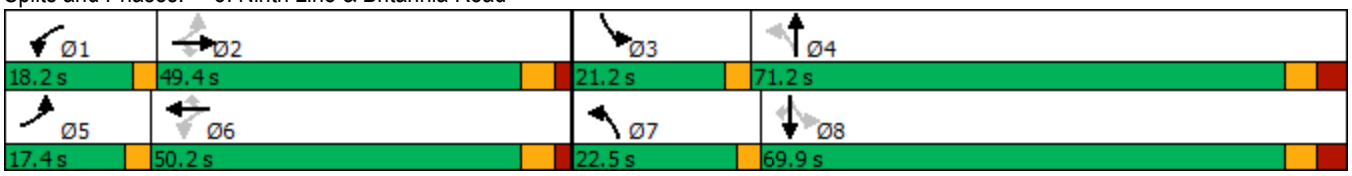
Intersection Capacity Utilization 109.0% ICU Level of Service G

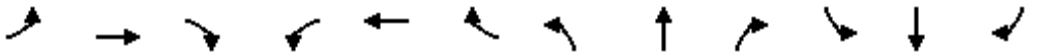
Analysis Period (min) 15

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

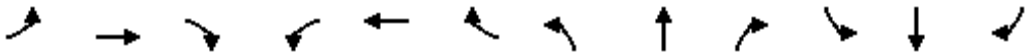
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Ninth Line & Britannia Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	3	38	77	3	32	60	1471	113	48	1644	53
Future Volume (vph)	22	3	38	77	3	32	60	1471	113	48	1644	53
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.0	3.6	3.5	3.5	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	15.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			15.0			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.860			0.862			0.989			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1602	0	1359	1591	0	1732	3488	0	1767	3590	0
Flt Permitted	0.734			0.729			0.077			0.106		
Satd. Flow (perm)	1180	1602	0	1043	1591	0	140	3488	0	197	3590	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			33			15			6	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		103.4			186.9			633.8			289.9	
Travel Time (s)		7.4			13.5			32.6			14.9	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	7%	2%	3%	2%	1%	2%	0%	0%	2%
Adj. Flow (vph)	23	3	40	80	3	33	63	1532	118	50	1713	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	43	0	80	36	0	63	1650	0	50	1768	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.09	1.03	1.01	1.01	1.03	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (m)	2.0	10.0		9.0	10.0		2.0	10.0		20.0	10.0	
Trailing Detector (m)	0.0	0.0		-0.2	0.0		0.0	0.0		10.0	0.0	
Detector 1 Position(m)	0.0	0.0		-0.2	0.0		0.0	0.0		10.0	0.0	
Detector 1 Size(m)	2.0	0.6		9.2	0.6		2.0	0.6		10.0	0.6	
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												

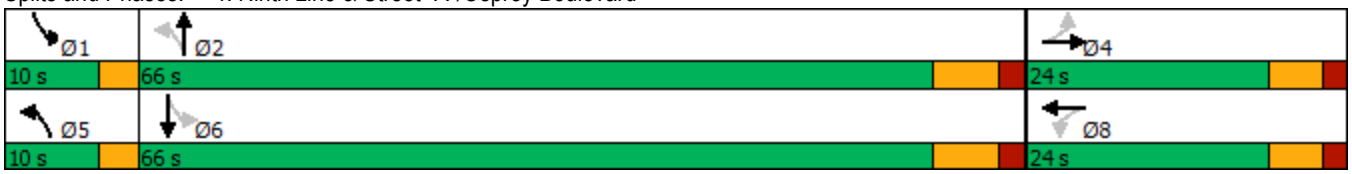


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	25.0		9.5	25.0	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	66.0		10.0	66.0	
Total Split (%)	24.0%	24.0%		24.0%	24.0%		10.0%	66.0%		10.0%	66.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		7.0	59.0		7.0	59.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	13.5	13.5		13.1	13.1		76.2	68.6		74.3	65.9	
Actuated g/C Ratio	0.15	0.15		0.14	0.14		0.82	0.74		0.80	0.71	
v/c Ratio	0.13	0.16		0.54	0.14		0.25	0.64		0.18	0.69	
Control Delay	36.3	13.6		51.2	14.5		5.0	10.4		4.1	12.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.3	13.6		51.2	14.5		5.0	10.4		4.1	12.8	
LOS	D	B		D	B		A	B		A	B	
Approach Delay		21.5			39.8			10.2			12.5	
Approach LOS		C			D			B			B	
Queue Length 50th (m)	3.9	0.5		14.3	0.5		2.0	92.1		1.5	108.2	
Queue Length 95th (m)	11.1	9.9		29.5	9.1		5.8	143.2		4.9	167.1	
Internal Link Dist (m)		79.4			162.9			609.8			265.9	
Turn Bay Length (m)				15.0			15.0			120.0		
Base Capacity (vph)	243	362		215	355		271	2590		315	2560	
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	0.09	0.12		0.37	0.10		0.23	0.64		0.16	0.69	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 92.5			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 12.5		Intersection LOS: B	

Intersection Capacity Utilization 70.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 4: Ninth Line & Street "A"/Osprey Boulevard



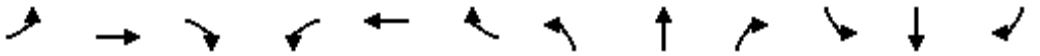
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	19	1391	67	47	1730
Future Volume (vph)	25	19	1391	67	47	1730
Ideal Flow (vphpl)	1640	1900	1900	1900	1640	1900
Lane Width (m)	3.0	3.0	3.5	3.5	3.0	3.5
Storage Length (m)	0.0	0.0		0.0	70.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				50.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.941		0.993			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1401	0	3511	0	1426	3570
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1401	0	3511	0	1426	3570
Link Speed (k/h)	50		70			70
Link Distance (m)	166.2		289.9			843.0
Travel Time (s)	12.0		14.9			43.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	2%	0%
Adj. Flow (vph)	26	20	1449	70	49	1802
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	1519	0	49	1802
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.0		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane			Yes			
Headway Factor	1.31	1.09	1.01	1.01	1.31	1.01
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.8%		ICU Level of Service B	
Analysis Period (min) 15			

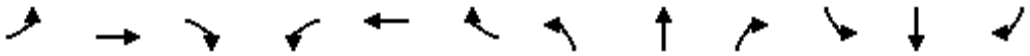
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	19	1391	67	47	1730
Future Volume (Veh/h)	25	19	1391	67	47	1730
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	26	20	1449	70	49	1802
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (m)			290			
pX, platoon unblocked	0.74	0.74			0.74	
vC, conflicting volume	2483	760			1519	
vC1, stage 1 conf vol	1484					
vC2, stage 2 conf vol	999					
vCu, unblocked vol	2297	0			986	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	86	98			90	
cM capacity (veh/h)	184	802			512	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	46	966	553	49	901	901
Volume Left	26	0	0	49	0	0
Volume Right	20	0	70	0	0	0
cSH	276	1700	1700	512	1700	1700
Volume to Capacity	0.17	0.57	0.33	0.10	0.53	0.53
Queue Length 95th (m)	4.7	0.0	0.0	2.5	0.0	0.0
Control Delay (s)	20.6	0.0	0.0	12.8	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	20.6	0.0		0.3		
Approach LOS	C					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	29	68	119	35	67	122	1115	148	135	1570	112
Future Volume (vph)	132	29	68	119	35	67	122	1115	148	135	1570	112
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.6	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.895			0.901			0.982			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1667	0	1454	1700	0	1732	3465	0	1649	3497	0
Flt Permitted	0.689			0.692			0.069			0.139		
Satd. Flow (perm)	1108	1667	0	1059	1700	0	126	3465	0	241	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			70			23			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		111.4			218.3			843.0			487.0	
Travel Time (s)		8.0			15.7			43.4			25.0	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Adj. Flow (vph)	138	30	71	124	36	70	127	1161	154	141	1635	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	101	0	124	106	0	127	1315	0	141	1752	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.03	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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												

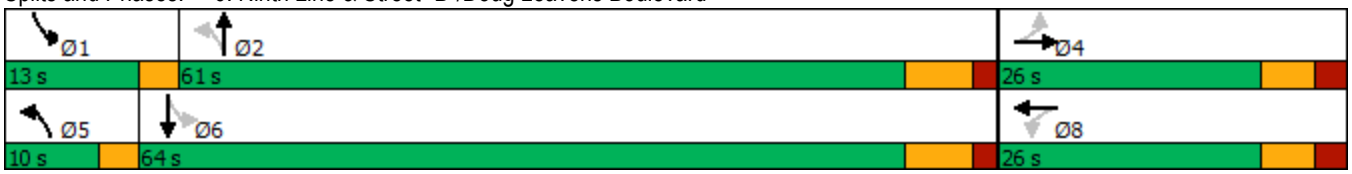


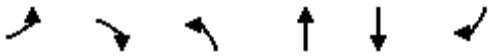
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	26.0	26.0		26.0	26.0		10.0	61.0		13.0	64.0	
Total Split (%)	26.0%	26.0%		26.0%	26.0%		10.0%	61.0%		13.0%	64.0%	
Maximum Green (s)	19.5	19.5		19.5	19.5		7.0	54.0		10.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	8.0	8.0		7.0	7.0			8.0			8.0	
Flash Dont Walk (s)	8.0	8.0		11.0	11.0			10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.2	17.2		17.2	17.2		70.8	58.0		72.5	59.1	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.74	0.60		0.75	0.61	
v/c Ratio	0.70	0.28		0.66	0.29		0.53	0.63		0.43	0.81	
Control Delay	56.0	15.1		53.6	16.1		21.6	14.4		7.8	18.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	56.0	15.1		53.6	16.1		21.6	14.4		7.8	18.8	
LOS	E	B		D	B		C	B		A	B	
Approach Delay		38.7			36.3			15.0			18.0	
Approach LOS		D			D			B			B	
Queue Length 50th (m)	25.6	5.0		22.8	6.0		6.4	81.4		6.5	133.3	
Queue Length 95th (m)	46.9	18.9		42.7	20.4		27.0	116.4		12.6	178.8	
Internal Link Dist (m)		87.4			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	242	420		232	427		243	2101		359	2156	
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	0.57	0.24		0.53	0.25		0.52	0.63		0.39	0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 96.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 19.3		Intersection LOS: B	

Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15

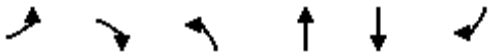
Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	9	0	1356	1884	88
Future Volume (vph)	0	9	0	1356	1884	88
Ideal Flow (vphpl)	1640	1640	1640	1900	1900	1900
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.993	
Flt Protected						
Satd. Flow (prot)	0	1391	0	3539	3514	0
Flt Permitted						
Satd. Flow (perm)	0	1391	0	3539	3514	0
Link Speed (k/h)	50			70	70	
Link Distance (m)	100.7			487.0	813.6	
Travel Time (s)	7.3			25.0	41.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	9	0	1356	1884	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	9	0	1356	1972	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.21	1.21	1.21	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

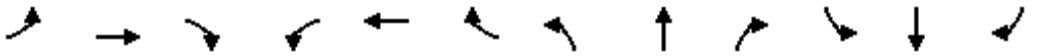
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		



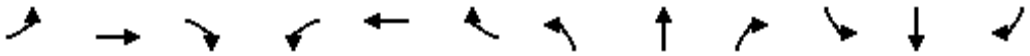
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	9	0	1356	1884	88
Future Volume (Veh/h)	0	9	0	1356	1884	88
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	9	0	1356	1884	88
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2606	986	1972			
vC1, stage 1 conf vol	1928					
vC2, stage 2 conf vol	678					
vCu, unblocked vol	2606	986	1972			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	95	247	290			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	9	678	678	1256	716
Volume Left	0	0	0	0	0
Volume Right	9	0	0	0	88
cSH	247	1700	1700	1700	1700
Volume to Capacity	0.04	0.40	0.40	0.74	0.42
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0
Control Delay (s)	20.1	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	20.1	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	959	314	389	1863	140	169	832	300	288	1075	343
Future Volume (vph)	221	959	314	389	1863	140	169	832	300	288	1075	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Storage Length (m)	75.0		45.0	80.0		50.0	200.0		40.0	60.0		90.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	80.0			75.0			100.0			45.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor									0.98			
Frt			0.850		0.990				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1767	5092	1597	1767	5137	0	1767	3614	1581	1785	3614	1581
Flt Permitted	0.080			0.160			0.102			0.094		
Satd. Flow (perm)	149	5092	1597	298	5137	0	190	3614	1556	177	3614	1581
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			185		9				123			225
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		234.9			182.6			813.6			145.2	
Travel Time (s)		14.1			11.0			41.8			7.5	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	0%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Adj. Flow (vph)	221	959	314	389	1863	140	169	832	300	288	1075	343
Shared Lane Traffic (%)												
Lane Group Flow (vph)	221	959	314	389	2003	0	169	832	300	288	1075	343
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			3.5			3.5	
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					Yes			Yes				
Headway Factor	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01	1.01	0.99	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template		Thru	Right		Thru							
Leading Detector (m)	25.0	10.0	2.0	25.0	10.0		8.0	10.0	8.0	8.0	10.0	8.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Detector 1 Size(m)	10.0	0.6	2.0	10.0	0.6		10.0	10.0	10.0	10.0	10.0	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	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	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		5.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	9.5	30.1	30.1	9.5	30.1		9.5	29.4	29.4	9.5	29.4	29.4
Total Split (s)	20.0	50.6	50.6	39.0	69.6		15.0	45.8	45.8	24.6	55.4	55.4
Total Split (%)	12.5%	31.6%	31.6%	24.4%	43.5%		9.4%	28.6%	28.6%	15.4%	34.6%	34.6%
Maximum Green (s)	17.0	44.5	44.5	36.0	63.5		12.0	39.4	39.4	21.6	49.0	49.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	2.1	2.1	0.0	2.1		0.0	2.4	2.4	0.0	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	3.0	6.1		3.0	6.4	6.4	3.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		9.0	9.0		9.0			9.0	9.0		9.0	9.0
Flash Dont Walk (s)		15.0	15.0		15.0			14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	70.0	50.2	50.2	86.3	63.5		54.8	39.4	39.4	67.4	49.0	49.0
Actuated g/C Ratio	0.44	0.31	0.31	0.54	0.40		0.34	0.25	0.25	0.42	0.31	0.31
v/c Ratio	0.94	0.60	0.50	0.89	0.98		0.92	0.93	0.63	0.99	0.97	0.54
Control Delay	91.4	49.1	21.6	54.9	62.2		87.6	76.6	37.6	94.9	75.0	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.4	49.1	21.6	54.9	62.2		87.6	76.6	37.6	94.9	75.0	18.3
LOS	F	D	C	D	E		F	E	D	F	E	B
Approach Delay		49.6			61.0			69.0			67.0	
Approach LOS		D			E			E			E	
Queue Length 50th (m)	57.4	101.3	34.6	88.9	240.6		38.8	144.8	53.8	79.6	187.8	31.4
Queue Length 95th (m)	#114.5	122.3	69.2	131.0	#277.6		#87.4	#184.7	89.4	#143.8	#235.3	65.0
Internal Link Dist (m)		210.9			158.6			789.6			121.2	
Turn Bay Length (m)	75.0		45.0	80.0			200.0		40.0	60.0		90.0
Base Capacity (vph)	237	1599	628	492	2048		183	891	476	292	1108	641
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.60	0.50	0.79	0.98		0.92	0.93	0.63	0.99	0.97	0.54

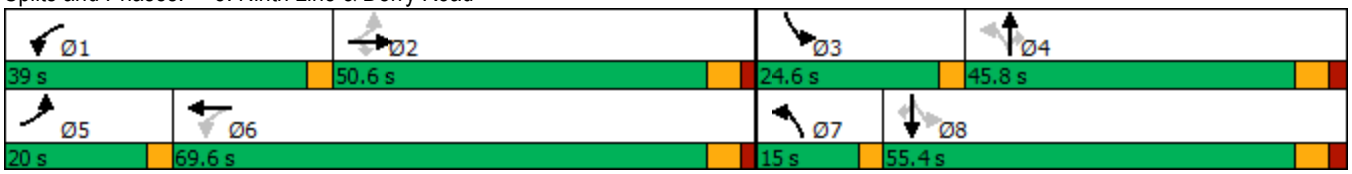
Intersection Summary	
Area Type:	Other
Cycle Length: 160	
Actuated Cycle Length: 159.7	
Natural Cycle: 100	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 61.5	Intersection LOS: E

Intersection Capacity Utilization 107.5% ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 8: Ninth Line & Derry Road

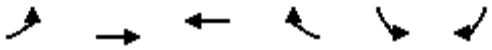


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1397	0	0	2337	104	245
Future Volume (vph)	1397	0	0	2337	104	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)		0.0	0.0		210.0	120.0
Storage Lanes		0	0		1	1
Taper Length (m)			7.5		90.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3579	0	0	3614	3362	1597
Flt Permitted					0.950	
Satd. Flow (perm)	3579	0	0	3614	3362	1597
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						92
Link Speed (k/h)	60			60	60	
Link Distance (m)	308.5			234.9	335.8	
Travel Time (s)	18.5			14.1	20.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	1397	0	0	2337	104	245
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1397	0	0	2337	104	245
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	7.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru		
Leading Detector (m)	10.0			10.0	9.0	9.0
Trailing Detector (m)	0.0			0.0	-1.0	-1.0
Detector 1 Position(m)	0.0			0.0	-1.0	-1.0
Detector 1 Size(m)	0.6			0.6	10.0	10.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm

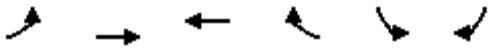
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	12.0			12.0	7.0	7.0
Minimum Split (s)	24.0			24.0	25.0	25.0
Total Split (s)	126.0			126.0	34.0	34.0
Total Split (%)	78.8%			78.8%	21.3%	21.3%
Maximum Green (s)	120.0			120.0	27.0	27.0
Yellow Time (s)	3.0			3.0	5.0	5.0
All-Red Time (s)	3.0			3.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	120.2			120.2	20.0	20.0
Actuated g/C Ratio	0.78			0.78	0.13	0.13
v/c Ratio	0.50			0.82	0.24	0.85
Control Delay	7.1			14.4	60.3	66.1
Queue Delay	0.3			11.5	0.0	0.0
Total Delay	7.3			26.0	60.3	66.1
LOS	A			C	E	E
Approach Delay	7.3			26.0	64.3	
Approach LOS	A			C	E	
Queue Length 50th (m)	74.8			216.3	15.6	49.6
Queue Length 95th (m)	105.1			300.4	25.4	83.2
Internal Link Dist (m)	284.5			210.9	311.8	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)	2807			2834	593	357
Starvation Cap Reductn	670			517	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.65			1.01	0.18	0.69

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 153.2			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 22.9		Intersection LOS: C	
Intersection Capacity Utilization 107.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 9: 407 NB Off-Ramp & Derry Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰	↱
Traffic Volume (vph)	0	1160	2287	0	327	536
Future Volume (vph)	0	1160	2287	0	327	536
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.5	3.5
Storage Length (m)	0.0			0.0	210.0	120.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.5				90.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3510	3614	0	3429	1597
Flt Permitted					0.950	
Satd. Flow (perm)	0	3510	3614	0	3429	1597
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						6
Link Speed (k/h)		60	60		60	
Link Distance (m)		162.3	308.5		357.0	
Travel Time (s)		9.7	18.5		21.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	0%	1%	0%
Adj. Flow (vph)	0	1160	2287	0	327	536
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1160	2287	0	327	536
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	1.01	1.01
Turning Speed (k/h)	25			15	25	15
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru			
Leading Detector (m)		10.0	10.0		9.0	9.0
Trailing Detector (m)		0.0	0.0		-1.0	-1.0
Detector 1 Position(m)		0.0	0.0		-1.0	-1.0
Detector 1 Size(m)		0.6	0.6		10.0	10.0
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm



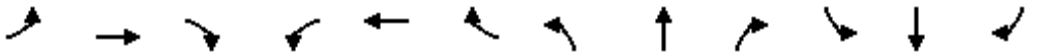
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		2	2		4	
Permitted Phases						4
Detector Phase		2	2		4	4
Switch Phase						
Minimum Initial (s)		12.0	12.0		7.0	7.0
Minimum Split (s)		24.0	24.0		25.0	25.0
Total Split (s)		104.0	104.0		56.0	56.0
Total Split (%)		65.0%	65.0%		35.0%	35.0%
Maximum Green (s)		98.0	98.0		49.0	49.0
Yellow Time (s)		3.0	3.0		5.0	5.0
All-Red Time (s)		3.0	3.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		98.0	98.0		49.0	49.0
Actuated g/C Ratio		0.61	0.61		0.31	0.31
v/c Ratio		0.54	1.03		0.31	1.09
Control Delay		19.1	59.0		43.6	116.5
Queue Delay		0.0	27.2		0.0	0.0
Total Delay		19.1	86.3		43.6	116.5
LOS		B	F		D	F
Approach Delay		19.1	86.3		88.8	
Approach LOS		B	F		F	
Queue Length 50th (m)		113.6	~430.8		43.5	~199.6
Queue Length 95th (m)		132.5	#469.8		57.7	#276.2
Internal Link Dist (m)		138.3	284.5		333.0	
Turn Bay Length (m)					210.0	120.0
Base Capacity (vph)		2149	2213		1050	493
Starvation Cap Reductn		0	218		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.54	1.15		0.31	1.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 140			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 68.7		Intersection LOS: E	
Intersection Capacity Utilization 107.2%		ICU Level of Service G	
Analysis Period (min) 15			

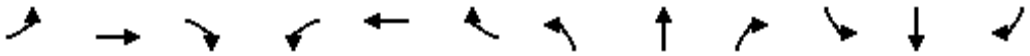
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Derry Road & 407 SB Off-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	92	129	155	92	186	55	1280	112	75	947	87
Future Volume (vph)	228	92	129	155	92	186	55	1280	112	75	947	87
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.0	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.912			0.900			0.988			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1699	0	1412	1676	0	1617	3433	0	1649	3486	0
Flt Permitted	0.213			0.471			0.150			0.085		
Satd. Flow (perm)	342	1699	0	700	1676	0	255	3433	0	148	3486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65			91			12			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		140.5			218.3			843.0			487.0	
Travel Time (s)		10.1			15.7			43.4			25.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	9%	0%	1%	2%
Adj. Flow (vph)	248	100	140	168	100	202	60	1391	122	82	1029	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	248	240	0	168	302	0	60	1513	0	82	1124	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.0			3.0	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.12	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	9.5	24.5		9.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	14.0	27.4		11.4	24.8		9.6	51.6		9.6	51.6	
Total Split (%)	14.0%	27.4%		11.4%	24.8%		9.6%	51.6%		9.6%	51.6%	
Maximum Green (s)	11.0	20.9		8.4	18.3		6.6	44.6		6.6	44.6	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-2.0	-1.5		-2.0	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	1.0	5.0		1.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		8.0			7.0			8.0			8.0	
Flash Dont Walk (s)		8.0			11.0			10.0			10.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	35.4	20.0		31.8	17.3		57.5	46.9		57.6	47.0	
Actuated g/C Ratio	0.37	0.21		0.33	0.18		0.60	0.49		0.60	0.49	
v/c Ratio	0.86	0.59		0.54	0.80		0.22	0.90		0.37	0.66	
Control Delay	53.3	31.5		29.8	43.2		10.1	32.0		13.8	21.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.3	31.5		29.8	43.2		10.1	32.0		13.8	21.4	
LOS	D	C		C	D		B	C		B	C	
Approach Delay		42.6			38.4			31.1			20.9	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	37.0	31.4		23.8	41.0		4.7	148.6		6.5	90.8	
Queue Length 95th (m)	#76.3	57.0		40.9	#79.9		9.9	#202.7		13.9	115.1	
Internal Link Dist (m)		116.5			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	288	449		310	420		276	1687		224	1715	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.86	0.53		0.54	0.72		0.22	0.90		0.37	0.66	

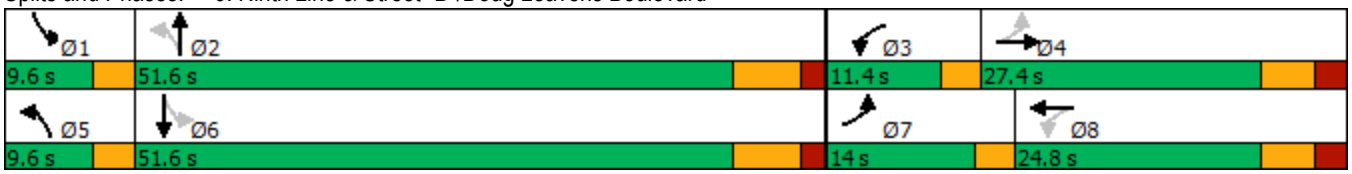
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 95.8			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 30.2		Intersection LOS: C	

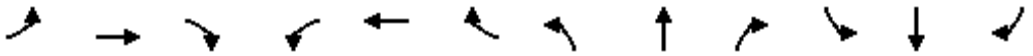
Intersection Capacity Utilization 89.1% ICU Level of Service E

Analysis Period (min) 15

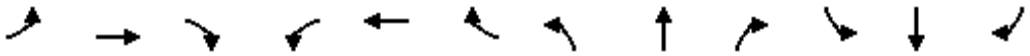
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	30	76	119	35	67	122	1115	148	134	1562	198
Future Volume (vph)	132	30	76	119	35	67	122	1115	148	134	1562	198
Ideal Flow (vphpl)	1640	1900	1900	1640	1900	1900	1860	1900	1900	1860	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.0	3.6	3.3	3.6	3.5	3.2	3.0	3.5	3.6
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		25.0	120.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			45.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Frt		0.892			0.901			0.982			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	1662	0	1454	1700	0	1732	3465	0	1649	3471	0
Flt Permitted	0.689			0.681			0.069			0.139		
Satd. Flow (perm)	1108	1662	0	1042	1700	0	126	3465	0	241	3471	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79			70			23			24	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		111.4			218.3			843.0			487.0	
Travel Time (s)		8.0			15.7			43.4			25.0	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Adj. Flow (vph)	138	31	79	124	36	70	127	1161	154	140	1627	206
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	110	0	124	106	0	127	1315	0	140	1833	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
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											Yes	
Headway Factor	1.21	1.00	1.00	1.31	1.00	1.04	1.03	1.01	1.06	1.12	1.01	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		7.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		-3.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		10.0	0.6		2.0	0.6		2.0	0.6	
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												

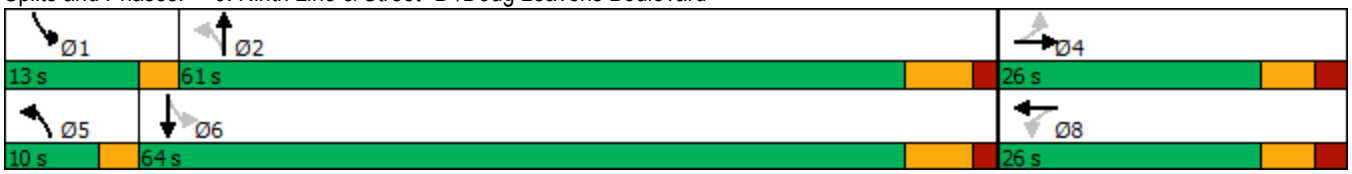


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	5.0		5.0	8.0		5.0	8.0	
Minimum Split (s)	25.5	25.5		24.5	24.5		9.5	26.0		9.5	26.0	
Total Split (s)	26.0	26.0		26.0	26.0		10.0	61.0		13.0	64.0	
Total Split (%)	26.0%	26.0%		26.0%	26.0%		10.0%	61.0%		13.0%	64.0%	
Maximum Green (s)	19.5	19.5		19.5	19.5		7.0	54.0		10.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0		3.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		1.0	5.0		1.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	8.0	8.0		7.0	7.0			8.0			8.0	
Flash Dont Walk (s)	8.0	8.0		11.0	11.0			10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.2	17.2		17.2	17.2		70.8	58.0		72.5	59.1	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.74	0.60		0.75	0.61	
v/c Ratio	0.70	0.30		0.67	0.29		0.53	0.63		0.43	0.85	
Control Delay	55.9	14.7		54.6	16.1		21.6	14.4		7.7	20.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	55.9	14.7		54.6	16.1		21.6	14.4		7.7	20.9	
LOS	E	B		D	B		C	B		A	C	
Approach Delay		37.7			36.8			15.0			19.9	
Approach LOS		D			D			B			B	
Queue Length 50th (m)	25.6	5.1		22.8	6.0		6.4	81.6		6.4	146.9	
Queue Length 95th (m)	46.9	19.9		42.9	20.4		27.0	116.4		12.5	197.4	
Internal Link Dist (m)		87.4			194.3			819.0			463.0	
Turn Bay Length (m)							15.0			120.0		
Base Capacity (vph)	242	425		227	427		243	2101		358	2144	
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	0.57	0.26		0.55	0.25		0.52	0.63		0.39	0.85	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 96.1			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 20.2		Intersection LOS: C	

Intersection Capacity Utilization 83.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Street "B"/Doug Leavens Boulevard



APPENDIX G

Ninth Line Corridor Study (MMM) Excerpts

SHAPING NINTH LINE

Mississauga's Northwestern Gateway

Ninth Line Corridor Study

Transportation Assessment

City of Mississauga

16-13112-001-T01

COMMUNITIES

TRANSPORTATION

BUILDINGS

INFRASTRUCTURE

MMM GROUP

July 2017

7.0 FUTURE BACKGROUND CONDITIONS (BUSINESS AS USUAL)

7.1 Future Background Inputs

The future background (business as usual) volumes were developed based on the combination of general growth and traffic generated by background developments.

7.1.1 General Growth

Existing traffic volumes in Figures 2.3A and 2.3B were grown from the year of the count date to the horizon 2041 based on the compound growth rates provided by the City as shown below.

NORTH/ SOUTH DEMAND

	AM PEAK HOUR		PM PEAK HOUR	
	2011 vs 2041 Without		2011 vs 2041 Without	
Ninth Line	**NB**	**SB**	**NB**	**SB**
-btwn Britannia Rd and Eglinton Ave	1.17%	0.35%	0.49%	0.97%
-btwn Derry Rd and Britannia Rd	1.00%	0.00%	0.00%	1.05%
-btwn 401 and Derry Rd	1.36%	1.13%	0.80%	1.34%
Average	**1.19%**	**0.47%**	**0.46%**	**1.12%**

	2011 vs 2041 Without		2011 vs 2041 Without	
Winston Churchill Blvd	**NB**	**SB**	**NB**	**SB**
-btwn Britannia Rd and Eglinton Ave	1.72%	0.95%	1.19%	1.54%
-btwn Derry Rd and Britannia Rd	1.64%	1.65%	1.88%	1.87%
-btwn 401 and Derry Rd	1.15%	2.76%	3.37%	1.30%
Average	**1.48%**	**1.62%**	**2.02%**	**1.54%**

EAST/ WEST DEMAND

	AM PEAK HOUR		PM PEAK HOUR	
	2011 vs 2041 Without		2011 vs 2041 Without	
	EB	**WB**	**EB**	**WB**
Derry Rd btwn Eight Ln and Tenth Ln	1.94%	2.04%	1.67%	1.45%
Britannia Rd btwn Eight Ln and Tenth Ln	2.71%	2.04%	1.85%	2.39%
Eglinton Ave btwn Eight Ln and Tenth Ln	1.09%	2.08%	1.77%	1.14%
Dundas St btwn just west of 9th Ln to WCB	1.30%	1.69%	1.59%	1.56%
Average	**1.70%**	**1.95%**	**1.71%**	**1.67%**

The above growth rates are based on the City's EMME model projections and are applied on a compound basis. As per discussion with City staff, the growth rates do not assume the widening of Ninth Line within the City of Mississauga (from a two-lane cross-section to a four-lane cross-section). The purpose of this approach is to understand how much background general growth would materialize based on the current configuration of Ninth Line, since the widening of Ninth Line is primarily associated with the development of the Emerging Land Use Scenario under future total conditions. Documentation of this discussion is provided in **Appendix I**.

In addition to the City's growth rates, a 2% per annum growth rate has also been applied to the freeway off-ramp approaches at the following MTO off-ramps, as per MTO's input in Appendix I.

- Highway 401 WB/ Winston Churchill Blvd.;
- Highway 401 EB/ Winston Churchill Blvd.;
- Highway 403 WB/ Winston Churchill Blvd.;
- Highway 403 EB/ Winston Churchill Blvd.;
- Highway 403 NB/ Dundas St.; and
- Highway 403 SB/ Dundas St.

The weekday a.m. and p.m. peak hour general traffic volume growths are presented in **Figures 7.1A** and **7.1B**.

7.1.2 Background Developments

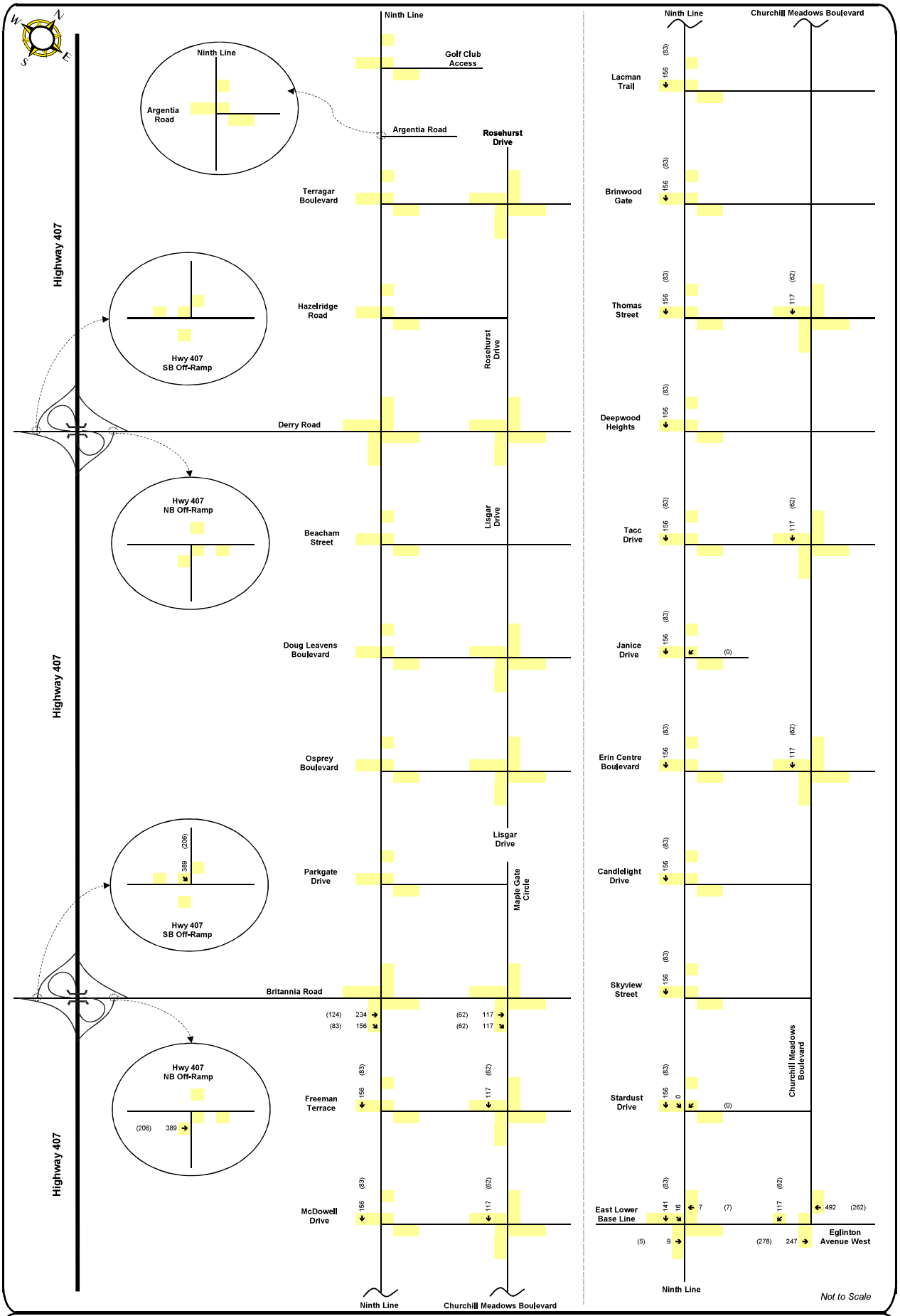
Based on discussion with City staff, the following background developments need to be considered in the future background conditions:

- Erin Mills Development – Northeast quadrant of Highway 403/407: This development comprises approximately 112,630 sq.m. of industrial park, 6,762 sq.m. of retail, and 8,074 sq.m. of office use. City staff provided a Traffic Impact Study, dated February 2014, completed by AECOM to provide context for this Ninth Line study. The site-generated traffic information was extracted and are provided in **Appendix H**. The traffic study only provides high-level site-traffic assignment information and MMM was instructed by City staff to interpret the results and incorporate the results into the future background conditions of this Ninth Line Study. The resulting site-generated traffic volumes for the Erin Mills development are shown in **Figures 7.2A** and **7.2B**.

- ProLogis Industrial Development – 10th Line at Argentia Road: This development comprises approximately 180,507 sq.m. of warehouse land use. City staff informed MMM that this background development has been incorporated in the City's EMME model and thus the growth volumes shown in Figures 7.1A and 7.1B already includes the site-generated volumes of the ProLogis development, therefore, no further forecasting was required.

7.1.3 407 Transitway Initiative

In 2008, Metrolinx's Board of Directors adopted the "Big Move", a plan that outlines a vision for a new regional transportation system, including the 407 Transitway. The Transitway is to be a separate right-of-way, located parallel to Highway 407 and includes running way, stations, platforms, parking, passenger pick-up and drop-off facilities. The Transitway will initially be implemented as bus rapid transit, with an opportunity to convert to light rail transit in the future.



LEGEND

XX AM Peak Hour Volumes
(XX) PM Peak Hour Volumes

MMM GROUP

FIGURE 7.2A

Background Development Traffic Volumes-
Primary Study Area

Based on the 1998 Transitway Corridor Protection Study by MRC for the Ministry of Transportation Ontario (MTO), an earlier iteration of the 407 Transitway initiative consisted of three Transitway stations within the Ninth Line lands study area at Britannia Road, Derry Road and the CPR Galt station north of Derry Road. The subsequent 407 Transitway Assessment by AMEC in 2016 determined the need for only two stations within the study limits, based on comments and direction from MTO at the time of the study. The details of the two stations were not established at the time and will be determined through future Environmental Assessments (EA) in the future.

At the time of this study, Ministry of Transportation – Ontario (MTO) is in the process of initiating an EA of the 407 Transitway initiative. As a result, detailed information regarding the Transitway facilities within the Ninth Line study area is not yet available. It was confirmed with City staff that the information of the two Transitway stations at Britannia Road and Derry Road from the 1998 MRC study would be applicable for the purpose of this study. The details of the two Transitway stations based on the MRC study are provided in **Table 7.1**.

TABLE 7.1
TRANSITWAY STATION INFORMATION

Station	Interim Capacity (Spaces)	Ultimate Capacity (Spaces)
Britannia	640	640
Derry	2,160	3,360
Total	**2,800**	**4,000**

Through discussion with City staff, the ultimate parking supply shown in Table 7.1 for the Britannia and Derry Stations have been assumed to be built-out as part of the future background conditions. This provides a very conservative approach for the purpose of this assessment. It should be noted that the build-out of both stations at ultimate capacity has been assumed in both the future background and the future total conditions so as to provide an “Apples to Apples” comparison.

There are two aspects of the 407 Transitway Stations to consider for this study:

1) Auto trip generation of patrons driving to and from the stations: Based on discussion with City staff and transit experts, the following methodology has been used to forecast the trip generation associated with the 407 Transitway Stations.

   - Assume that 85% of the ultimate parking capacity is utilized during the peak periods. This would be equivalent to 0.85 auto trips per parking space.

   - Assume uniform arrival and departure rates at the stations during the morning (5:30 a.m. to 9:30 a.m.) and afternoon (3:00 p.m. to 7:00 p.m.) peak periods.

This means that the 0.85 auto trips per parking space is occupied at a rate of 0.2125 spaces per hour, or 0.2125 auto trips per hour per parking space.

- The rationale for the chosen morning and afternoon peak periods is that the majority of the trips on transit during the peak hours are work-related. Based on MMM's experience, the commuter parking lots of various transit facilities (i.e., GO Train stations) are typically near capacity well before the actual roadway morning peak hour. This is expected since those taking transit will need to account for the additional time required on transit to get to work. Similarly, commuters leaving a transit parking lot know that they can avoid the afternoon peak hour traffic congestion if they leave earlier or later. Therefore, the use of a uniform arrival and departure rate is an adequate representation of the trip generation behaviour at the future Transitway stations.

- The distribution of the 0.2125 auto trips per hour at the Transitway stations is based on information contained in the Traffic Impact Study for the Toronto Transit Commission (Proposed 650-stall Commuter Parking Lot at Downsview Subway Station – now referred to as Sheppard West Station), dated October 2002. There are many similar characteristics between the proposed parking facilities between the subway and the higher order 407 Transitway stations. For example, many of the motorists who could use this parking lot are already driving past this site on the adjacent roadways and share similar arrival and departure patterns for work-home purposes. In this study, the inbound and outbound distributions during the AM and PM peak hours were determined through parking surveys at the TTC Wilson Subway Station parking lots. The survey indicated that during the AM peak periods, all of the trips generated at the parking lot were inbound. During the PM peak periods, 90% of the trips were outbound and 10% of the trips were inbound. Based on the similarity in parking lot purposes, it was confirmed with City staff that these in/out distributions have been applied for the trips related to the 407 Transitway station parking facilities.

- Based on an arrival and departure rate of 0.2125 trips per hour per parking space, **the two Transitway stations with an ultimate parking capacity of 4,000 spaces would generate 850 inbound vehicle trips during the morning peak hour, and 85 inbound plus 765 outbound vehicle trips during the afternoon peak hour**.

- Based on the Emerging Land Use Concept and the location of the two Transitway stations, two driveways have been assumed for each station as shown in **Figure 7.5A**. It should be noted that these driveways are preliminary locations chosen for the purpose of this study. The location of the final driveways will be pending further studies as part of the Transitway evaluation.

- The Transitway trips were assigned based on the combined consideration of the distribution information extracted from the City's EMME model for the 2041 horizon year for both the AM and PM peak periods, as well as assumptions made on the forecast demographics of rider. For instance, the majority of riders were assumed to enter the study area via the easterly and westerly gateways of Derry Road and Britannia Road, the northerly and southerly gateways of Ninth Line, the residential uses on the east side of Ninth Line. The rationale is that the Transitway stations would attract riders from residential uses within a manageable distance of the stations. For example, people living in Mississauga but who are located closer to Oakville would not likely access the Derry or Britannia Transitway stations because there would likely be another Transitway station that is closer and more convenient.

- The resulting Transitway-related trip generation and assignment are shown in **Figures 7.3A** and **7.3B**.

The documentation of the confirmation on the above methodology from City Staff is provided in **Appendix I**.

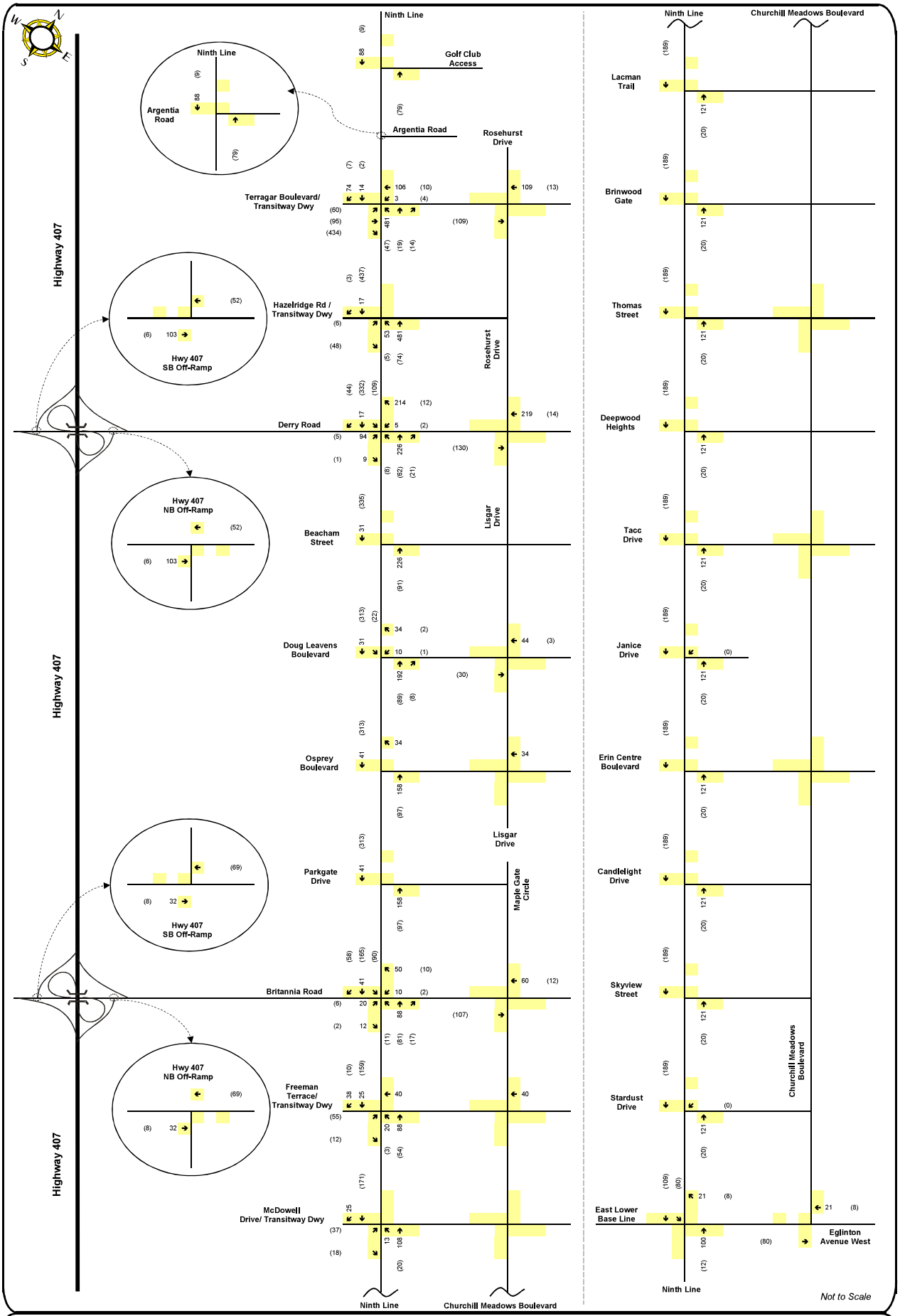
2) Influence on non-auto modal split of the land uses in the vicinity of the stations. The non-auto modal split impacts of the two 407 Transitway stations will be discussed further in **Section 8.2** as part of the trip generation of the Emerging Land Use Concept. It should be noted that a conservative approach has been adopted where the future background non-auto modal splits have been assumed to remain the same as existing splits despite the implementation of the 407 Transitway initiative.

7.2 Future Background Volumes

The 2041 future background volumes were derived by superimposing Figures 7.1A-B, Figures 7.2A-B, and Figures 7.3A-B onto the existing volumes in Figures 2.3A-B. The resulting weekday a.m. and p.m. future background volumes are shown in **Figures 7.4A** and **7.4B**.

7.3 Future Background Improvements

There are two types of future background improvements that were incorporated in the evaluation of the business as usual conditions. The first type are those that are planned and incorporated in the City's EMME model as shown in **Appendix J**. For the second type, City staff asked MMM to identify improvements that are not planned but required to support the future background traffic volumes. Both of these types of improvements are documented below and illustrated in **Figures 7.5A** and **7.5B**.



LEGEND

XX AM Peak Hour Volumes
(XX) PM Peak Hour Volumes

FIGURE 7.3A

407 Transitway Traffic Volumes-
Primary Study Area

MMM GROUP

Use has at the intersection. Further discussion of the future evaluation of this off-ramp intersection are provided in Section 9.0; and

- MTO has indicated that the intersection of Highway 401 Westbound off-ramp at Winston Churchill Boulevard is proposed to be improved in the future. Specifically, the intersection is proposed to be converted from a 3-legged intersection to a 4-legged intersection, with the new leg connecting to a new carpool lot. Upon consultation with City staff, the approach this study takes is to continue evaluating the future forecast volumes based on the current configuration of the off-ramp intersection. Since this intersection is a secondary study intersection, the focus will be on the incremental impact the Emerging Land Use has at the intersection. Further discussion of the future evaluation of this off-ramp intersection are provided in Section 9.0.

7.3.2 Additional Required Improvements

The following additional improvements have been identified by MMM to be required in order to accommodate the future background traffic volumes.

Road Widening:

- Widening of Derry Road from 4 lanes to 6 lanes from the City's westmost limit east to Winston Churchill Boulevard. This improvement is critical because the EMME model has forecast high-levels of growth on Derry Road as a result of the widening of this road within Halton Region (from 2 lanes in each direction to 3 lanes). Without this widening, traffic volumes bottleneck in the vicinity of Ninth Line creating significantly over-capacity movements at the intersections of Derry Road/Ninth Line, and Derry Road/ Rosehurst Drive/Lisgar Drive. This is further detailed in Section 7.4.

- Widening of Britannia Road from 4 lanes to 6 lanes from the City's westmost limit east to Winston Churchill Boulevard. This improvement is critical because the EMME model has forecast high-levels of growth on Britannia Road as a result of the widening of this road within Halton Region (from 1 lane in each direction to 3 lanes). Without this widening, traffic volumes bottleneck in the vicinity of Ninth Line creating significantly over-capacity movements at the intersections of Britannia Road/Ninth Line, and Britannia Road/Maple Gate Circle/Churchill Meadows Boulevard. This is further detailed in Section 7.4.

The above recommendations to Regional roads were based on findings in Section 7.4 that showed the future forecasted traffic volumes would exceed the current capacity without these additional widenings. Regional staff noted that the Region of Peel takes a more strategic and holistic approach to addressing Regional road improvements such as road widening issues, and this is articulated in the Long Range Transportation Plan (LRTP). This approach includes exploring if the Ninth

8.0 EMERGING LAND USE CONCEPT TRIP GENERATION

8.1 Land Uses

The site statistics associated with the Emerging Land Use Concept, dated September 18 2016, are provided in **Appendix N**. MMM was advised by the project team to use a population and employment forecast based on a density of a minimum 80 persons plus jobs/hectare for the purpose of this Transportation Assessment. This density is based on the most recent Provincial review of the Growth Plan and represents the planned direction for new Greenfield communities such as the Ninth Line lands. Therefore, the Ninth Line Lands have been subdivided into seven zones, as shown in **Figure 8.1**. **Table 8.1** summarizes the land uses within each zone.

Table 8.1
Emerging Land Use Concept Land Uses

Zone	Residential (units)	Commercial Retail (sq.ft. GFA)	General Office (sq.ft. GFA)	General Light Industrial (sq.ft. GFA)	Transitway Station (spaces)
1	470	--	--	–	–
2	92	--	--	--	–
3	103	--	--	–	–
4	43	1,625	--	–	640
5	1,739	26,673	--	–	–
6	1,096	7,169	--	–	3360
7A (southerly area)	--	--	3,638	26,921	--
7B (northerly area)	--	--	36,371	269,270	--
Total	**3,543**	**35,467**	**40,009**	**296,191**	**4,000**

8.2 Non-Auto Modal Splits

The existing non-auto modal splits for the study area (zones 3615-3617, 3809, 3637-3638, 3810-3811, 3634-3636, 3812, and 4024) for home-work trips were determined from the 2011 Transportation Tomorrow Survey (TTS). The non-auto modal split includes the percentages of public transit, cycling and walking during the weekday morning (7:00 to 9:00 a.m.) and afternoon (4:00 to 6:00 p.m.) peak periods. The existing modal split information is presented in **Table 8.2**.

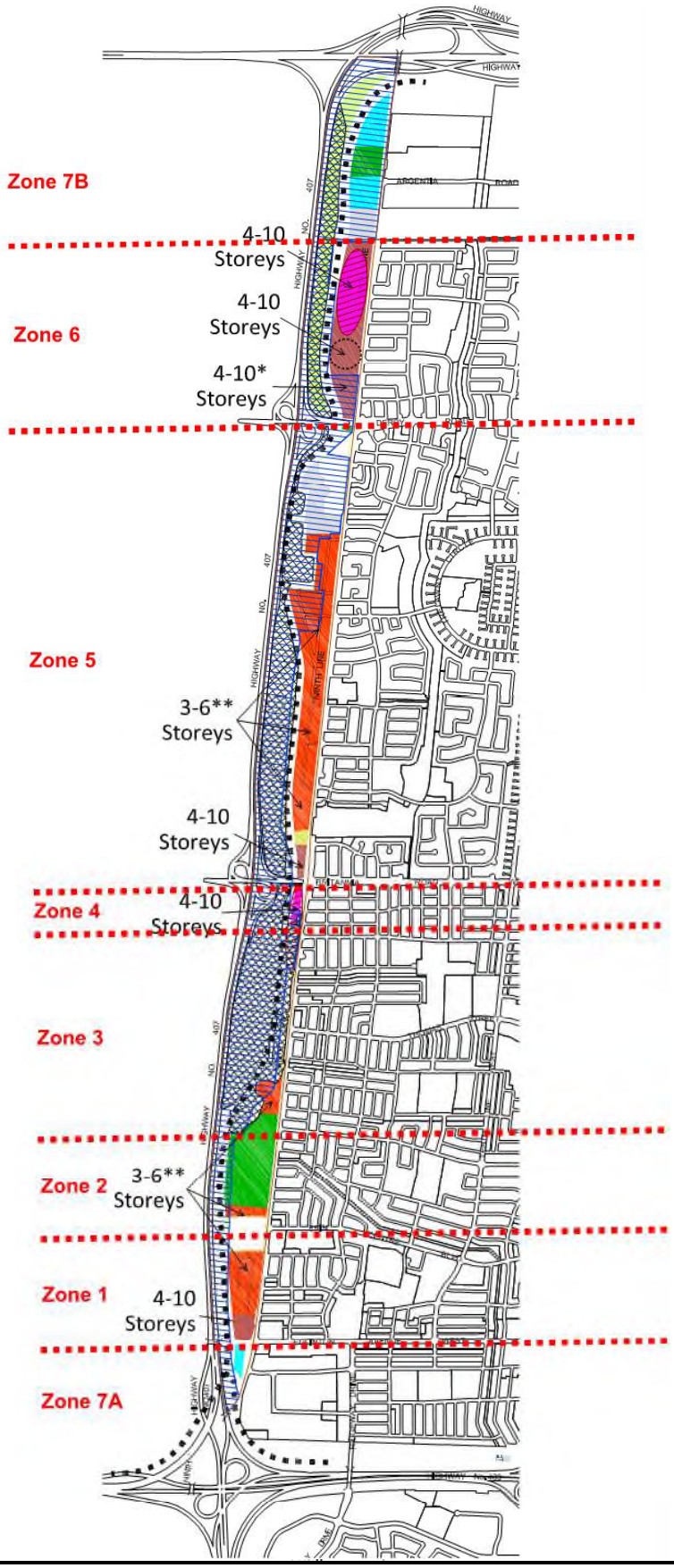
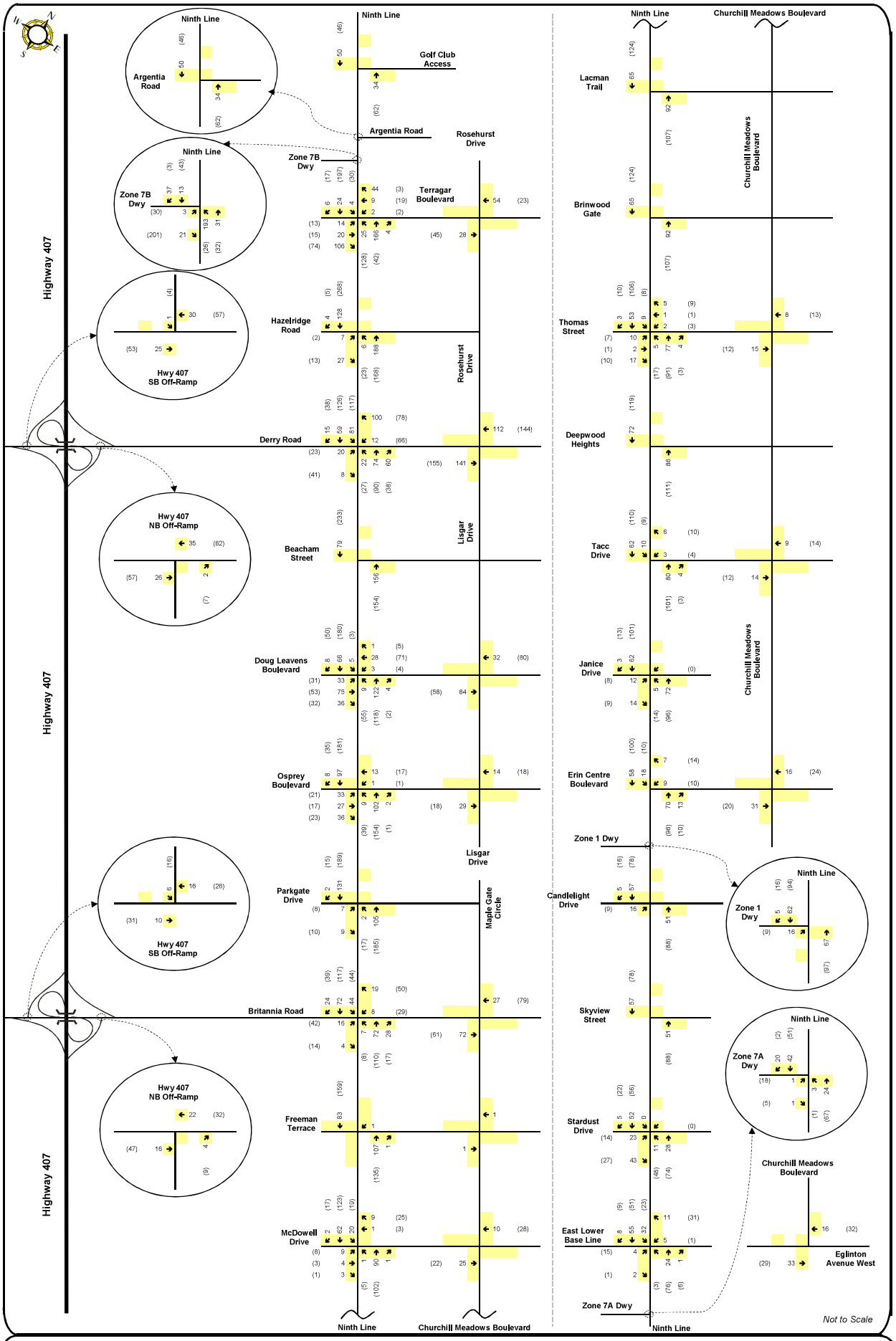


FIGURE 8.1

Ninth Line Land Use Concept
Study Zones

MMM GROUP



LEGEND

XX AM Peak Hour Volumes
(XX) PM Peak Hour Volumes

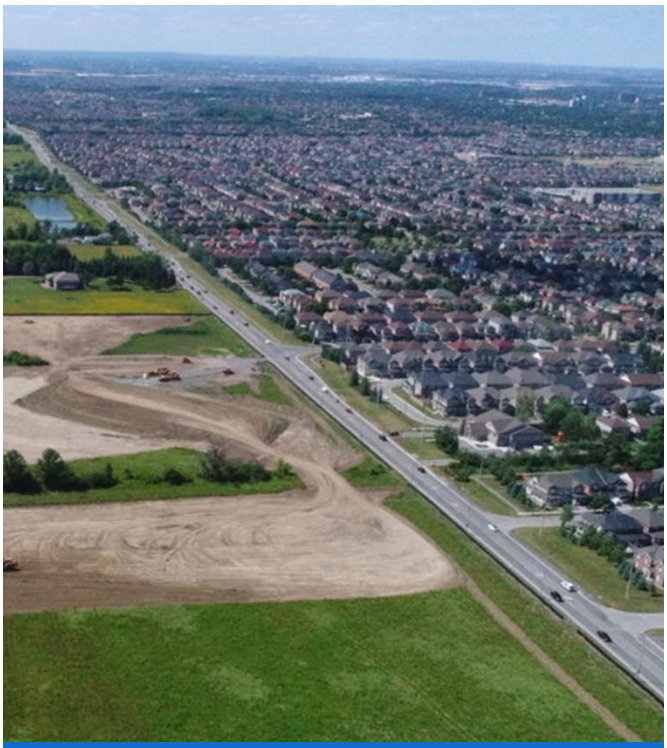
MMM GROUP

FIGURE 8.2A

Emerging Land Use-Generated Volumes
(5% Non-Auto Transitway Scenario)
Primary Study Area

APPENDIX H

Ninth Line Environmental Assessment Excerpts



Traffic Analysis Report – Phase 3

Schedule ‘C’ Class Environmental Assessment for Ninth Line from Eglinton Avenue West to Derry Road West

City of Mississauga

June 15, 2021

4.5 Preferred Alternative

Based on the traffic analysis results, physical constraints, and comments from both the City of Mississauga and Region of Peel, the preferred alternative is **Scenario 3 – Ultimate Improvements**. Lane configurations for the 2041 horizon for intersections analyzed as part of the Ninth Line EA are shown in **Table 4-7**. It is noted lane configurations and approaches for proposed developments are excluded as they are currently not approved.

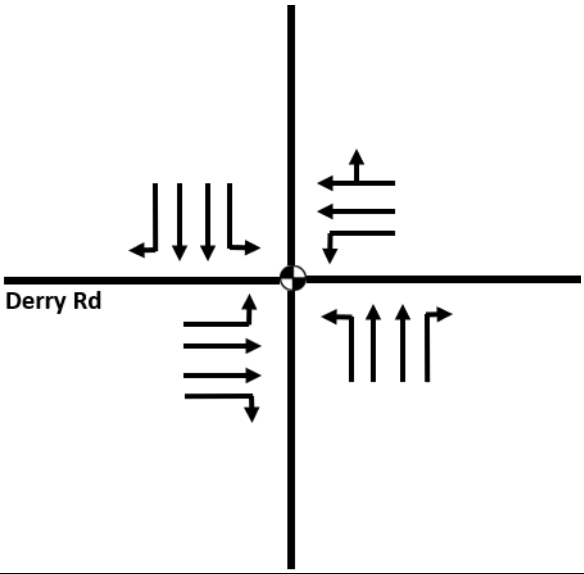
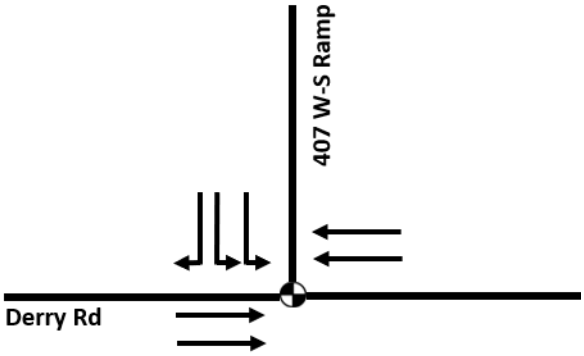
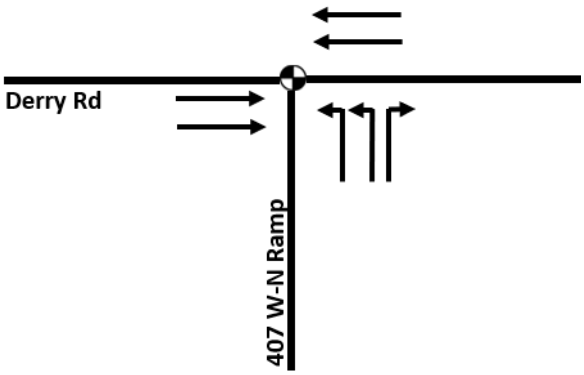
The queues for the preferred alternative are presented in **Table 4-5**. Critical locations along Ninth Line for the northbound and southbound directions where 95th percentile queues will exceed future storage provided are highlighted in red in the table. It is noted the preliminary design primarily addresses changes along Ninth Line only. Full intersection improvements including side streets intersecting Ninth Line will be confirmed during detailed design in coordination with the City of Mississauga. As a result, the eastbound and westbound queues on side streets were compared to existing storage lengths and length issues are highlighted in grey in the table. It is also noted 36 metres have been protected for the northbound left storage lane at the Skyview Street intersection; however, the length is subject to change since it is under development application.

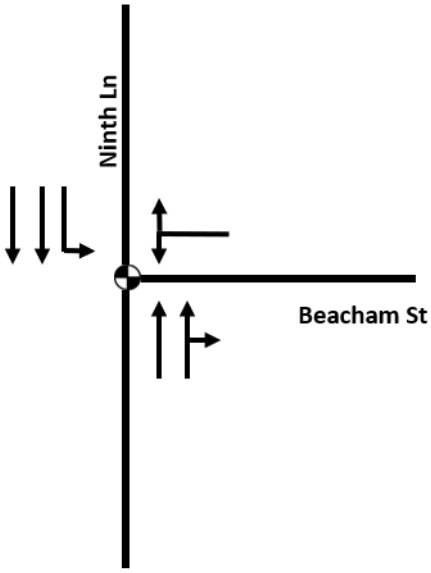
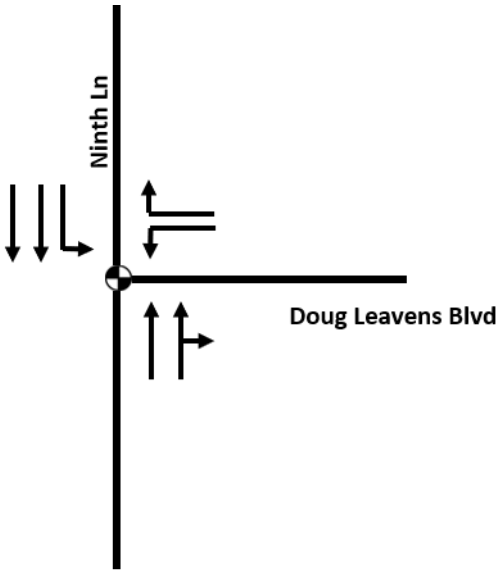
There is generally sufficient storage along the corridor, although there are localized congestion points that experience queuing issues during peak hours. The critical locations are summarized below:

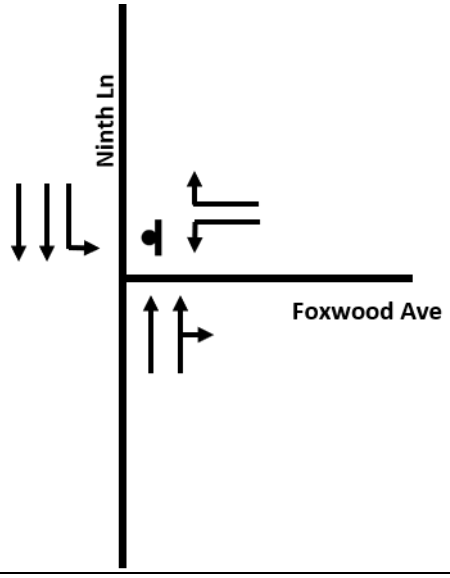
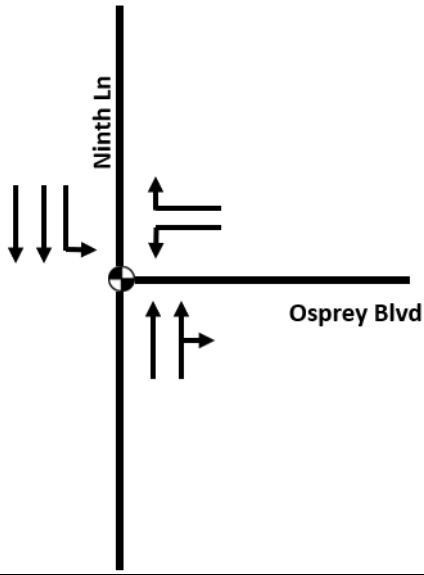
- Ninth Line at Skyview Street / Skyview Access
    - the southbound left queue during the AM peak hour is 41m while the protected storage length is 36m.
- Ninth Line at Eglinton Avenue
    - the southbound left queue during the AM and PM peak hours are 108m and 130m, respectively, while the storage is 90m

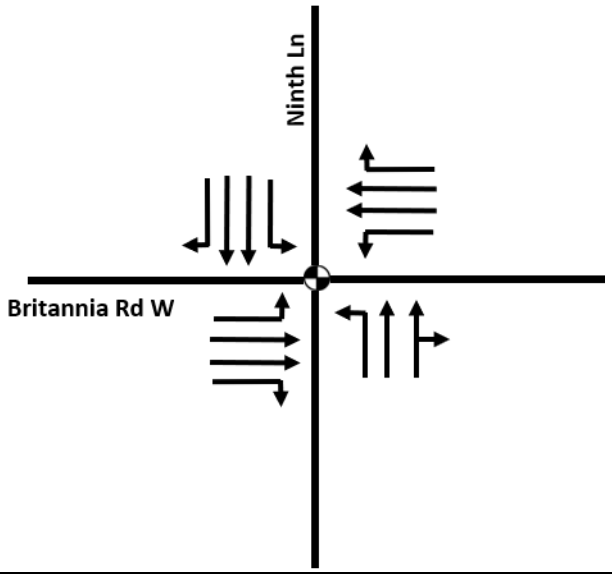
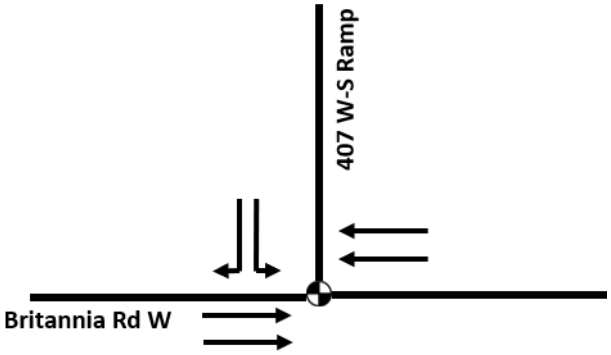
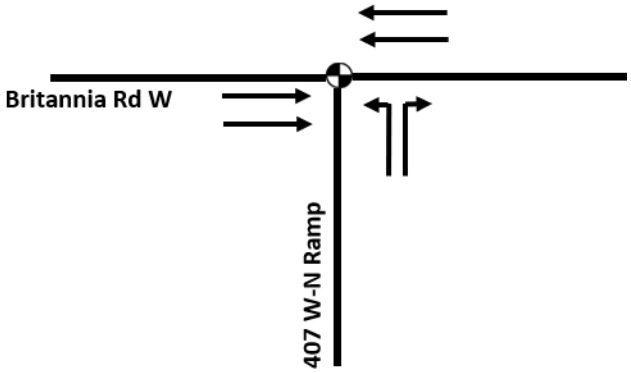
The storage lengths at these locations should be monitored to ensure adequate storage to accommodate queueing.

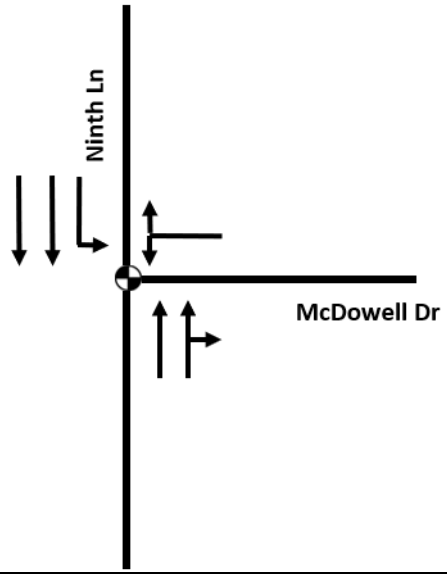
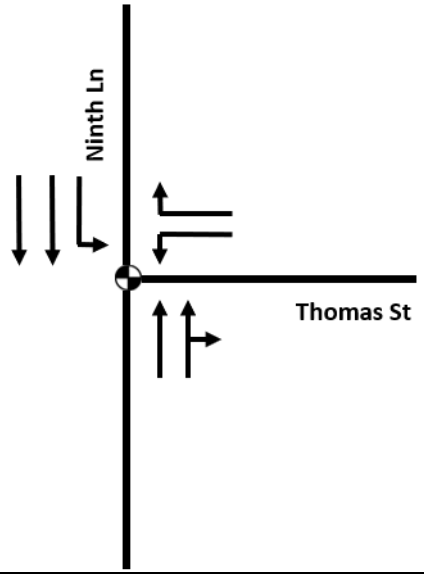
Table 4-7. Preferred Alternative Lane Configuration Schematics

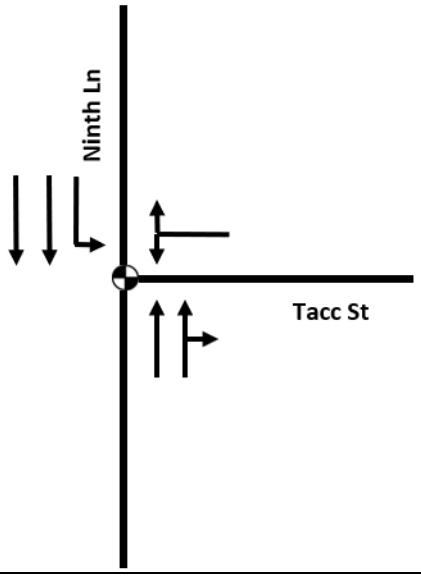
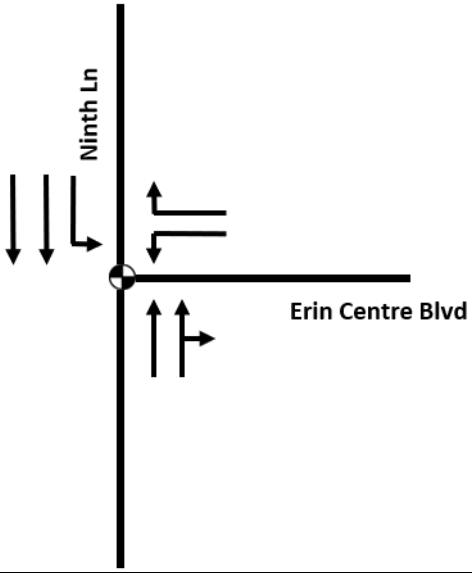
Intersection	Lane Configuration Schematic
Derry Road	
Highway 407 Southbound Off-Ramp / Derry Road	
Highway 407 Northbound Off-Ramp / Derry Road	

Intersection	Lane Configuration Schematic
Beacham Street	
Doug Leavens Boulevard	

Intersection	Lane Configuration Schematic
Foxwood Avenue	
Osprey Boulevard	

Intersection	Lane Configuration Schematic
Britannia Road	
Highway 407 Southbound Off-Ramp / Britannia Road	
Highway 407 Northbound Off-Ramp / Britannia Road	

Intersection	Lane Configuration Schematic
McDowell Drive	
Thomas Street	

Intersection	Lane Configuration Schematic
Tacc Drive	
Erin Centre Boulevard	

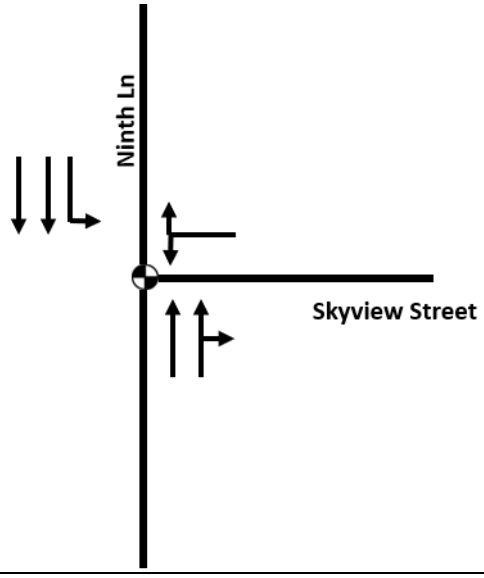
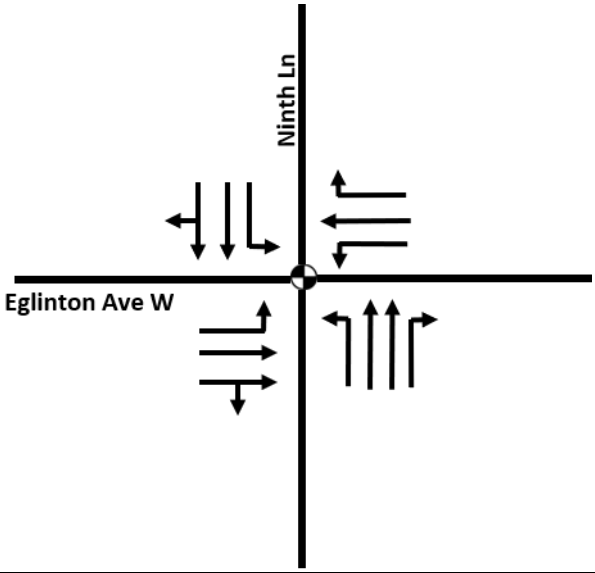
Intersection	Lane Configuration Schematic
Skyview Street / Skyview Access	
Eglinton Avenue	

Table 4-8. 2041 AM and PM Peak Hour 95th Percentile Queues

2041 AM Peak Hour - Preferred Alternative

Intersection	95th Percentile Queues															
	EBL		EBR		WBL		WBR		NBL		NBR		SBL		SBR	
	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue
Derry Road	75	110.3	45	34.5	80	51.1	-	0	155	154.4	41	40.2	20	13	76	29.9
Beacham Street	-	-	-	-	-	35	-	-	-	-	-	-	45	14.9	-	-
Street B North	-	-	-	-	-	-	-	-	15	0.1	-	-	-	-	-	-
Doug Leavens Boulevard / Street F	-	32.3	-	-	25	22.4	-	-	20	1.6	-	-	41	23.7	-	-
Street C	-	-	-	-	-	-	-	-	15	0.3	-	-	-	-	-	-
Foxwood Avenue / Street B South	15	4	-	-	15	5.6	-	-	15	0.4	-	-	15	0.05	-	-
Osprey Boulevard / Street A	-	17.3	-	-	10	42.5	-	-	15	3.4	-	-	35	7	-	-
Britannia Road	80	61.3	60	69.8	70	40.7	70	4	189	160.8	-	0	25	18.1	67	20.2
McDowell Drive	-	-	-	-	-	23.7	-	0	-	-	-	-	15	0.9	-	-
Thomas Street	-	-	-	-	-	37.3	-	12.1	-	-	-	-	83	17.3	-	-
Tacc Drive	-	-	-	-	-	24	-	-	-	-	-	-	40	12.2	-	-
Erin Centre Boulevard	-	-	-	-	-	26.7	-	8.4	-	-	-	-	22	8.5	-	-
Site Access	-	-	-	-	-	-	-	-	15	0.6	-	-	-	-	-	-
Skyview Street / Skyview Access	-	21.3	-	-	-	2.4	-	-	36	40.8	-	-	15	0.1	-	-
Eglinton Avenue	20	16.1	-	-	35	28	-	16.9	33	16.5	35	23	90	107.5	-	-
407 Northbound Off-ramp at Derry Road	-	-	-	-	-	-	-	-	-	10.8	-	75.8	-	-	-	-
407 Southbound Off-ramp at Derry Road	-	-	-	-	-	-	-	-	-	-	-	-	-	13.3	-	11.8
407 Northbound Off-ramp at Britannia Road	-	-	-	-	-	-	-	-	-	27.3	-	65.6	-	-	-	-
407 Southbound Off-ramp at Britannia Road	-	-	-	-	-	-	-	-	-	-	-	-	-	31.4	-	12.8

2041 PM Peak Hour - Preferred Alternative

Intersection	95th Percentile Queues															
	EBL		EBR		WBL		WBR		NBL		NBR		SBL		SBR	
	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue	Storage	95th Queue
Derry Road	75	164.7	45	39.2	80	30.1	-	0	155	117.1	41	18.9	20	19.7	76	75.9
Beacham Street	-	-	-	-	-	36.3	-	-	-	-	-	-	45	4.9	-	-
Street B North	-	-	-	-	-	-	-	-	15	0.4	-	-	-	-	-	-
Doug Leavens Boulevard / Street F	-	18.3	-	-	25	31.3	-	-	20	12.2	-	-	41	40.6	-	-
Street C	-	-	-	-	-	-	-	-	15	1.2	-	-	-	-	-	-
Foxwood Avenue / Street B South	15	3.6	-	-	15	0.5	-	-	15	0	-	-	15	0	-	-
Osprey Boulevard / Street A	-	13.9	-	-	10	70.9	-	-	15	13	-	-	35	12.3	-	-
Britannia Road	80	146.5	60	33.8	70	26.2	70	4.1	189	188.9	-	-	25	24.9	100	96.2
McDowell Drive	-	-	-	-	-	34.3	-	-	-	-	-	-	15	0.9	-	-
Thomas Street	-	-	-	-	-	66	-	51.4	-	-	-	-	83	82.8	-	-
Tacc Drive	-	-	-	-	-	33.5	-	-	-	-	-	-	40	38.5	-	-
Erin Centre Boulevard	-	-	-	-	-	26.8	-	12.1	-	-	-	-	22	21.8	-	-
Site Access	-	-	-	-	-	-	-	-	15	1.7	-	-	-	-	-	-
Skyview Street / Skyview Access	-	18.4	-	-	-	2.5	-	-	36	27.2	-	-	15	2.7	-	-
Eglinton Avenue	20	41.7	-	-	35	42.4	-	100	33	32.6	35	33.1	90	130	-	-
407 Northbound Off-ramp at Derry Road	-	-	-	-	-	-	-	-	-	12.7	-	182.3	-	-	-	-
407 Southbound Off-ramp at Derry Road	-	-	-	-	-	-	-	-	-	-	-	-	-	59.6	-	79.3
407 Northbound Off-ramp at Britannia Road	-	-	-	-	-	-	-	-	-	76.8	-	26.6	-	-	-	-
407 Southbound Off-ramp at Britannia Road	-	-	-	-	-	-	-	-	-	-	-	-	-	60.1	-	83.7

LEGEND

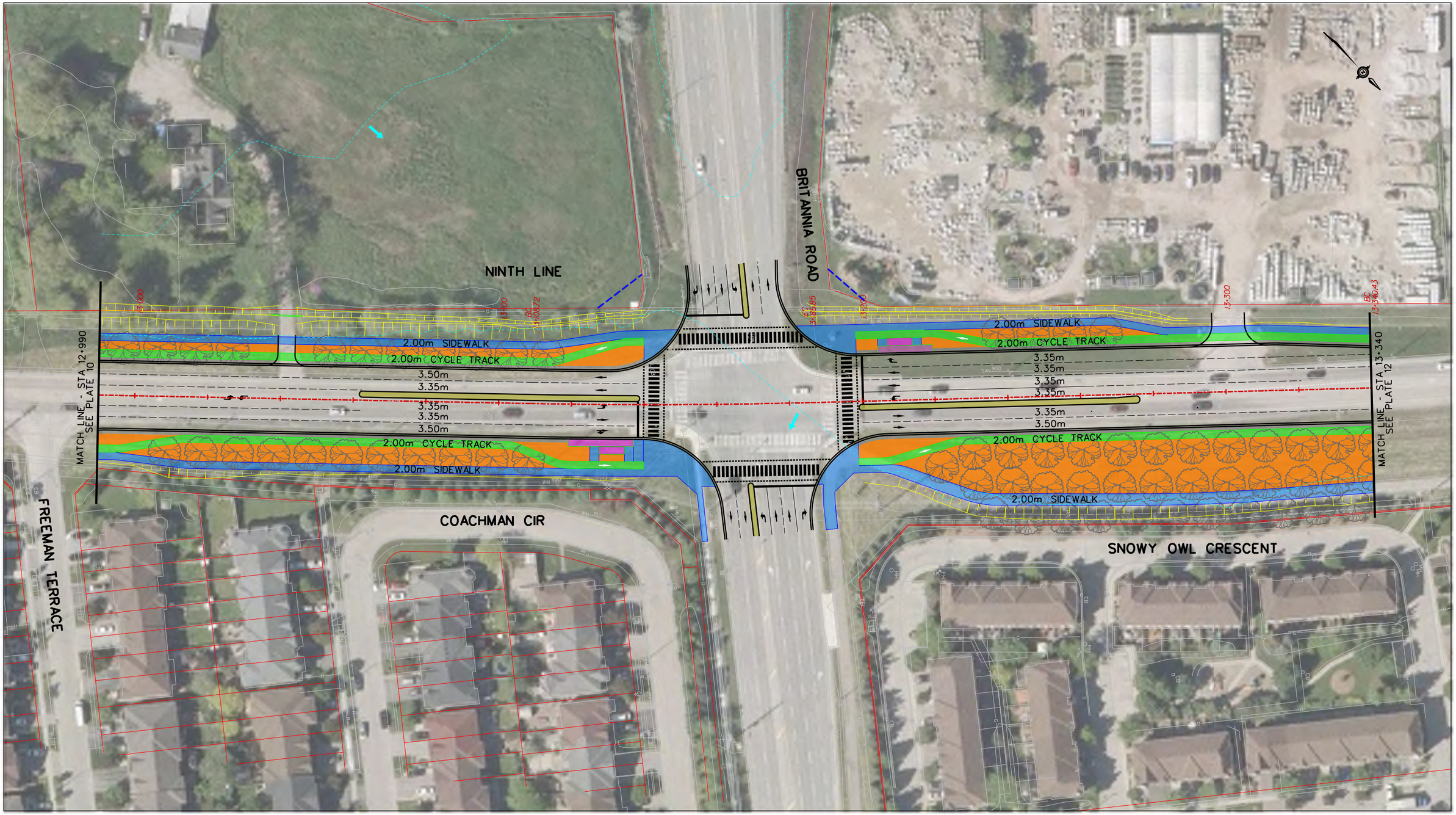
95th percentile queues along Ninth Line exceed proposed storage

95th percentile queues exceed existing storage. It is noted the design for the Ninth Line EA did not investigate side streets (eastbound and westbound approaches)

New storage lane (either from operation needs or new approach)

Length protected for turning lane that is under development application

Note: Storage lengths include parallel plus partial taper. Storage is measured to the location in the approximate location in the taper where one vehicle can be accomodated within the lane without blocking through traffic.



NOTE: PROPOSED BOULEVARD TREE LOCATIONS AND SPACING ARE CONCEPTUAL AND WILL BE CONFIRMED DURING DETAILED DESIGN

LEGEND

- PROPOSED CENTRELINE
- PROPOSED RIGHT-OF-WAY (ROW)
- PROPOSED SIDEWALK
- PROPOSED CYCLE TRACK
- PROPOSED MULTI-USE PATH (MUP)
- PROPOSED GRADING LIMIT
- PROPOSED GRADING
- PROPOSED CURB
- PROPOSED DAYLIGHTING
- PROPOSED BOULEVARD
- PROPOSED BUS STOPS
- PROPSOED RAISED MEDIAN
- EXISTING CENTRELINE
- EXISTING PROPERTY LINE
- EXISTING WATERCOURSE
- EXISTING REGIONAL FLOODPLAIN SPILL

HDR

MISSISSAUGA

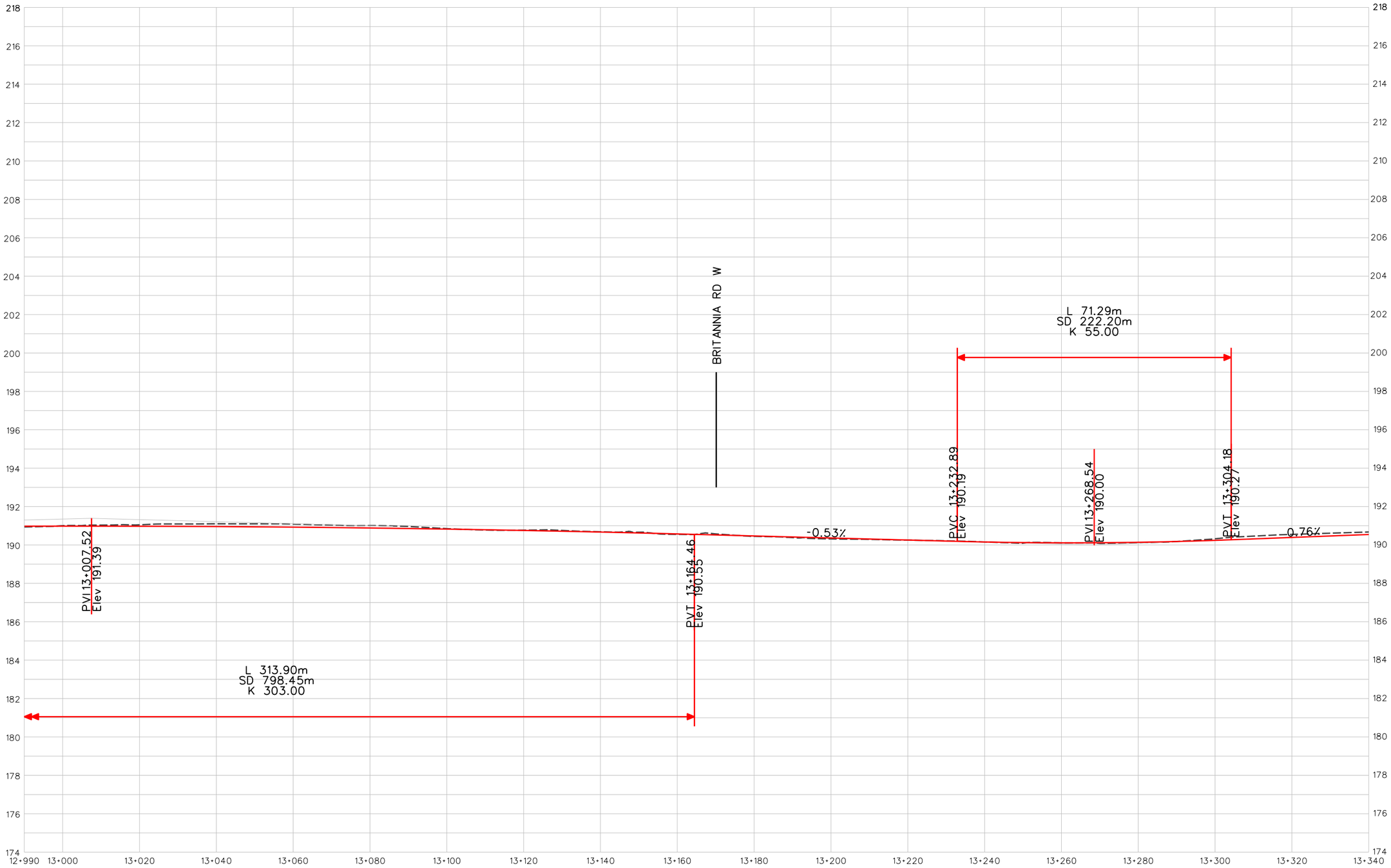
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PLAN

12+990 TO 13+340

PLAN NO.
P-11

SCALE
H 1:1000

DATE
JUNE 2021



LEGEND

PROPOSED PROFILE

EXISTING GROUND

HDR

MISSISSAUGA

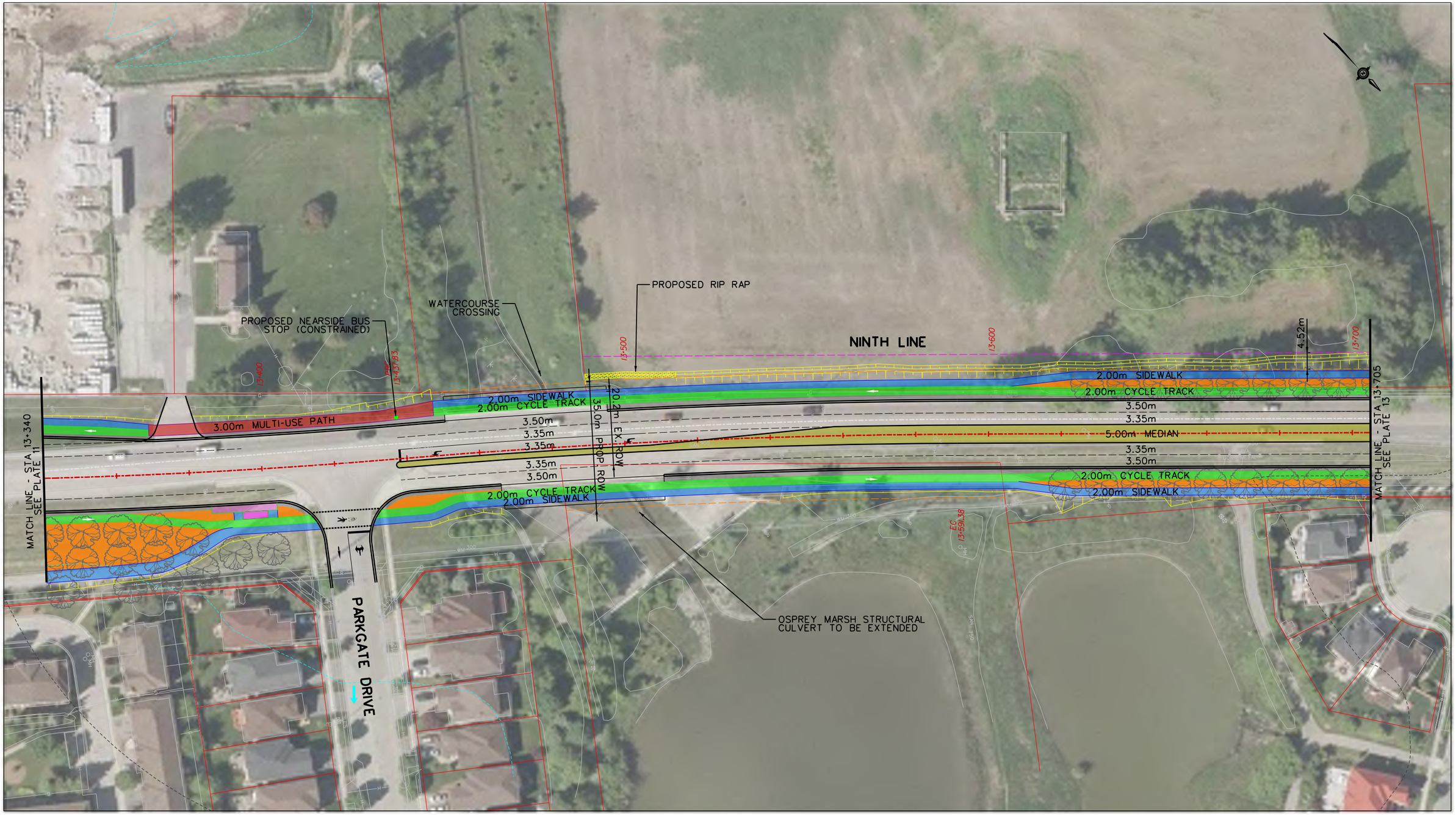
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PROFILE

12+990 TO 13+340

PLAN NO.
PF-11

SCALE
H 1:1000
V 1:100

DATE
JUNE 2021



NOTE: PROPOSED BOULEVARD TREE LOCATIONS AND SPACING ARE CONCEPTUAL AND WILL BE CONFIRMED DURING DETAILED DESIGN

LEGEND

- PROPOSED CENTRELINE
- PROPOSED RIGHT-OF-WAY (ROW)
- PROPOSED SIDEWALK
- PROPOSED CYCLE TRACK
- PROPOSED MULTI-USE PATH (MUP)
- PROPOSED GRADING LIMIT
- PROPOSED GRADING
- PROPOSED CURB
- PROPOSED DAYLIGHTING
- PROPOSED BOULEVARD
- PROPOSED BUS STOPS
- PROPSOED RAISED MEDIAN
- EXISTING CENTRELINE
- EXISTING PROPERTY LINE
- EXISTING WATERCOURSE
- EXISTING REGIONAL FLOODPLAIN SPILL

HDR

MISSISSAUGA

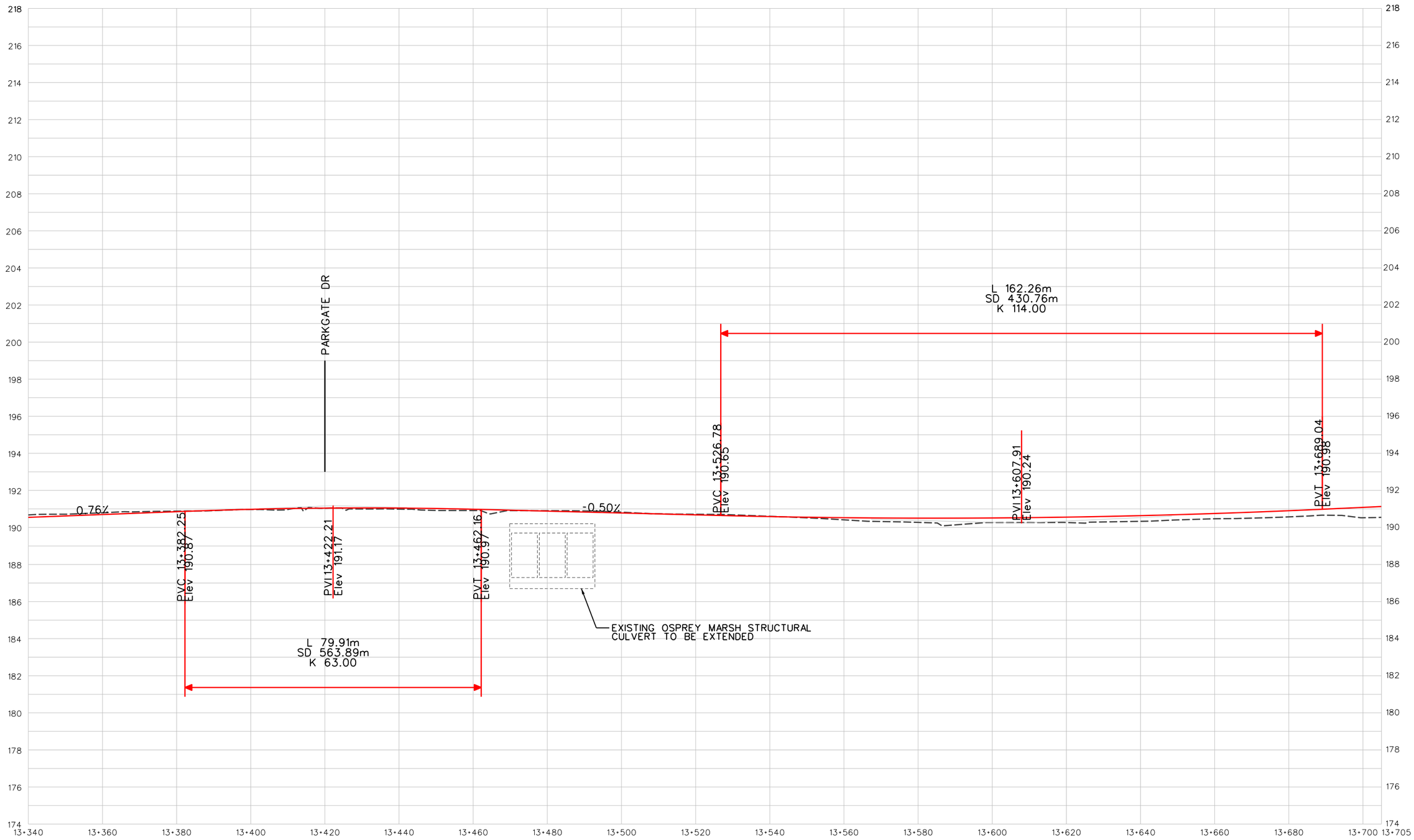
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PLAN

13+340 TO 13+705

PLAN NO.
P-12

SCALE
H 1:1000

DATE
JUNE 2021



LEGEND

PROPOSED PROFILE

EXISTING GROUND

HDR

MISSISSAUGA

NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PROFILE

13+340 TO 13+705

PLAN NO.
PF-12

SCALE
H 1:1000
V 1:100

DATE
JUNE 2021

NOTE: PROPOSED BOULEVARD TREE LOCATIONS AND SPACING ARE CONCEPTUAL AND WILL BE CONFIRMED DURING DETAILED DESIGN

LEGEND

- PROPOSED CENTRELINE
- PROPOSED RIGHT-OF-WAY (ROW)
- PROPOSED SIDEWALK
- PROPOSED CYCLE TRACK
- PROPOSED MULTI-USE PATH (MUP)
- PROPOSED GRADING LIMIT
- PROPOSED GRADING
- PROPOSED CURB
- PROPOSED DAYLIGHTING
- PROPOSED BOULEVARD
- PROPOSED BUS STOPS
- PROPSOED RAISED MEDIAN
- EXISTING CENTRELINE
- EXISTING PROPERTY LINE
- EXISTING WATERCOURSE
- EXISTING REGIONAL FLOODPLAIN SPILL

HDR

MISSISSAUGA

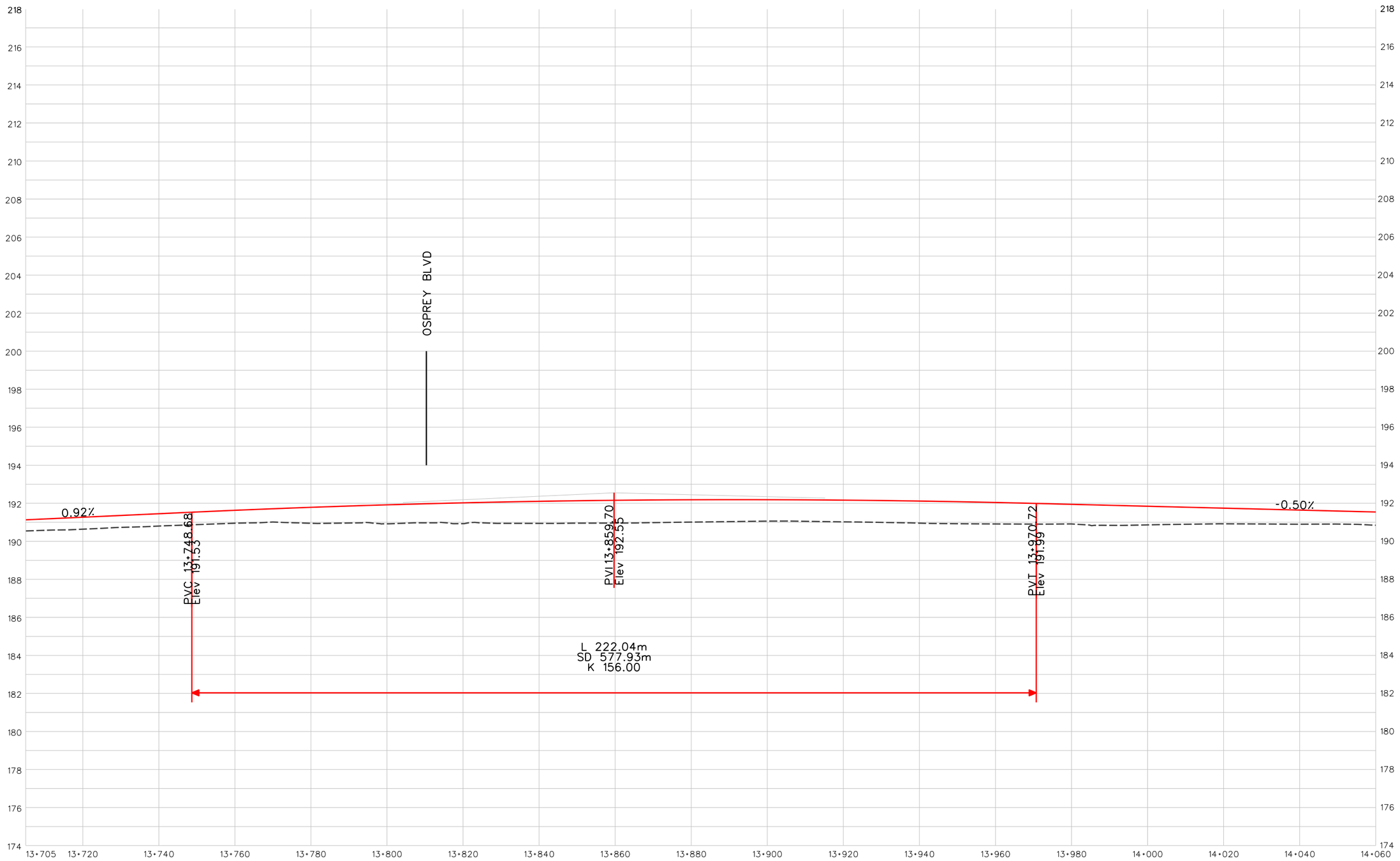
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PLAN

13+705 TO 14+060

PLAN NO. P-13

SCALE H 1:1000

DATE JUNE 2021



LEGEND

PROPOSED PROFILE

EXISTING GROUND

HDR

MISSISSAUGA

NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PROFILE

13+705 TO 14+060

PLAN NO.
PF-13

SCALE
H 1:1000
V 1:100

DATE
JUNE 2021

NINTH LINE

POTENTIAL FUTURE DEVELOPMENT ACCESS (BY OTHERS)

14+100

14+200

14+300

14+400

3.34m

4.61m

2.00m SIDEWALK

2.00m CYCLE TRACK

3.50m

3.35m

3.35m

5.00m MEDIAN

3.35m

3.50m

2.00m CYCLE TRACK

2.00m SIDEWALK

MATCH LINE - STA 14+060
SEE PLATE 13

MATCH LINE - STA 14+405
SEE PLATE 15

0.54m

SARATOGA WAY

FOXWOOD AVENUE

NOTE: PROPOSED BOULEVARD TREE LOCATIONS AND SPACING ARE CONCEPTUAL AND WILL BE CONFIRMED DURING DETAILED DESIGN

LEGEND

- PROPOSED CENTRELINE
- PROPOSED RIGHT-OF-WAY (ROW)
- PROPOSED SIDEWALK
- PROPOSED CYCLE TRACK
- PROPOSED MULTI-USE PATH (MUP)
- PROPOSED GRADING LIMIT
- PROPOSED GRADING
- PROPOSED CURB
- PROPOSED DAYLIGHTING
- PROPOSED BOULEVARD
- PROPOSED BUS STOPS
- PROPSOED RAISED MEDIAN
- EXISTING CENTRELINE
- EXISTING PROPERTY LINE
- EXISTING WATERCOURSE
- EXISTING REGIONAL FLOODPLAIN SPILL

HDR

MISSISSAUGA

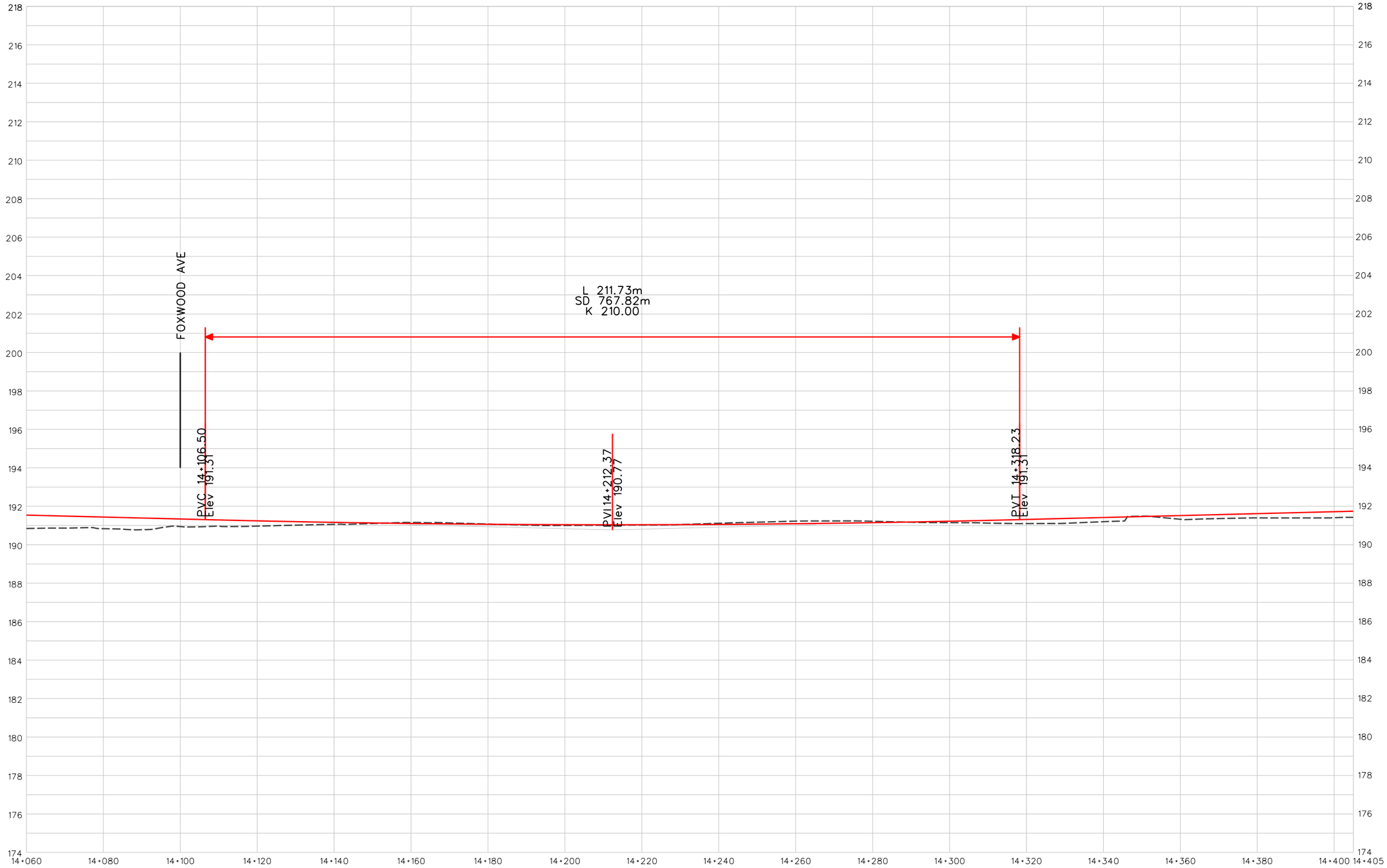
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PLAN

14+060 TO 14+405

PLAN NO. P-14

SCALE H 1:1000

DATE JUNE 2021



LEGEND

PROPOSED PROFILE

EXISTING GROUND

HDR

MISSISSAUGA

NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PROFILE

14+060 TO 14+405

PLAN NO.
PF-14

SCALE
H 1:1000
V 1:100

DATE
JUNE 2021

NINTH LINE

8.67m

8.02m

9.64m

14+500

14+600

14+700

2.00m SIDEWALK

2.00m CYCLE TRACK

3.50m

3.35m

5.00m MEDIAN

3.35m

3.50m

2.00m CYCLE TRACK

2.00m SIDEWALK

MATCH LINE - STA 14+405
SEE PLATE 14

MATCH LINE - STA 14+770
SEE PLATE 16

36.3m PROP. ROW

30.3m EX. ROW

0.56m

2.22m

OPPORTUNITY FOR CENTRE MEDIAN PLANTINGS (I.E. GRASSES, SHRUBS, FLOWERS), TO BE CONFIRMED DURING DETAILED DESIGN IN CONSULTATION WITH PARKS & FORESTRY STAFF

SAPLING TRAIL

NOTE: PROPOSED BOULEVARD TREE LOCATIONS AND SPACING ARE CONCEPTUAL AND WILL BE CONFIRMED DURING DETAILED DESIGN

LEGEND

- PROPOSED CENTRELINE
- PROPOSED RIGHT-OF-WAY (ROW)
- PROPOSED SIDEWALK
- PROPOSED CYCLE TRACK
- PROPOSED MULTI-USE PATH (MUP)
- PROPOSED GRADING LIMIT
- PROPOSED GRADING
- PROPOSED CURB
- PROPOSED DAYLIGHTING
- PROPOSED BOULEVARD
- PROPOSED BUS STOPS
- PROPSOED RAISED MEDIAN
- EXISTING CENTRELINE
- EXISTING PROPERTY LINE
- EXISTING WATERCOURSE
- EXISTING REGIONAL FLOODPLAIN SPILL

HDR

MISSISSAUGA

NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PLAN

14+405 TO 14+770

PLAN NO.
P-15

SCALE
H 1:1000

DATE
JUNE 2021

LEGEND

PROPOSED PROFILE

EXISTING GROUND

HDR

MISSISSAUGA

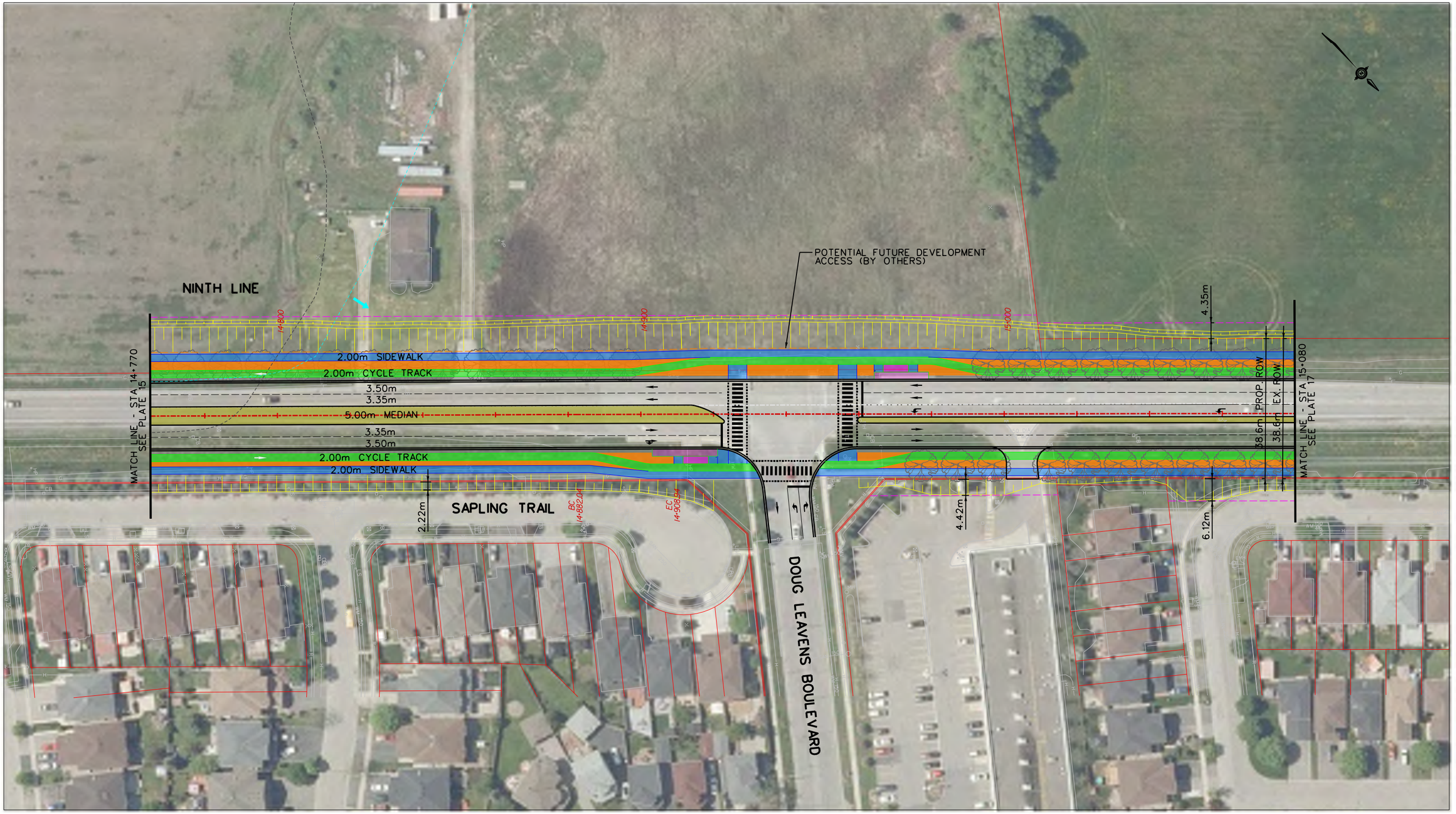
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PROFILE

14+405 TO 14+770

PLAN NO.
PF-15

SCALE
H 1:1000
V 1:100

DATE
JUNE 2021



NOTE: PROPOSED BOULEVARD TREE LOCATIONS AND SPACING ARE CONCEPTUAL AND WILL BE CONFIRMED DURING DETAILED DESIGN

LEGEND

- PROPOSED CENTRELINE
- PROPOSED RIGHT-OF-WAY (ROW)
- PROPOSED SIDEWALK
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- PROPOSED MULTI-USE PATH (MUP)
- PROPOSED GRADING LIMIT
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- PROPOSED BUS STOPS
- PROPSOED RAISED MEDIAN
- EXISTING CENTRELINE
- EXISTING PROPERTY LINE
- EXISTING WATERCOURSE
- EXISTING REGIONAL FLOODPLAIN SPILL

HDR

MISSISSAUGA

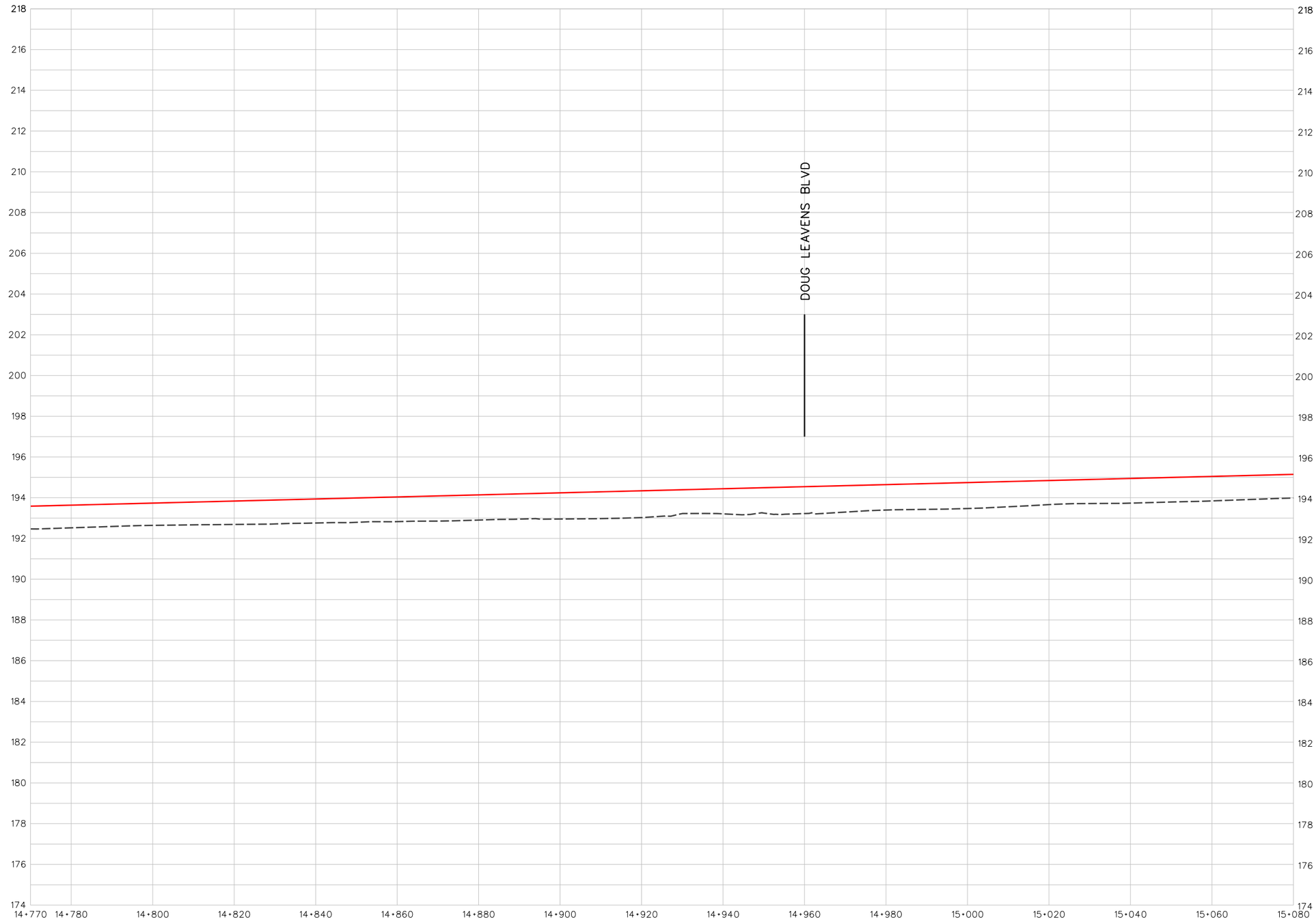
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PLAN

14+770 TO 15+080

PLAN NO.
P-16

SCALE
H 1:1000

DATE
JUNE 2021



LEGEND

PROPOSED PROFILE

EXISTING GROUND

HDR

MISSISSAUGA

NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PROFILE

14+770 TO 15+080

PLAN NO.
PF-16

SCALE
H 1:1000
V 1:100

DATE
JUNE 2021

NINTH LINE

POTENTIAL FUTURE DEVELOPMENT ACCESS (BY OTHERS)

4.35m

1.93m

15+100

15+200

15+300

2.00m SIDEWALK

2.00m CYCLE TRACK

3.50m

3.35m

5.00m MEDIAN

3.35m

3.50m

2.00m CYCLE TRACK

2.00m SIDEWALK

MATCH LINE - STA 15+080
SEE PLATE 16

MATCH LINE - STA 15+380
SEE PLATE 18

6.12m

6.42m

0.33m

INDIGO CRESCENT

EXISTING ACTIVE TRANSPORTATION CONNECTION TO BE CONFIRMED DURING DETAILED DESIGN IN CONSULTATION WITH CITY STAFF.

BERRYMAN TRAIL

NOTE: PROPOSED BOULEVARD TREE LOCATIONS AND SPACING ARE CONCEPTUAL AND WILL BE CONFIRMED DURING DETAILED DESIGN

LEGEND

- PROPOSED CENTRELINE
- PROPOSED RIGHT-OF-WAY (ROW)
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- PROPSOED RAISED MEDIAN
- EXISTING CENTRELINE
- EXISTING PROPERTY LINE
- EXISTING WATERCOURSE
- EXISTING REGIONAL FLOODPLAIN SPILL

HDR

MISSISSAUGA

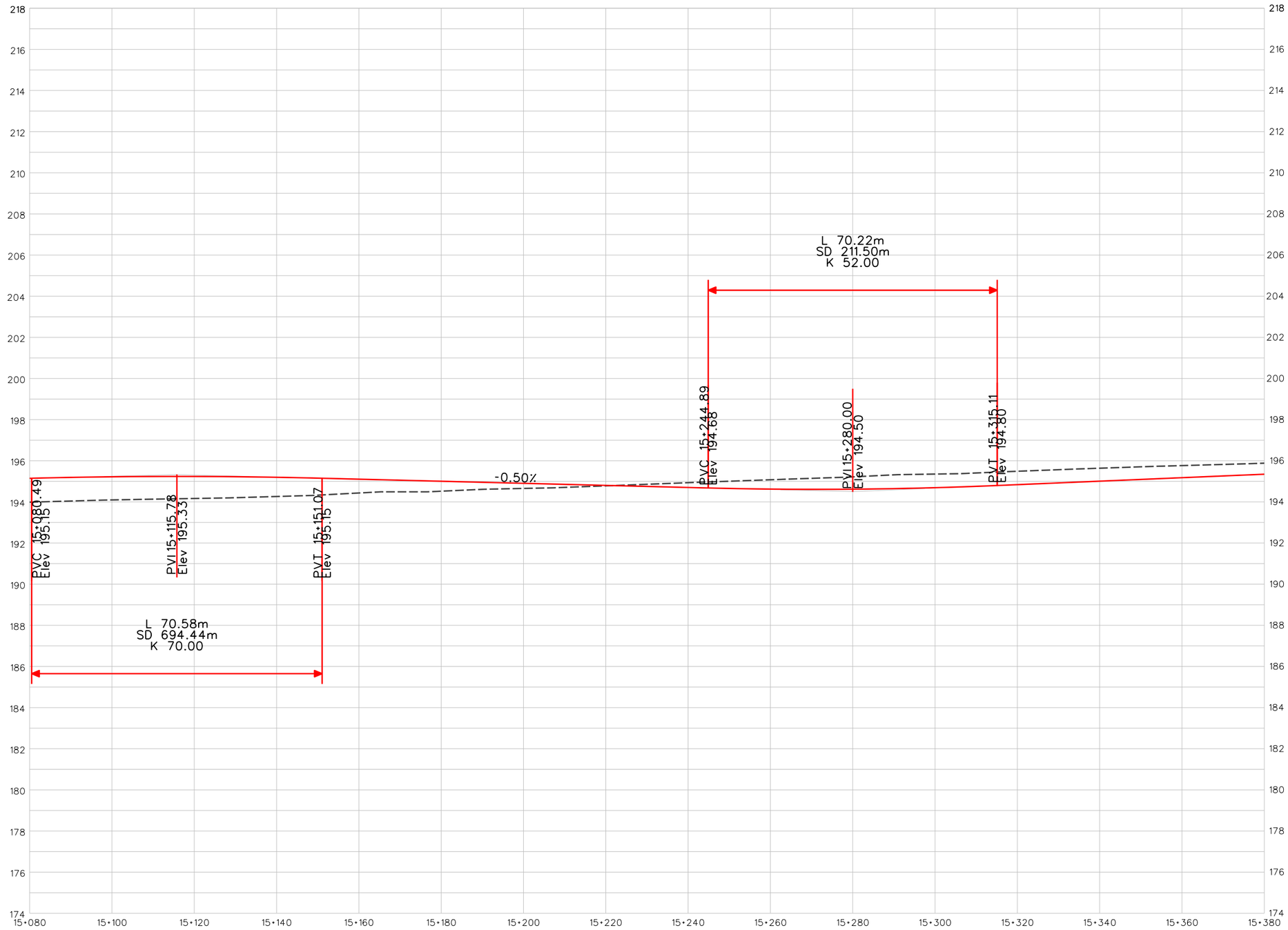
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PLAN

15+080 TO 15+380

PLAN NO.
P-17

SCALE
H 1:1000

DATE
JUNE 2021



LEGEND

PROPOSED PROFILE

EXISTING GROUND

HDR

MISSISSAUGA

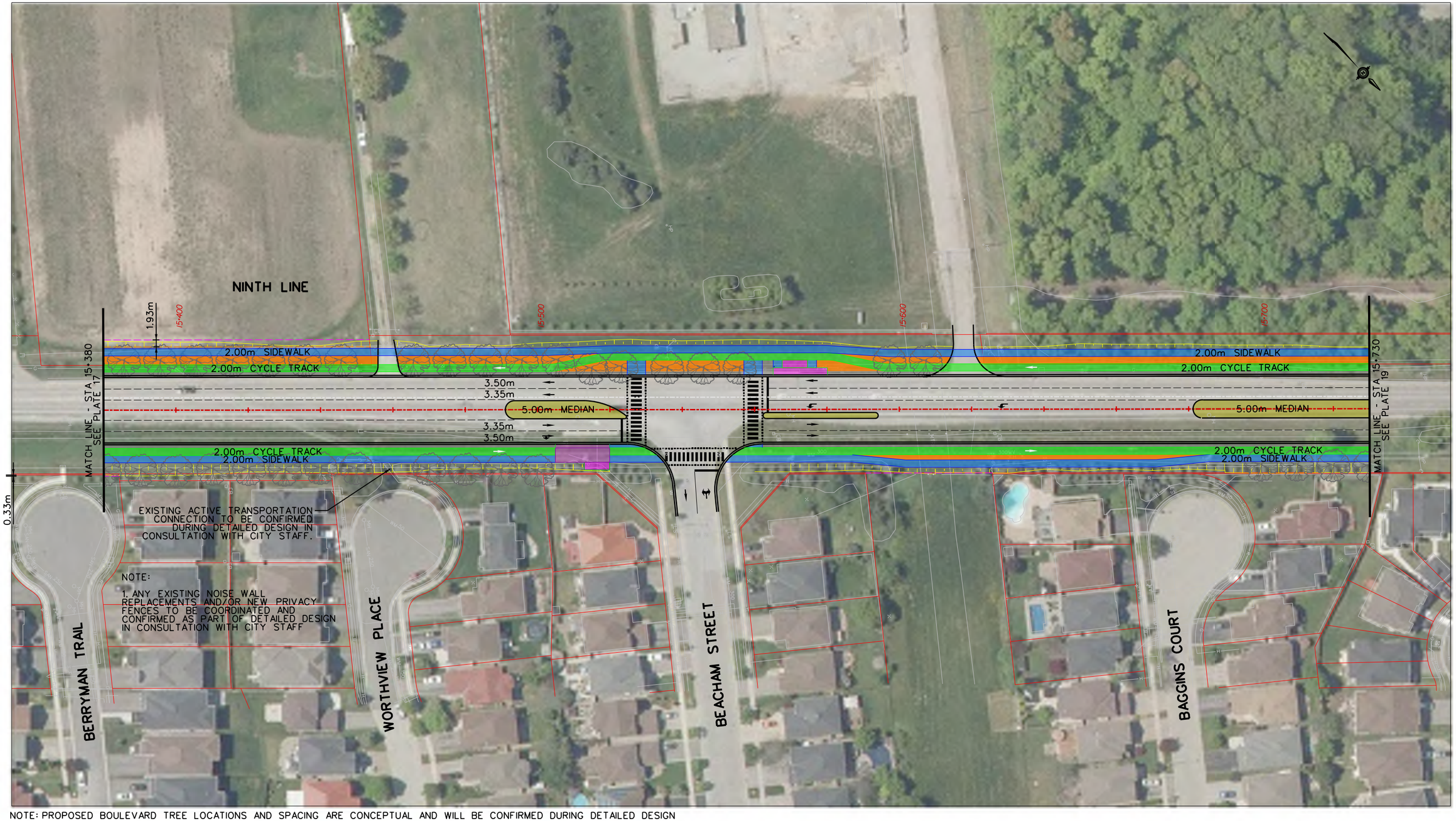
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PROFILE

15+080 TO 15+380

PLAN NO.
PF-17

SCALE
H 1:1000
V 1:100

DATE
JUNE 2021



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HDR

MISSISSAUGA

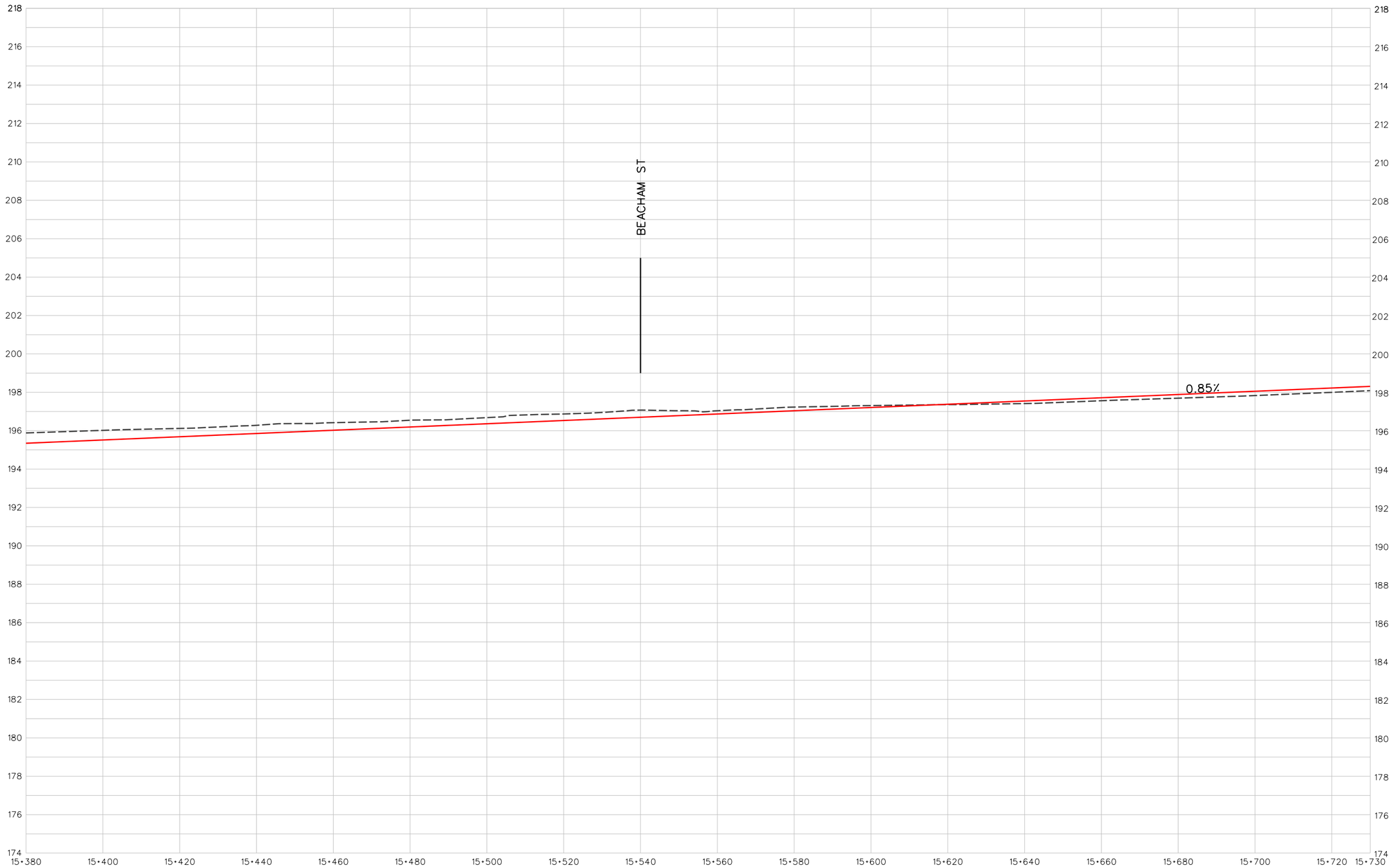
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PLAN

15+380 TO 15+730

PLAN NO.
P-18

SCALE
H 1:1000

DATE
JUNE 2021



LEGEND

PROPOSED PROFILE

EXISTING GROUND

HDR

MISSISSAUGA

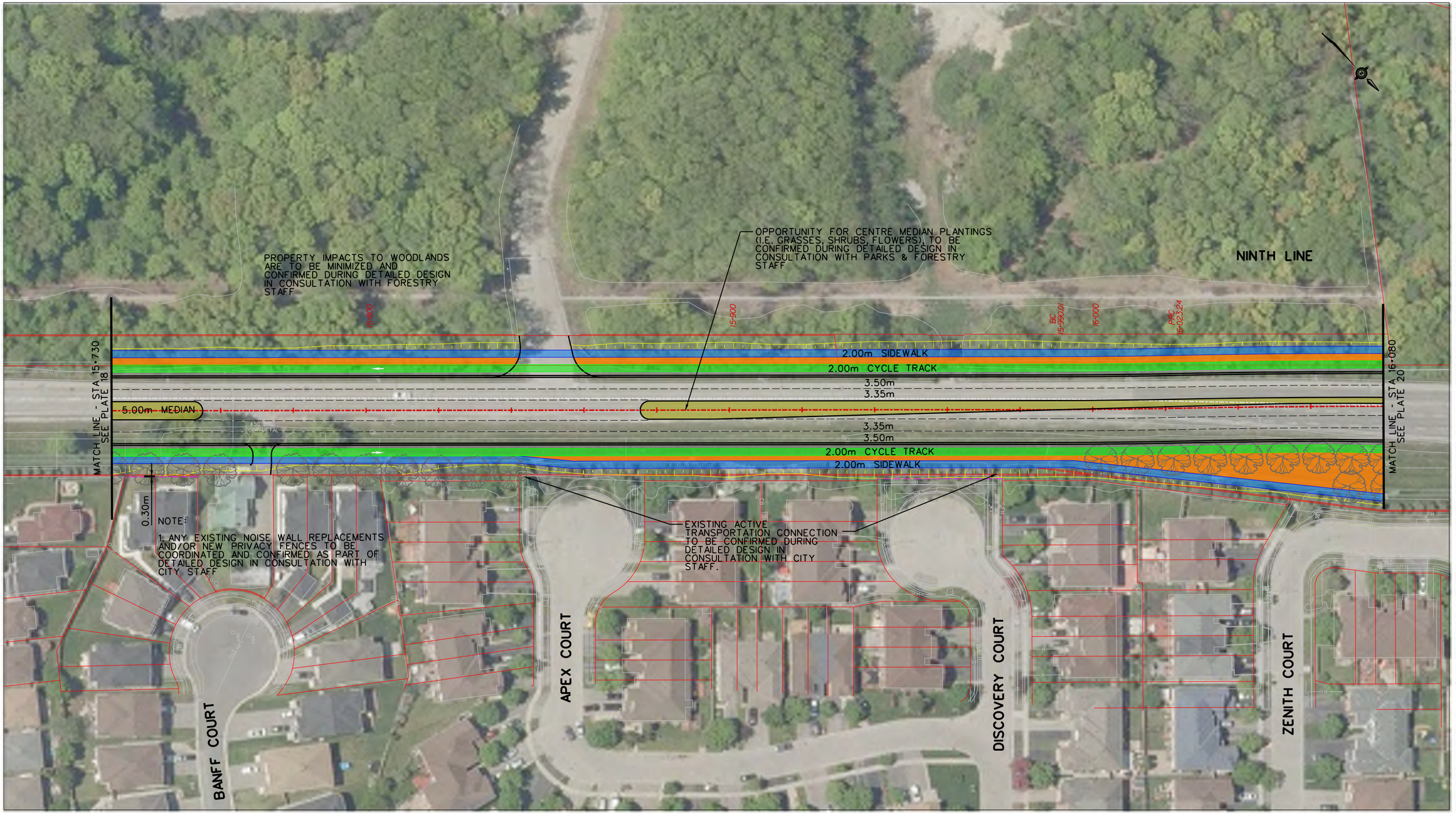
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PROFILE

15+380 TO 15+730

PLAN NO.
PF-18

SCALE
H 1:1000
V 1:100

DATE
JUNE 2021



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HDR

MISSISSAUGA

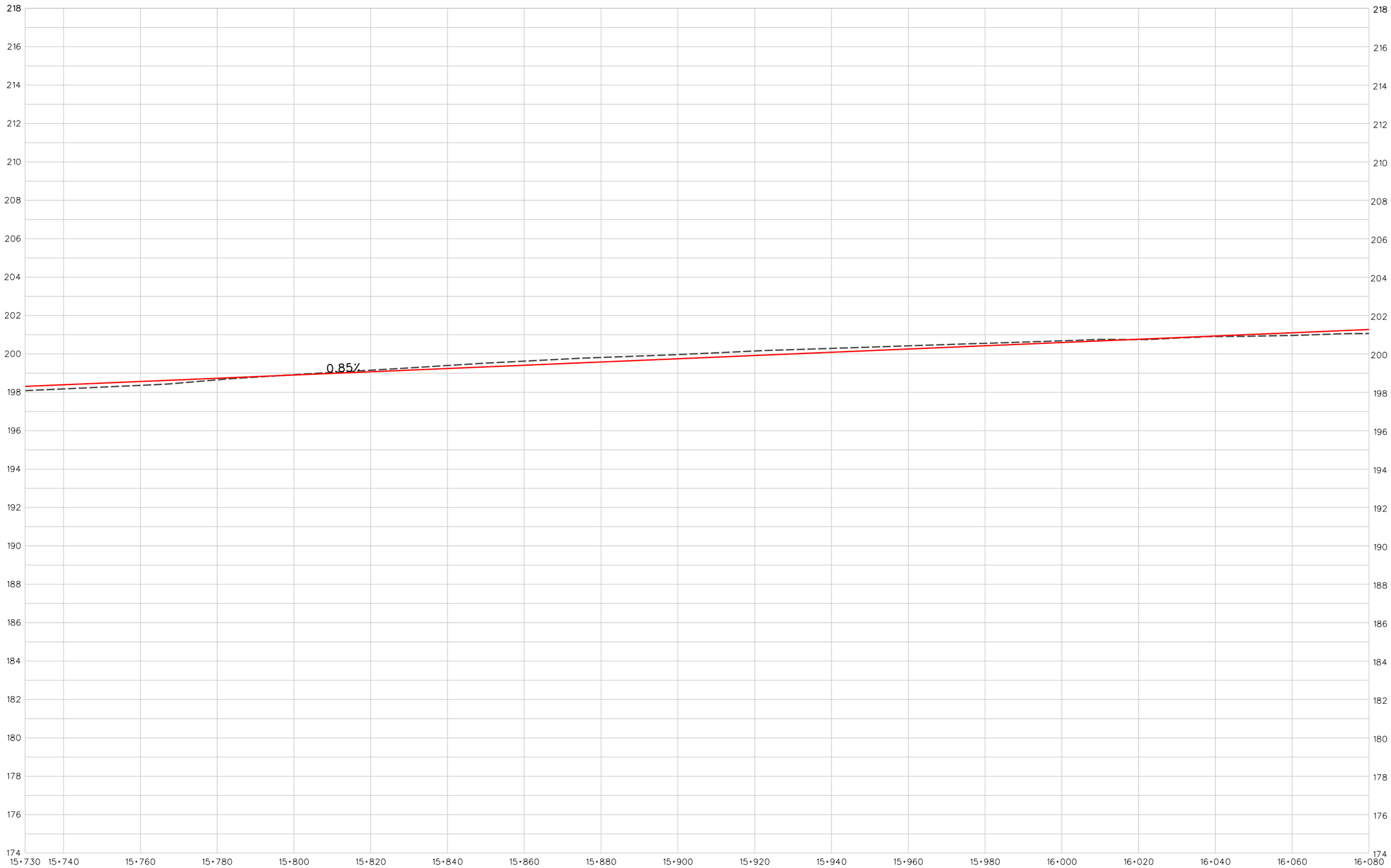
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PLAN

15+730 TO 16+080

PLAN NO. P-19

SCALE H 1:1000

DATE JUNE 2021



LEGEND

PROPOSED PROFILE

EXISTING GROUND

MISSISSAUGA

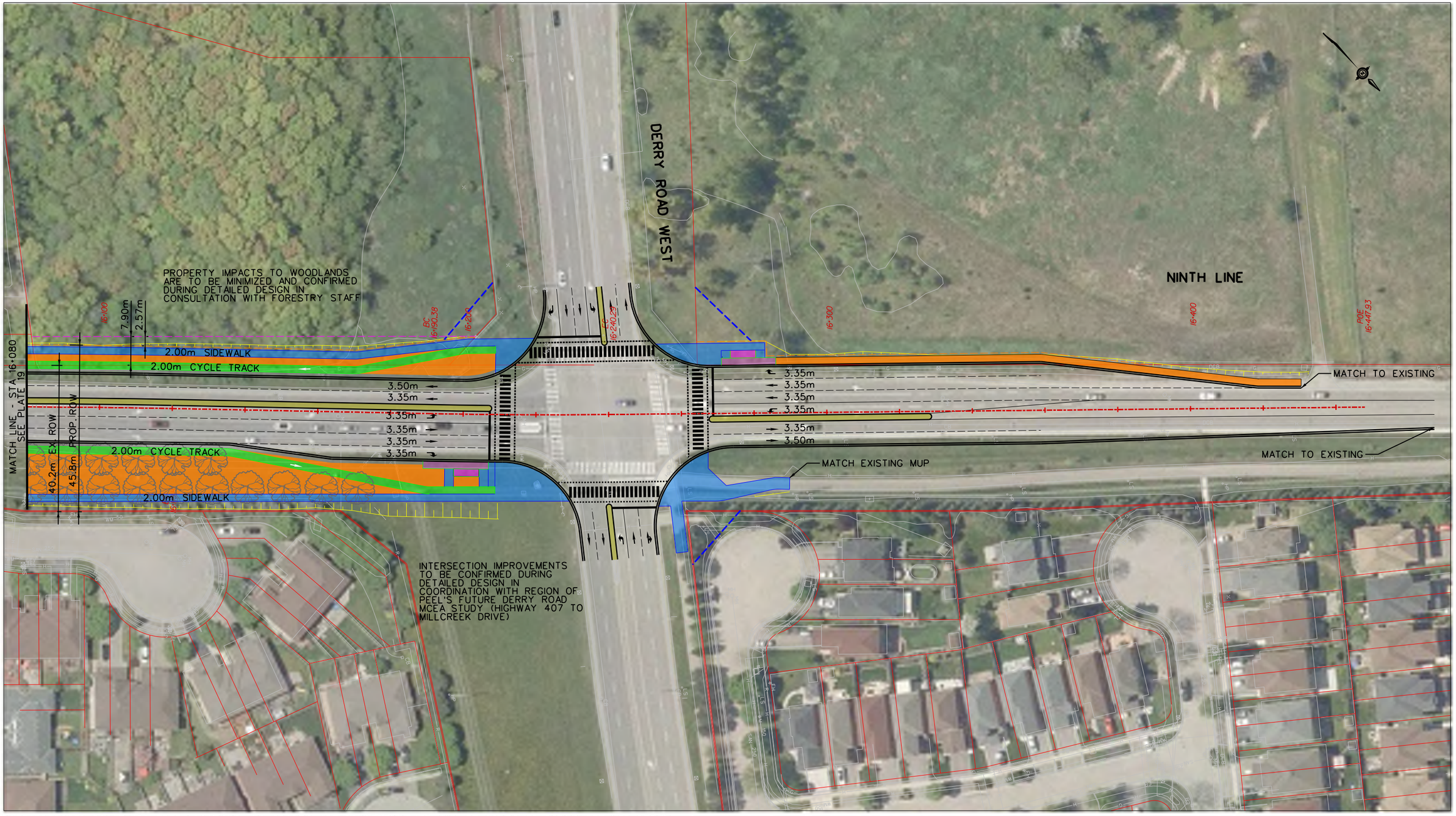
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PROFILE

15+730 TO 16+080

PLAN NO.
PF-19

SCALE
H 1:1000
V 1:100

DATE
JUNE 2021



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- PROPOSED SIDEWALK
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- PROPOSED MULTI-USE PATH (MUP)
- PROPOSED GRADING LIMIT
- PROPOSED GRADING
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HDR

MISSISSAUGA

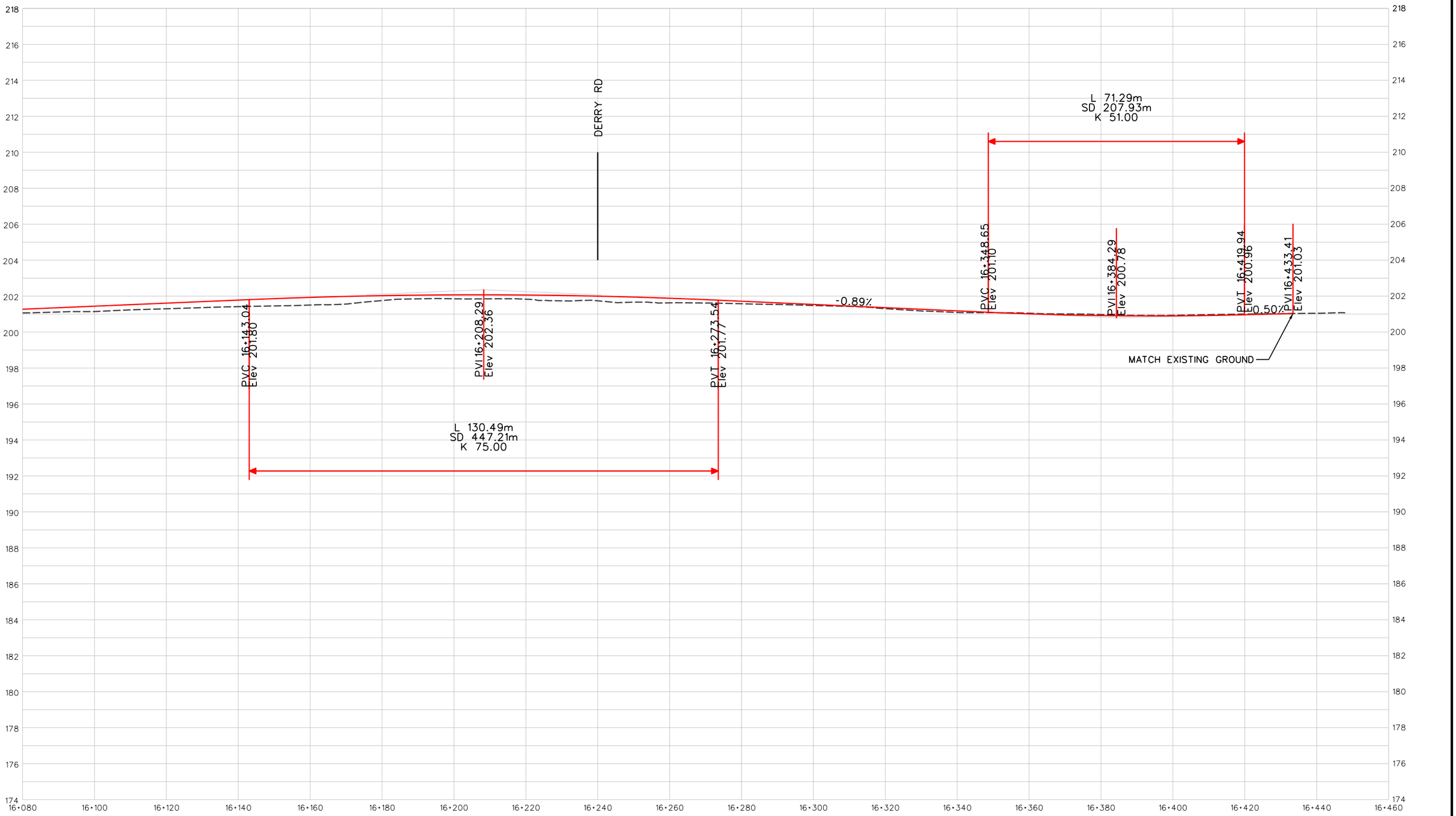
NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PLAN

16+080 TO 16+448

PLAN NO.
P-20

SCALE
H 1:1000

DATE
JUNE 2021



LEGEND

PROPOSED PROFILE

EXISTING GROUND

MISSISSAUGA

NINTH LINE IMPROVEMENTS
(EGLINTON AVE W TO DERRY RD W)
ENVIRONMENTAL ASSESSMENT
PROFILE

16+080 TO 16+433

PLAN NO.
PF-20

SCALE
H 1:1000
V 1:100

DATE
JUNE 2021

APPENDIX I

Additional Future Roadway Improvement Information

Britannia Road Corridor Improvements

COVID-19 Update

Regional staff and contractors will be following health and safety guidelines set out by the Province and Public Health to help stop the spread of COVID-19.

About the project

Britannia Road is a critical east-west corridor in Halton Region that motorists rely on to get to work, school, retail and home every day. To accommodate growth, provide safe alternative transit options and improve traffic flow, Halton Region is making improvements to Britannia Road.

These improvements will be implemented in three Phases:

- Phase 1 between Tremaine Road and Regional Road 25, **complete**.
- Phase 2 between James Snow Parkway and Highway 407 ETR, currently under construction.
- Phase 3 between Region Road 25 and James Snow Parkway, currently under construction.

Phase 1 Phase 2 Phase 3

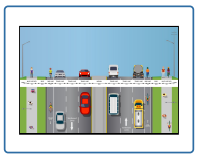
Between Tremaine Road and Regional Road 25, complete.

Project #: 2667

You can now enjoy:

- Widening from four to six lanes
- Bridges
- Traffic signals
- Landscaping
- Environmental protection
- Bike lanes
- Multi-use pathways
- Turn lanes
- Sound walls

Project Details



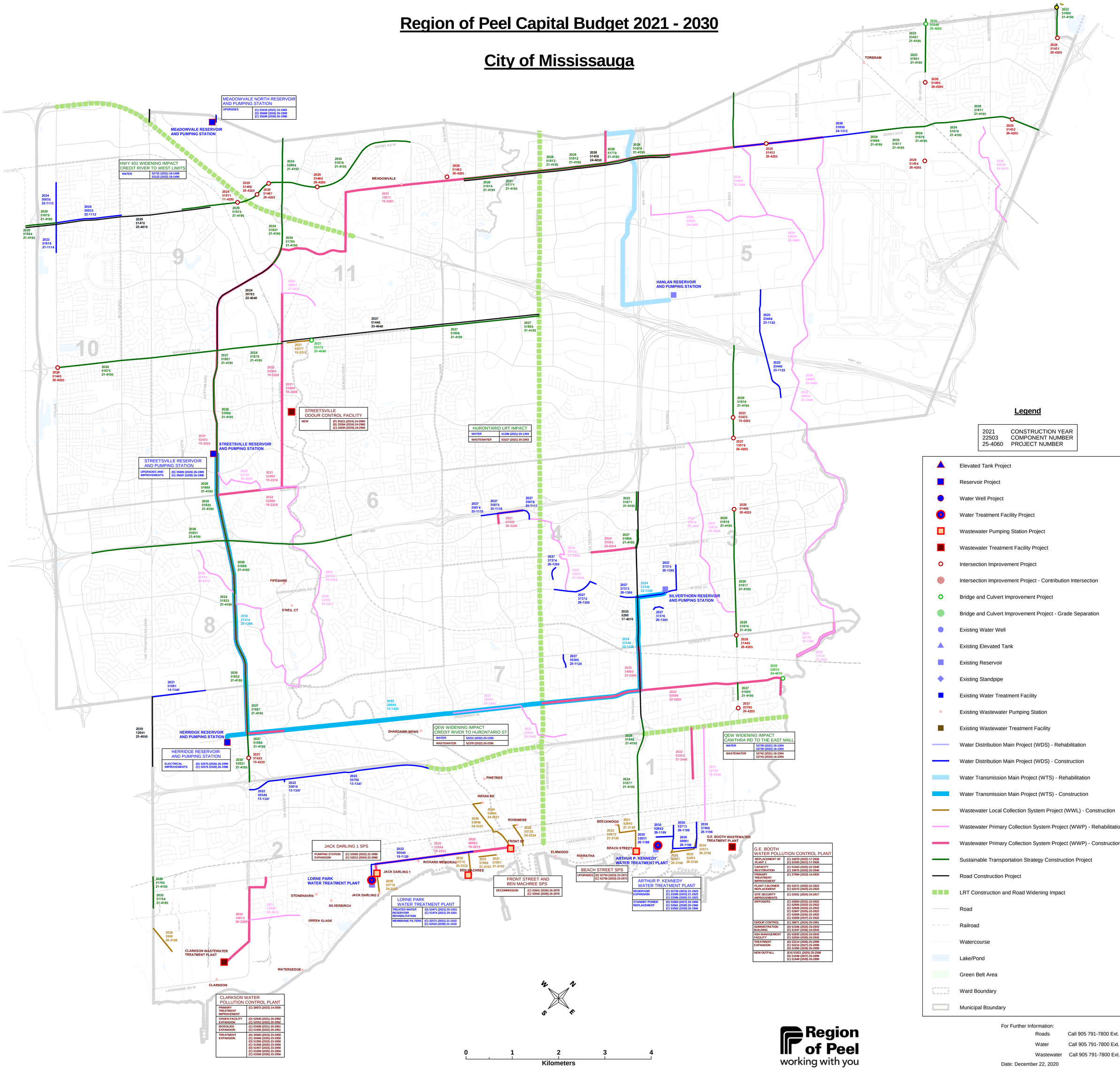
Britannia Road cross-section

Phase 1

- **Status:** Complete
- **Start:** September 2019
- **Ends:** February 2022

Region of Peel Capital Budget 2021 - 2030

City of Mississauga



Legend

2021	CONSTRUCTION YEAR
22503	COMPONENT NUMBER
25-4060	PROJECT NUMBER

- Elevated Tank Project
- Reservoir Project
- Water Well Project
- Water Treatment Facility Project
- Wastewater Pumping Station Project
- Wastewater Treatment Facility Project
- Intersection Improvement Project
- Intersection Improvement Project - Contribution Intersection
- Bridge and Culvert Improvement Project
- Bridge and Culvert Improvement Project - Grade Separation
- Existing Water Well
- Existing Elevated Tank
- Existing Reservoir
- Existing Standpipe
- Existing Water Treatment Facility
- Existing Wastewater Pumping Station
- Existing Wastewater Treatment Facility
- Water Distribution Main Project (WDS) - Rehabilitation
- Water Distribution Main Project (WDS) - Construction
- Water Transmission Main Project (WTS) - Rehabilitation
- Water Transmission Main Project (WTS) - Construction
- Wastewater Local Collection System Project (WWL) - Construction
- Wastewater Primary Collection System Project (WWP) - Rehabilitation
- Wastewater Primary Collection System Project (WWP) - Construction
- Sustainable Transportation Strategy Construction Project
- Road Construction Project
- LRT Construction and Road Widening Impact
- Road
- Railroad
- Watercourse
- Lake/Pond
- Green Belt Area
- Ward Boundary
- Municipal Boundary

Region of Peel
working with you

For Further Information:

Roads	Call 905 791-7800 Ext. 3258
Water	Call 905 791-7800 Ext. 4548
Wastewater	Call 905 791-7800 Ext. 4548

Date: December 22, 2020

- **Project #:** PR-2667

Phase 2

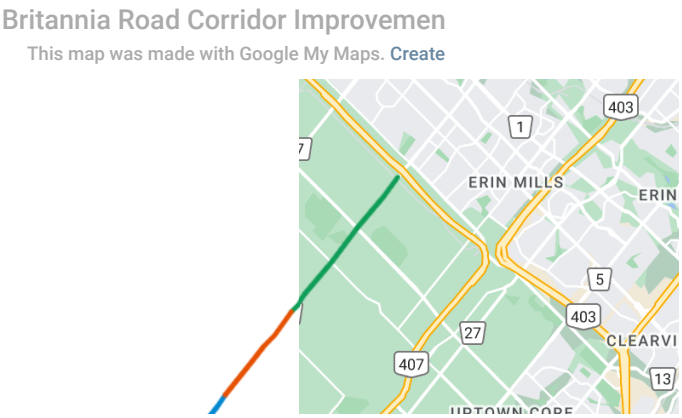
- **Status:** Construction ongoing
- **Start:** June 2021
- **Ends:** December 2024
- **Project #:** PR-3309A

Phase 3

- **Status:** Construction ongoing
- **Start:** June 2021
- **Ends:** December 2024
- **Project #:** PR-3309A

Read about the Britannia Road Transportation Corridor Improvements Municipal Class Environmental Assessment Study.

Project map



Legend

- Phase 1 improvement area
- Phase 2 improvement area
- Phase 3 improvement area

Project Renderings

View of Britannia Road at railroad overpass

Improvements include:

The **Road** to *Change*

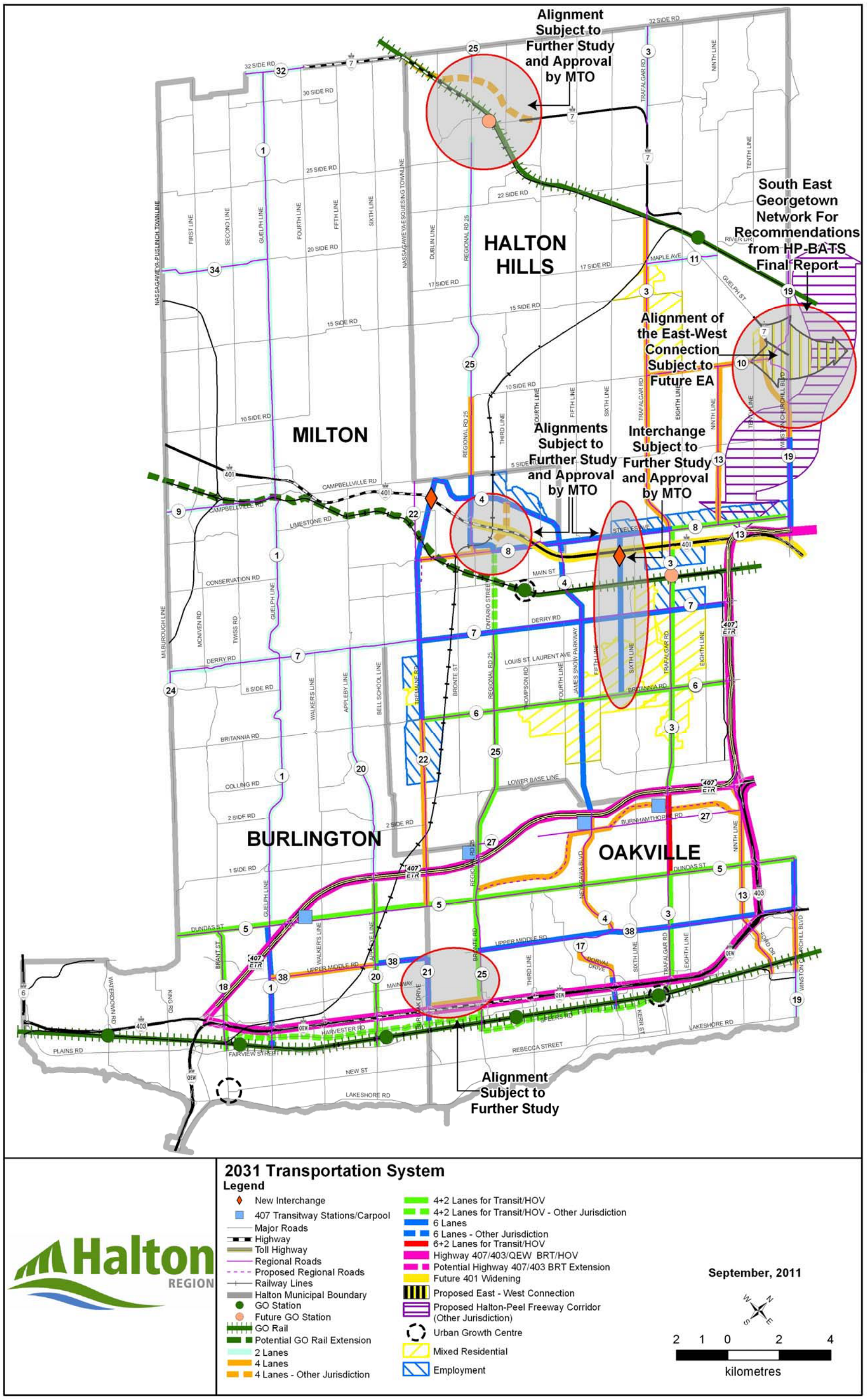
Halton Region Transportation Master Plan

2031

Halton REGION

September 2011

Figure 7.2 – 2031 Transportation System



APPENDIX J

TTS Data

Fri Mar 29 2019 12:16:44 GMT-0400 (Eastern Daylight Time) - Run Time: 1731ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: Use of Hwy 407 - hwy407

Filters:
2006 GTA zone of origin - gta06_orig In 3615, 3616, 3809, 3810, 3811
and
Start time of trip - start_time In 600-900
and
Primary travel mode of trip - mode_prime In D

Trip 2016
Table:

	Unknown	No	Yes	Sum	% use of 407	% total of trips	
PD 1 of Toronto	77	342	0	419	0.0%	1.7%	
PD 2 of Toronto	18	76	0	94	0.0%	0.4%	
PD 3 of Toronto	92	124	17	233	12.1%	1.0%	
PD 4 of Toronto	169	53	11	233	17.2%	1.0%	
PD 5 of Toronto	81	80	18	179	18.4%	0.7%	
PD 6 of Toronto	0	25	0	25	0.0%	0.1%	
PD 7 of Toronto	164	82	0	246	0.0%	1.0%	
PD 8 of Toronto	222	225	50	497	18.2%	2.0%	
PD 9 of Toronto	229	154	88	471	36.4%	1.9%	
PD 10 of Toronto	52	218	0	270	0.0%	1.1%	
PD 11 of Toronto	35	88	0	123	0.0%	0.5%	
PD 12 of Toronto	21	22	0	43	0.0%	0.2%	
PD 13 of Toronto	40	85	0	125	0.0%	0.5%	
PD 16 of Toronto	55	75	0	130	0.0%	0.5%	
Clarington	18	0	0	18	0.0%	0.1%	
Aurora	14	0	0	14	0.0%	0.1%	
Richmond Hill	32	10	0	42	0.0%	0.2%	
Markham	76	122	10	208	7.6%	0.9%	
Vaughan	146	188	181	515	49.1%	2.1%	
Caledon	26	20	0	46	0.0%	0.2%	
Brampton	425	874	133	1432	13.2%	5.9%	
Mississauga	7942	7710	228	15880	2.9%	65.4%	
Halton Hills	56	140	0	196	0.0%	0.8%	AVERAGE
Milton	106	368	0	474	0.0%	2.0%	6.6%
Oakville	430	770	18	1218	2.3%	5.0%	
Burlington	174	151	10	335	6.2%	1.4%	
Dundas	0	33	0	33	0.0%	0.1%	
Ancaster	53	0	0	53	0.0%	0.2%	
Hamilton	134	156	0	290	0.0%	1.2%	
St. Catharines	15	0	0	15	0.0%	0.1%	
Waterloo	60	12	0	72	0.0%	0.3%	
Cambridge	14	111	0	125	0.0%	0.5%	
City of Guelph	106	68	0	174	0.0%	0.7%	
Haliburton	8	0	0	8	0.0%	0.0%	
Brantford	0	19	0	19	0.0%	0.1%	AVERAGE
External	29	0	0	29	0.0%	0.1%	1.2%
Sum	11119	12401	764	24284	5.8%	100.0%	

Route w/407	Route w/o 407
North 407	East Derry
North 407	East Derry
North 407	East Derry
North 407	East Derry
North 407	East Derry
North 407	East Derry
North 407	East Derry
North 407	East Derry
North 407	East Derry
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North 407	East Derry
North 407	East Derry
North 407	East Derry
micro analysis	
North 407	West Derry
North 407	West Derry
South 407	South Ninth
South 407	South Ninth
South 407	South Ninth
South 407	South Ninth
South 407	South Ninth
South 407	South Ninth
North 407	West Derry
North 407	West Derry
North 407	West Derry
South 407	South Ninth
South 407	South Ninth

EXTERNAL TO MISSISSAUGA

Route	
East Derry	11.5%
North 407	6.6%
West Derry	4.3%
South Ninth	6.8%
South 407	1.2%
North Ninth	4.0%
	34.4%

INTERNAL TO MISSISSAUGA

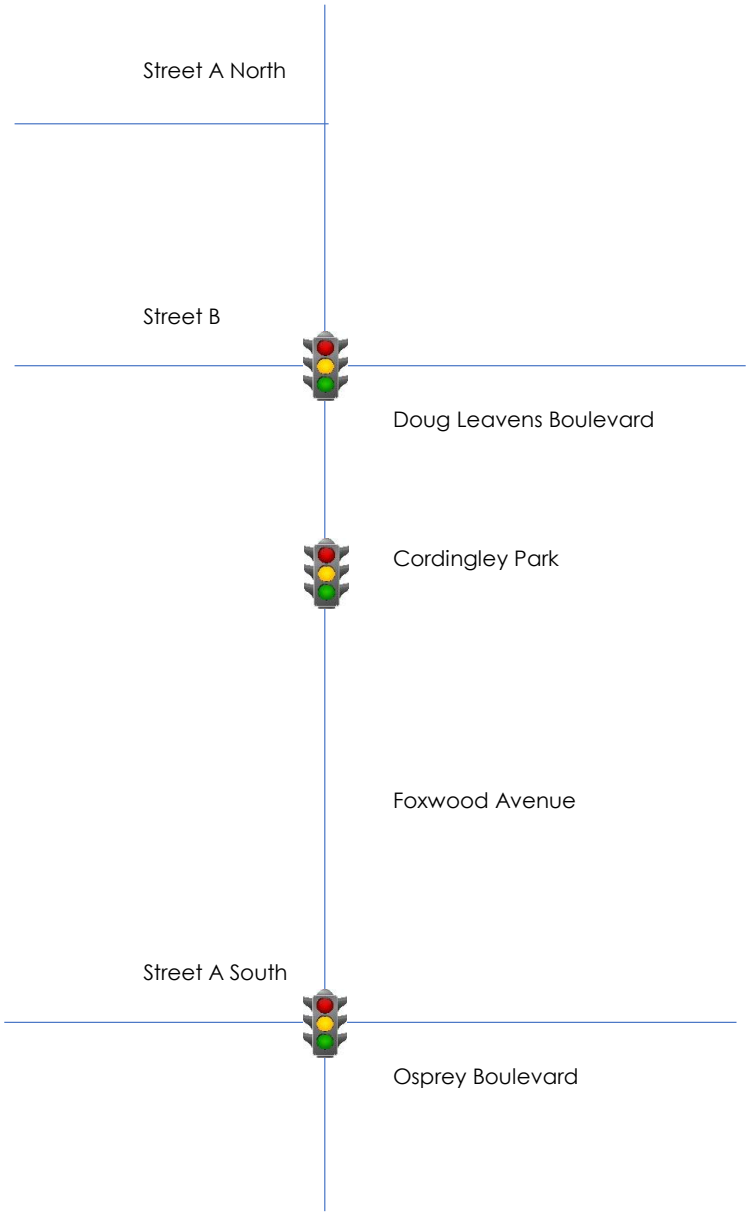
Route	
East Derry	15.0%
North 407	5.0%
West Derry	0.0%
South Ninth	25.0%
South 407	5.0%
East Doug Leavens	5.0%
East Britannia	5.0%
North Ninth	5.0%
	65.0%

TOTAL

Route		
East Derry	26.5%	30%
North 407	11.6%	10%
West Derry	4.3%	5%
South Ninth	31.8%	30%
South 407	6.2%	5%
East Doug Leaven	5.0%	5%
East Britannia	5.0%	5%
North Ninth	9.0%	10%
	99.4%	100.0%

APPENDIX K

Pedestrian Volume Analysis



			Average hourly pedestrian tri
	AM PEAK TOTAL	31	**15**
	PM PEAK TOTAL	30	
Street B	AM PEAK TOTAL	97	47
	PM PEAK TOTAL	91	
Cordingley Park	AM PEAK TOTAL	97	47
	PM PEAK TOTAL	91	
Street A South	AM PEAK TOTAL	57	32
	PM PEAK TOTAL	69	
	AM PEAK TOTAL	283	
	PM PEAK TOTAL	280	

FULL DRAFT PLAN PEDESTRIAN TRIP CALCULATIONS

APPENDIX L

Collision Data

Collision Details Report

OSPREY BLVD NINTH LINE

From: January 1, 2014 **To:** September 28, 2021

Location ..... NINTH LINE @ OSPREY BLVD **Municipality.....** Mississauga

Traffic Control.... Traffic signal **Total Collisions....** 6

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
150418070	2015-Oct-26, Mon,08:23	Clear	Rear end	P.D. only	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Other	
Comments:	Statement #1: V1, V2 S/B R1V1 REAR ENDS V2				South		Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
170209041	2017-Jun-05, Mon,18:20	Clear	Rear end	Non-fatal injury	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Other	
Comments:	Statement #1: REPORTED AT 11 FRONT DESK.V1 AND V2 WERE STOPPED SB ON NINTH LINE JUST NORTH OF OSPREY.THE TRAFFIC WAS STOPPED, LIGHTS THEN PROCEED TO TURN GREEN.V1 BEGAN MOVING FORWARD HOWEVER TRAFFIC IN FRONT OF V2 WAS STATIONARY, AS A RESULT V1 REAR ENDED V2.				South		Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
170239860	2017-Jun-28, Wed,22:50	Clear	Rear end	P.D. only	East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:	Statement #1: D2 WAS IN THE PROCESS OF MAKING A TURN EASTBOUND ONTO OSPREY WHEN D2 WAS FORCED TO BRAKE. D1 BEHIND V2 AND WAS UNABLE TO STOP WHEN V2 APPLIED ITS BRAKES CAUSING THE COLLISION.				East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
180184577	2018-May-17, Thu,17:20	Clear	Rear end	P.D. only	South	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:	Statement #1: V2 S/B ON R1 STOPPED AT RED LIGTHV1 BEHIND V1 REAR ENDS V2				South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
190041415	2019-Feb-01, Fri,10:10	Clear	Rear end	P.D. only	South	Ice	Going ahead	Automobile, station wagon	Other motor vehicle	Speed too fast for condition	
Comments:	Statement #1: V2 s/b on R1, stopped for traffic light ahead.V1 s/b on R1 behind V2, does not stop in time and collides into rear of V2.				South	Ice	Stopped	Delivery van	Other motor vehicle	Driving properly	
190052242	2019-Feb-09, Sat,17:15	Clear	Rear end	P.D. only	North	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:	Statement #1: V3 stopped n/b on R1 for traffic light ahead.V2 stopped n/b on R1 behind V3.V1 n/b on R1, does not stop in time and collides into rear of V2, causing V2 to collide into rear of V3.				North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	

Collision Details Report

NINTH LINE FOXWOOD AVE

From: January 1, 2014 **To:** September 28, 2021

Location ..... FOXWOOD AVE @ NINTH LINE **Municipality.....** Mississauga

Traffic Control.... Two-way Stop **Total Collisions....** 1

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
160248080	2016-Jun-30, Thu,19:29	Clear	Turning movement	P.D. only	North	Dry	Turning right	Automobile, station wagon	Other motor vehicle	Improper turn	
Comments:	Statement #1: V1 was turning from northbound R2 to Eastbound R1V2 was stopped at stop sign westbound R1V1 turned right and turned too wide and struck V2				West	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	

Collision Details Report

NINTH LINE DOUG LEAVENS BLVD

From: January 1, 2014 **To:** September 28, 2021

Location ..... DOUG LEAVENS BLVD @ NINTH LINE **Municipality.....** Mississauga

Traffic Control.... Two-way Stop **Total Collisions....** 3

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
150485640	2015-Dec-14, Mon,20:10	Rain	Sideswipe	P.D. only	North	Wet	Going ahead	Pick-up truck	Other motor vehicle	Improper turn	
Comments:	Statement #1: V2 WAS NORTHBOUND ON R1V1 WAS ATTEMPTING TO TURN NORTHBOUND ONTO R1V1 STRUCK V2				North	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
180403769	2018-Oct-25, Thu,19:30	Clear	Turning movement	P.D. only	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:	Statement #1: V2 S/B ON R1 ALLEDGES WAS MAKING LEFT WHEN REAR ENDED BY V1 V1 S/B ON R1 BEHIND V2 V1 ALLEDGES V2 ATTEMPTED TO TURN LEFT FROM THRU LANE				South	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Driving properly	
190177213	2019-May-15, Wed,18:48	Clear	Turning movement	P.D. only	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Improper turn	
Comments:	Statement #1: V1 WAS INTIALLY HEADING SOUTHBOUND ON R1, ATTEMPTING TO MAKE A LEFT ON TO R2.V2 WAS HEADING NORTHBOUND ON R1, GOING STRAIGHT AHEAD.AS A RESULT, V1 STRUCK V2 ON ITS PASSENGER SIDE.				South	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Driving properly	

Collision Details Report

NINTH LINE BEACHAM ST

From: January 1, 2014 **To:** September 28, 2021

Location ..... BEACHAM ST @ NINTH LINE **Municipality.....** Mississauga

Traffic Control.... Two-way Stop **Total Collisions....** 1

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
170019545	2017-Jan-15, Sun,22:35	Clear	SMV other	P.D. only	North	Dry	Turning right	Automobile, station wagon	Pole (sign, parking meter)	Lost control	
Comments:	Statement #1: V1 NB R1, ATTEMPTS TO MAKE RT ONTO R2. MISSES CORNER AND STRIKES STOP SIGN.					Dry					

Collision Details Report

From: January 1, 2014 **To:** September 28, 2021

Location ..... NINTH LINE btwn OSPREY BLVD & FOXWOOD AVE **Municipality.....** Mississauga

Traffic Control.... **Total Collisions....** 3

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
150339550	2015-Aug-29, Sat,18:05	Clear	Rear end	P.D. only	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:	Statement #1: D1 TRAVELING SOUTHBOUND ON R1D2 TRAVELING SOUTHBOUND ON R1D2 STOPS FOR RED TRAFFIC SIGNALD1 REAR ENDS D2				South	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Driving properly	
160018686	2016-Jan-14, Thu,08:24	Clear	Rear end	P.D. only	South	Slush	Going ahead	Automobile, station wagon	Other motor vehicle	Lost control	
Comments:	Statement #1: V2 TRAVELING S/B ON R1 IN LANE 1, STOPPED BEHIND LINE OF TRAFFIC AT RED LIGHT AT R2;V1 TRAVELING S/B ON R1 IN LANE 1 APPROACHING V2;V1 STRIKES REAR OF V2.				South	Slush	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
160365493	2016-Sep-29, Thu,08:02	Rain	Rear end	P.D. only	South	Wet	Stopped	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:	Statement #1: D2 was driving S/B on ninth line approaching Osprey Bv. D2 came to a stop on ninth line approachig Osprey Bv. behind other cars that were stopped since there was heavy traffic. D1 came from behind, failed to stop and rear ended D1.				South	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	

Collision Details Report

From: January 1, 2014 **To:** September 28, 2021

Location ..... NINTH LINE btwn FOXWOOD AVE & DOUG LEAVENS BLVD **Municipality.....** Mississauga

Traffic Control.... **Total Collisions....** 8

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
150244259	2015-Jun-21, Sun,01:03	Clear	Other	P.D. only	East	Dry	Reversing	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:	Statement #1: V1 EAST BACKING OUT OF 6252 NINTH LINEV2 DRIVING S/B R1 L1V1 FAILS TO YIELD TO TRAFFICV2 STRIKES V1				South		Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
150248935	2015-Jun-24, Wed,08:17	Clear	Rear end	P.D. only	North	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:	Statement #1: V2 WAS TRAVELLING N/B ON NINTHLINE N/O FOXWOOD. V1 WAS TRAVELLING BEHIND V2. V2 SLOWED DOWN DUE TO TRAFFIC. V1 COLLIDED INTO THE REAR OF V2.				North		Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
160126873	2016-Apr-03, Sun,21:03	Snow	Approaching	Non-fatal injury	North	Ice	Going ahead	Automobile, station wagon	Other motor vehicle	Lost control	
Comments:	Statement #1: V1 WAS DRIVING NORTH BOUND ON NINTH LINE AND LOST CONTROL, WENT INTO THE SOUTH BOUND LANE AND STRUCK V2				South		Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
160194409	2016-May-23, Mon,01:59	Clear	SMV other	Non-fatal injury	North	Dry	Going ahead	Automobile, station wagon	Pedestrian	Other	
Comments:	Statement #1: V1 WAS N/B ON R1, APPROACHING R2.AT THIS TIME, P1 WAS STANDING ON THE WEST SIDE OF R1, JUST S/O OF R2.P1 JUMPED IN FRONT OF V1 AS IT PASSED IN AN EFFORT TO END HIS LIFE.					Dry					
170290667	2017-Aug-05, Sat,11:44	Clear	Sideswipe	P.D. only	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Lost control	
Comments:	Statement #1: V1 WAS TRAVELING SOUTH BOUND ON NINTH LINE. V1 VEERED INTO THE NORTH BOUND LANE ON NINTH LINE, STRIKING D3 IN THE DRIVER'S SIDE REAR WHEEL, THEN PROCEEDED TO STRIKE D2 IN THE REAR DRIVER SIDE WHEEL, THEN FLIPPED OVER TWICE, COMING TO A STOP ON THE NORTH BOUND SHOULDER OF NINTH LINE.				North		Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
170480362	2017-Dec-24, Sun,23:07	Snow	Sideswipe	P.D. only	North	Ice	Going ahead		Other motor vehicle	Driving properly	
Comments:	Statement #1: D1 TRAVELING N/B ON R1D2 TRAVELING S/B ON R1DUE TO EXTREME WEATHER CONDITIONS AND MINIMAL VISIBILITY, BOTH D1 AND D2 COLLIDED TO THE SIDE OF EACH OTHER TRAVELING OPPOSITE DIRECTIONS ON R1.DUE TO THE ROAD AND WEATHER CONDITIONS AT THE TIME, NEITHER OF THE DRIVERS` WERE CHARGED.				South		Going ahead		Other motor vehicle	Driving properly	

180001639	2018-Jan-02, Tue,00:00	Drifting Snow	SMV other	P.D. only	South	Packed snow	Going ahead	Automobile, station wagon	Pole (utility, power)	Driving properly
Comments:	Statement #1: V1 S/B ON R1SNOW HAS BLOWN OVER COVERING MOST OF LANE 1 FOR S/B TRAFFIC.V1'S TIRES CATCH INTO SNOW, HOOKS TIRE.V1 INTO POLE.CITY OF MISSISSAUA CALLED OUT TO RE-PLOW ROAD.									
190043630	2019-Feb-03, Sun,07:02	Clear	SMV other	P.D. only	South	Wet	Going ahead	Automobile, station wagon	Pole (utility, power)	Other
Comments:	Statement #1: V1 TRAVELLING SOUTH BOUND ON R1, APPROACHING R2, VEERED OFF ROADWAY APPROXIMATELY 30M AND STRUCK A POLE ON WEST SIDE OF NINTH LINE.					Wet				

Collision Details Report

From: January 1, 2014 **To:** September 28, 2021

Location ..... NINTH LINE btwn DOUG LEAVENS BLVD & BEACHAM ST **Municipality.....** Mississauga

Traffic Control.... **Total Collisions....** 1

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
160234678	2016-Jun-20, Mon,15:40	Clear	Rear end	P.D. only	South	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:	Statement #1: AS D2 CAME TO A STOP ON NINTH LINE SHE WAS STRUCK FROM BEHIND BY D1 WHO WAS THEN STRUCK BY D3 WHO WAS THEN STRUCK BY D4				South		Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	

APPENDIX M

Signal Warrant Analysis Worksheets

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? Ninth Line and Street A (RIRO)

What is the direction of the Main Road street? North-South

When was the data collected? 2041 FT

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 3

d.- What is the operating environment? Urban **Population >= 10,000 AND Speed < 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	0	781	0	0	0	6	0	748	31	0	0	0	15
8:00	0	781	0	0	0	6	0	748	31	0	0	0	15
9:00	0	781	0	0	0	6	0	748	31	0	0	0	15
10:00	0	781	0	0	0	6	0	748	31	0	0	0	15
16:00	0	781	0	0	0	6	0	748	31	0	0	0	15
17:00	0	781	0	0	0	6	0	748	31	0	0	0	15
18:00	0	781	0	0	0	6	0	748	31	0	0	0	15
19:00	0	781	0	0	0	6	0	748	31	0	0	0	15
Total	**0**	**6,248**	**0**	**0**	**0**	**48**	**0**	**5,984**	**248**	**0**	**0**	**0**	**120**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume									
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: Ninth Line and Street A (RIRO)

Count Date: 2041 FT

Justification 1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00		
1A	480	720	600	900	1,566	1,566	1,566	1,566	1,566	1,566	1,566	1,566		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	180	255	180	255	6	6	6	6	6	6	6	6		
	COMPLIANCE %				2	2	2	2	2	2	2	2	19	2
Restricted Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours — Yes ☐ No ☑									

Justification 2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00		
2A	480	720	600	900	1,560	1,560	1,560	1,560	1,560	1,560	1,560	1,560		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	15	15	15	15	15	15	15	15		
	COMPLIANCE %				20	20	20	20	20	20	20	20	160	20
Restricted Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours — Yes ☐ No ☑									

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☐	NO ☑	YES	NO
Justification 2	Delay Cross Traffic	YES ☐	NO ☑	☐	☑ NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	7:00	1,539	5	115	4 %	4 %
	8:00	1,539	5	115	4 %	
	9:00	1,539	5	115	4 %	
	10:00	1,539	5	115	4 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

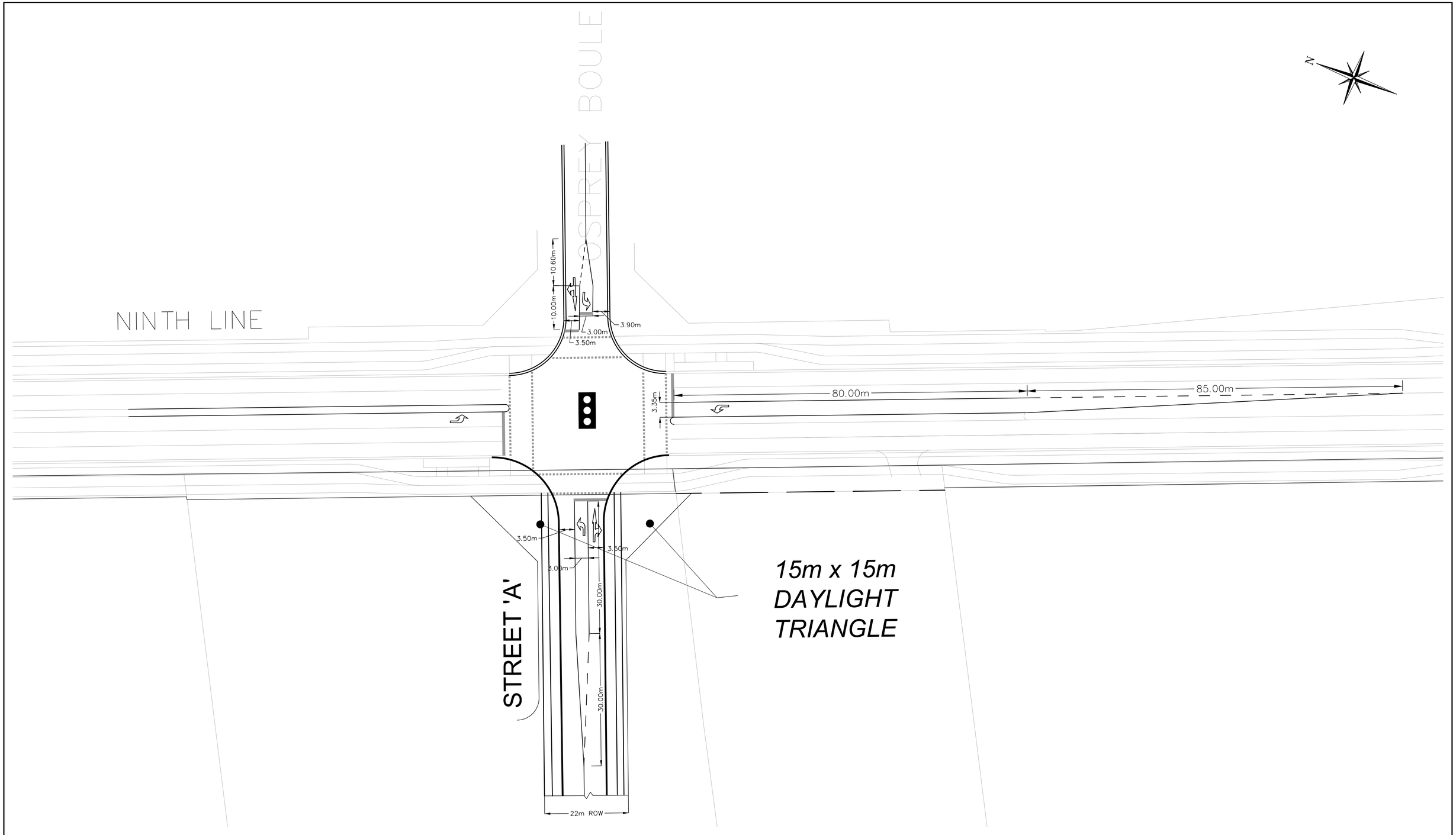
Intersection: Ninth Line and Street A (RIRO) Count Date: 2041 FT

Summary Results

Justification			Compliance		Signal Justified? YES	NO
1. Minimum Vehicular Volume	A	Total Volume	100	%		
	B	Crossing Volume	2	%		☑
2. Delay to Cross Traffic	A	Main Road	100	%		
	B	Crossing Road	20	%		☑
3. Combination	A	Justificaton 1	2	%		
	B	Justification 2	20	%		☑
4. 4-Hr Volume			4	%		☑
5. Collision Experience			0	%		☑
6. Pedestrians	A	Volume	Justification not met			
	B	Delay	Justification not met			☑

APPENDIX N

External Intersection Functional Sketches



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3. TURN LANE STORAGE LENGTHS AND WIDTHS ARE PRELIMINARY AND TO BE CONFIRMED BASED ON THE TRAFFIC STUDY.
4. EXACT DESIGN SPECIFICATIONS TO BE CONFIRMED DURING DETAILED INTERSECTION DESIGN ALONGSIDE DRAWINGS FOR FUTURE WIDENING OF NINTH LINE ROAD.

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR DISCUSSION PURPOSES ONLY	03/17/2021
1	ISSUED FOR INTERNAL REVIEW	04/25/2023
2	ISSUED FOR INTERNAL REVIEW	09/15/2023

Engineer

Engineer

DRAFT
FOR DISCUSSION PURPOSES ONLY

Project
NINTH LINE (BRITANNIA–DERRY DEVELOPMENTS)
CITY OF MISSISSAUGA

Drawing
NINTH LINE AND OSPERY BOULEVARD/STREET "A"
FUNCTIONAL DESIGN – SIGNALIZED

CROZIER & ASSOCIATES
Consulting Engineers
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3
705-446-3510 T
705-446-3520 F
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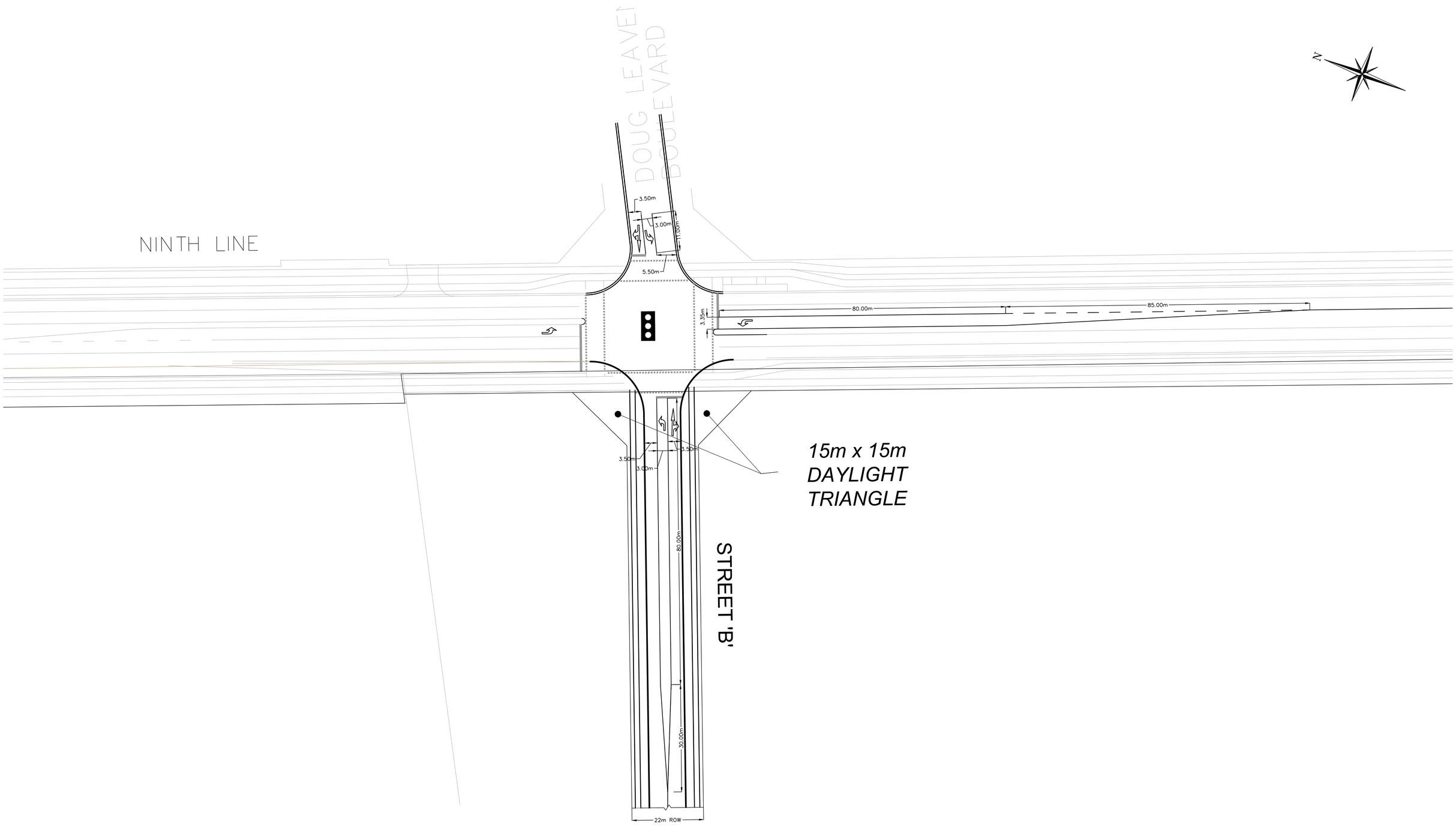
INFO@CFCROZIER.CA

Drawn By	Design By	Project
I.A./R.L.	S.K.	780–5227
Check By	Check By	Scale / Drawing
P.A.	A.F.	N.T.S. / C300



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No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR DISCUSSION PURPOSES ONLY	03/17/2021
1	ISSUED FOR INTERNAL REVIEW	04/25/2023
2	ISSUED FOR INTERNAL REVIEW	09/15/2023

Engineer

Engineer

DRAFT
FOR DISCUSSION PURPOSES ONLY

Project
NINTH LINE (BRITANNIA–DERRY DEVELOPMENTS)
CITY OF MISSISSAUGA

Drawing
NINTH LINE AND DOUG LEAVANS/STREET "B"
FUNCTIONAL DESIGN

CROZIER & ASSOCIATES Consulting Engineers
THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3
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I.A./R.L.	S.K.		780–5227
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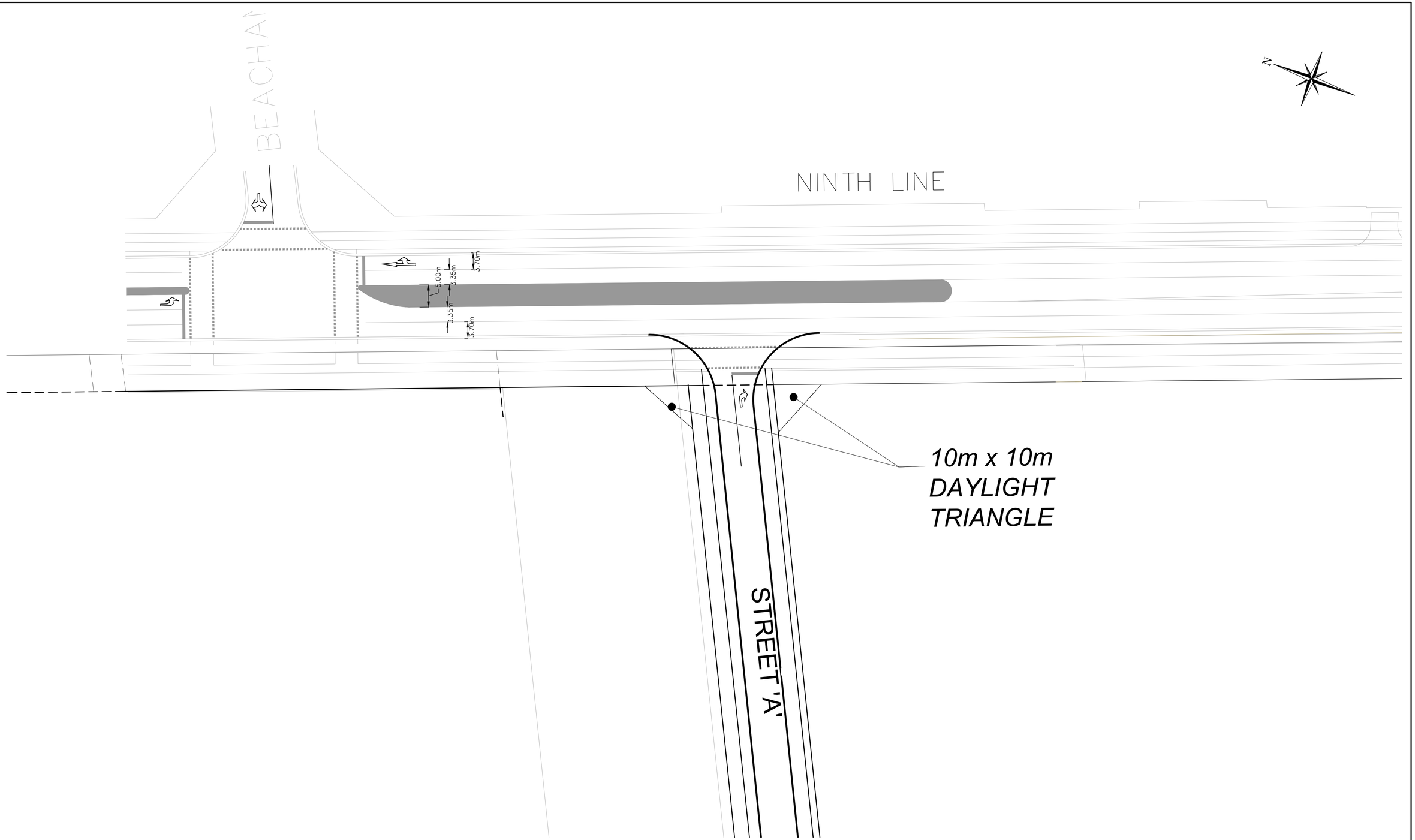
P.A	A.F.	N.T.S.	C301



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2. THIS DRAWING IS FOR SCHEMATIC PURPOSE ONLY AND NOT MEANT TO BE SCALED.
3. TURN LANE STORAGE LENGTHS AND WIDTHS ARE PRELIMINARY AND TO BE CONFIRMED BASED ON THE TRAFFIC STUDY.
4. EXACT DESIGN SPECIFICATIONS TO BE CONFIRMED DURING DETAILED INTERSECTION DESIGN ALONGSIDE DRAWINGS FOR FUTURE WIDENING OF NINTH LINE ROAD.

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR DISCUSSION PURPOSES ONLY	03/17/2021
1	ISSUED FOR INTERNAL REVIEW	04/25/2023
2	ISSUED FOR INTERNAL REVIEW	09/15/2023

Engineer

Engineer

DRAFT
FOR DISCUSSION PURPOSES ONLY

Project
NINTH LINE (BRITANNIA–DERRY DEVELOPMENTS)
CITY OF MISSISSAUGA

Drawing
NINTH LINE AND STREET "A"
FUNCTIONAL DESIGN

CROZIER & ASSOCIATES Consulting Engineers
THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3
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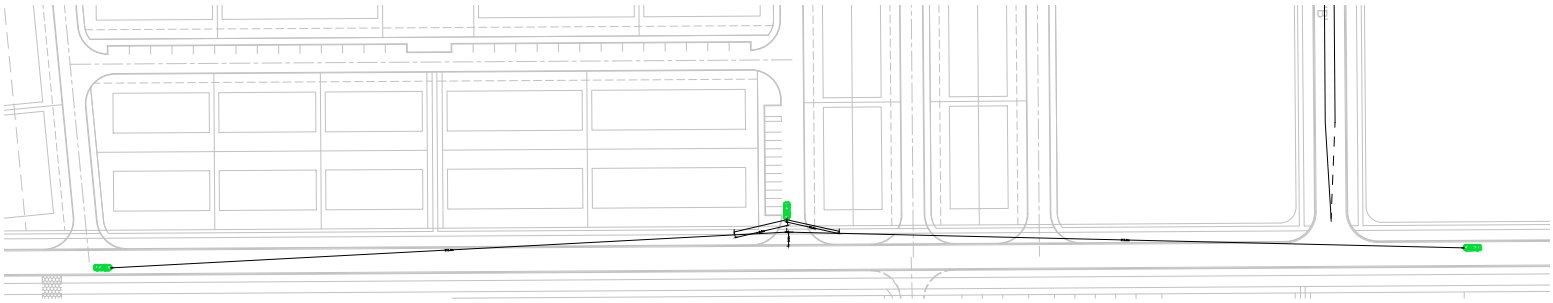
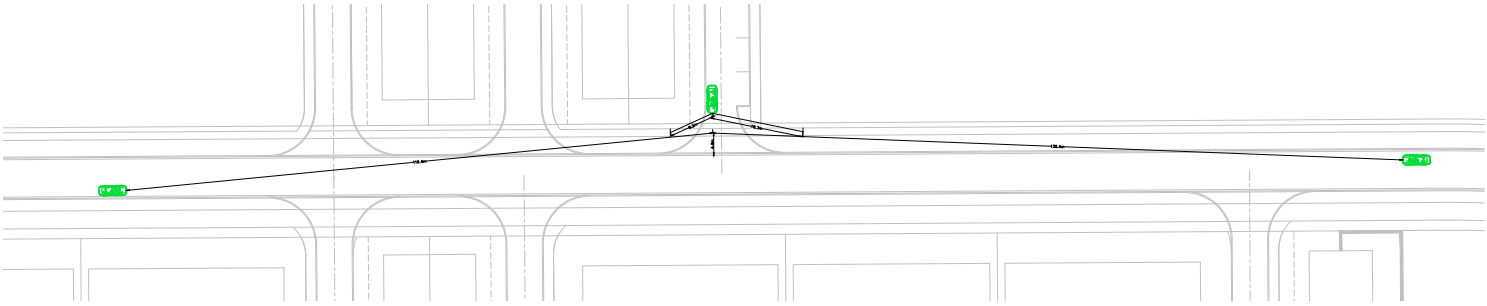
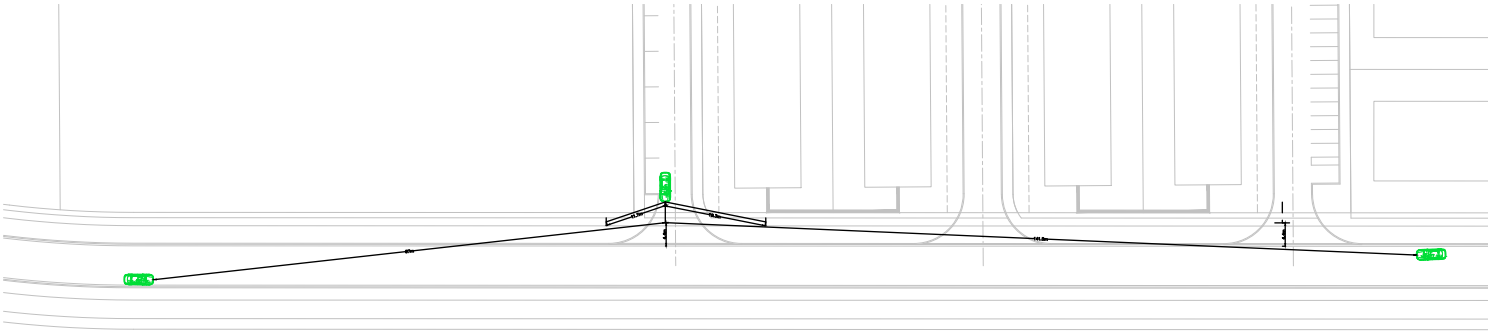
S.K.	S.K.		780–5227
Check By	Check By	Scale	Drawing
P.A.	A.F.	N.T.S.	C302

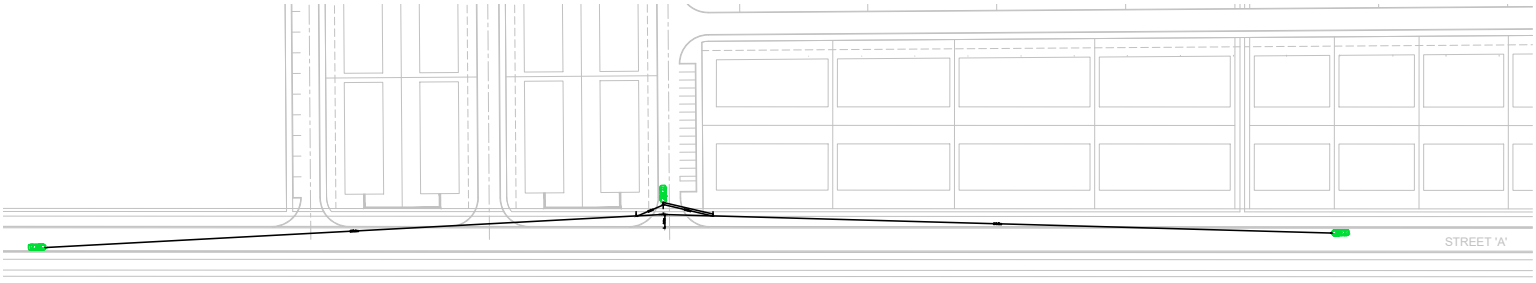
APPENDIX O

Condo Road Sight Distance Assessment Figures





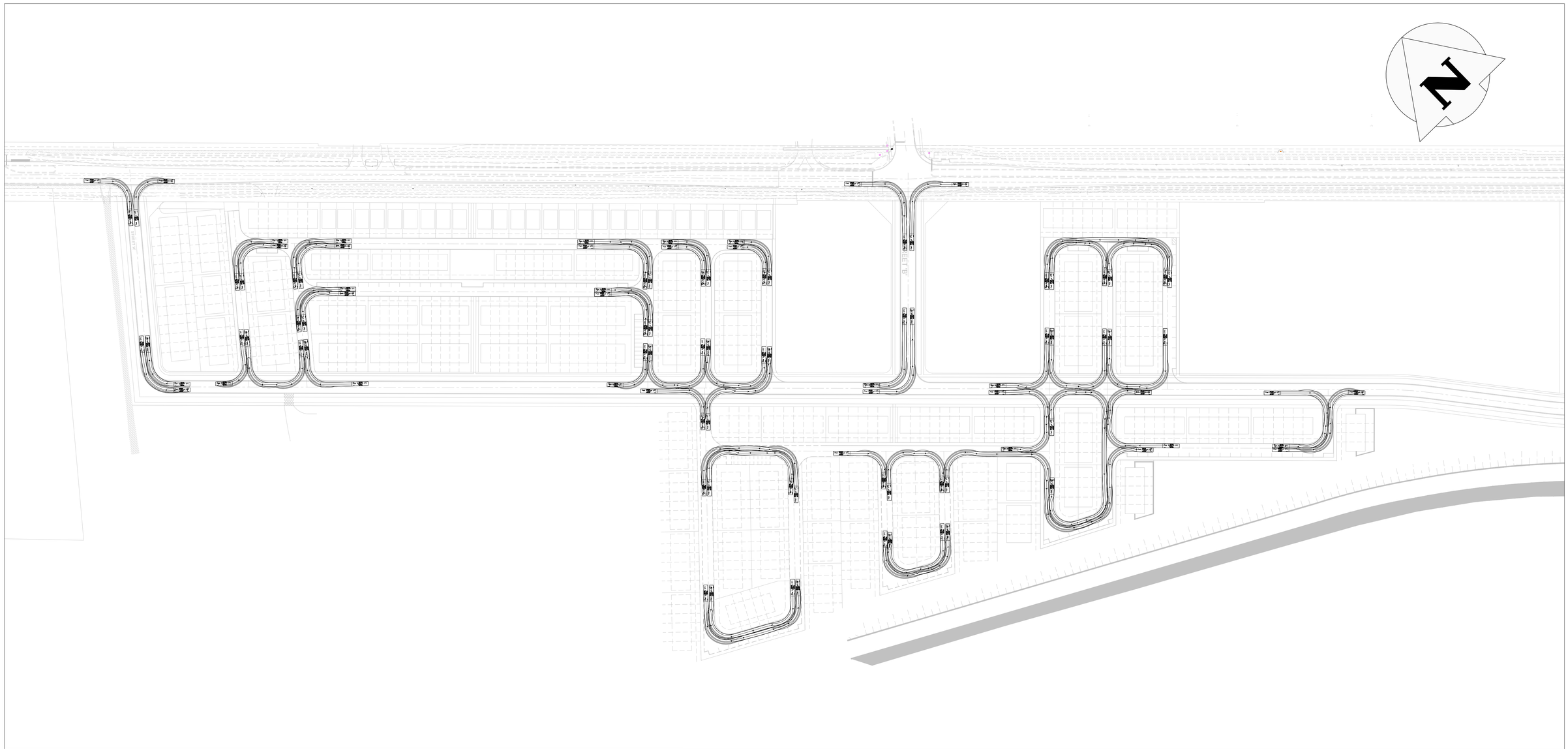


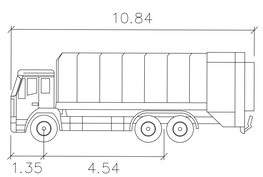

STREET 'A'

STREET 'A'

APPENDIX P

Vehicle Turning Diagrams





Peel Sideload CFC

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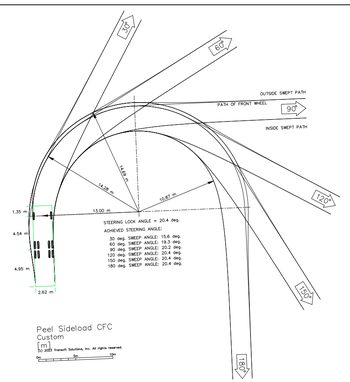
Track	: 2.62
Lock to Lock Time	: 6.0
Steering Angle	: 20.4



Project

6136–6588 NINTH LINE
CITY OF MISSISSAUGA

Drawing

PEEL SIDE LOAD CFC MOVEMENT

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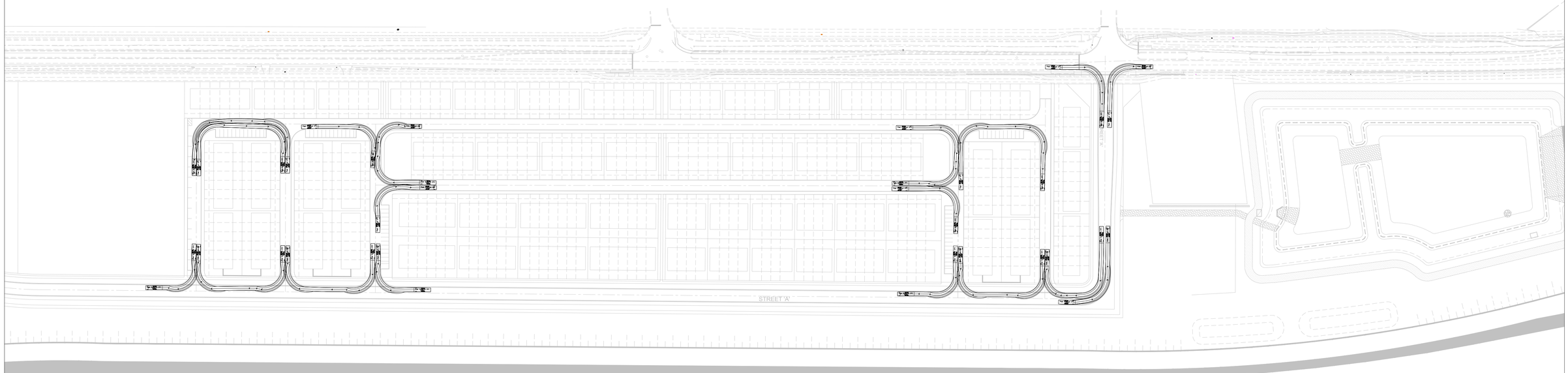
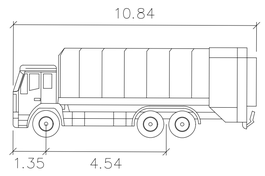
N.T.S	19/04/2023	A.H./P.A.	FIG 01





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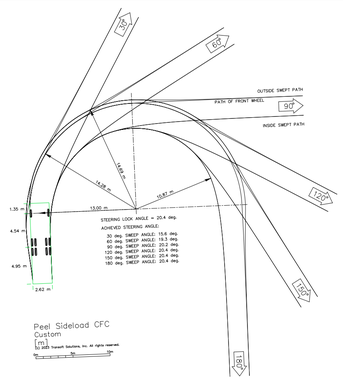
Lock to Lock Time	: 6.0
Steering Angle	: 20.4



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6136–6588 NINTH LINE
CITY OF MISSISSAUGA

Drawing

PEEL SIDE LOAD CFC MOVEMENT

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Scale	Date	Check By	Drawing
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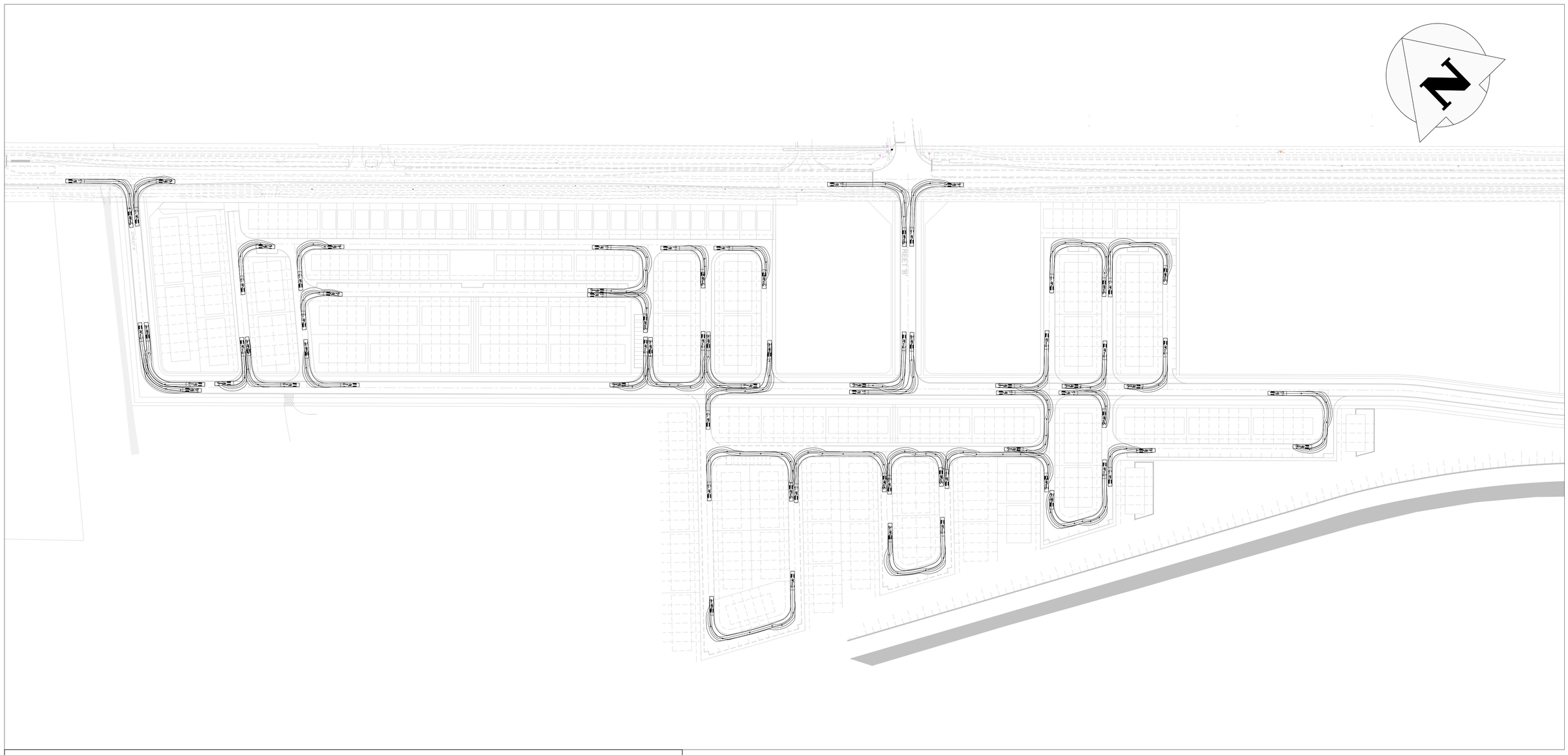
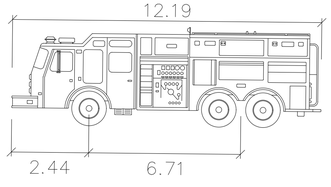
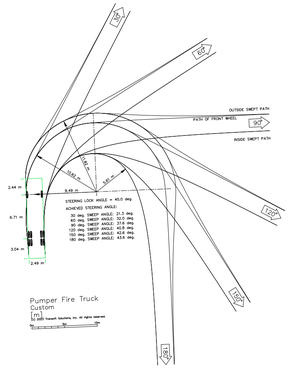




Pumper Fire Truck

	meters
Width	: 2.49
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 45.0



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6136–6588 NINTH LINE
CITY OF MISSISSAUGA

Drawing

PUMPER FIRE TRUCK

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Scale	Date	Check By	Drawing
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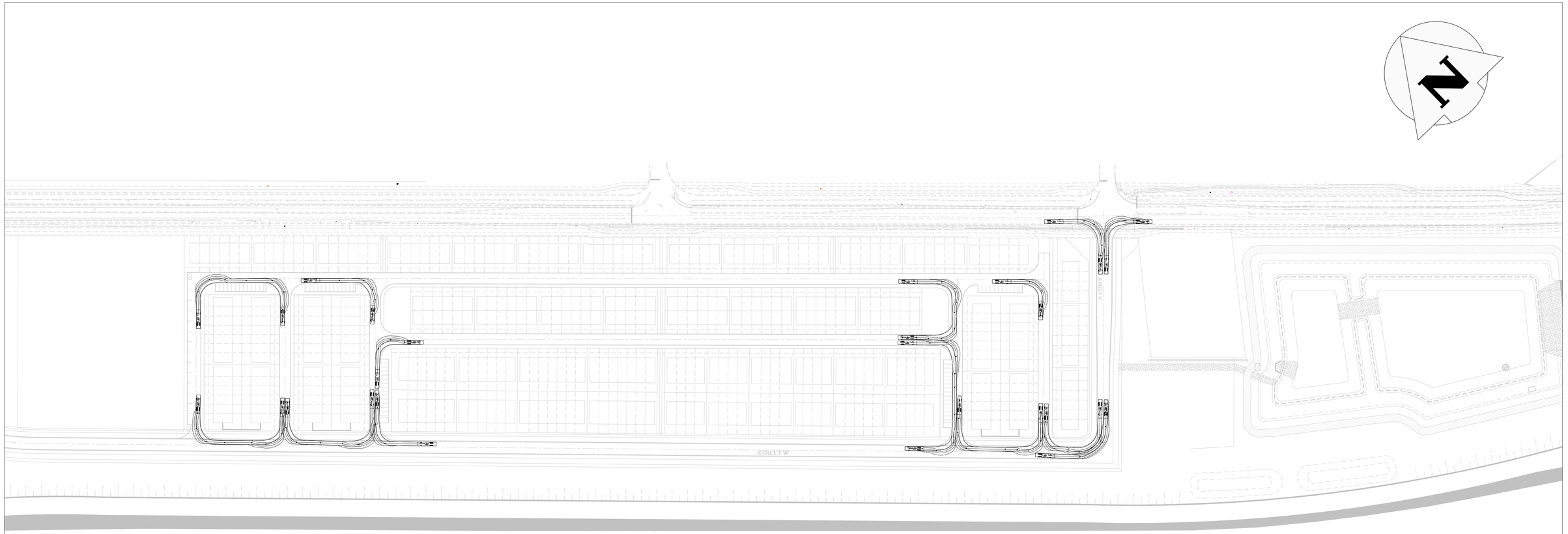

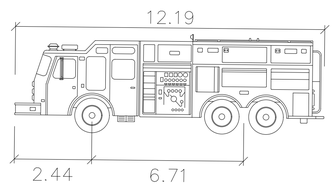

Pumper Fire Truck

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Width	: 2.49
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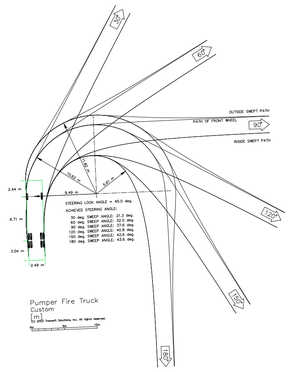

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6136–6588 NINTH LINE
CITY OF MISSISSAUGA

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PUMPER FIRE TRUCK

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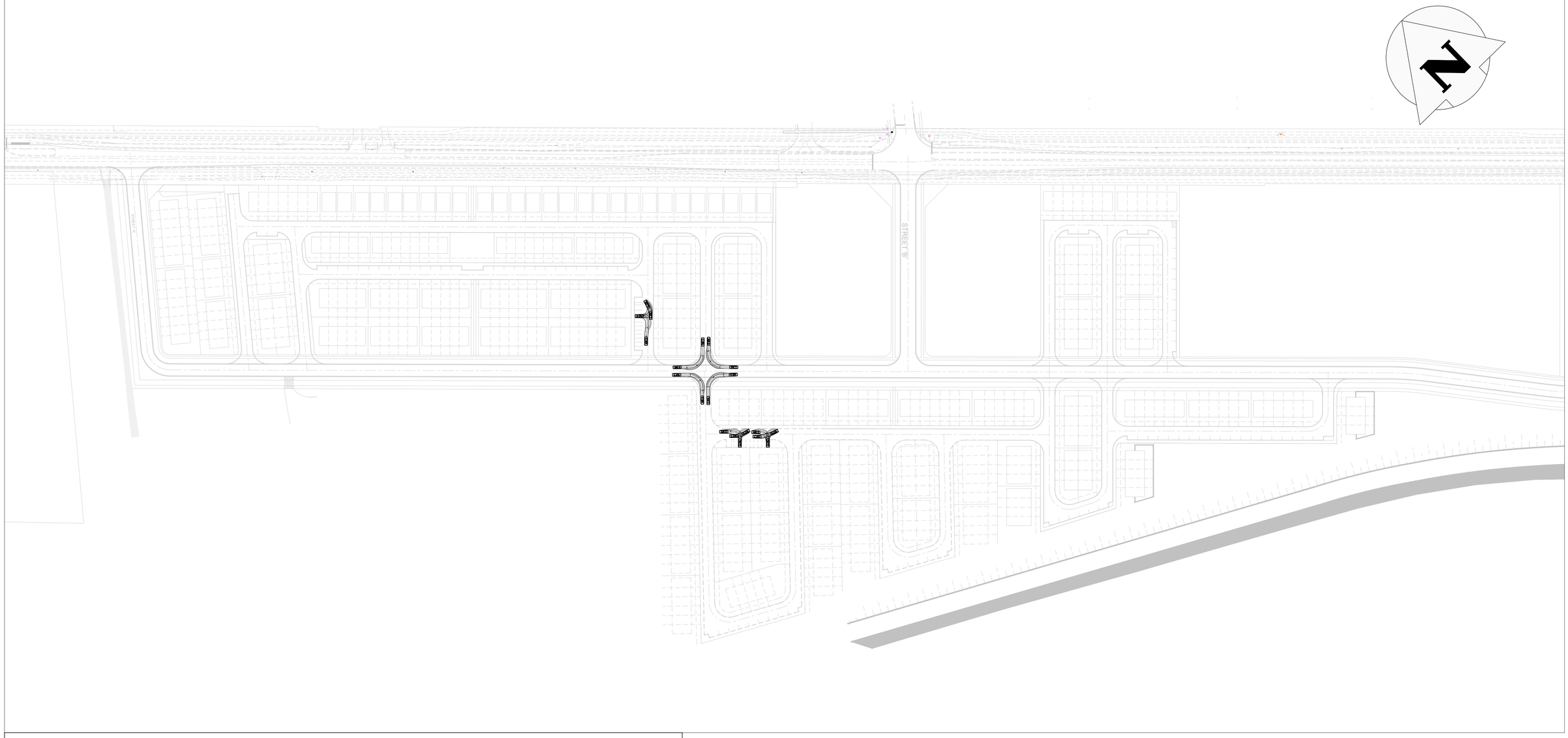
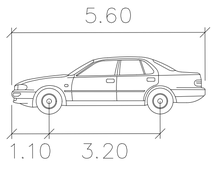
Scale	Date	Check By	Drawing
N.T.S	19/04/2023	A.H./P.A.	FIG 04





P

	meters
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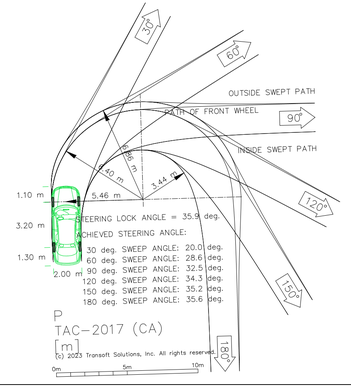
Steering Angle	: 35.9



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Project

6136-6588 NINTH LINE
CITY OF MISSISSAUGA

Drawing

PASSENGER VEHICLE (TAC)

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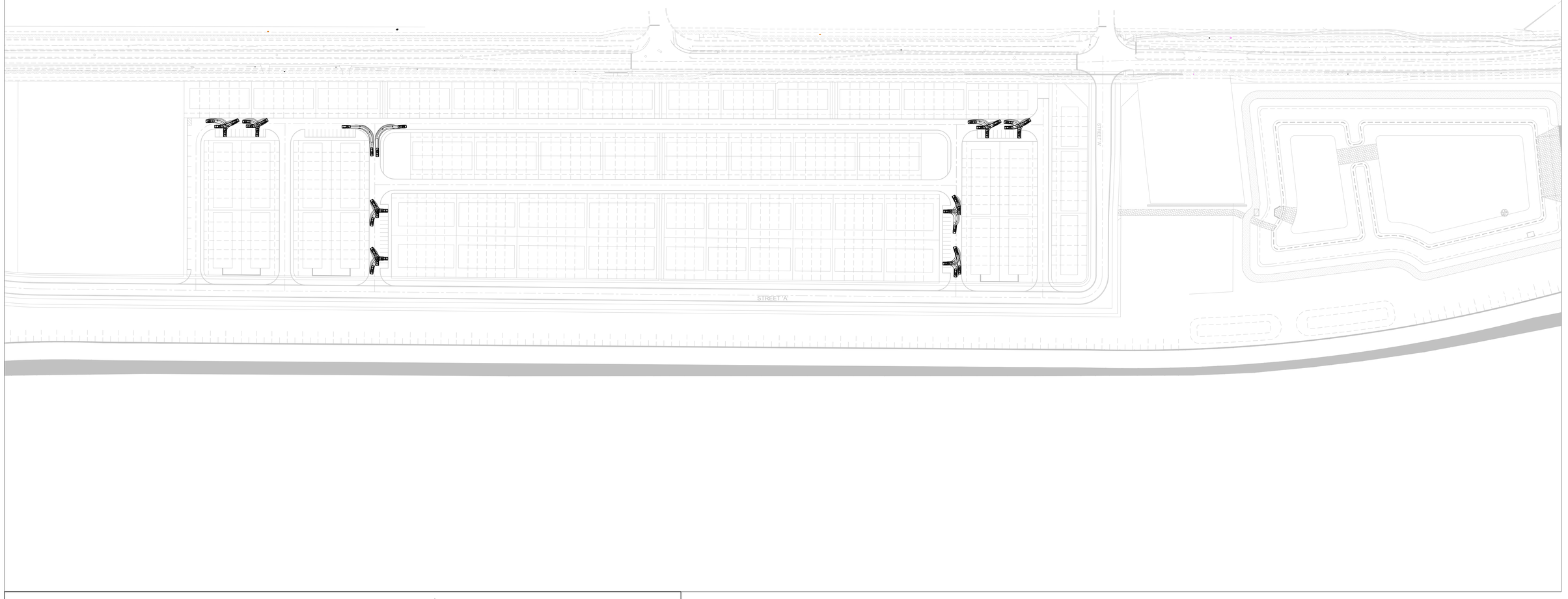
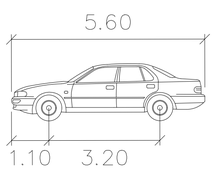
N.T.S	19/04/2023	A.H./P.A.	FIG 05





P

	meters
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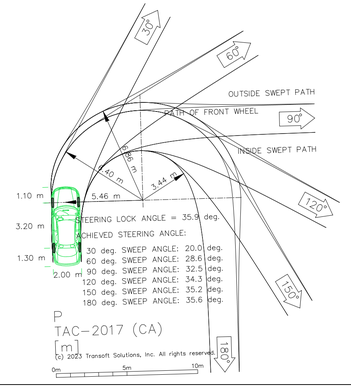
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9



Project

6136-6588 NINTH LINE
CITY OF MISSISSAUGA

Drawing

PASSENGER VEHICLE (TAC)

CROZIER
CONSULTING ENGINEERS

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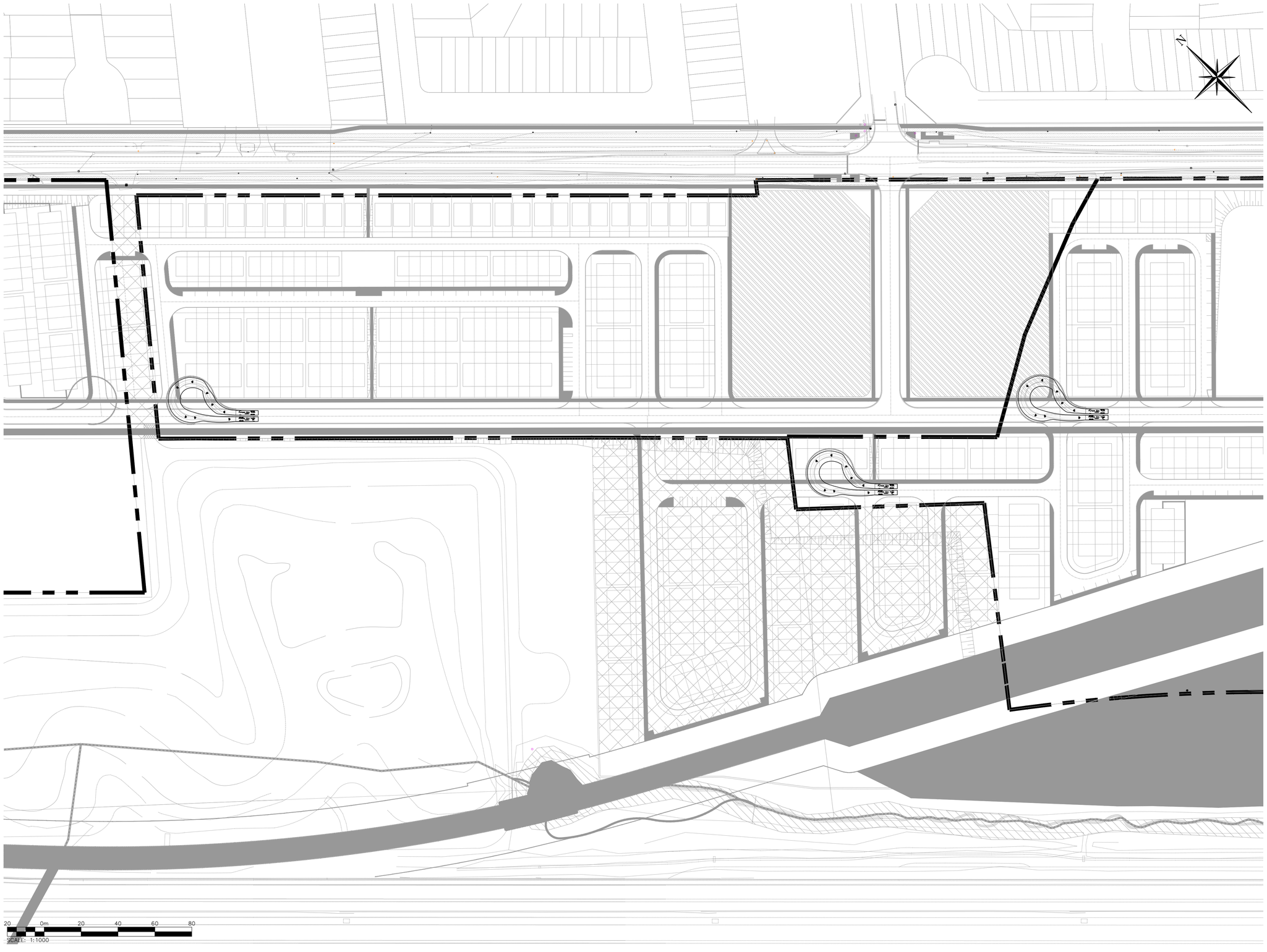
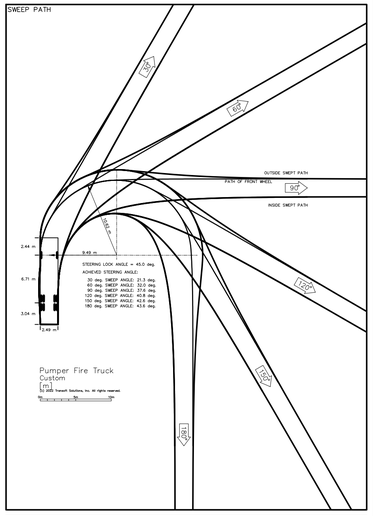
Scale	Date	Check By	Drawing
N.T.S	19/04/2023	A.H./P.A.	FIG 06



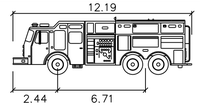
FOR REVIEW

NOT TO BE USED FOR CONSTRUCTION

SWEEP PATH



VEHICLE PROFILE



Pumper Fire Truck

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Width	: 2.49
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 45.0

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR REVIEW	09/20/2023

Project

NINTH LINE (DERRY–BRITANNIA)
CITY OF MISSISSAUGA

Drawing

VEHICLE MANEUVERING ANALYSIS

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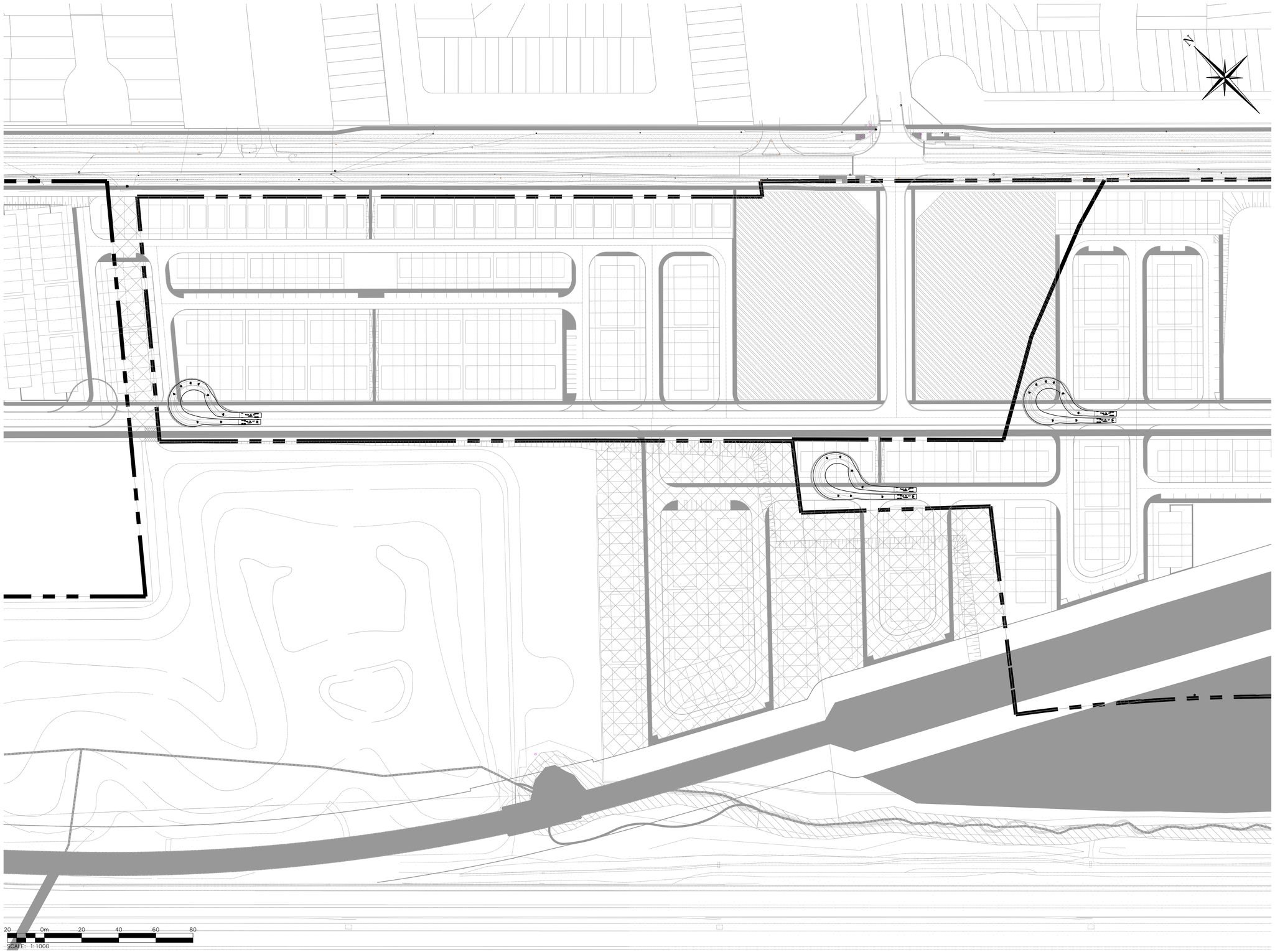
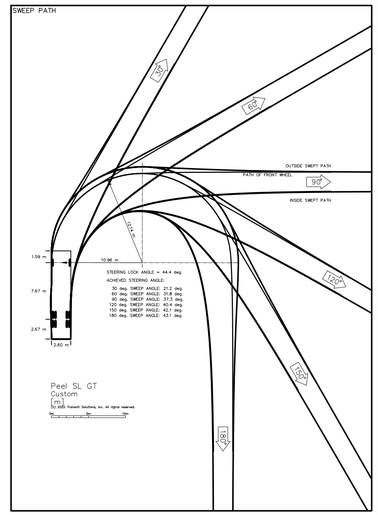
R.L.			780–5227
Check By	Check By	Scale	Drawing
P.A.		1:1000	T300

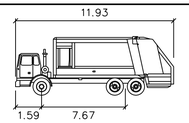


FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

SWEEP PATH



VEHICLE PROFILE



Peel SL GT

meters

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Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 44.4

No.	ISSUE	DATE: MM/DD/YYYY
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Project

NINTH LINE (DERRY–BRITANNIA)
CITY OF MISSISSAUGA

Drawing

VEHICLE MANEUVERING ANALYSIS

CROZIER
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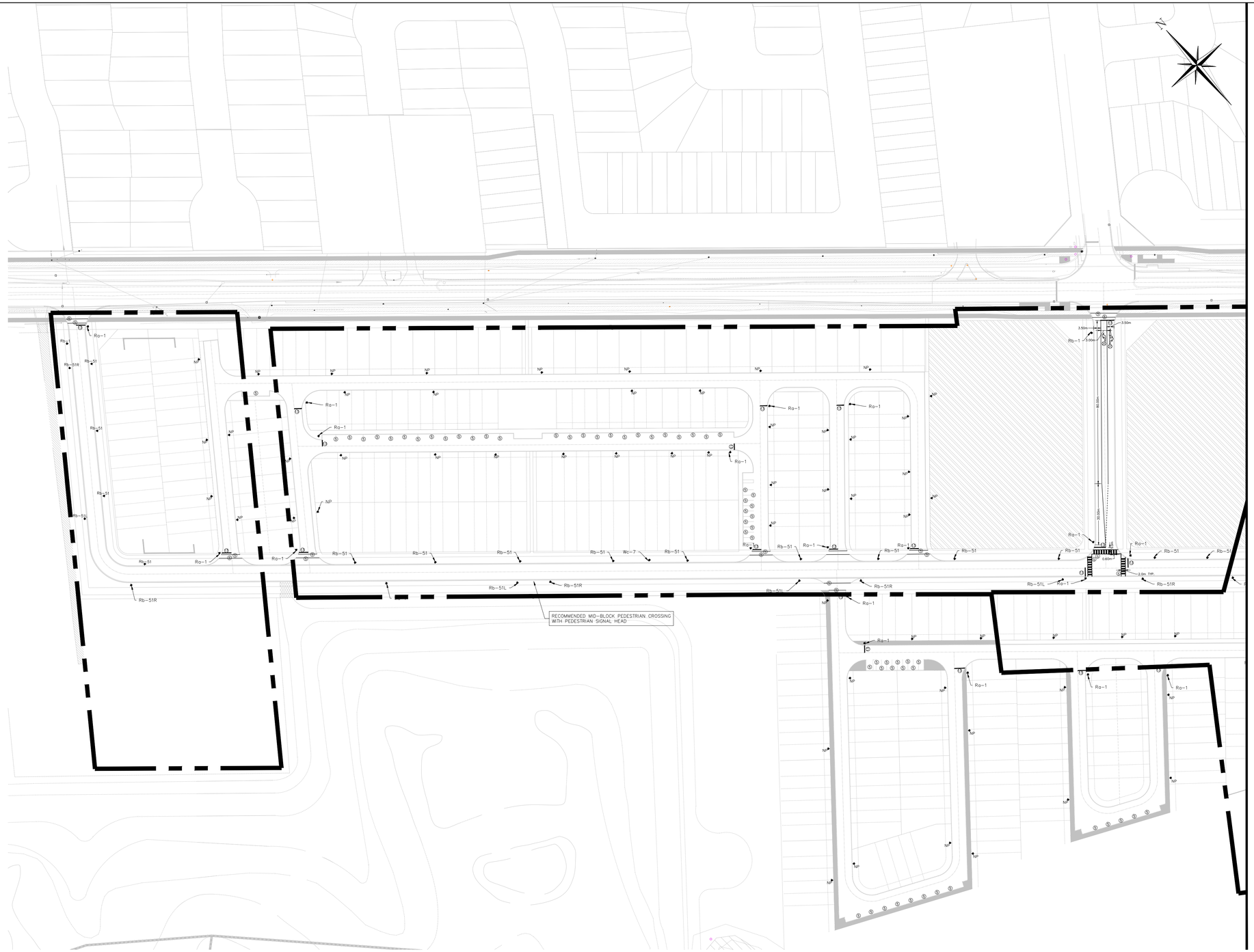
Check By	P.A.	Check By		Scale	1:1000
				Drawing	T301

APPENDIX Q

Pavement Marking and Signage Plan



LEGEND

PROPOSED SIGN

RAISED DECORATIVE CONCRETE

PAVEMENT MARKINGS LEGEND

5	SOLID WHITE, 10cm
13	SOLID WHITE, 30cm
20	SYMBOLS
][	LIMITS OF MARKINGS

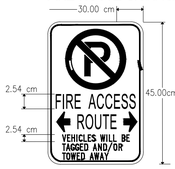
NOTES:

1. USE Ⓧ TO DENOTE PAVEMENT MARKING

SIGNAGE LEGEND

SIGN NAME	SIGN NUMBER	SIZE (cm)	OTM BOOK	SECTION
STOP	Ra-1	60x60	5	2
PEDESTRIAN CROSSOVER	Ra-4	60x75	5	4.1
MAXIMUM SPEED (MAXIMUM 40)	Rb-1	60x75	5	6
NO PARKING	Rb-51	30x30	5	13
NO PARKING (LEFT/RIGHT)	Rb-51 (L/R)	30x30	5	13
SCHOOL AREA	Wc-1	60x60	6	7
PEDESTRIANS AHEAD	Wc-7	75x75	6	7

FIRE ROUTE SIGNAGE AND INSTALLATION SPECIFICATIONS (NP)



SIGN REQUIREMENTS

SIGNS SHALL COMPLY WITH THE ATTACHED FIGURE.

1. ALL SIGN SHALL HAVE APPROPRIATE RADIUS. CORNER AS PER DIAGRAM OR 4 cm RADIUS.
2. ALL SHARP EDGES REMOVED FROM SIGN BLANKS. COMPLETED SIGNS SHALL HAVE 11mm X 18mm SLOTTED HOLES TO ACCEPT METRIC OR IMPERIAL MOUNTING WITH HOLES 3cm–12cm FROM OUTER EDGE OR AS PER DIAGRAM.
3. CENTRE OF MOUNTING SLOTS SHALL BE EQUAL TO MULTIPLE OF 5.08cm (2 INCHES) CENTRALLY LOCATED ON BLANK. ON STEEL BLANKS, FABRICATIONS SHALL BE FABRICATED BEFORE GALVANIZING AS TO PREVENT CORROSION. ON ALUMINUM BLANKS, FABRICATING SHALL BE PERFORMED PRIOR TO PAINTING AND BAKING.
4. FINISHED SIGNS AND SYMBOLS SHALL BE APPLIED TO 1.63mm UTILITY GRADE ALUMINUM WITH BRIGHT WHITE MILL BAKED FINISH ON BOTH SIDES. ALL INK'S SHALL BE FACES TO CONFORM TO REG. 486 OF THE HIGHWAY TRAFFIC ACT.
5. ALL LETTERING TO MEET M.T.O. STANDARDS.
6. ALL COLOURS TO MEET M.T.O. STANDARDS.

ACCESSIBLE PARKING SIGNAGE AND INSTALLATION SPECIFICATIONS (Rb-93)

CIRCLE TO BE RED IN COLOR NON A WHITE BACKGROUND WITH BLACK LETTERING

WHEELCHAIR SYMBOL TO BE BLUE IN BACKGROUND AND OUTLINE, AND WHITE IN SYMBOL AND BORDER

SIGN REQUIREMENTS

SIGNS SHALL COMPLY WITH THE ATTACHED FIGURE.

1. ALL SIGN SHALL HAVE APPROPRIATE RADIUS. CORNER AS PER DIAGRAM OR 4 cm RADIUS.
2. ALL SHARP EDGES REMOVED FROM SIGN BLANKS. COMPLETED SIGNS SHALL HAVE 11mm X 18mm SLOTTED HOLES TO ACCEPT METRIC OR IMPERIAL MOUNTING WITH HOLES 3cm–12cm FROM OUTER EDGE OR AS PER DIAGRAM.
3. CENTRE OF MOUNTING SLOTS SHALL BE EQUAL TO MULTIPLE OF 5.08cm (2 INCHES) CENTRALLY LOCATED ON BLANK. ON STEEL BLANKS, FABRICATIONS SHALL BE FABRICATED BEFORE GALVANIZING AS TO PREVENT CORROSION. ON ALUMINUM BLANKS, FABRICATING SHALL BE PERFORMED PRIOR TO PAINTING AND BAKING.
4. FINISHED SIGNS AND SYMBOLS SHALL BE APPLIED TO 1.63mm UTILITY GRADE ALUMINUM WITH BRIGHT WHITE MILL BAKED FINISH ON BOTH SIDES. ALL INKS SHALL BE FACES TO CONFORM TO REG. 486 OF THE HIGHWAY TRAFFIC ACT.
5. ALL LETTERING TO MEET M.T.O. STANDARDS.
6. ALL COLOURS TO MEET M.T.O. STANDARDS.

INSTALLATION REQUIREMENTS

1. SIGN MUST BE PLACED MIDWAY BETWEEN THE LATERAL LIMITS OF THE PARKING STALL.
2. SIGN SHOULD BE MOUNTED AT A HEIGHT OF 1.5m TO 2.5m, MEASURED FROM THE TOP OF THE CURB TO THE BOTTOM OF THE SIGN.

20 0m 20 40 60 80

SCALE: 1:1000

Notes

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2. ALL PAVEMENT MARKINGS HAVE BEEN DESIGNED IN CONJUNCTION WITH THE ONTARIO TRAFFIC MANUAL (OTM) BOOKS 5 & 11
3. TACTILE PLATES AND SIDEWALK RAMPS TO BE PROVIDED AT ALL PEDESTRIAN CROSSING LOCATIONS, IN CONFORMANCE WITH THE AODA STANDARDS

No.	ISSUE	DATE: MMM/DD/YYYY
0	ISSUED FOR COORDINATION	APR/19/2023
1	ISSUED FOR REVIEW	SEP/22/2023

Engineer

Engineer

DRAFT

FOR DISCUSSION PURPOSES ONLY

Project

NINTH LINE (DERRY–BRITTANIA)
CITY OF MISSISSAUGA

Drawing

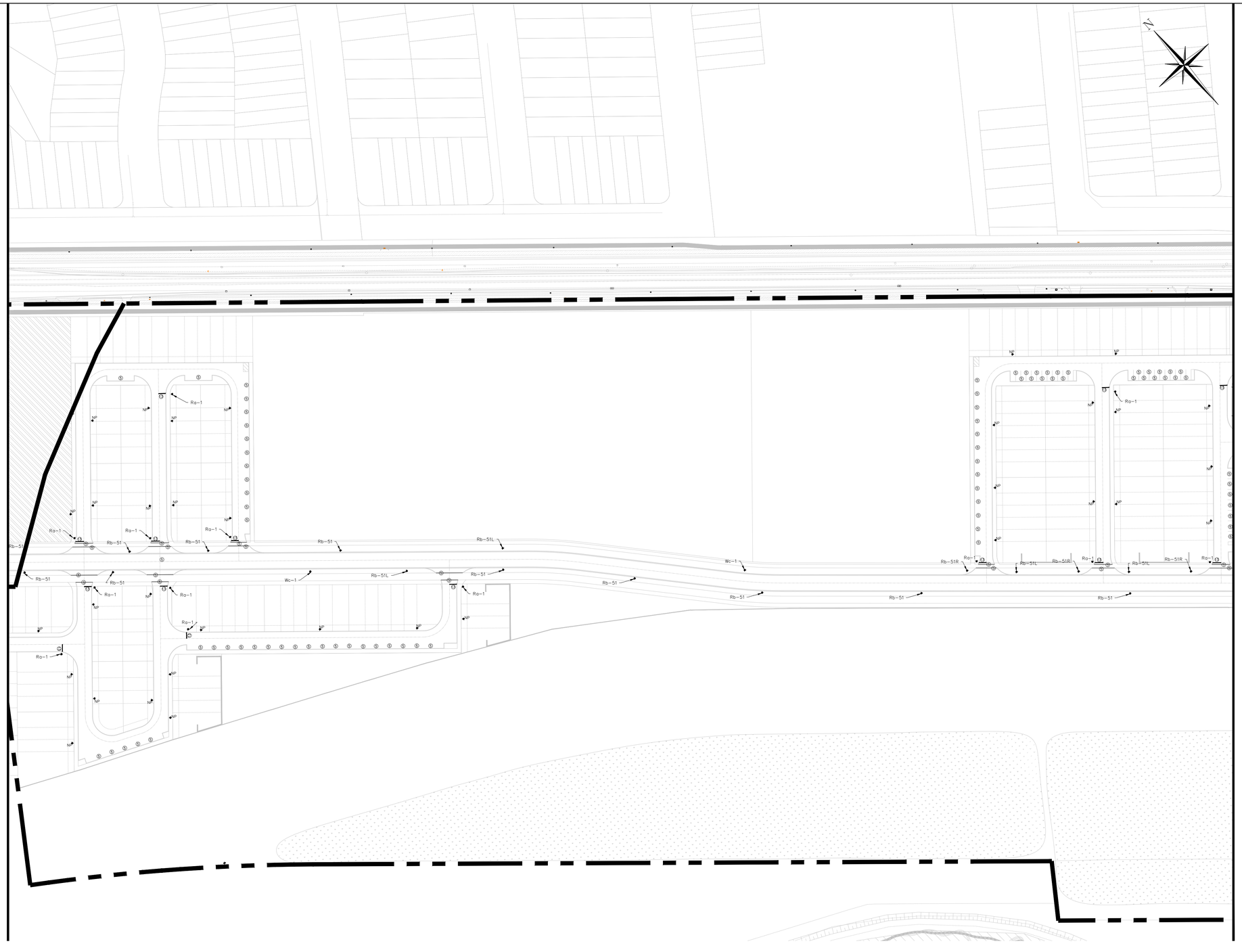
PAVEMENT MARKING AND SIGNAGE PLAN
ULTIMATE CONDITION

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON, M5B 1M4
416.477.3392 T
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By R.L.	Design By R.L.	Project	780–5227
Check By P.A.	Check By	Scale 1:1000	Drawing T101

MATCH LINE SEE DWG T1101

MATCH LINE SEE DWG T1103



LEGEND

PROPOSED SIGN

RAISED DECORATIVE CONCRETE

PAVEMENT MARKINGS LEGEND

5	SOLID WHITE, 10cm
13	SOLID WHITE, 30cm
20	SYMBOLS
] [	LIMITS OF MARKINGS

NOTES:

1. USE Ⓧ TO DENOTE PAVEMENT MARKING

SIGNAGE LEGEND

SIGN NAME	SIGN NUMBER	SIZE (cm)	OTM BOOK	SECTION
STOP	Ra-1	60x60	5	2
PEDESTRIAN CROSSOVER	Ra-4	60x75	5	4.1
MAXIMUM SPEED (MAXIMUM 40)	Rb-1	60x75	5	6
NO PARKING	Rb-51	30x30	5	13
NO PARKING (LEFT/RIGHT)	Rb-51 (L/R)	30x30	5	13
SCHOOL AREA	Wc-1	60x60	6	7
PEDESTRIANS AHEAD	Wc-7	75x75	6	7

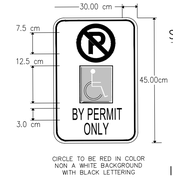
FIRE ROUTE SIGNAGE AND INSTALLATION SPECIFICATIONS (NP)

SIGN REQUIREMENTS

SIGNS SHALL COMPLY WITH THE ATTACHED FIGURE.

1. ALL SIGN SHALL HAVE APPROPRIATE RADIUS. CORNER AS PER DIAGRAM OR 4 cm RADIUS.
2. ALL SHARP EDGES REMOVED FROM SIGN BLANKS. COMPLETED SIGNS SHALL HAVE 11mm X 18mm SLOTTED HOLES TO ACCEPT METRIC OR IMPERIAL MOUNTING WITH HOLES 3cm~12cm FROM OUTER EDGE OR AS PER DIAGRAM.
3. CENTRE OF MOUNTING SLOTS SHALL BE EQUAL TO MULTIPLE OF 5.08cm (2 INCHES) CENTRALLY LOCATED ON BLANK. ON STEEL BLANKS, FABRICATIONS SHALL BE FABRICATED BEFORE GALVANIZING AS TO PREVENT CORROSION. ON ALUMINUM BLANKS, FABRICATING SHALL BE PERFORMED PRIOR TO PAINTING AND BAKING.
4. FINISHED SIGNS AND SYMBOLS SHALL BE APPLIED TO 1.63mm UTILITY GRADE ALUMINUM WITH BRIGHT WHITE MILL BAKED FINISH ON BOTH SIDES. ALL INKS SHALL BE FACES TO CONFORM TO REG. 486 OF THE HIGHWAY TRAFFIC ACT.
5. ALL LETTERING TO MEET M.T.O. STANDARDS.
6. ALL COLOURS TO MEET M.T.O. STANDARDS.

ACCESSIBLE PARKING SIGNAGE AND INSTALLATION SPECIFICATIONS (Rb-93)



CIRCLE TO BE RED IN COLOR NON A WHITE BACKGROUND WITH BLACK LETTERING

WHEELCHAIR SYMBOL TO BE BLUE IN BACKGROUND AND OUTLINE, AND WHITE IN SYMBOL AND BORDER

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20 0m 20 40 60 80

SCALE: 1:1000

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Drawn By	R.L.	Design By	R.L.
Check By	P.A.	Check By	
Project	780–5227		
Scale	1:1000	Drawing	T102

MATCH LINE SEE DWG T102

20 0m 20 40 60 80

SCALE: 1:1000

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PROPOSED SIGN

RAISED DECORATIVE CONCRETE

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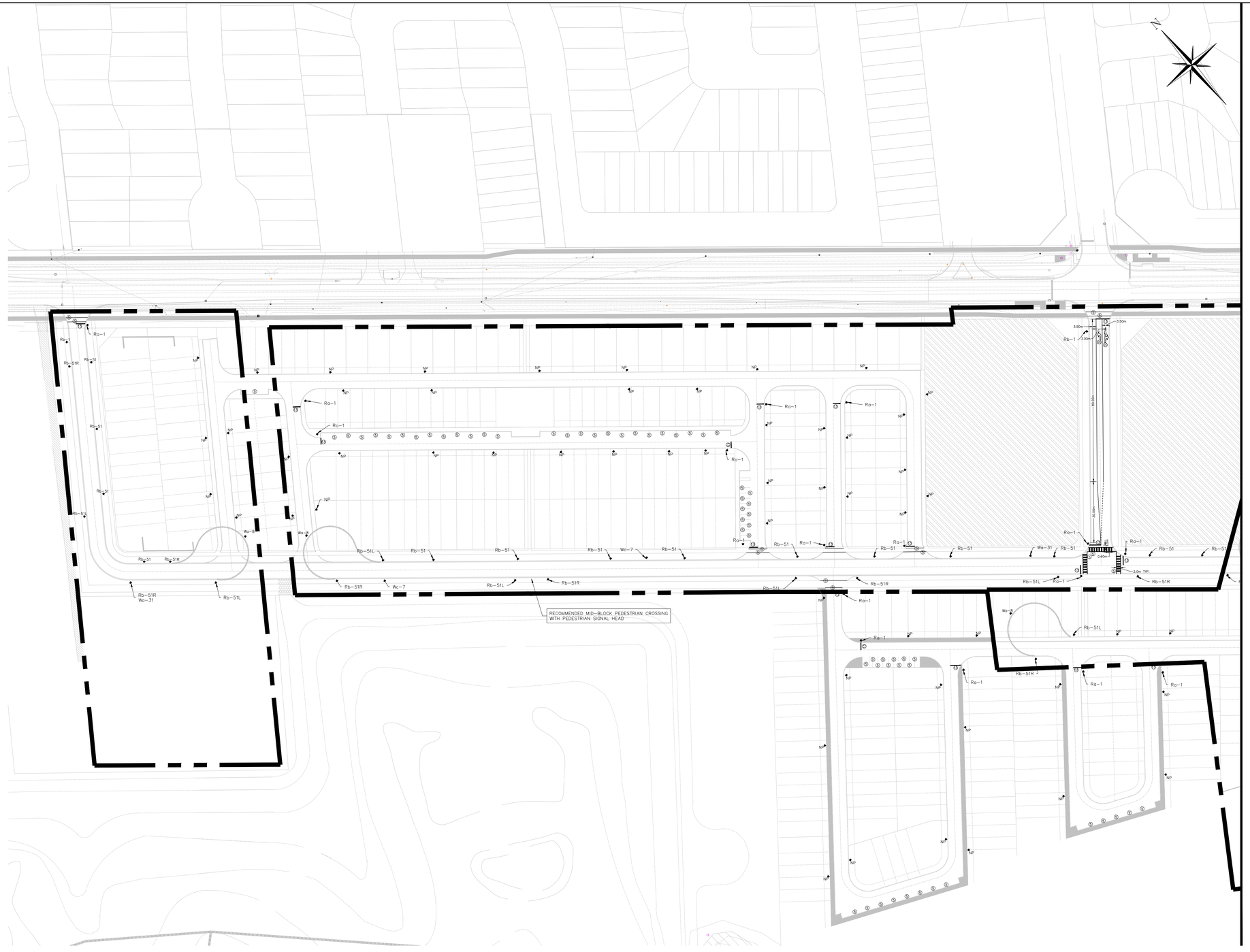
Check By	Check By	Scale / Drawing
P.A.		1:1000 / T103



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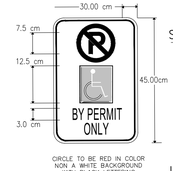

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SCALE: 1:1000

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MATCH LINE SEE DWG T104

MATCH LINE SEE DWG T106

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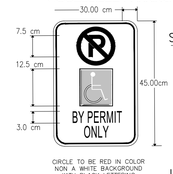

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SIGN REQUIREMENTS

SIGNS SHALL COMPLY WITH THE ATTACHED FIGURE.

1. ALL SIGN SHALL HAVE APPROPRIATE RADIUS. CORNER AS PER DIAGRAM OR 4 cm RADIUS.
2. ALL SHARP EDGES REMOVED FROM SIGN BLANKS. COMPLETED SIGNS SHALL HAVE 11mm X 18mm SLOTTED HOLES TO ACCEPT METRIC OR IMPERIAL MOUNTING WITH HOLES 3cm~12cm FROM OUTER EDGE OR AS PER DIAGRAM.
3. CENTRE OF MOUNTING SLOTS SHALL BE EQUAL TO MULTIPLE OF 5.08cm (2 INCHES) CENTRALLY LOCATED ON BLANK. ON STEEL BLANKS, FABRICATIONS SHALL BE FABRICATED BEFORE GALVANIZING AS TO PREVENT CORROSION. ON ALUMINUM BLANKS, FABRICATING SHALL BE PERFORMED PRIOR TO PAINTING AND BAKING.
4. FINISHED SIGNS AND SYMBOLS SHALL BE APPLIED TO 1.63mm UTILITY GRADE ALUMINUM WITH BRIGHT WHITE MILL BAKED FINISH ON BOTH SIDES. ALL INKS SHALL BE FACES TO CONFORM TO REG. 486 OF THE HIGHWAY TRAFFIC ACT.
5. ALL LETTERING TO MEET M.T.O. STANDARDS.
6. ALL COLOURS TO MEET M.T.O. STANDARDS.

INSTALLATION REQUIREMENTS

1. SIGN MUST BE PLACED MIDWAY BETWEEN THE LATERAL LIMITS OF THE PARKING STALL.
2. SIGN SHOULD BE MOUNTED AT A HEIGHT OF 1.5m TO 2.5m, MEASURED FROM THE TOP OF THE CURB TO THE BOTTOM OF THE SIGN.

Notes

1. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE REPRODUCTION OF ANY PART WITHOUT PRIOR WRITTEN CONSENT OF THIS OFFICE IS STRICTLY PROHIBITED.
2. ALL PAVEMENT MARKINGS HAVE BEEN DESIGNED IN CONJUNCTION WITH THE ONTARIO TRAFFIC MANUAL (OTM) BOOKS 5 & 11
3. TACTILE PLATES AND SIDEWALK RAMPS TO BE PROVIDED AT ALL PEDESTRIAN CROSSING LOCATIONS, IN CONFORMANCE WITH THE AODA STANDARDS

No.	ISSUE	DATE: MMM/DD/YYYY
0	ISSUED FOR COORDINATION	APR/19/2023
1	ISSUED FOR REVIEW	SEP/22/2023

Engineer

DRAFT

FOR DISCUSSION PURPOSES ONLY

Engineer

Project

NINTH LINE (DERRY–BRITTANIA)
CITY OF MISSISSAUGA

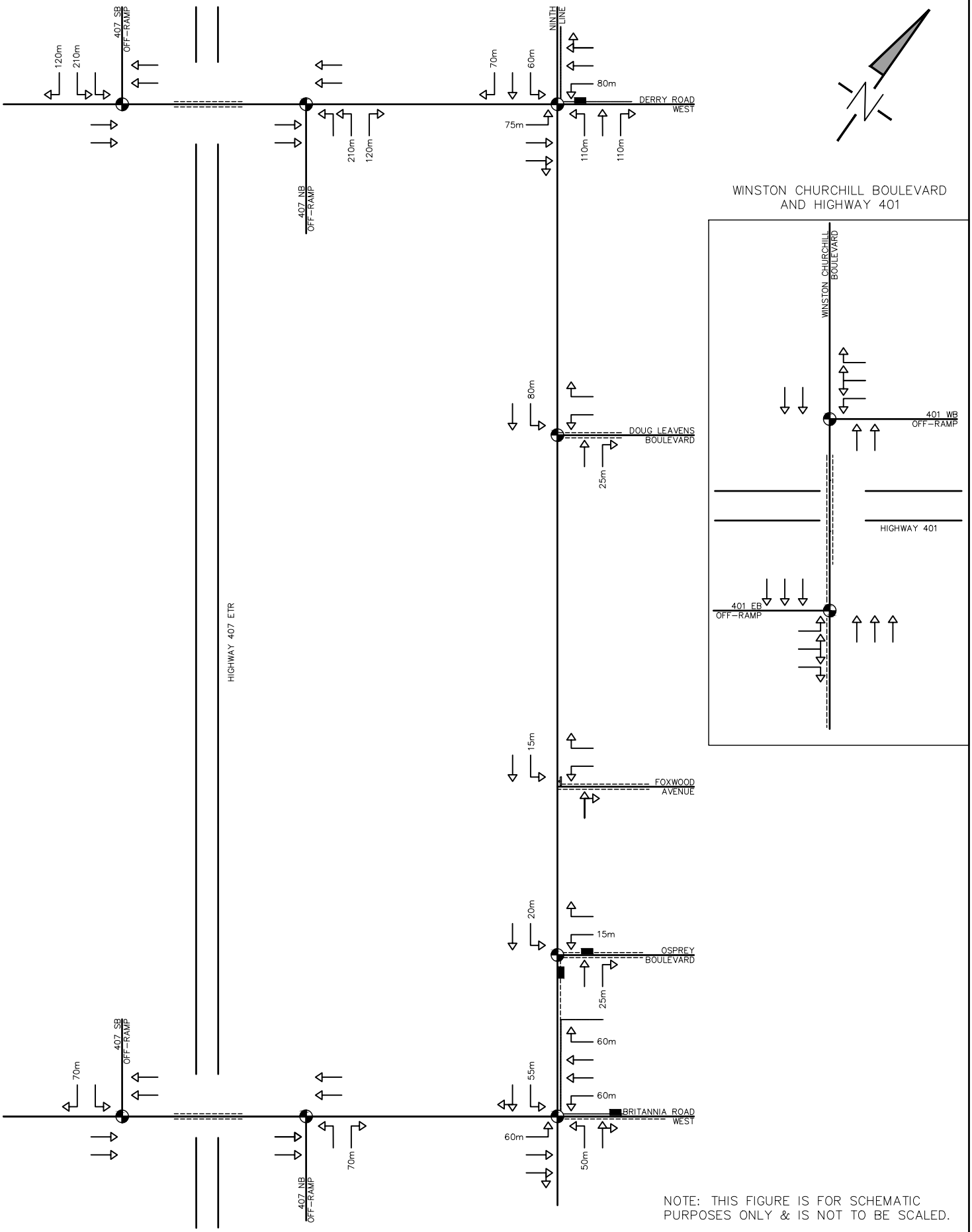
Drawing

PAVEMENT MARKING AND SIGNAGE PLAN
INTERIM CONDITION

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON, M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	R.L.	780–5227
Check By	Check By	Scale / Drawing
P.A.		1:1000 / T106

FIGURES



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- BUS STOP
- PEDESTRIAN SIDEWALK
- MULTI-USE TRAIL

Project

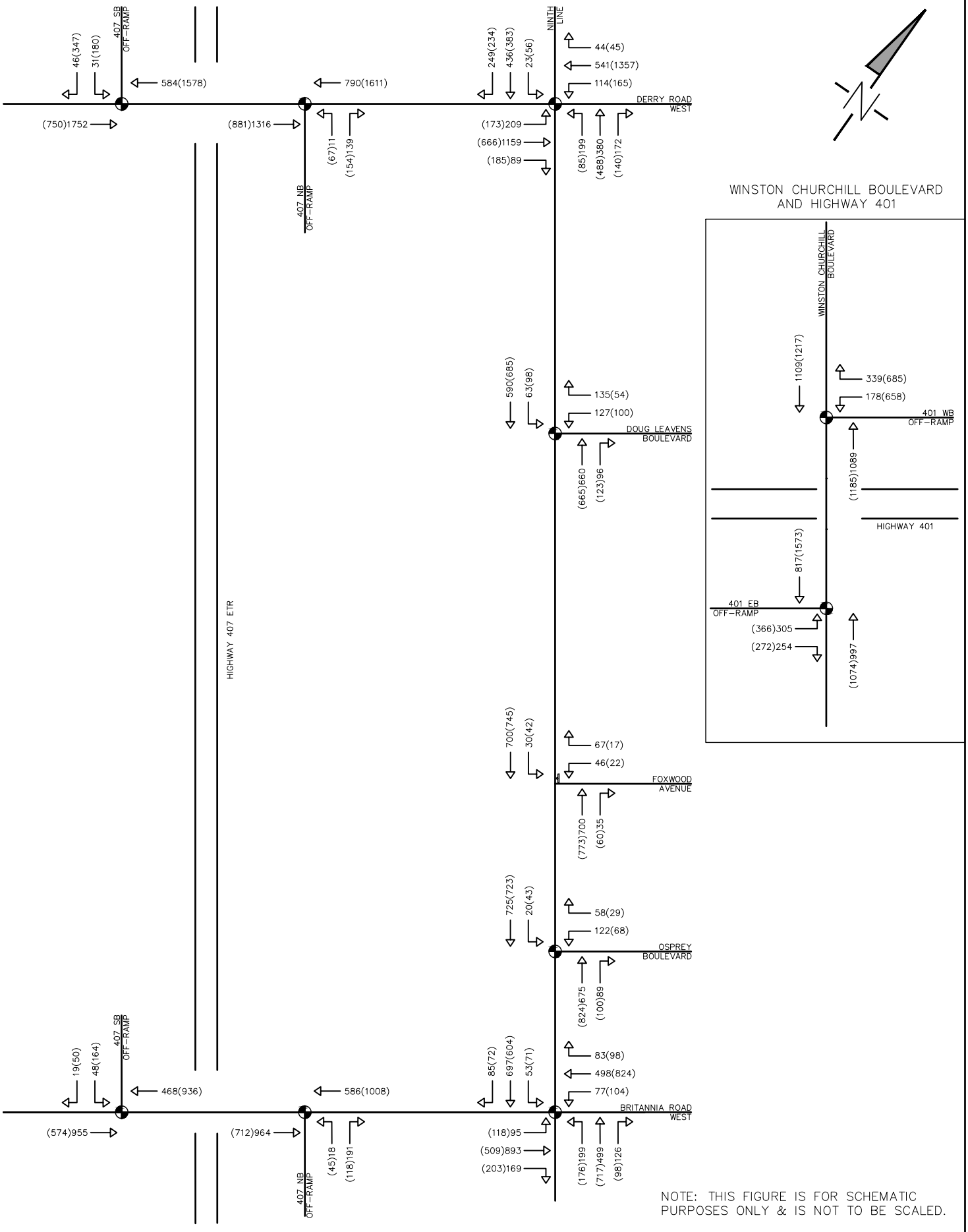
NINTH LINE
DRAFT PLAN OF SUBDIVISION

Drawing

BOUNDARY ROAD NETWORK

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780-5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 1



WINSTON CHURCHILL BOULEVARD AND HIGHWAY 401

NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

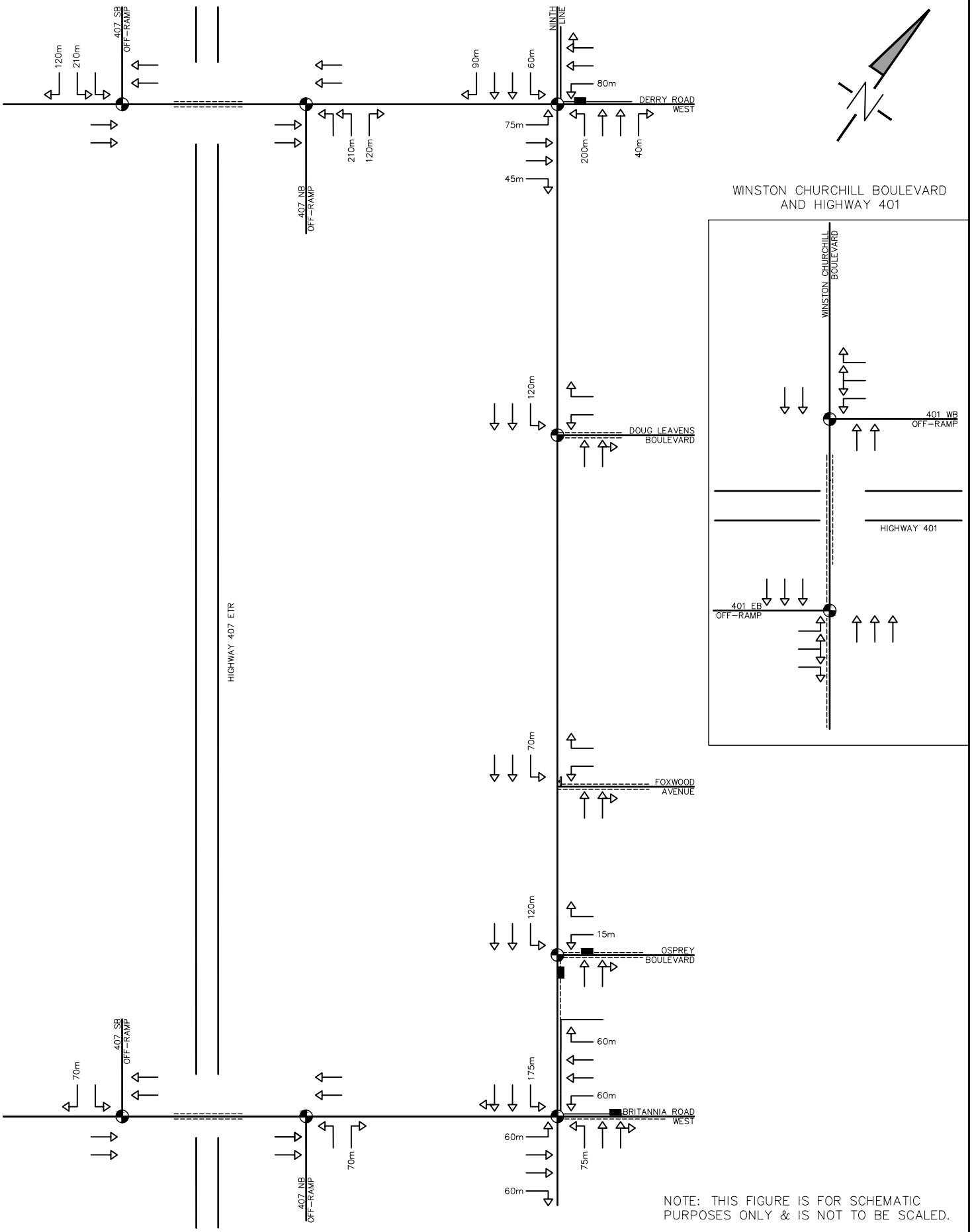
NINTH LINE
DRAFT PLAN OF SUBDIVISION

Drawing

2019 EXISTING TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780-5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 2



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- BUS STOP
- PEDESTRIAN SIDEWALK
- MULTI-USE TRAIL

Project

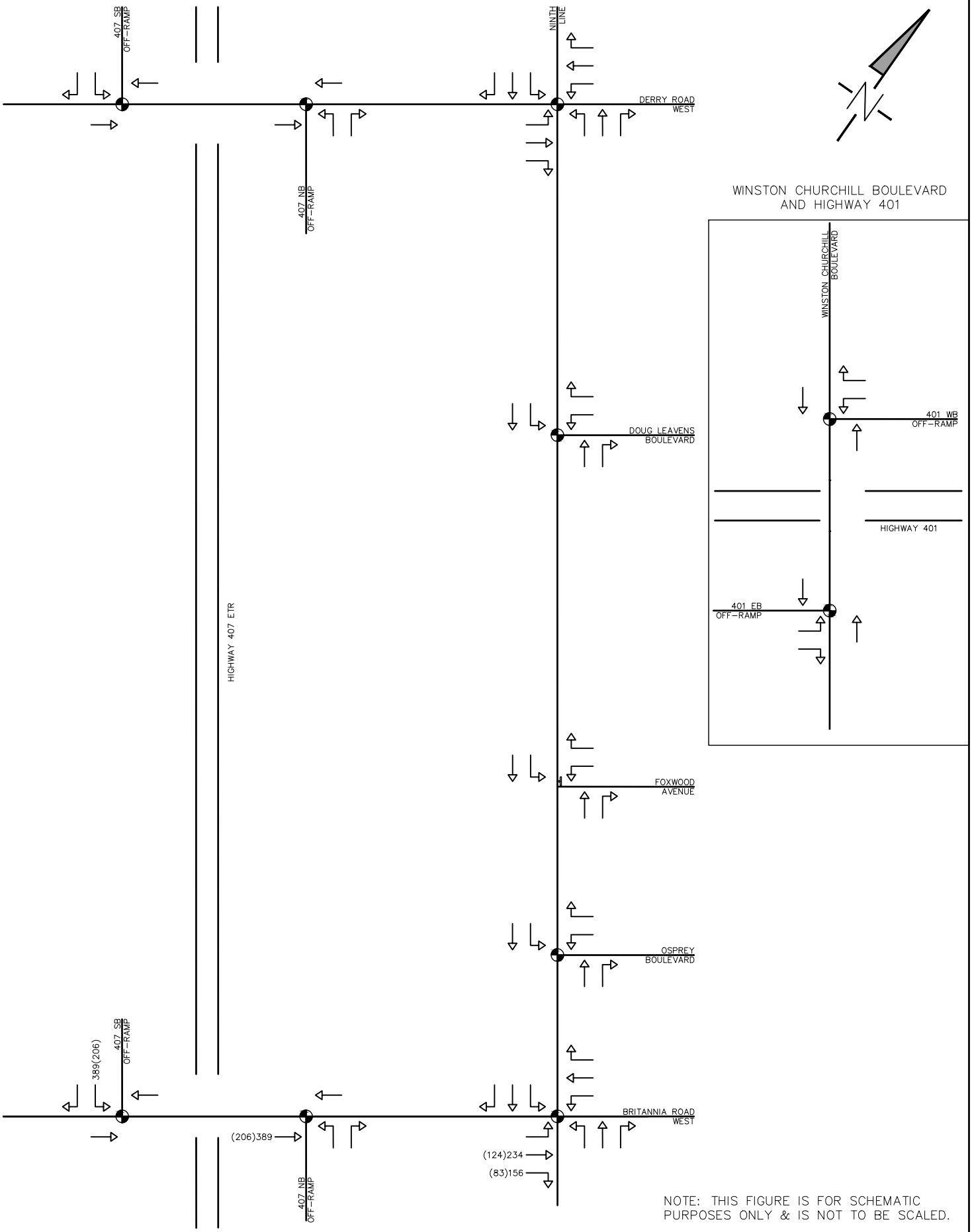
NINTH LINE
DRAFT PLAN OF SUBDIVISION

Drawing

FUTURE BACKGROUND BOUNDARY ROAD NETWORK

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780-5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 3



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

BACKGROUND TRAFFIC (ERIN MILLS)

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
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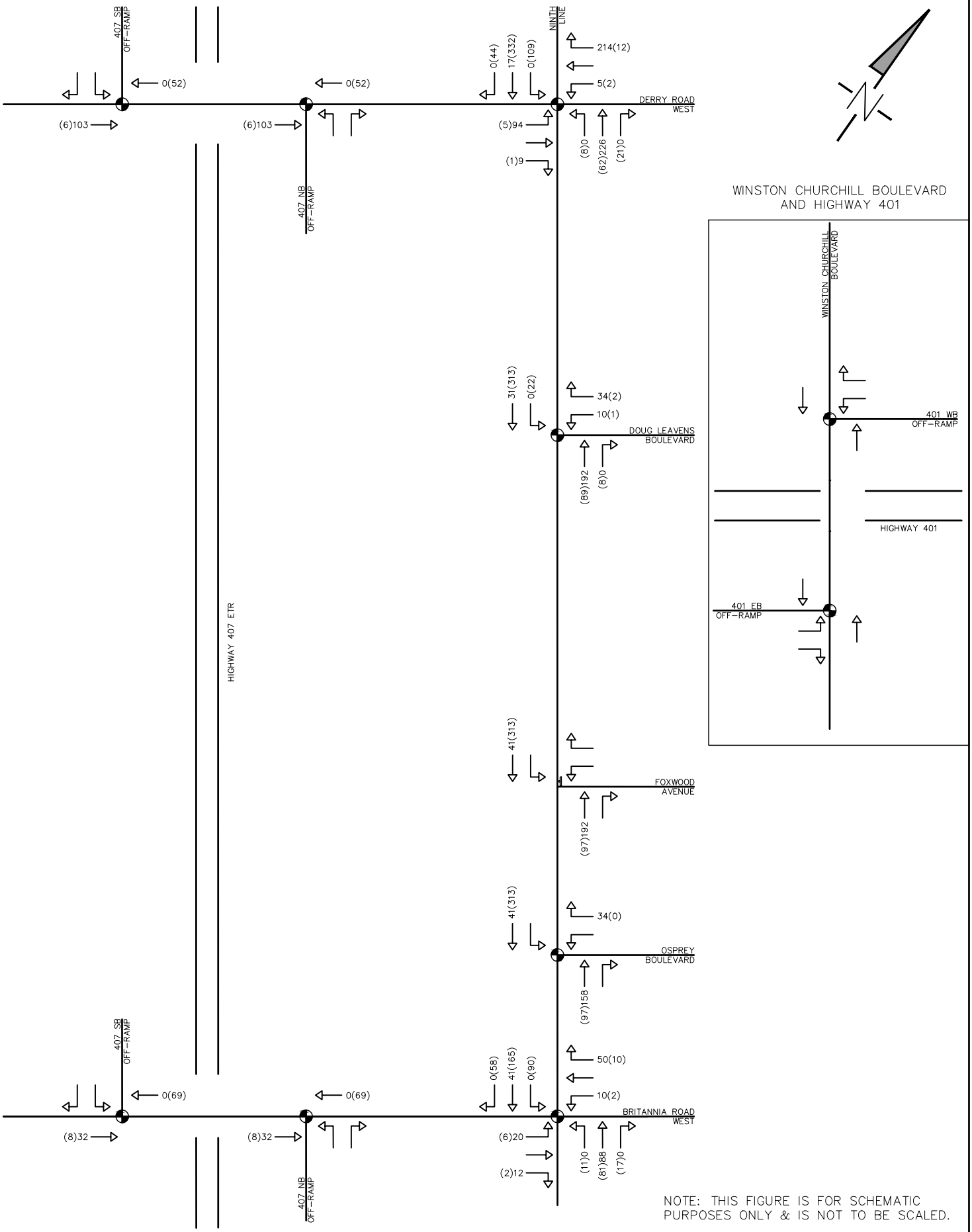
Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 4



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project: NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing: BACKGROUND TRAFFIC (407 TRANSITWAY)

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
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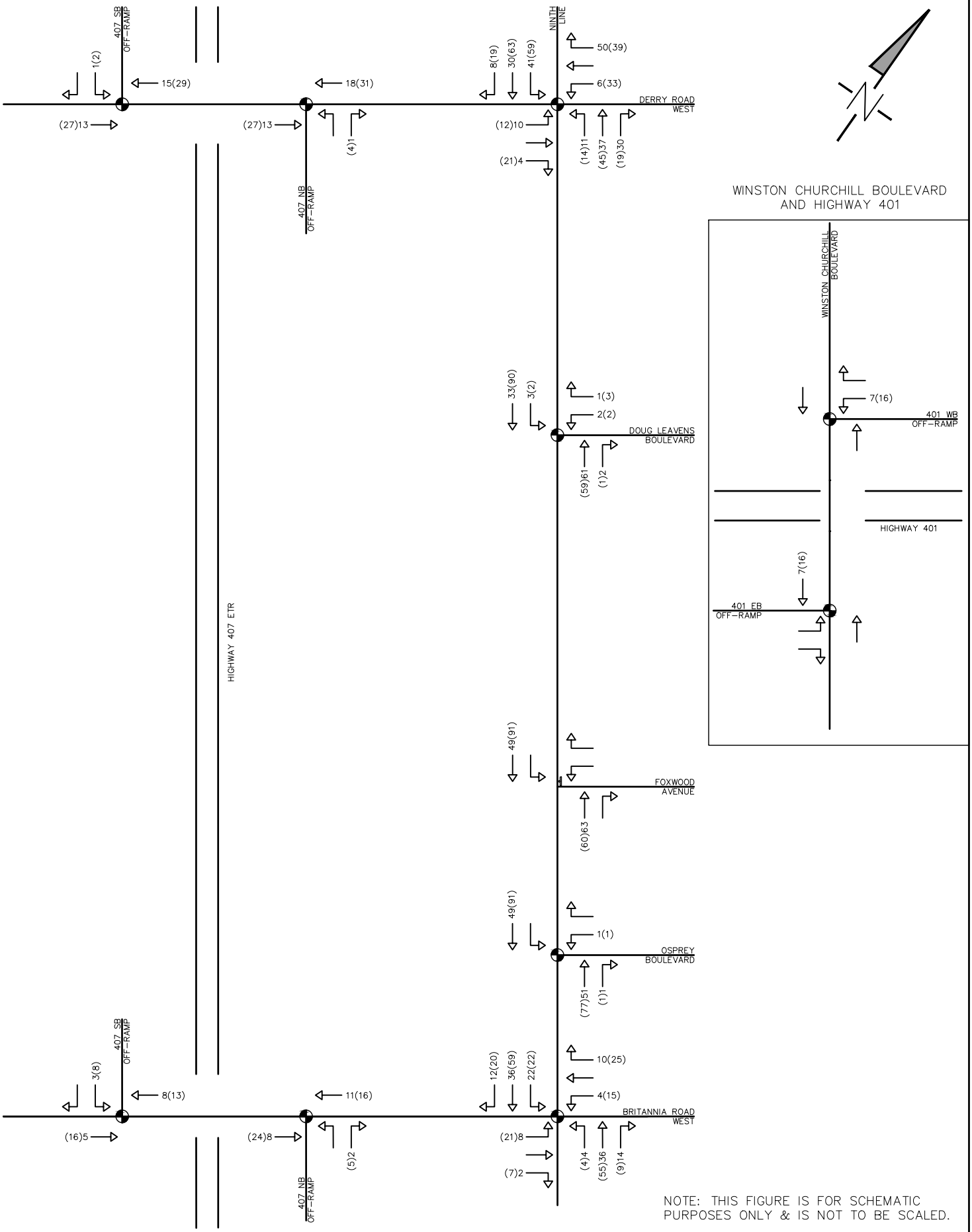
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 5



WINSTON CHURCHILL BOULEVARD AND HIGHWAY 401

NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

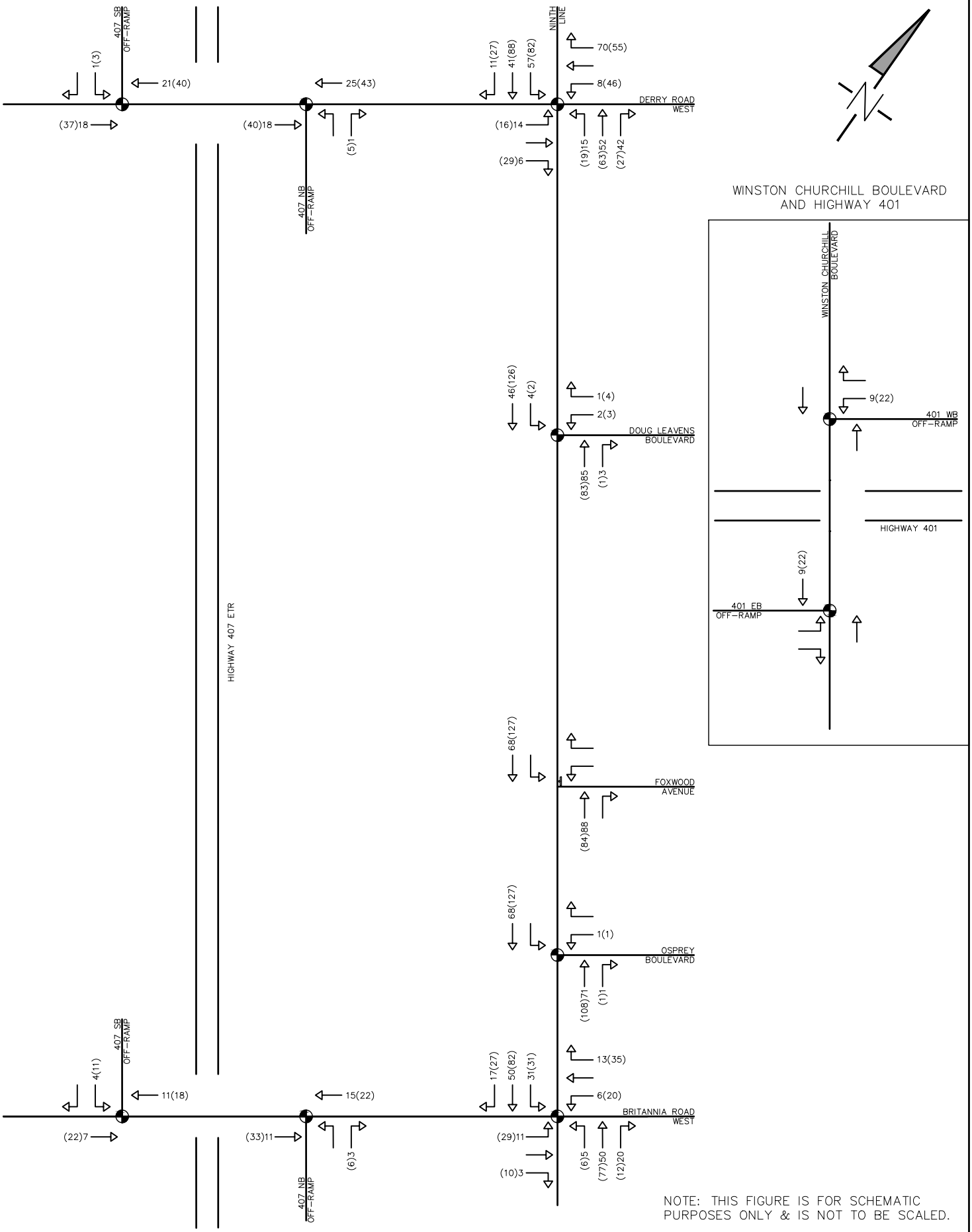
- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project: NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing: BACKGROUND TRAFFIC (EMERGING LAND USE – 2026)

CROZIER CONSULTING ENGINEERS
The HarbourEdge Building, 40 Huron Street, Suite 301, Collingwood, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
www.cfcrozier.ca
info@cfcrozier.ca

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 6



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

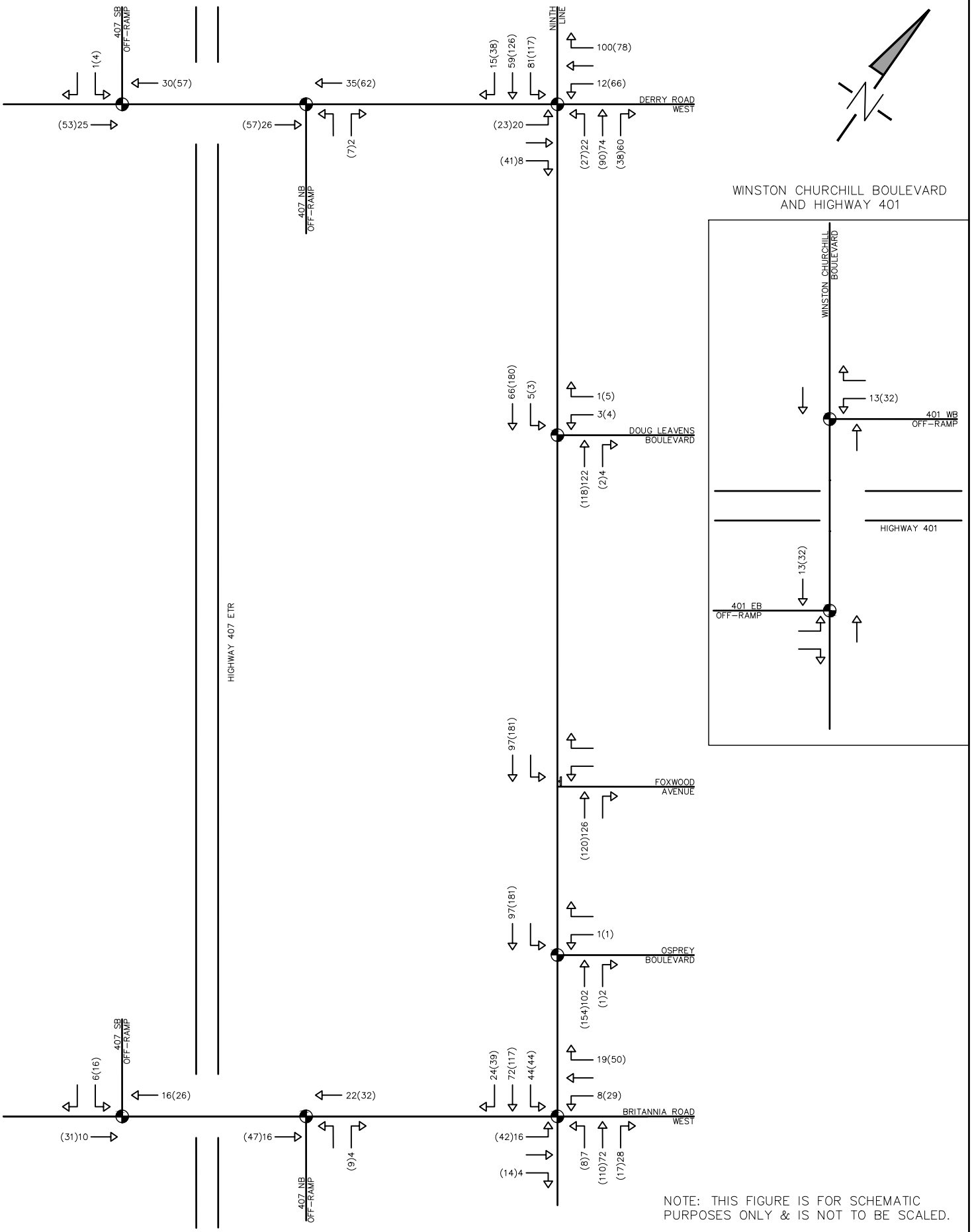
NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

BACKGROUND TRAFFIC (EMERGING LAND USE – 2028)

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 7



WINSTON CHURCHILL BOULEVARD AND HIGHWAY 401

NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

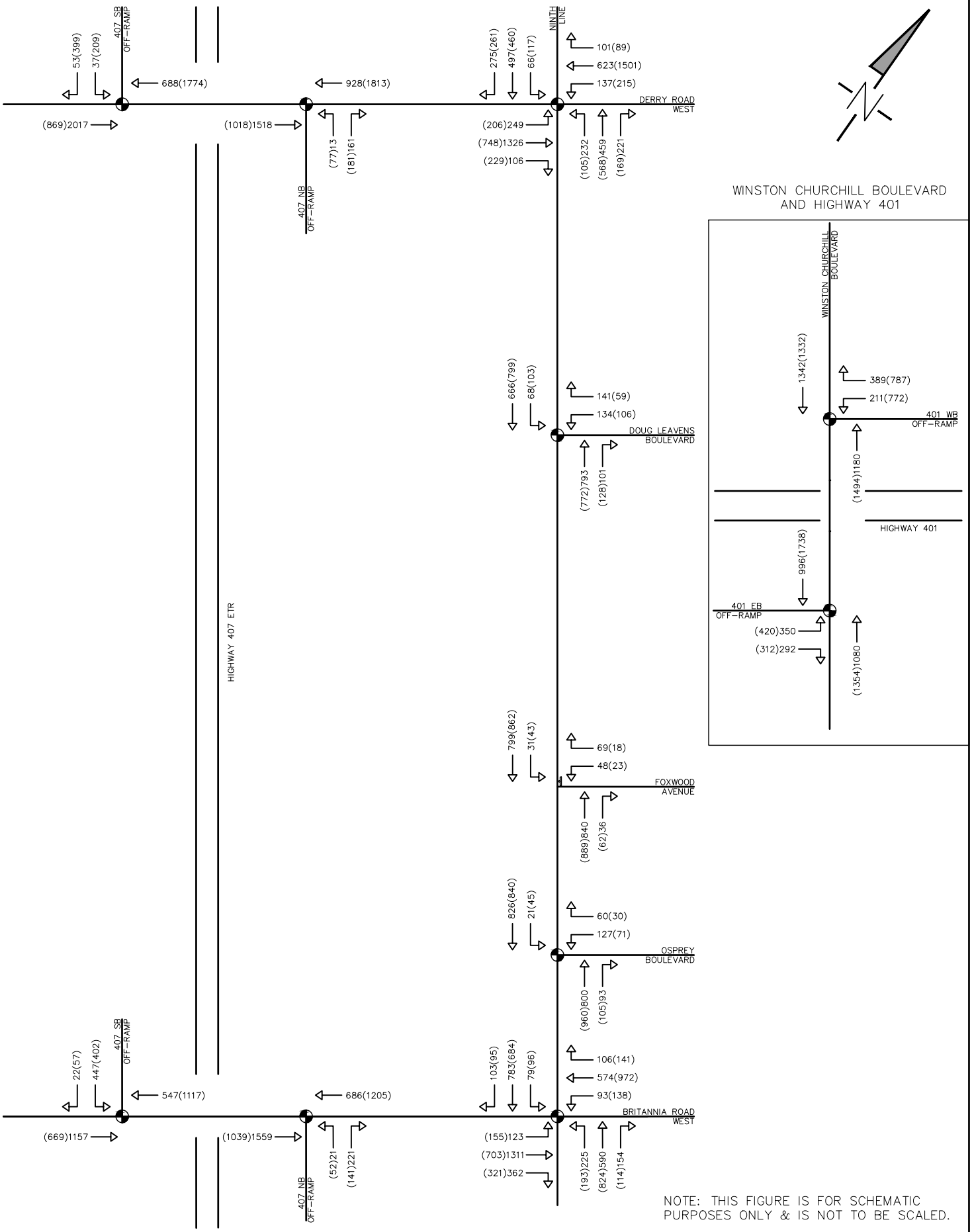
- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project: NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing: BACKGROUND TRAFFIC (EMERGING LAND USE – 2031, 2036 & 2041)

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 8



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

2026 FUTURE BACKGROUND TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
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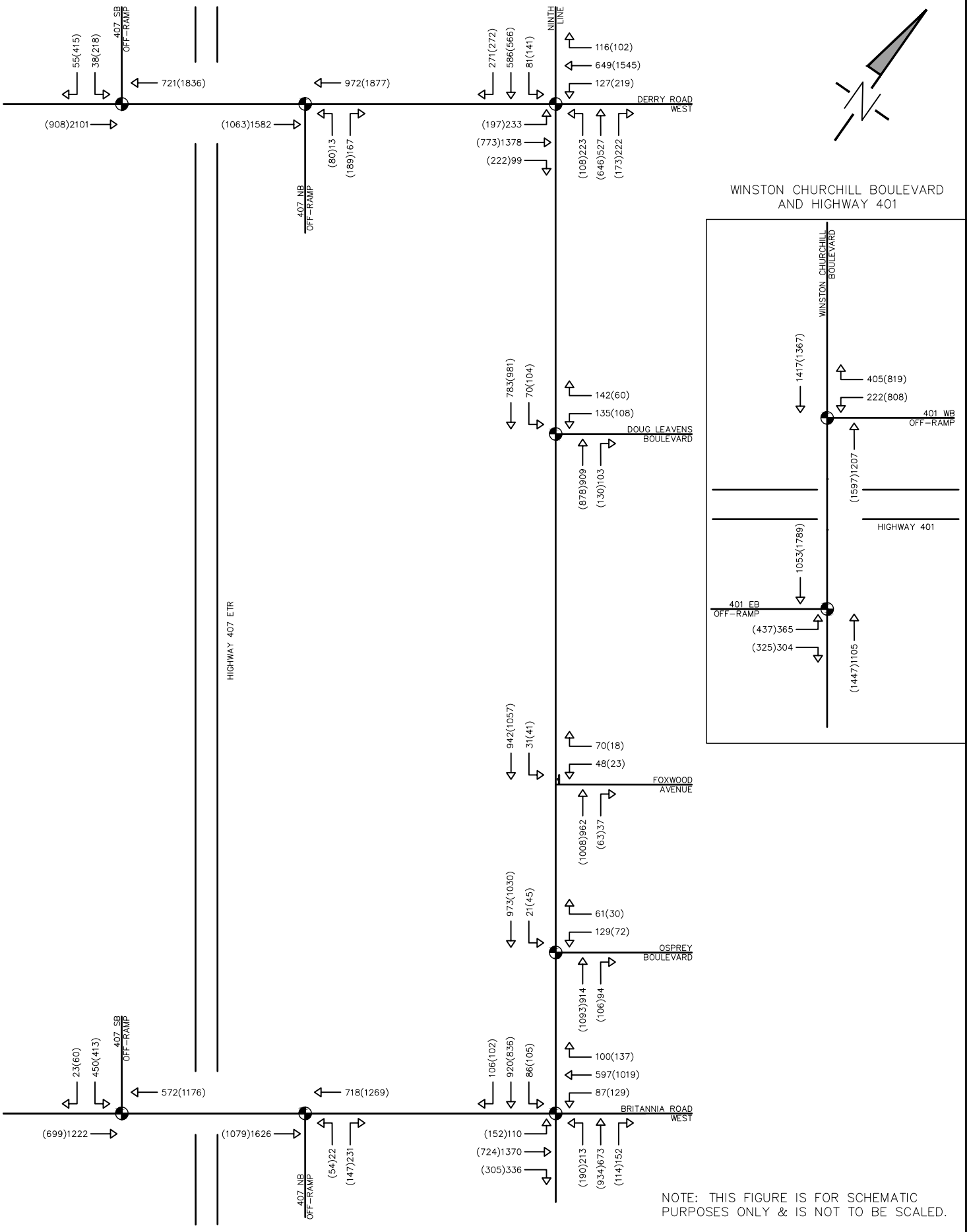
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 9



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

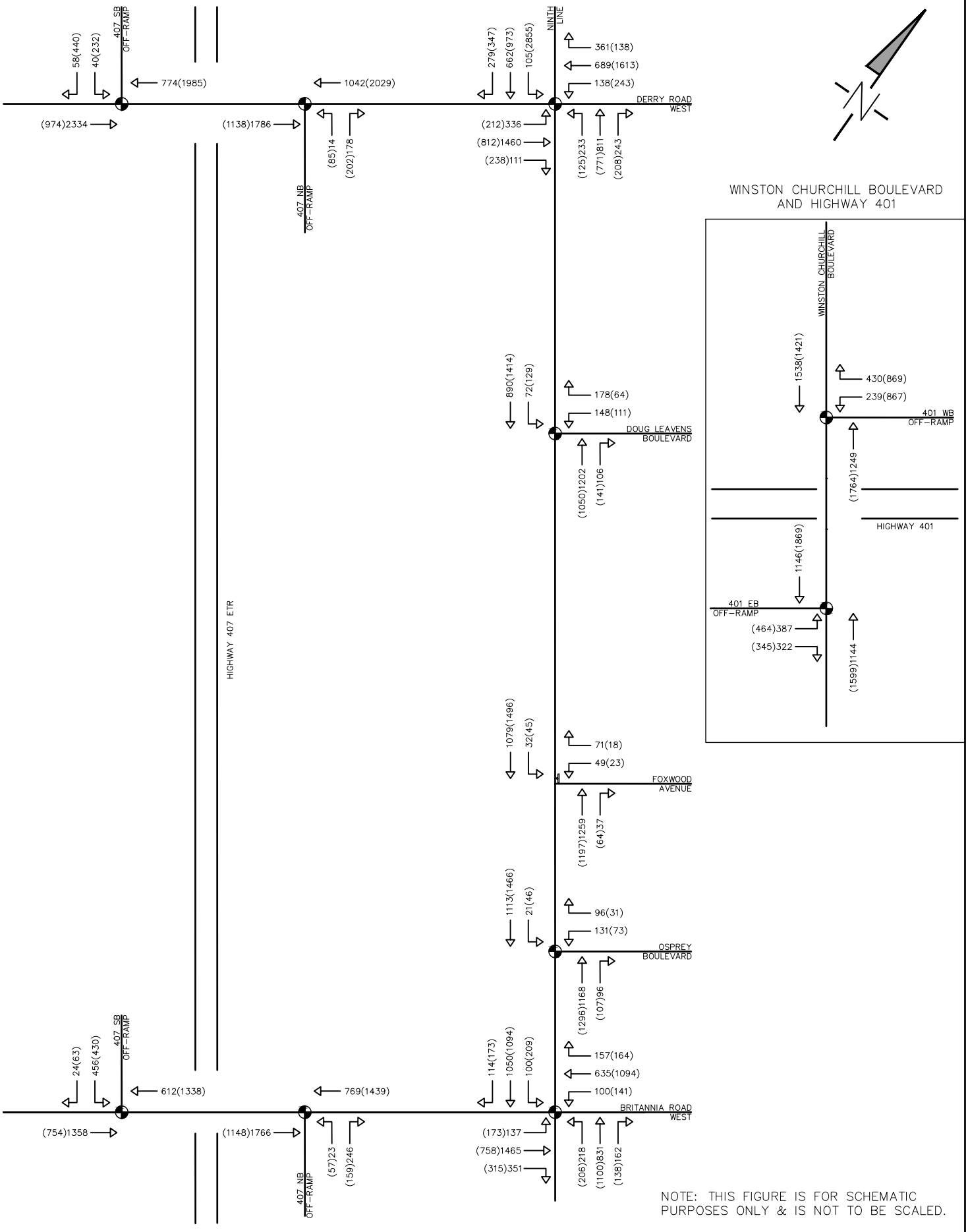
NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

2028 FUTURE BACKGROUND TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 10



WINSTON CHURCHILL BOULEVARD AND HIGHWAY 401

NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

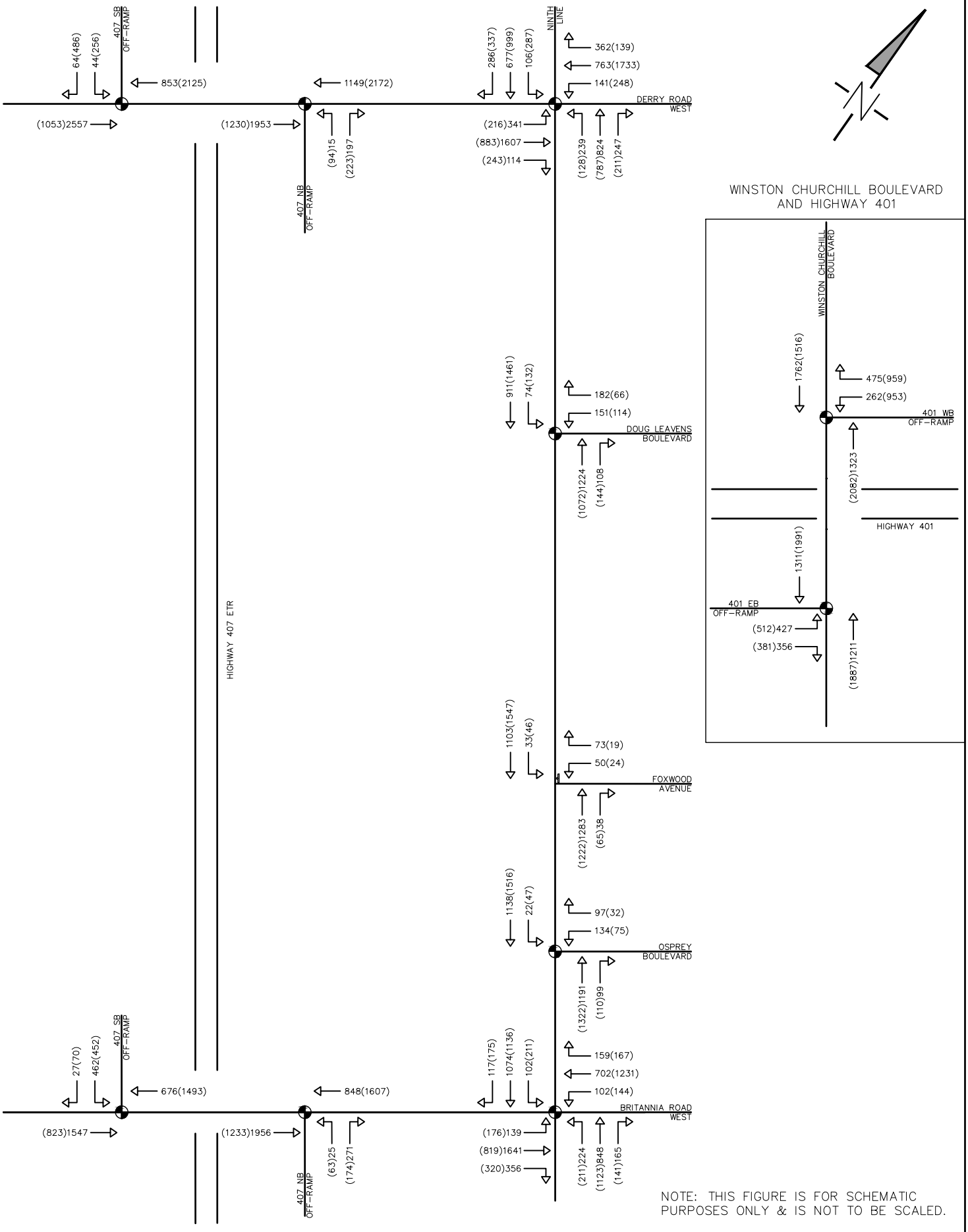
NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

2031 FUTURE BACKGROUND TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 11



WINSTON CHURCHILL BOULEVARD AND HIGHWAY 401

NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

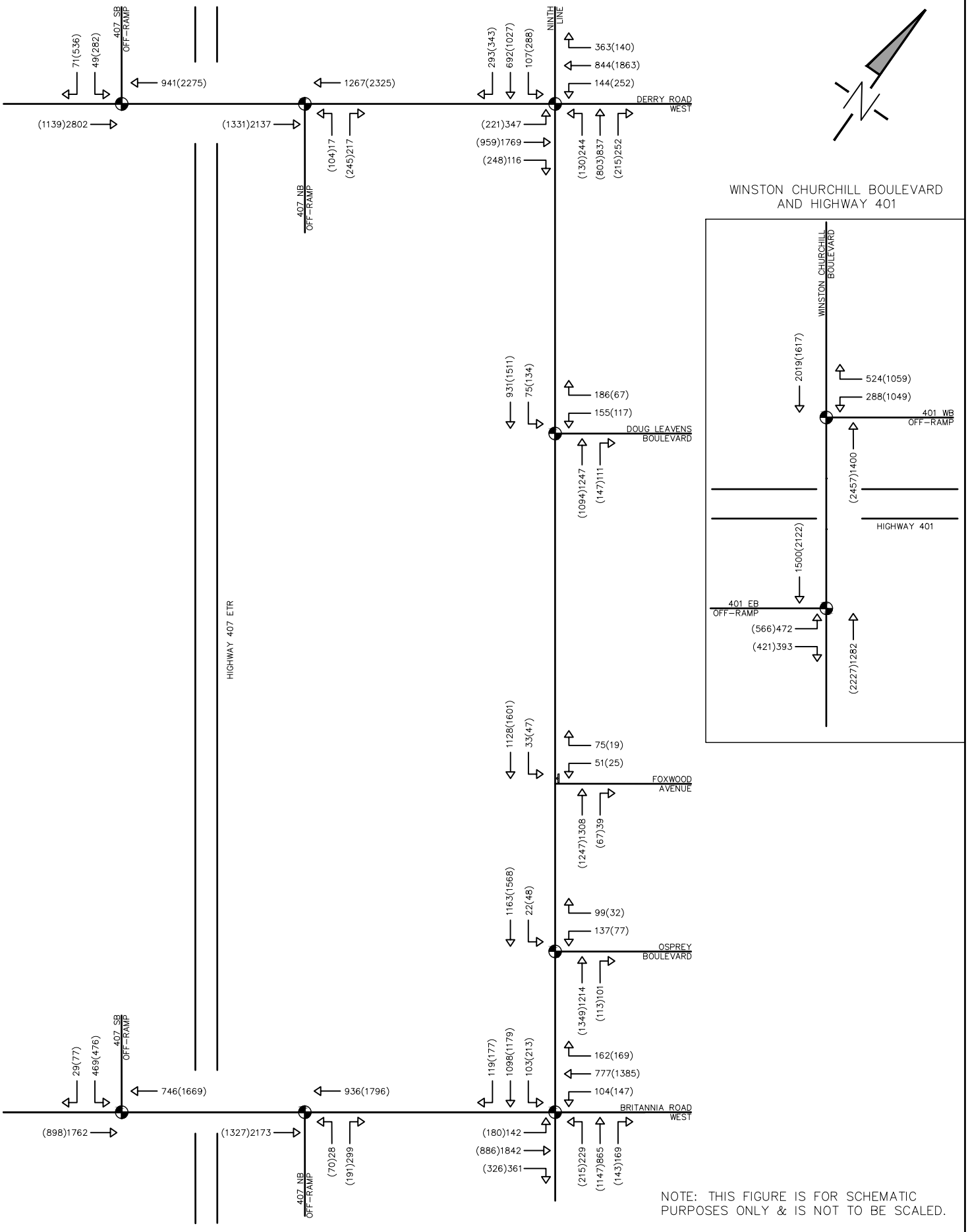
NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

2036 FUTURE BACKGROUND TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 12



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

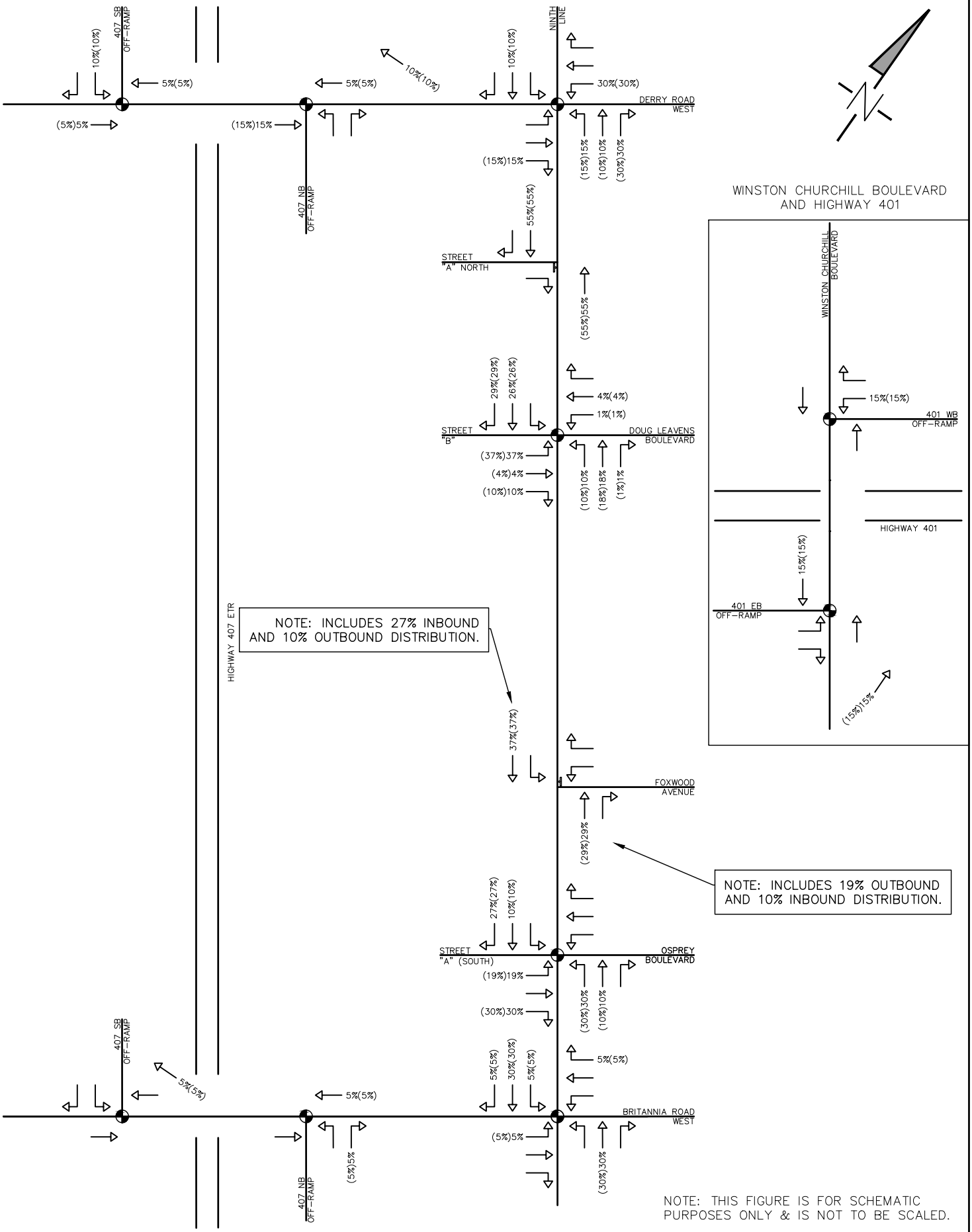
NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

2041 FUTURE BACKGROUND TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 13



Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) TRIP DISTRIBUTION

Project

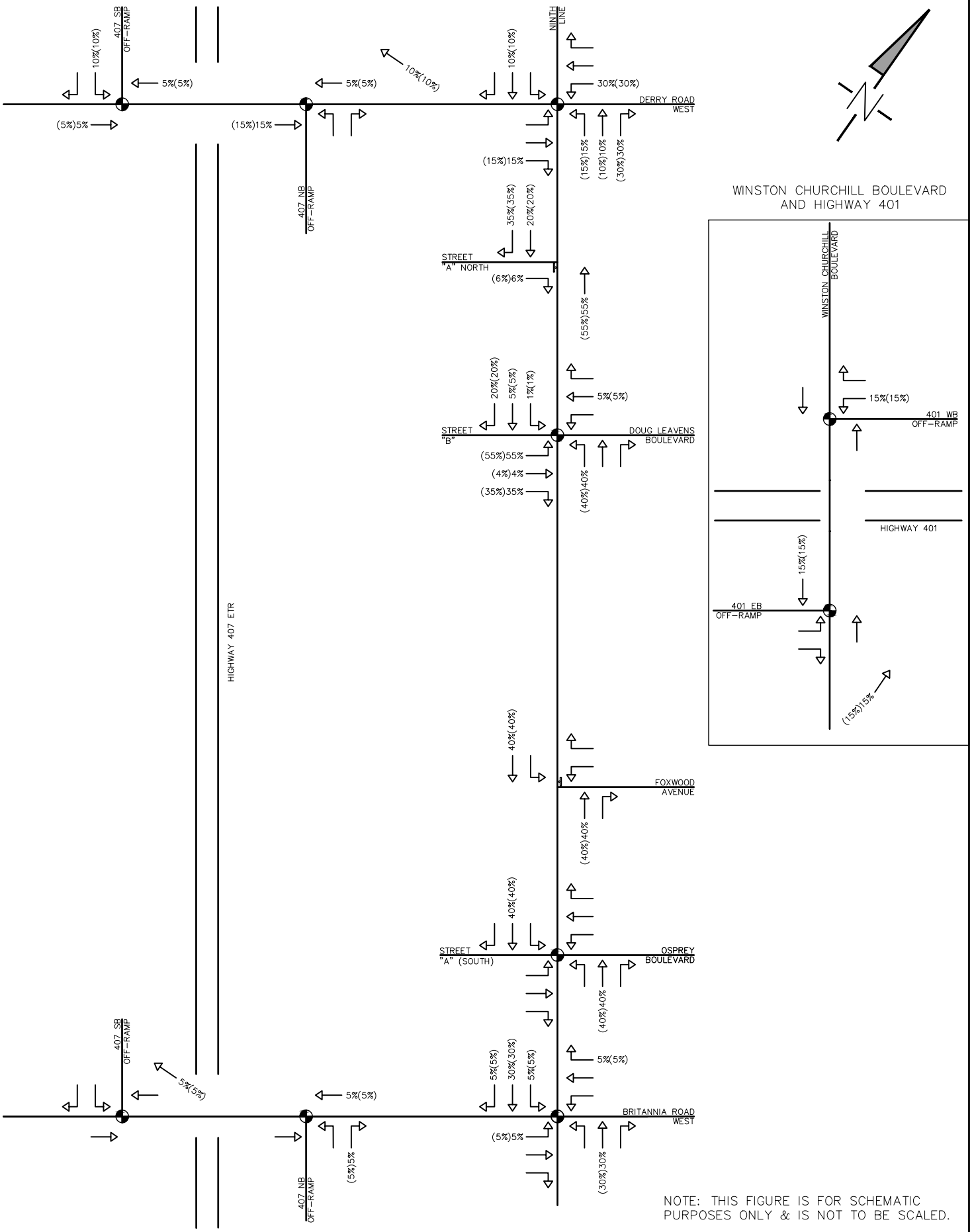
NINTH LINE (DERRY–BRITANNIA)
CITY OF MISSISSAUGA

Drawing

TRIP DISTRIBUTION
(SOUTH DRAFT PLAN)

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 14



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

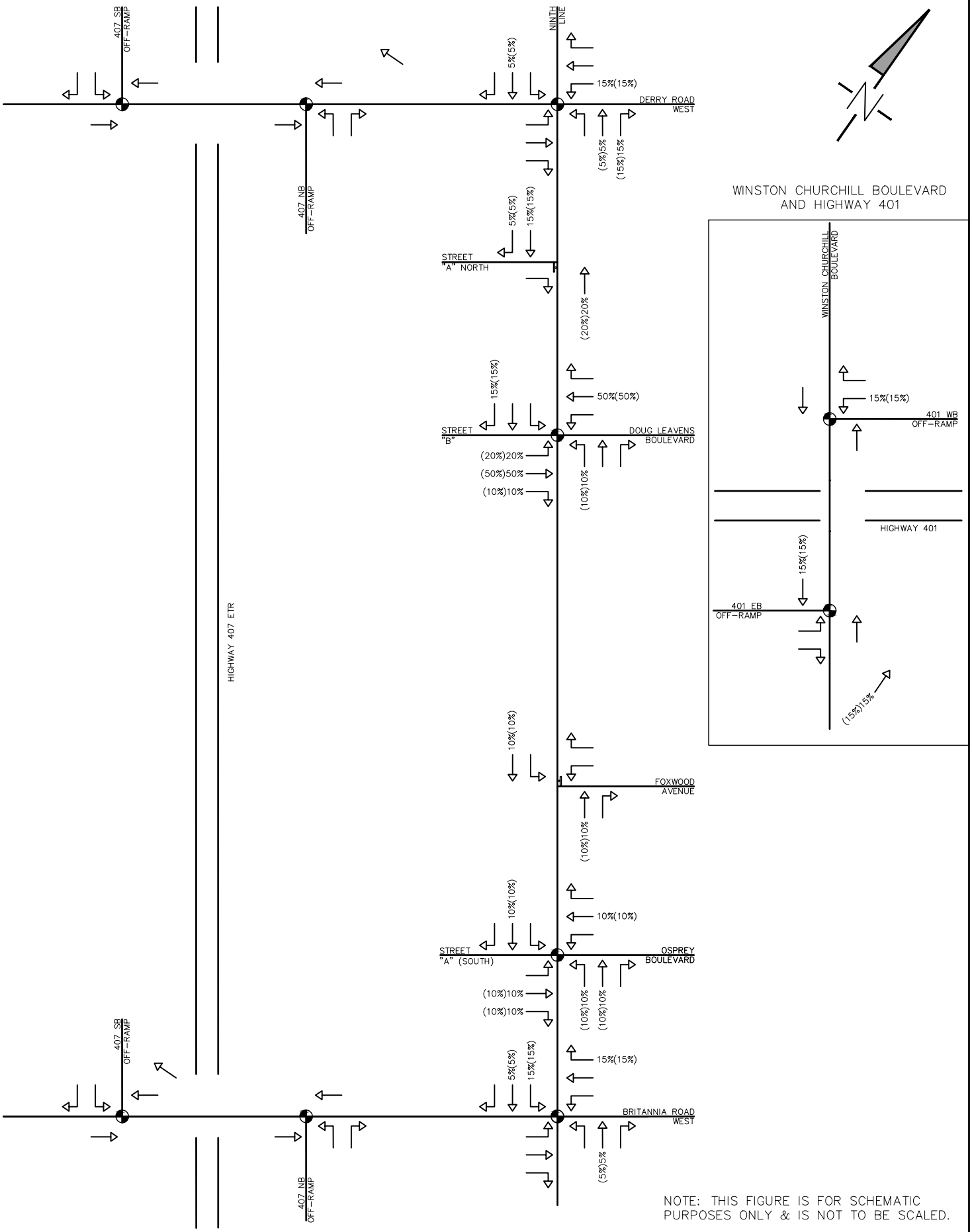
- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) TRIP DISTRIBUTION

Project: NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing: TRIP DISTRIBUTION (NORTH DRAFT PLAN)

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 15



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) TRIP DISTRIBUTION

Project

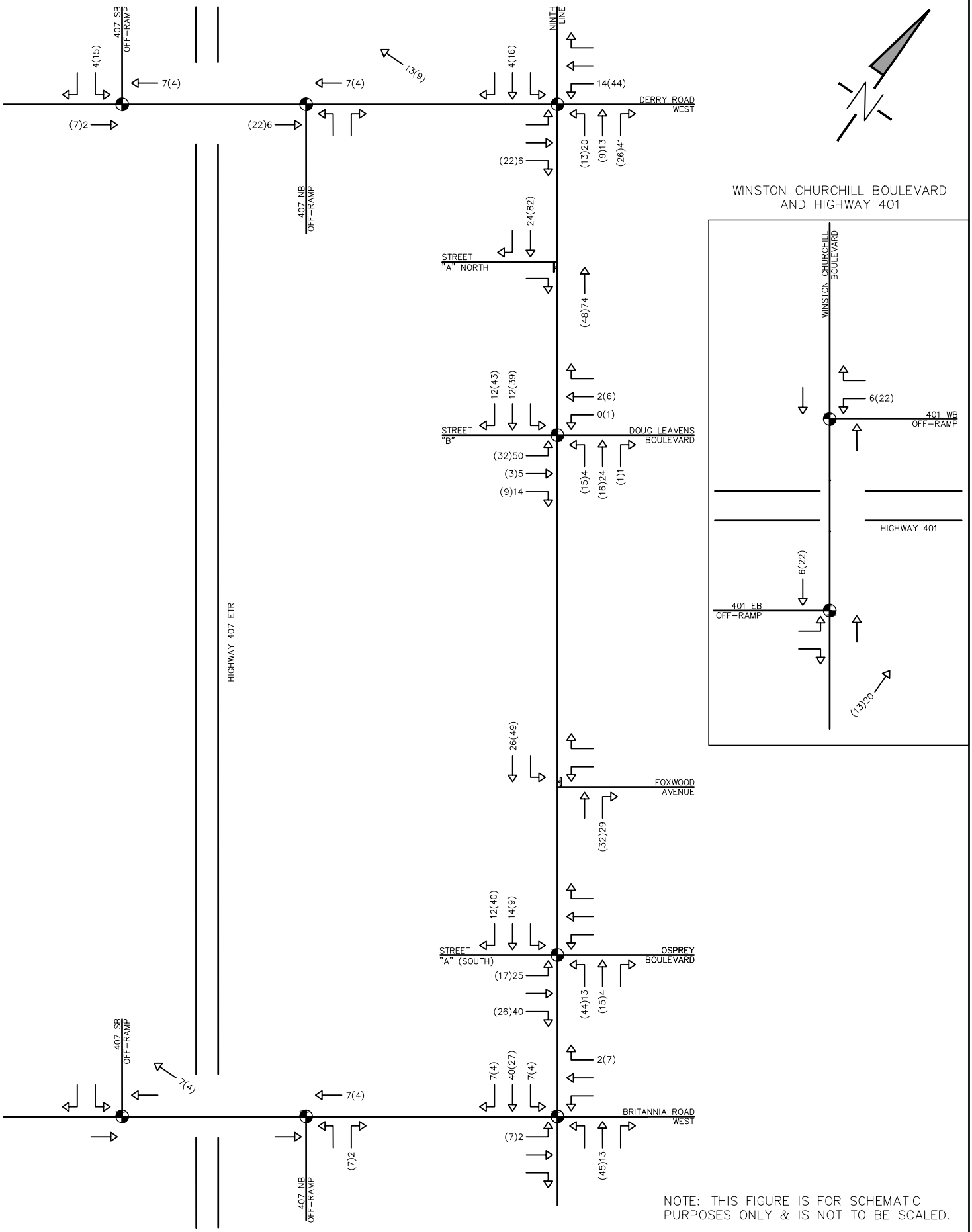
NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

TRIP DISTRIBUTION (EXTERNAL SCHOOL TRIPS)

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 16



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

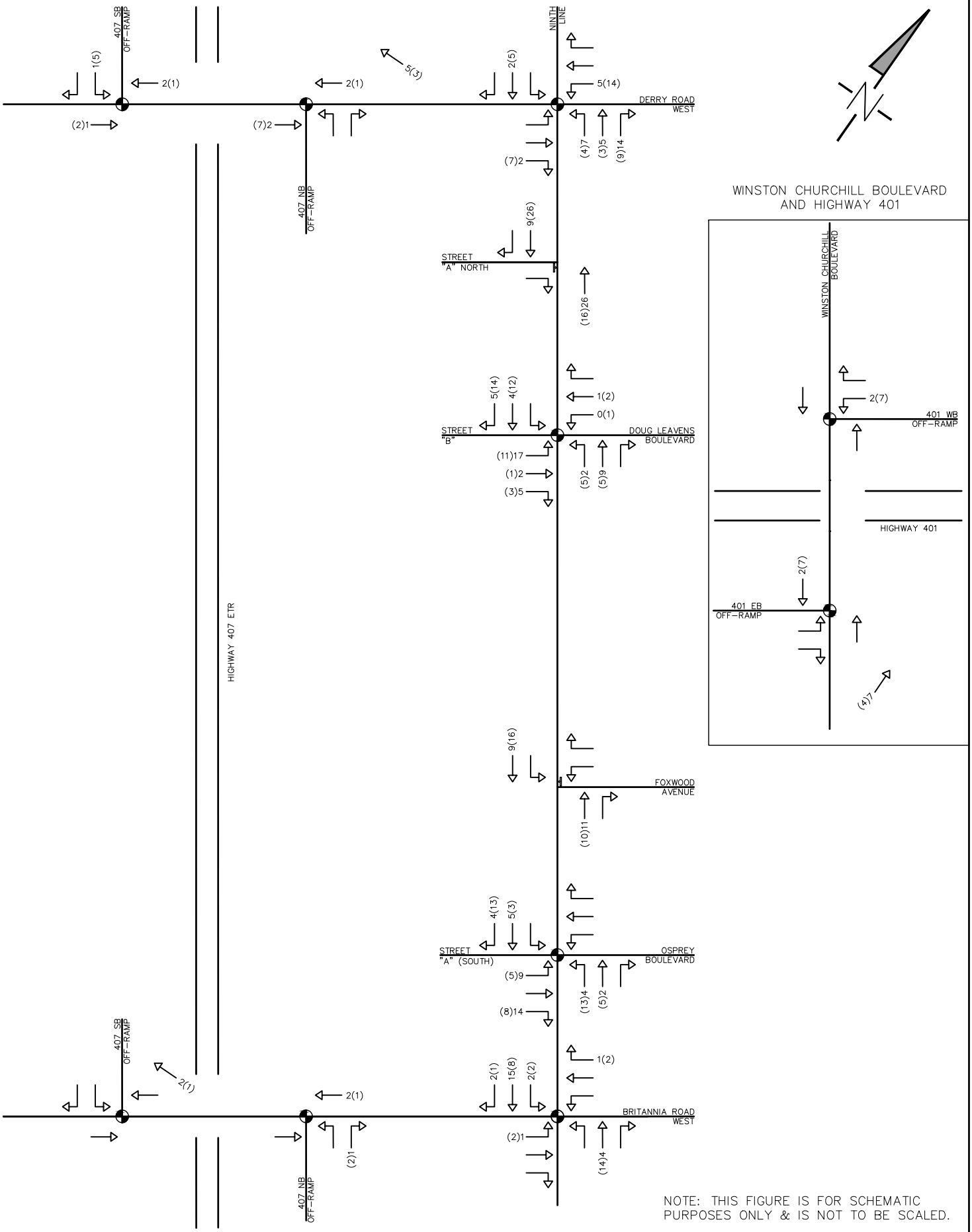
NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

TRIP ASSIGNMENT (SOUTH DRAFT PLAN)

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 17



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

TRIP ASSIGNMENT (FUTURE SOUTHERN RESIDENTIAL DEVELOPMENT)

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
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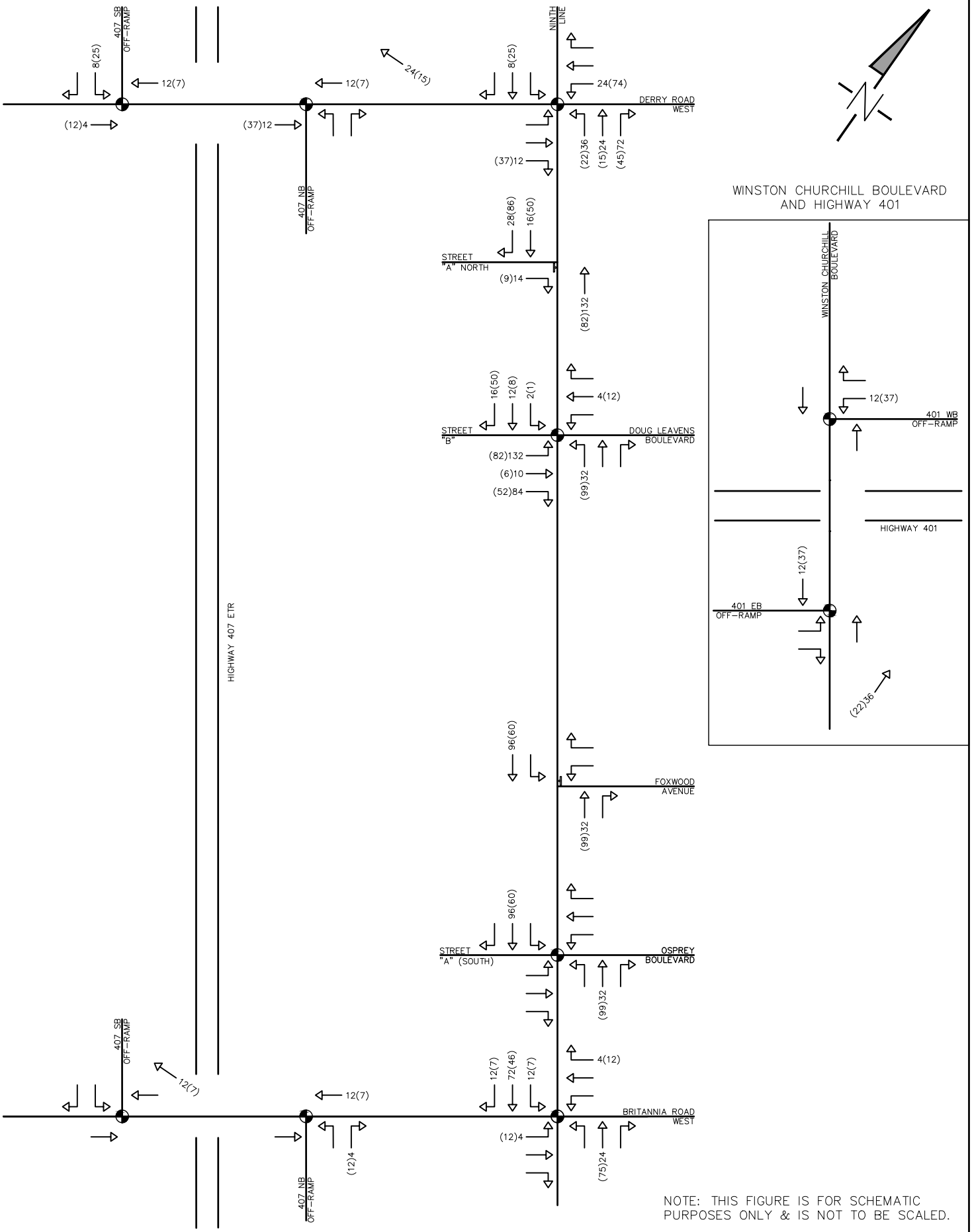
Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 18



WINSTON CHURCHILL BOULEVARD AND HIGHWAY 401

NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

TRIP ASSIGNMENT (NORTH DRAFT PLAN)

CROZIER CONSULTING ENGINEERS
The HarbourEdge Building,
40 Huron Street, Suite 301,
Collingwood, ON L9Y 4R3
705 446-3510 T
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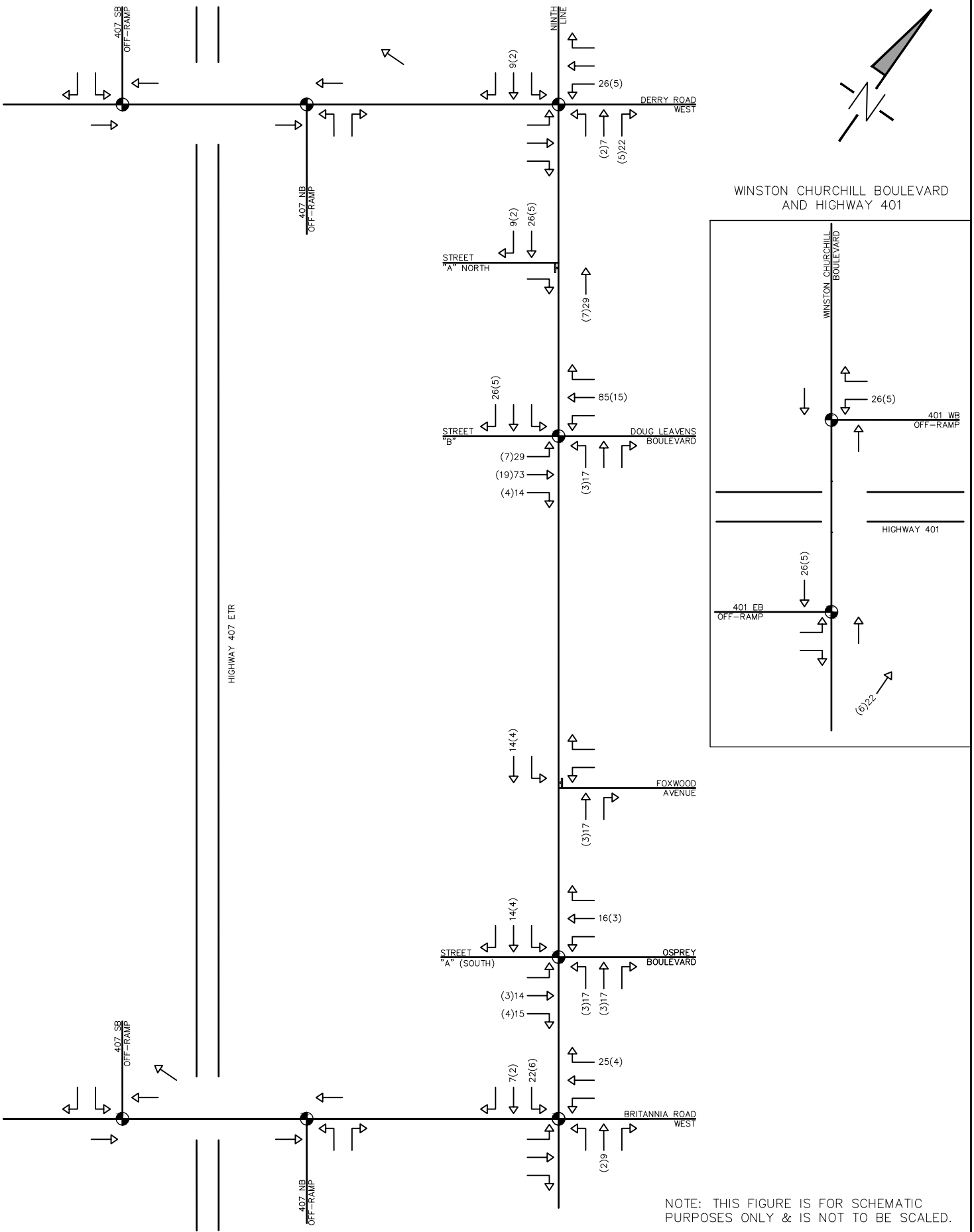
Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 19



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

SIGNAL CONTROL

STOP CONTROL

XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

TRIP ASSIGNMENT (EXTERNAL SCHOOL TRIPS)

CROZIER CONSULTING ENGINEERS

THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
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705 446-3520 F
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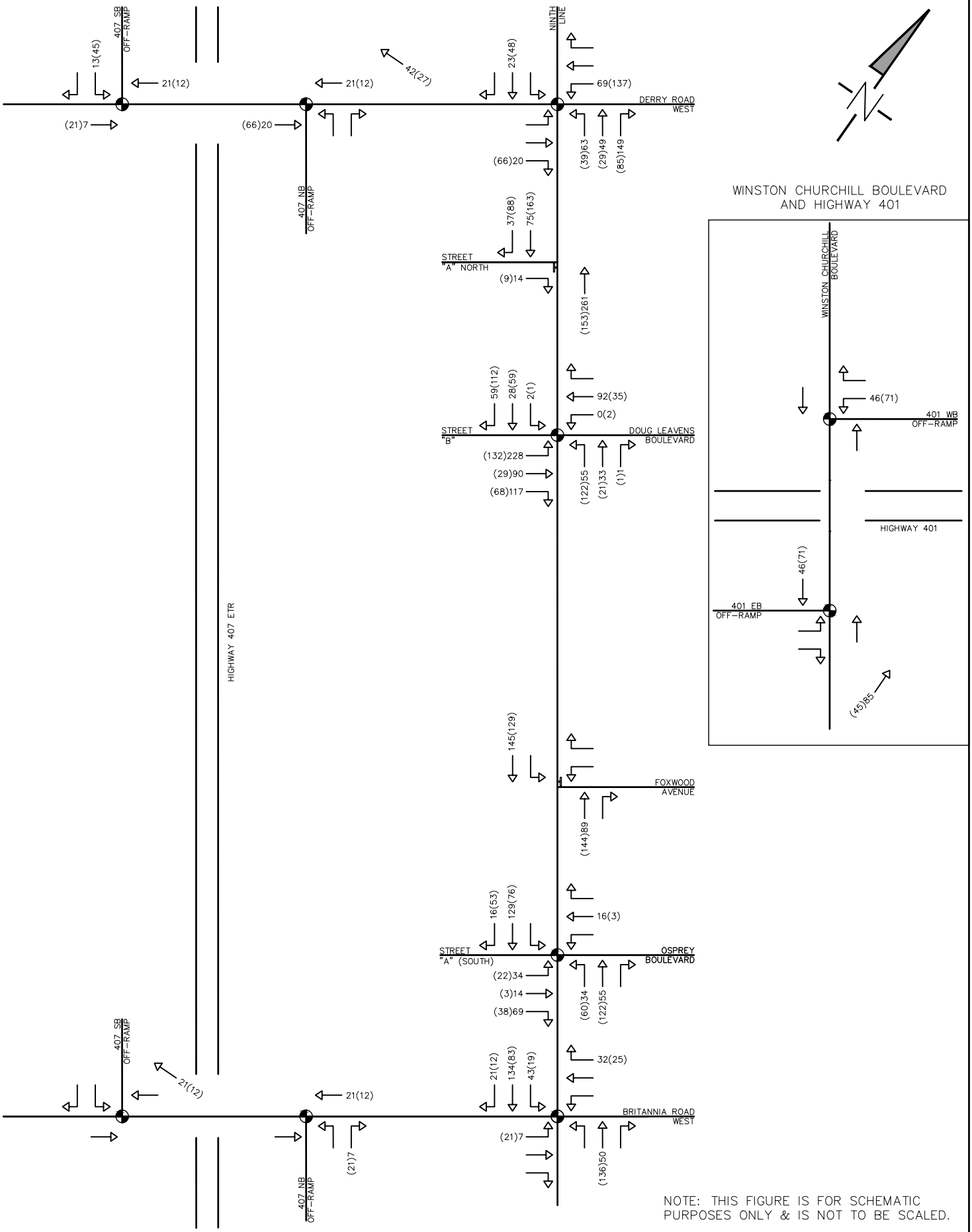
Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 20



WINSTON CHURCHILL BOULEVARD AND HIGHWAY 401

NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project: NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing: TRIP ASSIGNMENT (FULL BUILD–OUT)

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3
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705 446-3520 F
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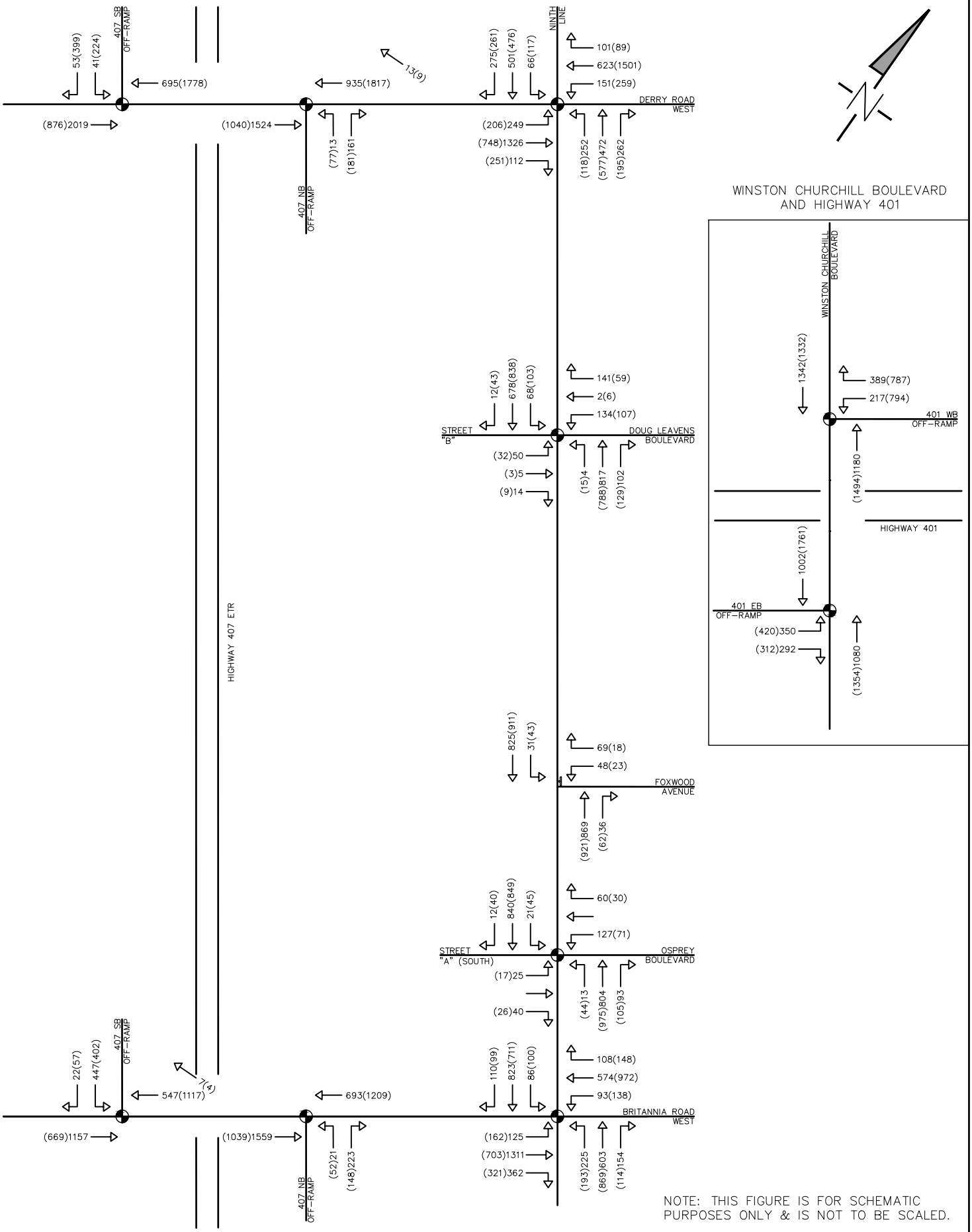
Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 21



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project: NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing: 2026 FUTURE TOTAL TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3
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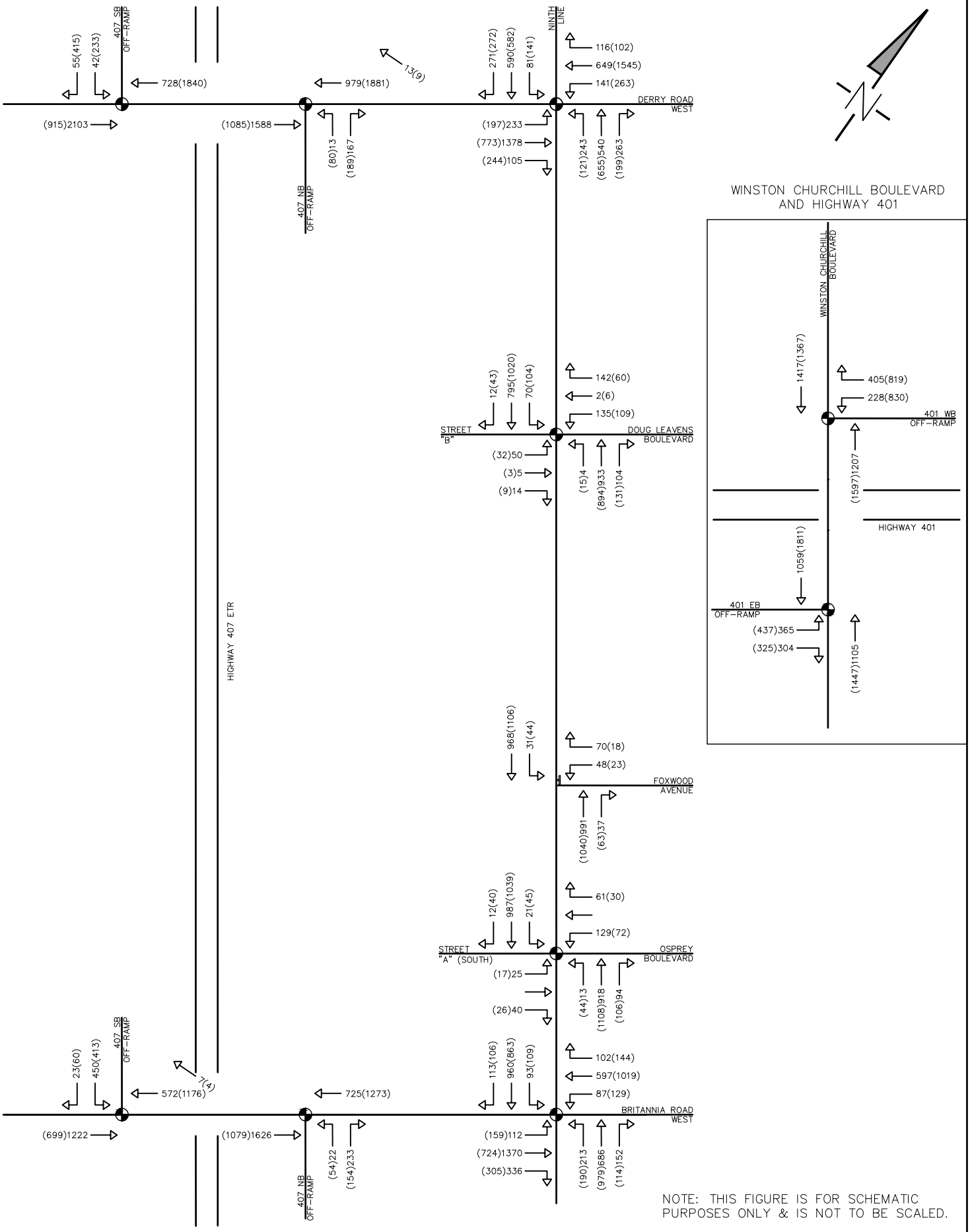
Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 22



WINSTON CHURCHILL BOULEVARD AND HIGHWAY 401

NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

NINTH LINE (DERRY–BRITANNIA)
CITY OF MISSISSAUGA

Drawing

2028 FUTURE TOTAL TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
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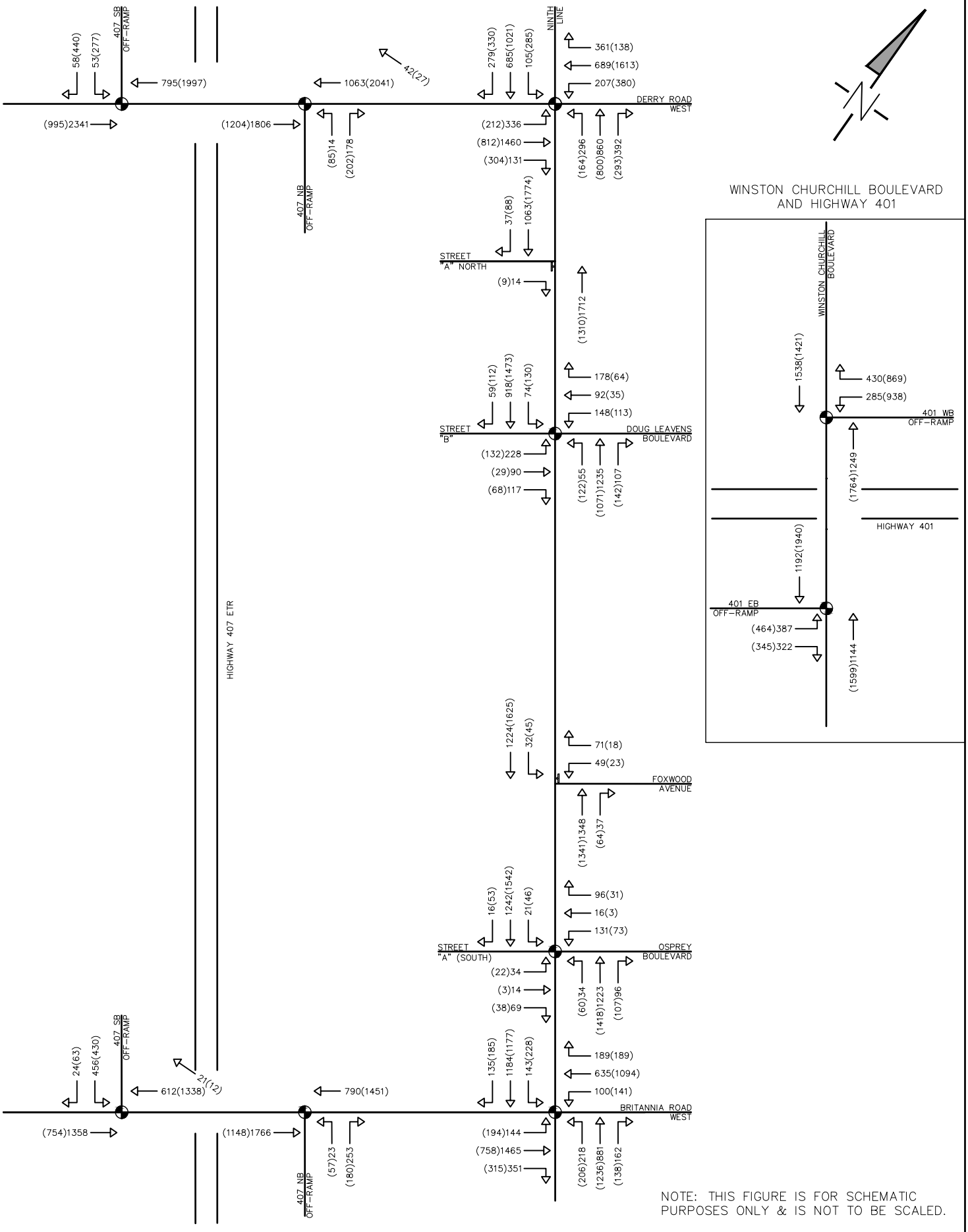
Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 23



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project: NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing: 2031 FUTURE TOTAL TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
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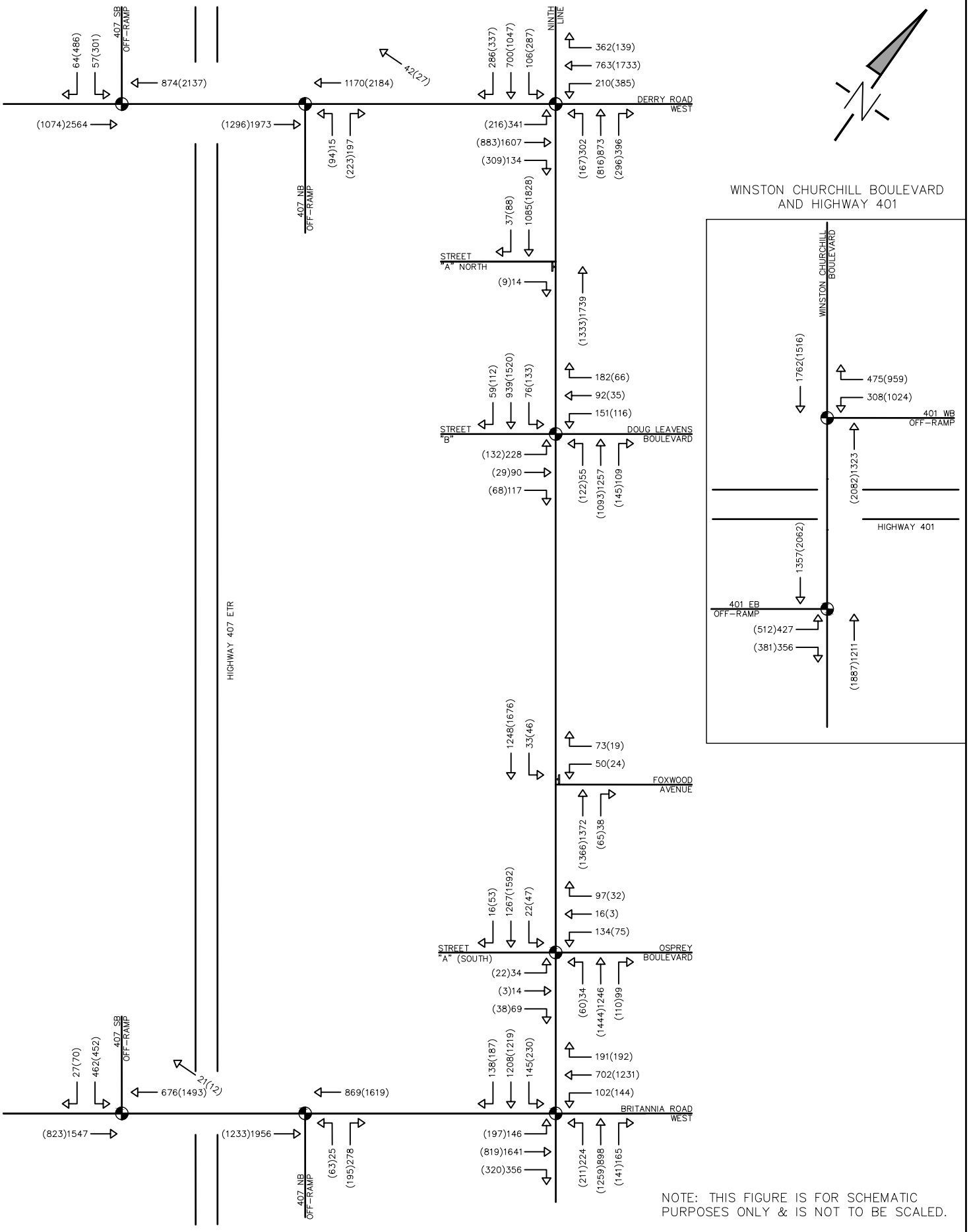
Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 24



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project: NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing: 2036 FUTURE TOTAL TRAFFIC VOLUMES

CROZIER CONSULTING ENGINEERS
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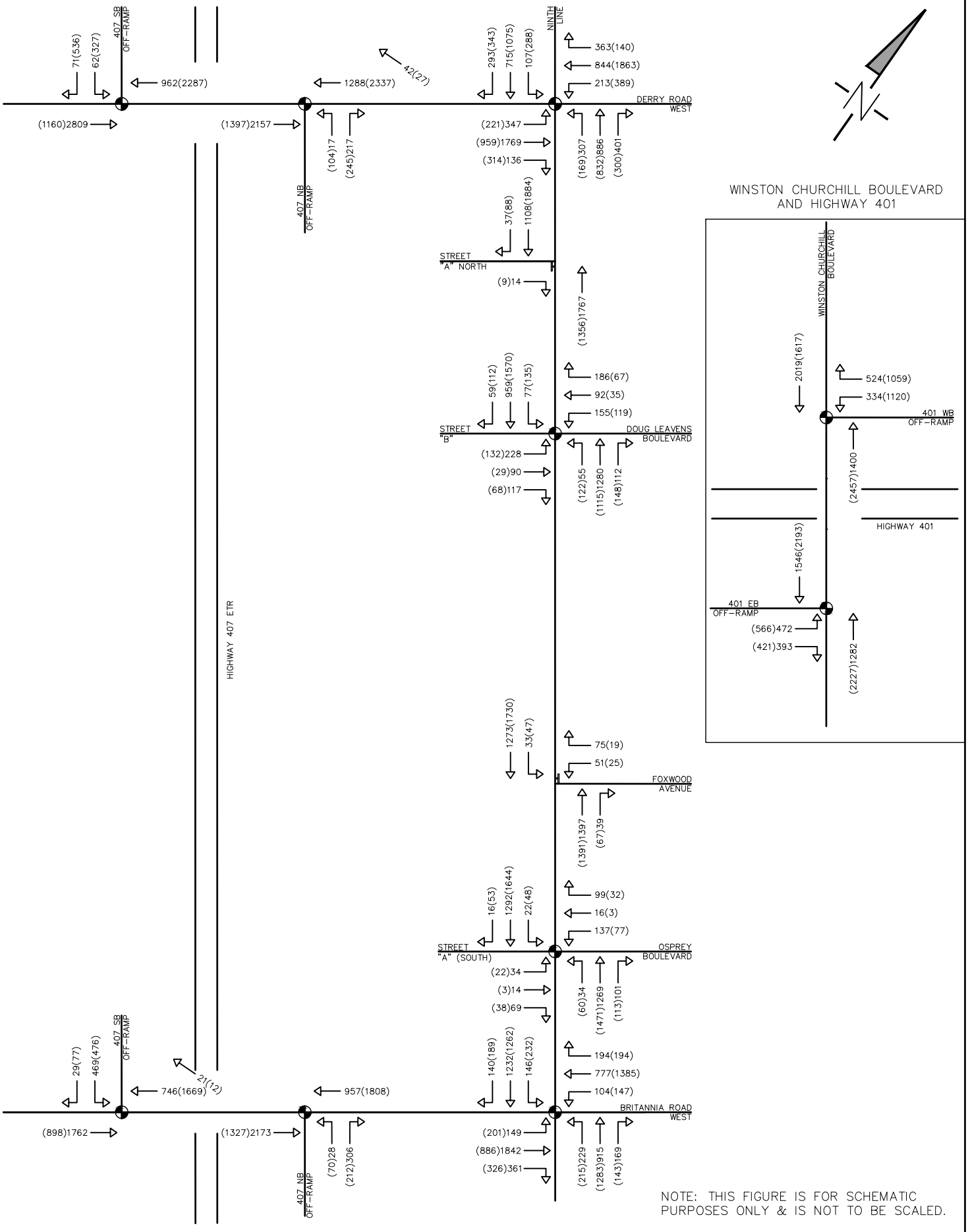
Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 25



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) WEEKDAY A.M. (WEEKDAY P.M.) PEAK HOUR VOLUMES

Project

NINTH LINE (DERRY–BRITANNIA) CITY OF MISSISSAUGA

Drawing

2041 FUTURE TOTAL TRAFFIC VOLUMES

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THE HARBOUREDGE BUILDING,
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705 446-3520 F
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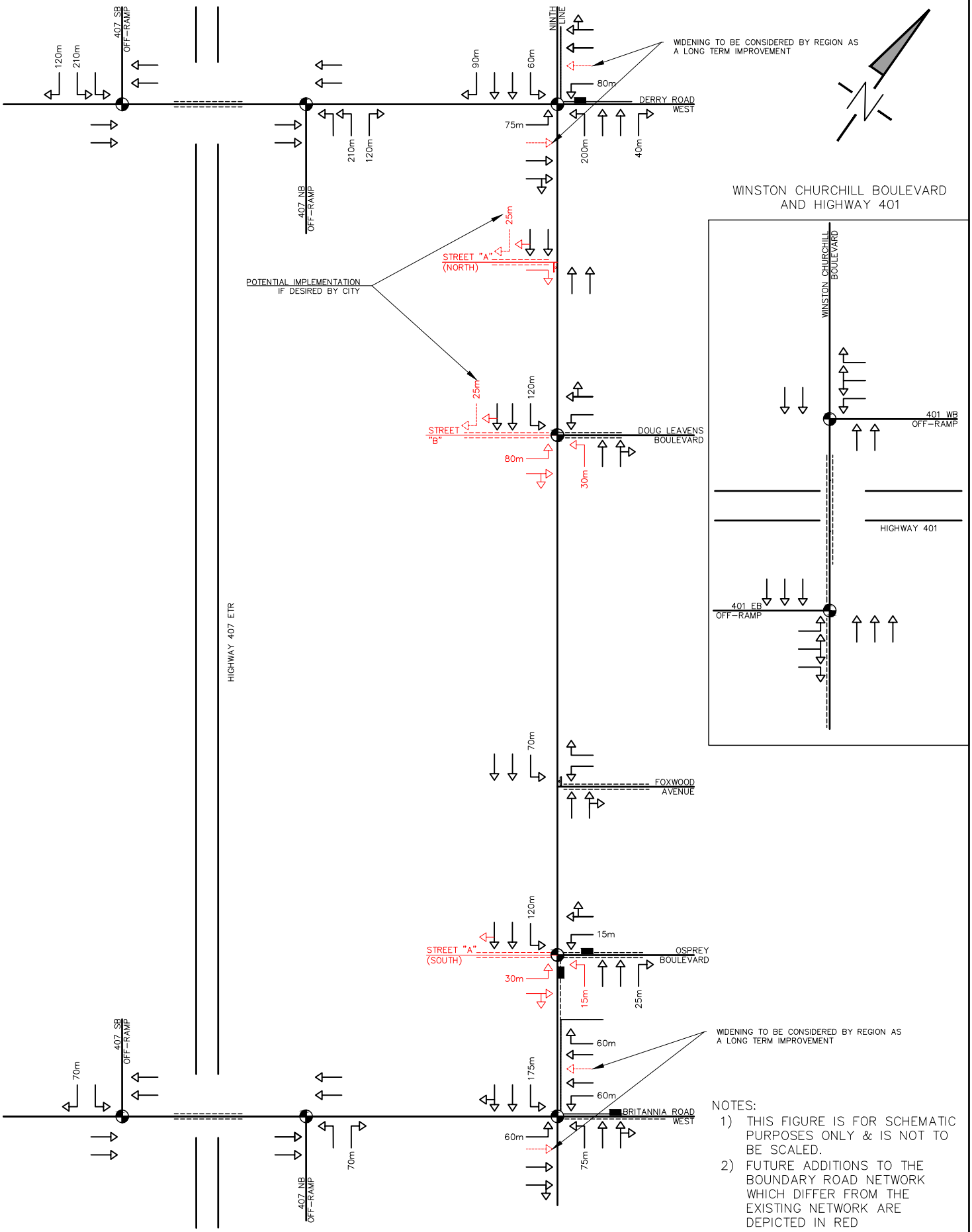
Drawn By	Design By	Project
R.L.	A.H.	780–5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 26



NOTES:

1) THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.
2) FUTURE ADDITIONS TO THE BOUNDARY ROAD NETWORK WHICH DIFFER FROM THE EXISTING NETWORK ARE DEPICTED IN RED

Legend

- SIGNAL CONTROL
- STOP CONTROL
- BUS STOP
- PEDESTRIAN SIDEWALK
- MULTI-USE TRAIL

Project

NINTH LINE (DERRY-BRITANNIA) CITY OF MISSISSAUGA

Drawing

FUTURE BOUNDARY ROAD NETWORK

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Drawn By	Design By	Project
R.L.	A.H.	780-5227
Scale	Date	Check By	Drawing
N.T.S.	APR. 25, 2023	A.H.	FIG 27