Forgestone Capital Management LP

TRANSPORTATION IMPACT STUDY UPDATE

Proposed Mixed-Use Development
170 Northfield Drive West,
City of Waterloo

April 2025

24063

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TABLE OF CONTENTS

1 Introduction 1
1.1 Development Proposal *2*
2 Existing Transportation Conditions 4
2.1 Existing Road Network *4*
2.2 Existing Transit Network *6*
Existing Cycling Network *7*
2.4 Existing Pedestrian Network *8*
Traffic Data Collection *8*
Existing Traffic Volumes *9*
3 Future Background Transportation Conditions 11
3.1 Background Developments *11*
Corridor Growth *11*
Future Road Network Improvements *11*
Future Background Traffic Volumes *12*
4 Site-Generated Traffic Volumes 15
Modal Split *15*
Trip Generation *15*
4.2.1 Multi-Modal Trip Generation 18
Trip Distribution and Assignment *18*
5 Future Total Transportation Conditions 22
5.1 Future Total Traffic Volumes *22*
6 Intersection Capacity Analysis 25
Synchro Model Inputs and Assumptions *25*
6.1.1 Road Network Assumptions 25
6.1.2 Synchro Calibrations/Parameters 25
6.1.2.1 Existing Conditions Synchro Model Inputs 25
6.1.2.2 Future Background and Future Total Synchro Model Inputs 25
6.1.3 Signal Timing Modifications 25
6.1.4 New Signalized Intersection – Weber Street North at Parkside Drive 26
2031 – Signalized Intersections *26*

6.2.1 Weber Street North and Randall Drive 26
6.2.2 Weber Street North and Northfield Drive West 28
6.2.3 Weber Street North and Parkside Drive (South Intersection) 30
6.2.4 Parkside Drive and Northfield Drive West 32
6.2.5 Northfield LRT Transit Station/Railway Crossing & Northfield Drive West 34
2031 – Unsignalized Intersections 35
6.3.1 Weber Street North and Parkside Drive (North Intersection) 35
6.3.2 Sobeys West Driveway/Plaza North-West Driveway and Parkside Drive 37
6.3.3 Sobeys East Driveway/North-South Access Road and Parkside Drive 38
6.3.4 North-South Access Road and Northfield Drive West 38
6.3.5 Kumpf Drive/Private Driveway and Northfield Drive West 39
6.3.6 Parkside Drive and Buildings A-E Driveway/Buildings E-H Driveway 39
6.3.7 Parkside Drive and Nordia Loading Driveway 40
6.3.8 Parkside Drive and Building I South-East Driveway/Building J South-West Driveway 40
6.3.9 Parkside Drive/Parkside Drive Extension and Future East-West Road 41
6.3.10 Building K South-West Driveway/Building I North-West Driveway and Future East-West Road 41
6.3.11 Building L South-East Driveway/Building J North-East Driveway and Future East-West Road 41
2041 – Signalized Intersections 42
6.4.1 Weber Street North and Randall Drive 42
6.4.2 Weber Street North and Northfield Drive West 43
6.4.3 Weber Street North and Parkside Drive (South Intersection) 46
6.4.4 Parkside Drive and Northfield Drive West 48
6.4.5 Northfield LRT Transit Station/Railway Crossing & Northfield Drive West 50
2041 – Unsignalized Intersections 51
6.5.1 Weber Street North and Parkside Drive (North Intersection) 51
6.5.2 Sobeys West Driveway/Plaza North-West Driveway and Parkside Drive 53
6.5.3 Sobeys East Driveway/North-South Access Road and Parkside Drive 54
6.5.4 North-South Access Road and Northfield Drive West 54
6.5.5 Kumpf Drive/Private Driveway and Northfield Drive West 55
6.5.6 Parkside Drive and Buildings A-E Driveway/Buildings E-H Driveway 55
6.5.7 Parkside Drive and Nordia Loading Driveway 55

6.5.8 Parkside Drive and Building I South-East Driveway/Building J South-West Driveway 56
6.5.9 Parkside Drive/Parkside Drive Extension and Future East-West Road 56
6.5.10 Building K South-West Driveway/Building I North-West Driveway and Future East-West Road 56
6.5.11 Building L South-East Driveway/Building J North-East Driveway and Future East-West Road 57
Pedestrian Level of Service Analysis *57*
Analysis Summary *58*
7 Traffic Operations Review 59
Signal Warrant Review *59*
7.2 Roundabout Capacity Analysis *60*
Traffic Operations Conclusion *61*
8 Parking Assessment 62
Bicycle Parking Review *62*
Vehicle Parking Review *62*
9 Loading and Site Circulation Assessment 63
9.1 Loading Requirements *63*
10 Transportation Demand Management Plan 64
10.1 Category 1: Site Access *64*
10.2 Category 2: Public Transportation Access *65*
10.3 Category 3: Parking *66*
10.4 Category: 4: Trip Reduction Incentives *66*
10.5 Impact of TDM Measures *67*
11 Conclusions and Recommendations 69

LIST OF TABLES

Table 1-1: Site Statistics 2
Table 2-1: Data Collection Summary 9
Table 3-1: Background Developments 11
Table 4-1: Mode Splits 15
Table 4-2: Vehicle Trip Generation – Building A to J 16

Table 4-3: Trip Generation - Buildings K & L 17
Table 4-4: Net Auto Trip Generation 17
Table 4-5: Multi-Modal Trip Generation 18
Table 4-6: Trip Distribution – Residential 18
Table 4-7: Trip Distribution – Retail 18
Table 4-8: Trip Distribution – Employment 19
Table 6-1: Proposed Signal Timing Plan at Weber Street North and Parkside Drive – Future Total (2031 & 2041) 26
Table 6-2: Summary of Signal Timing Plan – Weber Street North and Parkside Drive – Future Total 26
Table 6-3: Weber Street North & Randall Drive Capacity Analysis 27
Table 6-4: Weber Street North & Randall Drive Queues 27
Table 6-5: Weber Street North & Northfield Drive West Capacity Analysis 28
Table 6-6: Weber Street North & Northfield Drive West Queues 29
Table 6-7: Weber Street North & Parkside Drive (South Intersection) Capacity Analysis 30
Table 6-8: Weber Street & Parkside Drive (South Intersection) Queues 31
Table 6-9:Parkside Drive & Northfield Drive West Capacity Analysis 32
Table 6-10: Parkside Drive & Northfield Drive West Queues 33
Table 6-11: Northfield LRT Transit Station/Railway Crossing & Northfield Drive West Capacity Analysis. 34
Table 6-12: Northfield LRT Transit Station/Railway Crossing & Northfield Drive West Queues 35
Table 6-13: Weber Street North & Parkside Drive (North Intersection) Capacity Analysis 36
Table 6-14: Weber Street North & Parkside Drive (North Intersection) Signal Warrant Analysis 36
Table 6-15: Weber Street North & Parkside Drive (North Intersection) Capacity Analysis (Signalized) 37
Table 6-16: Weber Street North & Parkside Drive (North Intersection) Queues (Signalized) 37
Table 6-17:Sobeys West Driveway/Plaza North-West Driveway and Parkside Drive Capacity Analysis 38
Table 6-18:Sobeys East Driveway/North-South Access Road and Parkside Drive Capacity Analysis 38
Table 6-19: North-South Access Road and Northfield Drive West Capacity Analysis 39
Table 6-20: Kumpf Drive/Private Driveway and Northfield Drive West Capacity Analysis 39
Table 6-21: Parkside Drive and Buildings A-E Driveway/Buildings E-H Driveway Capacity Analysis 40
Table 6-22: Parkside Drive and Nordia Loading Driveway Capacity Analysis 40

Table 6-23: Parkside Drive and Building I South-East Driveway/Building J South-West Driveway Capacity Analysis 40

Table 6-24: Parkside Drive/Parkside Drive Extension and Future East-West Road Capacity Analysis 41

Table 6-25: Building K South-West Driveway/Building I North-West Driveway and Future East-West Road Capacity Analysis 41

Table 6-26: Building L South-East Driveway/Building J North-East Driveway and Future East-West Road Capacity Analysis 42

Table 6-27: Weber Street North & Randall Drive Capacity Analysis 42

Table 6-28: Weber Street North & Randall Drive Queues 43

Table 6-29: Weber Street North & Northfield Drive West Capacity Analysis 44

Table 6-30: Weber Street North & Northfield Drive West Queues 45

Table 6-31: Weber Street North & Parkside Drive (South Intersection) Capacity Analysis 46

Table 6-32: Weber Street & Parkside Drive (South Intersection) Queues 47

Table 6-33:Parkside Drive & Northfield Drive West Capacity Analysis 48

Table 6-34:Parkside Drive & Northfield Drive West Queues 49

Table 6-35: Northfield LRT Transit Station/Railway Crossing & Northfield Drive West Capacity Analysis 50

Table 6-36: Northfield LRT Transit Station/Railway Crossing & Northfield Drive West Queues 51

Table 6-37: Weber Street North & Parkside Drive (North Intersection) Capacity Analysis 52

Table 6-38: Weber Street North & Parkside Drive (North Intersection) Capacity Analysis (Signalized) 52

Table 6-39: Weber Street North & Parkside Drive (North Intersection) Queues (Signalized) 53

Table 6-40:Sobeys West Driveway/Plaza North-West Driveway and Parkside Drive Capacity Analysis 53

Table 6-41:Sobeys East Driveway/North-South Access Road and Parkside Drive Capacity Analysis 54

Table 6-42: North-South Access Road and Northfield Drive West Capacity Analysis 54

Table 6-43: Kumpf Drive/Private Driveway and Northfield Drive West Capacity Analysis 55

Table 6-44: Parkside Drive and Buildings A-E Driveway/Buildings E-H Driveway Capacity Analysis 55

Table 6-45: Parkside Drive and Nordia Loading Driveway Capacity Analysis 55

Table 6-46: Parkside Drive and Building I South-East Driveway/Building J South-West Driveway Capacity Analysis 56

Table 6-47: Parkside Drive/Parkside Drive Extension and Future East-West Road Capacity Analysis 56

Table 6-48: Building K South-West Driveway/Building I North-West Driveway and Future East-West Road Capacity Analysis 57

Table 6-49: Building L South-East Driveway/Building J North-East Driveway and Future East-West Road Capacity Analysis 57

Table 6-50: Pedestrian LOS Criteria 58

Table 6-51: Pedestrian LOS Evaluation 58

Table 7-1: Signalized Intersection Capacity Analysis - Parkside Drive/Parkside Drive Extension and Future East-West Road 59

Table 7-2: Signal Warrant Review - Parkside Drive/Parkside Drive Extension and Future East-West Road 60

Table 7-3: 2031 Future Total Roundabout Capacity Analysis Results - Parkside Drive/Parkside Drive Extension and Future East-West Road 60

Table 7-4: 2041 Future Total Roundabout Capacity Analysis Results - Parkside Drive/Parkside Drive Extension and Future East-West Road 61

Table 8-1: Zoning By-law Bicycle Parking Requirements 62

Table 8-2: Proposed Vehicle Parking Supply 62

Table 9-1: Zoning By-law Loading Requirements 63

Table 10-1: TDM Summary and Estimated Impacts 68

LIST OF FIGURES

Figure 1-1: Subject Site Location 1

Figure 1-2: Proposed Site Plan 3

Figure 2-1: Existing Lane Configuration 5

Figure 2-2: Existing Transit Network 6

Figure 2-3: Existing Cycling Network 8

Figure 2-4: Existing Peak Hour Traffic 10

Figure 3-1: Future Background Road Network 12

Figure 3-2: 2031 Future Background Peak Hour Traffic Volumes 13

Figure 3-3: 2041 Future Background Peak Hour Traffic Volumes 14

Figure 4-1: New Site Generated Peak Hour Traffic Volumes 20

Figure 4-2: Net Site Generated Peak Hour Traffic Volumes 21

Figure 5-1: Future Road Network 22

Figure 5-2: 2031 Future Total Traffic Volumes 23
Figure 5-3: 2041 Future Total Traffic Volumes 24
Figure 7-1: Proposed E-W Road 59

APPENDICES

APPENDIX A	**Terms of Reference**
APPENDIX B	**Traffic Data & Signal Timing Plans**
APPENDIX C	**Background Developments**
APPENDIX D	**TTS Trip Distribution Data**
APPENDIX E	**Existing Intersection Capacity Analysis**
APPENDIX F	**2031 & 2041 Future Background Intersection Capacity Analysis**
APPENDIX G	**2031 & 2041 Future Total Intersection Capacity Analysis**
APPENDIX H	**Traffic Operations Review**
APPENDIX I	**Transportation Demand Management Checklist**

1 INTRODUCTION

LEA Consulting Ltd. (LEA) was retained by Forgestone Capital Management LP to undertake a Transportation Impact Study (TIS) for the proposed mixed-use development located at 170 Northfield Drive West in the City of Waterloo (hereinafter referred to as the "subject site"). The initial TIS submission was made in April 2024 in support of the concurrent Official Plan Amendment (OPA)/Zoning By-law Amendment (ZBA) applications for the proposed development. This TIS Update has been prepared to present a revised site plan and assess the associated transportation impacts.

The subject site is currently occupied by two (2) commercial/office buildings and at-grade parking lots. The subject location is illustrated below in **Figure 1-1**.

Figure 1-1: Subject Site Location



Source: Google Maps, February 2024

The purpose of this study is to assess the proposed development from a transportation perspective, determine the traffic impacts on the adjacent road network, and identify any required mitigation measures. The study will be conducted following the Region of Waterloo *Transportation Impact Study Guidelines (September 2014).* The following study will analyse the horizon years of 2031 and 2041, in line with the Waterloo Transportation Master Plan horizons as indicated on the City of Waterloo's Pre-Study

Conference Form for the study, which is provided in **Appendix A**. The study terms of reference were also circulated to the Ministry of Transportation.

In addition, this study includes a review of the parking and loading provisions and a Transportation Demand Management (TDM) Plan to encourage alternative modes of travel.

1.1 DEVELOPMENT PROPOSAL

According to the Region of Waterloo Official Plan, developments located within a 600 to 800 metre radius of a rapid transit station are considered Major Transit Station Areas (MTSAs). MTSAs are planned and developed to achieve increased densities that support and ensure the viability of existing and planned rapid transit service levels and include a mix of residential, office, institutional and commercial development.

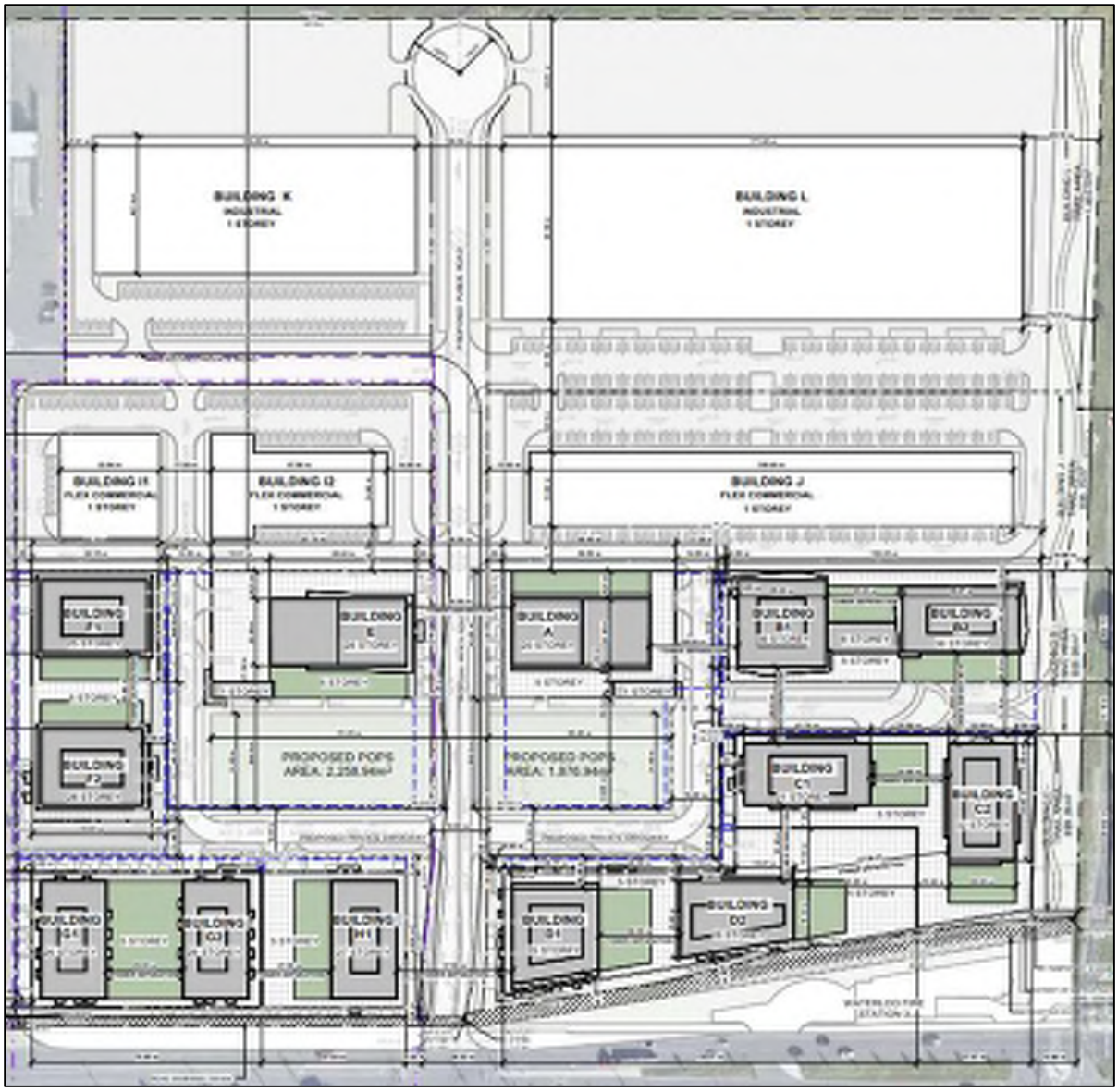
Based on the latest site plan, the development proposal consists of a total of 3,652 residential units and approximately 22,239 m^2 of non-residential GFA. A total of 3,325 vehicle parking spaces are proposed. Access to the development is proposed via Northfield Drive West and via Weber Street North.

The unit breakdown and preliminary site statistics are provided in **Table 1-1**, with the most recent site plan illustrated in **Figure 1-2**.

Table 1-1: Site Statistics

Land Use		Size
Residential	Studio	302 Units
	1 Bedroom	1,553 units
	2 Bedroom	1,516 Units
	3 Bedroom	281 Units
	Total	**3,652 Units**
Retail		341.9 m^2
Flex Commercial		6,581.6 m^2
Industrial		15,315.9 m^2

Figure 1-2: Proposed Site Plan



Source: Turner Fleischer, March 2025

2 EXISTING TRANSPORTATION CONDITIONS

This section identifies and assesses the existing transportation conditions within the study area, including the road, transit, cycling and pedestrian networks. The study area was determined by assessing the size of the proposed development, its anticipated transportation impact, and through consultation with City of Waterloo, Region of Waterloo, and Ministry of Transportation (MTO) Staff (see **Appendix A**). In addition, LEA met with the City, Region and MTO on Wednesday November 8th, 2023 to confirm the TOR. The study area includes the following existing intersections:

- Weber Street North and Randall Drive (Signalized);
- Northfield Drive West and Weber Street North (Signalized);
- Weber Street North and Parkside Drive South (Signalized);
- Parkside Drive North and Northfield Drive West (Signalized);
- Northfield Drive West and LRT Intersection (Pedestrian Signalized);
- Weber Street North and Parkside Drive North (Unsignalized);
- Sobeys West Driveway/Plaza Northwest Driveway and Parkside Drive (Unsignalized);
- Sobeys East Driveway/North-South Access Road and Parkside Drive (Unsignalized);
- N-S Access Road and Northfield Drive West (Unsignalized);
- Kumpf Drive/Private Driveway and Northfield Drive West (Unsignalized);
- Conestoga Parkway Southbound Ramps and Northfield Drive West (Unsignalized) and
- Conestoga Parkway Northbound Ramps and Northfield Drive West (Unsignalized).

2.1 EXISTING ROAD NETWORK

The following section provides a description and classification of the roadways within the study area. All roadways within the study area are under the jurisdiction of the Region of Waterloo or the City of Waterloo except for Conestoga Parkway, which is controlled by MTO.

Figure 2-1 illustrates the existing lane configuration for the study area road network.

Northfield Drive West is an east-west regional arterial roadway that operates with a four-lane cross-section (two lanes per direction) within the study area. Under the Region of Waterloo's jurisdiction, the roadway operates between Westmount Road North to King Street North where it continues as Northfield Drive East beyond the City of Waterloo into Woolwich Township. In the immediate vicinity of the subject site, the roadway operates with a posted speed limit of 60 km/h.

Weber Street North is a north-south regional arterial roadway that operates with a four-lane cross-section (two lanes per direction) within the study area. Under the Region of Waterloo's jurisdiction, the roadway operates between King Street North and Erb Street East where it continues as Weber Street South and eventually Weber Street East until Fairway Road North. The roadway operates with a posted speed limit of 60 km/h within the study area.

Parkside Drive is generally a north-south major collector roadway that operates with a two-lane cross-section (one lane per direction). North of Northfield Drive West, the road is a local roadway under private

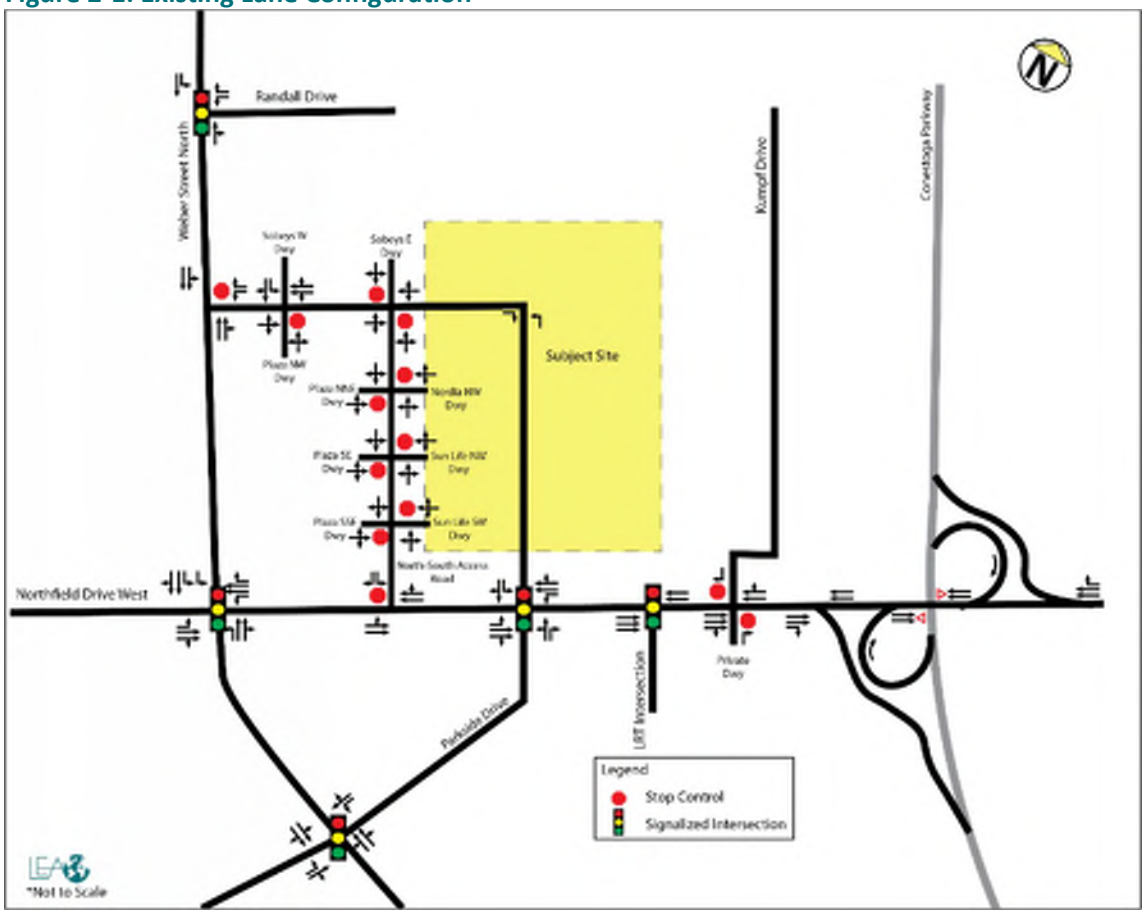
ownership. South of Northfield Drive West, the roadway operates as a major collector road under the jurisdiction of the City of Waterloo. The roadway extends from Northfield Drive West to Bearinger Road. North of Northfield Drive, Parkside Drive operates with a posted speed limit of 20 km/h. South of Northfield Drive, as there is no speed limit posted, Parkside Drive operates with an assumed speed limit of 50 km/h.

Randall Drive is an east-west local roadway that operates with a two-lane cross-section (one lane per direction). The roadway operates between Weber Street North and Kumpf Drive and is under the jurisdiction of the City of Waterloo. As there is no posted speed limit, the roadway operates with an assumed speed limit of 50 km/h within the study area.

Kumpf Drive is a north-south local roadway that operates with a two-lane cross-section (one lane per direction). The roadway operates between Northfield Drive West and terminates north of Randall Drive and is under the jurisdiction of the City of Waterloo. As there is no speed limit posted, the roadway operates with an assumed speed limit of 50 km/h within the study area.

Conestoga Parkway is classified as north-south highway. The route extends between the interchange with King Street North in Woolwich Township to Trussler Road in Kitchener where it continues as Highway 7/8, south of Ottawa Street. Currently, Conestoga Parkway has an interchange with Northfield Drive West in the area of the subject site. Conestoga Parkway is under the jurisdiction of the Ontario Ministry of Transportation.

Figure 2-1: Existing Lane Configuration

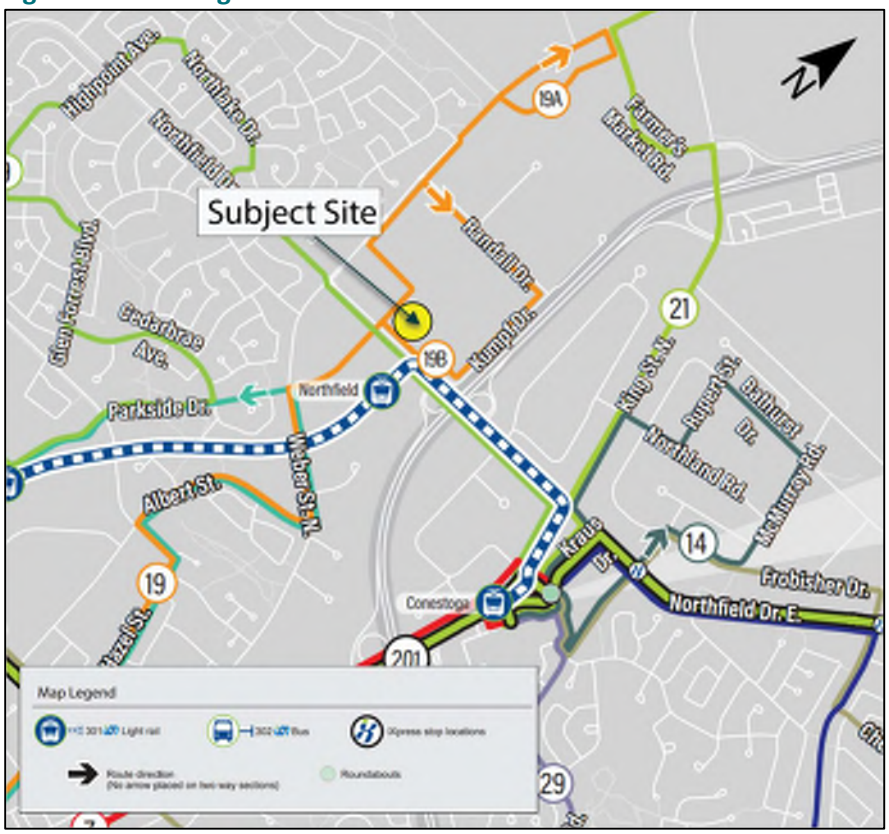


2.2 EXISTING TRANSIT NETWORK

The subject site is well served by existing transit services along Northfield Drive West and the surrounding road and transit network provided by Grand River Transit (GRT). Bus stops are located throughout the site along Parkside Drive and at the intersection of Northfield Drive West and Parkside Drive, which is immediately adjacent to the subject site. In addition, the site is within an MTSA for the Northfield LRT Station, which is located approximately 240 m (or a 3-minute walk) south of the subject site, providing a convenient connection to the overall transit network.

As a testament to the subject site's transit accessibility, the site receives a Transit Score of 54/100, or "Good Transit" when entered into the Walk Score application, indicating that there are many public transit opportunities in the nearby area. The existing transit network surrounding the subject site is described below and illustrated in **Figure 2-2**.

Figure 2-2: Existing Transit Network



Source: Grand River Transit, accessed February 2025

GRT Route 301 – ION Light Rail is a light rail transit (LRT) route that operates generally in an east-west direction. The route operates from Conestoga Station to Fairway Station where connections to the 302 ION Bus are provided. This route operates with headways of approximately 15-minutes, operating Monday to Friday from approximately 5:30 AM to 9:00 PM and on weekends from approximately 7:00 AM to 9:00 PM.

> *Access Location:* ION LRT Route 301 is accessible at the Northfield Station, which is located approximately 240 m (or a 4-minute walk) from the subject site.

GRT Route 9 – Lakeshore is a bus route that operates generally in a north-south direction. The route operates from the University of Waterloo Station to Conestoga Station, where connections to the 301 ION Light Rail are provided. This bus route operates Monday to Friday all day, with headways of approximately 15-minutes during peak hours and 30-minutes throughout the day. On Saturday and Sunday, the route operates all-day with headways of 30-minutes.

> *Access Location:* Route 9 is accessible at the intersection of Northfield Drive West and Parkside Drive, which is located adjacent to the subject site (less than a 1-minute walk).

GRT Route 19 – Hazel is a bus route that operates during the summer months only. The route operates generally in a north-south direction. Two services are operated, providing service from the University of Waterloo to Northfield Station, where connections to the 301 ION Light Rail are provided. Route 19A provides service to St. Jacobs Market and Route 19B operates from the University of Waterloo Station to Northfield Station via Kumpf Drive. Monday to Friday, Route 19A operates all-day with headways of approximately 30-minutes and Route 19B operates during the morning and evening peak hours only, with headways of approximately 30-minutes. On weekends, both routes operate with headways of approximately 1-hour all-day.

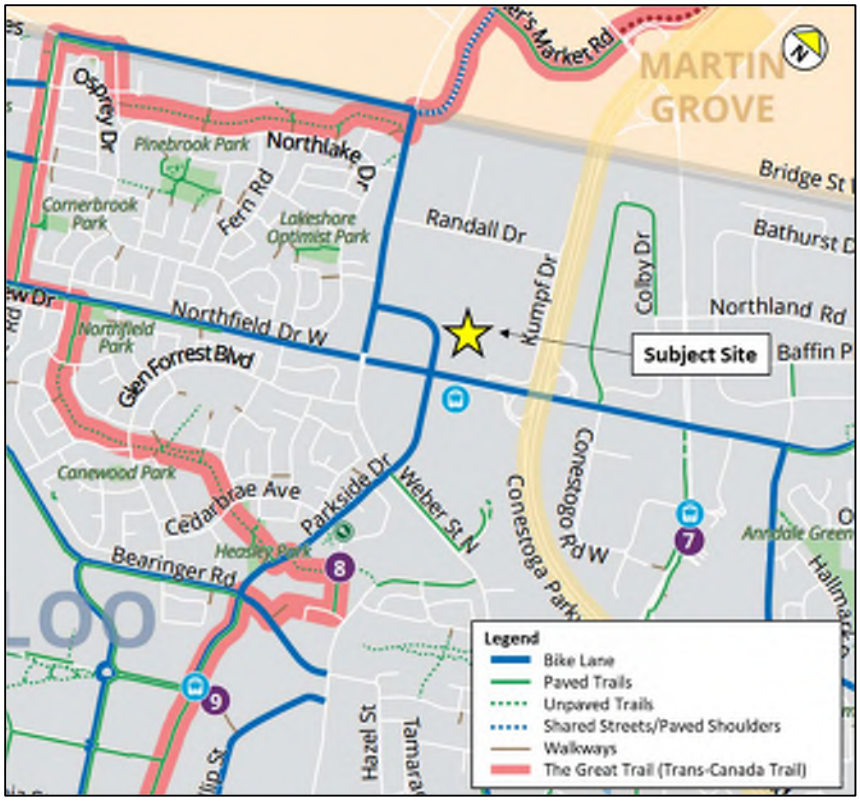
> *Access Location:* Route 19 is accessible at the intersection of Northfield Drive West and Parkside Drive, which is located adjacent to the subject site (less than a 1-minute walk).

2.3 EXISTING CYCLING NETWORK

Cycling facilities are available within the study area with bike lanes present along both sides of Northfield Drive West, Parkside Drive and Weber Street North. These bike lanes provide east-west and north-south connections to the Great Trail (Trans-Canada Trail) which features both paved and unpaved sections. Both the Laurel Trail and the Farmers Market Trail are accessible in the area.

As a testament to how bikeable the subject site is, the subject site receives a Bike Score of 64/100, or “Bikeable”, when entered into the WalkScore application. This indicates that there is some cycling infrastructure in the surrounding area. The existing bicycle and trail network surrounding the subject site is illustrated in **Figure 2-3**.

Figure 2-3: Existing Cycling Network



Source: Region of Waterloo Bike Map – Urban, 2021

2.4 EXISTING PEDESTRIAN NETWORK

In the area immediately surrounding the subject site, continuous sidewalks are available along both sides of all streets in the study area. In addition, crosswalks are available at all signalized intersections, inclusive of the intersection of Northfield Drive and the LRT interchange.

The walkability today is somewhat limited by the current land use and urban structure of the surrounding area, which is predominantly industrial and commercial uses that are auto-oriented. This is expected to improve through developments such as the subject development, which leverages existing higher-order transit by way of the ION LRT and cycling infrastructure available and will add mixed-use development that includes residential, retail, and flexible commercial space to the area.

2.5 TRAFFIC DATA COLLECTION

Turning movement counts (TMCs) were used as the source of traffic data in the intersection capacity analysis. Traffic counts were collected by the Region of Waterloo, MTO West and LEA Consulting. The data ranges from June 2022 to November 2023 between 7:00 AM – 10:00 AM and 4:00 PM – 7:00 PM.

It is noted that watermain construction resulted in the closure of Weber Street North and Northfield Drive West. As a result, no traffic counts were able to be collected for minor driveways along Parkside Drive and Northfield Drive West where historical counts were unavailable for purchase. As a result, trip generation was forecasted for the existing offices located on the subject site as well as the existing plaza on the northeast corner of Northfield Drive West and Weber Street North.

Signal timing plans at the signalized intersections were obtained from the Region of Waterloo. A summary of the TMC data collected is outlined in **Table 2-1** with detailed traffic counts and signal timing plans available in **Appendix B**.

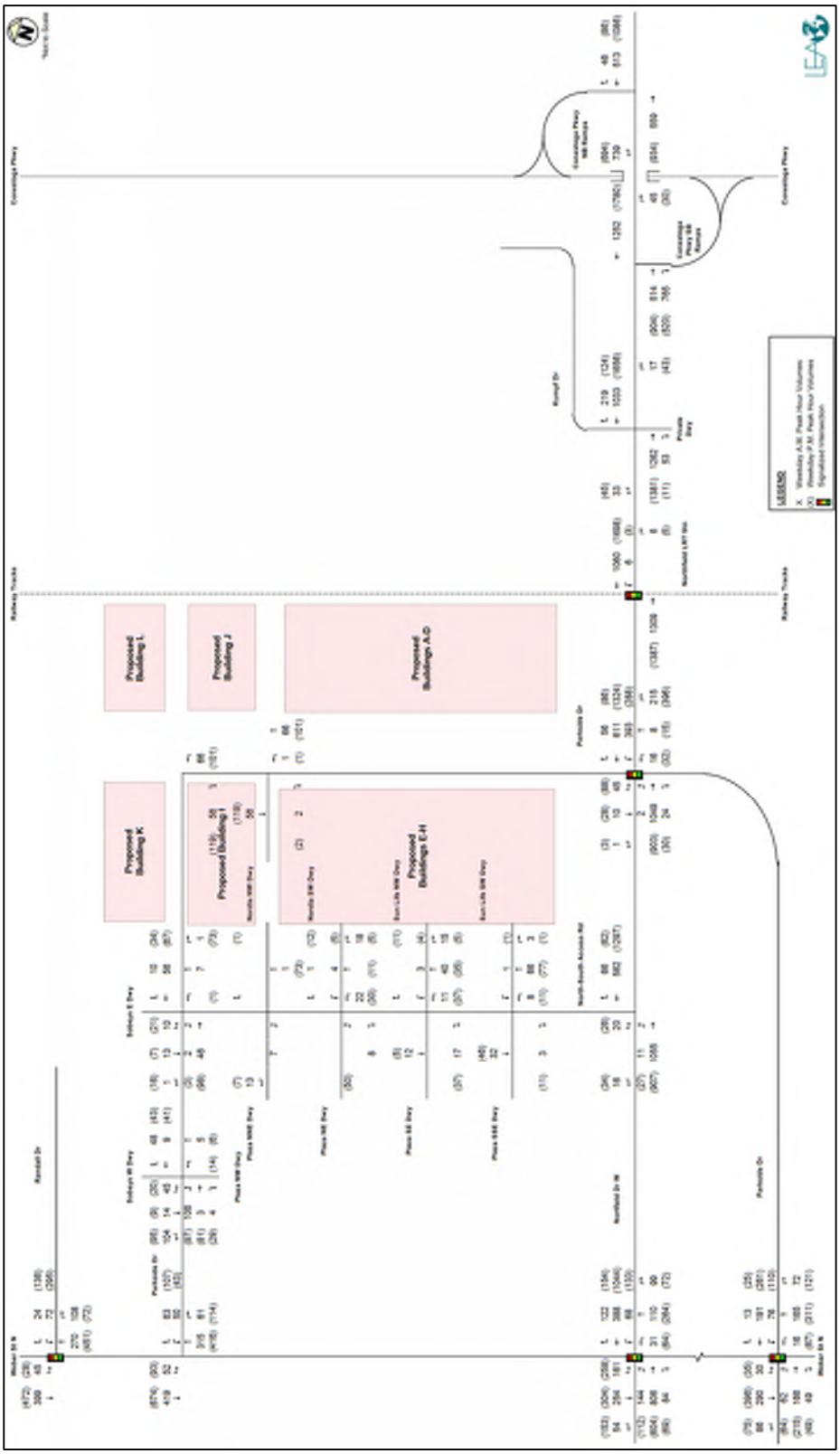
Table 2-1: Data Collection Summary

Intersection	TMC Date	Source
Weber St N & Randall Dr	Tues. November 25, 2022	Region of Waterloo
Weber St N & Northfield Dr W	Wed. June 8, 2022	
Weber St N & Parkside Dr (South intersection)	Thurs. December 8, 2022	
Parkside Dr & Northfield Dr W	Tues. October 25, 2022	
Conestoga Pkwy West Ramps	Tues. Sept 27, 2022	MTO West
Conestoga Pkwy East Ramps		

2.6 EXISTING TRAFFIC VOLUMES

As there are existing uses on site, the trips generated for the subject site and adjacent plaza were estimated using the ITE 11 Land Use Code (LUC) 130 Industrial Park. Site trips were assigned using trip distribution as calculated from 2016 TTS data. In addition, during the collection of traffic counts, construction was present at the intersection of Weber Street North and Northfield Drive West. As such, volumes were balanced based on the counts at Parkside Drive and Northfield Drive West. The existing balanced traffic volumes during the weekday AM and PM peak hour are illustrated in **Figure 2-4.**

Figure 2-4: Existing Peak Hour Traffic



3 FUTURE BACKGROUND TRANSPORTATION CONDITIONS

For the analysis of future background traffic conditions, the study consists of an eight (8)-year horizon from the existing year 2023 to the future year 2031 and an 18-year horizon to the future year 2041, in line with the horizon years for the Waterloo Transportation Master Plan horizons. Future background conditions include traffic added to the network from other future developments, corridor growth and considers overall improvements to the transportation network. The future background conditions will be used as the baseline for evaluating the impact of the proposed development.

3.1 BACKGROUND DEVELOPMENTS

LEA met with the City, Region and MTO on Wednesday November 8th, 2023 to confirm the Terms of Reference for this study, including the background growth and background developments to be assumed.

One (1) background development was included in the future background analysis as per the Region of Waterloo's Development Application portal. The background developments are summarized in **Table 3-1**. Excerpts from the study providing details of the background development's trips are provided in **Appendix C**.

Table 3-1: Background Developments

Location	Proposed Development	Source of Traffic Volumes
562-565 Conestogo Rd	432 Mid-rise units 2,102 High-rise units 21,400 sf GFA Commercial 196,100 sf Office	Paradigm March 28, 2023

3.2 CORRIDOR GROWTH

As per communication from the Region of Waterloo, no corridor growth rate was applied in the study area.

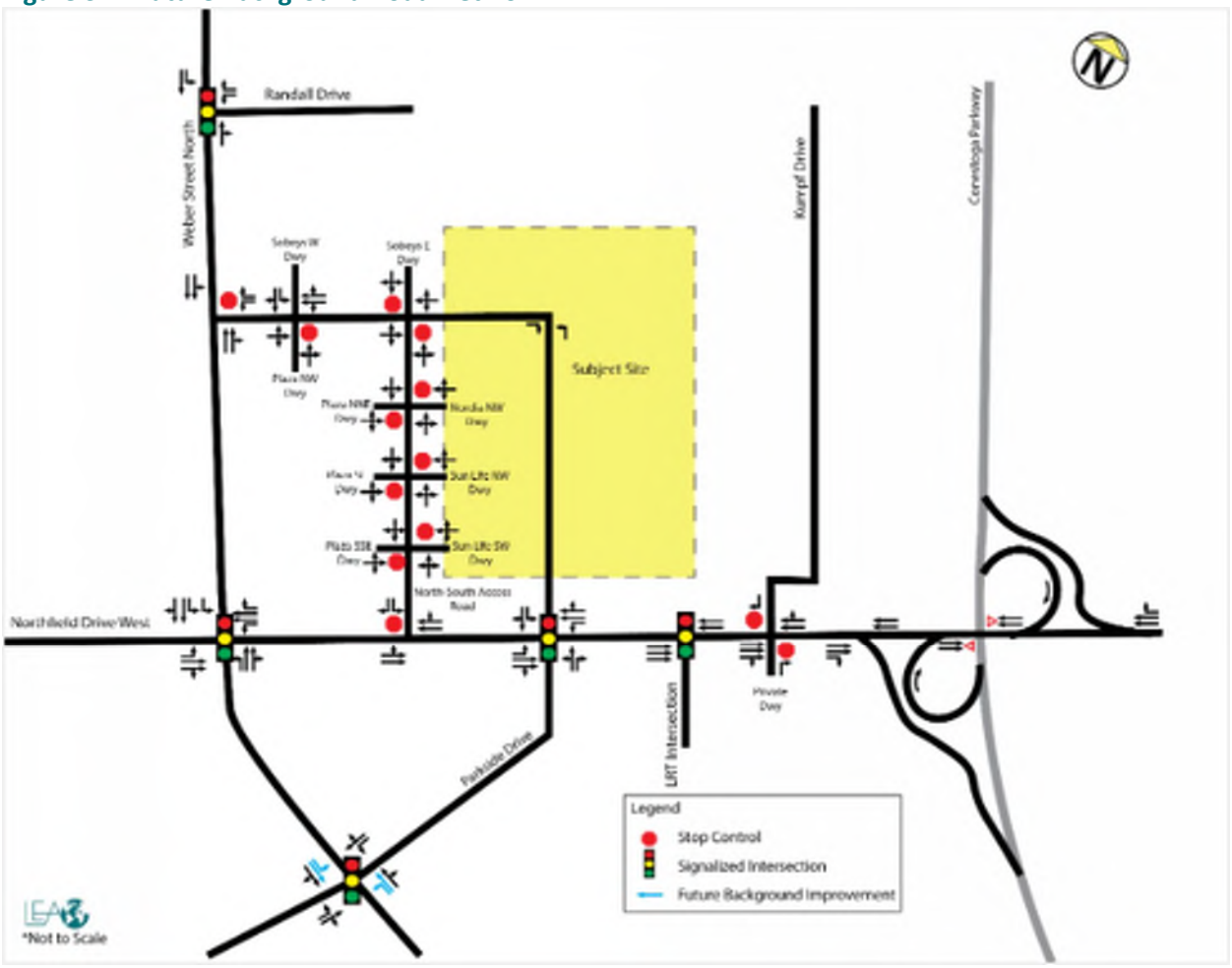
However, annual growth from the Highway 85 ramps on Northfield Drive was considered. An annual growth rate of 0.76% was applied in both AM and PM peak hours based on a review of "Urban Commuter" Average Annual Daily Traffic (AADT) volumes for the ramp between 2013 and 2019. Traffic growth from the ramps was then assigned to study area intersections along Northfield Drive.

3.3 FUTURE ROAD NETWORK IMPROVEMENTS

The Region of Waterloo has recently completed phase 1 of construction of the Farmer's Market Spur Line Trail, which is a 3m wide multi-use path along the rail corridor from Northfield Drive to Farmer's Market Road. A second phase of construction is proposed to take pace in 2025, where an extension of the trail will be constructed between the rail corridor and the intersection of Northfield Drive & Parkside Drive.

A further extension of the trail is proposed along Parkside Drive between Northfield Drive and Research & Technology Park to the south, however the timeline for its implementation is not specified at this time. For the purposes of this TIS, this future trail and the associated modifications to Parkside Drive have been assumed to be completed by the 2031 horizon year. The future road network and lane configuration is illustrated in **Figure 3-1**.

Figure 3-1: Future Background Road Network



3.4 FUTURE BACKGROUND TRAFFIC VOLUMES

The future background traffic volumes for the weekday AM and PM peak hours under the 2031 and 2041 horizon years are illustrated in **Figure 3-2** and **Figure 3-3**, respectively.

Figure 3-2: 2031 Future Background Peak Hour Traffic Volumes

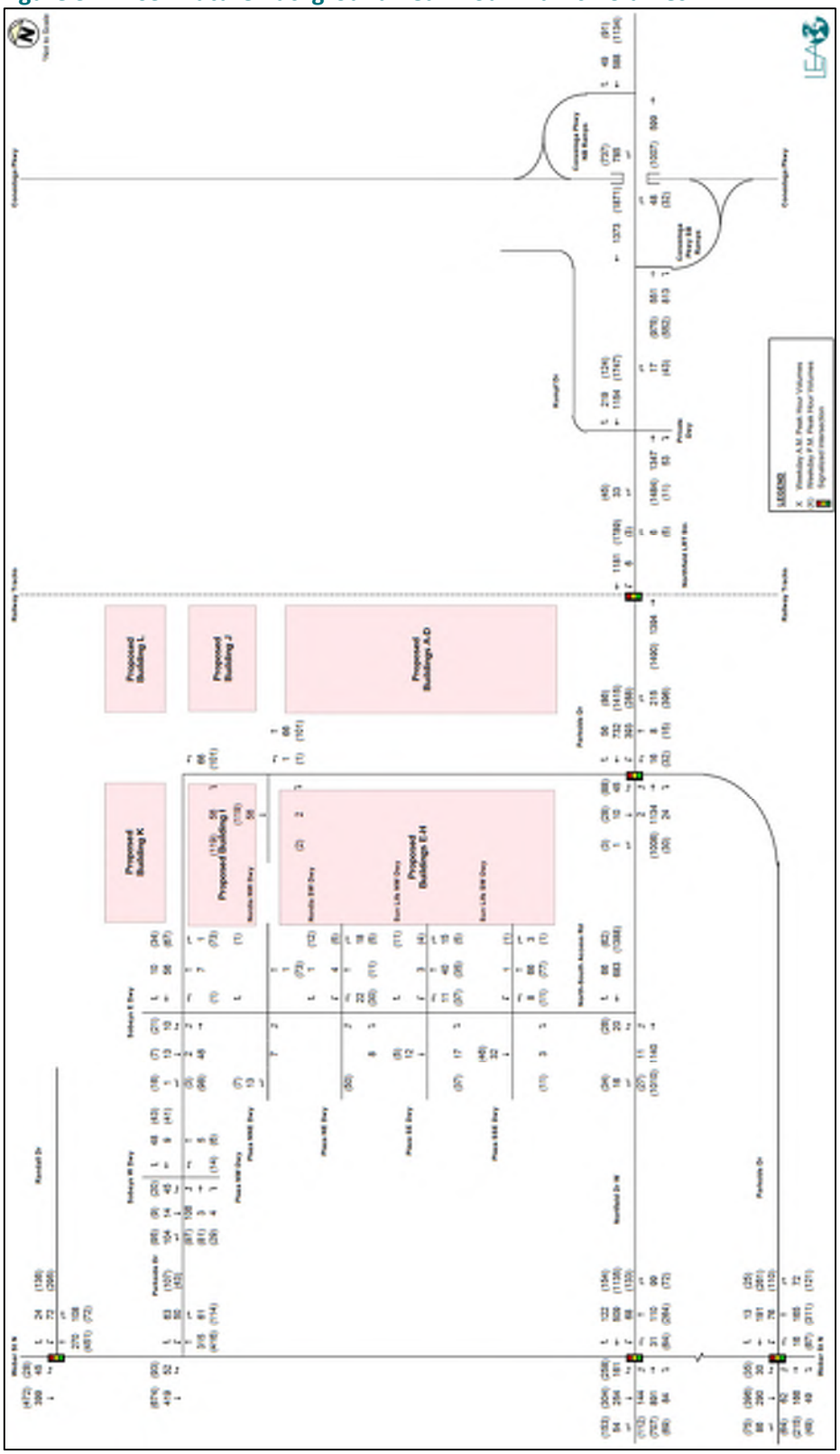
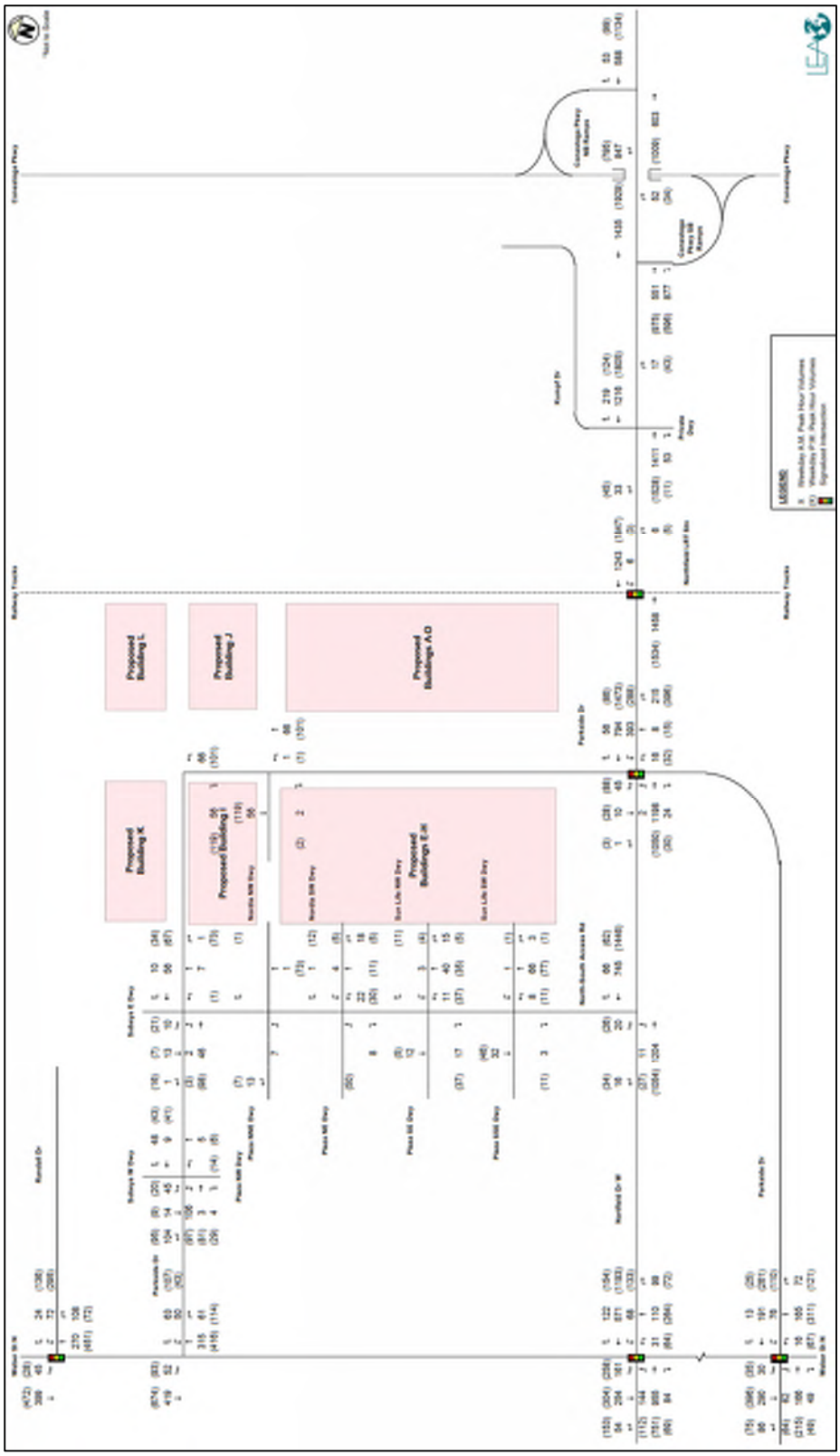


Figure 3-3: 2041 Future Background Peak Hour Traffic Volumes



4 SITE-GENERATED TRAFFIC VOLUMES

The proposed development consists of 12 buildings with a total of 3,652 residential units and approximately 22,239 m^2 of non-residential GFA. A total of 3,325 vehicle parking spaces are proposed. Access to the development is proposed via Northfield Drive West and via Weber Street North. The sections below discuss the calculation, distribution, and assignment of site-generated vehicle trips.

4.1 MODAL SPLIT

Data was provided by the Region of Waterloo for the future modal split of trips from the study area. Of note, to be conservative, the Auto Driver modal split was rounded up. The modal split is summarized in **Table 4-1**.

Table 4-1: Mode Splits

Mode	Split
Auto Driver	34%
Transit	33%
Walk/Cycle	33%
Total	100%

It should be noted that this modal split was not applied to calculate the site's vehicle trip generation, but was applied to determine the transit and walk/cycle trip generation, as further discussed in **Section 4.2**.

4.2 TRIP GENERATION

Trip generation for the proposed development was estimated using trip rates from the ITE Trip Generation Manual 11th Edition. The trip rates from ITE LUC 222 (Multifamily Housing – High Rise: close to rail, general urban/suburban) were used for the residential trips. The trip rates for ITE LUC 822 (Strip Retail Plaza: general urban/suburban, average rate) were used for the commercial uses in Building I, trip rates for ITE LUC 821 (Shopping Plaza (40-150k): general urban/suburban, average rate) were used for the commercial uses in Building J and trip rates for ITE LUC 130 (Industrial Park: general urban/suburban, average rate) were used for the industrial uses in Building K and L.

A summary of the vehicle trip generation for Building A to J is provided in **Table 4-2.**

Table 4-2: Vehicle Trip Generation – Building A to J

Land Use	Criteria	AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
		In	Out	Total	In	Out	Total
Buildings A-D							
Residential (LUC 222 – High Rise Residential) 2,061 Units	Trips/1000 ft^2	0.05	0.18	0.23	0.16	0.10	0.26
	ITE Total Trips	104	370	474	332	204	536
	Interaction Trips	-2	-5	-7	-19	-14	-33
	Total External Trips	102	365	467	313	190	503
	Gross Trips	**102**	**365**	**467**	**313**	**190**	**503**
Buildings E-H							
Residential (LUC 222 – High Rise Residential) 1,591 Units	Trips/1000 ft2	0.05	0.18	0.23	0.16	0.10	0.26
	ITE Total Trips	81	285	366	256	158	414
	Interaction Trips	-2	-4	-6	-15	-14	-29
	Total External Trips	79	281	360	241	187	428
	Gross Trips	**79**	**281**	**360**	**241**	**187**	**428**
Building I							
Strip Retail Plaza (ITE11 Code 822) 29,000 ft^2	Trips/1000 ft2	1.42	0.94	2.36	3.30	3.30	6.59
	ITE Total Trips	40	28	68	96	95	191
	Person Trips	49	34	83	122	118	240
	Interaction Trips	-17	-6	-23	-22	-33	-55
	Total External Person Trips	32	28	60	100	85	185
	Non-Auto Modal Split Reduction	-21	-18	-39	-66	-56	-122
	Total External Auto Trips	11	10	21	34	29	63
	Pass by Trips (0% AM, 34% PM)	0	0	0	12	10	22
	Primary Trips	**11**	**10**	**21**	**22**	**19**	**41**
Building J							
Shopping Plaza Retail (ITE11 Code 821) 42,000 ft^2	Trips/1000 ft2	1.07	0.66	1.73	2.54	2.65	5.19
	ITE Total Trips	45	28	73	107	111	218
	Person Trips	55	34	89	136	138	274
	Interaction Trips	-4	-10	-14	-21	-13	-34
	Total External Person Trips	51	24	75	115	125	240
	Non-Auto Modal Split Reduction	-34	-16	-50	-76	-83	-159
	Total External Auto Trips	17	8	25	39	42	81
	Pass by Trips (0% AM, 34% PM)	0	0	0	13	14	27
	Primary Trips	**17**	**8**	**25**	**26**	**28**	**54**
Total	Buildings A-D	102	365	467	313	190	503
	Buildings E-H	79	281	360	241	187	428
	Building I	11	10	21	34	29	63
	Building J	17	8	25	39	42	81
	Total Building A to J	**209**	**664**	**873**	**628**	**448**	**1076**

Buildings A to J are expected to generate a total of 873 two-way trips (209 inbound, 664 outbound) during the AM peak hour and 1,076 two-way trips (628 inbound, 448 outbound) during the PM peak hour.

The trip generation for Buildings K and L is provided in **Table 4-3**. Truck trip generation was also calculated to update the future heavy vehicle percentage applied in the Synchro analysis.

Table 4-3: Trip Generation - Buildings K & L

Land Use	Criteria	AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
		In	Out	Total	In	Out	Total
Total Vehicle Trip Generation							
Industrial Park (ITE11 LUC130) (166,000 ft^2)	Trips/1000 ft^2	0.28	0.06	0.34	0.07	0.27	0.34
	ITE Total Trips	46	10	56	12	44	56
	Person Trips	46	10	56	12	44	56
	Non-Auto Modal Split Reduction	-30	-7	-37	-8	-29	-37
	External Auto Trips	**16**	**3**	**19**	**4**	**15**	**19**
Truck Trip Generation							
Industrial Park (ITE11 LUC130) (166,000 ft^2)	Trips/1000 ft2	0.02	0.02	0.04	0.02	0.02	0.04
	ITE Total Trips	3	4	7	3	4	7
	External Truck Trips	**3**	**4**	**7**	**3**	**4**	**7**

Building K and L are expected to generate 19 two-way vehicle trips (16 inbound, 3 outbound) during the AM peak hour and 19 two-way vehicle trips (4 inbound, 15 outbound) during the PM Peak hour. Of these, 7 vehicle trips in the AM peak hour and 7 vehicle trips in the PM peak hour will be trucks.

As the existing uses on-site will be replaced, the net auto trip generation was calculated, and is shown in **Table 4-4**

Table 4-4: Net Auto Trip Generation

Land Use	AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
	In	Out	Total	In	Out	Total
Proposed						
Building A-D	102	365	467	313	190	503
Building E-H	79	281	360	241	187	428
Building I	11	10	21	34	29	63
Building J	17	8	25	40	42	82
Building K + L	16	3	19	4	15	19
Total Proposed	**225**	**667**	**892**	**632**	**463**	**1095**
Existing						
Nordia Site Trips	19	6	25	6	19	25
Sun Life Site Trips	18	5	23	6	17	23
Total Existing Trips	**37**	**11**	**48**	**12**	**36**	**48**
Net New Auto Trips	**188**	**656**	**844**	**620**	**427**	**1047**

The proposed development is anticipated to generate an additional 844 two-way auto trips (188 inbound, 656 outbound) during the AM peak hour and 1,047 two-way auto trips (620 inbound, 427 outbound) during the PM peak hour.

4.2.1 Multi-Modal Trip Generation

The multi-modal trip generation is summarized in **Table 4-5** and is based on the modal split identified in **Section 4.1**.

Table 4-5: Multi-Modal Trip Generation

Land Use	Description	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Subject Site	**External Person Trips**	**615**	**1950**	**2565**	**1844**	**1318**	**3162**
	Auto Driver + Passenger Trips	186	656	842	620	425	1045
	Transit Trips	215	647	862	613	447	1060
	Pedestrian Trips	109	333	442	314	229	543
	Cycling trips	105	314	419	297	217	514

4.3 TRIP DISTRIBUTION AND ASSIGNMENT

The directional trip distribution of site traffic was derived using the Transportation Tomorrow Survey (TTS) 2016 data. The site traffic was assigned to the road network based on trip patterns in the study area, changes in the future road network, logical routing, and the location and configuration of the site accesses. Trip distribution for the residential, retail and employment uses are outlined in **Table 4-6** to

Table 4-8. Detailed TTS calculations are provided in **Appendix D**.

It is noted that the majority of site generated trips are from/to Weber St North, Northfield Dr West, Northfield Dr East, Conestoga Pkwy South, and Parkside Dr South. Parkside Dr North is not expected to be a major route for the site trips. Therefore, the site trips are expected to have a minimal impact to the King Street interchange.

Table 4-6: Trip Distribution – Residential

Path	AM		PM	
	In	Out	In	Out
Weber St North	0%	6%	6%	0%
Weber St South	8%	10%	10%	8%
Northfield Dr West	19%	13%	13%	19%
Northfield Dr East	12%	16%	16%	12%
Conestoga Pkwy North	0%	0%	0%	0%
Conestoga Pkwy South	46%	39%	39%	46%
Parkside Dr South	15%	15%	15%	15%

Table 4-7: Trip Distribution – Retail

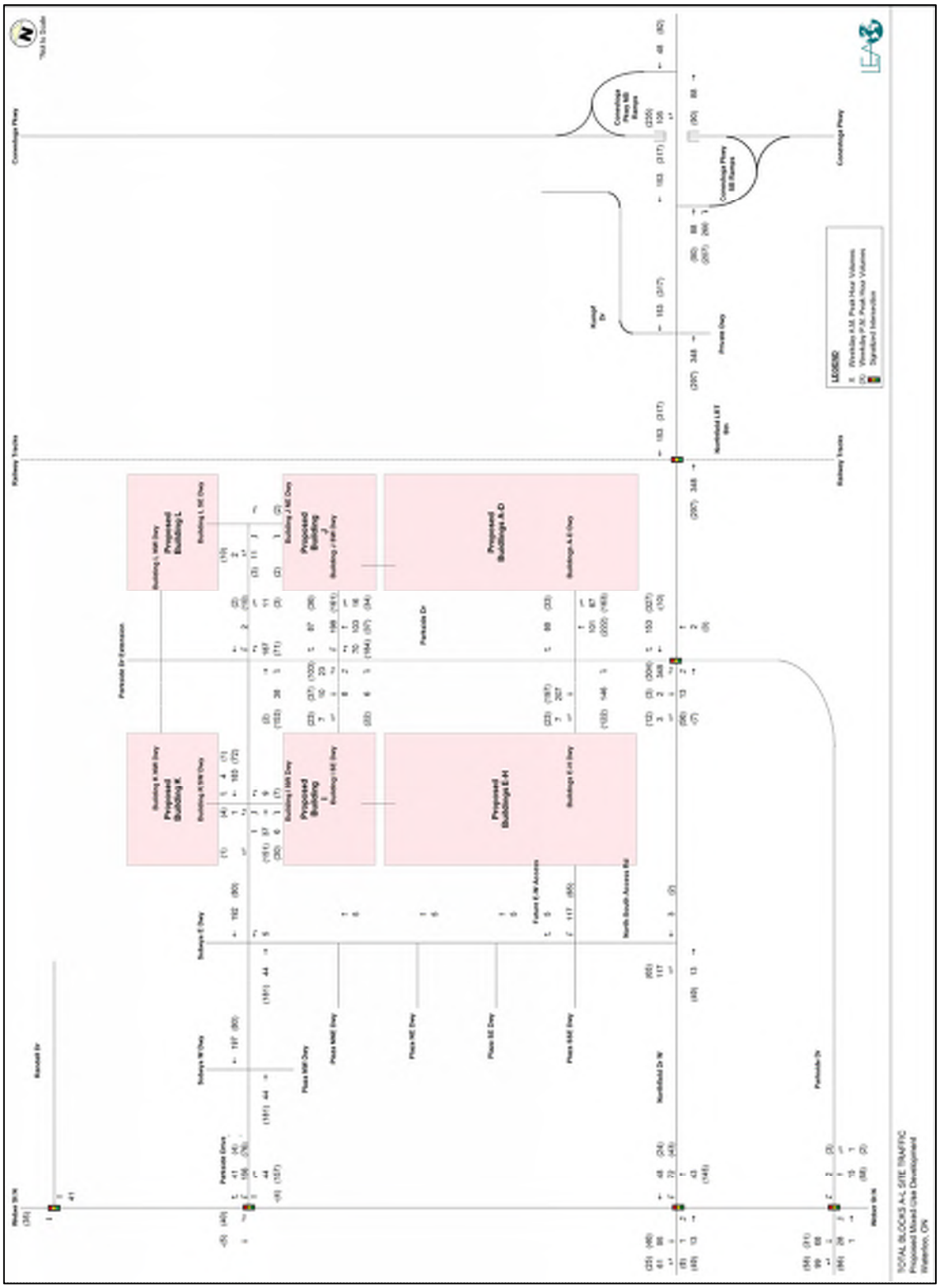
Path	AM		PM	
	In	Out	In	Out
Weber St North	2%	0%	0%	2%
Weber St South	11%	15%	15%	11%
Northfield Dr West	27%	7%	7%	27%
Northfield Dr East	8%	21%	21%	8%
Conestoga Pkwy North	0%	0%	0%	0%
Conestoga Pkwy South	48%	42%	42%	48%
Parkside Dr South	4%	15%	15%	4%

Table 4-8: Trip Distribution – Employment

Path	AM		PM	
	In	Out	In	Out
Weber St North	0%	0%	0%	0%
Weber St South	2%	6%	6%	2%
Northfield Dr West	29%	24%	24%	29%
Northfield Dr East	11%	35%	35%	11%
Conestoga Pkwy North	0%	0%	0%	0%
Conestoga Pkwy South	53%	32%	32%	53%
Parkside Dr South	5%	3%	3%	5%

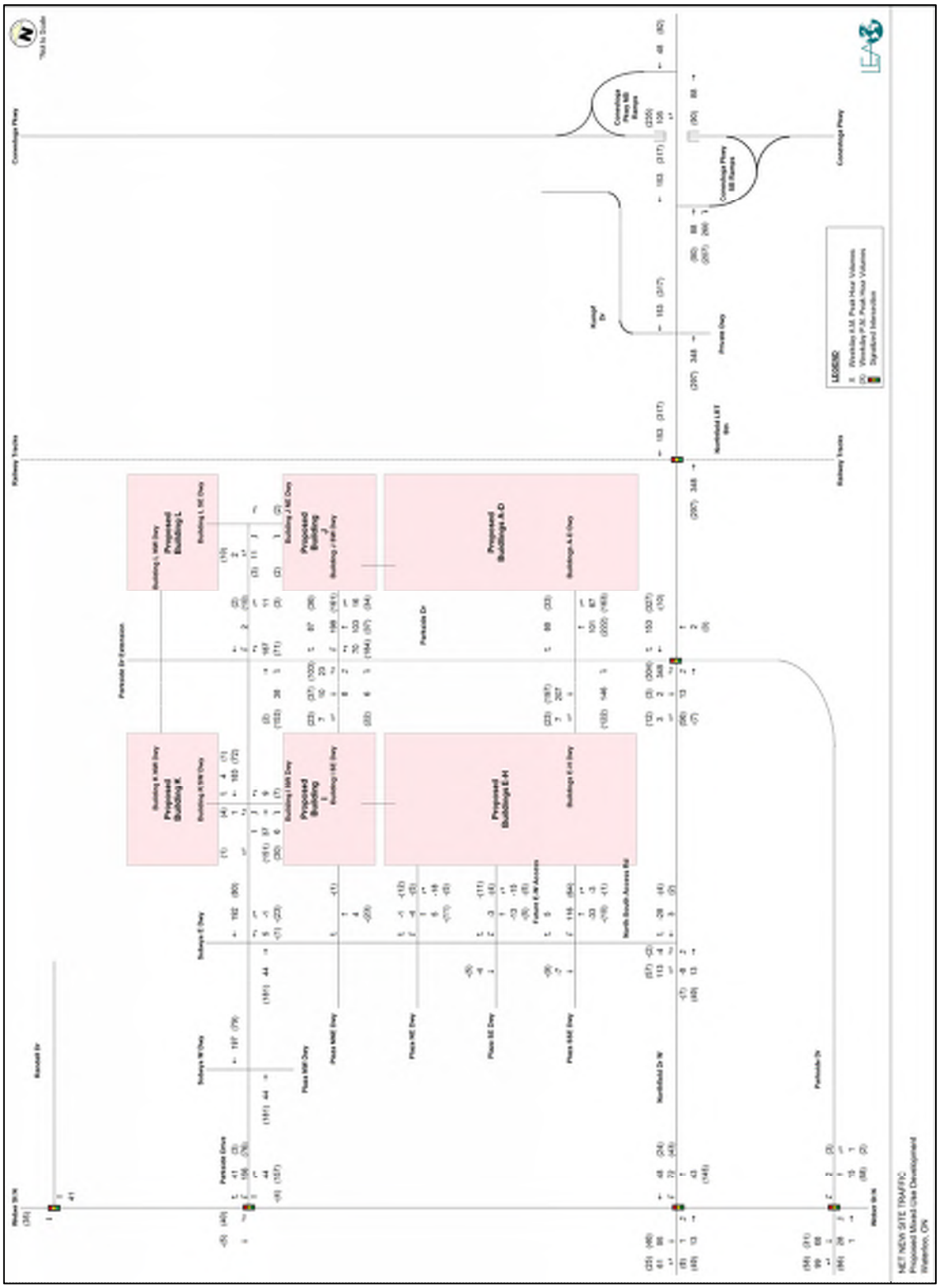
The site generated traffic volumes for the weekday AM and PM peak hours is illustrated in **Figure 4-1.**

Figure 4-1: New Site Generated Peak Hour Traffic Volumes



Considering the removal of existing site traffic, the net site traffic volumes are illustrated in **Figure 4-2**.

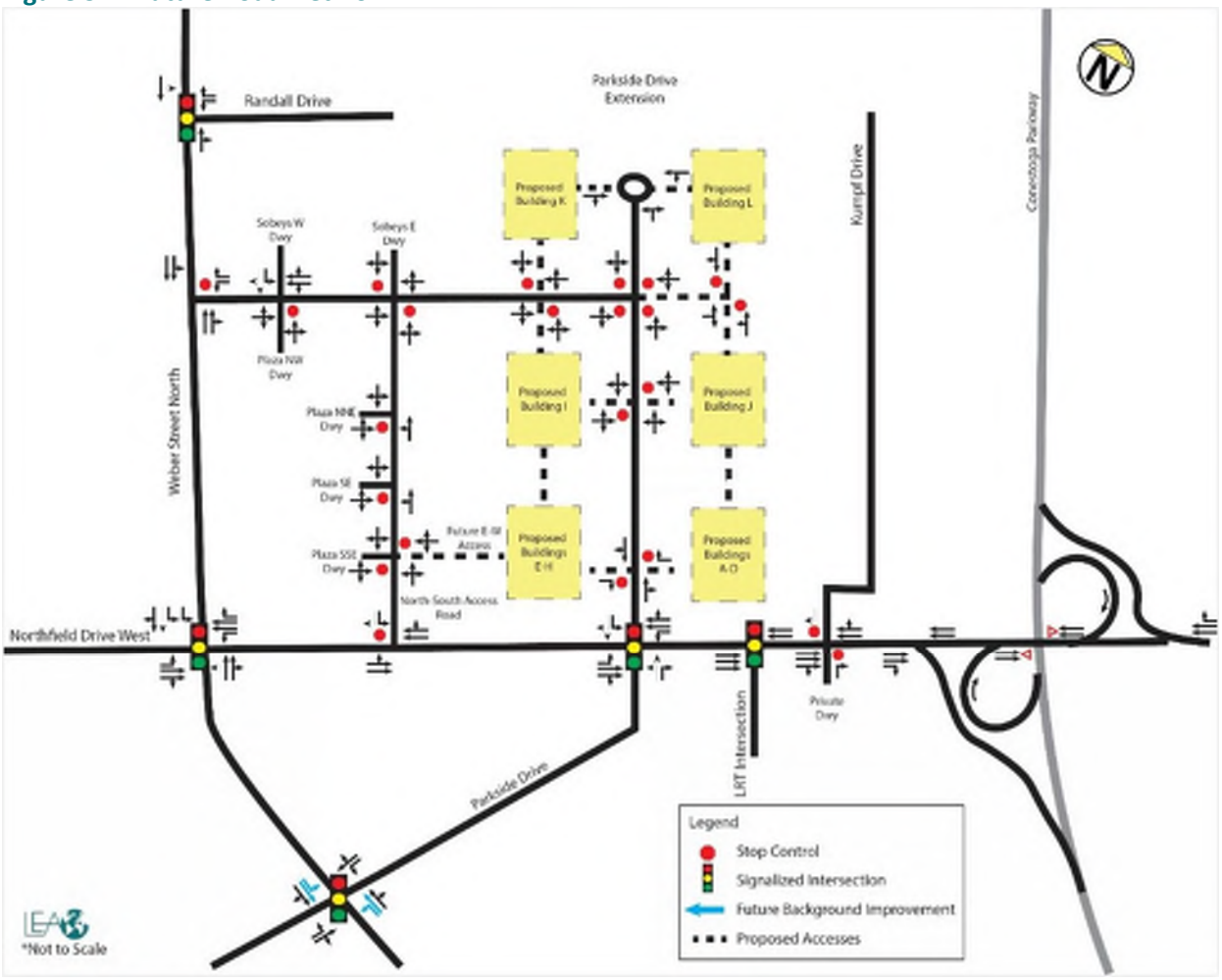
Figure 4-2: Net Site Generated Peak Hour Traffic Volumes



5 FUTURE TOTAL TRANSPORTATION CONDITIONS

Future total traffic conditions include the addition of site trips to the 2031 and 2041 future background volumes. **Figure 5-1** illustrates the future road network with the development's site accesses.

Figure 5-1: Future Road Network



5.1 FUTURE TOTAL TRAFFIC VOLUMES

The future total traffic volumes for the weekday AM and PM peak hours during the 2031 and 2041 horizon years are illustrated in **Figure 5-2** and **Figure 5-3**, respectively.

Figure 5-2: 2031 Future Total Traffic Volumes

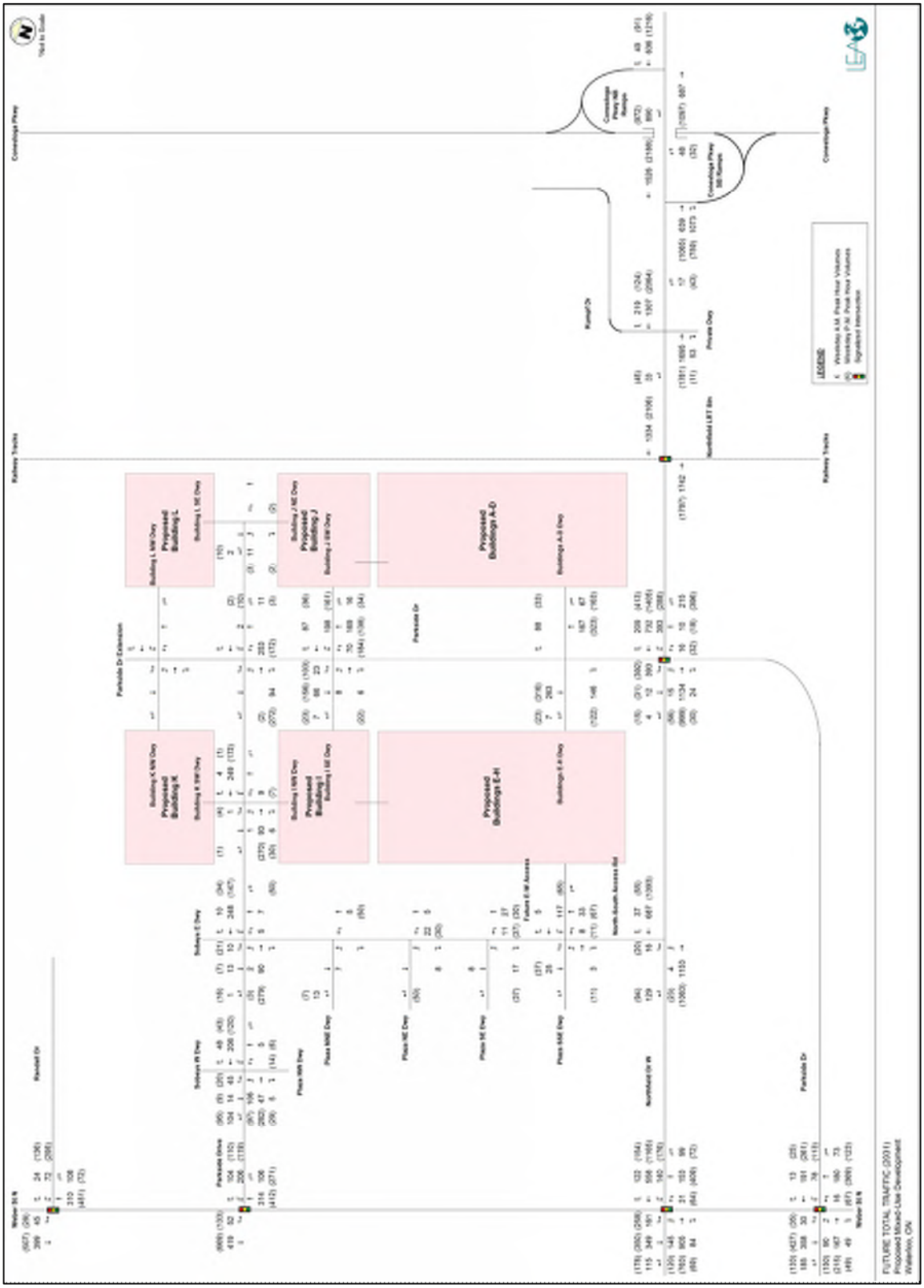
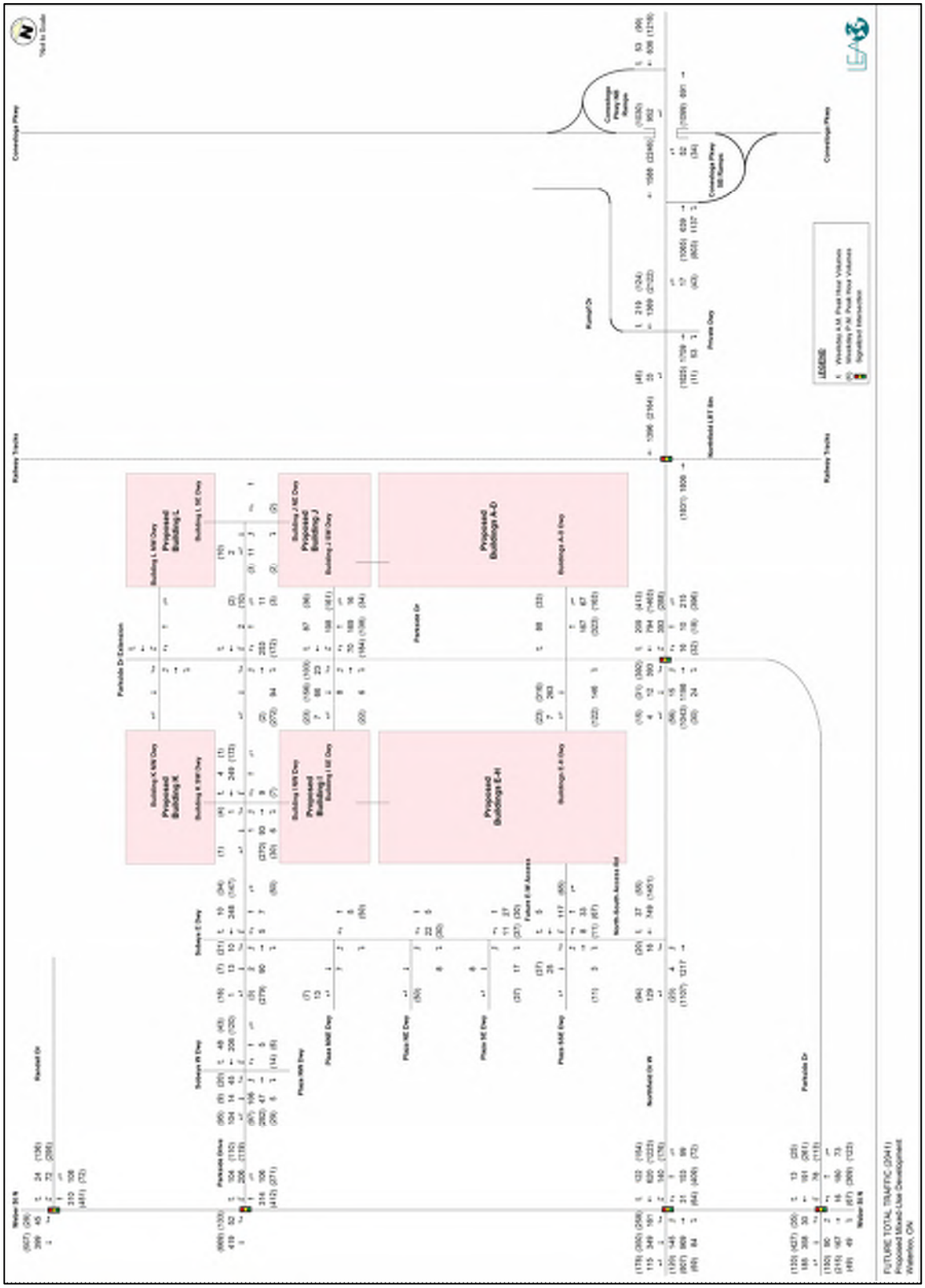


Figure 5-3: 2041 Future Total Traffic Volumes



6 INTERSECTION CAPACITY ANALYSIS

The intersection capacity analysis was undertaken using Synchro 11.0, which is based on the Highway Capacity Manual (2000) methodology and adheres to the Region of Waterloo Transportation Impact Study Guidelines (2018), the Region of Waterloo Transportation Impact Studies (TIS) Requirements for Capacity Analysis, Roundabouts, Signal Warrants (2013) and the Ministry of Transportation General Guidelines for the Preparation of Traffic Impact Studies (2023). As per the guidelines key movements of interest are those with a Level of Service (LOS) E or worse.

The sections below outline a comparison of the capacity analysis results under existing, future background and future total conditions. Detailed capacity analysis results are provided in the following appendices:

- **Appendix E:** Existing Intersection Capacity Analysis;
- **Appendix F:** 2031 & 2041 Future Background Intersection Capacity Analysis; and
- **Appendix G:** 2031 & 2041 Future Total Intersection Capacity Analysis.

6.1 SYNCHRO MODEL INPUTS AND ASSUMPTIONS

The following sub-sections outline the network assumptions and changes applied to the Synchro models in the existing, future background and future total scenarios. It is noted that queues reported within the capacity analysis were based on SimTraffic.

6.1.1 Road Network Assumptions

As noted in **Section 3.3**, the intersection of Parkside Drive (South) and Weber Street will be modified, which has been reflected in both the 2031 and 2041 future background and future total conditions. In addition, the proposed development will introduce several new access points, which have been reflected in the future total 2031 and 2041 horizon years. Signalization is recommended for the intersection of Weber Street North at Parkside Drive. The remaining road network is assumed to be the same.

6.1.2 Synchro Calibrations/Parameters

6.1.2.1 Existing Conditions Synchro Model Inputs

Existing traffic operations were assessed to provide a baseline for future traffic operations. The existing analysis incorporates the most recent signal timing plans. As per the Regional Guidelines for Capacity Analysis, the applied Peak Hour Factor (PHF) value of 1.00 was utilized as per the Regional Guidelines. The saturation flow rates were applied per the Regional TIS Guidelines. Lost time adjustments equal 4 for all movements and adjusted with clearance times.

6.1.2.2 Future Background and Future Total Synchro Model Inputs

Input parameters from the existing conditions were maintained with the corresponding future background and future total volumes.

6.1.3 Signal Timing Modifications

To accommodate projected future traffic volumes, signal timing plans were optimized at the intersections of Northfield Drive West & Weber Street North and Northfield Drive West & Parkside Drive. To improve coordination, the cycle lengths for the optimized plans were made consistent between the two

intersections. Cycle lengths up to 160 seconds were applied. Different signal timing plans were optimized for future background conditions versus future total conditions to accommodate the evolving traffic patterns. The recommended signal timing plans for each horizon and peak period are provided in **Appendix F** and **G**.

6.1.4 New Signalized Intersection – Weber Street North at Parkside Drive

A new signalized intersection is proposed at Weber Street North and Parkside Drive. A summary of the proposed signal timing plan is provided in **Table 6-1** and **Table 6-2**.

Table 6-1: Proposed Signal Timing Plan at Weber Street North and Parkside Drive – Future Total (2031 & 2041)

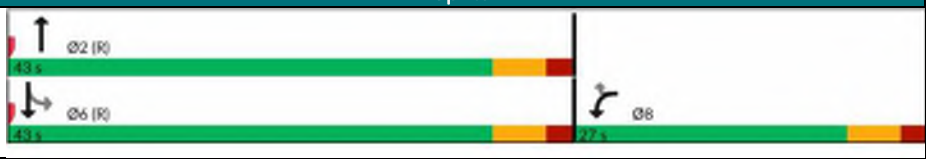
Period	Cycle Length (s)	Splits
AM/ PM	70	

Table 6-2: Summary of Signal Timing Plan – Weber Street North and Parkside Drive – Future Total

Timeframe	AM Peak Hour								PM Peak Hour							
	EBL	EBTR	WBL	WBTR	NBL	NBTR	SBL	SBTR	EBL	EBTR	WBL	WBTR	NBL	NBTR	SBL	SBTR
Future 2031 & 2041	0	0	0	27	0	43	0	43	0	0	0	27	0	43	0	43

6.2 2031 – SIGNALIZED INTERSECTIONS

The results for the studied signalized intersections under each traffic scenario for the 2031 horizon year during the weekday AM and PM peak hours are summarized in the sections below.

6.2.1 Weber Street North and Randall Drive

The intersection capacity analysis at Weber Street North and Randall Drive is summarized in **Table 6-3** and the queue analysis is summarized in **Table 6-4**.

Table 6-3: Weber Street North & Randall Drive Capacity Analysis

Mvmt		Existing				Future Background 2031				Future Total 2031			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
AM Peak Hour													
Weber St N & Randall Dr	**Overall**	**-**	**0.34**	**8**	**A**	**-**	**0.34**	**8**	**A**	**-**	**0.37**	**8**	**A**
	WBL	72	0.41	33	C	72	0.40	33	C	72	0.41	33	C
	WBR	24	0.02	30	C	24	0.01	30	C	24	0.02	30	C
	NBTR	378	0.33	6	A	378	0.32	6	A	418	0.35	6	A
	SBL	45	0.07	3	A	45	0.07	3	A	45	0.07	3	A
	SBT	399	0.29	3	A	399	0.28	3	A	399	0.29	3	A
Mvmt		Existing				Future Background 2031				Future Total 2031			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
PM Peak Hour													
Weber St N & Randall Dr	Overall	**-**	**0.59**	**18**	**B**	**-**	**0.59**	**18**	**B**	**-**	**0.64**	**20**	**B**
	WBL	295	0.70	36	D	295	0.70	36	D	295	0.76	39	D
	WBR	136	0.11	26	C	136	0.11	26	C	136	0.12	25	C
	NBTR	523	0.54	15	B	523	0.54	15	B	523	0.58	18	B
	SBL	28	0.07	7	A	28	0.07	7	A	28	0.07	8	A
	SBT	472	0.39	8	A	472	0.38	8	A	507	0.45	10	B

Table 6-4: Weber Street North & Randall Drive Queues

Mvmt	Available Storage	Existing Traffic			Future Background 2031			Future Total 2031		
		Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.
Weekday AM Peak Hour										
WBL	748	17	33	39	34	113	112	18	39	54
WBR	30	6	18	26	6	20	37	2	14	18
NBTR	131	18	41	48	22	49	66	22	51	63
SBL	100	6	17	22	0	49	72	6	16	19
SBT	491	17	38	47	76	309	227	16	35	47
Weekday PM Peak Hour										
WBL	748	50	83	96	55	93	105	72	126	150
WBR	**30**	**25**	**46**	**38**	**25**	**46**	**38**	**26**	**48**	**38**
NBTR	131	47	92	114	46	90	107	50	93	101
SBL	100	7	20	31	7	20	23	6	16	20
SBT	491	39	80	102	37	70	85	44	84	102

Existing Conditions: Traffic operations are deemed acceptable as the intersection is operating within capacity with an overall v/c ratio of less than 1.00. The 95th percentile queue length for all movements are indicated to be accommodated within the available storage, with the exception of the westbound right during the PM peak hour. All movements have a v/c below 1.00.

Future Background Conditions: The intersection experiences minor delay increases and a minor reduction in capacity. During the PM peak hour, the westbound right 95th percentile and maximum queue exceeds the available storage length, as in existing conditions. No additional queuing issues are anticipated. Overall, the intersection is expected to continue operating with minimal changes to operations compared to existing. All movements have a v/c below 1.00.

Future Total Conditions: Minor increases in delay and v/c ratio are expected under future total conditions compared to future background conditions during both weekday peak hours. All movements have a v/c ratio below 1.00 with the added site traffic. No additional constraints were identified with the addition of the site traffic.

6.2.2 Weber Street North and Northfield Drive West

The intersection capacity analysis at Weber Street North and Northfield Drive West is summarized in **Table 6-5** and the queue analysis is summarized in **Table 6-6**.

Table 6-5: Weber Street North & Northfield Drive West Capacity Analysis

Mvmt		Existing				Future Background 2031				Future Total 2031			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
AM Peak Hour													
Weber St N & Northfield Dr W	**Overall**	**-**	**0.49**	**33**	**C**	**-**	**0.53**	**34**	**C**	**-**	**0.60**	**36**	**D**
	EBL	144	0.34	22	C	144	0.39	23	C	145	0.42	24	C
	EBTR	890	0.72	36	D	975	0.79	39	D	989	0.81	40	D
	WBL	68	0.35	30	C	68	0.39	32	C	**140**	**0.83**	**63**	**E**
	WBT	388	0.34	30	C	509	0.44	32	C	558	0.49	33	C
	WBR	122	0.08	27	C	122	0.08	27	C	122	0.09	27	C
	NBL	31	0.09	30	C	31	0.09	30	C	31	0.11	30	C
	NBTR	209	0.17	34	C	209	0.17	34	C	252	0.23	35	D
	SBL	161	0.34	47	D	161	0.34	47	D	161	0.34	47	D
	SBTR	308	0.25	27	C	308	0.25	27	C	464	0.38	29	C
Mvmt		Existing				Future Background 2031				Future Total 2031			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
PM Peak Hour													
Weber St N & Northfield Dr W	**Overall**	**-**	**0.64**	**41**	**D**	**-**	**0.66**	**35**	**D**	**-**	**0.73**	**41**	**D**
	EBL	112	0.52	35	D	112	0.65	43	D	120	0.56	35	D
	EBTR	673	0.61	36	D	776	0.60	31	C	832	0.61	34	C
	WBL	133	0.46	29	C	133	0.46	24	C	176	0.58	28	C
	WBT	**1044**	**0.89**	**48**	**D**	1135	0.77	34	C	1165	0.80	38	D
	WBR	154	0.18	32	C	154	0.11	24	C	154	0.14	26	C
	NBL	64	0.16	25	C	64	0.22	32	C	64	0.29	44	D
	NBTR	336	0.39	39	D	336	0.35	36	D	481	0.67	54	D
	SBL	258	0.43	46	D	**258**	**0.75**	**66**	**E**	**258**	**0.65**	**72**	**E**
	SBTR	457	0.45	37	D	457	0.39	32	C	528	0.51	39	D

Table 6-6: Weber Street North & Northfield Drive West Queues

Mvmt	Available Storage	Existing Traffic			Future Background 2031			Future Total 2031		
		Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.
Weekday AM Peak Hour										
EBL	**90**	**139**	**265**	**190**	**141**	**266**	**190**	**156**	**265**	**190**
EBT	**330**	**438**	**790**	**628**	**391**	**737**	**623**	**536**	**796**	**628**
EBTR	**330**	**442**	**785**	**630**	**395**	**730**	**623**	**538**	**791**	**626**
WBL	45	14	29	36	13	29	37	20	43	55
WBT	151	29	52	57	40	70	77	38	69	82
WBT	151	30	53	60	42	72	81	41	68	76
WBR	65	13	25	35	12	22	25	10	21	26
NBL	95	5	15	20	6	16	23	12	59	68
NBT	166	19	44	59	21	48	66	47	134	122
NBTR	166	39	93	92	34	75	84	69	168	140
SBL1	**83**	**50**	**111**	**103**	**44**	**105**	**93**	21	47	55
SBL2	**83**	**75**	**144**	**123**	**75**	**150**	**112**	30	63	77
SBT	**235**	90	220	185	**107**	**250**	**166**	34	60	78
SBTR	235	52	138	169	52	138	151	43	66	72
Weekday PM Peak Hour										
EBL	90	18	34	41	23	43	51	22	38	43
EBT	330	58	84	87	54	83	88	65	96	102
EBTR	330	65	89	96	63	90	94	75	106	113
WBL	**45**	**39**	**100**	**110**	**25**	**61**	**110**	**34**	**84**	**110**
WBT	151	106	140	131	71	119	128	74	133	133
WBT	151	107	140	133	74	123	128	72	133	131
WBR	**65**	**41**	**113**	**115**	21	68	115	21	70	115
NBL	95	11	23	31	11	25	31	13	30	39
NBT	166	28	46	55	29	45	50	50	79	89
NBTR	166	30	52	63	31	48	53	56	85	94
SBL1	83	24	42	51	38	72	75	37	63	77
SBL2	83	32	52	65	48	83	84	42	69	84
SBT	235	32	58	68	39	71	91	40	67	79
SBTR	235	44	72	88	47	73	78	53	77	84

Existing Conditions: Traffic operations are deemed acceptable as the intersection is operating within capacity with an overall v/c ratio of less than 1.00. Results indicate that the eastbound left and through movements experience heavy queues under existing conditions for the AM peak hour. These conditions are a function of the signal activation at the Northfield LRT station intersection. A lengthy stoppage occurs with the eastbound LRT arrival and departure from the transit station. As a result, eastbound through traffic queues upstream from the LRT station and impact the operations at the Weber Street North and Northfield Drive West intersection. It is also noted that the 95th percentile queues for the southbound left movement during the AM peak hour and the westbound left and right movements during PM peak hour are also noted to exceed the available storage capacity.

Future Background Conditions: The intersection experiences minor delay increases and a minor reduction in capacity. The eastbound queues present during existing conditions continue to exist. Overall, the intersection is expected to continue operating with minimal changes to operations compared to existing. All movements have a v/c below 1.00.

Future Total Conditions: Good levels of service are maintained under future total conditions, however it is noted that LOS E is expected for the westbound left movement in the AM peak hour and for the southbound left movement in the PM peak hour. For the southbound left movement, this result is a function of operating with a protected phase and potential downstream eastbound through queues imposed from the stoppage on Northfield Drive West at the Northfield LRT-Railway Crossing/Northfield intersection. The queueing issues identified under future background conditions will persist or be resolved.

6.2.3 Weber Street North and Parkside Drive (South Intersection)

The intersection capacity analysis at Weber Street North and Parkside Drive (South Intersection) is summarized in **Table 6-7** and the queue analysis is summarized in **Table 6-8.**

Table 6-7: Weber Street North & Parkside Drive (South Intersection) Capacity Analysis

Mvmt		Existing				Future Background 2031				Future Total 2031			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
AM Peak Hour													
Weber St N & Parkside Drive	**Overall**	**-**	**0.30**	**14**	**B**	**-**	**0.27**	**14**	**B**	**-**	**0.32**	**14**	**B**
	EBL	62	0.15	16	B	62	0.15	16	B	90	0.22	17	B
	EBTR	215	0.31	17	B	215	0.31	17	B	216	0.32	17	B
	WBL	76	0.20	16	B	76	0.20	16	B	78	0.20	16	B
	WBTR	204	0.30	17	B	204	0.30	17	B	204	0.30	17	B
	NBLTR	253	0.17	12	B	-	-	-	-	-	-	-	-
	NBLT	-	-	-	-	16	0.04	12	B	16	0.05	12	B
	NBTR	-	-	-	-	237	0.14	11	B	253	0.16	12	B
	SBLTR	406	0.28	13	B	-	-	-	-	-	-	-	-
	SBLT	-	-	-	-	30	0.06	12	B	30	0.07	12	B
	SBTR	-	-	-	-	376	0.23	12	B	543	0.33	13	B
Mvmt		Existing				Future Background 2031				Future Total 2031			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
PM Peak Hour													
Weber St N & Parkside Drive	**Overall**	**-**	**0.41**	**16**	**B**	**-**	**0.36**	**15**	**B**	**-**	**0.41**	**16**	**B**
	EBL	64	0.21	19	B	64	0.21	19	B	150	0.52	27	C
	EBTR	264	0.45	22	C	264	0.45	22	C	264	0.45	22	C
	WBL	110	0.37	23	C	110	0.37	23	C	113	0.40	23	C
	WBTR	286	0.48	23	C	286	0.48	23	C	286	0.49	23	C
	NBLTR	499	0.35	11	B	-	-	-	-	-	-	-	-
	NBLT	-	-	-	-	67	0.17	11	B	67	0.20	12	B
	NBTR	-	-	-	-	432	0.24	10	B	492	0.30	11	B
	SBLTR	506	0.33	11	B	-	-	-	-	-	-	-	-
	SBLT	-	-	-	-	35	0.08	10	B	35	0.09	10	B
	SBTR	-	-	-	-	471	0.27	10	B	560	0.33	11	B

Table 6-8: Weber Street & Parkside Drive (South Intersection) Queues

Mvmt	Lane Storage Lengths (m)	Existing Traffic			Future Background 2031			Future Total 2031		
		Weekday AM Peak Hour			Weekday AM Peak Hour			Weekday AM Peak Hour		
		Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.
Weekday AM Peak Hour										
EBL	60	11	23	33	11	24	32	14	28	41
EBTR	60	24	42	51	25	44	55	25	46	61
WBL	500	16	37	40	15	34	39	16	35	40
WBTR	500	27	54	64	28	56	69	26	55	68
NBLT	600	13	26	35	-					
NBTR	600	14	26	30						
NBL	600	-			3	11	16	4	10	13
NBT	600				11	26	35	11	23	30
NBTR	600				15	28	37	15	30	35
SBLT	300	14	31	47	-					
SBTR	300	18	39	56						
SBL	300	-			5	16	27	4	13	21
SBT	300				10	30	46	15	34	43
SBTR	300				16	40	59	23	49	62
Weekday PM Peak Hour										
EBL	60	13	28	44	14	28	43	26	43	51
EBTR	60	32	56	67	32	55	69	35	56	63
WBL	500	22	42	40	24	44	40	19	40	38
WBTR	500	38	69	82	39	64	74	27	54	59
NBLT	600	22	38	41	-					
NBTR	600	19	34	37						
NBL	600	-			9	19	25	9	21	28
NBT	600				15	28	33	20	34	39
NBTR	600				18	32	38	22	40	46
SBLT	300	16	34	49						
SBTR	300	20	39	53						
SBL	300	-			6	17	26	5	14	26
SBT	300				12	27	35	17	37	50
SBTR	300				17	32	38	25	45	54

Existing Conditions: Traffic operations are deemed acceptable as the intersection is operating within capacity with an overall v/c ratio of less than 1.00. The 95th percentile queue length for all movements are indicated to be accommodated within the available storage. The exception to this is the EBTR movement during the PM peak hour, where the maximum queue is expected to exceed the lane storage length by 7 m. All movements have a v/c below 1.00.

Future Background Conditions: The intersection experiences minor delay increases and a minor reduction in capacity. No queuing issues are anticipated. Overall, the intersection is expected to continue operating with minimal changes to operations compared to existing. All movements have a v/c below 1.00.

Future Total Conditions: Minor increases in delay and v/c ratio are expected under future total conditions compared to future background conditions during both weekday peak hours. All movements have a v/c ratio below 1.00 with the added site traffic. No queuing issues are anticipated.

6.2.4 Parkside Drive and Northfield Drive West

The intersection capacity analysis at Parkside Drive and Northfield Drive West is summarized in **Table 6-9** and the queue analysis is summarized in **Table 6-10.**

Table 6-9:Parkside Drive & Northfield Drive West Capacity Analysis

Mvmt		Existing				Future Background 2031				Future Total 2031			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
AM Peak Hour													
Parkside Drive & Northfield Drive West	**Overall**	-	0.67	34	C	-	0.70	35	C	-	0.99	48	D
	EBL	2	0.00	22	C	2	0.00	21	C	15	0.08	25	C
	EBTR	1073	0.90	43	D	1158	0.91	43	D	1158	0.98	60	E
	WBL	393	0.90	54	D	393	0.92	62	E	393	0.99	80	E
	WBTR	667	0.33	9	A	788	0.37	9	A	941	0.49	14	B
	NBLT	24	0.06	29	C	24	0.06	32	C	26	0.06	29	C
	NBR	215	0.15	31	C	215	0.15	33	C	215	0.15	30	C
	SBL	45	0.12	30	C	45	0.13	33	C	393	0.97	77	E
	SBTR	11	0.02	29	C	11	0.02	31	C	16	0.03	28	C
Mvmt		Existing				Future Background 2031				Future Total 2031			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
PM Peak Hour													
Parkside Drive & Northfield Drive West	**Overall**	-	0.59	22	C	-	0.75	24	C	-	1.02	55	D
	EBL	0	0.00	0	A	0	0.00	0	A	56	0.66	50	D
	EBTR	933	0.71	28	C	1036	0.74	26	C	1029	0.65	32	C
	WBL	288	0.74	26	C	288	0.89	48	D	288	0.94	61	E
	WBTR	1410	0.70	15	B	1501	0.75	16	B	1818	1.02	61	E
	NBLT	47	0.12	26	C	47	0.12	26	C	50	0.12	38	D
	NBR	396	0.28	29	C	396	0.46	32	C	396	0.58	47	D
	SBL	88	0.22	28	C	88	0.22	27	C	392	0.98	93	F
	SBTR	31	0.06	25	C	31	0.06	25	C	46	0.07	38	D

Table 6-10: Parkside Drive & Northfield Drive West Queues

Move-ment	Lane Storage Lengths (m)	Existing Traffic			Future Background 2031			Future Total 2031		
		Weekday AM Peak Hour			Weekday AM Peak Hour			Weekday AM Peak Hour		
		Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.
Weekday AM Peak Hour										
EBL	40	1	14	24	0	3	5	**14**	**65**	**95**
EBT	147	117	149	133	119	151	133	116	151	135
EBTR	147	129	134	135	129	142	134	130	133	134
WBL	**21**	**60**	**91**	**80**	**68**	**93**	**80**	**76**	**91**	**80**
WBT	165	52	110	107	73	134	114	95	138	108
WBTR	165	38	73	82	49	91	97	62	108	107
NBLT	500	6	16	25	17	77	86	5	16	22
NBR	500	45	92	100	108	261	282	85	178	184
SBL	50	18	42	49	33	63	53	36	40	38
SBTR	50	5	23	34	20	61	55	47	57	59
Weekday PM Peak Hour										
EBL	**40**	0	0	0	0	0	0	**21**	**64**	**95**
EBT	147	59	99	105	54	95	115	79	132	129
EBTR	147	72	115	125	65	105	121	92	145	132
WBL	**21**	**49**	**83**	**80**	**54**	**85**	**80**	**58**	**104**	**80**
WBT	165	59	111	108	65	121	108	91	143	108
WBTR	165	64	117	108	69	128	110	91	147	108
NBLT	500	10	25	30	12	26	34	14	32	42
NBR	500	51	85	99	63	118	142	87	162	172
SBL	50	21	42	42	19	36	36	36	39	38
SBTR	50	9	32	36	12	34	44	48	57	58

Existing Conditions: Traffic operations are deemed acceptable as the intersection is operating within capacity with an overall v/c ratio of less than 1.00. Of note, the westbound left movement operates with some congestion during the AM peak hour with a v/c ratio of 0.90 and LOS "D". The queues for this movement exceed the available storage, which is partly a function of the opposing eastbound flows which limit the westbound left movement during the normal east-west phase. The 95th percentile queue length for all other movements are indicated to be accommodated within the available storage. All movements have a v/c below 1.00.

It should be noted that field observations identified westbound through-right queues of around 100 m from the Northfield LRT Transit Station/Railway Crossing & Northfield Drive intersection during the PM peak hour. These conditions are a direct result of eastbound through vehicles situated in the middle of the Parkside/Northfield intersection stemming from queueing at the Northfield LRT Station-Railway Crossing/ Northfield intersection and when a northbound LRT vehicle arrives at the LRT station. This queue effectively blocks the westbound left from performing its intended maneuver and the westbound left queues spills over into the median through lane.

Given that the Synchro software does not permit vehicle to block an intersection, the LOS result is not entirely reflective of existing conditions and represents a more favorable outcome.

As a result of the heavy queue conditions observed from the field, mitigation measures are recommended to alleviate this condition Such mitigation measures include added signage of "DO NOT BLOCK INTERSECTION" and painting the intersection with a cross hatch pattern to emphasizes this notion. Should

resource s be available, The City can add traffic monitoring personnel to direct traffic and as necessary, impose traffic tickets. If such measures are implemented it is expected that the conditions would more closely resemble the synchro results.

Future Background Conditions: The intersection experiences minor delay increases and a minor reduction in capacity. The delay to the westbound left movement during the AM peak hour increases by 8 seconds with a v/c ratio of 0.92, and the queuing issues identified during existing conditions continue to exist. Overall, the intersection is expected to continue operating with minimal changes to operations compared to existing. All movements have a v/c below 1.00.

Future Total Conditions: Under future total conditions, the intersection is expected to operate near capacity (i.e. V/C = 0.99) during the AM peak hour and at practical capacity (i.e. V/C = 1.02) during the PM peak hour. During the AM peak hour, similar constraints will be present as in future background conditions, however the southbound left movement will also operate with a critical V/C ratio of 0.97 and at LOS E. For the PM peak hour, the westbound through-right movement will operate at capacity with a V/C ratio of 1.02 and LOS E, and the southbound left movement will also approach capacity with a V/C ratio of 0.98 and LOS F. Queueing constraints for the westbound left movement will continue from future background conditions to future total conditions, with some improvement. In addition, 95th percentile queues for the eastbound left turn movement are expected to exceed the available storage of 40m in the PM peak hour.

6.2.5 Northfield LRT Transit Station/Railway Crossing & Northfield Drive West

The intersection capacity analysis at Northfield LRT Transit Station/Railway Crossing and Northfield Drive West is summarized in **Table 6-11** and the queue analysis is summarized in **Table 6-12**.

Table 6-11: Northfield LRT Transit Station/Railway Crossing & Northfield Drive West Capacity Analysis

Mvmt		Existing				Future Background 2031				Future Total 2031			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
AM Peak Hour													
Transit Station &	**Overall**	-	**0.43**	**14**	**B**	-	**0.47**	**15**	**B**	-	**0.58**	**32**	**B**
	EBT	1309	0.55	22	C	1394	0.59	23	C	**1742**	**0.89**	**45**	**D**
	WBT	1060	0.37	4	A	1181	0.43	5	A	1334	0.57	15	B
Mvmt		Existing				Future Background 2031				Future Total 2031			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
PM Peak Hour													
Transit Station &	**Overall**	-	**0.55**	**14**	**B**	-	**0.59**	**14**	**B**	-	**0.72**	**18**	**B**
	EBT	1387	0.57	22	C	1490	0.61	23	C	1787	0.76	27	C
	WBT	1698	0.60	6	A	1789	0.64	7	A	2109	0.79	10	A

Table 6-12: Northfield LRT Transit Station/Railway Crossing & Northfield Drive West Queues

Mvmt	Available Storage	Existing Traffic			Future Background 2031			Future Total 2031		
		Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.
Weekday AM Peak Hour										
EBT	165	61	113	114	76	132	121	67	119	114
EBT	165	116	120	122	114	124	117	111	115	120
EBT	165	85	86	85	85	87	85	85	85	85
WBT	520	15	19	21	15	22	27	32	37	41
WBT	520	14	18	19	15	19	24	28	39	36
Weekday PM Peak Hour										
EBT	165	77	121	113	90	127	117	95	131	118
EBT	165	84	126	116	98	132	118	103	130	118
EBT	165	74	100	85	80	98	85	82	95	85
WBT	520	15	18	21	15	18	21	28	46	41
WBT	520	15	18	22	15	19	22	27	44	37

Existing Conditions: Traffic operations are deemed acceptable as the intersection is operating within capacity with an overall v/c ratio of less than 1.00. The 95th percentile queue length for all movements are indicated to be accommodated within the available storage. All movements have a v/c below 1.00.

Future Background Conditions: The intersection experiences minor delay increases and a minor reduction in capacity. No queuing issues are anticipated. Overall, the intersection is expected to continue operating with minimal changes to operations compared to existing. All movements have a v/c below 1.00.

Future Total Conditions: Minor increases in delay and v/c ratio are expected under future total conditions compared to future background conditions during both weekday peak hours. All movements have a v/c ratio below 1.00 with the added site traffic. No queuing issues are anticipated. No additional constraints were identified with the addition of the site traffic.

6.3 2031 – UNSIGNALIZED INTERSECTIONS

The results for the studied unsignalized intersections under each traffic scenario for the 2031 horizon year during the weekday AM and PM peak hours are summarized in the sections below.

6.3.1 Weber Street North and Parkside Drive (North Intersection)

The intersection capacity analysis at Weber Street North and Parkside Drive (North Intersection) is summarized in **Table 6-13.**

Table 6-13: Weber Street North & Parkside Drive (North Intersection) Capacity Analysis

Mvmt	Existing					Future Background 2031					Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
AM Peak Hour															
WBL	50	0.13	16	C	1	50	0.13	16	C	1	206	0.56	27	D	3
WBR	63	0.08	10	B	0	63	0.08	10	B	0	104	0.13	10	B	1
SBL	52	0.04	8.2	A	0	52	0.04	8	A	0	52	0.05	8	A	0
PM Peak Hour															
WBL	43	0.21	27	D	1	43	0.15	11	B	1	**119**	**0.72**	**69**	**F**	**4**
WBR	107	0.15	11	B	1	107	0.09	9	A	0	110	0.17	12	B	1
SBL	93	0.09	8.8	A	0	93	0.09	9	A	0	133	0.15	10	A	1

The intersection operates with good levels of service under existing and future conditions. High delays are expected for the westbound left movement during the PM peak hour. Signalization is recommended to mitigate this constraint.

A peak hour signal warrant calculation was conducted at the intersection of Weber Street North at Parkside Drive. The analysis was based on the Ministry of Transportation (MTO) Book 12 requirements for the installation of a traffic signal. The analysis examines the combined AM and PM peak hour volumes. The signal warrant is summarized in **Table 6-14**.

Table 6-14: Weber Street North & Parkside Drive (North Intersection) Signal Warrant Analysis

Warrant	Percent Compliant	Warrant Satisfied
Warrant 1 – Minimum Vehicular Volume		
1A	67%	No
1B	44%	No
Warrant 2 – Delay to Cross Traffic		
2A	55%	No
2B	90%	No

The signal warrant analysis indicated that a signal is not required at the intersection. However, delays to cross traffic based on warrant 2B are at 90%. Additionally, a signal is recommended to alleviate queues at the intersection, and to improve progression along the Weber Street North corridor for northbound and southbound traffic. The signal would also encourage drivers in the area to use this intersection as a viable option as opposed to Parkside Drive and Northfield Drive West, further alleviating the congestion along Northfield Drive West.

The intersection capacity analysis for the signalized intersection under future total conditions is summarized in **Table 6-15** and the queue assessment is summarized in **Table 6-16**.

Table 6-15: Weber Street North & Parkside Drive (North Intersection) Capacity Analysis (Signalized)

Mvmt	Future Total 2031			
	Vol	V/C	Delay (s)	LOS
AM Peak Hour				
Overall	-	**0.29**	**10**	**A**
WBL	206	0.54	26	C
WBR	104	007	21	C
NBTR	420	0.19	5	A
SBL	52	0.09	5	A
SBT	419	0.20	5	A
Mvmt	Future Total 2031			
	Vol	V/C	Delay (s)	LOS
PM Peak Hour				
Overall	-	**0.32**	**7**	**A**
WBL	119	0.45	28	C
WBR	110	0.08	25	C
NBTR	683	0.28	3	A
SBL	133	0.28	5	A
SBT	669	0.29	4	A

Table 6-16: Weber Street North & Parkside Drive (North Intersection) Queues (Signalized)

Movement	Lane Storage Lengths (m)	Future Total 2031		
		Avg. Queue	95th Percentile Queue	Max. Queue
Weekday AM Peak Hour				
WBL	92	28	46	56
WBR	92	10	18	22
NBT	235	14	33	38
NBTR	235	8	23	33
SBL	**33**	7	16	17
SBT	255	11	24	29
SBT	255	12	26	34
Weekday PM Peak Hour				
WBL	92	19	32	36
WBR	92	10	19	22
NBT	235	25	60	78
NBTR	235	26	65	82
SBL	**33**	**21**	**56**	**47**
SBT	255	29	118	88
SBT	255	17	63	74

With signalization, the intersection is expected to operate well, with the exception of notable queueing expected for the southbound left movement. All movements will operate within capacity and with acceptable delays under future total conditions.

6.3.2 Sobeys West Driveway/Plaza North-West Driveway and Parkside Drive

The intersection capacity analysis at Sobeys West Driveway/Plaza North-West Driveway and Parkside Drive is summarized in **Table 6-17**.

Table 6-17:Sobeys West Driveway/Plaza North-West Driveway and Parkside Drive Capacity Analysis

Mvmt	Existing Traffic					Future Background 2031					Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)
Weekday AM Peak															
EBL	106	0.07	11	A	0	106	0.01	11	B	0	106	0.08	8	A	0
NBLTR	5	0.01	11	B	0	5	0.01	11	B	0	5	0.01	14	B	0
SBL	45	0.01	11	6	0	45	0.07	11	B	0	45	0.10	14	B	0
SBTR	118	0.12	9	A	0	104	0.12	9	A	0	118	0.15	10	B	1
Weekday PM Peak															
EBL	97	0.04	12	B	0	97	0.07	8	A	0	97	0.07	8	A	0
NBLTR	20	0.04	12	B	0	20	0.04	12	B	0	20	0.06	16	C	0
SBL	20	0.04	12	B	0	20	0.04	12	B	0	20	0.06	16	C	0
SBTR	104	0.12	10	A	0	104	0.12	10	A	0	104	0.13	10	B	0

The intersection operates with good levels of service under existing and future conditions.

6.3.3 Sobeys East Driveway/North-South Access Road and Parkside Drive

The intersection capacity analysis at Sobeys East Driveway/North-South Access Road and Parkside Drive is summarized in **Table 6-18**.

Table 6-18:Sobeys East Driveway/North-South Access Road and Parkside Drive Capacity Analysis

Mvmt	Existing Traffic					Future Background 2031					Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)
Weekday AM Peak															
EBL	2	0.00	7.3	A	0	2	0.00	7	A	0	2	0.00	8	A	0
NBLTR	8	0.01	10	A	0	8	0.01	10	A	0	12	0.02	11	B	0
SBLTR	24	0.03	10	A	0	24	0.03	10	A	0	24	0.04	11	B	0
Weekday PM Peak															
EBL	3	0.00	7.4	A	0	3	0.00	7	A	0	3	0.00	8	A	0
NBLTR	74	0.08	9	A	0	74	0.08	9	A	0	50	0.07	10	B	0
SBLTR	44	0.06	10	8	0	44	0.06	10	B	0	44	0.08	12	B	0

The intersection operates with good levels of service under existing and future conditions.

6.3.4 North-South Access Road and Northfield Drive West

The intersection capacity analysis at North-South Access Road and Northfield Drive West is summarized in **Table 6-19.**

Table 6-19: North-South Access Road and Northfield Drive West Capacity Analysis

Mvmt	Existing Traffic					Future Background 2031					Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)
Weekday AM Peak															
EBL	11	0.01	9	A	0	11	0.01	9	A	0	4	0.01	9	A	0
SBL	20	0.11	28	D	0	**20**	**0.15**	**36**	**E**	**1**	16	0.12	34	D	0
SBR	16	0.02	10	B	0	16	0.03	11	B	0	129	0.20	12	B	1
Weekday PM Peak															
EBL	27	0.05	13	B	0	27	0.06	13	B	0	23	0.05	13	B	0
SBL	**26**	**0.62**	**182**	**F**	**2**	**26**	**0.62**	**182**	**F**	**2**	**20**	**0.51**	**170**	**F**	**2**
SBR	34	0.09	16	C	0	34	0.09	16	C	0	94	0.26	18	C	1

During the AM peak hour, both southbound movements generally operate well. During the PM peak hour, under both existing and future conditions, the southbound left movement operates with some constraints. The heavy east-west volumes on Northfield Drive West limit the opportunity to complete this movement. The southbound right movement does not operate with any constraints.

6.3.5 Kumpf Drive/Private Driveway and Northfield Drive West

The intersection capacity analysis at Kumpf Drive/Private Driveway and Northfield Drive West is summarized in **Table 6-20.**

Table 6-20: Kumpf Drive/Private Driveway and Northfield Drive West Capacity Analysis

Mvmt	Existing Traffic					Future Background 2031					Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak															
NBR	17	0.05	16	6	0	17	0.05	17	C	0	17	0.07	20	C	0
SBR	33	0.08	15	B	0	33	0.09	16	C	0	33	0.10	18	C	0
Weekday PM Peak															
NBR	43	0.14	19	C	1	43	0.14	19	C	1	43	0.18	23	C	1
SBR	45	0.19	24	C	1	45	0.19	24	C	1	45	0.25	32	D	1

The intersection operates with good levels of service under existing and future conditions.

6.3.6 Parkside Drive and Buildings A-E Driveway/Buildings E-H Driveway

The intersection capacity analysis at Parkside Drive and Buildings A-E Driveway/Buildings E-H Driveway is summarized in **Table 6-21.**

Table 6-21: Parkside Drive and Buildings A-E Driveway/Buildings E-H Driveway Capacity Analysis

Mvmt	Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak					
EBLR	146	0.19	11	B	1
WBLR	88	0.10	10	A	0
Weekday PM Peak					
EBLR	122	0.17	11	B	1
WBLR	33	0.05	11	B	0

The intersection operates with good levels of service under future conditions.

6.3.7 Parkside Drive and Nordia Loading Driveway

The intersection capacity analysis at Parkside Drive and Nordia Loading Driveway is summarized in **Table 6-22.**

Table 6-22: Parkside Drive and Nordia Loading Driveway Capacity Analysis

Mvmt	Existing					Future Background 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak										
EBLR	2	0.00	10	A	0	2	0.00	10	A	0
NBL	1	0.00	8.3	A	0	1	0.00	8	A	0
Weekday PM Peak										
EBLR	2	0.00	10	B	0	2	0.00	10	B	0
NBL	1	0.00	9	A	0	1	0.00	9	A	0

The intersection operates with good levels of service under existing and future conditions. Under future total conditions, the driveway is removed.

6.3.8 Parkside Drive and Building I South-East Driveway/Building J South-West Driveway

The intersection capacity analysis at Parkside Drive and Building I South-East Driveway/Building J South-West Driveway is summarized in **Table 6-23.**

Table 6-23: Parkside Drive and Building I South-East Driveway/Building J South-West Driveway Capacity Analysis

Mvmt	Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak					
EBLTR	14	0.03	12	B	0
WBLTR	285	0.49	17	C	3
NBL	70	0.05	7	A	0
SBL	23	0.02	8	A	0
Weekday PM Peak					
EBLTR	22	0.03	9	A	0
WBLTR	**197**	**0.81**	**62**	**F**	**6**
NBL	184	0.13	8	A	0
SBL	103	0.07	8	A	0

The intersection operates with good levels of service under future conditions. It is noted that some delays are expected for the westbound movement during the PM peak hour, resulting in LOS F. The movement will operate within capacity.

6.3.9 Parkside Drive/Parkside Drive Extension and Future East-West Road

The intersection capacity analysis at Parkside Drive/Parkside Drive Extension and Future East-West Road is summarized in **Table 6-24.**

Table 6-24: Parkside Drive/Parkside Drive Extension and Future East-West Road Capacity Analysis

Mvmt	Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak					
EBLTR	94	0.10	7	A	0
WBLTR	2	0.00	8	A	0
NBLTR	264	0.31	9	A	1
Weekday PM Peak					
EBLTR	274	0.29	8	A	1
WBLTR	12	0.02	8	A	0
NBLTR	175	0.23	9	A	1

The intersection operates with good levels of service under future conditions.

6.3.10 Building K South-West Driveway/Building I North-West Driveway and Future East-West Road

The intersection capacity analysis at Building K South-West Driveway/Building I North-West Driveway and Future East-West Road is summarized in **Table 6-25.**

Table 6-25: Building K South-West Driveway/Building I North-West Driveway and Future East-West Road Capacity Analysis

Mvmt	Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak Hour					
EBL	1	0.00	8	A	0
NBLTR	9	0.02	11	B	0
SBLTR	1	0.00	11	B	0
Weekday PM Peak Hour					
EBL	0	0.00	0	A	0
NBLTR	7	0.01	12	B	0
SBLTR	5	0.01	12	B	0

The intersection operates with good levels of service under future conditions.

6.3.11 Building L South-East Driveway/Building J North-East Driveway and Future East-West Road

The intersection capacity analysis at Building L South-East Driveway/Building J North-East Driveway and Future East-West Road is summarized in **Table 6-26.**

Table 6-26: Building L South-East Driveway/Building J North-East Driveway and Future East-West Road Capacity Analysis

Mvmt	Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
	Weekday AM Peak				
EBLR	11	0.01	7	A	0
NBLT	0	0.00	7	A	0
SBTR	2	0.00	6	A	0
	Weekday PM Peak				
EBLR	5	0.01	7	A	0
NBLT	2	0.00	7	A	0
SBTR	10	0.01	6	A	0

The intersection operates with good levels of service under future conditions.

6.4 2041 – SIGNALIZED INTERSECTIONS

The results for the studied signalized intersection under each traffic scenario for the 2041 horizon year during the weekday AM and PM peak hours are summarized in the sections below.

6.4.1 Weber Street North and Randall Drive

The intersection capacity analysis at Weber Street North and Randall Drive is summarized in **Table 6-27** and the queue analysis is summarized in **Table 6-28**.

Table 6-27: Weber Street North & Randall Drive Capacity Analysis

Mvmt		Existing				Future Background 2041				Future Total 2041			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
AM Peak Hour													
Weber St N & Randall Dr	**Overall**	**-**	**0.34**	**8**	**A**	**-**	**0.34**	**8**	**A**	**-**	**0.37**	**8**	**A**
	WBL	72	0.40	33	C	72	0.40	33	C	72	0.41	33	C
	WBR	24	0.01	30	C	24	0.01	30	C	24	0.02	30	C
	NBTR	378	0.32	6	A	378	0.32	6	A	418	0.36	7	A
	SBL	45	0.07	3	A	45	0.07	3	A	45	0.07	3	A
	SBT	399	0.29	3	A	399	0.28	3	A	399	0.29	3	A
Mvmt		Existing				Future Background 2041				Future Total 2041			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
PM Peak Hour													
Weber St N & Randall Dr	Overall	**-**	**0.59**	**18**	**B**	**-**	**0.72**	**21**	**C**	**-**	**0.64**	**20**	**B**
	WBL	295	0.70	36	D	295	0.75	39	D	295	0.76	39	D
	WBR	136	0.11	26	C	136	0.12	25	C	136	0.12	25	C
	NBTR	523	0.54	15	B	632	0.69	21	C	523	0.58	18	B
	SBL	28	0.07	7	A	28	0.09	9	A	28	0.07	8	A
	SBT	472	0.39	8	A	511	0.45	10	B	507	0.45	10	B

Table 6-28: Weber Street North & Randall Drive Queues

Mvmt	Available Storage	Existing Traffic			Future Background 2041			Future Total 2041		
		Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.
Weekday AM Peak Hour										
WBL	748	17	33	39	36	111	127	112	306	342
WBR	30	6	18	26	5	18	30	6	24	37
NBTR	131	18	41	48	23	54	66	25	58	84
SBL	100	6	17	22	9	49	73	11	69	123
SBT	491	17	38	47	82	328	317	130	308	246
Weekday PM Peak Hour										
WBL	748	50	83	96	24	90	105	192	606	492
WBR	**30**	**25**	**46**	**38**	**27**	**48**	**38**	**20**	**46**	**38**
NBTR	131	47	92	114	45	86	105	52	108	126
SBL	100	7	20	31	6	18	24	7	41	44
SBT	491	39	80	102	35	64	86	88	220	186

Existing Conditions: Traffic operations are deemed acceptable as the intersection is operating within capacity with an overall v/c ratio of less than 1.00. The 95th percentile queue length for all movements are indicated to be accommodated within the available storage, except for the westbound right movement during the PM peak hour. All movements have a v/c below 1.00.

Future Background Conditions: The intersection experiences minor delay increases and a minor reduction in capacity. No queuing issues are anticipated, except for the westbound right queue as identified under existing conditions. Overall, the intersection is expected to continue operating with minimal changes to operations compared to existing. All movements have a v/c below 1.00.

Future Total Conditions: Under future total conditions, the intersection is expected to operate similar to future background conditions. All movements have a v/c ratio below 1.00 with the added site traffic. No new queueing constraints were identified with the addition of the site traffic.

6.4.2 Weber Street North and Northfield Drive West

The intersection capacity analysis at Weber Street North and Northfield Drive West is summarized in **Table 6-29 and** the queue analysis is summarized in **Table 6-30.**

Table 6-29: Weber Street North & Northfield Drive West Capacity Analysis

Mvmt		Existing				Future Background 2041				Future Total 2041			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
AM Peak Hour													
Weber St N & Northfield Dr W	**Overall**	-	**0.49**	**33**	**C**	-	**0.55**	**36**	**D**	-	**0.64**	**37**	**D**
	EBL	144	0.34	22	C	144	0.42	24	C	145	0.37	23	C
	EBTR	890	0.72	36	D	1039	0.84	41	D	1053	0.77	39	D
	WBL	68	0.35	30	C	68	0.43	34	C	140	0.52	29	C
	WBT	388	0.34	30	C	571	0.49	33	C	620	0.40	25	C
	WBR	122	0.08	27	C	122	0.08	27	C	122	0.09	21	C
	NBL	31	0.09	30	C	31	0.09	30	C	31	0.13	39	D
	NBTR	209	0.17	34	C	209	0.17	34	C	252	0.24	43	D
	SBL	161	0.34	47	D	161	0.34	47	D	**161**	**0.58**	**69**	**E**
	SBTR	308	0.25	27	C	308	0.25	27	C	464	0.47	42	D
Mvmt		Existing				Future Background 2041				Future Total 2041			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
PM Peak Hour													
Weber St N & Northfield Dr W	**Overall**	-	**0.64**	**41**	**D**	-	**0.67**	**36**	**D**	-	**0.74**	**46**	**D**
	EBL	112	0.52	35	D	112	0.72	50	D	120	0.58	40	D
	EBTR	673	0.61	36	D	820	0.63	32	C	876	0.63	38	D
	WBL	133	0.46	29	C	133	0.46	24	C	176	0.58	30	C
	WBT	**1044**	**0.89**	**48**	**D**	1193	0.78	33	C	1223	0.80	41	D
	WBR	154	0.18	32	C	154	0.11	23	C	154	0.15	28	C
	NBL	64	0.16	25	C	64	0.23	33	C	**64**	**0.30**	**56**	**E**
	NBTR	336	0.39	39	D	336	0.36	37	D	**481**	**0.69**	**67**	**E**
	SBL	258	0.43	46	D	**258**	**0.75**	**66**	**E**	**258**	**0.65**	**74**	**E**
	SBTR	457	0.45	37	D	457	0.40	33	C	528	0.51	46	D

Table 6-30: Weber Street North & Northfield Drive West Queues

Mvmt	Available Storage	Existing Traffic			Future Background 2041			Future Total 2041		
		Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.
Weekday AM Peak Hour										
EBL	90	139	265	190	160	264	190	133	269	190
EBT	600	438	790	628	503	791	626	536	789	628
EBTR	600	442	785	630	506	786	628	540	781	630
WBL	45	14	29	36	14	29	36	18	44	60
WBT	151	29	52	57	51	81	87	42	78	87
WBT	151	30	53	60	53	81	90	43	79	85
WBR	65	13	25	35	13	24	31	9	21	29
NBL	95	5	15	20	4	14	22	8	28	45
NBT	166	19	44	59	41	150	110	59	152	172
NBTR	166	39	93	92	72	220	129	111	218	199
SBL1	83	50	111	103	70	128	104	68	120	102
SBL2	83	75	144	123	97	158	125	106	159	125
SBT	235	90	220	185	154	278	212	193	265	213
SBTR	235	52	138	169	63	172	201	118	270	212
Weekday PM Peak Hour										
EBL	90	18	34	41	22	41	47	35	96	86
EBT	330	58	84	87	62	95	111	84	134	146
EBTR	330	65	89	96	69	100	113	92	142	156
WBL	45	39	100	110	27	64	85	24	57	87
WBT	151	106	140	131	75	118	127	66	115	119
WBT	151	107	140	133	78	122	127	66	114	116
WBR	65	41	113	115	19	58	81	19	62	73
NBL	95	11	23	31	11	24	31	23	73	109
NBT	166	28	46	55	29	45	51	106	253	226
NBTR	166	30	52	63	30	47	52	109	256	227
SBL1	83	24	42	51	51	93	94	28	60	74
SBL2	83	32	52	65	60	109	110	36	70	88
SBT	235	32	58	68	51	116	127	40	83	100
SBTR	235	44	72	88	52	86	110	54	102	123

Existing Conditions: Traffic operations are deemed acceptable as the intersection is operating within capacity with an overall v/c ratio of less than 1.00. Like the 2031 horizon results, the eastbound movements experience heavy queues under existing conditions for the AM peak hour. These conditions are a function of the signal activation at the Northfield LRT station intersection. A lengthy stoppage occurs with an eastbound LRT arrival and departure from the transit station. As a result, eastbound through traffic queues upstream from the LRT station and impact the operations at the Weber Street North and Northfield Drive West intersection.

Future Background Conditions: The intersection experiences minor delay increases and a minor reduction in capacity. The eastbound queues present during existing conditions continue to exist. Overall, the intersection is expected to continue operating with minimal changes to operations compared to existing. All movements have a v/c below 1.00.

Future Total Conditions: Good levels of service are maintained under future total conditions, noting that the southbound left, northbound through-right and northbound left movements operate at LOS E. Queue constraints identified under existing and future background conditions continue to existing under future total conditions, with the addition of the westbound right and northbound through movements.

6.4.3 Weber Street North and Parkside Drive (South Intersection)

The intersection capacity analysis at Weber Street North and Parkside Drive (South Intersection) is summarized in **Table 6-31** and the queue analysis is summarized in **Table 6-32.**

Table 6-31: Weber Street North & Parkside Drive (South Intersection) Capacity Analysis

Mvmt		Existing				Future Background 2041				Future Total 2041			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
AM Peak Hour													
Weber St N & Parkside Drive	**Overall**	**-**	**0.30**	**14**	**B**	**-**	**0.27**	**14**	**B**	**-**	**0.32**	**14**	**B**
	EBL	62	0.15	16	B	62	0.15	16	B	90	0.22	17	B
	EBTR	215	0.31	17	B	215	0.31	17	B	216	0.32	17	B
	WBL	76	0.20	16	B	76	0.20	16	B	78	0.20	16	B
	WBTR	204	0.30	17	B	204	0.30	17	B	204	0.30	17	B
	NBLTR	253	0.17	12	B	-				-			
	NBL	-				16	0.04	12	B	16	0.05	12	B
	NBTR	-				237	0.14	11	B	253	0.16	12	B
	SBLTR	406	0.28	13	B	-				-			
	SBL	-				30	0.06	12	B	30	0.07	12	B
	SBTR	-				376	0.23	12	B	543	0.33	13	B
Mvmt		Existing				Future Background 2041				Future Total 2041			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
PM Peak Hour													
Weber St N & Parkside Drive	**Overall**	**-**	**0.41**	**16**	**B**	**-**	**0.47**	**19**	**B**	**-**	**0.41**	**15**	**B**
	EBL	64	0.22	20	B	64	0.21	19	B	150	0.53	27	C
	EBTR	264	0.45	22	C	264	0.45	22	C	264	0.45	22	C
	WBL	110	0.38	23	C	110	0.37	23	C	113	0.40	23	C
	WBTR	286	0.49	23	C	286	0.48	23	C	286	0.49	23	C
	NBLTR	499	0.35	11	B	-				-			
	NBL	-				67	0.17	11	B	67	0.20	12	B
	NBTR	-				432	0.24	10	B	492	0.30	11	B
	SBLTR	506	0.33	11	B	-				-			
	SBL	-				35	0.08	10	B	35	0.09	7	A
	SBTR	-				471	0.27	10	B	560	0.33	6	A

Table 6-32: Weber Street & Parkside Drive (South Intersection) Queues

Mvmt	Lane Storage Lengths (m)	Existing Traffic			Future Background 2031			Future Total 2031		
		Weekday AM Peak Hour			Weekday AM Peak Hour			Weekday AM Peak Hour		
		Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.
Weekday AM Peak Hour										
EBL	60	11	23	33	11	22	24	14	28	43
EBTR	60	24	42	51	22	38	45	26	46	56
WBL	500	16	37	40	16	36	40	11	31	40
WBTR	500	27	54	64	26	56	67	20	48	59
NBLT	600	13	26	35	-					
NBTR	600	14	26	30						
NBL	600	-			2	8	12	2	9	11
NBT	600				11	21	25	11	24	26
NBTR	600				15	29	35	15	27	33
SBLT	300	14	31	47	-					
SBTR	300	18	39	56						
SBL	300	-			3	10	14	2	7	10
SBT	300				10	27	46	10	27	39
SBTR	300				15	36	58	17	40	53
Weekday PM Peak Hour										
EBL	**60**	13	28	44	13	31	45	24	45	52
EBTR	**60**	32	56	67	34	56	65	34	60	77
WBL	500	22	42	40	25	43	40	19	38	40
WBTR	500	38	69	82	41	68	76	27	51	63
NBLT	600	22	38	41	-					
NBTR	600	19	34	37						
NBL	600	-			11	22	28	10	22	30
NBT	600				16	28	35	19	35	39
NBTR	600				19	34	43	23	39	47
SBLT	300	16	34	49						
SBTR	300	20	39	53						
SBL	300	-			5	13	21	4	12	17
SBT	300				13	30	44	11	25	34
SBTR	300				18	37	51	17	36	45

Existing Conditions: Traffic operations are deemed acceptable as the intersection is operating within capacity with an overall v/c ratio of less than 1.00. The 95th percentile queue length for all movements are indicated to be accommodated within the available storage. All movements have a v/c below 1.00.

Future Background Conditions: The intersection experiences minor delay increases and a minor reduction in capacity. No queuing issues are anticipated. Overall, the intersection is expected to continue operating with minimal changes to operations compared to existing. All movements have a v/c below 1.00.

Future Total Conditions: Similar operations are expected under future total conditions compared to future background conditions. All movements have a v/c ratio below 1.00 with the added site traffic. It is noted that the queues for the EBL and EBTR movement are anticipated to extend past the available storage length. However, minimal delays are expected for the movement, and it is anticipated that

courtesy gaps will be provided along the EBTR movement to allow for appropriate access from unsignalized side streets.

6.4.4 Parkside Drive and Northfield Drive West

The intersection capacity analysis at Parkside Drive and Northfield Drive West is summarized in **Table 6-33** and the queue analysis is summarized in **Table 6-34.**

Table 6-33:Parkside Drive & Northfield Drive West Capacity Analysis

Mvmt		Existing				Future Background 2041				Future Total 2041			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
AM Peak Hour													
Parkside Drive & Northfield Drive West	**Overall**	**-**	**0.67**	**34**	**C**	**-**	**0.74**	**34**	**C**	**-**	**0.99**	**53**	**D**
	EBL	2	0.00	22	C	2	0.00	19	B	15	0.08	27	C
	EBTR	**1073**	**0.90**	**43**	**D**	**1222**	**0.90**	**40**	**D**	**1222**	**0.99**	**66**	**E**
	WBL	**393**	**0.90**	**54**	**D**	**393**	**0.96**	**72**	**E**	**393**	**0.98**	**86**	**F**
	WBTR	667	0.33	9	A	850	0.39	9	A	1003	0.51	15	B
	NBLT	24	0.06	29	C	24	0.07	33	C	26	0.06	34	C
	NBR	215	0.15	31	C	215	0.15	35	C	215	0.15	35	D
	SBL	45	0.12	30	C	45	0.13	35	C	**393**	**0.99**	**90**	**F**
	SBTR	11	0.02	29	C	11	0.02	33	C	16	0.03	34	C
Mvmt		Existing				Future Background 2041				Future Total 2041			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
PM Peak Hour													
Parkside Drive & Northfield Drive West	**Overall**	**-**	**0.59**	**22**	**C**	**-**	**0.77**	**24**	**C**	**-**	**1.03**	**56**	**E**
	EBL	0	0.00	0	A	0	0.00	0	A	56	0.65	49	D
	EBTR	933	0.71	28	C	1080	0.75	26	C	1073	0.72	36	D
	WBL	288	0.74	26	C	**288**	**0.90**	**50**	**D**	**288**	**0.85**	**48**	**D**
	WBTR	1410	0.70	15	B	1559	0.76	16	B	**1876**	**1.03**	**61**	**E**
	NBLT	47	0.12	26	C	47	0.12	26	C	50	0.12	40	D
	NBR	396	0.28	29	C	396	0.49	33	C	396	0.43	45	D
	SBL	88	0.22	28	C	88	0.23	28	C	**392**	**1.03**	**109**	**F**
	SBTR	31	0.06	25	C	31	0.06	25	C	46	0.08	39	D

Table 6-34:Parkside Drive & Northfield Drive West Queues

Mvmt	Lane Storage Lengths (m)	Existing Traffic			Future Background 2041			Future Total 2041		
		Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.
Weekday AM Peak Hour										
EBL	40	1	14	24	0	3	5	9	45	78
EBT	147	117	149	133	117	152	132	110	161	131
EBTR	147	129	134	135	130	133	134	130	133	135
WBL	**21**	**60**	**91**	**80**	**74**	**94**	**80**	**51**	**99**	**80**
WBT	165	52	110	107	93	142	115	67	130	108
WBTR	165	38	73	82	42	88	100	70	124	108
NBLT	500	6	16	25	10	38	58	16	54	65
NBR	500	45	92	100	98	228	245	93	209	222
SBL	50	18	42	49	33	62	53	36	39	38
SBTR	50	5	23	34	17	57	67	47	57	60
Weekday PM Peak Hour										
EBL	**40**	0	0	0	0	0	0	**18**	**59**	**95**
EBT	147	59	99	105	54	98	102	91	147	133
EBTR	**147**	72	115	125	65	108	108	**104**	**160**	**138**
WBL	**21**	**49**	**83**	**80**	**58**	**91**	**80**	**34**	**66**	**76**
WBT	165	59	111	108	73	127	109	58	96	107
WBTR	165	64	117	108	72	126	109	69	107	108
NBLT	500	10	25	30	16	48	83	54	186	163
NBR	500	51	85	99	109	222	255	174	363	286
SBL	50	21	42	42	27	51	49	36	40	38
SBTR	50	0	0	0	15	44	55	48	57	60

Existing Conditions: Traffic operations are deemed acceptable as the intersection is operating within capacity with an overall v/c ratio of less than 1.00. Of note, the westbound left and eastbound through movements operate with some congestion during the AM peak hour with a v/c ratio of 0.90 and LOS "D". The queues for the westbound left movement exceed the available storage, which is partly a function of the opposing eastbound flows which limit the westbound left movement during the normal east-west phase. The 95th percentile queue length for all other movements are indicated to be accommodated within the available storage. All movements have a v/c below 1.00.

It should be noted that field observations identified westbound through-right queues of around 100 m from the Northfield LRT Transit Station/Railway Crossing & Northfield Drive intersection during the PM peak hour. These conditions are a direct result of eastbound through vehicles situated in the middle of the Parkside/Northfield intersection stemming from queueing at the Northfield LRT Station-Railway Crossing/ Northfield intersection and when a northbound LRT vehicle arrives at the LRT station. This queue effectively blocks the westbound left from performing its intended maneuver and the westbound left queues spills over into the median through lane.

Given that the Synchro software does not permit vehicle to block an intersection, the LOS result is not entirely reflective of existing conditions and represents a more favorable outcome.

As a result of the heavy queue conditions observed form the field, mitigation measures are recommended to alleviate this condition Such mitigation measures include added signage of "DO NOT BLOCK INTERSECTION" and painting the intersection with a cross hatch pattern to emphasizes this notion. Should

resource s be available, The City can add traffic monitoring personnel to direct traffic and as necessary, impose traffic tickets. If such measures are implemented it is expected that the conditions would more closely resemble the synchro results.

Future Background Conditions: The intersection experiences minor delay increases and a minor reduction in capacity. The delay to the westbound left movement during the AM peak hour increases by approximately 70 seconds with a v/c ratio of 0.96, and the queuing issues identified during existing conditions continue to exist. Overall, the intersection is expected to continue operating with minimal changes to operations compared to existing. All movements have a v/c below 1.00.

Future Total Conditions: Under future total conditions, the intersection is expected to operate near capacity (i.e. V/C = 0.99) during the AM peak hour and at practical capacity (i.e. V/C = 1.03) during the PM peak hour. During the AM peak hour, similar constraints will be present as in future background conditions, however the southbound left movement will also operate with a critical V/C ratio of 0.99 and at LOS F. For the PM peak hour, the westbound through-right movement will operate at capacity with a V/C ratio of 1.03 and LOS E, and the southbound left movement will also operate at capacity with a V/C ratio of 1.03 and LOS F. The southbound constraint is expected to be managed within the section of Parkside Drive adjacent to the site with a median to allow for queuing associated with the constraint to not conflict with left-turning vehicles. This delay is only expected at the absolute peak times. The queueing constraints identified under future background conditions will continue to exist, in addition to 95th percentile queues exceeding storage capacity for the eastbound left and eastbound through movements.

6.4.5 Northfield LRT Transit Station/Railway Crossing & Northfield Drive West

The intersection capacity analysis at Northfield LRT Transit Station/Railway Crossing and Northfield Drive West is summarized in **Table 6-35** and the queue analysis is summarized in **Table 6-36.**

Table 6-35: Northfield LRT Transit Station/Railway Crossing & Northfield Drive West Capacity Analysis

Mvmt		Existing				Future Background 2041				Future Total 2041			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
AM Peak Hour													
Transit Station & Northfield	Overall	-	0.43	14	B	-	0.49	15	B	-	0.60	18	B
	EBT	1309	0.55	22	C	1458	0.61	23	C	1806	0.76	27	C
	WBT	1060	0.37	4	A	1243	0.45	5	A	1402	0.55	6	A
Mvmt		Existing				Future Background 2041				Future Total 2041			
		Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
PM Peak Hour													
Transit Station & Northfield	Overall	-	0.55	14	B	-	0.61	15	B	-	0.74	18	B
	EBT	1387	0.57	22	C	1534	0.63	24	C	1831	0.78	27	C
	WBT	1698	0.60	6	A	1847	0.66	7	A	2167	0.82	10	B

Table 6-36: Northfield LRT Transit Station/Railway Crossing & Northfield Drive West Queues

Mvmt	Available Storage	Existing Traffic			Future Background 2041			Future Total 2041		
		Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.	Avg.	95th Percentile	Max.
Weekday AM Peak Hour										
EBT	165	61	113	114	60	106	116	59	111	116
EBT	165	116	120	122	114	115	14	112	116	121
EBT	165	85	86	85	85	85	85	85	86	85
WBT	520	15	19	21	16	22	29	22	41	33
WBT	520	14	18	19	15	20	24	21	36	33
Weekday PM Peak Hour										
EBT	165	77	121	113	101	135	120	104	129	122
EBT	165	84	126	116	107	132	119	108	128	122
EBT	165	74	100	85	83	93	85	84	94	85
WBT	520	15	18	21	15	17	19	23	39	33
WBT	520	15	18	22	16	20	23	21	36	33

Existing Conditions: Traffic operations are deemed acceptable as the intersection is operating within capacity with an overall v/c ratio of less than 1.00. The 95th percentile queue length for all movements are indicated to be accommodated within the available storage. All movements have a v/c below 1.00.

Future Background Conditions: The intersection experiences minor delay increases and a minor reduction in capacity. No queuing issues are anticipated. Overall, the intersection is expected to continue operating with minimal changes to operations compared to existing. All movements have a v/c below 1.00.

Future Total Conditions: Minor increases in delay and v/c ratio are expected under future total conditions compared to future background conditions during both weekday peak hours. All movements have a v/c ratio below 1.00 with the added site traffic. No queuing issues are anticipated. No additional constraints were identified with the addition of the site traffic.

6.5 2041 – UNSIGNALIZED INTERSECTIONS

The results for the studied unsignalized intersections under each traffic scenario for the 2041 horizon year during the weekday AM and PM peak hours are summarized in the sections below.

6.5.1 Weber Street North and Parkside Drive (North Intersection)

The intersection capacity analysis at Weber Street North and Parkside Drive (North Intersection) is summarized in **Table 6-37.**

Table 6-37: Weber Street North & Parkside Drive (North Intersection) Capacity Analysis

Mvmt	Existing					Future Background 2041					Future Total 2041				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
AM Peak Hour															
WBL	50	0.13	16	C	1	50	0.13	16	C	1	206	0.56	27	D	3
WBR	63	0.08	10	B	0	63	0.08	10	B	0	104	0.14	10	B	1
SBL	52	0.04	8	A	0	52	0.04	8	A	0	52	0.05	8	A	0
PM Peak Hour															
WBL	43	0.21	27	D	1	43	0.21	27	D	1	**119**	**0.72**	**69**	**F**	**4**
WBR	107	0.15	11	B	1	107	0.15	11	B	1	110	0.18	12	B	1
SBL	93	0.09	9	A	0	93	0.09	9	A	0	133	0.15	10	A	1

The intersection generally operates with good levels of service under existing and future conditions. As discussed in **Section 6.3.1**, the intersection is proposed to be signalized under future total conditions. The intersection capacity analysis for the signalized intersection under future total conditions is summarized in **Table 6-38** and the queue assessment is summarized in **Table 6-39**.

Table 6-38: Weber Street North & Parkside Drive (North Intersection) Capacity Analysis (Signalized)

Mvmt	Future Total 2041			
	Vol	V/C	Delay (s)	LOS
AM Peak Hour				
Overall	-	**0.29**	**10**	**A**
WBL	206	0.55	26	C
WBR	104	0.08	22	C
NBTR	420	0.19	4	A
SBL	52	0.09	5	A
SBT	419	0.20	5	A
Mvmt	**Future Total 2041**			
	Vol	**V/C**	**Delay (s)**	**LOS**
PM Peak Hour				
Overall	-	**0.32**	**7**	**A**
WBL	119	0.46	28	C
WBR	110	0.09	26	C
NBTR	683	0.28	4	A
SBL	133	0.28	5	A
SBT	669	0.29	4	A

Table 6-39: Weber Street North & Parkside Drive (North Intersection) Queues (Signalized)

Movement	Lane Storage Lengths (m)	Future Total 2041		
		Avg. Queue	95th Percentile Queue	Max. Queue
Weekday AM Peak Hour				
WBL	92	57	89	72
WBR	92	13	46	38
NBT	235	16	36	44
NBTR	235	8	22	31
SBL	**33**	**12**	**56**	**88**
SBT	**255**	**183**	**347**	**265**
SBT	**255**	**113**	**287**	**241**
Weekday PM Peak Hour				
WBL	92	21	37	47
WBR	92	12	22	26
NBT	235	50	157	165
NBTR	235	72	194	183
SBL	**33**	**43**	**97**	**78**
SBT	**255**	**91**	**265**	**202**
SBT	255	57	193	195

With signalization, the intersection is expected to operate well, however 95th percentile queues for the southbound movement are expected to exceed the available storage capacity during both peak hours.

6.5.2 Sobeys West Driveway/Plaza North-West Driveway and Parkside Drive

The intersection capacity analysis at Sobeys West Driveway/Plaza North-West Driveway and Parkside Drive is summarized in **Table 6-40**.

Table 6-40:Sobeys West Driveway/Plaza North-West Driveway and Parkside Drive Capacity Analysis

Mvmt	Existing Traffic					Future Background 2041					Future Total 2041				
	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)
Weekday AM Peak															
EBL	106	0.07	11	A	0	106	0.07	8	A	0	106	0.08	8	A	0
NBLTR	5	0.01	11	B	0	0	0.00	0	A	0	5	0.01	14	B	0
SBL	45	0.01	11	6	0	5	0.01	11	B	0	45	0.10	14	B	0
SBTR	118	0.12	9	A	0	45	0.07	11	B	0	118	0.15	10	B	1
Weekday PM Peak															
EBL	97	0.04	12	B	0	97	0.07	8	A	0	97	0.07	8	A	0
NBLTR	20	0.04	12	B	0	0	0.00	0	A	0	20	0.06	16	C	0
SBL	20	0.04	12	B	0	20	0.04	12	B	0	20	0.06	16	C	0
SBTR	104	0.12	10	A	0	20	0.04	12	B	0	104	0.13	10	B	0

The intersection operates with good levels of service under existing and future conditions.

6.5.3 Sobeys East Driveway/North-South Access Road and Parkside Drive

The intersection capacity analysis at Sobeys East Driveway/North-South Access Road and Parkside Drive is summarized in **Table 6-41**.

Table 6-41:Sobeys East Driveway/North-South Access Road and Parkside Drive Capacity Analysis

Mvmt	Existing Traffic					Future Background 2041					Future Total 2041				
	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)
Weekday AM Peak															
EBL	2	0.00	7.3	A	0	2	0.00	7	A	0	2	0.00	8	A	0
NBLTR	8	0.01	10	A	0	8	0.01	10	A	0	12	0.02	11	B	0
SBLTR	24	0.03	10	A	0	24	0.03	10	A	0	24	0.04	11	B	0
Weekday PM Peak															
EBL	3	0.00	7.4	A	0	3	0.00	7	A	0	3	0.00	8	A	0
NBLTR	74	0.08	9	A	0	74	0.08	9	A	0	50	0.07	10	B	0
SBLTR	44	0.06	10	8	0	44	0.06	10	B	0	44	0.08	12	B	0

The intersection operates with good levels of service under existing and future conditions.

6.5.4 North-South Access Road and Northfield Drive West

The intersection capacity analysis at North-South Access Road and Northfield Drive West is summarized in **Table 6-42.**

Table 6-42: North-South Access Road and Northfield Drive West Capacity Analysis

Mvmt	Existing Traffic					Future Background 2041					Future Total 2041				
	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)	Vol	V/C	Delay (s)	LOS	95th Queue (Veh)
Weekday AM Peak															
EBL	11	0.01	9	A	0	11	0.01	9	A	0	4	0.01	9	A	0
SBL	20	0.11	28	D	0	**20**	**0.17**	**42**	**E**	**1**	**16**	**0.13**	**40**	**E**	**0**
SBR	16	0.02	10	B	0	16	0.03	11	B	0	129	0.21	12	B	1
Weekday PM Peak															
EBL	27	0.05	13	B	0	27	0.06	14	B	0	23	0.05	14	B	0
SBL	**26**	**0.62**	**182**	**F**	**2**	**26**	**0.72**	**233**	**F**	**3**	**20**	**0.59**	**210**	**F**	**2**
SBR	34	0.09	16	C	0	34	0.10	17	C	0	94	0.27	19	C	1

During the AM peak hour, both southbound movements generally operate well. During the PM peak hour, under both existing and future conditions, the southbound left movement operates with some constraints. The heavy east-west volumes on Northfield Drive West limit the opportunity to complete this movement, however the movement operates with ample capacity. The southbound right movement does not operate with any constraints.

6.5.5 Kumpf Drive/Private Driveway and Northfield Drive West

The intersection capacity analysis at Kumpf Drive/Private Driveway and Northfield Drive West is summarized in **Table 6-43.**

Table 6-43: Kumpf Drive/Private Driveway and Northfield Drive West Capacity Analysis

Mvmt	Existing					Future Background 2041					Future Total 2041				
	Vol	V/C	Delay (s)	LOS	95th Queue	Vol	V/C	Delay (s)	LOS	95th Queue	Vol	V/C	Delay (s)	LOS	95th Queue
AM Peak Hour															
NBR	17	0.05	16	6	0	17	0.05	17	C	0	17	0.07	21	C	0
SBR	33	0.08	15	B	0	33	0.10	17	C	0	33	0.11	18	C	0
PM Peak Hour															
NBR	43	0.14	19	C	1	43	0.15	19	C	1	43	0.18	23	C	1
SBR	45	0.19	24	C	1	45	0.20	25	C	1	45	0.26	33	D	1

The intersection operates with good levels of service under existing and future conditions.

6.5.6 Parkside Drive and Buildings A-E Driveway/Buildings E-H Driveway

The intersection capacity analysis at Parkside Drive and Buildings A-E Driveway/Buildings E-H Driveway is summarized in **Table 6-44.**

Table 6-44: Parkside Drive and Buildings A-E Driveway/Buildings E-H Driveway Capacity Analysis

Mvmt	Future Total 2041				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak					
EBLR	146	0.19	11	B	1
WBLR	88	0.10	10	A	0
Weekday PM Peak					
EBLR	122	0.17	11	B	1
WBLR	33	0.05	11	B	0

The intersection operates with good levels of service under future conditions.

6.5.7 Parkside Drive and Nordia Loading Driveway

The intersection capacity analysis at Parkside Drive and Nordia Loading Driveway is summarized in **Table 6-45.**

Table 6-45: Parkside Drive and Nordia Loading Driveway Capacity Analysis

Mvmt	Existing					Future Background 2041				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak										
EBLR	2	0.00	10	A	0	2	0.00	10	A	0
NBL	1	0.00	8.3	A	0	1	0.00	8	A	0
Weekday PM Peak										
EBLR	2	0.00	10	B	0	2	0.00	10	B	0
NBL	1	0.00	9	A	0	1	0.00	9	A	0

The intersection operates with good levels of service under existing and future conditions. Under future total conditions, the driveway is removed.

6.5.8 Parkside Drive and Building I South-East Driveway/Building J South-West Driveway

The intersection capacity analysis at Parkside Drive and Building I South-East Driveway/Building J South-West Driveway is summarized in **Table 6-46.**

Table 6-46: Parkside Drive and Building I South-East Driveway/Building J South-West Driveway Capacity Analysis

Mvmt	Future Total 2041				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak					
EBLTR	14	0.03	12	B	0
WBLTR	285	0.49	17	C	3
NBL	70	0.05	7	A	0
Weekday PM Peak					
EBLTR	22	0.03	9	A	0
WBLTR	**197**	**0.81**	**62**	**F**	**6**
NBL	184	0.13	8	A	0

The intersection operates with good levels of service under future conditions. However, it is noted that a high delay is expected for the westbound movement during the PM peak hour. The movement will operate within capacity

6.5.9 Parkside Drive/Parkside Drive Extension and Future East-West Road

The intersection capacity analysis at Parkside Drive/Parkside Drive Extension and Future East-West Road is summarized in **Table 6-47.**

Table 6-47: Parkside Drive/Parkside Drive Extension and Future East-West Road Capacity Analysis

Mvmt	Future Total 2041				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak					
EBLTR	94	0.10	7	A	0
WBLTR	2	0.00	8	A	0
NBLTR	264	0.32	10	A	1
Weekday PM Peak					
EBLTR	274	0.29	8	A	1
WBLTR	12	0.02	8	A	0
NBLTR	175	0.24	9	A	1

The intersection operates with good levels of service under future conditions.

6.5.10 Building K South-West Driveway/Building I North-West Driveway and Future East-West Road

The intersection capacity analysis at Building K South-West Driveway/Building I North-West Driveway and Future East-West Road is summarized in **Table 6-48.**

Table 6-48: Building K South-West Driveway/Building I North-West Driveway and Future East-West Road Capacity Analysis

Mvmt	Future Total 2031				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Weekday AM Peak Hour					
EBL	1	0.00	8	A	0
NBLTR	9	0.02	11	B	0
SBLTR	1	0.00	11	B	0
Weekday PM Peak Hour					
EBL	0	0.00	0	A	0
NBLTR	7	0.01	12	B	0
SBLTR	5	0.01	12	B	0

The intersection operates with good levels of service under future conditions.

6.5.11 Building L South-East Driveway/Building J North-East Driveway and Future East-West Road

The intersection capacity analysis at Building L South-East Driveway/Building J North-East Driveway and Future East-West Road is summarized in **Table 6-49.**

Table 6-49: Building L South-East Driveway/Building J North-East Driveway and Future East-West Road Capacity Analysis

Mvmt	Future Total 2041				
	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
	Weekday AM Peak				
EBLR	11	0.01	7	A	0
NBLT	0	0.00	7	A	0
SBTR	2	0.00	6	A	0
	Weekday PM Peak				
EBLR	5	0.01	7	A	0
NBLT	2	0.00	7	A	0
SBTR	10	0.01	6	A	0

The intersection operates with good levels of service under future conditions.

6.6 PEDESTRIAN LEVEL OF SERVICE ANALYSIS

A pedestrian flow analysis was conducted using the methodology as per Highway Capacity Manual 6, Chapter 24. This analysis calculates the theoretical pedestrian LOS based on pedestrian volumes, walking speeds, and effective widths of pedestrian crossings. Pedestrian space was used as the evaluation criteria to determine the LOS of pedestrian crossings which is identified as the average area occupied by a pedestrian within crossings, expressed as a meter square per person. **Table 6-50** below shows the pedestrian LOS criteria (as per Exhibit 24-1 in HCM6, Chapter 24).

Table 6-50: Pedestrian LOS Criteria

LOS	Average Space (ft^2/p)	Description
A	> 530	Ability to move in desired path, no need to alter movements
B	> 90 – 530	Occasional need to adjust path to avoid conflicts
C	> 40 – 90	Frequent need to adjust path to avoid conflicts
D	> 23 – 40	Speed and ability to pass slower pedestrians restricted
E	> 11 – 23	Speed restricted, very limited ability to pass slower pedestrians
F	≤ 11	Speeds severely restricted, frequent contact with other users

The multi-modal trip generation (**Table 4-5**) indicates that the highest pedestrian volumes for the proposed development are generated by transit users. These pedestrian volumes were assigned to routes between main transit station and the development considering the capacity of crossings and demand balancing of pedestrian routes. Based on the pedestrian demand and assignment, the pedestrian LOS along the main routes were evaluated for the typical weekday and weekend peak hours. **Table 6-51** summarizes the resulting pedestrian LOS.

Table 6-51: Pedestrian LOS Evaluation

Pedestrian Connection	Time	Pedestrian LOS
Sidewalks/Crossings along Northfield Drive between the Proposed Development and the Northfield LRT Station	Weekday AM Peak	C
	Weekday PM Peak	B

Overall, it is expected that the site generated pedestrian volumes result in good LOSs of “C” and “B” which could accommodate high pedestrian demand during the critical weekday peaks.

6.7 ANALYSIS SUMMARY

The analysis results indicate that the proposed development is expected to have an acceptable impact on the road network operations in the surrounding area with the proposed signal timing plans. While there is congestion in the network, all new site accesses are expected to operate well with the addition of site traffic. Lastly, the analysis demonstrates that the queues experienced during the LRT crossing are not anticipated to extend past the Conestoga Parkway on-ramps. This indicates that the on-ramps can operate under free-flow conditions and the off-ramps will not be blocked by traffic along Northfield Drive West.

7 TRAFFIC OPERATIONS REVIEW

It is understood that the Region requested more information about the future intersection operations of Parkside Drive/Parkside Drive Extension & Future East-West Road. The intersection was assumed to be an all-way stop-controlled intersection when analyzed in **Section 6**.

To evaluate additional options, the intersection was also analyzed as signalized and as a roundabout. These analyses are discussed in the following sections, with detailed capacity results provided in **Appendix H**.

7.1 SIGNAL WARRANT REVIEW

A sensitivity analysis was undertaken during future conditions where the intersection of Parkside Drive/Parkside Drive Extension and Future East-West Road was signalized. **Figure 7-1** shows the 2041 traffic volumes with the future East-West Road. The signalized intersection capacity analysis results are summarized in **Table 7-1**.

Figure 7-1: Proposed E-W Road

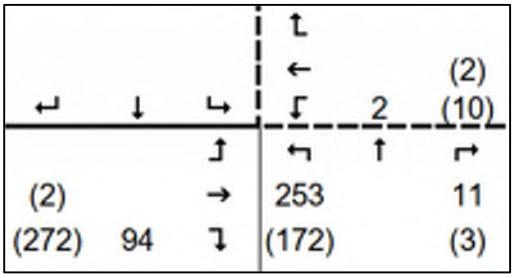


Table 7-1: Signalized Intersection Capacity Analysis - Parkside Drive/Parkside Drive Extension and Future East-West Road

AM Peak Hour	Future Total 2031				Future Total 2041			
	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	**-**	**0.22**	**8**	**A**	**-**	**0.23**	**9**	**A**
EBLTR	94	0.06	24	C	94	0.06	24	C
WBLTR	2	0.01	24	C	2	0.01	24	C
NBLTR	264	0.24	3	A	264	0.26	3	A
SBLTR	0	0.00	0	-	0	0.00	0	-
PM Peak Hour	Future Total 2031				Future Total 2041			
	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	**-**	**0.18**	**16**	**B**	**-**	**0.19**	**16**	**B**
EBLTR	274	0.18	24	C	274	0.18	24	C
WBLTR	12	0.11	24	C	12	0.11	24	C
NBLTR	175	0.17	4	A	175	0.19	4	A
SBLTR	0	0.00	0	-	0	0.00	0	-

Under future conditions, if the intersection were to be signalized, good levels of service with v/c ratios below 1.0 occur during each horizon.

A peak hour signal warrant calculation was conducted. The analysis was based on Ministry of Transportation (MTO Book 12) requirements for installation of traffic signal for new intersections. The analysis examines the combined AM & PM peak hours. **Table 7-2** summarize the warrant review results.

Table 7-2: Signal Warrant Review - Parkside Drive/Parkside Drive Extension and Future East-West Road

Warrant	Percent Compliant	Warrant Satisfied?
Warrant 1 – Minimum Vehicular Volume		
1A	24%	No
1B	47%	No
Warrant 2 – Delay to Cross Traffic		
2A	13%	No
2B	4%	No

Results indicate a traffic signal is not warranted under future total conditions for 2031 and 2041.

7.2 ROUNDABOUT CAPACITY ANALYSIS

A roundabout capacity analysis was conducted to determine if this means of traffic control is a viable option. Similar to the unsignalized and signalized analyses, each direction is served with one shared lane. Please note that the future traffic volumes are identical for 2031 and 2041 for both peak hours. The results are shown below in **Table 7-3** and **Table 7-4**, for 2031 and 2041, respectively.

Table 7-3: 2031 Future Total Roundabout Capacity Analysis Results - Parkside Drive/Parkside Drive Extension and Future East-West Road

Leg	Weekday AM Peak Hour							
	Queue (Passenger Car Equivalent)	95% Queue (Passenger Car Equivalent)	Delay (s)	V/C	LOS	Intersection Delay (s)	Intersection LOS	Network Residual Capacity
Westbound	0.00	~1	0.00	0.00	A	3.83	A	319% (Northbound Leg)
Southbound	0.00	~1	0.00	0.00	A			
Eastbound	0.09	~1	3.30	0.08	A			
Northbound	0.29	~1	4.01	0.22	A			
Leg	Weekday PM Peak Hour							
	Queue (Passenger Car Equivalent)	95% Queue (Passenger Car Equivalent)	Delay (s)	V/C	LOS	Intersection Delay (s)	Intersection LOS	Network Residual Capacity
Westbound	0.01	~1	3.26	0.01	A	3.79	A	298% (Eastbound Leg)
Southbound	0.00	~1	0.00	0.00	A			
Eastbound	0.30	~1	3.89	0.23	A			
Northbound	0.18	~1	3.68	0.15	A			

Table 7-4: 2041 Future Total Roundabout Capacity Analysis Results - Parkside Drive/Parkside Drive Extension and Future East-West Road

Leg	Weekday AM Peak Hour							
	Queue (Passenger Car Equivalent)	95% Queue (Passenger Car Equivalent)	Delay (s)	V/C	LOS	Intersection Delay (s)	Intersection LOS	Network Residual Capacity
Westbound	0.00	~1	0.00	0.00	A	3.84	A	314% (Northbound Leg)
Southbound	0.00	~1	0.00	0.00	A			
Eastbound	0.09	~1	3.30	0.08	A			
Northbound	0.30	~1	4.01	0.22	A			
Leg	Weekday PM Peak Hour							
	Queue (Passenger Car Equivalent)	95% Queue (Passenger Car Equivalent)	Delay (s)	V/C	LOS	Intersection Delay (s)	Intersection LOS	Network Residual Capacity
Westbound	0.01	~1	3.26	0.01	A	3.79	A	298% (Eastbound Leg)
Southbound	0.00	~1	0.00	0.00	A			
Eastbound	0.30	~1	3.89	0.23	A			
Northbound	0.18	~1	3.68	0.15	A			

Under future total weekday AM and PM peak hour conditions, the Parkside Dr/Parkside Dr Ext & Future E-W Road roundabout is expected to operate without any issues.

7.3 TRAFFIC OPERATIONS CONCLUSION

Based on the results, the unsignalized operations of the Parkside Drive/Parkside Drive Extension & Future E-W Road intersection is sufficient. Other traffic control means are not necessary as the intersection is expected to operate well as unsignalized.

8 PARKING ASSESSMENT

8.1 BICYCLE PARKING REVIEW

The bicycle parking provisions of the proposed development have been assessed according to the standards set out by the City of Waterloo Zoning By-law 2018-050. Of note, according to the Zoning By-law, for the calculation of required parking, fractions shall be rounded up to the nearest whole number.

The required bicycle parking rates and provisions are summarized in **Table 8-1**.

Table 8-1: Zoning By-law Bicycle Parking Requirements

Land Use	Unit Count/ GFA	Type of Space	ZBL 2018-050		Proposed Supply
			Required Rate	Required Bicycle Parking	
Residential	3652 Units	Type 'A' (Long-Term)	0.3 spaces/unit	1,100	1,104
		Type 'B' (Short-Term)		1,100	1,105
Retail(1)	342 m^2	Type 'A' (Long-Term) or Type 'B' (Short-Term)	40% of required vehicle spaces	2	-
Commercial	6,582 m^2	Type 'A' (Long-Term)	40% of required spaces (50% Type A)	21	-
		Type 'B' (Short-Term)	40% of required spaces (50% Type B)	21	-
Industrial	15,315.9 m^2	Type 'A' (Long-Term)	40% of required spaces (50% Type A)	47	-
		Type 'B' (Short-Term)	40% of required spaces (50% Type B)	47	-
			Total	2,338	2,209

Note: (1) According to ZBL 2018-050 Section 6.6.2.c.i. For non-residential uses, bicycle parking spaces shall be provided at a minimum rate of 40% of the required motor vehicle parking spaces. The requirement may be satisfied as Type A or Type B.

Based on the City of Waterloo Zoning By-law 2018-050, a total of 2,338 bicycle parking spaces are required for the proposed development. In total, 2,209 bicycle parking spaces are provided.

The location of the bicycle parking will be refined through future iterations of the site plan to ensure bicycle parking spaces are located in convenient locations.

8.2 VEHICLE PARKING REVIEW

The site is within an MTSA for the Northfield LRT Station, therefore, has no minimum vehicular parking requirements as per Bill 185. The proposed parking supply is summarized in **Table 8-2**.

Table 8-2: Proposed Vehicle Parking Supply

Land Use	Unit Count/ GFA	Proposed Supply
Residential	3652 Units	2,922
Visitor		
Retail	342 m^2	
Commercial	6,582 m^2	403
Industrial	15,315.9 m^2	
	Total	3,325

9 LOADING AND SITE CIRCULATION ASSESSMENT

9.1 LOADING REQUIREMENTS

The loading provisions of the proposed development have been assessed according to the standards set out by the City of Waterloo Zoning By-law 2018-050.

The required loading rates and provisions are summarized in **Table 9-1**.

Table 9-1: Zoning By-law Loading Requirements

Block	Bedroom Count/Retail BFA	City of Waterloo ZBL 2018-050		Proposed Supply
		Loading Rate	Loading Space Required	
A	239	76 to 900	1 Type A	2 Type A
B	660	77 to 900	1 Type A	2 Type A
C	561	76 to 900	1 Type A	2 Type A
D	601	76 to 900	1 Type A	
	341.9	250 - 2500	1 Type B	2 Type A + 1 Type B
		Sub-Total	**4 Type A 1 Type B**	**8 Type A 1 Type B**
E	329	76 to 900	1 Type A	2 Type A
F	498	76 to 900	1 Type A	2 Type A
G	502	76 to 900	1 Type A	2 Type A
H	262	76 to 900	1 Type A	2 Type A
		Sub-Total	**4 Type A**	**7 Type A**
I	2714.4	2501 - 4000	2 Type B	
J	3890.5	2501 - 4000	2 Type B	
K	4855.5	4001 - 10000	2 Type B & 1 Type C	
L	10460.4	10001 or more	2 Type B & 2 Type C	
		Sub-Total	**8 Type B 3 Type C**	
		Total	**8 Type A 9 Type B 3 Type C**	**15 Type A 1 Type B**

Note: (1) According to ZBL 2018-050 Section 6.9.5.3. For buildings containing both residential and non-residential uses, the provision of a non-residential loading space shall be deemed to satisfy the requirement for a residential loading space provided the loading space is accessible to both the non-residential and residential uses.

According to Zoning By-law 2018-050, the proposed development is required to provide 8 Type "A" loading spaces, 9 Type "B" loading spaces, and 3 Type "C" loading spaces. The development is proposing 15 Type "A" and 1 Type "B" loading spaces for the proposed development.

Loading spaces will be refined through future iterations of the site plan to ensure bicycle parking spaces are located in convenient locations for commercial and industrial land uses.

10 TRANSPORTATION DEMAND MANAGEMENT PLAN

Transportation Demand Management (TDM) is a set of strategies that strive towards a more efficient transportation network by influencing travel behaviour. Effective TDM measures can reduce vehicle usage and encourage residents to engage in more sustainable methods of travel. There are various opportunities to incorporate TDM measures that support alternative modes of transportation. The recommendations should enhance non-single occupant auto vehicle trips for future residents of the subject development.

The TDM Plan should influence how, when, where, and why trips will be made to and from the site. To demonstrate that the proposed development is transit-supportive, an acceptable TDM Plan for new non-residential and mixed-use developments in the Urban Growth Centres, Major Transit Station Areas and Reurbanization Corridors of Cambridge, Kitchener and Waterloo will include a completed TDM Checklist.

The Region of Waterloo TDM Checklist outlines initiatives that are organized into four (4) different categories:

1. **Site Access:** In creating an environment that supports pedestrian and cycling activity, the public realm must be accessible, safe, and comfortable to encourage movement on the street and in the surrounding area(s). These facilities should encourage walking and cycling.
2. **Public Transportation Access:** The availability and proximity of convenient public transit service with direct pedestrian linkages to the building will provide viable travel options for employees, visitors and residents.
3. **Parking:** Vehicle parking facilities can affect the character, travel mode and cost of a development. Reducing the parking supply to match expected demand can have a positive influence on the selection of alternative travel modes.
4. **Trip Reduction Incentives:** A formal TDM plan will identify specific initiatives that will be initiated in order to encourage reduced single occupant vehicle travel.

In addition to the active transportation and transit routes in the area, there are several opportunities to incorporate TDM measures into the proposed development that support alternative modes of transportation. As per the Region of Waterloo TDM Implementation Checklist, a minimum of 24 points are required for the development to be TDM supportive.

The following sections detail the recommendations and proposed TDM initiatives for the development proposal to meet the requirements. The full TDM Checklist is provided in **Appendix I**.

10.1 CATEGORY 1: SITE ACCESS

(A1) Development incorporates functional building entrances that are oriented to public space or to locations where pedestrians and transit users arrive from such as a street, square, park, or plaza.

The primary residential building entrances are located facing the internal street network and the non-residential entrances in Buildings I to L face the surface parking lots, which minimize travel distances to sidewalks and transit stops while maximizing visibility to encourage pedestrian activity. The pedestrian realm along Northfield Drive and the private road will also provide a pleasant and safe experience through enhanced landscaping and adequate lighting.

TDM Checklist Score: The provision of this TDM measure awards a score of 2.

(A2) External to the site: continuous sidewalks (consistent with AODA Accessible Built Environment Standard) are provided along both sides of all adjacent public streets (over and above requirement).

Internal to the site: Pedestrian walkways (consistent with AODA Accessible Built Environment Standard e.g. 1.8 m min. width) are provided through large parking areas to link the building with the public street sidewalk system.

The proposed site plan ensures safe, comfortable, and convenient connections to the external pedestrian network. Sidewalks are proposed along the internal site as part of the development proposal and are proposed to connect to existing sidewalks along Northfield Drive.

TDM Checklist Score: The provision of this TDM measure awards a score of 1.

(A5) Provision of active uses at-grade along street frontages (e.g. retail).

The inclusion of ground-floor retail in the same buildings as residential units in Building D provides a great opportunity for residents to walk to retail destinations that they may otherwise drive to. This retail space within the proposed development will also provide opportunities for nearby residents to walk to their destinations via Northfield Drive, or from nearby transit stops, which will ultimately further discourage automobile travel in the area.

TDM Checklist Score: The provision of this TDM measure awards a score of 2.

10.2 CATEGORY 2: PUBLIC TRANSPORTATION ACCESS

(B1) Bus shelters with seating are provided at the transit stop immediately adjacent to the development in consultation with Transportation Planning and the Region of Waterloo.

Currently, along Northfield Drive, there are some bus shelters with seating provided at the transit stops. It is recommended that with the construction of the development, the transit stops near the development where applicable are designed with shelters and seating provided.

TDM Checklist Score: The provision of this TDM measure awards a score of 1.

(B3a) Located within 800 m of a Rapid Transit Station.

As mentioned, according to the Region of Waterloo Official Plan, the proposed development is within the MTSA. As part of GRT Route 301 – ION Light Rail, the Northfield LRT Station is located approximately 240 m (or a 3-minute walk) south of the subject site, providing a convenient connection to the overall transit network. The LRT route operates with headways of approximately 15-minutes. The subject site's location provides convenient access for pedestrians and transit users.

TDM Checklist Score: The provision of this TDM measure awards a score of 5.

10.3 CATEGORY 3: PARKING

(C7) Parking is not located on major street frontage or between a road right of way and the building façade.

Based on the latest site plan, no parking is provided on any major street frontage or between a road right of way and the building façade. Parking for residential uses is provided in underground and above ground parking structures. Parking for commercial and industrial land uses is provided in a surface lot directly outside of each building.

TDM Checklist Score: Provision of this TDM measure awards a score of 3.

(C10) 75% of parking or more is located underground or in a structure.

The development proposes a total of 3,325 parking spaces, which exceeds the minimum by-law requirement. Of this supply, approximately 2,918 spaces (or approximately 88% of spaces) are provided underground or in an above ground structure. This exceeds the TDM measure of providing 75% of parking underground or in a structure.

TDM Checklist Score: The provision of this TDM measure awards a score of 15.

10.4 CATEGORY: 4: TRIP REDUCTION INCENTIVES

(D4) The building owner/occupant agrees to charge for parking as an unbundled cost to occupants.

Selling or leasing parking spaces separately from the sale or lease of each residential unit can lead to lower rates of vehicle ownership and can be used as a selling feature in an area well-served by transit and/or cycling infrastructure. It is recommended that the proposed development unbundle the cost of parking from new dwelling units to support zero-car households and reduce parking demand from the proposed development.

TDM Checklist Score: The provision of this TDM measure awards a score of 5.

(D6) The building owner/occupant has prepared a TDM plan to the satisfaction of the Region of Waterloo and the Area municipality that targets a 10% reduction in peak hour trips using forecast trip generation with status quo travel characteristics.

A requirement of the TDM Plan is to identify and evaluate the effects of the measures proposed, which may include:

- Reducing trip generation;
- Reducing the proportion of trips in the peak hour; and
- Increasing the modal share of trips by walking, cycling, and transit, and/or increase auto occupancy.

The effects should be calculated as adjustments to the basic travel demand estimates.

As discussed in **Section 4**, the mix of uses proposed on the site is expected to reduce the site's vehicle trip generation by 5% in the AM peak hour and 9% in the PM peak hour. Furthermore, the site plan enhances the pedestrian environment of the area with features such as accessible sidewalks, bus shelters with seating, and the screening of parking underground or away from key pedestrian corridors. The unbundled

parking cost for residents of the site also disincentivizes automobile ownership and therefore is likely to increase the non-auto mode share.

A TDM plan has been prepared and as seen in **Appendix I**. As summarized above, it is expected that the TDM Plan will encourage the use of non-auto modes to and from the site, thereby reducing the vehicle trip generation of the site by at least 10%.

TDM Checklist Score: The provision of this TDM measure awards a score of 10.

(D10) The development includes mixed uses (i.e. retail, commercial or food services, daycare, or other complementary uses) on-site or located within 400 metres.

The inclusion of ground-floor retail in the same building as residential units (within Building D), provides a great opportunity for residents to walk to retail destinations that they may otherwise drive to. In addition, commercial and industrial space is proposed on the north side of the site, offering employment opportunities and convenient access to services for residents on the site. This mix of uses within the proposed development will provide opportunities for nearby local residents to walk to the destinations via the Northfield Drive West sidewalk network, or from nearby transit stops, which will ultimately further discourage automobile travel in the area.

TDM Checklist Score: The provision of this TDM measure awards a score of 2.

10.5 IMPACT OF TDM MEASURES

The proposed TDM measures are expected to further reduce the site's SOV trips by increasing the convenience and attractiveness of taking transit, walking, or cycling to/from the subject site. A summary of the abovementioned TDM measures that are reflected in the development proposal has been prepared in the form of a TDM Checklist based on the Region of Waterloo's Guidelines. **Table 10-1** summarizes the proposed strategies.

Table 10-1: TDM Summary and Estimated Impacts

TDM Initiative		Category Maximum	TDM Score
Category 1: Site Access			
(A1)	Development incorporates functional building entrances that are oriented to public space or to locations where pedestrians and transit users arrive from such as a street, square, park, or plaza.	10	2
(A2)	External to the site: continuous sidewalks (consistent with AODA Accessible Built Environment Standard) are provided along both sides of all adjacent public streets (over and above requirement). Internal to the site: Pedestrian walkways (consistent with AODA Accessible Built Environment Standard e.g. 1.8 m min. width) are provided through large parking areas to link the building with the public street sidewalk system.		1
(A5)	Provision of active uses at-grade along street frontages (e.g. retail).		2
	Category 1 Total	**10**	**5**
Category 2: Public Transportation Access			
(B1)	Bus shelters with seating are provided at the transit stop immediately adjacent to the development in consultation with Transportation Planning and the Region of Waterloo.	5	1
(B3a)	Located within 800 m of a Rapid Transit Station.		5
	Category 2 Total	**5**	**6**
Category 3: Parking			
(C7)	Parking is not located on major street frontage or between a road right of way and the building façade.	25	3
(C10)	75% of parking or more is located underground or in a structure.		15
	Category 3 Total	**25**	**18**
Category 4: Trip Reduction Incentives			
(D4)	The building owner/occupant agrees to charge for parking as an unbundled cost to occupants.	25	5
(D6)	The building owner/occupant has prepared a TDM plan to the satisfaction of the Region of Waterloo and the Area municipality that targets a 10% reduction in peak hour trips using forecast trip generation with status quo travel characteristics.		10
(D10)	The development includes mixed uses (i.e. retail, commercial or food services, daycare, or other complementary uses) on-site or located within 400 metres.		2
	Trip Reduction Incentives Total	**25**	**17**
	Overall Total	**65**	**45**

The combination of these TDM strategies listed above is expected to reduce the auto-dependency of residents and visitors to, from, and within the subject development and encourage more sustainable travel habits. Overall, the development receives a total of 45 points, which indicates that the development is TDM Supportive according to the Region of Waterloo TDM Implementation Checklist. Of note, for certain categories, there are upper maximum limits for points achievable.

Additionally, it is anticipated that these measures will contribute to a 15% single-occupancy vehicle reduction for the subject development. Based on the subject development's location within an MTSA and

within walking distance of the Northfield ION LRT Station, as well as dedicated on-street cycling and pedestrian facilities, the proposed TDM measures are considered to be appropriate for a development of this size and will support leveraging the available multi-modal transportation network.

11 CONCLUSIONS AND RECOMMENDATIONS

- The development proposal consists of 12 building with a total of 3,652 residential units and approximately 22,239 m^2 of non-residential GFA. A total of 3,325 vehicle parking spaces are proposed. Access to the development is proposed via Northfield Drive West along the south frontage and via Parkside Drive by way of Weber Street North or Northfield Drive West.
- According to both the Region of Waterloo and City of Waterloo Official Plans, developments located within a 600 to 800 metre radius of a rapid transit station are considered Major Transit Station Areas (MTSAs). MTSAs are planned and developed to achieve increased densities that support and ensure the viability of existing and planned rapid transit service levels and include a mix of residential, office, institutional and commercial development.
- The subject site is well served by existing transit services along Northfield Drive West and the surrounding road and transit network provided by Grand River Transit (GRT). Bus stops are located at the intersection of Northfield Drive West and Parkside Road, which is immediately adjacent to the subject site. In addition, the site is within an MTSA for the Northfield LRT Station, which is located approximately 240 m (or a 3-minute walk) south of the subject site, providing a convenient connection to the overall transit network.
- As the existing uses on-site will be replaced, the net site trip generation was calculated. The proposed development is anticipated to generate an additional 844 two-way auto trips (188 inbound, 656 outbound) during the AM peak hour and 1,047 two-way auto trips (620 inbound, 427 outbound) during the PM peak hour.
- The intersection capacity analysis findings indicate that the proposed development will have an acceptable impact on the surrounding road network. All site accesses are anticipated to operate well. With the optimization of the signal timing plan in the future conditions, minimal changes in operations with the addition of the site traffic in future total conditions was observed and no constraints were identified. It is recommended that signage be provided at Northfield Drive West at Parkside Drive to discourage vehicles from blocking the intersection. Signalization is recommended for the intersection of Weber Street North and Parkside Drive. Additionally, a median has been proposed along Parkside Drive, north of Northfield Drive West.

- The proposed development is considered TDM Supportive according to the Region of Waterloo Implementation Checklist. It is anticipated that these measures will contribute to a 15% single-occupancy vehicle reduction for the subject development. Based on the subject development's location within an MTSA and within walking distance of the Northfield ION LRT Station, as well as dedicated on-street cycling and pedestrian facilities, the proposed TDM measures are considered to be appropriate for a development of this size and will support leveraging the available multi-modal transportation network.



APPENDIX A

Terms of Reference

Appendix 1: City of Waterloo PRE-STUDY CONFERENCE FORM

Item	Description	Details
ISSUES		
1	List any issues expected that may impact the content or recommendations of the subject Transportation Impact Study.	o Intersection of Northfield and Weber is o currently under construction o o
INTRODUCTION		
2	Nature of application (Attach a drawing)	☒ Official Plan Amendment ☒ Zoning Amendment o Site Plan Control Application o Plan of Subdivision o Community Plan o Other
3	TIS process, and relevant policies, procedures and approvals	☒ Guidelines for the preparation of Transportation Impact Studies in Support of Development Applications ☒ Transportation Impact Studies Requirements for Capacity Analysis, Roundabouts, Turn Lanes ☒ Safety Analysis Checklist ☒ Policy and Procedures for Access onto Regional Roads
4	Public Meeting	☒ Required o Not Required
CONTEXT		
5	Study intersections (Intersections to be analyzed) Note: the consultant is responsible to identify any further intersections impacted as the study progresses.	o Northfield Dr W at Weber St N o Northfield Dr W at Access 1 o Northfield Dr W at Parkside Dr o Northfield Dr W at Kumpf Dr o Northfield Dr W at SB Off Ramp o Northfield Dr W at NB Off Ramp o Weber St N at Parkside Dr
6	Size and number of phases of development	☒ Phase 1: TBC ☒ Phase 2: TBC o Phase 3: o Phase 4: o Phase 5:
7	Approved and pending approval development applications	o 562-565 Conestogo Road, Waterloo o o
8	Planned transportation system improvements	o bike lanes proposed along various roads o in study area o
TRAVEL DEMAND		
9	Horizon years	o 5 years from date of TIS o 5 years after full occupancy ☒ Transportation Plan horizon for large scale projects o Interim years o Other…

Item	Description	Details
10	Peak hour determination	☒ AM weekday peak hour of adjacent roadway ☒ PM weekday peak hour of adjacent roadway o Saturday peak of adjacent roadway o AM weekday peak hour of development o PM weekday peak hour of development o Saturday peak of development o Other…
11	Background	o Historical traffic/transit counts ☒ ROW travel demand forecasts o Approved and pending approval development applications o Other…
12	Trip generation	☒ ITE average rates o ITE fitted equation o Rates published elsewhere o Observed rates for similar areas o Observed rates for similar developments in the local area o Other…
13	Trip reductions (TDM, internal, pass-by)	o Transportation Demand Management Checklist o Published Travel Demand Management reductions o Observed Travel Demand Management reductions ☒ ITE internal capture reductions for mixed-use developments o Observed internal capture reductions for mixed-use developments ☒ ITE pass-by reductions o Observed pass-by reductions for similar developments ☒ Other…
14	Trip distribution	☒ ITE trip distribution IN/OUT split o Regional travel demand o Population and employment distribution o Market analysis of catchment area o Other…
15	Trip assignment	☒ Local traffic pattern ☒ Site layout and access design o Existing turning movements o Other…
EVALUATION OF IMPACTS		
16	Traffic impact analysis (Use approved software)	☒ Unsignalized intersections ☒ left turn warrant analysis ☒ signal warrant analysis ☒ Signalized intersections ☒ LOS, v/c, delay, queuing o ROW saturation flow rates ☒ Existing signal timings for existing conditions ☒ Optimize signal timings for future conditions ☒ Use existing cycle length to respect coordinated corridor o Queuing analysis o Roundabouts o Other…

Item	Description	Details
17	Roundabout feasibility (Use approved software)	o Initial screening o Intersection control study (10 year horizon)
18	Transit assessment	☒ Frequency and hours of service ☒ Presence of bus stops o Reliability of service o Passenger loads ☒ Travel time o Other
19	Pedestrian assessment	☒ Presence, connectivity, and width of sidewalks ☒ Barriers and buffers from traffic ☒ Crossing opportunities at intersections ☒ Delay at intersections ☒ Number of driveways and traffic volumes at the driveways ☒ Presence of illumination ☒ Future needs (desire lines / policy / accessibility / demand) o Other
20	Cycling assessment	☒ Presence of a dedicated facility ☒ Network connectivity ☒ Number and width of travel lanes adjacent to the route ☒ Volume and speed of traffic ☒ Percentage of trucks and buses encountered o Pavement condition ☒ Presence of parking /showers/change rooms ☒ Future needs (desire lines / policy / demand) o Other
21	Safety analysis	o Road safety review ☒ Collision risk analysis ☒ Access conflict evaluation
22	Site access and circulation	☒ Review sight distances at all new access points ☒ Internal traffic controls ☒ Loading facilities and access ☒ Service/maintenance vehicle access ☒ Emergency vehicle access
23	Submission format	o Three hard copies of main report including appendices (other than analysis results/output e.g. Synchro reports) o Minimum one original hard copy must be sealed by a professional engineer ☒ Electronic copy of complete report and all appendices ☒ Electronic copy of operational analysis files (e.g. Synchro, Arcady ☒ Electronic copy of all signal warrant calculation files o Other

APPENDIX B

Traffic Data & Signal Timing Plans

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Morning Peak Diagram

Count Period
From: 7:30 AM
To: 10:30 AM

Peak Hour
From: 8:00 AM
To: 9:00 AM

Municipality: Waterloo
Intersection: Northfield Dr @ Parkside Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 692
Count Date: Tuesday, 25-Oct-22

North Leg Total: 122
North Entering: 56
North Peds: 6
Peds Cross: ⋈

% Trks	0%	20%	4%	
Heavys	0	2	2	4
Trucks	0	0	0	0
Cars	1	8	43	52
Total	1	10	45	

Heavys	Trucks	Cars	Total
17	12	599	628

Heavys	Trucks	Cars	Total
10	0	56	66

East Leg Total: 2,369
East Entering: 1,060
East Peds: 3
Peds Cross: ⋈

Parkside Dr

Total	Cars	Trucks	Heavys	% Trks
56	49	0	7	13%
611	582	12	17	5%
393	387	2	4	2%
	1,018	14	28	

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Northfield Dr

% Trks	Heavys	Trucks	Cars	Total
0%	0	0	2	2
5%	35	14	1,000	1,049
8%	0	2	22	24
	35	16	1,024	

Northfield Dr

Cars	Trucks	Heavys	Total
1,253	16	40	1,309

Parkside Dr

Peds Cross: ⋈
West Peds: 10
West Entering: 1,075
West leg Total: 1,703

Heavys	6
Trucks	4
Cars	417
Total	427

Total	16	8	215	
Cars	16	5	210	231
Trucks	0	0	2	2
Heavys	0	3	3	6
% Trks	0%	38%	2%	

Peds Cross: ⋈
South Peds: 18
South Entering: 239
South leg Total: 666

Comments

To determine total vehicles entering the intersection during morning peak hour, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **2,430**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **1,075**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Mid-day Peak Diagram

Count Period
From: 12:00 PM
To: 2:00 PM

Peak Hour
From: 12:00 PM
To: 1:00 PM

Municipality: Waterloo
Intersection: Northfield Dr @ Parkside Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 692
Count Date: Tuesday, 25-Oct-22

North Leg Total: 180
North Entering: 90
North Peds: 12
Peds Cross: ⋈

% Trks	50%	10%	5%	
Heavys	0	2	1	3
Trucks	1	1	2	4
Cars	1	27	55	83
Total	2	30	58	

Heavys	Trucks	Cars	Total
21	8	699	728

Northfield Dr

% Trks	Heavys	Trucks	Cars	Total
0%	0	0	3	3
6%	27	14	652	693
13%	2	2	27	31
	29	16	682	

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Heavys	5
Trucks	4
Cars	81
Total	90

East Leg Total: 1,998
East Entering: 991
East Peds: 8
Peds Cross: ⧖

Parkside Dr

Total	Cars	Trucks	Heavys	% Trks
61	57	3	1	7%
702	675	6	21	4%
228	217	2	9	5%
	949	11	31	

Northfield Dr

Cars	Trucks	Heavys	Total
951	22	34	1007

Parkside Dr

Total	24	26	256	
Cars	23	21	244	288
Trucks	1	1	6	8
Heavys	0	4	6	10
% Trks	4%	19%	5%	

Peds Cross: ⧖
West Peds: 7
West Entering: 727
West leg Total: 1,455

Heavys	13
Trucks	5
Cars	271
Total	289

Peds Cross: ⋈
South Peds: 16
South Entering: 306
South leg Total: 595

Comments

To determine total vehicles entering the intersection during mid-day peak hour, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **2,114**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **727**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Afternoon Peak Diagram

Count Period
From: 3:00 PM
To: 6:00 PM

Peak Hour
From: 4:30 PM
To: 5:30 PM

Municipality: Waterloo
Intersection: Northfield Dr @ Parkside Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 692
Count Date: Tuesday, 25-Oct-22

North Leg Total: 220
North Entering: 119
North Peds: 9
Peds Cross: ⋈

% Trks	0%	7%	1%	
Heavys	0	2	0	2
Trucks	0	0	1	1
Cars	3	26	87	116
Total	3	28	88	

Heavys	Trucks	Cars	Total
12	6	1,341	1,359

Northfield Dr

% Trks	Heavys	Trucks	Cars	Total
0%	0	0	0	0
3%	12	14	876	902
0%	0	0	30	30
	12	14	906	

Heavys	6
Trucks	1
Cars	94
Total	101

East Leg Total: 3,084
East Entering: 1,698
East Peds: 11
Peds Cross: ⧖

Parkside Dr

Total	Cars	Trucks	Heavys	% Trks
86	83	1	2	3%
1,324	1,307	5	12	1%
288	284	2	2	1%
	1,674	8	16	

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Northfield Dr

Cars	Trucks	Heavys	Total
1,357	17	12	1,386

Parkside Dr

Total	32	15	396
Cars	31	11	394	436
Trucks	1	0	2	3
Heavys	0	4	0	4
% Trks	3%	27%	1%	

Peds Cross: ⧖
West Peds: 2
West Entering: 932
West leg Total: 2,291

Heavys	4
Trucks	2
Cars	340
Total	346

Peds Cross: ⋈
South Peds: 25
South Entering: 443
South leg Total: 789

Comments

To determine total vehicles entering the intersection during afternoon peak hour, add all leg totals entering.

Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering

Example 1: Therefore, total vehicles entering intersection = **3,192**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn

Therefore, vehicles entering from the west = **932**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Total Count Diagram

Municipality: Waterloo
Intersection: Northfield Dr @ Parkside Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 692
Count Date: Tuesday, 25-Oct-22

North Leg Total:	1,214
North Entering:	602
North Peds:	71
Peds Cross:	⋈
Bicycles Entering:	7
Buggies Entering:	0

% Trks	14%	11%	4%	
Heavys	1	16	8	25
Trucks	1	1	8	10
Cars	12	137	418	567
Total	14	154	434	

Heavys	Trucks	Cars	Total	
128	70	6,360	6,558	

Heavys	53			
Trucks	11			
Cars	548			
Total	612			

East Leg Total:	18,117
East Entering:	9,021
East Peds:	54
Peds Cross:	⧖
Bicycles Entering:	24
Buggies Entering:	0

Parkside Dr

Total	Cars	Trucks	Heavys	% Trks
461	433	8	20	6%
6,339	6,146	66	127	3%
2,221	2,150	26	45	3%
	8,729	100	192	

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Northfield Dr

% Trks	Heavys	Trucks	Cars	Total
0%	0	0	14	14
4%	177	105	6,196	6,478
4%	3	7	216	226
	180	112	6,426	

Northfield Dr

Cars	Trucks	Heavys	Total
8,748	143	205	9,096

Parkside Dr

Total	205	137	2,184	
Cars	202	101	2,134	2,437
Trucks	3	3	30	36
Heavys	0	33	20	53
% Trks	1%	26%	2%	

Peds Cross:	⧖
West Peds:	46
West Entering:	6,718
West leg Total:	13,276
Bicycles Entering:	16
Buggies Entering:	0

Heavys	64
Trucks	34
Cars	2,503
Total	2,601

Peds Cross:	⋈
South Peds:	131
South Entering:	2,526
South leg Total:	5,127
Bicycles Entering:	27
Buggies Entering:	0

Comments

To determine total vehicles entering the intersection, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **18,867**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **6,718**

Notes: None

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Estimated Daily Traffic

Total Factor = Monthly Factor 1 x Daily Factor 1 x 24 Hour Factor 1.74 = 1.740000

Municipality: Waterloo
Intersection: Northfield Dr @ Parkside Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 692
Count Date: Tuesday, 25-Oct-22

North Leg Total: 2,112
North Entering: 1,047
North Peds: N/A
Peds Cross: ⋈

% Trks	14%	11%	4%	
Heavys	2	28	14	44
Trucks	2	2	14	17
Cars	21	238	727	987
Total	24	268	755	

Heavys	Trucks	Cars	Total
223	122	11,066	11,411

Parkside Dr

Heavys	Trucks	Cars	Total
92	19	954	1065

East Leg Total: 31,524
East Entering: 15,697
East Peds: N/A
Peds Cross: ⧖

Total	Cars	Trucks	Heavys	% Trks
802	753	14	35	6%
11,030	10,694	115	221	3%
3,865	3,741	45	78	3%
	15,188	174	334	

Northfield Dr

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% Trks	Heavys	Trucks	Cars	Total
0%	0	0	24	24
4%	308	183	10,781	11,272
4%	5	12	376	393
	313	195	11,181	

Northfield Dr

Cars	Trucks	Heavys	Total
15,222	249	357	15,827

Parkside Dr

Peds Cross: ⧖
West Peds: N/A
West Entering: 11,689
West leg Total: 23,100

Heavys	111
Trucks	59
Cars	4,355
Total	4,526

Total	357	238	3,800	
Cars	351	176	3,713	4,240
Trucks	5	5	52	63
Heavys	0	57	35	92
% Trks	1%	26%	2%	

Peds Cross: ⋈
South Peds: N/A
South Entering: 4,395
South leg Total: 8,921

Comments

To determine the EDT (Estimated Daily Traffic), add all four leg totals and divide by two.
This will give you the approximate number of vehicles entering and exiting the intersection in a 24-hour period

Example: $\frac{\text{(West leg total + South leg total + East leg total + North leg total)}}{2}$ ***EDT =*** ***32,829***

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Peak Hour Factor By Movement

Municipality: Waterloo
Intersection: Northfield Dr @ Parkside Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 692
Count Date: Tuesday, 25-Oct-22

North Approach PHF

AM Peak:	0.74
Mid-day Peak:	0.73
PM Peak:	0.74

	Movement		
PM	0.25	0.64	0.85
MID	0.50	0.68	0.73
AM	0.25	0.42	0.80

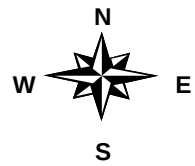
Parkside Dr

East Approach PHF

AM Peak:	0.87
Mid-day Peak:	0.95
PM Peak:	0.94

AM AM Peak Hour
MID Mid-day Peak Hour
PM PM Peak Hour

Northfield Dr



Movement	AM	MID	PM
	0.74	0.85	0.77
	0.87	0.93	0.91
	0.91	0.89	0.97

Northfield Dr

Movement	PM	MID	AM
	0.00	0.75	0.25
	0.92	0.95	0.91
	0.75	0.70	0.67

Parkside Dr

West Approach PHF

AM Peak:	0.90
Mid-day Peak:	0.93
PM Peak:	0.92

0.80	0.67	0.81	AM
0.86	0.81	0.89	MID
0.57	0.75	0.94	PM

Movement

South Approach PHF

AM Peak:	0.82
Mid-day Peak:	0.91
PM Peak:	0.89

Comments

Intersection: Northfield Dr @ Parkside Dr
GeoID: 692
Municipality: Waterloo
Major Road: Northfield Dr

Intersection Control: Signalized
Date: Tuesday, 25-Oct-22
Name: Cam
Weather: Cloudy/Dry

	EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND			TOTAL	TOTAL HOUR
Approach Control	***Signalized***			***Signalized***			***Signalized***			***Signalized***				
7:30 to 7:45	0	221	3	47	72	8	2	1	56	6	0	0	416	
7:45 to 8:00	0	243	8	46	87	8	4	5	62	9	4	0	476	
8:00 to 8:15	2	244	3	94	145	12	4	0	64	14	1	0	583	
8:15 to 8:30	0	268	4	90	150	7	4	3	66	7	1	1	601	2,076
8:30 to 8:45	0	249	8	101	140	18	3	3	42	11	2	0	577	2,237
8:45 to 9:00	0	288	9	108	176	19	5	2	43	13	6	0	669	2,430
9:00 to 9:15	1	166	5	113	164	9	8	3	45	5	4	0	523	2,370
9:15 to 9:30	0	200	9	82	125	9	5	3	41	11	7	0	492	2,261
9:30 to 9:45	0	168	6	66	123	9	1	5	37	8	1	0	424	2,108
9:45 to 10:00	0	175	7	67	147	13	5	3	36	9	2	1	465	1,904
10:00 to 10:15	0	146	7	59	137	6	3	3	46	8	4	0	419	1,800
10:15 to 10:30	0	173	7	54	123	9	4	4	52	7	2	0	435	1,743
AM Peak Hour														
8:00 to 9:00	**2**	**1,049**	**24**	**393**	**611**	**56**	**16**	**8**	**215**	**45**	**10**	**1**	**2,430**	
# of trucks in peak	0	14	2	2	12	0	0	0	2	0	0	0	32	
# of heavies in peak	0	35	0	4	17	7	0	3	3	2	2	0	73	
% heavies (Total)	0%	5%	8%	2%	5%	13%	0%	38%	2%	4%	20%	0%	4%	
12:00 to 12:15	1	183	11	55	180	14	7	7	64	13	4	1	540	
12:15 to 12:30	0	173	6	64	171	11	6	8	59	14	11	0	523	
12:30 to 12:45	1	163	8	53	163	18	5	7	72	11	5	0	506	
12:45 to 13:00	1	174	6	56	188	18	6	4	61	20	10	1	545	2,114
13:00 to 13:15	1	181	4	58	159	8	8	5	48	13	5	0	490	2,064
13:15 to 13:30	0	172	7	56	176	8	7	4	68	12	5	1	516	2,057
13:30 to 13:45	1	180	4	50	179	22	10	9	49	14	2	0	520	2,071
13:45 to 14:00	2	159	7	50	156	7	6	3	77	14	7	1	489	2,015
Midday Peak Hour														
12:00 to 13:00	**3**	**693**	**31**	**228**	**702**	**61**	**24**	**26**	**256**	**58**	**30**	**2**	**2,114**	
# of trucks in peak	0	14	2	2	6	3	1	1	6	2	1	1	39	
# of heavies in peak	0	27	2	9	21	1	0	4	6	1	2	0	73	
% heavies (Total)	0%	6%	13%	5%	4%	7%	4%	19%	5%	5%	10%	50%	5%	
15:00 to 15:15	0	200	7	62	206	10	7	3	69	14	3	0	581	
15:15 to 15:30	0	214	8	67	237	16	3	2	87	10	3	0	647	
15:30 to 15:45	0	194	13	69	253	25	8	3	89	21	7	2	684	
15:45 to 16:00	0	251	2	72	226	12	4	8	88	19	2	0	684	2,596
16:00 to 16:15	0	203	7	63	285	15	9	7	98	22	9	0	718	2,733
16:15 to 16:30	0	217	10	72	254	26	5	6	90	10	6	1	697	2,783
16:30 to 16:45	0	245	9	70	318	21	4	3	89	22	6	0	787	2,886
16:45 to 17:00	0	246	5	73	332	25	8	3	105	25	6	0	828	3,030
17:00 to 17:15	0	190	6	74	365	12	14	5	105	26	11	3	811	3,123
17:15 to 17:30	0	221	10	71	309	28	6	4	97	15	5	0	766	3,192
17:30 to 17:45	2	174	9	82	318	19	14	5	89	20	10	1	743	3,148
17:45 to 18:00	2	197	11	77	275	19	20	6	90	11	3	1	712	3,032
PM Peak Hour														
16:30 to 17:30	**0**	**902**	**30**	**288**	**1,324**	**86**	**32**	**15**	**396**	**88**	**28**	**3**	**3,192**	
# of trucks in peak	0	14	0	2	5	1	1	0	2	1	0	0	26	
# of heavies in peak	0	12	0	2	12	2	0	4	0	0	2	0	34	
% heavies (Total)	0%	3%	0%	1%	1%	3%	3%	27%	1%	1%	7%	0%	2%	

Intersection: Northfield Dr @ Parkside Dr
GeoID: 692
Municipality: Waterloo
Major Road: Northfield Dr

Intersection Control: Signalized
Date: Tuesday, 25-Oct-22
Name: Cam
Weather: Cloudy/Dry

PEDESTRIAN CROSSING								
Time			Crossing Approach					
			East App.	West App.	North App.	South App.	TOTAL	TOTAL HOUR
7:30	to	7:45	0	1	1	3	5	
7:45	to	8:00	1	2	3	11	17	
8:00	to	8:15	0	0	1	4	5	
8:15	to	8:30	0	1	3	2	6	33
8:30	to	8:45	2	5	1	7	15	43
8:45	to	9:00	1	4	1	5	11	37
9:00	to	9:15	0	2	1	2	5	37
9:15	to	9:30	1	2	1	3	7	38
9:30	to	9:45	0	1	2	3	6	29
9:45	to	10:00	1	2	2	1	6	24
10:00	to	10:15	1	1	2	3	7	26
10:15	to	10:30	0	1	0	5	6	25
AM Peak Hour							**96**	
8:00	**to**	**9:00**	**3**	**10**	**6**	**18**	**37**	
12:00	to	12:15	1	2	4	2	9	
12:15	to	12:30	4	1	0	2	7	
12:30	to	12:45	1	2	5	5	13	
12:45	to	13:00	2	2	3	7	14	43
13:00	to	13:15	5	2	6	5	18	52
13:15	to	13:30	1	1	0	4	6	51
13:30	to	13:45	2	0	1	2	5	43
13:45	to	14:00	2	0	1	0	3	32
Midday Peak Hour							**75**	
12:00	**to**	**13:00**	8	7	12	16	**43**	
15:00	to	15:15	2	1	4	3	10	
15:15	to	15:30	0	2	2	5	9	
15:30	to	15:45	1	2	1	4	8	
15:45	to	16:00	2	2	2	1	7	34
16:00	to	16:15	4	0	5	4	13	37
16:15	to	16:30	3	1	1	4	9	37
16:30	to	16:45	5	0	3	8	16	45
16:45	to	17:00	3	2	4	10	19	57
17:00	to	17:15	1	0	1	4	6	50
17:15	to	17:30	2	0	1	3	6	47
17:30	to	17:45	4	3	3	6	16	47
17:45	to	18:00	2	1	6	3	12	40
PM Peak Hour							**131**	
16:30	**to**	**17:30**	11	2	9	25	**47**	

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Morning Peak Diagram

Count Period
From: 7:30 AM
To: 10:30 AM

Peak Hour
From: 7:45 AM
To: 8:45 AM

Municipality: Waterloo
Intersection: Weber St @ Northfield Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions: Partly Cloudy/Dry

Person(s) who counted: Matt & Doris

GeoID: 8117
Count Date: Wednesday, 08-Jun-22

North Leg Total: 842
North Entering: 469
North Peds: 3
Peds Cross: ⋈

	% Trks	6%	3%	8%	
Heavys		1	6	11	18
Trucks		2	1	2	5
Cars		51	247	148	446
Total		54	254	161	

Heavys	Trucks	Cars	Total
8	24	462	494

Heavys	Trucks	Cars	Total
9	4	360	373

East Leg Total: 1,533
East Entering: 599
East Peds: 14
Peds Cross: ⧖

Weber St

Total	Cars	Trucks	Heavys	% Trks
122	117	3	2	4%
409	381	21	7	7%
68	64	2	2	6%
	562	26	11	

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Northfield Dr

% Trks	Heavys	Trucks	Cars	Total
0%	0	0	144	144
2%	5	7	662	674
1%	1	0	83	84
	6	7	889	

Northfield Dr

Cars	Trucks	Heavys	Total
906	10	18	934

Weber St

Peds Cross: ⧖
West Peds: 16
West Entering: 902
West leg Total: 1,396

Heavys	9	
Trucks	3	
Cars	394	
Total	406	

Total	31	107	99	
Cars	30	99	96	225
Trucks	1	1	1	3
Heavys	0	7	2	9
% Trks	3%	7%	3%	

Peds Cross: ⋈
South Peds: 16
South Entering: 237
South leg Total: 643

Comments

To determine total vehicles entering the intersection during morning peak hour, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **2,207**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **902**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Mid-day Peak Diagram

Count Period
From: 12:00 PM
To: 2:00 PM

Peak Hour
From: 12:00 PM
To: 1:00 PM

Municipality: Waterloo
Intersection: Weber St @ Northfield Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions:
Partly Cloudy/Dry

Person(s) who counted:
Matt & Doris

GeoID: 8117
Count Date: Wednesday, 08-Jun-22

North Leg Total:	893
North Entering:	445
North Peds:	28
Peds Cross:	⋈

	Heavys	Trucks	Cars	Total
% Trks	7%	5%	13%	
Heavys	1	4	15	20
Trucks	3	7	8	18
Cars	56	198	153	407
Total	60	209	176	

East Leg Total:	1,362
East Entering:	704
East Peds:	27
Peds Cross:	⧖

Heavys	Trucks	Cars	Total
7	11	430	448

Weber St

Heavys	Trucks	Cars	Total
6	16	559	581

Total	Cars	Trucks	Heavys	% Trks
156	147	5	4	6%
465	447	13	5	4%
83	80	1	2	4%
	674	19	11	

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Northfield Dr

% Trks	Heavys	Trucks	Cars	Total
8%	2	6	93	101
3%	6	8	405	419
0%	0	0	52	52
	8	14	550	

Northfield Dr

Cars	Trucks	Heavys	Total
621	16	21	658

Weber St

Peds Cross:	⧖
West Peds:	23
West Entering:	572
West leg Total:	1,153

	Heavys	Trucks	Cars	Total
Heavys	6			
Trucks	8			
Cars	330			
Total	344			

Total	56	191	63	
Cars	56	190	63	309
Trucks	0	0	0	0
Heavys	0	1	0	1
% Trks	0%	1%	0%	

Peds Cross:	⋈
South Peds:	26
South Entering:	310
South leg Total:	654

Comments

To determine total vehicles entering the intersection during mid-day peak hour, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **2,031**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **572**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Afternoon Peak Diagram

Count Period
From: 3:00 PM
To: 6:00 PM

Peak Hour
From: 4:45 PM
To: 5:45 PM

Municipality: Waterloo
Intersection: Weber St @ Northfield Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions:
Partly Cloudy/Dry

Person(s) who counted:
Matt & Doris

GeoID: 8117
Count Date: Wednesday, 08-Jun-22

North Leg Total: 1,185
North Entering: 716
North Peds: 16
Peds Cross: ⋈

% Trks	1%	1%	3%	
Heavys	1	0	4	5
Trucks	0	2	3	5
Cars	152	303	251	706
Total	153	305	258	

Heavys	Trucks	Cars	Total
8	10	1,104	1,122

East Leg Total: 1,962
East Entering: 1,192
East Peds: 13
Peds Cross: ⧖

Heavys	5
Trucks	2
Cars	462
Total	469

Weber St

Total	Cars	Trucks	Heavys	% Trks
154	149	1	4	3%
905	889	9	7	2%
133	131	1	1	2%
	1,169	11	12	

Northfield Dr

% Trks	Heavys	Trucks	Cars	Total
2%	1	1	110	112
2%	6	4	430	440
0%	0	0	69	69
	7	5	609	

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Northfield Dr

Cars	Trucks	Heavys	Total
753	7	10	770

Weber St

Total	64	203	72
Cars	63	203	72	338
Trucks	1	0	0	1
Heavys	0	0	0	0
% Trks	2%	0%	0%	

Peds Cross: ⧖
West Peds: 26
West Entering: 621
West leg Total: 1,743

Heavys	1
Trucks	3
Cars	503
Total	507

Peds Cross: ⋈
South Peds: 18
South Entering: 339
South leg Total: 846

Comments

To determine total vehicles entering the intersection during afternoon peak hour, add all leg totals entering.

Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering

Example 1: Therefore, total vehicles entering intersection = **2,868**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn

Therefore, vehicles entering from the west = **621**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Total Count Diagram

Municipality: Waterloo
Intersection: Weber St @ Northfield Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions: Partly Cloudy/Dry

Person(s) who counted: Matt & Doris

GeoID: 8117
Count Date: Wednesday, 08-Jun-22

North Leg Total:	7,443
North Entering:	4,169
North Peds:	137
Peds Cross:	⋈
Bicycles Entering:	59
Buggies Entering:	0

% Trks	4%	4%	8%	
Heavys	19	34	86	139
Trucks	16	32	35	83
Cars	748	1,778	1,421	3,947
Total	783	1,844	1,542	

Heavys	Trucks	Cars	Total
72	107	5,178	5,357

Heavys	72		
Trucks	48		
Cars	3,154		
Total	3,274		

East Leg Total:	11,985
East Entering:	6,022
East Peds:	125
Peds Cross:	⧖
Bicycles Entering:	30
Buggies Entering:	0

Weber St

Total	Cars	Trucks	Heavys	% Trks
1,101	1,041	19	41	5%
4,209	4,068	89	52	3%
712	691	10	11	3%
	5,800	118	104	

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Northfield Dr

% Trks	Heavys	Trucks	Cars	Total
3%	18	11	867	896
3%	54	59	3,720	3,833
2%	4	6	461	471
	76	76	5,048	

Northfield Dr

Cars	Trucks	Heavys	Total
5,716	101	146	5,963

Weber St

Total	365	1,277	588	
Cars	362	1,246	575	2,183
Trucks	2	18	7	27
Heavys	1	13	6	20
% Trks	1%	2%	2%	

Peds Cross:	⧖
West Peds:	217
West Entering:	5,200
West leg Total:	10,557
Bicycles Entering:	30
Buggies Entering:	0

Heavys	49
Trucks	48
Cars	2,930
Total	3,027

Peds Cross:	⋈
South Peds:	143
South Entering:	2,230
South leg Total:	5,257
Bicycles Entering:	36
Buggies Entering:	0

Comments

To determine total vehicles entering the intersection, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **17,621**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **5,200**

Notes: None

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Estimated Daily Traffic

Total Factor = Monthly Factor 1 x Daily Factor 1 x 24 Hour Factor 1.74 = 1.740000

Municipality: Waterloo
Intersection: Weber St @ Northfield Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions: Partly Cloudy/Dry

Person(s) who counted: Matt & Doris

GeoID: 8117
Count Date: Wednesday, 08-Jun-22

North Leg Total: 12,951
North Entering: 7,254
North Peds: N/A
Peds Cross: ⋈

% Trks	4%	4%	8%	
Heavys	33	59	150	242
Trucks	28	56	61	144
Cars	1,302	3,094	2,473	6,868
Total	1,362	3,209	2,683	

Heavys	Trucks	Cars	Total
125	186	9,010	9,321

Northfield Dr

% Trks	Heavys	Trucks	Cars	Total
3%	31	19	1,509	1,559
3%	94	103	6,473	6,669
2%	7	10	802	820
	132	132	8,784	

Peds Cross: ⧖
West Peds: N/A
West Entering: 9,048
West leg Total: 18,369

Heavys	85
Trucks	84
Cars	5,098
Total	5,267

Weber St

Heavys	125
Trucks	84
Cars	5,488
Total	5697

East Leg Total: 20,854
East Entering: 10,478
East Peds: N/A
Peds Cross: ⧖

Total	Cars	Trucks	Heavys	% Trks
1,916	1,811	33	71	5%
7,324	7,078	155	90	3%
1,239	1,202	17	19	3%
	10,092	205	181	

Northfield Dr

Cars	Trucks	Heavys	Total
9,946	176	254	10,376

Weber St

Total	635	2,222	1,023
Cars	630	2,168	1,001	3,798
Trucks	3	31	12	47
Heavys	2	23	10	35
% Trks	1%	2%	2%	

Peds Cross: ⋈
South Peds: N/A
South Entering: 3,880
South leg Total: 9,147

Comments

To determine the EDT (Estimated Daily Traffic), add all four leg totals and divide by two.
This will give you the approximate number of vehicles entering and exiting the intersection in a 24-hour period

Example: $\frac{\text{(West leg total + South leg total + East leg total + North leg total)}}{2}$ ***EDT =*** ***30,661***

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Peak Hour Factor By Movement

Municipality: Waterloo
Intersection: Weber St @ Northfield Dr
Control: Signalized
Major Road: Northfield Dr

Weather conditions:
Partly Cloudy/Dry

Person(s) who counted:
Matt & Doris

GeoID: 8117
Count Date: Wednesday, 08-Jun-22

North Approach PHF

AM Peak:	0.95
Mid-day Peak:	0.95
PM Peak:	0.91

	Movement		
PM	0.81	0.94	0.82
MID	0.71	0.89	0.90
AM	0.84	0.92	0.84

East Approach PHF

AM Peak:	0.92
Mid-day Peak:	0.94
PM Peak:	0.89

AM AM Peak Hour
MID Mid-day Peak Hour
PM PM Peak Hour

Weber St

Northfield Dr

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Movement	AM	MID	PM
	0.87	0.85	0.90
	0.94	0.87	0.87
	0.77	0.80	0.85

Northfield Dr

Movement	PM	MID	AM
	0.74	0.84	0.78
	0.95	0.91	0.94
	0.75	0.68	0.81

Weber St

West Approach PHF

AM Peak:	0.92
Mid-day Peak:	0.98
PM Peak:	0.93

0.65	0.89	0.71	AM
0.78	0.94	0.88	MID
0.84	0.82	0.90	PM

Movement

South Approach PHF

AM Peak:	0.86
Mid-day Peak:	0.91
PM Peak:	0.88

Comments

Intersection: Weber St @ Northfield Dr
GeoID: 8117
Municipality: Waterloo
Major Road: Northfield Dr

Intersection Control: Signalized
Date: Wednesday, 08-Jun-22
Name: Matt & Doris
Weather: Partly Cloudy/Dry

	EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND			TOTAL	TOTAL HOUR
Approach Control	***Signalized***			***Signalized***			***Signalized***			***Signalized***				
7:30 to 7:45	23	134	10	8	43	26	3	21	9	36	56	22	391	
7:45 to 8:00	37	176	26	18	101	24	5	23	22	34	69	16	551	
8:00 to 8:15	28	148	23	16	109	34	7	30	26	48	61	15	545	
8:15 to 8:30	33	170	15	12	93	29	12	27	16	37	65	15	524	2,011
8:30 to 8:45	46	180	20	22	106	35	7	27	35	42	59	8	587	2,207
8:45 to 9:00	32	178	14	13	104	35	5	35	27	38	47	12	540	2,196
9:00 to 9:15	24	125	13	25	86	40	5	33	17	43	38	12	461	2,112
9:15 to 9:30	29	144	25	16	70	33	9	29	14	38	58	18	483	2,071
9:30 to 9:45	19	104	14	18	93	38	5	30	22	25	38	8	414	1,898
9:45 to 10:00	25	114	17	10	83	24	2	30	18	35	47	16	421	1,779
10:00 to 10:15	15	84	6	16	66	13	7	27	12	39	33	11	329	1,647
10:15 to 10:30	21	86	7	15	60	16	10	34	16	29	45	10	349	1,513
AM Peak Hour														
7:45 to 8:45	**144**	**674**	**84**	**68**	**409**	**122**	**31**	**107**	**99**	**161**	**254**	**54**	**2,207**	
# of trucks in peak	0	7	0	2	21	3	1	1	1	2	1	2	41	
# of heavies in peak	0	5	1	2	7	2	0	7	2	11	6	1	44	
% heavies (Total)	0%	2%	1%	6%	7%	4%	3%	7%	3%	8%	3%	6%	4%	
12:00 to 12:15	18	115	10	16	134	38	18	51	12	36	47	21	516	
12:15 to 12:30	25	108	10	20	122	35	11	47	16	45	52	19	510	
12:30 to 12:45	28	99	13	26	112	46	11	42	17	46	51	11	502	
12:45 to 13:00	30	97	19	21	97	37	16	51	18	49	59	9	503	2,031
13:00 to 13:15	24	100	13	16	104	49	11	37	17	35	41	34	481	1,996
13:15 to 13:30	28	85	9	23	95	30	11	46	21	39	46	16	449	1,935
13:30 to 13:45	30	109	12	17	108	36	5	32	20	48	49	25	491	1,924
13:45 to 14:00	21	114	9	23	99	35	8	50	11	30	57	18	475	1,896
Midday Peak Hour														
12:00 to 13:00	**101**	**419**	**52**	**83**	**465**	**156**	**56**	**191**	**63**	**176**	**209**	**60**	**2,031**	
# of trucks in peak	6	8	0	1	13	5	0	0	0	8	7	3	51	
# of heavies in peak	2	6	0	2	5	4	0	1	0	15	4	1	40	
% heavies (Total)	8%	3%	0%	4%	4%	6%	0%	1%	0%	13%	5%	7%	4%	
15:00 to 15:15	44	104	8	30	161	31	16	52	15	79	69	41	650	
15:15 to 15:30	34	97	13	20	174	28	22	47	19	58	56	27	595	
15:30 to 15:45	28	95	14	31	159	36	12	50	23	76	75	47	646	
15:45 to 16:00	38	128	12	37	152	46	22	40	22	58	66	35	656	2,547
16:00 to 16:15	17	127	15	23	188	40	16	53	19	77	65	43	683	2,580
16:15 to 16:30	30	109	19	22	200	42	14	33	20	66	72	32	659	2,644
16:30 to 16:45	25	117	18	26	202	41	22	53	22	63	68	53	710	2,708
16:45 to 17:00	38	116	13	39	197	43	16	47	17	79	70	47	722	2,774
17:00 to 17:15	21	112	17	29	226	37	14	62	20	67	81	43	729	2,820
17:15 to 17:30	30	103	16	31	222	33	15	51	15	68	81	34	699	2,860
17:30 to 17:45	23	109	23	34	260	41	19	43	20	44	73	29	718	2,868
17:45 to 18:00	32	146	18	39	183	30	9	44	10	35	50	36	632	2,778
PM Peak Hour														
16:45 to 17:45	**112**	**440**	**69**	**133**	**905**	**154**	**64**	**203**	**72**	**258**	**305**	**153**	**2,868**	
# of trucks in peak	1	4	0	1	9	1	1	0	0	3	2	0	22	
# of heavies in peak	1	6	0	1	7	4	0	0	0	4	0	1	24	
% heavies (Total)	2%	2%	0%	2%	2%	3%	2%	0%	0%	3%	1%	1%	2%	

Intersection: Weber St @ Northfield Dr
GeoID: 8117
Municipality: Waterloo
Major Road: Northfield Dr

Intersection Control: Signalized
Date: Wednesday, 08-Jun-22
Name: Matt & Doris
Weather: Partly Cloudy/Dry

PEDESTRIAN CROSSING								
Time			Crossing Approach					
			East App.	West App.	North App.	South App.	TOTAL	TOTAL HOUR
7:30	to	7:45	0	3	5	2	10	
7:45	to	8:00	2	5	1	6	14	
8:00	to	8:15	4	2	0	2	8	
8:15	to	8:30	3	3	2	2	10	42
8:30	to	8:45	5	6	0	6	17	49
8:45	to	9:00	8	5	4	5	22	57
9:00	to	9:15	2	4	0	3	9	58
9:15	to	9:30	8	7	9	2	26	74
9:30	to	9:45	0	9	2	4	15	72
9:45	to	10:00	4	9	4	3	20	70
10:00	to	10:15	0	8	3	5	16	77
10:15	to	10:30	0	9	3	3	15	66
AM Peak Hour							**182**	
7:45	**to**	**8:45**	**14**	**16**	**3**	**16**	**49**	
12:00	to	12:15	6	13	2	7	28	
12:15	to	12:30	8	5	12	10	35	
12:30	to	12:45	5	2	9	1	17	
12:45	to	13:00	8	3	5	8	24	104
13:00	to	13:15	11	3	1	7	22	98
13:15	to	13:30	3	7	12	0	22	85
13:30	to	13:45	2	8	5	7	22	90
13:45	to	14:00	3	2	3	1	9	75
Midday Peak Hour							**179**	
12:00	**to**	**13:00**	27	23	28	26	**104**	
15:00	to	15:15	2	8	4	3	17	
15:15	to	15:30	5	12	6	3	26	
15:30	to	15:45	2	8	6	4	20	
15:45	to	16:00	1	8	6	5	20	83
16:00	to	16:15	5	11	2	7	25	91
16:15	to	16:30	2	12	6	4	24	89
16:30	to	16:45	4	15	8	6	33	102
16:45	to	17:00	4	4	5	4	17	99
17:00	to	17:15	2	9	4	2	17	91
17:15	to	17:30	5	7	3	10	25	92
17:30	to	17:45	2	6	4	2	14	73
17:45	to	18:00	9	4	1	9	23	79
PM Peak Hour							**261**	
16:45	**to**	**17:45**	13	26	16	18	**73**	

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Morning Peak Diagram

Count Period
From: 7:30 AM
To: 10:30 AM

Peak Hour
From: 8:00 AM
To: 9:00 AM

Municipality: Waterloo
Intersection: Weber St @ Parkside Dr (Southerly Intersection
Control: Signalized
Major Road: Weber St

Weather conditions: Overcast/Dry

Person(s) who counted: Cam

GeoID: 8058
Count Date: Thursday, 08-Dec-22

North Leg Total: 594
North Entering: 354
North Peds: 1
Peds Cross: ⋈

% Trks	2%	2%	0%	
Heavys	2	2	0	4
Trucks	0	3	0	3
Cars	84	233	30	347
Total	86	238	30	

Heavys	Trucks	Cars	Total
2	0	291	293

Parkside Dr

% Trks	Heavys	Trucks	Cars	Total
5%	2	1	59	62
1%	1	1	164	166
2%	1	0	48	49
	4	2	271	

Weber St

Heavys	Trucks	Cars	Total
10	5	225	240

East Leg Total: 548
East Entering: 280
East Peds: 0
Peds Cross: ⧖

Weber St

Total	Cars	Trucks	Heavys	% Trks
13	13	0	0	0%
191	191	0	0	0%
76	70	2	4	8%
	274	2	4	

Parkside Dr

Cars	Trucks	Heavys	Total
259	2	7	268

Peds Cross: ⧖
West Peds: 3
West Entering: 277
West leg Total: 570

Heavys	7			
Trucks	5			
Cars	351			
Total	363			

Weber St

Total	16	165	72	
Cars	16	153	65	234
Trucks	0	4	1	5
Heavys	0	8	6	14
% Trks	0%	7%	10%	

Peds Cross: ⋈
South Peds: 13
South Entering: 253
South leg Total: 616

Comments

To determine total vehicles entering the intersection during morning peak hour, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **1,164**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **277**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Mid-day Peak Diagram

Count Period
From: 12:00 PM
To: 2:00 PM

Peak Hour
From: 12:15 PM
To: 1:15 PM

Municipality: Waterloo
Intersection: Weber St @ Parkside Dr (Southerly Intersection
Control: Signalized
Major Road: Weber St

Weather conditions: Overcast/Dry

Person(s) who counted: Cam

GeoID: 8058
Count Date: Thursday, 08-Dec-22

North Leg Total: 675
North Entering: 350
North Peds: 5
Peds Cross: ⋈

% Trks	3%	2%	3%	
Heavys	1	4	0	5
Trucks	1	2	1	4
Cars	61	247	33	341
Total	63	253	34	

Heavys	4
Trucks	9
Cars	312
Total	325

East Leg Total: 491
East Entering: 229
East Peds: 1
Peds Cross: ⧖

Heavys	Trucks	Cars	Total
3	3	195	201

Weber St

Total	Cars	Trucks	Heavys	% Trks
28	27	1	0	4%
119	116	2	1	3%
82	77	1	4	6%
	220	4	5	

Parkside Dr

% Trks	Heavys	Trucks	Cars	Total
4%	0	2	49	51
4%	3	2	130	135
6%	1	1	29	31
	4	5	208	

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Parkside Dr

Cars	Trucks	Heavys	Total
247	8	7	262

Weber St

Total	19	246	93	
Cars	18	236	84	338
Trucks	0	6	5	11
Heavys	1	4	4	9
% Trks	5%	4%	10%	

Peds Cross: ⧖
West Peds: 3
West Entering: 217
West leg Total: 418

Heavys	9
Trucks	4
Cars	353
Total	366

Peds Cross: ⋈
South Peds: 12
South Entering: 358
South leg Total: 724

Comments

To determine total vehicles entering the intersection during mid-day peak hour, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **1,154**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **217**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Afternoon Peak Diagram

Count Period
From: 3:00 PM
To: 6:00 PM

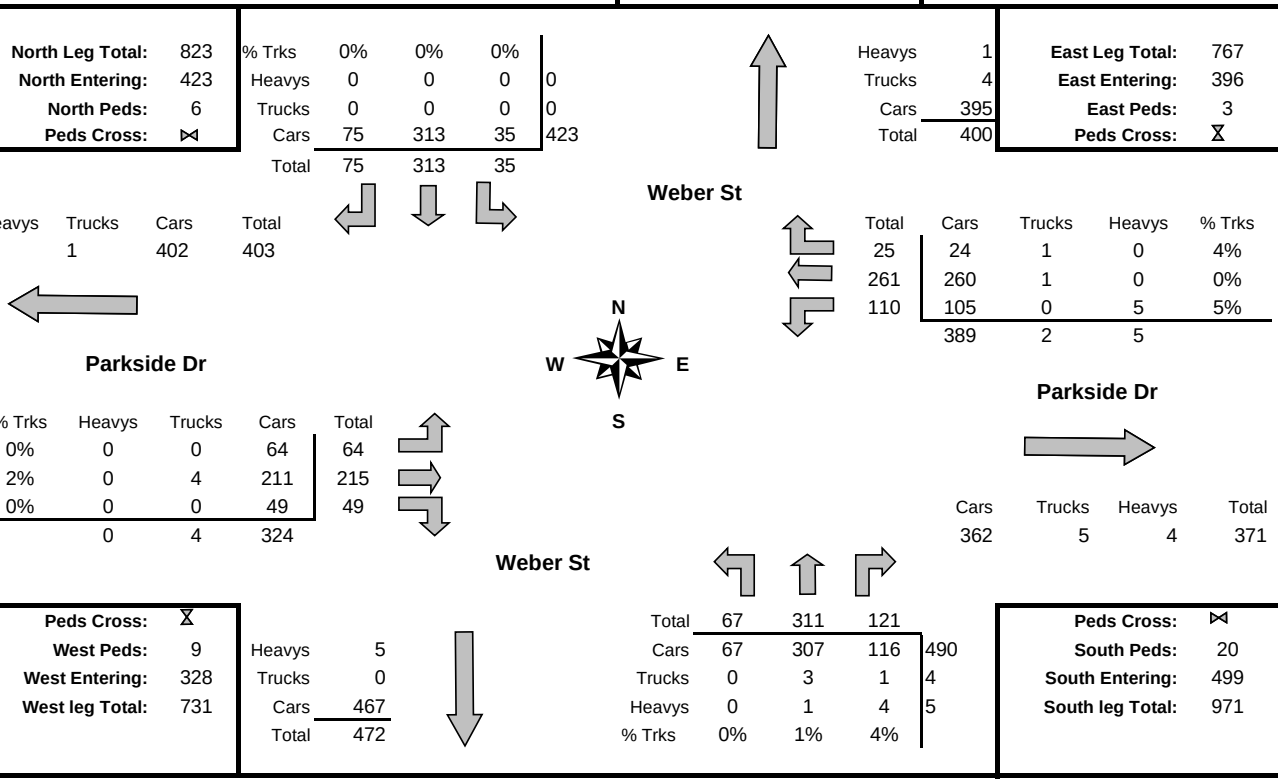
Peak Hour
From: 4:30 PM
To: 5:30 PM

Municipality: Waterloo
Intersection: Weber St @ Parkside Dr (Southerly Intersection
Control: Signalized
Major Road: Weber St

Weather conditions: Overcast/Dry

Person(s) who counted: Cam

GeoID: 8058
Count Date: Thursday, 08-Dec-22



Comments

To determine total vehicles entering the intersection during afternoon peak hour, add all leg totals entering.

Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering

Example 1: Therefore, total vehicles entering intersection = **1,646**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn

Therefore, vehicles entering from the west = **328**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Total Count Diagram

Municipality: Waterloo
Intersection: Weber St @ Parkside Dr (Southerly Intersection
Control: Signalized
Major Road: Weber St

Weather conditions: Overcast/Dry

Person(s) who counted: Cam

GeoID: 8058
Count Date: Thursday, 08-Dec-22

North Leg Total: 5,036
North Entering: 2,660
North Peds: 28
Peds Cross: ⋈
Bicycles Entering: 7
Buggies Entering: 0

% Trks	2%	3%	2%	
Heavys	7	32	0	39
Trucks	4	20	4	28
Cars	506	1,874	213	2,593
Total	517	1,926	217	

Heavys	Trucks	Cars	Total
38	38	2,300	2,376

East Leg Total: 4,331
East Entering: 2,171
East Peds: 17
Peds Cross: ⧖
Bicycles Entering: 14
Buggies Entering: 0

Heavys	Trucks	Cars	Total
15	13	2,080	2,108

Weber St

Total	Cars	Trucks	Heavys	% Trks
186	181	4	1	3%
1,331	1,318	8	5	1%
654	610	9	35	7%
	2,109	21	41	

Parkside Dr

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% Trks	Heavys	Trucks	Cars	Total
2%	5	5	445	455
2%	9	11	1,256	1,276
4%	8	6	304	318
	22	22	2,005	

Parkside Dr

Cars	Trucks	Heavys	Total
2,079	33	48	2,160

Weber St

Peds Cross: ⧖
West Peds: 43
West Entering: 2,049
West leg Total: 4,157
Bicycles Entering: 17
Buggies Entering: 0

Heavys	75
Trucks	35
Cars	2,788
Total	2,898

Total	260	1,735	667	
Cars	256	1,674	610	2,540
Trucks	1	29	18	48
Heavys	3	32	39	74
% Trks	2%	4%	9%	

Peds Cross: ⋈
South Peds: 101
South Entering: 2,662
South leg Total: 5,560
Bicycles Entering: 3
Buggies Entering: 0

Comments

To determine total vehicles entering the intersection, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **9,542**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **2,049**

Notes: None

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Estimated Daily Traffic

Total Factor = Monthly Factor 1 x Daily Factor 1 x 24 Hour Factor 1.74 = 1.740000

Municipality: Waterloo
Intersection: Weber St @ Parkside Dr (Southerly Intersection
Control: Signalized
Major Road: Weber St

Weather conditions: Overcast/Dry

Person(s) who counted: Cam

GeoID: 8058
Count Date: Thursday, 08-Dec-22

North Leg Total: 8,763
North Entering: 4,628
North Peds: N/A
Peds Cross: ⋈

	% Trks	2%	3%	2%	
	Heavys	12	56	0	68
	Trucks	7	35	7	49
	Cars	880	3,261	371	4,512
	Total	900	3,351	378	

Heavys	Trucks	Cars	Total
66	66	4,002	4134

East Leg Total: 7,536
East Entering: 3,778
East Peds: N/A
Peds Cross: ⧖

Weber St

Heavys	Trucks	Cars	Total
26	23	3,619	3,668

Total	Cars	Trucks	Heavys	% Trks
324	315	7	2	3%
2,316	2,293	14	9	1%
1,138	1,061	16	61	7%
	3,670	37	71	

Parkside Dr

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% Trks	Heavys	Trucks	Cars	Total
2%	9	9	774	792
2%	16	19	2,185	2,220
4%	14	10	529	553
	38	38	3,489	

Parkside Dr

Cars	Trucks	Heavys	Total
3,617	57	84	3,758

Weber St

Peds Cross: ⧖
West Peds: N/A
West Entering: 3,565
West leg Total: 7,233

	Heavys	131
	Trucks	61
	Cars	4,851
	Total	5,043

Total	452	3,019	1,161	
Cars	445	2,913	1,061	4,420
Trucks	2	50	31	84
Heavys	5	56	68	129
% Trks	2%	4%	9%	

Peds Cross: ⋈
South Peds: N/A
South Entering: 4,632
South leg Total: 9,674

Comments

To determine the EDT (Estimated Daily Traffic), add all four leg totals and divide by two.
This will give you the approximate number of vehicles entering and exiting the intersection in a 24-hour period

Example: (West leg total + South leg total + East leg total + North leg total) / 2 ***EDT =*** ***16,603***

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Peak Hour Factor By Movement

Municipality: Waterloo
Intersection: Weber St @ Parkside Dr (Southerly Intersection
Control: Signalized
Major Road: Weber St

Weather conditions: Overcast/Dry

Person(s) who counted: Cam

GeoID: 8058
Count Date: Thursday, 08-Dec-22

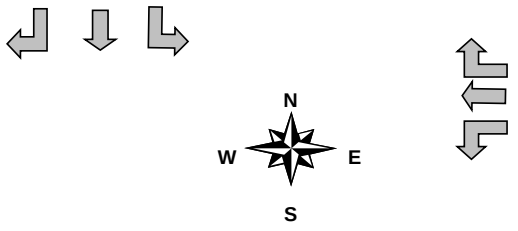
North Approach PHF

AM Peak:	0.84
Mid-day Peak:	0.92
PM Peak:	0.84

East Approach PHF

AM Peak:	0.85
Mid-day Peak:	0.84
PM Peak:	0.77

AM AM Peak Hour
MID Mid-day Peak Hour
PM PM Peak Hour



West Approach PHF

AM Peak:	0.92
Mid-day Peak:	0.82
PM Peak:	0.83

South Approach PHF

AM Peak:	0.81
Mid-day Peak:	0.81
PM Peak:	0.91

Comments

Intersection: Weber St @ Parkside Dr (Southerly
GeoID: 8058
Municipality: Waterloo
Major Road: Weber St

Intersection Control: Signalized
Date: Thursday, 08-Dec-22
Name: Cam
Weather: Overcast/Dry

	EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND				
Approach Control	***Signalized***			***Signalized***			***Signalized***			***Signalized***			**TOTAL**	**TOTAL HOUR**
7:30 to 7:45	14	44	10	13	27	4	1	19	12	3	48	7	202	
7:45 to 8:00	15	34	14	16	42	2	4	39	9	4	72	12	263	
8:00 to 8:15	17	41	9	17	44	3	7	49	11	4	65	21	288	
8:15 to 8:30	20	33	11	14	41	2	4	48	26	9	48	19	275	1,028
8:30 to 8:45	11	39	21	19	51	7	2	31	14	9	68	28	300	1,126
8:45 to 9:00	14	53	8	26	55	1	3	37	21	8	57	18	301	1,164
9:00 to 9:15	8	36	9	18	48	5	2	31	15	7	59	12	250	1,126
9:15 to 9:30	15	32	9	16	38	0	3	42	19	9	48	17	248	1,099
9:30 to 9:45	9	31	9	14	39	5	4	45	12	3	42	13	226	1,025
9:45 to 10:00	13	29	3	14	22	6	2	41	13	6	48	13	210	934
10:00 to 10:15	9	27	4	11	16	3	2	41	16	4	44	10	187	871
10:15 to 10:30	8	28	6	15	27	1	7	36	17	3	45	8	201	824
AM Peak Hour														
8:00 to 9:00	**62**	**166**	**49**	**76**	**191**	**13**	**16**	**165**	**72**	**30**	**238**	**86**	**1,164**	
# of trucks in peak	1	1	0	2	0	0	0	4	1	0	3	0	12	
# of heavies in peak	2	1	1	4	0	0	0	8	6	0	2	2	26	
% heavies (Total)	5%	1%	2%	8%	0%	0%	0%	7%	10%	0%	2%	2%	3%	
12:00 to 12:15	14	39	5	21	37	12	6	78	15	7	51	13	298	
12:15 to 12:30	13	28	10	19	25	4	3	66	26	8	74	13	289	
12:30 to 12:45	10	25	5	26	34	8	3	53	21	11	53	18	267	
12:45 to 13:00	15	43	8	18	26	10	5	54	16	10	70	14	289	1,143
13:00 to 13:15	13	39	8	19	34	6	8	73	30	5	56	18	309	1,154
13:15 to 13:30	12	32	8	20	35	5	12	57	19	7	47	11	265	1,130
13:30 to 13:45	12	43	8	25	33	8	9	50	20	6	54	12	280	1,143
13:45 to 14:00	19	32	9	26	30	5	8	49	19	4	62	15	278	1,132
Midday Peak Hour														
12:15 to 13:15	**51**	**135**	**31**	**82**	**119**	**28**	**19**	**246**	**93**	**34**	**253**	**63**	**1,154**	
# of trucks in peak	2	2	1	1	2	1	0	6	5	1	2	1	24	
# of heavies in peak	0	3	1	4	1	0	1	4	4	0	4	1	23	
% heavies (Total)	4%	4%	6%	6%	3%	4%	5%	4%	10%	3%	2%	3%	4%	
15:00 to 15:15	18	42	6	15	31	5	10	49	22	7	67	19	291	
15:15 to 15:30	12	33	8	20	41	6	13	52	31	4	51	21	292	
15:30 to 15:45	9	41	13	28	60	15	13	54	24	8	72	11	348	
15:45 to 16:00	12	51	9	27	50	5	9	69	25	9	58	29	353	1,284
16:00 to 16:15	24	47	15	20	40	7	19	76	29	5	73	18	373	1,366
16:15 to 16:30	17	47	17	25	57	12	10	63	20	12	66	17	363	1,437
16:30 to 16:45	16	58	12	24	48	6	16	85	36	10	90	26	427	1,516
16:45 to 17:00	19	67	13	27	70	8	12	79	30	10	75	14	424	1,587
17:00 to 17:15	13	48	13	36	89	4	17	80	23	9	76	18	426	1,640
17:15 to 17:30	16	42	11	23	54	7	22	67	32	6	72	17	369	1,646
17:30 to 17:45	18	51	14	23	50	5	15	57	29	8	63	17	350	1,569
17:45 to 18:00	20	41	13	19	37	9	9	65	15	2	52	18	300	1,445
PM Peak Hour														
16:30 to 17:30	**64**	**215**	**49**	**110**	**261**	**25**	**67**	**311**	**121**	**35**	**313**	**75**	**1,646**	
# of trucks in peak	0	4	0	0	1	1	0	3	1	0	0	0	10	
# of heavies in peak	0	0	0	5	0	0	0	1	4	0	0	0	10	
% heavies (Total)	0%	2%	0%	5%	0%	4%	0%	1%	4%	0%	0%	0%	1%	

Intersection: Weber St @ Parkside Dr (Southerly Iı
GeoID: 8058
Municipality: Waterloo
Major Road: Weber St

Intersection Control: Signalized
Date: Thursday, 08-Dec-22
Name: Cam
Weather: Overcast/Dry

PEDESTRIAN CROSSING								
Time			Crossing Approach					
			East App.	West App.	North App.	South App.	TOTAL	TOTAL HOUR
7:30	to	7:45	0	1	1	3	5	
7:45	to	8:00	1	2	1	2	6	
8:00	to	8:15	0	0	0	0	0	
8:15	to	8:30	0	0	0	2	2	13
8:30	to	8:45	0	2	1	9	12	20
8:45	to	9:00	0	1	0	2	3	17
9:00	to	9:15	1	3	0	0	4	21
9:15	to	9:30	0	2	0	3	5	24
9:30	to	9:45	0	1	0	4	5	17
9:45	to	10:00	0	0	1	2	3	17
10:00	to	10:15	1	2	2	3	8	21
10:15	to	10:30	0	0	0	2	2	18
AM Peak Hour							**55**	
8:00	**to**	**9:00**	**0**	**3**	**1**	**13**	**17**	
12:00	to	12:15	1	0	0	3	4	
12:15	to	12:30	0	0	1	3	4	
12:30	to	12:45	1	1	0	1	3	
12:45	to	13:00	0	0	2	4	6	17
13:00	to	13:15	0	2	2	4	8	21
13:15	to	13:30	0	0	0	1	1	18
13:30	to	13:45	2	0	0	3	5	20
13:45	to	14:00	1	0	1	5	7	21
Midday Peak Hour							**38**	
12:15	**to**	**13:15**	1	3	5	12	**21**	
15:00	to	15:15	0	0	0	1	1	
15:15	to	15:30	0	1	1	2	4	
15:30	to	15:45	4	2	3	8	17	
15:45	to	16:00	1	1	2	4	8	30
16:00	to	16:15	1	2	2	2	7	36
16:15	to	16:30	0	1	0	4	5	37
16:30	to	16:45	0	3	0	3	6	26
16:45	to	17:00	2	2	4	10	18	36
17:00	to	17:15	0	2	2	1	5	34
17:15	to	17:30	1	2	0	6	9	38
17:30	to	17:45	0	3	1	2	6	38
17:45	to	18:00	0	7	1	2	10	30
PM Peak Hour							**96**	
16:30	**to**	**17:30**	3	9	6	20	**38**	

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Morning Peak Diagram

Count Period
From: 7:30 AM
To: 10:30 AM

Peak Hour
From: 7:45 AM
To: 8:45 AM

Municipality: Waterloo
Intersection: Weber St @ Randall Dr
Control: Signalized
Major Road: Weber St

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 8353
Count Date: Tuesday, 25-Oct-22

North Leg Total: 619
North Entering: 372
North Peds: 0
Peds Cross: ⋈

% Trks	0%	6%	11%	
Heavys	0	14	4	18
Trucks	0	5	1	6
Cars	0	308	40	348
Total	0	327	45	

Heavys	Trucks	Cars	Total
0	0	0	0

Heavys	13
Trucks	6
Cars	228
Total	247

East Leg Total: 249
East Entering: 96
East Peds: 6
Peds Cross: ⧖

Weber St

Total	Cars	Trucks	Heavys	% Trks
24	21	0	3	13%
0	0	0	0	0%
72	52	5	15	28%
	73	5	18	

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% Trks	Heavys	Trucks	Cars	Total
0%	0	0	0	0
0%	0	0	0	0
0%	0	0	0	0
	0	0	0	

Randall Dr

Cars	Trucks	Heavys	Total
143	1	9	153

Weber St

Peds Cross: ⧖
West Peds: 0
West Entering: 0
West leg Total: 0

Heavys	29
Trucks	10
Cars	360
Total	399

Total	0	223	108	
Cars	0	207	103	310
Trucks	0	6	0	6
Heavys	0	10	5	15
% Trks	0%	7%	5%	

Peds Cross: ⋈
South Peds: 0
South Entering: 331
South leg Total: 730

Comments

To determine total vehicles entering the intersection during morning peak hour, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **799**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **0**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Mid-day Peak Diagram

Count Period
From: 12:00 PM
To: 2:00 PM

Peak Hour
From: 12:00 PM
To: 1:00 PM

Municipality: Waterloo
Intersection: Weber St @ Randall Dr
Control: Signalized
Major Road: Weber St

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 8353
Count Date: Tuesday, 25-Oct-22

North Leg Total: 720
North Entering: 351
North Peds: 1
Peds Cross: ⋈

	% Trks	0%	2%	13%	
	Heavys	0	7	2	9
	Trucks	0	1	2	3
	Cars	0	313	26	339
	Total	0	321	30	

Heavys	Trucks	Cars	Total
0	0	0	0

East Leg Total: 305
East Entering: 185
East Peds: 10
Peds Cross: ⧖

Heavys	6
Trucks	5
Cars	358
Total	369

Weber St

Total	Cars	Trucks	Heavys	% Trks
56	51	2	3	9%
0	0	0	0	0%
129	111	6	12	14%
	162	8	15	

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% Trks	Heavys	Trucks	Cars	Total
0%	0	0	0	0
0%	0	0	0	0
0%	0	0	0	0
	0	0	0	

Randall Dr

Cars	Trucks	Heavys	Total
109	3	8	120

Weber St

Peds Cross: ⧖
West Peds: 0
West Entering: 0
West leg Total: 0

Heavys	19
Trucks	7
Cars	424
Total	450

Total	0	313	90	
Cars	0	307	83	390
Trucks	0	3	1	4
Heavys	0	3	6	9
% Trks	0%	2%	8%	

Peds Cross: ⋈
South Peds: 0
South Entering: 403
South leg Total: 853

Comments

To determine total vehicles entering the intersection during mid-day peak hour, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **939**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **0**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Afternoon Peak Diagram

Count Period
From: 3:00 PM
To: 6:00 PM

Peak Hour
From: 3:00 PM
To: 4:00 PM

Municipality: Waterloo
Intersection: Weber St @ Randall Dr
Control: Signalized
Major Road: Weber St

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 8353
Count Date: Tuesday, 25-Oct-22

North Leg Total: 782
North Entering: 331
North Peds: 0
Peds Cross: ⋈

	0%	4%	32%	
% Trks				
Heavys	0	10	6	16
Trucks	0	1	3	4
Cars	0	292	19	311
Total	0	303	28	

Heavys	Trucks	Cars	Total
0	0	0	0

Heavys	14
Trucks	3
Cars	434
Total	451

East Leg Total: 531
East Entering: 431
East Peds: 5
Peds Cross: ⧖

Weber St

Total	Cars	Trucks	Heavys	% Trks
136	131	1	4	4%
0	0	0	0	0%
295	281	5	9	5%
	412	6	13	

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% Trks	Heavys	Trucks	Cars	Total
0%	0	0	0	0
0%	0	0	0	0
0%	0	0	0	0
	0	0	0	

Randall Dr

Cars	Trucks	Heavys	Total
85	4	11	100

Weber St

Peds Cross: ⧖
West Peds: 0
West Entering: 0
West leg Total: 0

Heavys	19
Trucks	6
Cars	573
Total	598

Total	0	315	72	
Cars	0	303	66	369
Trucks	0	2	1	3
Heavys	0	10	5	15
% Trks	0%	4%	8%	

Peds Cross: ⋈
South Peds: 0
South Entering: 387
South leg Total: 985

Comments

To determine total vehicles entering the intersection during afternoon peak hour, add all leg totals entering.

Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering

Example 1: Therefore, total vehicles entering intersection = **1,149**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn

Therefore, vehicles entering from the west = **0**

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Total Count Diagram

Municipality: Waterloo
Intersection: Weber St @ Randall Dr
Control: Signalized
Major Road: Weber St

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 8353
Count Date: Tuesday, 25-Oct-22

North Leg Total:	5,358
North Entering:	2,600
North Peds:	5
Peds Cross:	⋈
Bicycles Entering:	14
Buggies Entering:	0

% Trks	0%	4%	15%	
Heavys	0	75	22	97
Trucks	0	22	11	33
Cars	0	2,284	186	2,470
Total	0	2,381	219	

Heavys	87
Trucks	30
Cars	2,641
Total	2,758

East Leg Total:	2,324
East Entering:	1,600
East Peds:	40
Peds Cross:	⧖
Bicycles Entering:	5
Buggies Entering:	0

Heavys	Trucks	Cars	Total
0	0	0	0

Weber St

Total	Cars	Trucks	Heavys	% Trks
505	471	13	21	7%
0	0	0	0	0%
1,095	983	30	82	10%
	1,454	43	103	

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Randall Dr

% Trks	Heavys	Trucks	Cars	Total
0%	0	0	0	0
0%	0	0	0	0
0%	0	0	0	0
	0	0	0	

Cars	Trucks	Heavys	Total
635	18	71	724

Weber St

Peds Cross:	⧖
West Peds:	0
West Entering:	0
West leg Total:	0
Bicycles Entering:	0
Buggies Entering:	0

Heavys	157
Trucks	52
Cars	3,267
Total	3,476

Total	0	2,253	505	
Cars	0	2,170	449	2,619
Trucks	0	17	7	24
Heavys	0	66	49	115
% Trks	0%	4%	11%	

Peds Cross:	⋈
South Peds:	19
South Entering:	2,758
South leg Total:	6,234
Bicycles Entering:	11
Buggies Entering:	0

Comments

To determine total vehicles entering the intersection, add all leg totals entering.

Example 1: Total Entering = West leg total entering + South leg total entering + East leg total entering + North leg total entering
Therefore, total vehicles entering intersection = **6,958**

Example 2: Total vehicles entering from the west = eastbound left turn + eastbound through + eastbound right turn
Therefore, vehicles entering from the west = **0**

Notes: None

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Estimated Daily Traffic

Total Factor = Monthly Factor 1 x Daily Factor 1 x 24 Hour Factor 1.74 = 1.740000

Municipality: Waterloo
Intersection: Weber St @ Randall Dr
Control: Signalized
Major Road: Weber St

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 8353
Count Date: Tuesday, 25-Oct-22

North Leg Total: 9,323
North Entering: 4,524
North Peds: N/A
Peds Cross: ⋈

	0%	4%	15%	
% Trks				
Heavys	0	131	38	169
Trucks	0	38	19	57
Cars	0	3,974	324	4,298
Total	0	4,143	381	

Heavys	Trucks	Cars	Total
0	0	0	0

East Leg Total: 4,044
East Entering: 2,784
East Peds: N/A
Peds Cross: ⧖

Heavys	151
Trucks	52
Cars	4,595
Total	4799

Weber St

Total	Cars	Trucks	Heavys	% Trks
879	820	23	37	7%
0	0	0	0	0%
1,905	1,710	52	143	10%
	2,530	75	179	

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% Trks	Heavys	Trucks	Cars	Total
0%	0	0	0	0
0%	0	0	0	0
0%	0	0	0	0
	0	0	0	

Randall Dr

Cars	Trucks	Heavys	Total
1,105	31	124	1,260

Weber St

Peds Cross: ⧖
West Peds: N/A
West Entering: 0
West leg Total: 0

Heavys	273
Trucks	90
Cars	5,685
Total	6,048

	0	3,920	879	
Total				
Cars	0	3,776	781	4,557
Trucks	0	30	12	42
Heavys	0	115	85	200
% Trks	0%	4%	11%	

Peds Cross: ⋈
South Peds: N/A
South Entering: 4,799
South leg Total: 10,847

Comments

To determine the EDT (Estimated Daily Traffic), add all four leg totals and divide by two.
This will give you the approximate number of vehicles entering and exiting the intersection in a 24-hour period

Example: $\frac{\text{(West leg total + South leg total + East leg total + North leg total)}}{2}$ ***EDT =*** ***12,107***

REGIONAL MUNICIPALITY OF WATERLOO
TURNING MOVEMENT COUNT

Region of Waterloo

Peak Hour Factor By Movement

Municipality: Waterloo
Intersection: Weber St @ Randall Dr
Control: Signalized
Major Road: Weber St

Weather conditions: Cloudy/Dry

Person(s) who counted: Cam

GeoID: 8353
Count Date: Tuesday, 25-Oct-22

North Approach PHF

AM Peak:	0.87
Mid-day Peak:	0.91
PM Peak:	0.81

	Movement		
PM	0.00	0.82	0.70
MID	0.00	0.94	0.68
AM	0.00	0.88	0.80

Weber St

AM AM Peak Hour
MID Mid-day Peak Hour
PM PM Peak Hour

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AM	MID	PM	
0.75	0.56	0.53	
0.00	0.00	0.00	
0.86	0.72	0.66	Movement

Randall Dr

Movement	PM	MID	AM
	0.00	0.00	0.00
	0.00	0.00	0.00
	0.00	0.00	0.00

Weber St

East Approach PHF

AM Peak:	0.89
Mid-day Peak:	0.66
PM Peak:	0.62

West Approach PHF

AM Peak:	0.00
Mid-day Peak:	0.00
PM Peak:	0.00

0.00	0.94	0.71	AM	
0.00	0.86	0.73	MID	
0.00	0.89	0.60	PM	
	Movement			

South Approach PHF

AM Peak:	0.87
Mid-day Peak:	0.87
PM Peak:	0.94

Comments

Intersection: Weber St @ Randall Dr
GeoID: 8353
Municipality: Waterloo
Major Road: Weber St

Intersection Control: Signalized
Date: Tuesday, 25-Oct-22
Name: Cam
Weather: Cloudy/Dry

	EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND			TOTAL	TOTAL HOUR
Approach Control	***N/A***			***Signalized***			***Signalized***			***Signalized***				
7:30 to 7:45	0	0	0	42	0	9	0	36	21	10	60	0	178	
7:45 to 8:00	0	0	0	19	0	8	0	52	26	14	93	0	212	
8:00 to 8:15	0	0	0	18	0	5	0	59	20	7	73	0	182	
8:15 to 8:30	0	0	0	21	0	5	0	55	24	13	79	0	197	769
8:30 to 8:45	0	0	0	14	0	6	0	57	38	11	82	0	208	799
8:45 to 9:00	0	0	0	11	0	4	0	67	28	18	63	0	191	778
9:00 to 9:15	0	0	0	12	0	6	0	51	16	7	54	0	146	742
9:15 to 9:30	0	0	0	10	0	5	0	46	20	6	66	0	153	698
9:30 to 9:45	0	0	0	10	0	5	0	48	9	5	53	0	130	620
9:45 to 10:00	0	0	0	7	0	4	0	74	10	7	64	0	166	595
10:00 to 10:15	0	0	0	20	0	10	0	47	12	1	61	0	151	600
10:15 to 10:30	0	0	0	18	0	12	0	53	10	4	62	0	159	606
AM Peak Hour														
7:45 to 8:45	**0**	**0**	**0**	**72**	**0**	**24**	**0**	**223**	**108**	**45**	**327**	**0**	**799**	
# of trucks in peak	0	0	0	5	0	0	0	6	0	1	5	0	17	
# of heavies in peak	0	0	0	15	0	3	0	10	5	4	14	0	51	
% heavies (Total)	0%	0%	0%	28%	0%	13%	0%	7%	5%	11%	6%	0%	9%	
12:00 to 12:15	0	0	0	45	0	25	0	67	17	4	80	0	238	
12:15 to 12:30	0	0	0	31	0	11	0	91	25	11	85	0	254	
12:30 to 12:45	0	0	0	29	0	10	0	70	17	7	79	0	212	
12:45 to 13:00	0	0	0	24	0	10	0	85	31	8	77	0	235	939
13:00 to 13:15	0	0	0	20	0	8	0	61	17	11	50	0	167	868
13:15 to 13:30	0	0	0	15	0	9	0	72	14	4	62	0	176	790
13:30 to 13:45	0	0	0	16	0	5	0	57	13	7	68	0	166	744
13:45 to 14:00	0	0	0	17	0	10	0	64	9	8	68	0	176	685
Midday Peak Hour														
12:00 to 13:00	**0**	**0**	**0**	**129**	**0**	**56**	**0**	**313**	**90**	**30**	**321**	**0**	**939**	
# of trucks in peak	0	0	0	6	0	2	0	3	1	2	1	0	15	
# of heavies in peak	0	0	0	12	0	3	0	3	6	2	7	0	33	
% heavies (Total)	0%	0%	0%	14%	0%	9%	0%	2%	8%	13%	2%	0%	5%	
15:00 to 15:15	0	0	0	98	0	37	0	73	30	10	92	0	340	
15:15 to 15:30	0	0	0	30	0	16	0	78	25	10	69	0	228	
15:30 to 15:45	0	0	0	111	0	64	0	76	12	4	67	0	334	
15:45 to 16:00	0	0	0	56	0	19	0	88	5	4	75	0	247	1,149
16:00 to 16:15	0	0	0	57	0	30	0	88	13	5	85	0	278	1,087
16:15 to 16:30	0	0	0	47	0	24	0	76	6	3	75	0	231	1,090
16:30 to 16:45	0	0	0	77	0	33	0	101	5	2	86	0	304	1,060
16:45 to 17:00	0	0	0	51	0	36	0	100	4	2	99	0	292	1,105
17:00 to 17:15	0	0	0	60	0	21	0	86	12	6	101	0	286	1,113
17:15 to 17:30	0	0	0	39	0	30	0	107	3	2	84	0	265	1,147
17:30 to 17:45	0	0	0	43	0	20	0	86	5	5	86	0	245	1,088
17:45 to 18:00	0	0	0	27	0	8	0	82	8	3	83	0	211	1,007
PM Peak Hour														
15:00 to 16:00	**0**	**0**	**0**	**295**	**0**	**136**	**0**	**315**	**72**	**28**	**303**	**0**	**1,149**	
# of trucks in peak	0	0	0	5	0	1	0	2	1	3	1	0	13	
# of heavies in peak	0	0	0	9	0	4	0	10	5	6	10	0	44	
% heavies (Total)	0%	0%	0%	5%	0%	4%	0%	4%	8%	32%	4%	0%	5%	

Intersection: Weber St @ Randall Dr
GeoID: 8353
Municipality: Waterloo
Major Road: Weber St

Intersection Control: Signalized
Date: Tuesday, 25-Oct-22
Name: Cam
Weather: Cloudy/Dry

PEDESTRIAN CROSSING								
Time			Crossing Approach					
			East App.	West App.	North App.	South App.	TOTAL	TOTAL HOUR
7:30	to	7:45	0	0	0	2	2	
7:45	to	8:00	1	0	0	0	1	
8:00	to	8:15	0	0	0	0	0	
8:15	to	8:30	0	0	0	0	0	3
8:30	to	8:45	5	0	0	0	5	6
8:45	to	9:00	4	0	1	3	8	13
9:00	to	9:15	0	0	0	2	2	15
9:15	to	9:30	0	0	0	0	0	15
9:30	to	9:45	0	0	0	0	0	10
9:45	to	10:00	1	0	0	0	1	3
10:00	to	10:15	0	0	0	0	0	1
10:15	to	10:30	0	0	0	0	0	1
AM Peak Hour							**19**	
7:45	**to**	**8:45**	**6**	**0**	**0**	**0**	**6**	
12:00	to	12:15	3	0	0	0	3	
12:15	to	12:30	1	0	1	0	2	
12:30	to	12:45	2	0	0	0	2	
12:45	to	13:00	4	0	0	0	4	11
13:00	to	13:15	1	0	0	0	1	9
13:15	to	13:30	1	0	0	0	1	8
13:30	to	13:45	2	0	0	0	2	8
13:45	to	14:00	1	0	0	0	1	5
Midday Peak Hour							**16**	
12:00	**to**	**13:00**	10	0	1	0	**11**	
15:00	to	15:15	2	0	0	0	2	
15:15	to	15:30	1	0	0	0	1	
15:30	to	15:45	1	0	0	0	1	
15:45	to	16:00	1	0	0	0	1	5
16:00	to	16:15	0	0	0	0	0	3
16:15	to	16:30	1	0	0	0	1	3
16:30	to	16:45	3	0	1	2	6	8
16:45	to	17:00	0	0	0	3	3	10
17:00	to	17:15	1	0	1	5	7	17
17:15	to	17:30	1	0	0	0	1	17
17:30	to	17:45	1	0	1	2	4	15
17:45	to	18:00	2	0	0	0	2	14
PM Peak Hour							**29**	
15:00	**to**	**16:00**	5	0	0	0	**5**	

Ontario

TES - Traffic Engineering System
Turning Movement Count Period Report (Bikes) - Full Study

Description: HWY 85 @ NORTHFIELD DR W - RAMP 24

Region WEST

Hwy #: HWY 85

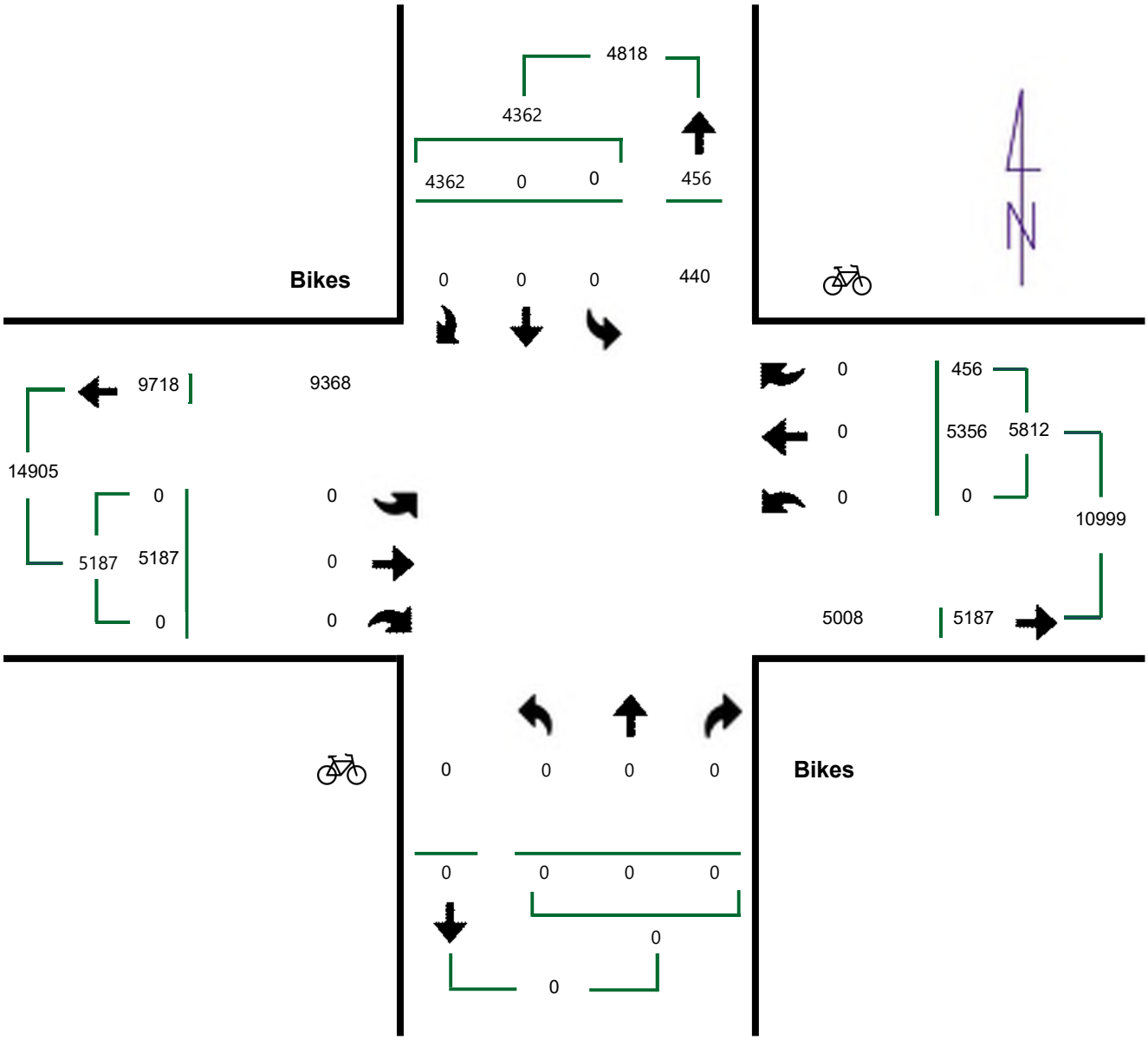
LHRS_Offset: 38480_0000_24T

Count Period: 9/27/2022 07:00 AM to 9/27/2022 06:00 PM

Count Start Date: Tuesday, 27 September, 2022

Int. Type: T-Intersection

Full Study



Ontario

TES - Traffic Engineering System
Turning Movement Count Period Report (Bikes) - AM Period

Description: HWY 85 @ NORTHFIELD DR W - RAMP 24

Region WEST

Hwy #: HWY 85

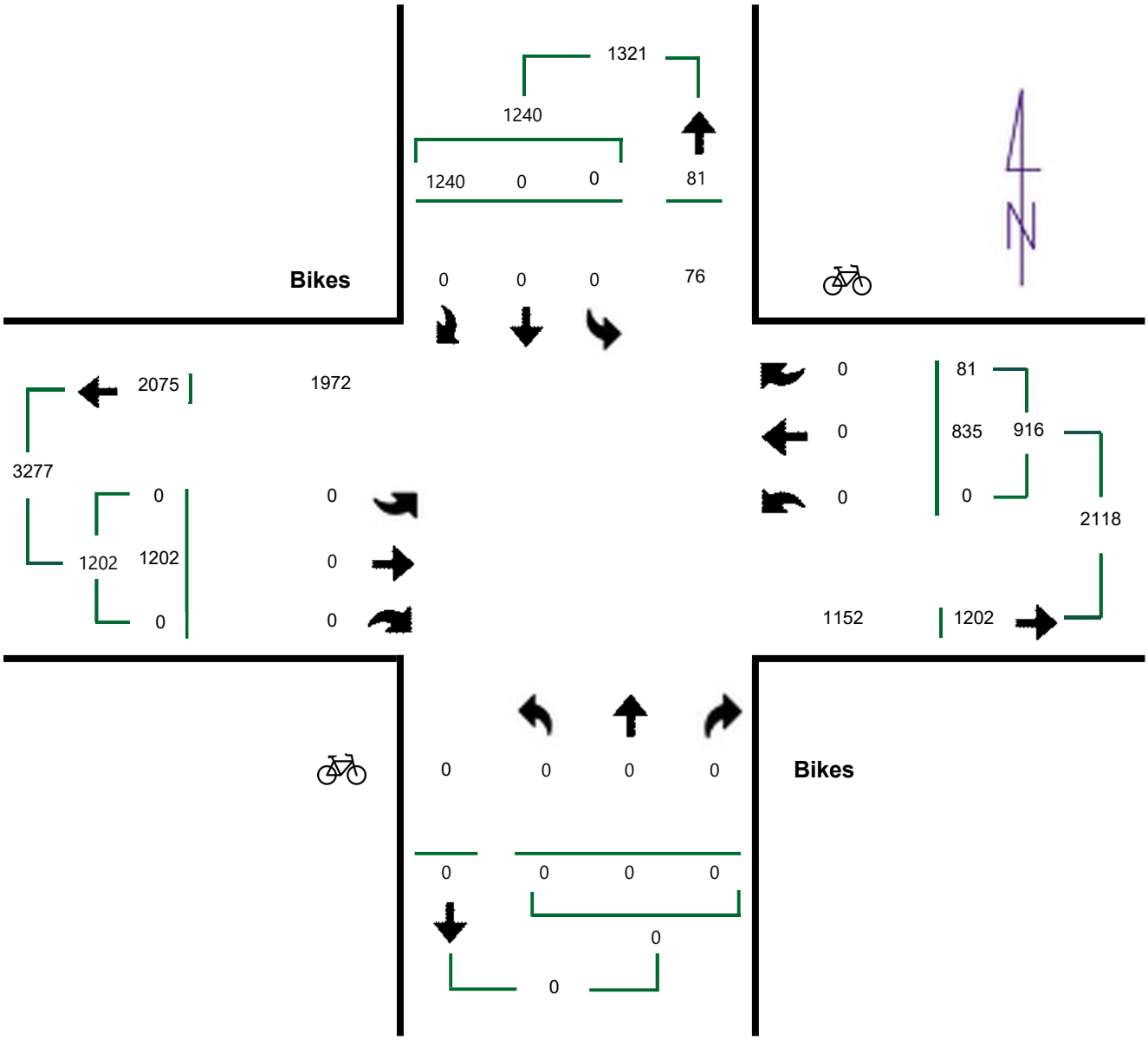
LHRS_Offset: 38480_0000_24T

Count Period: 9/27/2022 07:00 AM to 9/27/2022 09:00 AM

Count Start Date: Tuesday, 27 September, 2022

Int. Type: T-Intersection

AM Period



Ontario

TES - Traffic Engineering System
Turning Movement Count Period Report (Bikes) - MD Period

Description: HWY 85 @ NORTHFIELD DR W - RAMP 24

Region WEST

Hwy #: HWY 85

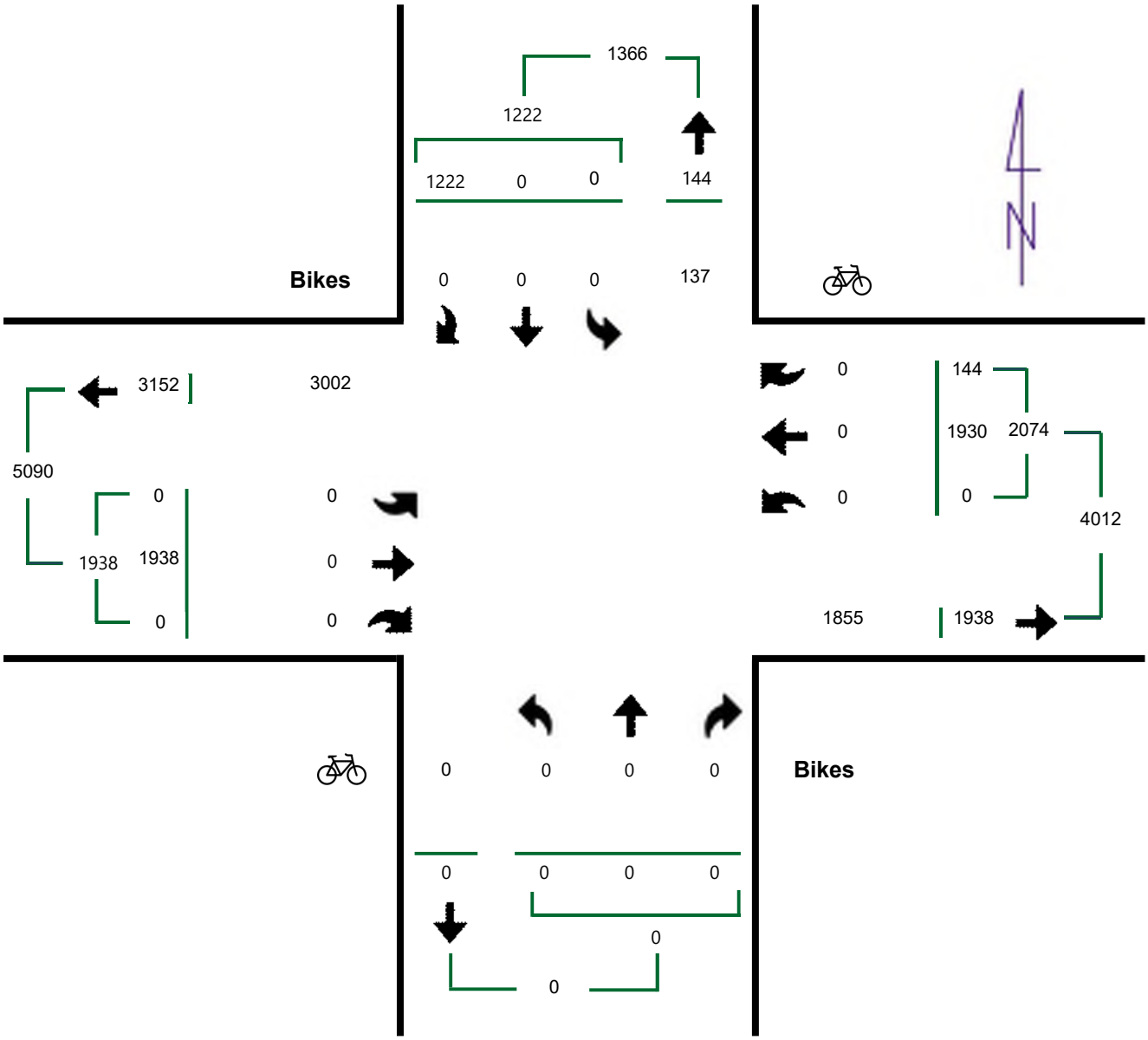
LHRS_Offset: 38480_0000_24T

Count Period: 9/27/2022 11:00 AM to 9/27/2022 02:00 PM

Count Start Date: Tuesday, 27 September, 2022

Int. Type: T-Intersection

MD Period



Ontario

TES - Traffic Engineering System
Turning Movement Count Period Report (Bikes) - PM Period

Description: HWY 85 @ NORTHFIELD DR W - RAMP 24

Region WEST

Hwy #: HWY 85

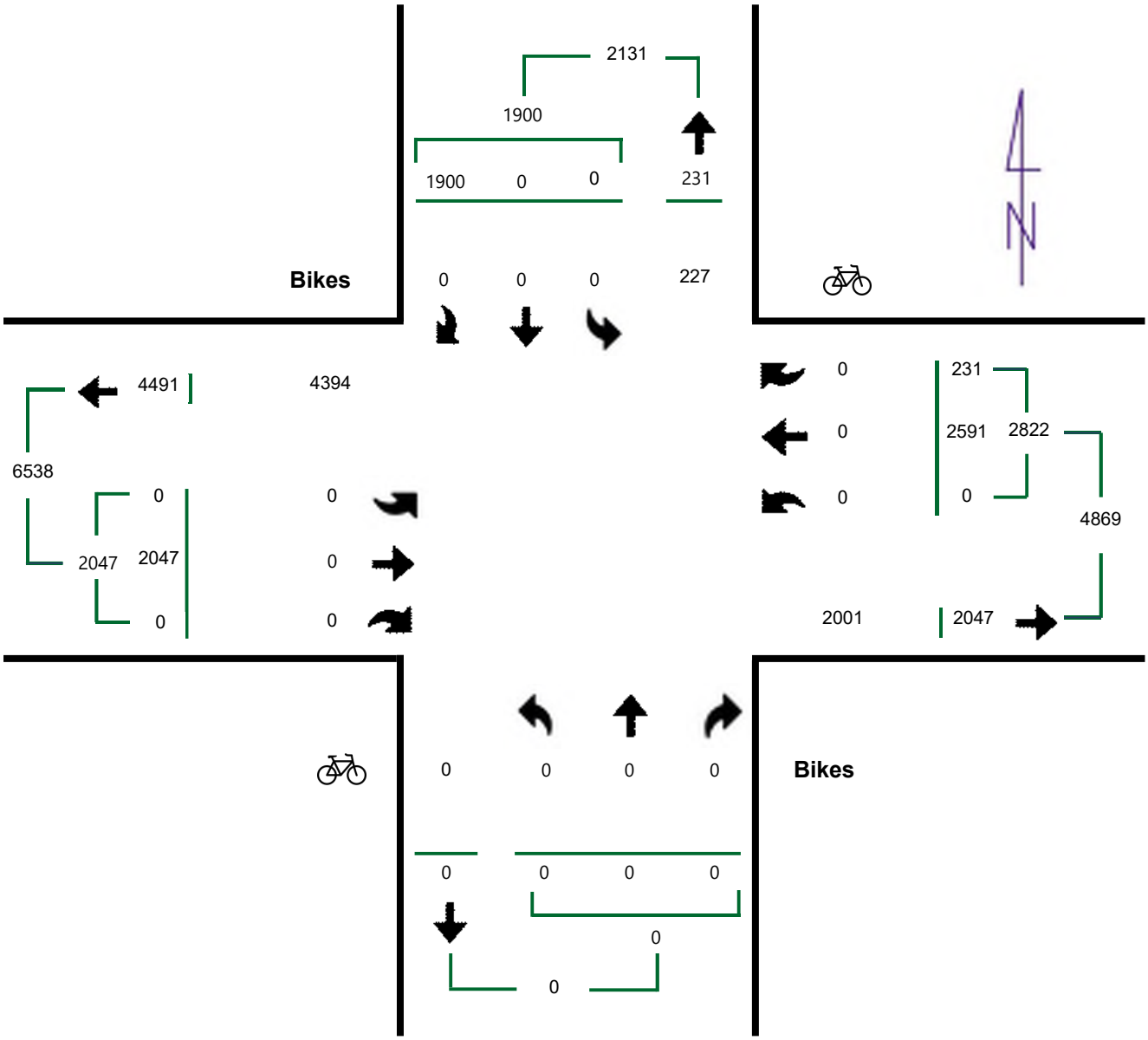
LHRS_Offset: 38480_0000_24T

Count Period: 9/27/2022 03:00 PM to 9/27/2022 06:00 PM

Count Start Date: Tuesday, 27 September, 2022

Int. Type: T-Intersection

PM Period



Ontario
Ministry of Transportation

TES - Traffic Engineering System

Turning Movement 15 Minute Report

Description: HWY 85 @ NORTHFIELD DR W - RAMP 24

Region WEST **Hwy #:** HWY 85

LHRS_Offset: 38480_0000_24T **Count Period.** 9/27/2022 7:00:00 AM

Count Start Date: 9/27/2022 12:00:00 AM 9/27/2022 6:00:00 PM

Int. Type: T-Intersection

Start Time	North										South										East										West										Total
	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	
	LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT	
07:00	0	0	96	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	62	7	0	2	0	0	8	0	0	0	103	0	0	0	0	0	3	0	0	284
07:15	0	0	108	0	0	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	72	10	0	0	0	0	3	0	0	0	121	0	0	1	0	0	6	0	0	325
07:30	0	0	122	0	0	3	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	73	7	0	2	1	0	8	1	0	0	129	0	0	0	0	0	4	0	0	353
07:45	0	0	185	0	0	7	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	99	7	0	2	0	0	3	0	0	0	158	0	0	1	0	0	7	0	0	470
08:00	0	0	160	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	119	6	0	3	1	0	4	0	0	0	135	0	0	1	0	0	3	0	0	436
08:15	0	0	168	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	124	20	0	4	1	0	3	0	0	0	150	0	0	5	0	0	3	0	0	482
08:30	0	0	203	0	0	3	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	111	10	0	6	1	0	4	0	0	0	187	0	0	3	0	0	5	0	0	537
08:45	0	0	153	0	0	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	117	9	0	3	0	0	3	0	0	0	169	0	0	6	0	0	2	0	0	471
11:00	0	0	87	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	105	10	0	3	0	0	3	0	0	0	129	0	0	5	0	0	4	0	0	352
11:15	0	0	86	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	125	18	0	4	1	0	5	0	0	0	139	0	0	3	0	0	3	0	0	389
11:30	0	0	80	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	126	12	0	7	1	0	5	1	0	0	147	0	0	6	0	0	5	0	0	395
11:45	0	0	100	0	0	2	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	167	17	0	4	0	0	1	0	0	0	189	0	0	2	0	0	3	0	0	487
12:00	0	0	94	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	168	10	0	3	0	0	3	0	0	0	148	0	0	5	0	0	4	0	0	441
12:15	0	0	100	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169	10	0	5	0	0	4	0	0	0	175	0	0	2	0	0	4	0	0	473
12:30	0	0	109	0	0	5	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	159	13	0	1	0	0	4	0	0	0	142	0	0	2	0	0	3	0	0	441
12:45	0	0	99	0	0	3	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	176	3	0	0	0	0	2	1	0	0	152	0	0	2	0	0	2	0	0	447
13:00	0	0	103	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165	7	0	2	0	0	5	0	0	0	165	0	0	6	0	0	3	0	0	458
13:15	0	0	98	0	0	2	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	179	13	0	8	1	0	2	1	0	0	192	0	0	6	0	0	3	0	0	511
13:30	0	0	91	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	161	12	0	3	0	0	4	0	0	0	117	0	0	3	0	0	4	0	0	397
13:45	0	0	108	0	0	5	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	147	12	0	2	1	0	3	0	0	0	160	0	0	1	0	0	2	0	0	443
15:00	0	0	126	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	178	18	0	3	0	0	3	0	0	0	161	0	0	0	0	0	3	0	0	494

Start Time	North										South										East										West										Total
	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	
	LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		
15:15	0	0	133	0	0	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	157	16	0	6	0	0	4	0	0	0	147	0	0	2	0	0	1	0	0	469
15:30	0	0	125	0	0	2	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	209	24	0	3	0	0	3	0	0	0	150	0	0	2	0	0	4	0	0	526
15:45	0	0	170	0	0	1	0	0	6	1	0	0	0	0	0	0	0	0	0	0	0	171	18	0	5	0	0	3	0	0	0	179	0	0	1	0	0	3	0	0	557
16:00	0	0	160	0	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	199	17	0	2	1	0	3	0	0	0	148	0	0	3	0	0	4	0	0	543
16:15	0	0	165	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	197	15	0	3	0	0	3	1	0	0	186	0	0	4	0	0	3	0	0	581
16:30	0	0	160	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	285	20	0	2	0	0	3	0	0	0	169	0	0	1	0	0	2	0	0	643
16:45	0	0	184	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	246	25	0	0	0	0	1	0	0	0	204	0	0	1	0	0	2	0	0	664
17:00	0	0	177	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	311	24	0	2	0	0	3	1	0	0	181	0	0	0	0	0	3	0	0	702
17:15	0	0	170	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	246	16	0	3	0	0	2	0	0	0	175	0	0	0	0	0	1	0	0	614
17:30	0	0	167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	186	17	0	0	0	0	2	0	0	0	150	0	0	1	0	0	3	0	0	526
17:45	0	0	129	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	143	17	0	1	1	0	3	0	0	0	151	0	0	0	0	0	2	0	0	450

Ontario

TES - Traffic Engineering System
Turning Movement Count Period Report (Bikes) - Full Study

Description: HWY 85 @ NORTHFIELD DR W - RAMP 34

Region WEST

Hwy #: HWY 85

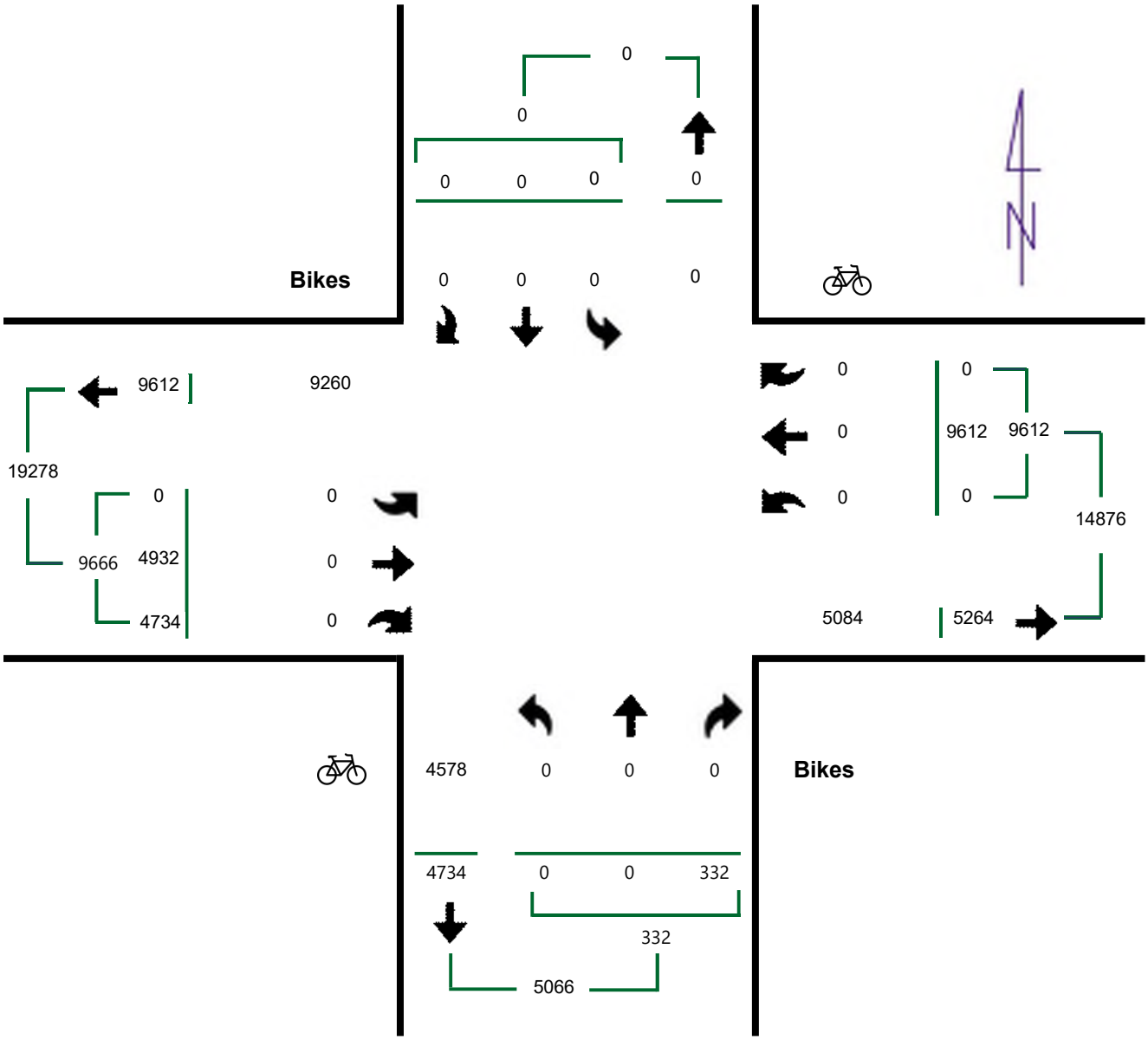
LHRS_Offset: 38480_0000_34T

Count Period: 9/27/2022 07:00 AM to 9/27/2022 06:00 PM

Count Start Date: Tuesday, 27 September, 2022

Int. Type: T-Intersection

Full Study



Ontario

TES - Traffic Engineering System
Turning Movement Count Period Report (Bikes) - AM Period

Description: HWY 85 @ NORTHFIELD DR W - RAMP 34

Region WEST

Hwy #: HWY 85

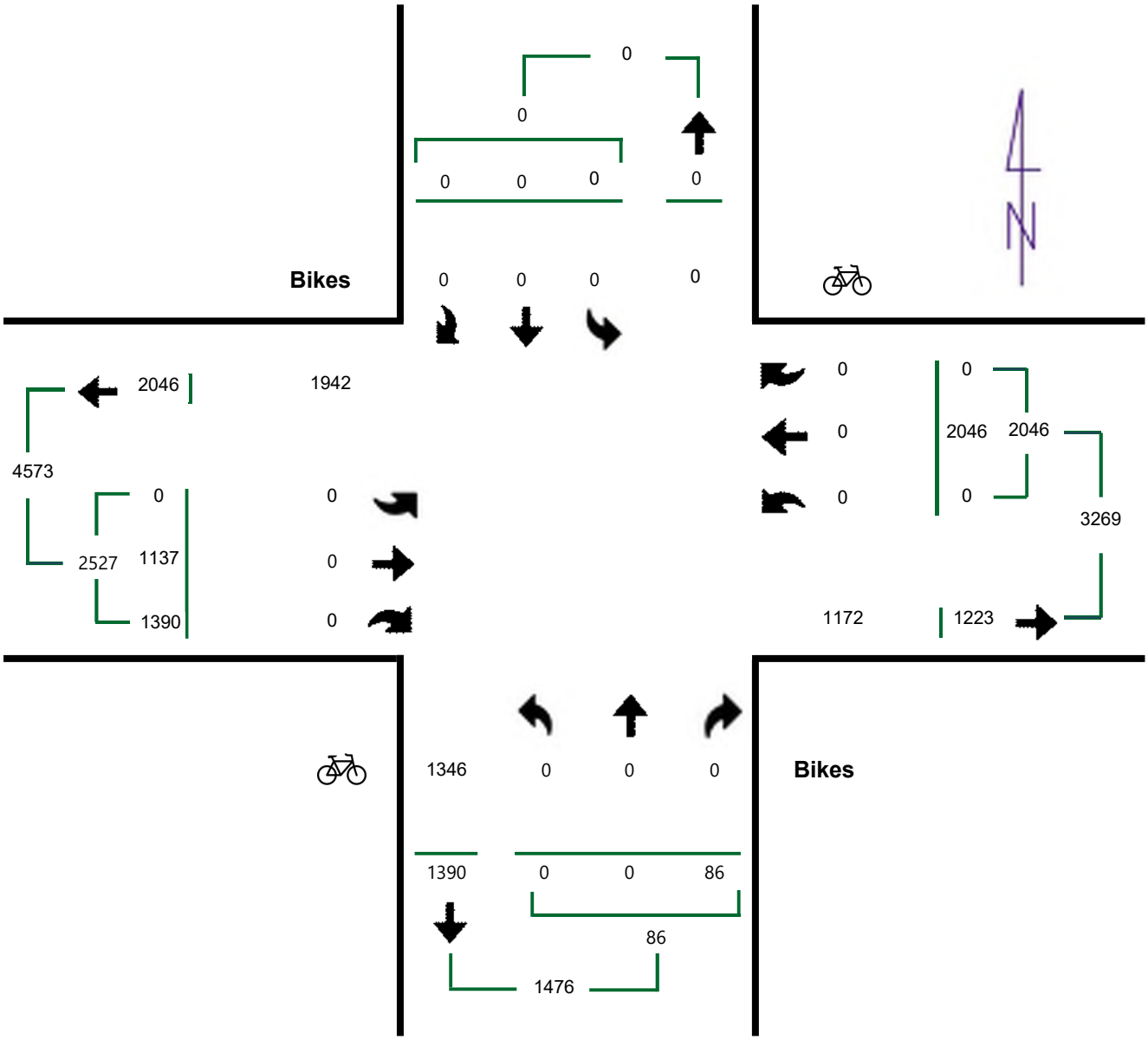
LHRS_Offset: 38480_0000_34T

Count Period: 9/27/2022 07:00 AM to 9/27/2022 09:00 AM

Count Start Date: Tuesday, 27 September, 2022

Int. Type: T-Intersection

AM Period



Ontario

TES - Traffic Engineering System
Turning Movement Count Period Report (Bikes) - MD Period

Description: HWY 85 @ NORTHFIELD DR W - RAMP 34

Region WEST

Hwy #: HWY 85

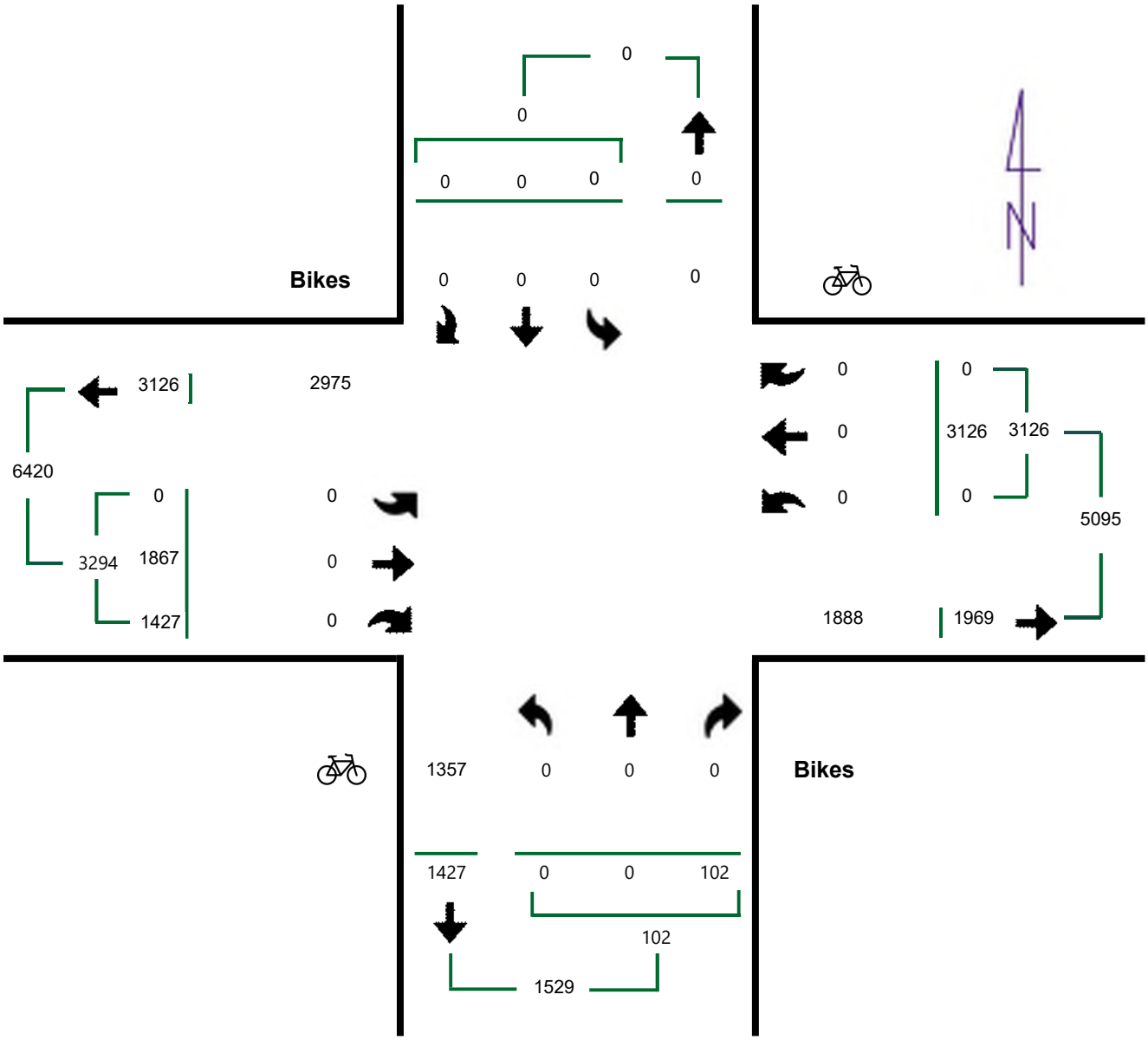
LHRS_Offset: 38480_0000_34T

Count Period: 9/27/2022 11:00 AM to 9/27/2022 02:00 PM

Count Start Date: Tuesday, 27 September, 2022

Int. Type: T-Intersection

MD Period



Ontario

TES - Traffic Engineering System
Turning Movement Count Period Report (Bikes) - PM Period

Description: HWY 85 @ NORTHFIELD DR W - RAMP 34

Region WEST

Hwy #: HWY 85

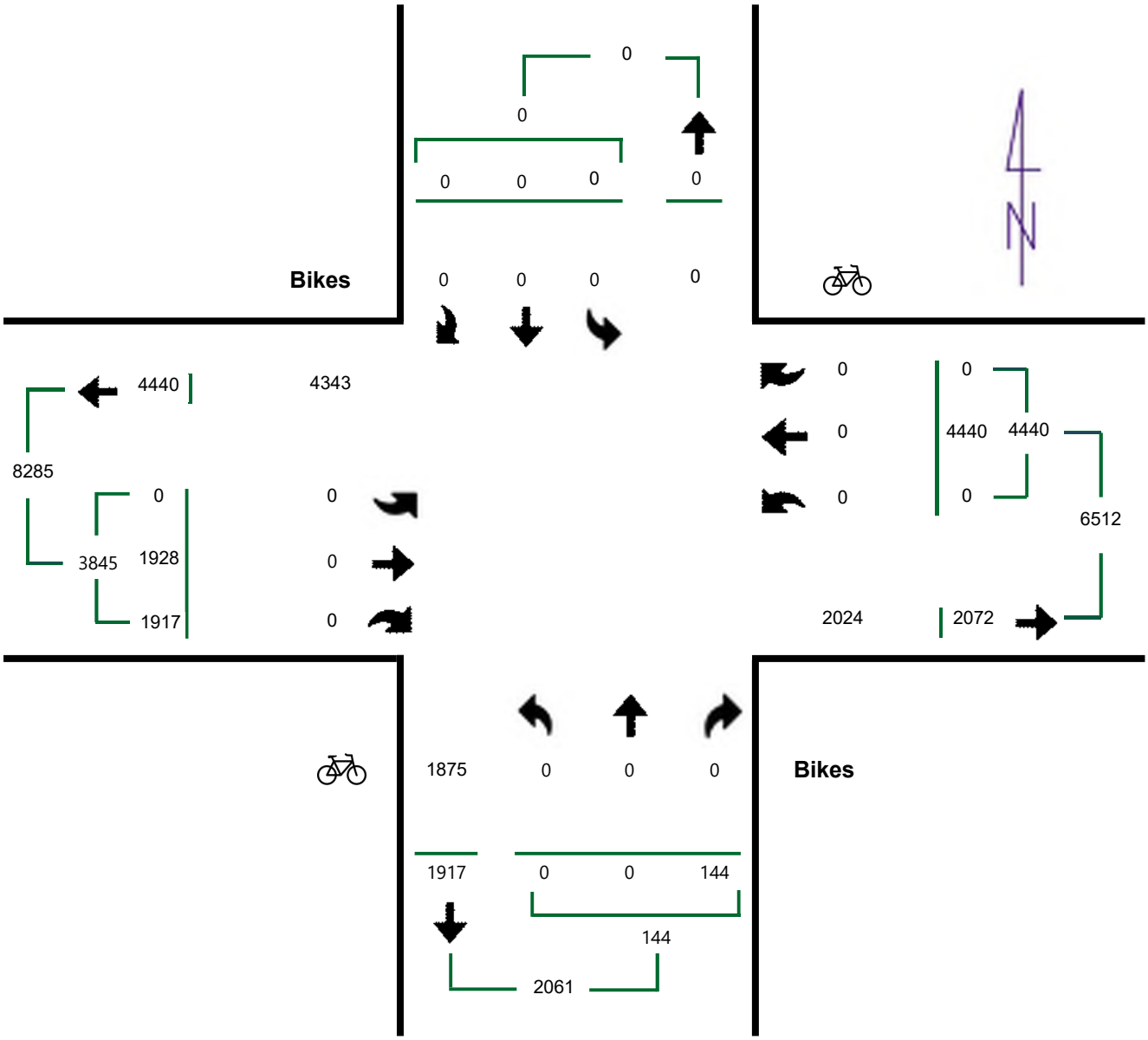
LHRS_Offset: 38480_0000_34T

Count Period: 9/27/2022 03:00 PM to 9/27/2022 06:00 PM

Count Start Date: Tuesday, 27 September, 2022

Int. Type: T-Intersection

PM Period



Ontario
Ministry of Transportation

TES - Traffic Engineering System

Turning Movement 15 Minute Report

Description: HWY 85 @ NORTHFIELD DR W - RAMP 34

Region WEST **Hwy #:** HWY 85

LHRS_Offset: 38480_0000_34T **Count Period.** 9/27/2022 7:00:00 AM

Count Start Date: 9/27/2022 12:00:00 AM 9/27/2022 6:00:00 PM

Int. Type: T-Intersection

Start Time	North										South										East										West										Total
	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	
	LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	1	4	0	154	0	0	3	0	0	10	0	0	0	93	107	0	0	0	0	2	4	0	386
07:15	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	1	0	0	176	0	0	2	0	0	7	0	0	0	119	178	0	0	1	0	6	1	0	498
07:30	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	1	0	0	0	0	0	199	0	0	4	0	0	11	0	0	0	118	196	0	0	1	0	3	1	0	542
07:45	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	3	0	0	271	0	0	9	0	0	5	0	0	0	155	196	0	1	5	0	4	5	0	662
08:00	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	1	0	276	0	0	5	0	0	5	0	0	0	133	182	0	1	3	0	3	4	0	622
08:15	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	288	0	0	6	0	0	4	0	0	0	136	171	0	5	5	0	3	3	0	632
08:30	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	1	0	0	0	0	0	307	0	0	10	0	0	7	0	0	0	182	183	0	2	4	0	5	4	0	717
08:45	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	2	0	0	0	0	0	271	0	0	7	0	0	9	0	0	0	159	133	0	5	1	0	2	2	0	600
11:00	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	2	0	0	0	0	0	189	0	0	6	0	0	6	0	0	0	131	115	0	3	5	0	4	3	0	471
11:15	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	204	0	0	6	0	0	8	0	0	0	128	79	0	3	3	0	3	1	0	442
11:30	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	1	0	0	208	0	0	8	0	0	7	0	0	0	164	163	0	6	0	0	5	6	0	577
11:45	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	266	0	0	8	0	0	3	0	0	0	163	116	0	2	2	0	2	2	0	571
12:00	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	1	0	0	257	0	0	6	0	0	6	0	0	0	155	130	0	4	3	0	4	3	0	575
12:15	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	272	0	0	9	0	0	4	0	0	0	167	91	0	2	4	0	3	0	0	558
12:30	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	1	0	259	0	0	6	0	0	7	0	0	0	153	112	0	2	6	0	3	4	0	561
12:45	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	271	0	0	4	0	0	9	0	0	0	126	96	0	2	1	0	2	3	0	519
13:00	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	1	0	0	0	0	0	268	0	0	4	0	0	6	0	0	0	168	120	0	4	6	0	3	1	0	592
13:15	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	1	0	0	0	1	0	282	0	0	10	0	0	7	0	0	0	176	107	0	4	4	0	3	1	0	605
13:30	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	244	0	0	3	0	0	6	0	0	0	120	133	0	5	3	0	4	4	0	530
13:45	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	255	0	0	7	0	0	5	0	0	0	141	95	0	1	1	0	1	4	0	521
15:00	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	1	0	0	0	1	0	294	0	0	5	0	0	4	0	0	0	154	181	0	0	1	0	3	1	0	657

Start Time	North										South										East										West										Total
	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	
	LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT		LT	TH	RT	LT	TH	RT	LT	TH	RT	
15:15	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	287	0	0	5	0	0	6	0	0	0	147	158	0	2	2	0	1	4	0	621
15:30	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	327	0	0	5	0	0	7	0	0	0	156	172	0	1	0	0	4	2	0	683
15:45	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	1	1	0	347	0	0	6	0	0	9	0	0	0	143	142	0	1	1	0	2	1	0	668
16:00	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	1	1	0	376	0	0	3	0	0	8	0	0	0	154	180	0	3	4	0	3	3	0	740
16:15	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	1	0	0	0	0	0	347	0	0	4	0	0	7	0	0	0	167	156	0	2	3	0	3	1	0	700
16:30	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	433	0	0	1	0	0	4	0	0	0	168	180	0	2	3	0	2	3	0	805
16:45	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	0	0	427	0	0	1	0	0	1	0	0	0	175	128	0	1	1	0	2	3	0	762
17:00	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	1	0	0	0	0	0	467	0	0	5	0	0	3	0	0	0	189	199	0	0	3	0	3	1	0	884
17:15	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	2	0	410	0	0	0	0	0	3	0	0	0	157	132	0	0	2	0	1	1	0	725
17:30	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	356	0	0	0	0	0	2	0	0	0	145	147	0	1	0	0	3	1	0	661
17:45	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	272	0	0	3	0	0	5	0	0	0	131	100	0	0	1	0	2	0	0	523

CURRENT TRAFFIC SIGNAL TIMING

INT # **14** | **WEBER STREET @ Northfield Drive** | T08-50/ **46W**

Date Prepared: **July 11, 2023**

Mode of Control **Fixed Time**

Left Info							
	Actuated	**SB**	LT	-	**Weber Street - Dual LT**	via	**wired 24/7**
	Actuated	**NB**	LT	-	**Weber Street**	via	**phase omit**
	Actuated	**EB**	LT	-	**Northfield Drive**	via	**phase omit**
	Actuated	**WB**	LT	-	**Northfield Drive**	via	**phase omit**

*Offsets are a percentage of the cycle length and refers to the beginning of Main Street green

Pattern 1 06:30 - 09:00 M-F, 07:30 - 14:00 Sat

WEBER STREET								OFFSET	13%
SBL Green Arrow	Min	7.0	seconds	NBL Green Arrow			Min	5.0	seconds
	Ext	3.0	seconds				Ext	3.0	seconds
	Max	16.8	seconds				Max	6.8	seconds
SBL Amber Arrow		4.0	seconds	NBL Amber Arrow				3.0	seconds
All Red		2.0	seconds	All Red				1.0	seconds
Green		30.0	seconds						
Amber		4.0	seconds	Walk	11.0	seconds			
All Red		2.0	seconds	FDW	19.0	seconds			
Northfield Drive									
EBL Green Arrow	Min	5.0	seconds	WBL Green Arrow			Min	5.0	seconds
	Ext	4.0	seconds				Ext	3.0	seconds
	Max	12.8	seconds				Max	8.0	seconds
EBL Amber Arrow		3.0	seconds	WBL Amber Arrow				3.0	seconds
All Red		1.0	seconds	All Red				1.0	seconds
Green		38.4	seconds						
Amber		4.0	seconds	Walk	14.4	seconds			
All Red		2.0	seconds	FDW	24.0	seconds			
TOTAL		120.0	seconds						

Min=Minimum Time
Ext=Extension Time
Max=Maximum Time

This signal timing cannot be presented as evidence in a court of law.

Pattern 2 09:00-15:00, 18:00-22:00 M-F, 14:00-22:00 Sa, 11:00-22:00 Su

WEBER STREET OFFSET 69%

SBL Green Arrow	Min	7.0	seconds	NBL Green Arrow	Min	5.0	seconds
	Ext	3.0	seconds		Ext	3.0	seconds
	Max	14.9	seconds		Max	10.3	seconds
SBL Amber Arrow		4.0	seconds	NBL Amber Arrow		3.0	seconds
All Red		2.0	seconds	All Red		1.0	seconds
Green		29.2	seconds				
Amber		4.0	seconds	Walk 10.2 seconds			
All Red		2.0	seconds	FDW 19.0 seconds			

Northfield Drive

EBL Green Arrow	Min	5.0	seconds	WBL Green Arrow	Min	5.0	seconds
	Ext	4.0	seconds		Ext	3.0	seconds
	Max	12.5	seconds		Max	12.5	seconds
EBL Amber Arrow		3.0	seconds	WBL Amber Arrow		3.0	seconds
All Red		1.0	seconds	All Red		1.0	seconds
Green		31.4	seconds				
Amber		4.0	seconds	Walk 7.4 seconds			
All Red		2.0	seconds	FDW 24.0 seconds			
TOTAL		110.0	seconds				

Pattern 3 15:00 - 18:00 Mon to Fri

WEBER STREET OFFSET 61%

SBL Green Arrow	Min	7.0	seconds	NBL Green Arrow	Min	5.0	seconds
	Ext	3.0	seconds		Ext	3.0	seconds
	Max	20.4	seconds		Max	17.6	seconds
SBL Amber Arrow		4.0	seconds	NBL Amber Arrow		3.0	seconds
All Red		2.0	seconds	All Red		1.0	seconds
Green		27.6	seconds				
Amber		4.0	seconds	Walk 8.6 seconds			
All Red		2.0	seconds	FDW 19.0 seconds			

Northfield Drive

EBL Green Arrow	Min	5.0	seconds	WBL Green Arrow	Min	5.0	seconds
	Ext	4.0	seconds		Ext	3.0	seconds
	Max	9.2	seconds		Max	11.6	seconds
EBL Amber Arrow		3.0	seconds	WBL Amber Arrow		3.0	seconds
All Red		1.0	seconds	All Red		1.0	seconds
Green		38.4	seconds				
Amber		4.0	seconds	Walk 14.4 seconds			
All Red		2.0	seconds	FDW 24.0 seconds			
TOTAL		120.0	seconds				

Min=Minimum Time
Ext=Extension Time
Max=Maximum Time

This signal timing cannot be presented as evidence in a court of law.

Pattern 4 All Other Times

WEBER STREET OFFSET 94%

SBL Green Arrow	Min	7.0	seconds			
	Ext	3.0	seconds			
	Max	13.0	seconds			
SBL Amber Arrow		4.0	seconds			
All Red		2.0	seconds			
Green		31.0	seconds			
Amber		4.0	seconds	Walk	12.0	seconds
All Red		2.0	seconds	FDW	19.0	seconds

Northfield Drive

Green		38.0	seconds			
Amber		4.0	seconds	Walk	14.0	seconds
All Red		2.0	seconds	FDW	24.0	seconds
TOTAL		100.0	seconds			

Min=Minimum Time
Ext=Extension Time
Max=Maximum Time

This signal timing cannot be presented as evidence in a court of law.

CURRENT TRAFFIC SIGNAL TIMING

INT # 15 | WEBER STREET @ Parkside Drive | T08-50/ 48W

Date Prepared: July 11, 2023

Mode of Control FIXED TIME

Left Info

Acuated	NB	LT	-	WEBER STREET
Acuated	SB	LT	-	WEBER STREET

*Offsets are a percentage of the cycle length and refers to the beginning of Main Street green

Pattern 1 07:00 - 10:30 M-F

WEBER STREET						OFFSET	99%
Green	37.2	seconds					
Amber	4.0	seconds	Walk	27.2	seconds		
All Red	2.0	seconds	FDW	10.0	seconds		
Parkside Drive							
Green	30.8	seconds					
Amber	4.0	seconds	Walk	20.8	seconds		
All Red	2.0	seconds	FDW	10.0	seconds		
TOTAL	80.0	seconds					

Pattern 2 10:30 - 14:30 M-F, 08:00 - 20:00 Sa & Su

WEBER STREET						OFFSET	95%
Green	38.8	seconds					
Amber	4.0	seconds	Walk	28.8	seconds		
All Red	2.0	seconds	FDW	10.0	seconds		
Parkside Drive							
Green	29.2	seconds					
Amber	4.0	seconds	Walk	19.2	seconds		
All Red	2.0	seconds	FDW	10.0	seconds		
TOTAL	80.0	seconds					

Pattern 3 14:30 - 16:00, 18:00 - 20:00 M-F

WEBER STREET						OFFSET	5%
Green	41.2	seconds					
Amber	4.0	seconds	Walk	31.2	seconds		
All Red	2.0	seconds	FDW	10.0	seconds		
Parkside Drive							
Green	26.8	seconds					
Amber	4.0	seconds	Walk	16.8	seconds		
All Red	2.0	seconds	FDW	10.0	seconds		
TOTAL	80.0	seconds					

Min=Minimum Time
Ext=Extension Time
Max=Maximum Time

This signal timing cannot be presented as evidence in a court of law.

Pattern 4 16:00 - 18:00 M-F

WEBER STREET									OFFSET	5%
SBL	Green Arrow	Min	5.0	seconds	NBL	Green Arrow			Min 5.0	seconds
		Ext	3.0	seconds					Ext 3.0	seconds
		Max	5.6	seconds					Max 5.6	seconds
SBL	Amber Arrow		3.0	seconds	NBL	Amber Arrow			3.0	seconds
All Red			1.0	seconds	All Red				1.0	seconds
Green			30.0	seconds						
Amber			4.0	seconds	Walk		20.0	seconds		
All Red			2.0	seconds	FDW		10.0	seconds		
Parkside Drive										
Green			28.4	seconds						
Amber			4.0	seconds	Walk		18.4	seconds		
All Red			2.0	seconds	FDW		10.0	seconds		
TOTAL			80.0	seconds						

Pattern 5 ALL OTHER TIMES

WEBER STREET							OFFSET	36%
Green		33.0	seconds					
Amber		4.0	seconds	Walk	23.0	seconds		
All Red		2.0	seconds	FDW	10.0	seconds		
Parkside Drive								
Green		20.0	seconds					
Amber		4.0	seconds	Walk	10.0	seconds		
All Red		2.0	seconds	FDW	10.0	seconds		
		65.0	seconds					

Min=Minimum Time
Ext=Extension Time
Max=Maximum Time

This signal timing cannot be presented as evidence in a court of law.

CURRENT TRAFFIC SIGNAL TIMING

INT # **356** | **WEBER STREET @ Randall Street** | T08-50/ **120W**

Date Prepared: **November 27, 2023**

Mode of Control **Semi-Actuated**

Left Info **Actuated** **SB** LT - **WEBER STREET**

Max 1 07:00 - 09:15, 16:00 - 18:00 Monday to Friday

WEBER STREET

SB Green Arrow	Min	5.0	seconds				
	Ext	3.0	seconds				
	Max	15.0	seconds				
SB Amber Arrow		3.0	seconds				
All Red		1.0	seconds				
Green		35.0	seconds				
Amber		4.0	seconds	Walk	25.0	seconds	
All Red		2.0	seconds	FDW	10.0	seconds	

Randall Street

				Pedestrian Call		
Green	Min	8.0	seconds	Green/Walk	7.0	seconds
	Ext	3.0	seconds	Green/FDW	11.0	seconds
	Max	40.0	seconds	Green/SDW	22.0	seconds
Amber		4.0	seconds	Amber	4.0	seconds
All Red		2.0	seconds	All Red	2.0	seconds

Max 2 09:15 - 16:00 Monday to Friday

WEBER STREET

SB Green Arrow	Min	5.0	seconds				
	Ext	3.0	seconds				
	Max	10.0	seconds				
SB Amber Arrow		3.0	seconds				
All Red		1.0	seconds				
Green		35.0	seconds				
Amber		4.0	seconds	Walk	25.0	seconds	
All Red		2.0	seconds	FDW	10.0	seconds	

Randall Street

				Pedestrian Call		
Green	Min	8.0	seconds	Green/Walk	7.0	seconds
	Ext	3.0	seconds	Green/FDW	11.0	seconds
	Max	25.0	seconds	Green/SDW	7.0	seconds
Amber		4.0	seconds	Amber	4.0	seconds
All Red		2.0	seconds	All Red	2.0	seconds

Min=Minimum Time
Ext=Extension Time
Max=Maximum Time

This signal timing cannot be presented as evidence in a court of law.

Max 3 All other Times

WEBER STREET

Green		30.0	seconds			
Amber		4.0	seconds	Walk	20.0	seconds
All Red		2.0	seconds	FDW	10.0	seconds

Randall Street

				Pedestrian Call		
Green	Min	8.0	seconds	Green/Walk	7.0	seconds
	Ext	3.0	seconds	Green/FDW	11.0	seconds
	Max	20.0	seconds	Green/SDW	2.0	seconds
Amber		4.0	seconds	Amber	4.0	seconds
All Red		2.0	seconds	All Red	2.0	seconds

Min=Minimum Time
Ext=Extension Time
Max=Maximum Time

This signal timing cannot be presented as evidence in a court of law.

CURRENT TRAFFIC SIGNAL TIMING

INT # 504 | NORTHFIELD DRIVE @ Parkside Drive/Waterloo Corporate Campus | T08-50/ 69W

Date Prepared: July 11, 2023

Mode of Control SEMI-ACTUATED

Left Info Actuated WB LT - NORTHFIELD DRIVE

*Offsets are a percentage of the cycle length and refers to the beginning of Main Street green

Max 1 06:30 - 09:00 Monday to Friday

NORTHFIELD DRIVE

WBL	Green Arrow	Min	5.0	seconds			
		Ext	3.0	seconds			
		Max	30.0	seconds			
WBL	Amber Arrow		3.0	seconds			
All Red			1.0	seconds			
Green			40.0	seconds			
Amber			4.0	seconds	Walk	32.0	seconds
All Red			2.0	seconds	FDW	8.0	seconds

Parkside Drive/Waterloo Corporate Campus

					Pedestrian Call		
Green	Min	8.0	seconds		Green/Walk	10.0	seconds
	Ext	3.0	seconds		Green/FDW	18.0	seconds
	Max	30.0	seconds		Green/SDW	2.0	seconds
Amber		4.0	seconds		Amber	4.0	seconds
All Red		2.0	seconds		All Red	2.0	seconds

Max 2 09:00-16:00, 16:30-22:00 M-F, 07:30-22:00 Sa, 09:00-18:00 Su

NORTHFIELD DRIVE

WBL	Green Arrow	Min	5.0	seconds			
		Ext	3.0	seconds			
		Max	30.0	seconds			
WBL	Amber Arrow		3.0	seconds			
All Red			1.0	seconds			
Green			40.0	seconds			
Amber			4.0	seconds	Walk	32.0	seconds
All Red			2.0	seconds	FDW	8.0	seconds

Parkside Drive/Waterloo Corporate Campus

					Pedestrian Call		
Green	Min	8.0	seconds		Green/Walk	10.0	seconds
	Ext	3.0	seconds		Green/FDW	18.0	seconds
	Max	30.0	seconds		Green/SDW	2.0	seconds
Amber		4.0	seconds		Amber	4.0	seconds
All Red		2.0	seconds		All Red	2.0	seconds

Min=Minimum Time
Ext=Extension Time
Max=Maximum Time

This signal timing cannot be presented as evidence in a court of law.

Max 3 16:00 - 16:30 Monday to Friday

NORTHFIELD DRIVE

WBL	Green Arrow	Min	5.0	seconds			
		Ext	3.0	seconds			
		Max	30.0	seconds			
WBL	Amber Arrow		3.0	seconds			
All Red			1.0	seconds			
Green			40.0	seconds			
Amber			4.0	seconds	Walk	32.0	seconds
All Red			2.0	seconds	FDW	8.0	seconds

Parkside Drive/Waterloo Corporate Campus

					Pedestrian Call		
Green	Min	8.0	seconds		Green/Walk	10.0	seconds
	Ext	3.0	seconds		Green/FDW	18.0	seconds
	Max	30.0	seconds		Green/SDW	2.0	seconds
Amber		4.0	seconds		Amber	4.0	seconds
All Red		2.0	seconds		All Red	2.0	seconds

Max 1 - WBLT omitted All Other Times

NORTHFIELD DRIVE

Green			40.0	seconds			
Amber			4.0	seconds	Walk	32.0	seconds
All Red			2.0	seconds	FDW	8.0	seconds

Parkside Drive/Waterloo Corporate Campus

					Pedestrian Call		
Green	Min	8.0	seconds		Green/Walk	10.0	seconds
	Ext	3.0	seconds		Green/FDW	18.0	seconds
	Max	30.0	seconds		Green/SDW	2.0	seconds
Amber		4.0	seconds		Amber	4.0	seconds
All Red		2.0	seconds		All Red	2.0	seconds

Min=Minimum Time
Ext=Extension Time
Max=Maximum Time

This signal timing cannot be presented as evidence in a court of law.

CURRENT TRAFFIC SIGNAL TIMING

INT # **712** | **NORTHFIELD DRIVE @ Waterloo Spur** | T08-50/ **136W**

Date Prepared: **July 11, 2023**

Mode of Control **Semi-Actuated**

*Offsets are a percentage of the cycle length and refers to the beginning of Main Street green

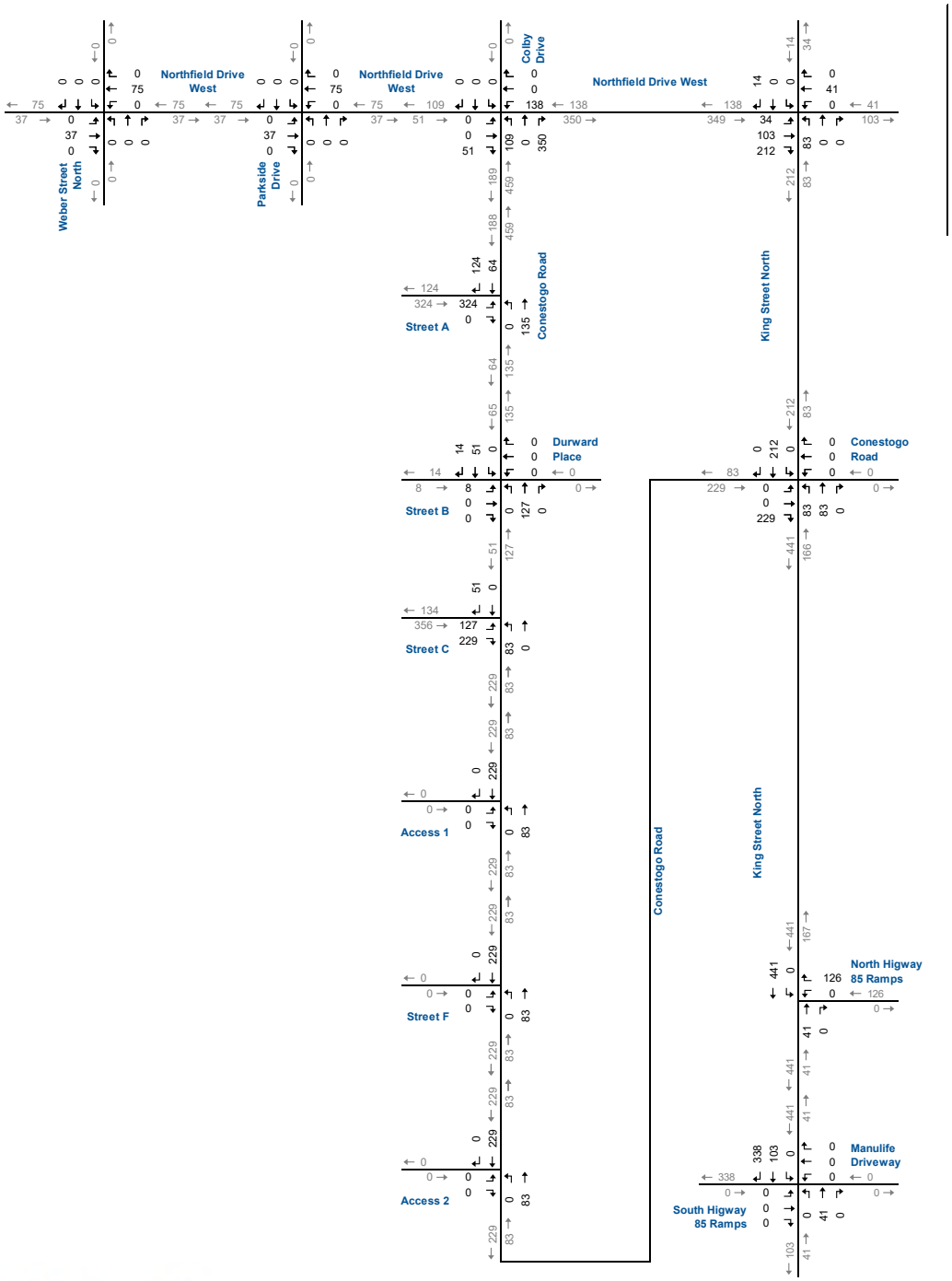
Max 1		07:00 - 21:00 Monday to Friday, 08:30 to 21:00 Saturday, 09:00 to 18:00 Sunday	
Northfield Drive			
Green	Min -	30	seconds
	Ext -	5	seconds
	Max -	50	seconds
Amber		4	seconds
All Red		4	seconds
Waterloo Spur Ped Crossing			
WALK		10	seconds
FDW		18	seconds
SDW		6	seconds
Max 2		All Other Times	
Northfield Drive			
Green	Min -	30	seconds
	Ext -	5	seconds
	Max -	50	seconds
Amber		4	seconds
All Red		4	seconds
Waterloo Spur Ped Crossing			
WALK		10	seconds
FDW		18	seconds
SDW		6	seconds

Min=Minimum Time
Ext=Extension Time
Max=Maximum Time

This signal timing cannot be presented as evidence in a court of law.

APPENDIX C

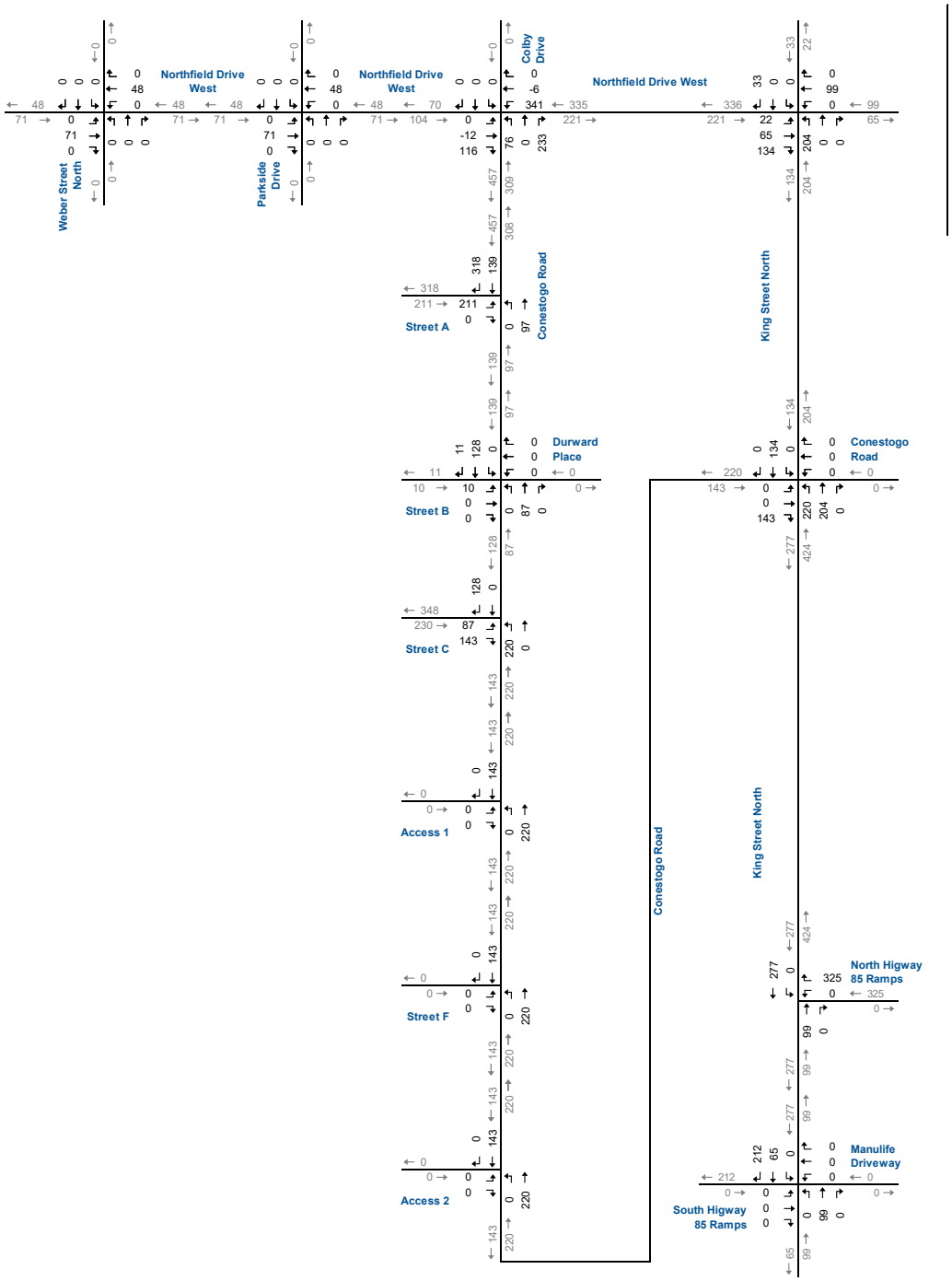
Background Developments



Revised Site-Generated AM Peak Hour Traffic Volumes

562-565 Conestogo Road
220661

Figure 6



Revised Site-Generated PM Peak Hour Traffic Volumes

562-565 Conestogo Road
220661

Figure 7

APPENDIX D

TTS Trip Distribution Data

RESIDENTIAL DISTRIBUTION

AM OUTBOUND

Subject Site lies in TTS Zone 7018

Fri Nov 10 2023 11:50:58 GMT-0500 (Eastern Standard Time) - Run Time: 2777ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 7004, 7008, 7010-7012, 7025-7026, 7028-7029, 7034-7038, 7054, 7062, and
Start time of trip - start_time In 600-900, and
Primary travel mode of trip - mode_prime In D,M,T,P, and Waterloo 7001-7576
Trip purpose of origin - purp_orig In H, and
2006 GTA zone of destination - gta06_dest In 1-9016, and Wellesley Woolwich Waterloo Guelph
Type of dwelling unit - dwell_type In 2) Wilmot Cambridge Kitchener

Trip 2016
ROW : gta06_orig

COLUMN : gta06_dest			Zone			Value	General Direction	Path							Value						
								Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr	Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr
gta06_orig	gta06_dest	total	From	To	Muncipality			North	South	West	East	North	South	South	North	South	West	East	North	South	South
7004	7025	21	7004	7025	Waterloo	21	West			100%					0	0	21	0	0	0	0
7004	7179	14		7179	Kitchener	14	South						100%		0	0	0	0	0	14	0
7004	7351	21		7351	Cambridge	21	South						100%		0	0	0	0	0	21	0
7004	7572	28		7572	Woolwich	28	West			100%					0	0	28	0	0	0	0
7008	7001	13		7001	Waterloo	13	East				100%				0	0	0	13	0	0	0
7010	7010	22	7010	7010	Waterloo	22	East				100%				0	0	0	22	0	0	0
7010	7016	38		7016	Waterloo	38	East				100%				0	0	0	38	0	0	0
7010	7056	22		7056	Waterloo	22	South		100%						0	22	0	0	0	0	0
7010	7097	24		7097	Kitchener	24	South						100%		0	0	0	0	0	24	0
7012	8351	26	7012	8351	Wellington	26	South						100%		0	0	0	0	0	26	0
7025	7023	18	7025	7023	Waterloo	18	South		100%						0	18	0	0	0	0	0
7025	7536	25		7536	Wellesley	25	West			100%					0	0	25	0	0	0	0
7025	8114	18		8114	Guelph	18	East						100%		0	0	0	0	0	18	0
7029	7020	18	7029	7020	Waterloo	18	South		100%						0	18	0	0	0	0	0
7029	7179	48		7179	Kitchener	48	South						100%		0	0	0	0	0	48	0
7029	7321	38		7321	Cambridge	38	South						100%		0	0	0	0	0	38	0
7029	7387	48		7387	Cambridge	48	South						100%		0	0	0	0	0	48	0
7035	7017	11	7035	7017	Waterloo	11	North	100%							11	0	0	0	0	0	0
7035	7037	19		7037	Waterloo	19	South		100%						0	19	0	0	0	0	0
7035	7248	47		7248	Waterloo	47	West			100%					0	0	47	0	0	0	0
7035	7392	19		7392	Cambridge	19	South						100%		0	0	0	0	0	19	0
7035	8186	38		8186	Guelph	38	East						100%		0	0	0	0	0	38	0
7036	7017	60	7036	7017	Waterloo	60	North	100%							60	0	0	0	0	0	0
7036	7019	30		7019		30								100%	0	0	0	0	0	0	30
7036	7031	38		7031		38	Southwest							100%	0	0	0	0	0	0	38
7036	7033	67		7033		67								100%	0	0	0	0	0	0	67
7036	7106	38		7106		38	South		100%						0	38	0	0	0	0	0
7038	7043	15	7038	7043	Waterloo	15	South							100%	0	0	0	0	0	0	15
7038	7303	48		7303	Cambridge	48	South						100%		0	0	0	0	0	48	0
7054	7007	20	7054	7007	Waterloo	20	East				100%				0	0	0	20	0	0	0
7054	7008	54		7008	Waterloo	54	East				100%				0	0	0	54	0	0	0
7054	7013	32		7013	Waterloo	32	Southeast				100%				0	0	0	32	0	0	0
7054	7042	23		7042	Waterloo	23	South							100%	0	0	0	0	0	0	23
7054	7135	23		7135	Kitchener	23	South						100%		0	0	0	0	0	23	0
7054	7137	19		7137	Kitchener	19	South						100%		0	0	0	0	0	19	0
7054	7190	54		7190	Kitchener	54	South						100%		0	0	0	0	0	54	0
7054	7268	23		7268	Kitchener	23	Southwest			100%					0	0	23	0	0	0	0
						1,120									71	115	144	179	0	438	173
															6%	10%	13%	16%	0%	39%	15%

PM OUTBOUND

Subject Site lies in TTS Zone 7018

Fri Nov 10 2023 12:08:29 GMT-0500 (Eastern Standard Time) - Run Time: 3179ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 7004, 7008-7011, 7025-7026, 7029, 7034-7037, 7050-7051, 7054, and
Start time of trip - start_time In 1500-1900, and
Primary travel mode of trip - mode_prime In D,M,T,P, and
Trip purpose of origin - purp_orig In H, and
2006 GTA zone of destination - gta06_dest In 1-9016, and
Type of dwelling unit - dwell_type In 2) Waterloo 7001-7576

Trip 2016
ROW : gta06_orig

COLUMN : gta06_dest			Zone			Value	General Direction	Path							Value						
								Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr	Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr
gta06_orig	gta06_dest	total	From	To	Muncipality			North	South	West	East	North	South	South	North	South	West	East	North	South	South
7029	7013	76	7029	7013	Waterloo	76	East				100%				0	0	0	76	0	0	0
7029	7042	48		7042	Waterloo	48	South							100%	0	0	0	0	0	0	48
7029	7141	96		7141	Cambridge	96	South						100%		0	0	0	0	0	96	0
7035	7011	23	7035	7011	Waterloo	23	East				100%				0	0	0	23	0	0	0
7035	7244	21		7244	Waterloo	21	West			100%					0	0	21	0	0	0	0
7035	7348	19		7348	Cambridge	19	South						100%		0	0	0	0	0	19	0
7035	7464	5		7464	Woolwich	5	West			100%					0	0	5	0	0	0	0
7035	7572	26		7572	Woolwich	26	West			100%					0	0	26	0	0	0	0
7036	7018	38	7036	7018	Waterloo	38	South							100%	0	0	0	0	0	0	38
7036	7055	30		7055	Waterloo	30	South		100%						0	30	0	0	0	0	0
7036	7258	23		7258		23	South		100%						0	23	0	0	0	0	0
7051	465	28	7051	465	Toronto	28	East							100%	0	0	0	0	0	28	0
7051	7024	33		7024	Waterloo	33	Southeast							100%	0	0	0	0	0	33	0
7051	7097	27		7097	Kitchener	27	South							100%	0	0	0	0	0	27	0
7051	7168	42		7168	Kitchener	42	South							100%	0	0	0	0	0	42	0
7051	7257	30		7257	Waterloo	30	Southwest			100%					0	0	30	0	0	0	0
7054	7019	23	7054	7019	Waterloo	23	Southwest							100%	0	0	0	0	0	0	23
7054	7024	54		7024	Waterloo	54	Southeast							100%	0	0	0	0	0	54	0
7054	7092	19		7092	Kitchener	19	South							100%	0	0	0	0	0	19	0
7054	7105	11		7105	Waterloo	11	South							100%	0	11	0	0	0	0	11
7054	7137	14		7137	Kitchener	14	South							100%	0	0	0	0	0	14	0
7054	7138	11		7138	Kitchener	11	South							100%	0	0	0	0	0	11	0
7054	7181	13		7181	Kitchener	13	South							100%	0	0	0	0	0	13	0
7054	7532	32		7532	Wellesley	32	West							100%	0	0	32	0	0	0	0
7054	7548	32		7548	Woolwich	32	West							100%	0	0	32	0	0	0	0
						774									0	64	146	99	0	356	120
															0%	8%	19%	12%	0%	46%	15%

Path	AM		PM	
	In	Out	In	Out
Weber St North	0%	6%	6%	0%
Weber St South	8%	10%	10%	8%
Northfield Dr West	19%	13%	13%	19%
Northfield Dr East	12%	16%	16%	12%
Conetoga Pkwy	0%	0%	0%	0%
Conestoga Pkwy	46%	39%	39%	46%
Parkside Dr South	15%	15%	15%	15%

RETAIL DISTRIBUTION

AM INBOUND

Subject Site lies in TTS Zone 7018

Mon Nov 20 2023 14:21:12 GMT-0500 (Eastern Standard Time) - Run Time: 2535ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 1-9016, and
Start time of trip - start_time In 600-900, and
Trip purpose of origin - purp_orig In H, and
Primary travel mode of trip - mode_prime In D,M,T,P, and
2006 GTA zone of destination - gta06_dest In 7008, 7013, 7018)

Trip 2016 Waterloo 7001-7576
ROW : gta06_orig

COLUMN : gta06_dest			Zone			Value	General Direction	Path: Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr	Value: Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr
gta06_orig	gta06_dest	total	From	Municipality	To			North	South	West	East	North	South	South	North	South	West	East	North	South	South
3378	7013	17	3378	Peel	7013	17	East						100%		0	0	0	0	0	17	0
3435	7008	14	3435		7008	14	East						100%		0	0	0	0	0	14	0
4186	7008	19	4186	Halton	7008	19	Southeast						100%		0	0	0	0	0	19	0
5147	7008	12	5147	Hamilton	7008	12	Southeast						100%		0	0	0	0	0	12	0
7002	7008	76	7002		7008	76	East				100%				0	0	0	76	0	0	0
7004	7008	44	7004		7008	44	East				100%				0	0	0	44	0	0	0
7005	7008	42	7005		7008	42	East				100%				0	0	0	42	0	0	0
7011	7008	68	7011		7008	68	Southeast				100%				0	0	0	68	0	0	0
7026	7008	27	7026		7008	27	West			100%					0	0	27	0	0	0	0
7028	7008	44	7028		7008	44	West			100%					0	0	44	0	0	0	0
7029	7008	53	7029		7008	53	West			100%					0	0	53	0	0	0	0
7029	7018	20	7029		7018	20	West			100%					0	0	20	0	0	0	0
7034	7013	41	7034		7013	41	Southwest							100%	0	0	0	0	0	0	41
7035	7008	30	7035		7008	30	East							100%	0	0	0	0	0	0	30
7039	7013	35	7039		7013	35	South							100%	0	0	0	0	0	0	35
7054	7008	54	7054		7008	54	South						100%		0	0	0	0	0	54	0
7054	7013	32	7054	Waterloo	7013	32	South						100%		0	0	0	0	0	32	0
7055	7013	10	7055		7013	10	South		100%						0	10	0	0	0	0	0
7057	7008	15	7057		7008	15	South						100%		0	0	0	0	0	15	0
7059	7008	44	7059		7008	44	Southeast						100%		0	0	0	0	0	44	0
7060	7013	10	7060		7013	10	Southeast						100%		0	0	0	0	0	10	0
7069	7013	13	7069		7013	13	Southeast						100%		0	0	0	0	0	13	0
7081	7008	13	7081		7008	13	East						100%		0	0	0	0	0	13	0
7082	7008	18	7082		7008	18	South						100%		0	0	0	0	0	18	0
7082	7018	19	7082		7018	19	South						100%		0	0	0	0	0	19	0
7094	7013	18	7094		7013	18	Southeast						100%		0	0	0	0	0	18	0
7097	7013	5	7097		7013	5	Southeast						100%		0	0	0	0	0	5	0
7102	7008	12	7102		7008	12	South		100%						0	12	0	0	0	0	0
7104	7018	27	7104		7018	27	South		100%						0	27	0	0	0	0	0
7141	7018	67	7141		7018	67	South						100%		0	0	0	0	0	67	0
7157	7013	30	7157		7013	30	South						100%		0	0	0	0	0	30	0
7180	7008	109	7180		7008	109	South						100%		0	0	0	0	0	109	0
7180	7013	16	7180		7013	16	South						100%		0	0	0	0	0	16	0
7187	7008	40	7187	Kitchener	7008	40	South						100%		0	0	0	0	0	40	0
7192	7008	18	7192		7008	18	South						100%		0	0	0	0	0	18	0
7195	7008	69	7195		7008	69	South						100%		0	0	0	0	0	69	0
7212	7008	14	7212		7008	14	South						100%		0	0	0	0	0	14	0
7214	7008	64	7214		7008	64	South						100%		0	0	0	0	0	64	0
7216	7008	62	7216		7008	62	South						100%		0	0	0	0	0	62	0
7246	7008	109	7246		7008	109	West			100%					0	0	109	0	0	0	0
7248	7008	128	7248		7008	128	West			100%					0	0	128	0	0	0	0
7253	7008	25	7253	Waterloo	7008	25	West			100%					0	0	25	0	0	0	0
7257	7013	17	7257		7013	17	Southwest			100%					0	0	17	0	0	0	0
7259	7008	14	7259		7008	14	Southwest			100%					0	0	14	0	0	0	0
7264	7013	45	7264		7013	45	Southwest			100%					0	0	45	0	0	0	0
7282	7013	50	7282		7013	50	Southwest						100%		0	0	0	0	0	50	0
7287	7008	23	7287	Kitchener	7008	23	Southwest						100%		0	0	0	0	0	23	0
7290	7008	23	7290		7008	23	South						100%		0	0	0	0	0	23	0
7312	7013	56	7312		7013	56	South						100%		0	0	0	0	0	56	0
7313	7013	17	7313		7013	17	South						100%		0	0	0	0	0	17	0
7359	7008	14	7359	Cambridge	7008	14	South						100%		0	0	0	0	0	14	0
7373	7008	14	7373		7008	14	South						100%		0	0	0	0	0	14	0
7393	7008	25	7393		7008	25	South						100%		0	0	0	0	0	25	0
7450	7008	5	7450	Wilmot	7008	5	West			100%					0	0	5	0	0	0	0
7466	7013	27	7466	Kitchener	7013	27	South						100%		0	0	0	0	0	27	0
7540	7008	24	7540	Wellesley	7008	24	West			100%					0	0	24	0	0	0	0
7540	7018	16	7540		7018	16	West			100%					0	0	16	0	0	0	0
7545	7013	25	7545		7013	25	West			100%					0	0	25	0	0	0	0
7548	7013	23	7548	Woolwich	7013	23	West			100%					0	0	23	0	0	0	0
7549	7013	30	7549		7013	30	West			100%					0	0	30	0	0	0	0
7565	7013	17	7565		7013	17	West			100%					0	0	17	0	0	0	0
8069	7008	8	8069		7008	8	East						100%		0	0	0	0	0	8	0
8080	7008	25	8080	Guelph	7008	25	East						100%		0	0	0	0	0	25	0
8164	7008	37	8164		7008	37	East						100%		0	0	0	0	0	37	0
8403	7008	12	8403	Orangeville	7008	12	Northeast						100%		0	0	0	0	0	12	0
8949	7008	12	8949	Brantford	7008	12	South						100%		0	0	0	0	0	12	0
8960	7013	11	8960	Brant County	7013	11	South						100%		0	0	0	0	0	11	0
						2,153									0	49	622	230	0	1,146	106
															0%	2%	29%	11%	0%	53%	5%

PM INBOUND

Subject Site lies in TTS Zone 7018

Mon Nov 20 2023 14:28:01 GMT-0500 (Eastern Standard Time) - Run Time: 2895ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 1-9016, and
Start time of trip - start_time In 1600-1900, and
Trip purpose of origin - purp_orig In H, and
Primary travel mode of trip - mode_prime In D,M,T,P, and
2006 GTA zone of destination - gta06_dest In 7008, 7013, 7018)

Trip 2016 Waterl 7001-7576
ROW : gta06_orig

COLUMN : gta06_dest			Zone			Value	General Direction	Path: Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr	Value: Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr
gta06_orig	gta06_dest	total	From	To	Municipality			North	South	West	East	North	South	South	North	South	West	East	North	South	South
7002	7008	85	7002	7008		85	East				100%				0	0	0	85	0	0	0
7002	7013	75	7002	7013		75	East				100%				0	0	0	75	0	0	0
7011	7008	21	7011	7008		21	East				100%				0	0	0	21	0	0	0
7012	7013	15	7012	7013		15	East				100%				0	0	0	15	0	0	0
7014	7013	51	7014	7013		51	East				100%				0	0	0	51	0	0	0
7024	7013	33	7024	7013		33	Southeast							100%	0	0	0	0	0	33	0
7025	7008	26	7025	7008		26	East				100%				0	0	0	26	0	0	0
7026	7008	15	7026	7008		15	East				100%				0	0	0	15	0	0	0
7026	7013	19	7026	7013		19	East				100%				0	0	0	19	0	0	0
7028	7008	10	7028	7008		10	East				100%				0	0	0	10	0	0	0
7029	7013	76	7029	7013	Waterloo	76	East				100%				0	0	0	76	0	0	0
7029	7018	112	7029	7018		112	East				100%				0	0	0	112	0	0	0
7036	7018	53	7036	7018		53	Southwest							100%	0	0	0	0	0	0	53
7037	7013	17	7037	7013		17	South		100%						0	17	0	0	0	0	0
7048	7013	40	7048	7013		40	South		100%						0	40	0	0	0	0	0
7055	7013	19	7055	7013		19	South		100%						0	19	0	0	0	0	0
7059	7013	95	7059	7013		95	Southeast								0	0	0	0	0	95	0
7060	7013	28	7060	7013		28	Southeast								0	0	0	0	0	28	0
7062	7008	70	7062	7008		70	East				100%				0	0	0	70	0	0	0
7066	7008	29	7066	7008		29	Southeast				33%				0	0	0	10	0	19	0
7068	7013	8	7068	7013		8	Southeast				33%				0	0	0	3	0	5	0
7082	7013	12	7082	7013	Kitchener	12	Southeast								0	0	0	0	0	12	0
7094	7013	9	7094	7013		9	Southeast								0	0	0	0	0	9	0
7105	7013	26	7105	7013	Waterloo	26	South		100%						0	26	0	0	0	0	0
7110	7013	25	7110	7013		25	South				100%				0	0	25	0	0	0	0
7138	7008	31	7138	7008		31	Southwest								0	0	0	0	0	31	0
7141	7018	34	7141	7018		34	South								0	0	0	0	0	34	0
7146	7013	16	7146	7013	Kitchener	16	South								0	0	0	0	0	16	0
7207	7008	26	7207	7008		26	South								0	0	0	0	0	26	0
7214	7013	82	7214	7013		82	South								0	0	0	0	0	82	0
7245	7008	28	7245	7008		28	West				100%				0	0	28	0	0	0	0
7248	7013	156	7248	7013		156	West				100%				0	0	156	0	0	0	0
7252	7013	66	7252	7013	Waterloo	66	Southwest				100%				0	0	66	0	0	0	0
7255	7008	26	7255	7008		26	Southwest				100%				0	0	26	0	0	0	0
7256	7013	29	7256	7013		29	Southwest				100%				0	0	29	0	0	0	0
7283	7013	11	7283	7013	Kitchener	11	Southwest				100%				0	0	11	0	0	0	0
7359	7013	82	7359	7013	Cambridge	82	South								0	0	0	0	0	82	0
7466	7013	56	7466	7013	Kitchener	56	South								0	0	0	0	0	56	0
7513	7013	5	7513	7013	Wilmot	5	West				100%				0	0	5	0	0	0	0
7560	7013	48	7560	7013	Woolwich	48	West				100%				0	0	48	0	0	0	0
						1665									0	102	394	588	0	528	53
															0%	6%	24%	35%	0%	32%	3%

Path	AM		PM	
	In	Out	In	Out
Weber St North	0%	0%	0%	0%
Weber St South	2%	6%	6%	2%
Northfield Dr West	29%	24%	24%	29%
Northfield Dr East	11%	35%	35%	11%
Conetoga Pkwy	0%	0%	0%	0%
Conestoga Pkwy	53%	32%	32%	53%
Parkside Dr South	5%	3%	3%	5%

EMPLOYMENT DISTRIBUTION

AM INBOUND

Subject Site lies in TTS Zone 7018

Fri Nov 10 2023 12:14:12 GMT-0500 (Eastern Standard Time) - Run Time: 2904ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 1-9016, and
Start time of trip - start_time In 600-900, and
Primary travel mode of trip - mode_prime In D,M,T, and
Trip purpose of destination - purp_dest In W, R, and
2006 GTA zone of destination - gta06_dest In 7017-7019)

Waterloo 7001-7576

Trip 2016
ROW : gta06_orig

COLUMN : gta06_dest		
gta06_orig	gta06_dest	total
177	7017	22
300	7017	27
319	7017	11
443	7019	9
2448	7017	26
3378	7017	26
3456	7019	18
3684	7017	8
4108	7017	17
5053	7017	19
5158	7017	53
7002	7017	24
7002	7019	22
7020	7019	23
7022	7017	34
7024	7017	32
7025	7017	66
7025	7019	18
7026	7017	30
7034	7017	15
7035	7017	64
7036	7017	86
7057	7019	23
7062	7017	30
7062	7019	59
7066	7017	19
7066	7019	9
7068	7019	71
7082	7018	19
7082	7019	16
7097	7019	27
7098	7017	13
7100	7017	10
7108	7017	23
7112	7019	52
7125	7019	22
7128	7017	29
7134	7019	15
7150	7017	18
7151	7017	40
7152	7017	53
7153	7017	12
7160	7019	14
7167	7019	9
7168	7019	14
7170	7017	24
7171	7019	131
7176	7019	18
7177	7017	29
7190	7017	39
7194	7017	39
7194	7019	34
7207	7019	39
7210	7017	14
7211	7017	12
7212	7017	33
7212	7019	33
7214	7017	48
7222	7017	58
7233	7017	10
7246	7017	35
7248	7017	10
7252	7017	22
7253	7017	15
7253	7019	27
7254	7017	17
7255	7017	8
7256	7017	9
7259	7019	18
7260	7019	26
7262	7017	12
7264	7019	15
7272	7017	17
7272	7019	13
7278	7017	109
7282	7017	27
7283	7017	28
7287	7017	21
7293	7019	10
7296	7017	20
7296	7019	24
7324	7017	28
7361	7019	21
7362	7019	7
7381	7019	17
7394	7017	20
7397	7019	37
7404	7017	6
7415	7017	9
7451	7017	12
7479	7019	19
7483	7019	38
7494	7017	27
7506	7017	16
7514	7017	12
7520	7017	14
7523	7019	13
7536	7019	30
7540	7018	16
7548	7019	15
7549	7019	24
7560	7017	48
7562	7019	30
8021	7018	13
8024	7017	14
8024	7019	13
8047	7019	21
8072	7017	12
8072	7019	14
8123	7019	13
8139	7019	8
8351	7017	29
8417	7019	5
8951	7019	26

Zone				Value	General Direction	Path: Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr	Value: Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr	
From	Municipality	To				North	South	West	East	North	South	South	North	South	West	East	North	South	South	South
177				22	East						100%		0	0	0	0	0	22	0	
300	Toronto	7017	7017	27	East						100%		0	0	0	0	0	27	0	
319				11	East						100%		0	0	0	0	0	11	0	
443	Toronto	7019	7019	9	East						100%		0	0	0	0	0	9	0	
2448	York	7017	7017	26	East						100%		0	0	0	0	0	26	0	
3378	Peel	7017	7017	26	East						100%		0	0	0	0	0	26	0	
3456	Peel	7019	7019	18	East						100%		0	0	0	0	0	18	0	
3684	Peel	7017	7017	8	East						100%		0	0	0	0	0	8	0	
4108	Halton	7017	7017	17	Southeast						100%		0	0	0	0	0	17	0	
5053	Hamilton	7017	7017	19	Southeast						100%		0	0	0	0	0	19	0	
5158	Hamilton	7017	7017	53	Southeast						100%		0	0	0	0	0	53	0	
7002	Waterloo	7017	7017	24	East								0	0	0	24	0	0	0	
7002	Waterloo	7019	7019	22	East				100%				0	0	0	22	0	0	0	
7020	Waterloo	7019	7019	23	South		100%						0	23	0	0	0	0	0	
7022	Waterloo	7017	7017	34	South		100%						0	34	0	0	0	0	0	
7024	Waterloo	7017	7017	32	Southeast				100%				0	0	0	32	0	0	0	
7025	Waterloo	7017	7017	66	West	75%		25%					50	0	16	0	0	0	0	
7025	Waterloo	7019	7019	18	West	75%		25%					14	0	4	0	0	0	0	
7026	Waterloo	7017	7017	30	West			100%					0	0	30	0	0	0	0	
7034	Waterloo	7017	7017	15	West			100%					0	0	15	0	0	0	0	
7035	Waterloo	7017	7017	64	Southwest		30%	20%				50%	0	19	13	0	0	0	32	
7036	Waterloo	7017	7017	86	Southwest							100%	0	0	0	0	0	0	86	
7057	Waterloo	7019	7019	23	South		50%				50%		0	12	0	0	0	12	0	
7062	Waterloo	7017	7017	30	East				100%				0	0	0	30	0	0	0	
7062	Waterloo	7019	7019	59	East				100%				0	0	0	59	0	0	0	
7066	Waterloo	7017	7017	19	East				100%				0	0	0	19	0	0	0	
7066	Waterloo	7019	7019	9	East				100%				0	0	0	9	0	0	0	
7068	Kitchener	7019	7019	71	Southeast				33%		67%		0	0	0	23	0	48	0	
7082	Kitchener	7018	7018	19	South						100%		0	0	0	0	0	19	0	
7082	Kitchener	7019	7019	16	South						100%		0	0	0	0	0	16	0	
7097	Kitchener	7019	7019	27	South						100%		0	0	0	0	0	27	0	
7098				13							100%		0	0	0	0	0	13	0	
7100	Waterloo	7017	7017	10	South		50%				50%		0	5	0	0	0	5	0	
7108	Waterloo	7017	7017	23	South		50%				50%		0	12	0	0	0	12	0	
7112	Kitchener	7019	7019	52	South		100%						0	52	0	0	0	0	0	
7125	Kitchener	7019	7019	22	South						100%		0	0	0	0	0	22	0	
7128	Kitchener	7017	7017	29	South						100%		0	0	0	0	0	29	0	
7134	Kitchener	7019	7019	15	South						100%		0	0	0	0	0	15	0	
7150				18			100%						0	18	0	0	0	0	0	
7151	Kitchener	7017	7017	40	South		100%						0	40	0	0	0	0	0	
7152	Kitchener	7017	7017	53	South		100%						0	53	0	0	0	0	0	
7153				12			100%						0	12	0	0	0	0	0	
7160				14			100%						0	14	0	0	0	0	0	
7167	Kitchener	7019	7019	9	South		100%						0	9	0	0	0	0	0	
7168	Kitchener	7019	7019	14	South		100%						0	14	0	0	0	0	0	
7170	Kitchener	7017	7017	24	South						100%		0	0	0	0	0	24	0	
7171	Kitchener	7019	7019	131	South						100%		0	0	0	0	0	131	0	
7176	Kitchener	7019	7019	18	South						100%		0	0	0	0	0	18	0	
7177	Kitchener	7017	7017	29	South						100%		0	0	0	0	0	29	0	
7190	Kitchener	7017	7017	39	South						100%		0	0	0	0	0	39	0	
7194	Kitchener	7017	7017	39	South						100%		0	0	0	0	0	39	0	
7194	Kitchener	7019	7019	34	South						100%		0	0	0	0	0	34	0	
7207	Kitchener	7019	7019	39	South						100%		0	0	0	0	0	39	0	
7210	Kitchener	7017	7017	14	South						100%		0	0	0	0	0	14	0	
7211	Kitchener	7017	7017	12	South						100%		0	0	0	0	0	12	0	
7212	Kitchener	7017	7017	33	South						100%		0	0	0	0	0	33	0	
7212	Kitchener	7019	7019	33	South						100%		0	0	0	0	0	33	0	
7214				48							100%		0	0	0	0	0	48	0	
7222	Kitchener	7017	7017	58	South						100%		0	0	0	0	0	58	0	
7233	Kitchener	7017	7017	10	South						100%		0	0	0	0	0	10	0	
7246	Waterloo	7017	7017	35	West			100%					0	0	35	0	0	0	0	
7248	Waterloo	7017	7017	10	West			100%					0	0	10	0	0	0	0	
7252	Waterloo	7017	7017	22	Southwest			100%					0	0	22	0	0	0	0	
7253	Waterloo	7017	7017	15	Southwest			100%					0	0	15	0	0	0	0	
7253	Waterloo	7019	7019	27	Southwest			100%					0	0	27	0	0	0	0	
7254	Waterloo	7017	7017	17	Southwest			100%					0	0	17	0	0	0	0	
7255	Waterloo	7017	7017	8	Southwest			100%					0	0	8	0	0	0	0	
7256	Waterloo	7017	7017	9	Southwest			100%					0	0	9	0	0	0	0	
7259	Waterloo	7019	7019	18	Southwest			100%					0	0	18	0	0	0	0	
7260	Kitchener	7019	7019	26	Southwest			100%					0	0	26	0	0	0	0	
7262	Kitchener	7017	7017	12	Southwest			100%					0	0	12	0	0	0	0	
7264	Kitchener	7019	7019	15	Southwest			100%					0	0	15	0	0	0	0	
7272	Kitchener	7017	7017	17	Southwest			100%					0	0	17	0	0	0	0	
7272	Kitchener	7019	7019	13	Southwest			100%					0	0	13	0	0	0	0	
7278	Kitchener	7017	7017	109	Southwest			100%					0	0	109	0	0	0	0	
7282				27				100%					0	0	27	0	0	0	0	
7283	Kitchener	7017	7017	28	Southwest			100%					0	0	28	0	0	0	0	
7287				21				100%					0	0	21	0	0	0	0	
7293	Kitchener	7019	7019	10	South		100%						0	10	0	0	0	0	0	
7296	Kitchener	7017	7017	20	South			100%					0	0	20	0	0	0	0	
7296	Kitchener	7019	7019	24	South			100%					0	0	24	0	0	0	0	
7324	Cambridge	7017	7017	28	South						100%		0	0	0	0	0	28	0	
7361				21							100%		0	0	0	0	0	21	0	
7362	Cambridge	7019	7019	7	South						100%		0	0	0	0	0	7	0	
7381				17							100%		0	0	0	0	0	17	0	
7394	Cambridge	7017	7017	20	South						100%		0	0	0	0	0	20	0	
7397	Cambridge	7019	7019	37	South						100%		0	0	0	0	0	37	0	
7040	Waterloo			6	Southwest			100%					0	0	6	0	0	0	0	
7415	Cambridge	7017	7017	9	South						100%		0	0	0	0	0	9	0	
7451	Wellesley	7017	7017	12	West			100%			0%		0	0	12	0	0	0	0	
7479	Cambridge	7019	7019	19	South						100%		0	0	0	0	0	19	0	
7483	Cambridge	7019	7019	38	South						100%		0	0	0	0	0	38	0	
7494	North Dumfrie	7017	7017	27	South						100%		0	0	0	0	0	27	0	
7506	Wilmot	7017	7017	16	West			100%					0	0	16	0	0	0	0	
7514	Wilmot	7017	7017	12	West			100%					0	0	12	0	0	0	0	
7520	Wilmot	7017	7017	14	West			100%					0	0	14	0	0	0	0	
7523	Wilmot	7019	7019	13	West			100%					0	0	13	0	0	0	0	
7536	Wellesley	7019	7019	30	West			100%					0	0	30	0	0	0	0	
7540	Wellesley	7018	7018	16	West			100%					0	0	16	0	0	0	0	
7548	Woolwich	7019	7019	15	West			100%					0	0	15	0	0	0	0	
7549	Woolwich	7019	7019	24	West			100%					0	0	24	0	0	0	0	
7560	Woolwich	7017	7017	48	West			100%					0	0	48	0	0	0	0	
7562	Woolwich	7019	7019	30	West			100%					0	0	30	0	0	0	0	
8021	Guelph	7018	7018	13	East						100%		0	0	0	0	0	13	0	
8024	Guelph	7017	7017	14	East						100%		0	0	0	0	0	14	0	
8024	Guelph	7019	7019	13	East						100%		0	0	0	0	0	13	0	
8047	Guelph	7019	7019	21	East						100%		0	0	0	0	0	21	0	
8072	Guelph	7017	7017	12	East						100%		0	0	0	0	0	12	0	
8072	Guelph	7019	7019	14	East						100%		0	0	0	0	0	14	0	
8123	Guelph	7019	7019	13	East						100%		0	0	0	0	0	13	0	
8139			7019	8	East						100%		0	0	0	0	0	8	0	
8351	Wellington	7017	7017	29	South						100%		0	0	0	0	0	29	0	
8417	Dufferin	7019	7019	5	Northeast						100%		0	0	0	0	0	5	0	
8951	Brant		7019	26	Southwest						100%		0	0	0	0	0	26	0	
				2,918									64	327	787	218	0	1,406	118	
													2%	11%	27%	8%	0%	48%	4%	

AM OUTBOUND

Subject Site lies in TTS Zone 7018

Fri Nov 10 2023 12:22:41 GMT-0500 (Eastern Standard Time) - Run Time: 2717ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 7003, 7007-7010, 7013, 7015-7021, 7031, and
Start time of trip - start_time In 600-900, and
Primary travel mode of trip - mode_prime In D,M,T, and
Trip purpose of destination - purp_dest In W, R, and
2006 GTA zone of destination - gta06_dest In 1-9016)

Waterl-7001-7576

Trip 2016
ROW : gta06_orig

COLUMN : gta06_dest		
gta06_orig	gta06_dest	total
7007	5036	18
7007	7042	10
7007	7108	31
7007	7157	12
7007	7395	17
7008	7001	13
7008	7007	32
7008	7014	13
7008	7093	34
7008	7112	53
7008	8187	21
7009	7207	7
7010	7016	38
7010	7056	22
7010	7097	24
7013	7236	20
7015	378	19
7015	7136	35
7016	7198	51
7019	7001	48
7019	7009	16
7019	7043	82
7019	7134	15
7019	8052	24
7020	7019	23
7021	7001	29
7021	7053	14
7021	7141	27
7021	7233	26
7021	7304	22
7021	7505	13
7031	7031	31
7031	7042	33
7031	7117	30

Zone				Value	General Direction	Path: Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr	Value: Weber St N		Northfield Dr W		Conestoga Parkway		Parkside Dr	
From	To	Municipality				North	South	West	East	North	South	South	North	South	West	East	North	South	South	South
7007	5036	Hamilton	18	18	Southeast							100%	0	0	0	0	0	18	0	
	7042	Waterloo	10	10	South			100%					0	0	10	0	0	0	0	
	7108		31	31			100%						0	31	0	0	0	0	0	
	7157	Kitchener	12	12	South							100%	0	0	0	0	0	12	0	
	7395	Cambridge	17	17	South							100%	0	0	0	0	0	17	0	
	7001		13	13	East					100%			0	0	0	13	0	0	0	
	7007	Waterloo	32	32	East					100%			0	0	0	32	0	0	0	
7008	7014		13	13						100%			0	0	0	13	0	0	0	
	7093	Kitchener	34	34	Southeast							100%	0	0	0	0	0	34	0	
	7112	Kitchener	53	53			50%	50%					0	26	27	0	0	0	0	
	8187	Guelph	21	21	East							100%	0	0	0	0	0	21	0	
7009	7207	Kitchener	7	7	South							100%	0	0	0	0	0	7	0	
	7016	Waterloo	38	38	East					100%			0	0	0	38	0	0	0	
7010	7056	Waterloo	22	22	South		100%						0	22	0	0	0	0	0	
	7097	Kitchener	24	24	South							100%	0	0	0	0	0	24	0	
7013	7236	Kitchener	20	20	South							100%	0	0	0	0	0	20	0	
7015	378	Toronto	19	19	East							100%	0	0	0	0	0	19	0	
7015	7136	Kitchener	35	35	South		50%					50%	0	18	0	0	0	17	0	
7016	7198	Kitchener	51	51	Southeast							100%	0	0	0	0	0	51	0	
7019	7001	Waterloo	48	48	East					100%			0	0	0	48	0	0	0	
7019	7009		16	16						100%			0	0	0	16	0	0	0	
7019	7043	Waterloo	82	82	South							100%	0	0	0	0	0	0	82	
7019	7134	Kitchener	15	15			50%					50%	0	8	0	0	0	7	0	
7019	8052	Guelph	24	24	East							100%	0	0	0	0	0	24	0	
7020	7019	Waterloo	23	23	Southwest							100%	0	0	0	0	0	23	23	
7021	7001	Waterloo	29	29	East					100%			0	0	0	29	0	0	0	
7021	7053		14	14	South		100%						0	14	0	0	0	0	0	
7021	7141	Cambridge	27	27	South							100%	0	0	0	0	0	27	0	
7021	7233	Kitchener	26	26	South							100%	0	0	0	0	0	26	0	
7021	7304	Cambridge	22	22	South							100%	0	0	0	0	0	22	0	
7021	7505	Wilmot	13	13	West			100%					0	0	13	0	0	0	0	
7031	7031	Waterloo	31	31	South							100%	0	0	0	0	0	0	31	
7031	7042	Waterloo	33	33	South			100%					0	0	33	0	0	0	0	
7031	7117	Waterloo	30	30	South		60%					40%	0	18	0	0	0	12	0	
			903										0	137	83	189	0	381	196	
													0%	15%	7%	21%	0%	42%	15%	

Path	AM		PM	
	In	Out	In	Out
Weber St North	2%	0%	0%	2%
Weber St South	11%	15%	15%	11%
Northfield Dr West	27%	7%	7%	27%
Northfield Dr East	8%	21%	21%	8%
Conestoga Pkwy North	0%	0%	0%	0%
Conestoga Pkwy South	48%	42%	42%	48%
Parkside Dr South	4%	15%	15%	4%

APPENDIX E

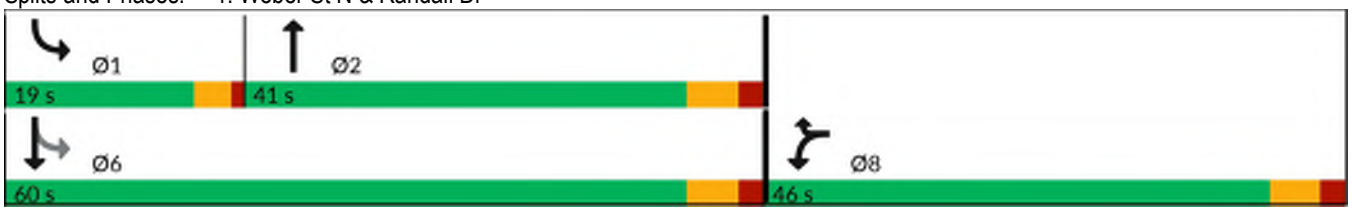
Existing Intersection Capacity Analysis

Weekday AM Peak Hour

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	72	24	270	45	399
Future Volume (vph)	72	24	270	45	399
Lane Group Flow (vph)	72	24	378	45	399
Turn Type	Prot	Prot	NA	pm+pt	NA
Protected Phases	8	8	2	1	6
Permitted Phases	8	8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	10.0	5.0	10.0
Minimum Split (s)	24.0	24.0	41.0	9.5	42.0
Total Split (s)	46.0	46.0	41.0	19.0	60.0
Total Split (%)	43.4%	43.4%	38.7%	17.9%	56.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
v/c Ratio	0.33	0.10	0.31	0.06	0.28
Control Delay (s/veh)	33.2	12.5	7.2	3.2	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.2	12.5	7.2	3.2	3.8
Queue Length 50th (m)	9.8	0.0	23.4	1.4	15.1
Queue Length 95th (m)	21.5	6.1	45.9	4.3	30.5
Internal Link Dist (m)	723.8		106.7		467.0
Turn Bay Length (m)		30.0		100.0	
Base Capacity (vph)	767	788	1199	777	1400
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	0.09	0.03	0.32	0.06	0.29

Intersection Summary
Cycle Length: 106
Actuated Cycle Length: 76.3
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Weber St N & Randall Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	24	270	108	45	399
Future Volume (vph)	72	24	270	108	45	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.99	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1394	1413	1684		1605	1773
Flt Permitted	0.95	1.00	1.00		0.47	1.00
Satd. Flow (perm)	1394	1413	1684		795	1773
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	24	270	108	45	399
RTOR Reduction (vph)	0	21	7	0	0	0
Lane Group Flow (vph)	72	3	371	0	45	399
Confl. Peds. (#/hr)				6	6	
Heavy Vehicles (%)	28%	13%	7%	5%	11%	6%
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	2		1	6
Permitted Phases	8	8			6	
Actuated Green, G (s)	8.1	8.1	51.3		59.1	59.1
Effective Green, g (s)	10.1	10.1	53.3		59.1	61.1
Actuated g/C Ratio	0.13	0.13	0.67		0.75	0.77
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	177	180	1133		632	1367
v/s Ratio Prot	c0.05	0.00	c0.22		0.00	c0.23
v/s Ratio Perm					0.05	
v/c Ratio	0.40	0.01	0.32		0.07	0.29
Uniform Delay, d1	31.7	30.2	5.4		2.9	2.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.0	0.7		0.0	0.5
Delay (s)	33.3	30.2	6.2		2.9	3.2
Level of Service	C	C	A		A	A
Approach Delay (s/veh)	32.5		6.2			3.1
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

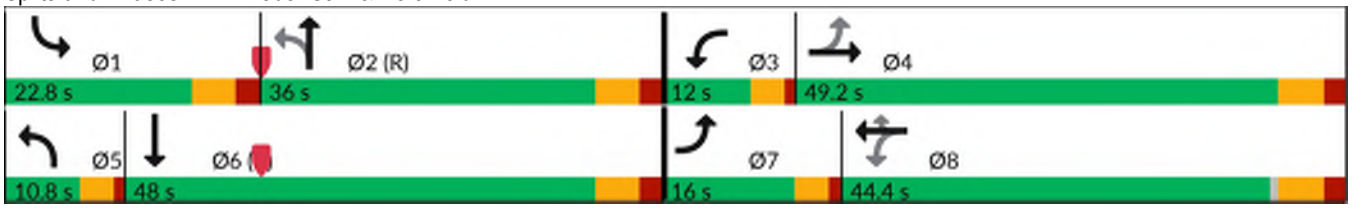
c Critical Lane Group

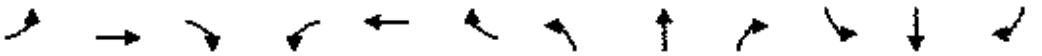
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	144	806	68	388	122	31	110	161	254
Future Volume (vph)	144	806	68	388	122	31	110	161	254
Lane Group Flow (vph)	144	890	68	388	122	31	209	161	308
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2			
Minimum Split (s)	9.5	44.4	9.0	44.4	44.4	9.5	36.0	13.0	36.0
Total Split (s)	16.0	49.2	12.0	44.4	44.4	10.8	36.0	22.8	48.0
Total Split (%)	13.3%	41.0%	10.0%	37.0%	37.0%	9.0%	30.0%	19.0%	40.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes								
v/c Ratio	0.33	0.73	0.34	0.34	0.21	0.09	0.24	0.34	0.26
Control Delay (s/veh)	20.3	36.0	22.5	30.3	2.8	19.9	18.6	47.4	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.3	36.0	22.5	30.3	2.8	19.9	18.6	47.4	25.1
Queue Length 50th (m)	19.9	97.6	9.0	37.4	0.0	4.2	10.9	18.5	25.6
Queue Length 95th (m)	33.2	122.6	17.6	51.2	7.5	10.1	21.3	29.4	37.1
Internal Link Dist (m)		607.0		127.2			507.4		212.4
Turn Bay Length (m)	90.0		45.0		65.0	95.0		82.5	
Base Capacity (vph)	430	1219	198	1136	572	340	848	471	1165
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	0.33	0.73	0.34	0.34	0.21	0.09	0.25	0.34	0.26

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 15.6 (13%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 105
Control Type: Pretimed

Splits and Phases: 2: Weber St N & Northfield Dr W





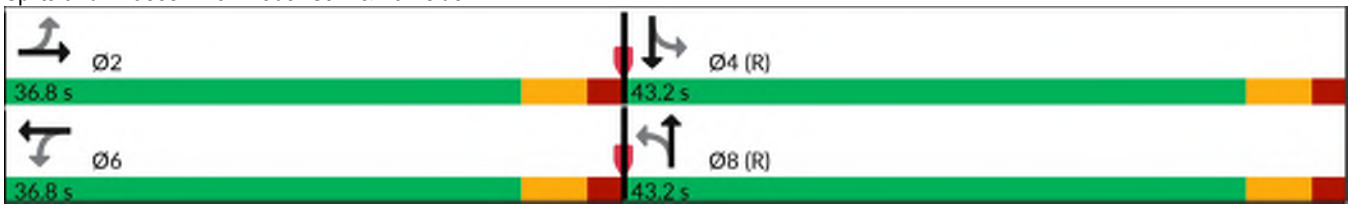
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	806	84	68	388	122	31	110	99	161	254	54
Future Volume (vph)	144	806	84	68	388	122	31	110	99	161	254	54
Ideal Flow (vphpl)	1775	1775	1775	1755	1900	1750	1755	1775	1775	1775	1775	1775
Grade (%)		0%			0%			0%			-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.92		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1667	3218		1555	3310	1371	1590	2908		3010	3135	
Flt Permitted	0.40	1.00		0.17	1.00	1.00	0.56	1.00		0.95	1.00	
Satd. Flow (perm)	703	3218		279	3310	1371	945	2908		3010	3135	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	144	806	84	68	388	122	31	110	99	161	254	54
RTOR Reduction (vph)	0	7	0	0	0	80	0	73	0	0	15	0
Lane Group Flow (vph)	144	883	0	68	388	42	31	136	0	161	293	0
Confl. Peds. (#/hr)	3		16	16		3	16		14	14		16
Heavy Vehicles (%)	0%	2%	1%	6%	7%	4%	3%	7%	3%	8%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	4	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	55.2	43.2		47.2	39.2	39.2	36.8	30.0		16.8	42.0	
Effective Green, g (s)	55.2	45.2		47.2	41.2	41.2	36.8	32.0		18.8	44.0	
Actuated g/C Ratio	0.46	0.38		0.39	0.34	0.34	0.31	0.27		0.16	0.37	
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	419	1212		194	1136	470	326	775		471	1149	
v/s Ratio Prot	c0.03	c0.27		0.02	0.12		0.01	0.05		c0.05	c0.09	
v/s Ratio Perm	0.12			0.11		0.03	0.02					
v/c Ratio	0.34	0.72		0.35	0.34	0.08	0.09	0.17		0.34	0.25	
Uniform Delay, d1	19.6	32.1		24.6	29.3	26.6	29.4	33.8		45.0	26.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	3.8		4.9	0.8	0.3	0.5	0.4		1.9	0.5	
Delay (s)	21.8	35.9		29.6	30.1	27.0	29.9	34.3		47.0	27.0	
Level of Service	C	D		C	C	C	C	C		D	C	
Approach Delay (s/veh)		34.0			29.4			33.7			33.9	
Approach LOS		C			C			C			C	

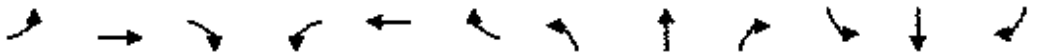
Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	62	166	76	191	16	165	30	290
Future Volume (vph)	62	166	76	191	16	165	30	290
Lane Group Flow (vph)	62	215	76	204	0	253	0	406
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Minimum Split (s)	36.8	36.8	36.8	36.8	43.2	43.2	43.2	43.2
Total Split (s)	36.8	36.8	36.8	36.8	43.2	43.2	43.2	43.2
Total Split (%)	46.0%	46.0%	46.0%	46.0%	54.0%	54.0%	54.0%	54.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0		-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.15	0.33	0.20	0.30		0.19		0.30
Control Delay (s/veh)	16.2	16.0	17.0	17.1		8.5		11.0
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	16.2	16.0	17.0	17.1		8.5		11.0
Queue Length 50th (m)	6.1	20.1	7.6	20.8		7.9		16.2
Queue Length 95th (m)	14.2	36.7	17.1	36.8		14.6		25.5
Internal Link Dist (m)		315.6		475.0		572.0		507.4
Turn Bay Length (m)	25.0		15.0					
Base Capacity (vph)	404	648	378	664		1280		1350
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	0.15	0.33	0.20	0.31		0.20		0.30

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 42.7 (53%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed

Splits and Phases: 3: Weber St N & Parkside Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	166	49	76	191	13	16	165	72	30	290	86
Future Volume (vph)	62	166	49	76	191	13	16	165	72	30	290	86
Ideal Flow (vphpl)	1775	1650	1650	1755	1650	1650	1650	1650	1650	1650	1650	1650
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00			0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			0.99			1.00	
Frt	1.00	0.96		1.00	0.99			0.95			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1587	1549		1516	1615			2743			2922	
Flt Permitted	0.59	1.00		0.57	1.00			0.92			0.91	
Satd. Flow (perm)	987	1549		922	1615			2539			2695	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	62	166	49	76	191	13	16	165	72	30	290	86
RTOR Reduction (vph)	0	14	0	0	3	0	0	37	0	0	30	0
Lane Group Flow (vph)	62	201	0	76	201	0	0	216	0	0	376	0
Confl. Peds. (#/hr)	1		13	13		1	3					3
Heavy Vehicles (%)	5%	1%	2%	8%	0%	0%	0%	7%	10%	0%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	30.8	30.8		30.8	30.8			37.2			37.2	
Effective Green, g (s)	32.8	32.8		32.8	32.8			39.2			39.2	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.49			0.49	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)	404	635		378	662			1244			1320	
v/s Ratio Prot		c0.13			0.12							
v/s Ratio Perm	0.06			0.08				0.09			c0.14	
v/c Ratio	0.15	0.31		0.20	0.30			0.17			0.28	
Uniform Delay, d1	14.8	16.0		15.1	15.9			11.3			12.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.8	1.3		1.1	1.1			0.3			0.5	
Delay (s)	15.6	17.3		16.3	17.0			11.6			12.6	
Level of Service	B	B		B	B			B			B	
Approach Delay (s/veh)		16.9			16.8			11.6			12.6	
Approach LOS		B			B			B			B	

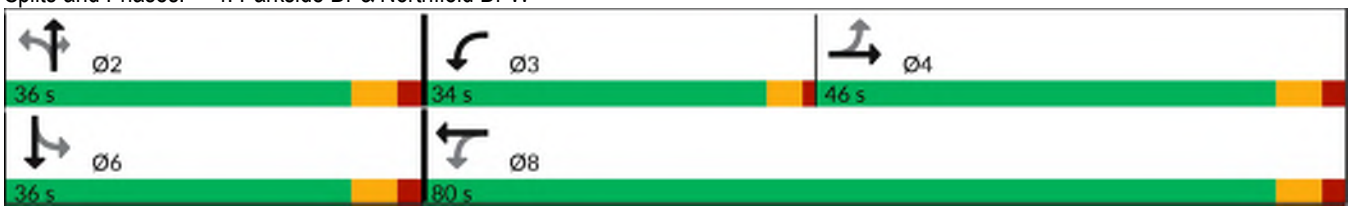
Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		

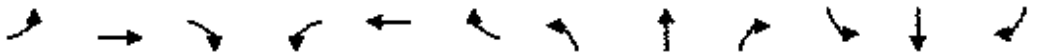
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	2	1049	393	611	16	8	215	45	10
Future Volume (vph)	2	1049	393	611	16	8	215	45	10
Lane Group Flow (vph)	2	1073	393	667	0	24	215	45	11
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4	3	8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	40.0	40.0	5.0	40.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	46.0	46.0	9.5	46.0	34.0	34.0	34.0	34.0	34.0
Total Split (s)	46.0	46.0	34.0	80.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	39.7%	39.7%	29.3%	69.0%	31.0%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max
v/c Ratio	0.00	0.90	0.89	0.33		0.06	0.38	0.12	0.02
Control Delay (s/veh)	24.0	46.0	53.1	9.2		31.5	6.5	32.3	29.1
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.0	46.0	53.1	9.2		31.5	6.5	32.3	29.1
Queue Length 50th (m)	0.3	126.7	71.0	32.7		4.2	0.0	8.0	1.7
Queue Length 95th (m)	2.2	#175.2	#121.6	42.7		11.3	18.5	17.8	6.4
Internal Link Dist (m)		123.1		82.8		475.0			54.4
Turn Bay Length (m)	35.0		25.0					30.0	
Base Capacity (vph)	262	1180	497	2121		362	557	361	394
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	0.01	0.91	0.79	0.31		0.07	0.39	0.12	0.03

Intersection Summary
Cycle Length: 116
Actuated Cycle Length: 111.9
Natural Cycle: 100
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Parkside Dr & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1049	24	393	611	56	16	8	215	45	10	1
Future Volume (vph)	2	1049	24	393	611	56	16	8	215	45	10	1
Ideal Flow (vphpl)	1775	1775	1775	1775	1775	1775	1650	1650	1750	1775	1650	1650
Grade (%)		0%			0%			0%			-2%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.98	1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			0.99	1.00	0.99	1.00	
Frt	1.00	0.99		1.00	0.98			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1662	3135		1635	3109			1390	1408	1614	1372	
Flt Permitted	0.39	1.00		0.09	1.00			0.87	1.00	0.74	1.00	
Satd. Flow (perm)	697	3135		156	3109			1263	1408	1260	1372	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1049	24	393	611	56	16	8	215	45	10	1
RTOR Reduction (vph)	0	1	0	0	6	0	0	0	153	0	1	0
Lane Group Flow (vph)	2	1072	0	393	661	0	0	24	62	45	10	0
Confl. Peds. (#/hr)	6		18	18		6	10		3	3		10
Heavy Vehicles (%)	0%	5%	8%	2%	5%	13%	0%	38%	2%	4%	20%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	2	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	40.1	40.1		69.8	69.8			30.1	30.1	30.1	30.1	
Effective Green, g (s)	42.1	42.1		69.8	71.8			32.1	32.1	32.1	32.1	
Actuated g/C Ratio	0.38	0.38		0.62	0.64			0.29	0.29	0.29	0.29	
Clearance Time (s)	6.0	6.0		4.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	262	1179		436	1994			362	403	361	393	
v/s Ratio Prot		0.34		c0.21	0.21						0.01	
v/s Ratio Perm	0.00			c0.35				0.02	c0.04	0.04		
v/c Ratio	0.00	0.90		0.90	0.33			0.06	0.15	0.12	0.02	
Uniform Delay, d1	21.8	33.0		32.3	9.1			29.0	29.7	29.5	28.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	10.2		21.3	0.0			0.3	0.8	0.7	0.1	
Delay (s)	21.8	43.3		53.7	9.2			29.3	30.5	30.2	28.7	
Level of Service	C	D		D	A			C	C	C	C	
Approach Delay (s/veh)		43.2			25.7			30.4			29.9	
Approach LOS		D			C			C			C	

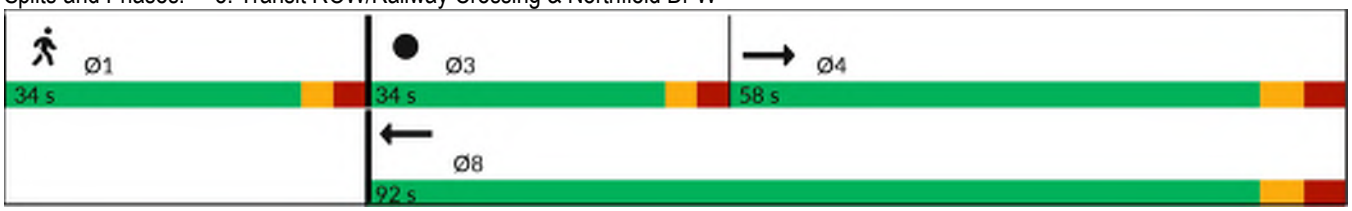
Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	111.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

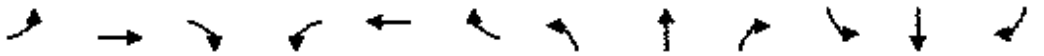
c Critical Lane Group

Lane Group	EBT	WBT	Ø1	Ø3
Lane Configurations				
Traffic Volume (vph)	1309	1060		
Future Volume (vph)	1309	1060		
Lane Group Flow (vph)	1309	1060		
Turn Type	NA	NA		
Protected Phases	4	8	1	3
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	7.0	7.0
Minimum Split (s)	50.0	50.0	34.0	24.0
Total Split (s)	58.0	92.0	34.0	34.0
Total Split (%)	46.0%	73.0%	27%	27%
Yellow Time (s)	4.0	4.0	3.0	3.0
All-Red Time (s)	4.0	4.0	3.0	3.0
Lost Time Adjust (s)	-4.0	-4.0		
Total Lost Time (s)	4.0	4.0		
Lead/Lag	Lag			Lead
Lead-Lag Optimize?	Yes			Yes
Recall Mode	Max	Max	None	Max
v/c Ratio	0.54	0.36		
Control Delay (s/veh)	23.5	6.0		
Queue Delay	0.0	0.0		
Total Delay (s/veh)	23.5	6.0		
Queue Length 50th (m)	95.9	56.4		
Queue Length 95th (m)	112.1	68.7		
Internal Link Dist (m)	82.8	6.9		
Turn Bay Length (m)				
Base Capacity (vph)	2413	2924		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	0.54	0.36		

Intersection Summary
Cycle Length: 126
Actuated Cycle Length: 112.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Transit ROW/Railway Crossing & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑							
Traffic Volume (vph)	0	1309	0	0	1060	0	0	0	0	0	0	0
Future Volume (vph)	0	1309	0	0	1060	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1775	1900	1750	1775	1900	1750	1775	1900	1750	1775	1900	1750
Total Lost time (s)		4.0			4.0							
Lane Util. Factor		0.91			0.95							
Frpb, ped/bikes		1.00			1.00							
Flpb, ped/bikes		1.00			1.00							
Frt		1.00			1.00							
Flt Protected		1.00			1.00							
Satd. Flow (prot)		4906			3570							
Flt Permitted		1.00			1.00							
Satd. Flow (perm)		4906			3570							
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1309	0	0	1060	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1309	0	0	1060	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	19		59	59		19	26		26	26		26
Heavy Vehicles (%)	0%	4%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0					
Turn Type		NA			NA							
Protected Phases		4			8							
Permitted Phases												
Actuated Green, G (s)		51.3			86.0							
Effective Green, g (s)		55.3			90.0							
Actuated g/C Ratio		0.48			0.78							
Clearance Time (s)		8.0			8.0							
Vehicle Extension (s)		3.0			3.0							
Lane Grp Cap (vph)		2359			2793							
v/s Ratio Prot		c0.27			c0.30							
v/s Ratio Perm												
v/c Ratio		0.55			0.37							
Uniform Delay, d1		21.1			3.8							
Progression Factor		1.00			1.00							
Incremental Delay, d2		0.9			0.3							
Delay (s)		22.0			4.2							
Level of Service		C			A							
Approach Delay (s/veh)		22.0			4.2			0.0			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	63	315	61	52	419
Future Vol, veh/h	50	63	315	61	52	419
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	14	4	0	2	5
Mvmt Flow	50	63	315	61	52	419

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	662	190	0	0	378	0
Stage 1	348	-	-	-	-	-
Stage 2	314	-	-	-	-	-
Critical Hdwy	6.8	7.18	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.44	-	-	2.22	-
Pot Cap-1 Maneuver	399	783	-	-	1177	-
Stage 1	692	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	375	782	-	-	1175	-
Mov Cap-2 Maneuver	375	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	678	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.7	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	375	782	1175	-
HCM Lane V/C Ratio	-	-	0.133	0.081	0.044	-
HCM Control Delay (s/veh)	-	-	16.1	10	8.2	0.2
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q (veh)	-	-	0.5	0.3	0.1	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	3	4	0	9	48	0	5	0	45	14	104
Future Vol, veh/h	106	3	4	0	9	48	0	5	0	45	14	104
Conflicting Peds, #/hr	2	0	0	0	0	2	5	0	3	3	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	10	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	33	0	0	100	0	0	0	0	0	0	0
Mvmt Flow	106	3	4	0	9	48	0	5	0	45	14	104

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	7	0	0	234	276	8	258	254	36
Stage 1	-	-	-	-	-	-	217	217	-	35	35	-
Stage 2	-	-	-	-	-	-	17	59	-	223	219	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1558	-	-	1627	-	-	716	635	1080	689	653	1035
Stage 1	-	-	-	-	-	-	790	727	-	982	870	-
Stage 2	-	-	-	-	-	-	1006	850	-	784	726	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1556	-	-	1627	-	-	597	591	1077	646	607	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	597	591	-	646	607	-
Stage 1	-	-	-	-	-	-	736	678	-	914	868	-
Stage 2	-	-	-	-	-	-	886	848	-	724	677	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	7	0	11.1	9.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	591	1556	-	-	1627	-	-	646	951
HCM Lane V/C Ratio	0.008	0.068	-	-	-	-	-	0.07	0.124
HCM Control Delay (s/veh)	11.1	7.5	0	-	0	-	-	11	9.3
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0	0.2	-	-	0	-	-	0.2	0.4

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	46	0	0	56	10	0	7	1	10	13	1
Future Vol, veh/h	2	46	0	0	56	10	0	7	1	10	13	1
Conflicting Peds, #/hr	3	0	3	3	0	3	5	0	2	2	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	0	16	0	0	0	100	0	0	0
Mvmt Flow	2	46	0	0	56	10	0	7	1	10	13	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	49	0	0	126	122	51	120	117	69
Stage 1	-	-	-	-	-	-	53	53	-	64	64	-
Stage 2	-	-	-	-	-	-	73	69	-	56	53	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	7.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	4.2	3.5	4	3.3
Pot Cap-1 Maneuver	1545	-	-	1571	-	-	852	772	797	860	777	1000
Stage 1	-	-	-	-	-	-	965	855	-	952	846	-
Stage 2	-	-	-	-	-	-	942	841	-	961	855	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1541	-	-	1567	-	-	834	768	794	849	773	994
Mov Cap-2 Maneuver	-	-	-	-	-	-	834	768	-	849	773	-
Stage 1	-	-	-	-	-	-	962	852	-	949	844	-
Stage 2	-	-	-	-	-	-	923	839	-	949	852	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.3	0	9.7	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	771	1541	-	-	1567	-	-	811
HCM Lane V/C Ratio	0.01	0.001	-	-	-	-	-	0.03
HCM Control Delay (s/veh)	9.7	7.3	0	-	0	-	-	9.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	1055	562	66	20	16
Future Vol, veh/h	11	1055	562	66	20	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	5	5	0	10	0
Mvmt Flow	11	1055	562	66	20	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	628	0	-	0	1145	314
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	550	-
Critical Hdwy	4.1	-	-	-	7	6.9
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.2	-	-	-	3.6	3.3
Pot Cap-1 Maneuver	964	-	-	-	181	688
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	520	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	964	-	-	-	176	688
Mov Cap-2 Maneuver	-	-	-	-	176	-
Stage 1	-	-	-	-	478	-
Stage 2	-	-	-	-	520	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.2	0	20.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	964	-	-	-	176	688
HCM Lane V/C Ratio	0.011	-	-	-	0.114	0.023
HCM Control Delay (s/veh)	8.8	0.1	-	-	28.1	10.4
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q (veh)	0	-	-	-	0.4	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1262	53	0	1033	219	0	0	17	0	0	33
Future Vol, veh/h	0	1262	53	0	1033	219	0	0	17	0	0	33
Conflicting Peds, #/hr	3	0	3	3	0	3	10	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	7	0	0	4	5	0	0	0	0	0	9
Mvmt Flow	0	1262	53	0	1033	219	0	0	17	0	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	661	-	-	639
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	3.39
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	351	0	0	402
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	350	-	-	398
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	15.8	14.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	350	-	-	-	-	398
HCM Lane V/C Ratio	0.049	-	-	-	-	0.083
HCM Control Delay (s/veh)	15.8	-	-	-	-	14.9
HCM Lane LOS	C	-	-	-	-	B
HCM 95th %tile Q (veh)	0.2	-	-	-	-	0.3

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	0	0	0	0	0	1	0	0	0	13
Future Vol, veh/h	7	0	0	0	0	0	0	1	0	0	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	0	0	0	0	0	0	1	0	0	0	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	8	8	7	8	14	1	13	0	0	1	0	0
Stage 1	7	7	-	1	1	-	-	-	-	-	-	-
Stage 2	1	1	-	7	13	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1016	891	1081	1016	884	1090	1619	-	-	1635	-	-
Stage 1	1020	894	-	1027	899	-	-	-	-	-	-	-
Stage 2	1027	899	-	1020	889	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1016	891	1081	1016	884	1090	1619	-	-	1635	-	-
Mov Cap-2 Maneuver	1016	891	-	1016	884	-	-	-	-	-	-	-
Stage 1	1020	894	-	1027	899	-	-	-	-	-	-	-
Stage 2	1027	899	-	1020	889	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.6	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1619	-	-	1016	-	1635	-	-
HCM Lane V/C Ratio	-	-	-	0.007	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	8.6	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	8	4	0	1	22	0	18	0	0	0
Future Vol, veh/h	0	0	8	4	0	1	22	0	18	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	8	4	0	1	22	0	18	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	55	63	1	58	54	9	1	0	0	18	0	0
Stage 1	1	1	-	53	53	-	-	-	-	-	-	-
Stage 2	54	62	-	5	1	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	948	832	1090	944	841	1079	1635	-	-	1612	-	-
Stage 1	1027	899	-	965	855	-	-	-	-	-	-	-
Stage 2	963	847	-	1022	899	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	937	820	1090	927	829	1079	1635	-	-	1612	-	-
Mov Cap-2 Maneuver	937	820	-	927	829	-	-	-	-	-	-	-
Stage 1	1013	899	-	951	843	-	-	-	-	-	-	-
Stage 2	949	835	-	1014	899	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.3	8.8	4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1635	-	-	1090	954	1612	-	-
HCM Lane V/C Ratio	0.013	-	-	0.007	0.005	-	-	-
HCM Control Delay (s/veh)	7.2	0	-	8.3	8.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	17	3	0	0	11	40	15	0	12	0
Future Vol, veh/h	0	0	17	3	0	0	11	40	15	0	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	17	3	0	0	11	40	15	0	12	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	82	89	12	91	82	48	12	0	0	55	0	0
Stage 1	12	12	-	70	70	-	-	-	-	-	-	-
Stage 2	70	77	-	21	12	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	910	805	1074	898	812	1027	1620	-	-	1563	-	-
Stage 1	1014	890	-	945	841	-	-	-	-	-	-	-
Stage 2	945	835	-	1003	890	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	905	799	1074	879	806	1027	1620	-	-	1563	-	-
Mov Cap-2 Maneuver	905	799	-	879	806	-	-	-	-	-	-	-
Stage 1	1007	890	-	938	835	-	-	-	-	-	-	-
Stage 2	938	829	-	987	890	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.4	9.1	1.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1620	-	-	1074	879	1563	-	-
HCM Lane V/C Ratio	0.007	-	-	0.016	0.003	-	-	-
HCM Control Delay (s/veh)	7.2	0	-	8.4	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	3	1	0	0	8	66	3	0	32	0
Future Vol, veh/h	0	0	3	1	0	0	8	66	3	0	32	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	3	1	0	0	8	66	3	0	32	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	116	117	32	118	116	68	32	0	0	69	0	0
Stage 1	32	32	-	84	84	-	-	-	-	-	-	-
Stage 2	84	85	-	34	32	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	865	777	1048	863	778	1001	1593	-	-	1545	-	-
Stage 1	990	872	-	929	829	-	-	-	-	-	-	-
Stage 2	929	828	-	987	872	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	862	773	1048	857	774	1001	1593	-	-	1545	-	-
Mov Cap-2 Maneuver	862	773	-	857	774	-	-	-	-	-	-	-
Stage 1	985	872	-	924	825	-	-	-	-	-	-	-
Stage 2	924	824	-	984	872	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.4	9.2	0.8	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1593	-	-	1048	857	1545	-	-
HCM Lane V/C Ratio	0.005	-	-	0.003	0.001	-	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.4	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	1	66	56	0
Future Vol, veh/h	0	2	1	66	56	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	100	100	14	4	0
Mvmt Flow	0	2	1	66	56	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	124	56	56	0	-	0
Stage 1	56	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.4	7.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	4.2	3.1	-	-	-
Pot Cap-1 Maneuver	876	792	1099	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	875	792	1099	-	-	-
Mov Cap-2 Maneuver	875	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	960	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.6	0.1	0
HCM LOS	A		

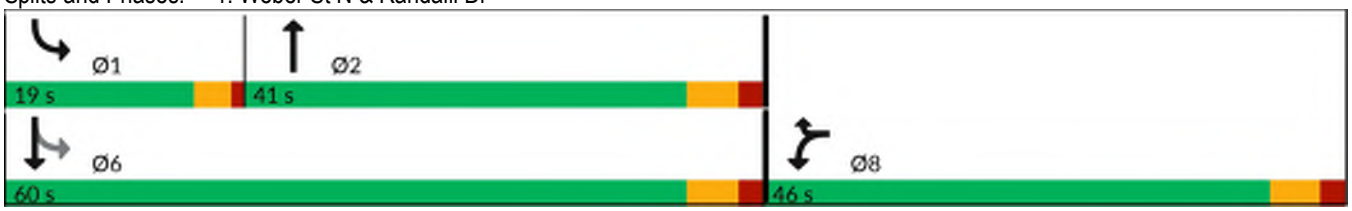
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1099	-	792	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s/veh)	8.3	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Weekday PM Peak Hour

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	295	136	451	28	472
Future Volume (vph)	295	136	451	28	472
Lane Group Flow (vph)	295	136	523	28	472
Turn Type	Prot	Prot	NA	pm+pt	NA
Protected Phases	8	8	2	1	6
Permitted Phases	8	8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	10.0	5.0	10.0
Minimum Split (s)	24.0	24.0	41.0	9.5	42.0
Total Split (s)	46.0	46.0	41.0	19.0	60.0
Total Split (%)	43.4%	43.4%	38.7%	17.9%	56.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	8.0	4.0	4.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
v/c Ratio	0.68	0.28	0.53	0.07	0.40
Control Delay (s/veh)	37.4	7.4	17.0	7.1	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.4	7.4	17.0	7.1	9.1
Queue Length 50th (m)	46.1	1.7	45.3	1.5	33.8
Queue Length 95th (m)	72.5	14.8	115.8	5.6	68.0
Internal Link Dist (m)	723.8		106.7		467.0
Turn Bay Length (m)		30.0		100.0	
Base Capacity (vph)	831	814	982	481	1179
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	0.35	0.17	0.53	0.06	0.40

Intersection Summary
Cycle Length: 106
Actuated Cycle Length: 86.1
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Weber St N & Randalll Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	295	136	451	72	28	472
Future Volume (vph)	295	136	451	72	28	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	8.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.99	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1700	1536	1757		1351	1807
Flt Permitted	0.95	1.00	1.00		0.36	1.00
Satd. Flow (perm)	1700	1536	1757		513	1807
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	295	136	451	72	28	472
RTOR Reduction (vph)	0	93	4	0	0	0
Lane Group Flow (vph)	295	43	519	0	28	472
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	5%	4%	4%	8%	32%	4%
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	2		1	6
Permitted Phases	8	8			6	
Actuated Green, G (s)	19.9	19.9	50.0		56.6	56.6
Effective Green, g (s)	21.9	21.9	48.0		56.6	58.6
Actuated g/C Ratio	0.25	0.25	0.54		0.64	0.66
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	420	380	952		352	1196
v/s Ratio Prot	c0.17	0.03	c0.30		0.00	c0.26
v/s Ratio Perm					0.05	
v/c Ratio	0.70	0.11	0.54		0.07	0.39
Uniform Delay, d1	30.3	25.7	13.1		6.8	6.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.2	0.1	2.2		0.0	0.9
Delay (s)	35.5	25.9	15.4		6.9	7.8
Level of Service	D	C	B		A	A
Approach Delay (s/veh)	32.5		15.4			7.7
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

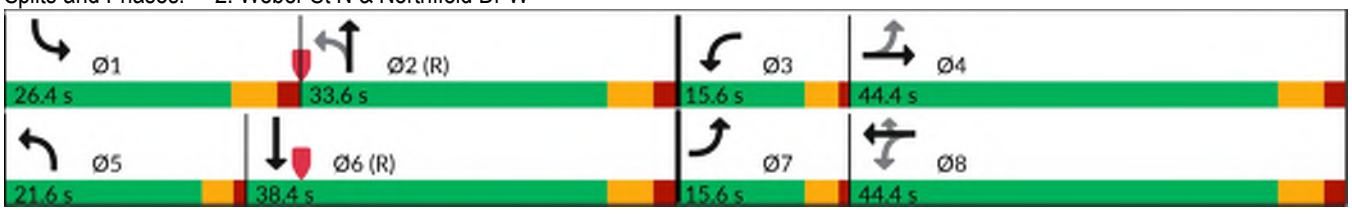
c Critical Lane Group

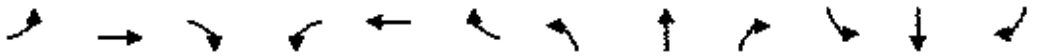
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	112	604	133	1044	154	64	264	258	304
Future Volume (vph)	112	604	133	1044	154	64	264	258	304
Lane Group Flow (vph)	112	673	133	1044	154	64	336	258	457
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2			
Minimum Split (s)	9.0	44.4	9.0	44.4	44.4	9.0	33.6	13.0	33.6
Total Split (s)	15.6	44.4	15.6	44.4	44.4	21.6	33.6	26.4	38.4
Total Split (%)	13.0%	37.0%	13.0%	37.0%	37.0%	18.0%	28.0%	22.0%	32.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0	2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	8.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
v/c Ratio	0.51	0.61	0.45	0.89	0.31	0.15	0.41	0.43	0.48
Control Delay (s/veh)	28.8	35.7	24.1	48.8	12.4	19.2	36.5	45.9	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.8	35.7	24.1	48.8	12.4	19.2	36.5	45.9	31.4
Queue Length 50th (m)	15.5	72.0	18.7	128.6	7.9	8.6	33.8	29.4	41.3
Queue Length 95th (m)	29.6	92.7	31.7	#167.6	25.2	17.0	48.4	42.9	58.0
Internal Link Dist (m)		607.0		127.2			507.4		212.4
Turn Bay Length (m)	90.0		45.0		65.0	95.0		82.5	
Base Capacity (vph)	218	1090	290	1168	491	406	811	589	942
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	0.51	0.62	0.46	0.89	0.31	0.16	0.41	0.44	0.49

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Weber St N & Northfield Dr W





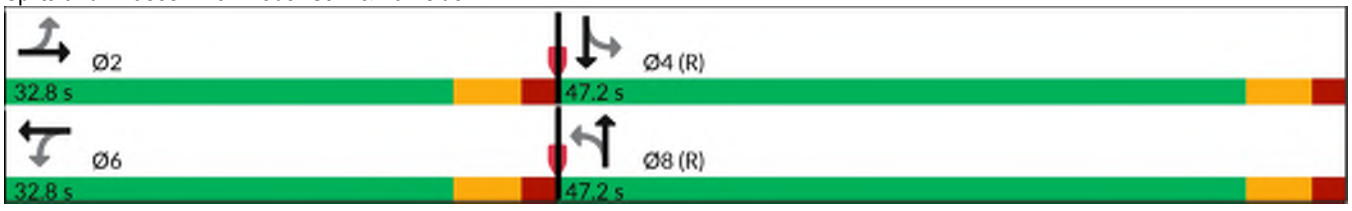
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	604	69	133	1044	154	64	264	72	258	304	153
Future Volume (vph)	112	604	69	133	1044	154	64	264	72	258	304	153
Ideal Flow (vphpl)	1775	1775	1775	1755	1900	1750	1755	1775	1775	1775	1775	1775
Grade (%)		0%			0%			0%			-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	8.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1635	3216		1615	3472	1368	1606	3208		3156	3104	
Flt Permitted	0.10	1.00		0.23	1.00	1.00	0.41	1.00		0.95	1.00	
Satd. Flow (perm)	179	3216		401	3472	1368	694	3208		3156	3104	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	112	604	69	133	1044	154	64	264	72	258	304	153
RTOR Reduction (vph)	0	7	0	0	0	77	0	20	0	0	52	0
Lane Group Flow (vph)	112	666	0	133	1044	77	64	316	0	258	405	0
Confl. Peds. (#/hr)	16		18	18		16	26		13	13		26
Heavy Vehicles (%)	2%	2%	0%	2%	2%	3%	2%	0%	0%	3%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	4	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	50.0	38.4		50.0	38.4	38.4	45.2	27.6		20.4	32.4	
Effective Green, g (s)	50.0	40.4		50.0	40.4	36.4	45.2	29.6		22.4	34.4	
Actuated g/C Ratio	0.42	0.34		0.42	0.34	0.30	0.38	0.25		0.19	0.29	
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	215	1082		284	1168	414	395	791		589	889	
v/s Ratio Prot	c0.05	0.21		0.05	c0.30		0.02	0.10		c0.08	c0.13	
v/s Ratio Perm	0.17			0.15		0.06	0.04					
v/c Ratio	0.52	0.61		0.46	0.89	0.18	0.16	0.39		0.43	0.45	
Uniform Delay, d1	26.4	33.2		23.4	37.7	30.8	24.3	37.7		43.2	35.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.7	2.6		5.4	10.6	0.9	0.8	1.5		2.3	1.6	
Delay (s)	35.2	35.9		28.9	48.3	31.8	25.2	39.2		45.5	36.7	
Level of Service	D	D		C	D	C	C	D		D	D	
Approach Delay (s/veh)		35.8			44.5			37.0			39.9	
Approach LOS		D			D			D			D	

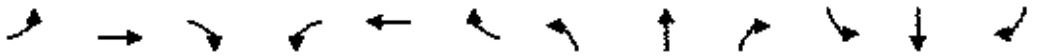
Intersection Summary			
HCM 2000 Control Delay (s/veh)	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	64	215	110	261	67	311	35	396
Future Volume (vph)	64	215	110	261	67	311	35	396
Lane Group Flow (vph)	64	264	110	286	0	499	0	506
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Minimum Split (s)	32.8	32.8	32.8	32.8	47.2	47.2	47.2	47.2
Total Split (s)	32.8	32.8	32.8	32.8	47.2	47.2	47.2	47.2
Total Split (%)	41.0%	41.0%	41.0%	41.0%	59.0%	59.0%	59.0%	59.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0		-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.21	0.46	0.37	0.49		0.37		0.34
Control Delay (s/veh)	20.2	21.6	23.7	22.9		9.6		10.3
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay (s/veh)	20.2	21.6	23.7	22.9		9.6		10.3
Queue Length 50th (m)	7.0	29.8	12.8	34.0		18.1		20.4
Queue Length 95th (m)	16.5	51.5	27.2	57.3		28.5		30.4
Internal Link Dist (m)		315.6		475.0		572.0		507.4
Turn Bay Length (m)	25.0		15.0					
Base Capacity (vph)	295	568	292	581		1341		1479
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	0.22	0.46	0.38	0.49		0.37		0.34

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 2.4 (3%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed

Splits and Phases: 3: Weber St N & Parkside Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	215	49	110	261	25	67	311	121	35	396	75
Future Volume (vph)	64	215	49	110	261	25	67	311	121	35	396	75
Ideal Flow (vphpl)	1775	1650	1650	1755	1650	1650	1650	1650	1650	1650	1650	1650
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	0.99	1.00		0.98	1.00			0.99			0.99	
Frt	1.00	0.97		1.00	0.98			0.96			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1662	1552		1552	1602			2898			3008	
Flt Permitted	0.46	1.00		0.49	1.00			0.82			0.89	
Satd. Flow (perm)	821	1552		812	1602			2412			2708	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	64	215	49	110	261	25	67	311	121	35	396	75
RTOR Reduction (vph)	0	10	0	0	4	0	0	38	0	0	17	0
Lane Group Flow (vph)	64	254	0	110	282	0	0	461	0	0	489	0
Confl. Peds. (#/hr)	6		20	20		6	9		3	3		9
Heavy Vehicles (%)	0%	2%	0%	5%	0%	4%	0%	1%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	26.8	26.8		26.8	26.8			41.2			41.2	
Effective Green, g (s)	28.8	28.8		28.8	28.8			43.2			43.2	
Actuated g/C Ratio	0.36	0.36		0.36	0.36			0.54			0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)	295	558		292	576			1302			1462	
v/s Ratio Prot		0.16			c0.18							
v/s Ratio Perm	0.08			0.14				c0.19			0.18	
v/c Ratio	0.21	0.45		0.37	0.48			0.35			0.33	
Uniform Delay, d1	17.7	19.5		18.9	19.8			10.4			10.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.6	2.6		3.6	2.9			0.7			0.6	
Delay (s)	19.4	22.2		22.6	22.8			11.2			10.9	
Level of Service	B	C		C	C			B			B	
Approach Delay (s/veh)		21.7			22.7			11.2			10.9	
Approach LOS		C			C			B			B	

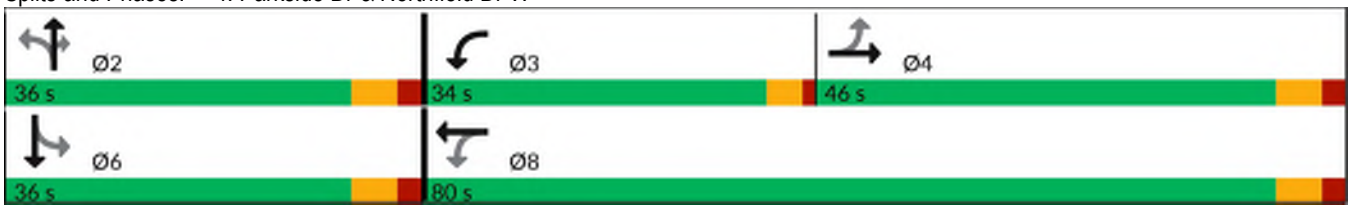
Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	126.7%	ICU Level of Service	H
Analysis Period (min)	15		

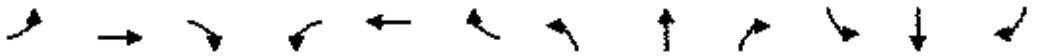
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	903	288	1324	32	15	396	88	28
Future Volume (vph)	903	288	1324	32	15	396	88	28
Lane Group Flow (vph)	933	288	1410	0	47	396	88	31
Turn Type	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases	4	3	8		2			6
Permitted Phases		8		2		2	6	
Detector Phase	4	3	8	2	2	2	6	6
Switch Phase								
Minimum Initial (s)	40.0	5.0	40.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	46.0	9.5	46.0	34.0	34.0	34.0	34.0	34.0
Total Split (s)	46.0	34.0	80.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	39.7%	29.3%	69.0%	31.0%	31.0%	31.0%	31.0%	31.0%
Yellow Time (s)	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	0.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lead						
Lead-Lag Optimize?								
Recall Mode	None	None	None	Max	Max	Max	Max	Max
v/c Ratio	0.71	0.73	0.70		0.12	0.55	0.22	0.06
Control Delay (s/veh)	30.5	27.5	15.6		29.0	6.5	30.3	26.0
Queue Delay	0.0	0.0	0.1		0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.5	27.5	15.8		29.0	6.5	30.3	26.0
Queue Length 50th (m)	84.8	30.9	97.7		7.1	0.0	13.7	4.1
Queue Length 95th (m)	126.3	60.2	121.3		18.2	25.4	30.2	12.6
Internal Link Dist (m)	123.1		82.8		475.0			54.4
Turn Bay Length (m)		25.0					30.0	
Base Capacity (vph)	1298	560	2399		383	708	389	473
Starvation Cap Reductn	0	0	251		0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0
Reduced v/c Ratio	0.72	0.51	0.66		0.12	0.56	0.23	0.07

Intersection Summary
Cycle Length: 116
Actuated Cycle Length: 103.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord

Splits and Phases: 4: Parkside Dr & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	903	30	288	1324	86	32	15	396	88	28	3
Future Volume (vph)	0	903	30	288	1324	86	32	15	396	88	28	3
Ideal Flow (vphpl)	1775	1775	1775	1775	1775	1775	1650	1650	1750	1775	1650	1650
Grade (%)		0%			0%			0%			-2%	
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99			1.00	0.97	1.00	0.99	
Flpb, ped/bikes		1.00		0.99	1.00			0.99	1.00	0.98	1.00	
Frt		0.99		1.00	0.99			1.00	0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)		3194		1650	3262			1424	1410	1648	1525	
Flt Permitted		1.00		0.14	1.00			0.84	1.00	0.72	1.00	
Satd. Flow (perm)		3194		253	3262			1239	1410	1260	1525	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	903	30	288	1324	86	32	15	396	88	28	3
RTOR Reduction (vph)	0	2	0	0	5	0	0	0	273	0	2	0
Lane Group Flow (vph)	0	931	0	288	1405	0	0	47	123	88	29	0
Confl. Peds. (#/hr)	9		25	25		9	2		11	11		2
Heavy Vehicles (%)	0%	3%	0%	1%	1%	3%	3%	27%	1%	1%	7%	0%
Bus Blockages (#/hr)	0	4	0	0	0	0	0	0	2	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		40.1		61.6	61.6			30.1	30.1	30.1	30.1	
Effective Green, g (s)		42.1		61.6	63.6			32.1	32.1	32.1	32.1	
Actuated g/C Ratio		0.41		0.59	0.61			0.31	0.31	0.31	0.31	
Clearance Time (s)		6.0		4.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1296		386	2000			383	436	390	472	
v/s Ratio Prot		0.29		0.13	c0.43						0.02	
v/s Ratio Perm				c0.32				0.04	c0.09	0.07		
v/c Ratio		0.71		0.74	0.70			0.12	0.28	0.22	0.06	
Uniform Delay, d1		25.8		18.4	13.6			25.6	27.0	26.5	25.1	
Progression Factor		1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.9		7.6	1.1			0.6	1.6	1.3	0.2	
Delay (s)		27.7		26.1	14.7			26.3	28.6	27.9	25.4	
Level of Service		C		C	B			C	C	C	C	
Approach Delay (s/veh)		27.7			16.6			28.4			27.2	
Approach LOS		C			B			C			C	

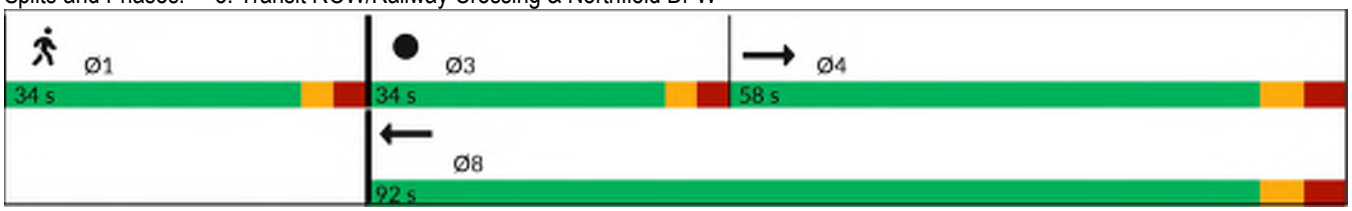
Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	103.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.8%	ICU Level of Service	G
Analysis Period (min)	15		

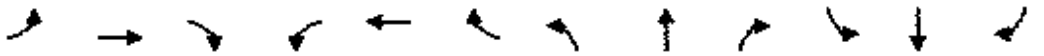
c Critical Lane Group

Lane Group	EBT	WBT	Ø1	Ø3
Lane Configurations				
Traffic Volume (vph)	1387	1698		
Future Volume (vph)	1387	1698		
Lane Group Flow (vph)	1387	1698		
Turn Type	NA	NA		
Protected Phases	4	8	1	3
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	7.0	7.0
Minimum Split (s)	50.0	50.0	34.0	24.0
Total Split (s)	58.0	92.0	34.0	34.0
Total Split (%)	46.0%	73.0%	27%	27%
Yellow Time (s)	4.0	4.0	3.0	3.0
All-Red Time (s)	4.0	4.0	3.0	3.0
Lost Time Adjust (s)	-4.0	-4.0		
Total Lost Time (s)	4.0	4.0		
Lead/Lag	Lag			Lead
Lead-Lag Optimize?	Yes			Yes
Recall Mode	Max	Max	None	Max
v/c Ratio	0.56	0.58		
Control Delay (s/veh)	23.8	8.5		
Queue Delay	0.0	0.0		
Total Delay (s/veh)	23.8	8.5		
Queue Length 50th (m)	103.1	121.2		
Queue Length 95th (m)	120.0	144.5		
Internal Link Dist (m)	82.8	6.9		
Turn Bay Length (m)				
Base Capacity (vph)	2460	2924		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	0.56	0.58		

Intersection Summary
Cycle Length: 126
Actuated Cycle Length: 112.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Transit ROW/Railway Crossing & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑							
Traffic Volume (vph)	0	1387	0	0	1698	0	0	0	0	0	0	0
Future Volume (vph)	0	1387	0	0	1698	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1775	1900	1750	1775	1900	1750	1775	1900	1750	1775	1900	1750
Total Lost time (s)		4.0			4.0							
Lane Util. Factor		0.91			0.95							
Frpb, ped/bikes		1.00			1.00							
Flpb, ped/bikes		1.00			1.00							
Frt		1.00			1.00							
Flt Protected		1.00			1.00							
Satd. Flow (prot)		5002			3570							
Flt Permitted		1.00			1.00							
Satd. Flow (perm)		5002			3570							
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1387	0	0	1698	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1387	0	0	1698	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	9		79	79		9	32		32	32		32
Heavy Vehicles (%)	0%	2%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0					
Turn Type		NA			NA							
Protected Phases		4			8							
Permitted Phases												
Actuated Green, G (s)		51.3			86.0							
Effective Green, g (s)		55.3			90.0							
Actuated g/C Ratio		0.48			0.78							
Clearance Time (s)		8.0			8.0							
Vehicle Extension (s)		3.0			3.0							
Lane Grp Cap (vph)		2405			2793							
v/s Ratio Prot		0.28			c0.48							
v/s Ratio Perm												
v/c Ratio		0.57			0.60							
Uniform Delay, d1		21.4			5.1							
Progression Factor		1.00			1.00							
Incremental Delay, d2		1.0			0.9							
Delay (s)		22.4			6.1							
Level of Service		C			A							
Approach Delay (s/veh)		22.4			6.1			0.0			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	107	416	114	93	674
Future Vol, veh/h	43	107	416	114	93	674
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	6	2	0	0	1
Mvmt Flow	43	107	416	114	93	674

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	999	268	0	0	533	0
Stage 1	476	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Critical Hdwy	6.8	7.02	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.36	-	-	2.2	-
Pot Cap-1 Maneuver	244	718	-	-	1045	-
Stage 1	597	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	209	716	-	-	1043	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	596	-	-	-	-	-
Stage 2	484	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	15.4	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	209	716	1043	-
HCM Lane V/C Ratio	-	-	0.206	0.149	0.089	-
HCM Control Delay (s/veh)	-	-	26.6	10.9	8.8	0.5
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q (veh)	-	-	0.8	0.5	0.3	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	81	29	0	41	43	14	6	0	20	9	95
Future Vol, veh/h	97	81	29	0	41	43	14	6	0	20	9	95
Conflicting Peds, #/hr	14	0	0	0	0	14	15	0	1	1	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	15	0	0	0	0	0	0	0
Mvmt Flow	97	81	29	0	41	43	14	6	0	20	9	95

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	98	0	0	110	0	0	330	388	97	371	381	71
Stage 1	-	-	-	-	-	-	290	290	-	77	77	-
Stage 2	-	-	-	-	-	-	40	98	-	294	304	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1508	-	-	1493	-	-	616	550	965	577	555	983
Stage 1	-	-	-	-	-	-	722	676	-	929	835	-
Stage 2	-	-	-	-	-	-	976	818	-	719	667	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1492	-	-	1493	-	-	513	507	964	535	511	961
Mov Cap-2 Maneuver	-	-	-	-	-	-	513	507	-	535	511	-
Stage 1	-	-	-	-	-	-	672	629	-	856	826	-
Stage 2	-	-	-	-	-	-	860	809	-	662	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	3.6	0	12.3	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	511	1492	-	-	1493	-	-	535	893
HCM Lane V/C Ratio	0.039	0.065	-	-	-	-	-	0.037	0.116
HCM Control Delay (s/veh)	12.3	7.6	0	-	0	-	-	12	9.6
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0.1	0.2	-	-	0	-	-	0.1	0.4

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	98	0	0	67	34	1	0	73	21	7	16
Future Vol, veh/h	3	98	0	0	67	34	1	0	73	21	7	16
Conflicting Peds, #/hr	0	0	2	4	0	0	0	0	5	5	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	9	0	0	0	1	0	0	0
Mvmt Flow	3	98	0	0	67	34	1	0	73	21	7	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	101	0	0	102	0	0	204	209	107	230	192	84
Stage 1	-	-	-	-	-	-	108	108	-	84	84	-
Stage 2	-	-	-	-	-	-	96	101	-	146	108	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1504	-	-	1503	-	-	758	692	950	729	707	981
Stage 1	-	-	-	-	-	-	902	810	-	929	829	-
Stage 2	-	-	-	-	-	-	916	815	-	861	810	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1504	-	-	1498	-	-	737	689	943	669	703	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	737	689	-	669	703	-
Stage 1	-	-	-	-	-	-	897	806	-	927	829	-
Stage 2	-	-	-	-	-	-	893	815	-	790	806	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.2	0	9.2	10
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	939	1504	-	-	1498	-	-	763
HCM Lane V/C Ratio	0.079	0.002	-	-	-	-	-	0.058
HCM Control Delay (s/veh)	9.2	7.4	0	-	0	-	-	10
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q (veh)	0.3	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	907	1297	62	26	34
Future Vol, veh/h	27	907	1297	62	26	34
Conflicting Peds, #/hr	13	0	0	13	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	3	1	0	8	0
Mvmt Flow	27	907	1297	62	26	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1372	0	-	0	1852	693
Stage 1	-	-	-	-	1341	-
Stage 2	-	-	-	-	511	-
Critical Hdwy	4.1	-	-	-	6.96	6.9
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	2.2	-	-	-	3.58	3.3
Pot Cap-1 Maneuver	507	-	-	-	61	390
Stage 1	-	-	-	-	198	-
Stage 2	-	-	-	-	550	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	502	-	-	-	53	386
Mov Cap-2 Maneuver	-	-	-	-	53	-
Stage 1	-	-	-	-	175	-
Stage 2	-	-	-	-	545	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.9	0	63.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	502	-	-	-	53	386
HCM Lane V/C Ratio	0.054	-	-	-	0.491	0.088
HCM Control Delay (s/veh)	12.6	0.6	-	-	126	15.2
HCM Lane LOS	B	A	-	-	F	C
HCM 95th %tile Q (veh)	0.2	-	-	-	1.9	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1381	11	0	1656	124	0	0	43	0	0	45
Future Vol, veh/h	0	1381	11	0	1656	124	0	0	43	0	0	45
Conflicting Peds, #/hr	4	0	2	2	0	4	36	0	0	0	0	36
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	3	0	0	2	3	0	0	2	0	0	4
Mvmt Flow	0	1381	11	0	1656	124	0	0	43	0	0	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	698	-	-	930
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.34
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	328	0	0	265
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	327	-	-	257
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	17.7	22
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	327	-	-	-	-	257
HCM Lane V/C Ratio	0.131	-	-	-	-	0.175
HCM Control Delay (s/veh)	17.7	-	-	-	-	22
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q (veh)	0.4	-	-	-	-	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	1	0	73	0	0	0	7
Future Vol, veh/h	0	0	0	0	0	1	0	73	0	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	1	0	73	0	0	0	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	78	77	4	77	80	73	7	0	0	73	0	0
Stage 1	4	4	-	73	73	-	-	-	-	-	-	-
Stage 2	74	73	-	4	7	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	916	817	1085	917	814	995	1627	-	-	1540	-	-
Stage 1	1024	897	-	942	838	-	-	-	-	-	-	-
Stage 2	940	838	-	1024	894	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	915	817	1085	917	814	995	1627	-	-	1540	-	-
Mov Cap-2 Maneuver	915	817	-	917	814	-	-	-	-	-	-	-
Stage 1	1024	897	-	942	838	-	-	-	-	-	-	-
Stage 2	939	838	-	1024	894	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.6	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1627	-	-	-	995	1540	-	-
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.6	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	-	0	0	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	0	0	5	0	12	30	11	5	0	0	0
Future Vol, veh/h	50	0	0	5	0	12	30	11	5	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	0	0	5	0	12	30	11	5	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	81	77	1	75	75	14	1	0	0	16	0	0
Stage 1	1	1	-	74	74	-	-	-	-	-	-	-
Stage 2	80	76	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	912	817	1090	920	819	1072	1635	-	-	1615	-	-
Stage 1	1027	899	-	940	837	-	-	-	-	-	-	-
Stage 2	934	836	-	1027	899	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	888	801	1090	907	803	1072	1635	-	-	1615	-	-
Mov Cap-2 Maneuver	888	801	-	907	803	-	-	-	-	-	-	-
Stage 1	1007	899	-	922	821	-	-	-	-	-	-	-
Stage 2	906	820	-	1027	899	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.3	8.6	4.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1635	-	-	888	1018	1615	-	-
HCM Lane V/C Ratio	0.018	-	-	0.056	0.017	-	-	-
HCM Control Delay (s/veh)	7.2	0	-	9.3	8.6	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0.1	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	37	4	0	11	37	35	5	0	5	0
Future Vol, veh/h	0	0	37	4	0	11	37	35	5	0	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	37	4	0	11	37	35	5	0	5	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	122	119	5	136	117	38	5	0	0	40	0	0
Stage 1	5	5	-	112	112	-	-	-	-	-	-	-
Stage 2	117	114	-	24	5	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	858	775	1084	840	777	1040	1630	-	-	1583	-	-
Stage 1	1022	896	-	898	807	-	-	-	-	-	-	-
Stage 2	892	805	-	999	896	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	834	757	1084	797	759	1040	1630	-	-	1583	-	-
Mov Cap-2 Maneuver	834	757	-	797	759	-	-	-	-	-	-	-
Stage 1	998	896	-	877	788	-	-	-	-	-	-	-
Stage 2	862	786	-	965	896	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.4	8.8	3.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1630	-	-	1084	962	1583	-	-
HCM Lane V/C Ratio	0.023	-	-	0.034	0.016	-	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.4	8.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	11	1	0	0	11	77	1	0	46	0
Future Vol, veh/h	0	0	11	1	0	0	11	77	1	0	46	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	11	1	0	0	11	77	1	0	46	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	146	146	46	152	146	78	46	0	0	78	0	0
Stage 1	46	46	-	100	100	-	-	-	-	-	-	-
Stage 2	100	100	-	52	46	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	827	749	1029	820	749	988	1575	-	-	1533	-	-
Stage 1	973	861	-	911	816	-	-	-	-	-	-	-
Stage 2	911	816	-	966	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	823	744	1029	807	744	988	1575	-	-	1533	-	-
Mov Cap-2 Maneuver	823	744	-	807	744	-	-	-	-	-	-	-
Stage 1	966	861	-	905	810	-	-	-	-	-	-	-
Stage 2	905	810	-	956	861	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.5	9.5	0.9	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1575	-	-	1029	807	1533	-	-
HCM Lane V/C Ratio	0.007	-	-	0.011	0.001	-	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.5	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	1	101	119	0
Future Vol, veh/h	0	2	1	101	119	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	100	100	6	1	0
Mvmt Flow	0	2	1	101	119	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	222	119	119	0	-	0
Stage 1	119	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.4	7.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	4.2	3.1	-	-	-
Pot Cap-1 Maneuver	771	724	1032	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	770	724	1032	-	-	-
Mov Cap-2 Maneuver	770	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	926	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1032	-	724	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s/veh)	8.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

APPENDIX F

2031 & 2041 Future Background Intersection Capacity Analysis

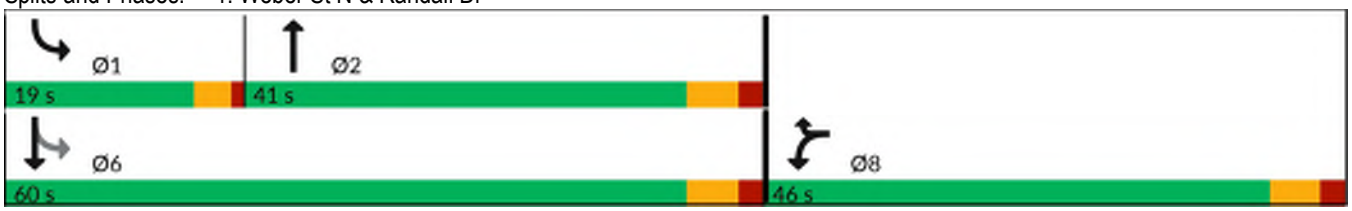
2031 Future Background Intersection Capacity Analysis

Weekday AM Peak Hour

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	72	24	270	45	399
Future Volume (vph)	72	24	270	45	399
Lane Group Flow (vph)	72	24	378	45	399
Turn Type	Prot	Prot	NA	pm+pt	NA
Protected Phases	8	8	2	1	6
Permitted Phases	8	8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	10.0	5.0	10.0
Minimum Split (s)	24.0	24.0	41.0	9.5	42.0
Total Split (s)	46.0	46.0	41.0	19.0	60.0
Total Split (%)	43.4%	43.4%	38.7%	17.9%	56.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
v/c Ratio	0.33	0.10	0.31	0.06	0.28
Control Delay (s/veh)	33.2	12.5	7.2	3.2	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.2	12.5	7.2	3.2	3.8
Queue Length 50th (m)	9.8	0.0	23.4	1.4	15.1
Queue Length 95th (m)	21.5	6.1	45.9	4.3	30.4
Internal Link Dist (m)	723.8		106.7		467.0
Turn Bay Length (m)		30.0		100.0	
Base Capacity (vph)	767	788	1207	777	1413
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	0.09	0.03	0.31	0.06	0.28

Intersection Summary
Cycle Length: 106
Actuated Cycle Length: 76.3
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Weber St N & Randall Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	24	270	108	45	399
Future Volume (vph)	72	24	270	108	45	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.99	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1394	1413	1696		1605	1789
Flt Permitted	0.95	1.00	1.00		0.47	1.00
Satd. Flow (perm)	1394	1413	1696		795	1789
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	24	270	108	45	399
RTOR Reduction (vph)	0	21	7	0	0	0
Lane Group Flow (vph)	72	3	371	0	45	399
Confl. Peds. (#/hr)				6	6	
Heavy Vehicles (%)	28%	13%	6%	5%	11%	5%
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	2		1	6
Permitted Phases	8	8			6	
Actuated Green, G (s)	8.1	8.1	51.3		59.1	59.1
Effective Green, g (s)	10.1	10.1	53.3		59.1	61.1
Actuated g/C Ratio	0.13	0.13	0.67		0.75	0.77
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	177	180	1141		632	1380
v/s Ratio Prot	c0.05	0.00	c0.22		0.00	c0.22
v/s Ratio Perm					0.05	
v/c Ratio	0.40	0.01	0.32		0.07	0.28
Uniform Delay, d1	31.7	30.2	5.4		2.9	2.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.0	0.7		0.0	0.5
Delay (s)	33.3	30.2	6.1		2.9	3.1
Level of Service	C	C	A		A	A
Approach Delay (s/veh)	32.5		6.1			3.1
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

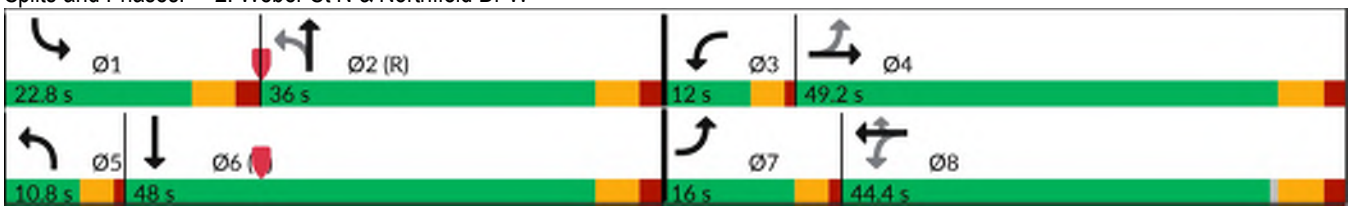
c Critical Lane Group

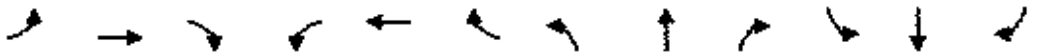
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	144	891	68	509	122	31	110	161	254
Future Volume (vph)	144	891	68	509	122	31	110	161	254
Lane Group Flow (vph)	144	975	68	509	122	31	209	161	308
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2			
Minimum Split (s)	9.5	44.4	9.0	44.4	44.4	9.5	36.0	13.0	36.0
Total Split (s)	16.0	49.2	12.0	44.4	44.4	10.8	36.0	22.8	48.0
Total Split (%)	13.3%	41.0%	10.0%	37.0%	37.0%	9.0%	30.0%	19.0%	40.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes								
v/c Ratio	0.38	0.79	0.38	0.44	0.21	0.09	0.24	0.34	0.26
Control Delay (s/veh)	21.2	38.6	24.2	32.0	2.8	19.9	18.6	47.4	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.2	38.6	24.2	32.0	2.8	19.9	18.6	47.4	25.1
Queue Length 50th (m)	19.9	111.0	9.0	51.1	0.0	4.2	10.9	18.5	25.6
Queue Length 95th (m)	33.2	138.2	17.6	67.5	7.5	10.1	21.3	29.4	37.1
Internal Link Dist (m)		607.0		127.2			507.4		212.4
Turn Bay Length (m)	90.0		45.0		65.0	95.0		82.5	
Base Capacity (vph)	375	1230	176	1147	572	340	848	471	1165
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	0.38	0.79	0.39	0.44	0.21	0.09	0.25	0.34	0.26

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 15.6 (13%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 105
Control Type: Pretimed

Splits and Phases: 2: Weber St N & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	891	84	68	509	122	31	110	99	161	254	54
Future Volume (vph)	144	891	84	68	509	122	31	110	99	161	254	54
Ideal Flow (vphpl)	1775	1775	1775	1755	1900	1750	1755	1775	1775	1775	1775	1775
Grade (%)		0%			0%			0%			-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.92		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1667	3252		1555	3341	1371	1590	2908		3010	3135	
Flt Permitted	0.31	1.00		0.13	1.00	1.00	0.56	1.00		0.95	1.00	
Satd. Flow (perm)	555	3252		213	3341	1371	945	2908		3010	3135	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	144	891	84	68	509	122	31	110	99	161	254	54
RTOR Reduction (vph)	0	6	0	0	0	80	0	73	0	0	15	0
Lane Group Flow (vph)	144	969	0	68	509	42	31	136	0	161	293	0
Confl. Peds. (#/hr)	3		16	16		3	16		14	14		16
Heavy Vehicles (%)	0%	1%	1%	6%	6%	4%	3%	7%	3%	8%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	4	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	55.2	43.2		47.2	39.2	39.2	36.8	30.0		16.8	42.0	
Effective Green, g (s)	55.2	45.2		47.2	41.2	41.2	36.8	32.0		18.8	44.0	
Actuated g/C Ratio	0.46	0.38		0.39	0.34	0.34	0.31	0.27		0.16	0.37	
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	366	1224		173	1147	470	326	775		471	1149	
v/s Ratio Prot	c0.04	c0.30		0.03	0.15		0.01	0.05		c0.05	c0.09	
v/s Ratio Perm	0.14			0.13		0.03	0.02					
v/c Ratio	0.39	0.79		0.39	0.44	0.08	0.09	0.17		0.34	0.25	
Uniform Delay, d1	20.1	33.2		25.4	30.5	26.6	29.4	33.8		45.0	26.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	5.2		6.5	1.2	0.3	0.5	0.4		1.9	0.5	
Delay (s)	23.2	38.5		31.9	31.7	27.0	29.9	34.3		47.0	27.0	
Level of Service	C	D		C	C	C	C	C		D	C	
Approach Delay (s/veh)		36.5			30.9			33.7			33.9	
Approach LOS		D			C			C			C	

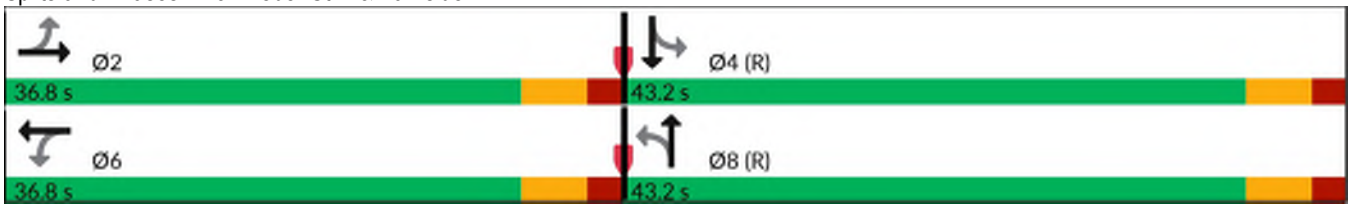
Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

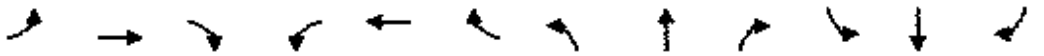
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	62	166	76	191	16	165	30	290
Future Volume (vph)	62	166	76	191	16	165	30	290
Lane Group Flow (vph)	62	215	76	204	16	237	30	376
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Minimum Split (s)	36.8	36.8	36.8	36.8	43.2	43.2	43.2	43.2
Total Split (s)	36.8	36.8	36.8	36.8	43.2	43.2	43.2	43.2
Total Split (%)	46.0%	46.0%	46.0%	46.0%	54.0%	54.0%	54.0%	54.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	6.0	4.0	6.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.15	0.33	0.20	0.30	0.04	0.17	0.06	0.25
Control Delay (s/veh)	16.2	16.0	17.0	17.1	12.1	8.1	12.4	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.2	16.0	17.0	17.1	12.1	8.1	12.4	10.1
Queue Length 50th (m)	6.1	20.1	7.6	20.8	1.3	7.1	2.5	14.0
Queue Length 95th (m)	14.2	36.7	17.1	36.8	4.7	13.4	7.2	22.5
Internal Link Dist (m)		315.6		475.0		572.0		507.4
Turn Bay Length (m)	25.0		15.0		25.0		25.0	
Base Capacity (vph)	404	648	378	664	385	1374	458	1465
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.33	0.20	0.31	0.04	0.17	0.07	0.26

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 42.7 (53%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed

Splits and Phases: 3: Weber St N & Parkside Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	166	49	76	191	13	16	165	72	30	290	86
Future Volume (vph)	62	166	49	76	191	13	16	165	72	30	290	86
Ideal Flow (vphpl)	1775	1650	1650	1755	1650	1650	1650	1650	1650	1650	1650	1650
Total Lost time (s)	4.0	4.0		4.0	4.0		6.0	4.0		6.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1587	1549		1516	1615		1535	2731		1550	2920	
Flt Permitted	0.59	1.00		0.57	1.00		0.51	1.00		0.60	1.00	
Satd. Flow (perm)	987	1549		922	1615		830	2731		986	2920	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	62	166	49	76	191	13	16	165	72	30	290	86
RTOR Reduction (vph)	0	14	0	0	3	0	0	37	0	0	35	0
Lane Group Flow (vph)	62	201	0	76	201	0	16	200	0	30	341	0
Confl. Peds. (#/hr)	1		13	13		1	3					3
Heavy Vehicles (%)	5%	1%	2%	8%	0%	0%	0%	7%	10%	0%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	30.8	30.8		30.8	30.8		37.2	37.2		37.2	37.2	
Effective Green, g (s)	32.8	32.8		32.8	32.8		37.2	39.2		37.2	39.2	
Actuated g/C Ratio	0.41	0.41		0.41	0.41		0.47	0.49		0.47	0.49	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	404	635		378	662		385	1338		458	1430	
v/s Ratio Prot		c0.13			0.12			0.07			c0.12	
v/s Ratio Perm	0.06			0.08			0.02			0.03		
v/c Ratio	0.15	0.31		0.20	0.30		0.04	0.14		0.06	0.23	
Uniform Delay, d1	14.8	16.0		15.1	15.9		11.6	11.2		11.8	11.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.3		1.1	1.1		0.2	0.2		0.2	0.3	
Delay (s)	15.6	17.3		16.3	17.0		11.8	11.4		12.0	12.1	
Level of Service	B	B		B	B		B	B		B	B	
Approach Delay (s/veh)		16.9			16.8			11.4			12.1	
Approach LOS		B			B			B			B	

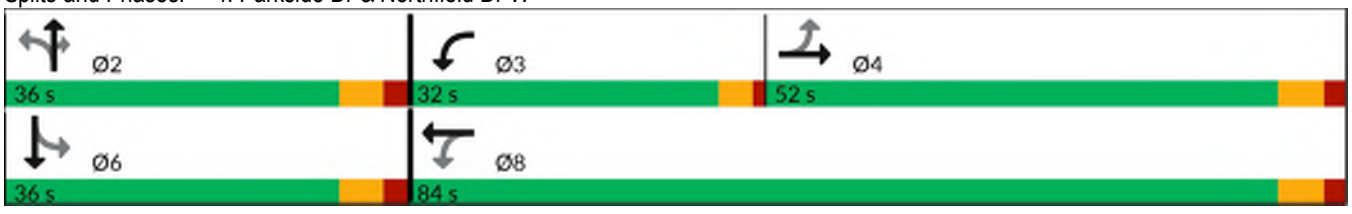
Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

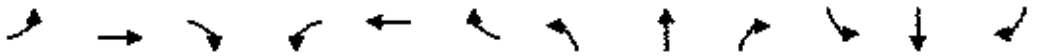
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	2	1134	393	732	16	8	215	45	10
Future Volume (vph)	2	1134	393	732	16	8	215	45	10
Lane Group Flow (vph)	2	1158	393	788	0	24	215	45	11
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4	3	8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	40.0	40.0	5.0	40.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	46.0	46.0	9.5	46.0	34.0	34.0	34.0	34.0	34.0
Total Split (s)	52.0	52.0	32.0	84.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	43.3%	43.3%	26.7%	70.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max
v/c Ratio	0.00	0.91	0.92	0.38		0.06	0.39	0.13	0.02
Control Delay (s/veh)	22.0	45.5	60.9	9.4		33.7	6.8	34.8	31.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.0	45.5	60.9	9.4		33.7	6.8	34.8	31.0
Queue Length 50th (m)	0.3	140.7	77.5	40.9		4.5	0.0	8.5	1.9
Queue Length 95th (m)	2.1	#186.0	#135.8	52.2		11.7	19.0	18.7	6.7
Internal Link Dist (m)		123.1		82.8		475.0			54.4
Turn Bay Length (m)	35.0		25.0					30.0	
Base Capacity (vph)	254	1302	450	2160		344	542	345	376
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	0.01	0.89	0.87	0.36		0.07	0.40	0.13	0.03

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 117
Natural Cycle: 100
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Parkside Dr & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1134	24	393	732	56	16	8	215	45	10	1
Future Volume (vph)	2	1134	24	393	732	56	16	8	215	45	10	1
Ideal Flow (vphpl)	1775	1775	1775	1775	1775	1775	1650	1650	1750	1775	1650	1650
Grade (%)		0%			0%			0%			-2%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.98	1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			0.99	1.00	0.99	1.00	
Frt	1.00	0.99		1.00	0.98			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1663	3166		1635	3147			1390	1408	1614	1372	
Flt Permitted	0.35	1.00		0.08	1.00			0.87	1.00	0.74	1.00	
Satd. Flow (perm)	619	3166		141	3147			1260	1408	1260	1372	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1134	24	393	732	56	16	8	215	45	10	1
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	156	0	1	0
Lane Group Flow (vph)	2	1157	0	393	783	0	0	24	59	45	10	0
Confl. Peds. (#/hr)	6		18	18		6	10		3	3		10
Heavy Vehicles (%)	0%	4%	8%	2%	4%	13%	0%	38%	2%	4%	20%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	2	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	44.8	44.8		74.9	74.9			30.1	30.1	30.1	30.1	
Effective Green, g (s)	46.8	46.8		74.9	76.9			32.1	32.1	32.1	32.1	
Actuated g/C Ratio	0.40	0.40		0.64	0.66			0.27	0.27	0.27	0.27	
Clearance Time (s)	6.0	6.0		4.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	247	1266		423	2068			345	386	345	376	
v/s Ratio Prot		0.37		c0.21	0.25						0.01	
v/s Ratio Perm	0.00			c0.39				0.02	c0.04	0.04		
v/c Ratio	0.00	0.91		0.92	0.37			0.06	0.15	0.13	0.02	
Uniform Delay, d1	21.1	33.1		35.3	9.1			31.4	32.1	31.9	31.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	10.2		26.5	0.1			0.3	0.8	0.7	0.1	
Delay (s)	21.1	43.3		61.8	9.2			31.7	32.9	32.7	31.1	
Level of Service	C	D		E	A			C	C	C	C	
Approach Delay (s/veh)		43.3			26.7			32.8			32.4	
Approach LOS		D			C			C			C	

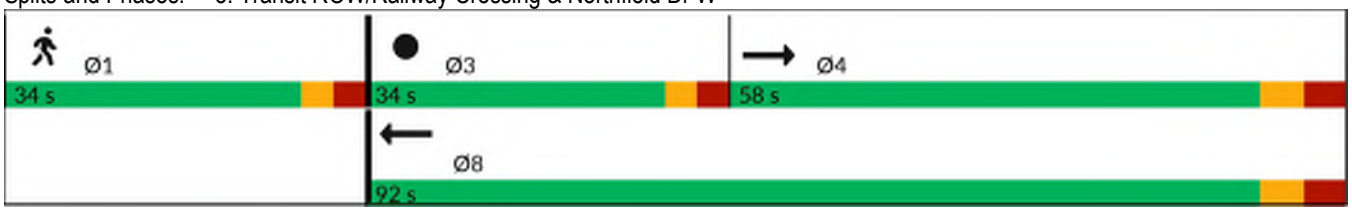
Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	117.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

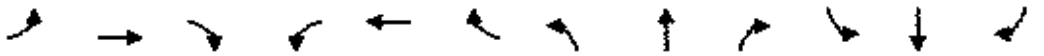
c Critical Lane Group

Lane Group	EBT	WBT	Ø1	Ø3
Lane Configurations				
Traffic Volume (vph)	1394	1181		
Future Volume (vph)	1394	1181		
Lane Group Flow (vph)	1394	1181		
Turn Type	NA	NA		
Protected Phases	4	8	1	3
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	7.0	7.0
Minimum Split (s)	50.0	50.0	34.0	24.0
Total Split (s)	58.0	92.0	34.0	34.0
Total Split (%)	46.0%	73.0%	27%	27%
Yellow Time (s)	4.0	4.0	3.0	3.0
All-Red Time (s)	4.0	4.0	3.0	3.0
Lost Time Adjust (s)	-4.0	-4.0		
Total Lost Time (s)	4.0	4.0		
Lead/Lag	Lag			Lead
Lead-Lag Optimize?	Yes			Yes
Recall Mode	Max	Max	None	Max
v/c Ratio	0.57	0.42		
Control Delay (s/veh)	24.1	6.5		
Queue Delay	0.0	0.0		
Total Delay (s/veh)	24.1	6.5		
Queue Length 50th (m)	104.5	67.4		
Queue Length 95th (m)	121.8	81.7		
Internal Link Dist (m)	82.8	6.9		
Turn Bay Length (m)				
Base Capacity (vph)	2413	2811		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	0.58	0.42		

Intersection Summary
Cycle Length: 126
Actuated Cycle Length: 112.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Transit ROW/Railway Crossing & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑							
Traffic Volume (vph)	0	1394	0	0	1181	0	0	0	0	0	0	0
Future Volume (vph)	0	1394	0	0	1181	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1775	1900	1750	1775	1900	1750	1775	1900	1750	1775	1900	1750
Total Lost time (s)		4.0			4.0							
Lane Util. Factor		0.91			0.95							
Frpb, ped/bikes		1.00			1.00							
Flpb, ped/bikes		1.00			1.00							
Frt		1.00			1.00							
Flt Protected		1.00			1.00							
Satd. Flow (prot)		4906			3433							
Flt Permitted		1.00			1.00							
Satd. Flow (perm)		4906			3433							
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1394	0	0	1181	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1394	0	0	1181	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	19		59	59		19	26		26	26		26
Heavy Vehicles (%)	0%	4%	0%	100%	4%	0%	0%	0%	100%	0%	0%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0					
Turn Type		NA			NA							
Protected Phases		4			8							
Permitted Phases												
Actuated Green, G (s)		51.3			86.0							
Effective Green, g (s)		55.3			90.0							
Actuated g/C Ratio		0.48			0.78							
Clearance Time (s)		8.0			8.0							
Vehicle Extension (s)		3.0			3.0							
Lane Grp Cap (vph)		2359			2686							
v/s Ratio Prot		c0.28			c0.34							
v/s Ratio Perm												
v/c Ratio		0.59			0.43							
Uniform Delay, d1		21.6			4.1							
Progression Factor		1.00			1.00							
Incremental Delay, d2		1.0			0.5							
Delay (s)		22.7			4.6							
Level of Service		C			A							
Approach Delay (s/veh)		22.7			4.6			0.0			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	63	315	61	52	419
Future Vol, veh/h	50	63	315	61	52	419
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	14	4	0	2	5
Mvmt Flow	50	63	315	61	52	419

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	662	190	0	0	378	0
Stage 1	348	-	-	-	-	-
Stage 2	314	-	-	-	-	-
Critical Hdwy	6.8	7.18	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.44	-	-	2.22	-
Pot Cap-1 Maneuver	399	783	-	-	1177	-
Stage 1	692	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	375	782	-	-	1175	-
Mov Cap-2 Maneuver	375	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	678	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.7	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	375	782	1175	-
HCM Lane V/C Ratio	-	-	0.133	0.081	0.044	-
HCM Control Delay (s/veh)	-	-	16.1	10	8.2	0.2
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q (veh)	-	-	0.5	0.3	0.1	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	3	4	0	9	48	0	5	0	45	14	104
Future Vol, veh/h	106	3	4	0	9	48	0	5	0	45	14	104
Conflicting Peds, #/hr	2	0	0	0	0	2	5	0	3	3	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	10	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	33	0	0	100	0	0	0	0	0	0	0
Mvmt Flow	106	3	4	0	9	48	0	5	0	45	14	104

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	7	0	0	234	276	8	258	254	36
Stage 1	-	-	-	-	-	-	217	217	-	35	35	-
Stage 2	-	-	-	-	-	-	17	59	-	223	219	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1558	-	-	1627	-	-	716	635	1080	689	653	1035
Stage 1	-	-	-	-	-	-	790	727	-	982	870	-
Stage 2	-	-	-	-	-	-	1006	850	-	784	726	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1556	-	-	1627	-	-	597	591	1077	646	607	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	597	591	-	646	607	-
Stage 1	-	-	-	-	-	-	736	678	-	914	868	-
Stage 2	-	-	-	-	-	-	886	848	-	724	677	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	7	0	11.1	9.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	591	1556	-	-	1627	-	-	646	951
HCM Lane V/C Ratio	0.008	0.068	-	-	-	-	-	0.07	0.124
HCM Control Delay (s/veh)	11.1	7.5	0	-	0	-	-	11	9.3
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0	0.2	-	-	0	-	-	0.2	0.4

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	46	0	0	56	10	0	7	1	10	13	1
Future Vol, veh/h	2	46	0	0	56	10	0	7	1	10	13	1
Conflicting Peds, #/hr	3	0	3	3	0	3	5	0	2	2	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	0	16	0	0	0	100	0	0	0
Mvmt Flow	2	46	0	0	56	10	0	7	1	10	13	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	49	0	0	126	122	51	120	117	69
Stage 1	-	-	-	-	-	-	53	53	-	64	64	-
Stage 2	-	-	-	-	-	-	73	69	-	56	53	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	7.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	4.2	3.5	4	3.3
Pot Cap-1 Maneuver	1545	-	-	1571	-	-	852	772	797	860	777	1000
Stage 1	-	-	-	-	-	-	965	855	-	952	846	-
Stage 2	-	-	-	-	-	-	942	841	-	961	855	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1541	-	-	1567	-	-	834	768	794	849	773	994
Mov Cap-2 Maneuver	-	-	-	-	-	-	834	768	-	849	773	-
Stage 1	-	-	-	-	-	-	962	852	-	949	844	-
Stage 2	-	-	-	-	-	-	923	839	-	949	852	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.3	0	9.7	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	771	1541	-	-	1567	-	-	811
HCM Lane V/C Ratio	0.01	0.001	-	-	-	-	-	0.03
HCM Control Delay (s/veh)	9.7	7.3	0	-	0	-	-	9.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	1140	683	66	20	16
Future Vol, veh/h	11	1140	683	66	20	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	4	0	10	0
Mvmt Flow	11	1140	683	66	20	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	749	0	-	0	1308	375
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	592	-
Critical Hdwy	4.1	-	-	-	7	6.9
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.2	-	-	-	3.6	3.3
Pot Cap-1 Maneuver	869	-	-	-	141	628
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	494	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	869	-	-	-	136	628
Mov Cap-2 Maneuver	-	-	-	-	136	-
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	494	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	24.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	869	-	-	-	136	628
HCM Lane V/C Ratio	0.013	-	-	-	0.147	0.025
HCM Control Delay (s/veh)	9.2	0.2	-	-	36	10.9
HCM Lane LOS	A	A	-	-	E	B
HCM 95th %tile Q (veh)	0	-	-	-	0.5	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1347	53	0	1154	219	0	0	17	0	0	33
Future Vol, veh/h	0	1347	53	0	1154	219	0	0	17	0	0	33
Conflicting Peds, #/hr	3	0	3	3	0	3	10	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	5	0	0	0	0	0	9
Mvmt Flow	0	1347	53	0	1154	219	0	0	17	0	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	703	-	-	700
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	3.39
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	330	0	0	366
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	329	-	-	362
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	16.5	15.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	329	-	-	-	-	362
HCM Lane V/C Ratio	0.052	-	-	-	-	0.091
HCM Control Delay (s/veh)	16.5	-	-	-	-	15.9
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q (veh)	0.2	-	-	-	-	0.3

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	0	0	0	0	0	1	0	0	0	13
Future Vol, veh/h	7	0	0	0	0	0	0	1	0	0	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	0	0	0	0	0	0	1	0	0	0	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	8	8	7	8	14	1	13	0	0	1	0	0
Stage 1	7	7	-	1	1	-	-	-	-	-	-	-
Stage 2	1	1	-	7	13	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1016	891	1081	1016	884	1090	1619	-	-	1635	-	-
Stage 1	1020	894	-	1027	899	-	-	-	-	-	-	-
Stage 2	1027	899	-	1020	889	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1016	891	1081	1016	884	1090	1619	-	-	1635	-	-
Mov Cap-2 Maneuver	1016	891	-	1016	884	-	-	-	-	-	-	-
Stage 1	1020	894	-	1027	899	-	-	-	-	-	-	-
Stage 2	1027	899	-	1020	889	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.6	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1619	-	-	1016	-	1635	-	-
HCM Lane V/C Ratio	-	-	-	0.007	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	8.6	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	8	4	0	1	22	0	18	0	0	0
Future Vol, veh/h	0	0	8	4	0	1	22	0	18	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	8	4	0	1	22	0	18	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	55	63	1	58	54	9	1	0	0	18	0	0
Stage 1	1	1	-	53	53	-	-	-	-	-	-	-
Stage 2	54	62	-	5	1	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	948	832	1090	944	841	1079	1635	-	-	1612	-	-
Stage 1	1027	899	-	965	855	-	-	-	-	-	-	-
Stage 2	963	847	-	1022	899	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	937	820	1090	927	829	1079	1635	-	-	1612	-	-
Mov Cap-2 Maneuver	937	820	-	927	829	-	-	-	-	-	-	-
Stage 1	1013	899	-	951	843	-	-	-	-	-	-	-
Stage 2	949	835	-	1014	899	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.3	8.8	4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1635	-	-	1090	954	1612	-	-
HCM Lane V/C Ratio	0.013	-	-	0.007	0.005	-	-	-
HCM Control Delay (s/veh)	7.2	0	-	8.3	8.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	17	3	0	0	11	40	15	0	12	0
Future Vol, veh/h	0	0	17	3	0	0	11	40	15	0	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	17	3	0	0	11	40	15	0	12	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	82	89	12	91	82	48	12	0	0	55	0	0
Stage 1	12	12	-	70	70	-	-	-	-	-	-	-
Stage 2	70	77	-	21	12	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	910	805	1074	898	812	1027	1620	-	-	1563	-	-
Stage 1	1014	890	-	945	841	-	-	-	-	-	-	-
Stage 2	945	835	-	1003	890	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	905	799	1074	879	806	1027	1620	-	-	1563	-	-
Mov Cap-2 Maneuver	905	799	-	879	806	-	-	-	-	-	-	-
Stage 1	1007	890	-	938	835	-	-	-	-	-	-	-
Stage 2	938	829	-	987	890	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.4	9.1	1.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1620	-	-	1074	879	1563	-	-
HCM Lane V/C Ratio	0.007	-	-	0.016	0.003	-	-	-
HCM Control Delay (s/veh)	7.2	0	-	8.4	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	3	1	0	0	8	66	3	0	32	0
Future Vol, veh/h	0	0	3	1	0	0	8	66	3	0	32	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	3	1	0	0	8	66	3	0	32	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	116	117	32	118	116	68	32	0	0	69	0	0
Stage 1	32	32	-	84	84	-	-	-	-	-	-	-
Stage 2	84	85	-	34	32	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	865	777	1048	863	778	1001	1593	-	-	1545	-	-
Stage 1	990	872	-	929	829	-	-	-	-	-	-	-
Stage 2	929	828	-	987	872	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	862	773	1048	857	774	1001	1593	-	-	1545	-	-
Mov Cap-2 Maneuver	862	773	-	857	774	-	-	-	-	-	-	-
Stage 1	985	872	-	924	825	-	-	-	-	-	-	-
Stage 2	924	824	-	984	872	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.4	9.2	0.8	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1593	-	-	1048	857	1545	-	-
HCM Lane V/C Ratio	0.005	-	-	0.003	0.001	-	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.4	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	1	66	56	0
Future Vol, veh/h	0	2	1	66	56	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	100	100	14	4	0
Mvmt Flow	0	2	1	66	56	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	124	56	56	0	-	0
Stage 1	56	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.4	7.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	4.2	3.1	-	-	-
Pot Cap-1 Maneuver	876	792	1099	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	875	792	1099	-	-	-
Mov Cap-2 Maneuver	875	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	960	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.6	0.1	0
HCM LOS	A		

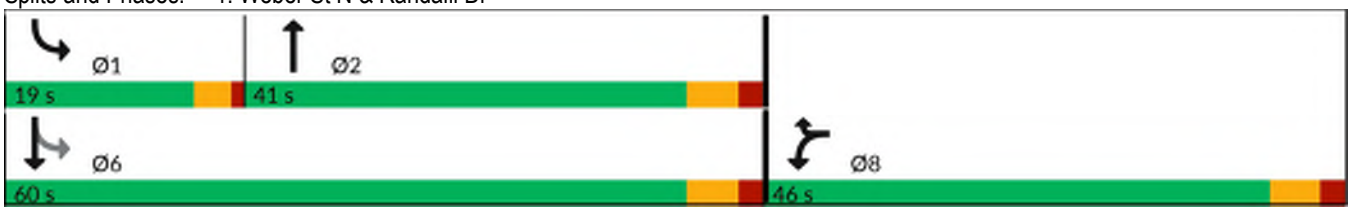
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1099	-	792	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s/veh)	8.3	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Weekday PM Peak Hour

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	295	136	451	28	472
Future Volume (vph)	295	136	451	28	472
Lane Group Flow (vph)	295	136	523	28	472
Turn Type	Prot	Prot	NA	pm+pt	NA
Protected Phases	8	8	2	1	6
Permitted Phases	8	8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	10.0	5.0	10.0
Minimum Split (s)	24.0	24.0	41.0	9.5	42.0
Total Split (s)	46.0	46.0	41.0	19.0	60.0
Total Split (%)	43.4%	43.4%	38.7%	17.9%	56.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	8.0	4.0	4.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
v/c Ratio	0.68	0.28	0.52	0.07	0.39
Control Delay (s/veh)	37.4	7.4	16.9	7.1	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.4	7.4	16.9	7.1	9.0
Queue Length 50th (m)	46.1	1.7	45.0	1.5	33.6
Queue Length 95th (m)	72.5	14.8	115.3	5.6	67.5
Internal Link Dist (m)	723.8		106.7		467.0
Turn Bay Length (m)		30.0		100.0	
Base Capacity (vph)	831	814	991	481	1201
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	0.35	0.17	0.53	0.06	0.39

Intersection Summary
Cycle Length: 106
Actuated Cycle Length: 86.1
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Weber St N & Randalll Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	295	136	451	72	28	472
Future Volume (vph)	295	136	451	72	28	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	8.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.99	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1700	1536	1772		1351	1842
Flt Permitted	0.95	1.00	1.00		0.36	1.00
Satd. Flow (perm)	1700	1536	1772		513	1842
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	295	136	451	72	28	472
RTOR Reduction (vph)	0	93	4	0	0	0
Lane Group Flow (vph)	295	43	519	0	28	472
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	5%	4%	3%	8%	32%	2%
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	2		1	6
Permitted Phases	8	8			6	
Actuated Green, G (s)	19.9	19.9	50.0		56.6	56.6
Effective Green, g (s)	21.9	21.9	48.0		56.6	58.6
Actuated g/C Ratio	0.25	0.25	0.54		0.64	0.66
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	420	380	961		352	1219
v/s Ratio Prot	c0.17	0.03	c0.29		0.00	c0.26
v/s Ratio Perm					0.05	
v/c Ratio	0.70	0.11	0.54		0.07	0.38
Uniform Delay, d1	30.3	25.7	13.1		6.8	6.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.2	0.1	2.1		0.0	0.9
Delay (s)	35.5	25.9	15.2		6.9	7.7
Level of Service	D	C	B		A	A
Approach Delay (s/veh)	32.5		15.2			7.6
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

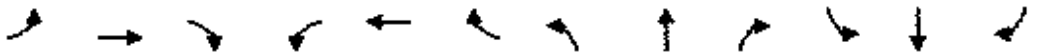
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	112	707	133	1135	154	64	264	258	304
Future Volume (vph)	112	707	133	1135	154	64	264	258	304
Lane Group Flow (vph)	112	776	133	1135	154	64	336	258	457
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2			
Minimum Split (s)	9.0	44.4	9.0	44.4	44.4	9.0	33.6	13.0	33.6
Total Split (s)	12.0	51.0	15.0	54.0	54.0	10.0	37.0	17.0	44.0
Total Split (%)	10.0%	42.5%	12.5%	45.0%	45.0%	8.3%	30.8%	14.2%	36.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0	2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	8.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
v/c Ratio	0.64	0.60	0.45	0.77	0.24	0.21	0.37	0.75	0.42
Control Delay (s/veh)	36.6	31.1	20.5	34.7	4.7	23.8	33.4	66.8	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.6	31.1	20.5	34.7	4.7	23.8	33.4	66.8	26.7
Queue Length 50th (m)	13.9	78.6	16.8	125.6	0.0	9.5	32.3	32.5	37.8
Queue Length 95th (m)	#34.0	100.0	28.4	153.6	13.5	18.8	46.4	#51.0	53.3
Internal Link Dist (m)		607.0		127.2			507.4		212.4
Turn Bay Length (m)	90.0		45.0		65.0	95.0		82.5	
Base Capacity (vph)	173	1280	293	1460	619	295	902	341	1087
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	0.65	0.61	0.45	0.78	0.25	0.22	0.37	0.76	0.42

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Weber St N & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	707	69	133	1135	154	64	264	72	258	304	153
Future Volume (vph)	112	707	69	133	1135	154	64	264	72	258	304	153
Ideal Flow (vphpl)	1775	1775	1775	1755	1900	1750	1755	1775	1775	1775	1775	1775
Grade (%)		0%			0%			0%			-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	8.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1635	3253		1615	3506	1368	1604	3208		3156	3104	
Flt Permitted	0.09	1.00		0.20	1.00	1.00	0.46	1.00		0.95	1.00	
Satd. Flow (perm)	165	3253		349	3506	1368	789	3208		3156	3104	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	112	707	69	133	1135	154	64	264	72	258	304	153
RTOR Reduction (vph)	0	6	0	0	0	95	0	20	0	0	52	0
Lane Group Flow (vph)	112	770	0	133	1135	59	64	316	0	258	405	0
Confl. Peds. (#/hr)	16		18	18		16	26		13	13		26
Heavy Vehicles (%)	2%	1%	0%	2%	1%	3%	2%	0%	0%	3%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	4	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	53.0	45.0		59.0	48.0	48.0	37.0	31.0		11.0	38.0	
Effective Green, g (s)	53.0	47.0		59.0	50.0	46.0	37.0	33.0		13.0	40.0	
Actuated g/C Ratio	0.44	0.39		0.49	0.42	0.38	0.31	0.28		0.11	0.33	
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	170	1274		287	1460	524	284	882		341	1034	
v/s Ratio Prot	c0.04	0.24		c0.04	c0.32		0.01	0.10		c0.08	c0.13	
v/s Ratio Perm	0.25			0.18		0.04	0.06					
v/c Ratio	0.65	0.60		0.46	0.77	0.11	0.22	0.35		0.75	0.39	
Uniform Delay, d1	24.4	29.0		19.1	30.1	23.8	29.9	34.9		51.9	30.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.2	2.1		5.3	4.1	0.4	1.8	1.1		14.4	1.1	
Delay (s)	42.6	31.2		24.4	34.3	24.2	31.7	36.1		66.4	31.7	
Level of Service	D	C		C	C	C	C	D		E	C	
Approach Delay (s/veh)		32.6			32.3			35.4			44.2	
Approach LOS		C			C			D			D	

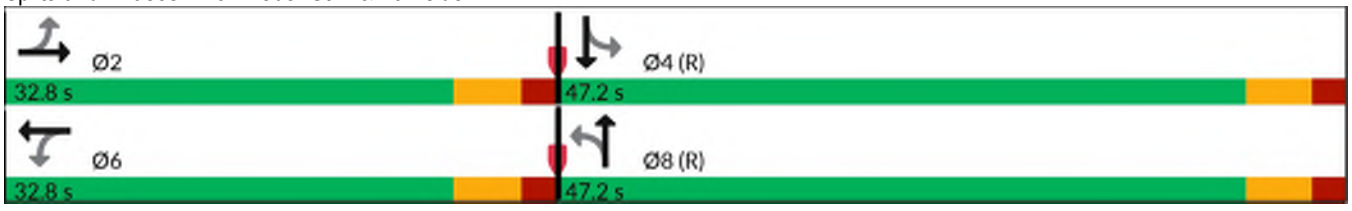
Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

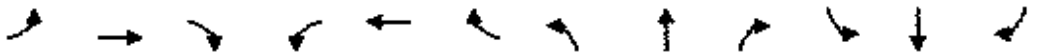
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	64	215	110	261	67	311	35	396
Future Volume (vph)	64	215	110	261	67	311	35	396
Lane Group Flow (vph)	64	264	110	286	67	432	35	471
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Minimum Split (s)	32.8	32.8	32.8	32.8	47.2	47.2	47.2	47.2
Total Split (s)	32.8	32.8	32.8	32.8	47.2	47.2	47.2	47.2
Total Split (%)	41.0%	41.0%	41.0%	41.0%	59.0%	59.0%	59.0%	59.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	6.0	4.0	6.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.21	0.46	0.37	0.49	0.17	0.26	0.08	0.28
Control Delay (s/veh)	20.2	21.6	23.7	22.9	11.9	7.6	10.6	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.2	21.6	23.7	22.9	11.9	7.6	10.6	9.5
Queue Length 50th (m)	7.0	29.8	12.8	34.0	5.4	13.0	2.7	18.0
Queue Length 95th (m)	16.5	51.5	27.2	57.3	12.7	20.9	7.4	26.9
Internal Link Dist (m)		315.6		475.0		572.0		507.4
Turn Bay Length (m)	25.0		15.0		25.0		25.0	
Base Capacity (vph)	295	568	292	581	381	1613	407	1645
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.46	0.38	0.49	0.18	0.27	0.09	0.29

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 2.4 (3%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed

Splits and Phases: 3: Weber St N & Parkside Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	215	49	110	261	25	67	311	121	35	396	75
Future Volume (vph)	64	215	49	110	261	25	67	311	121	35	396	75
Ideal Flow (vphpl)	1775	1650	1650	1755	1650	1650	1650	1650	1650	1650	1650	1650
Total Lost time (s)	4.0	4.0		4.0	4.0		6.0	4.0		6.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1662	1552		1552	1602		1531	2893		1549	3012	
Flt Permitted	0.46	1.00		0.49	1.00		0.46	1.00		0.48	1.00	
Satd. Flow (perm)	821	1552		812	1602		741	2893		790	3012	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	64	215	49	110	261	25	67	311	121	35	396	75
RTOR Reduction (vph)	0	10	0	0	4	0	0	52	0	0	19	0
Lane Group Flow (vph)	64	254	0	110	282	0	67	380	0	35	452	0
Confl. Peds. (#/hr)	6		20	20		6	9		3	3		9
Heavy Vehicles (%)	0%	2%	0%	5%	0%	4%	0%	1%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	26.8	26.8		26.8	26.8		41.2	41.2		41.2	41.2	
Effective Green, g (s)	28.8	28.8		28.8	28.8		41.2	43.2		41.2	43.2	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.52	0.54		0.52	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	295	558		292	576		381	1562		406	1626	
v/s Ratio Prot		0.16			c0.18			0.13			c0.15	
v/s Ratio Perm	0.08			0.14			0.09			0.04		
v/c Ratio	0.21	0.45		0.37	0.48		0.17	0.24		0.08	0.27	
Uniform Delay, d1	17.7	19.5		18.9	19.8		10.3	9.7		9.8	9.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	2.6		3.6	2.9		1.0	0.3		0.4	0.4	
Delay (s)	19.4	22.2		22.6	22.8		11.3	10.1		10.2	10.3	
Level of Service	B	C		C	C		B	B		B	B	
Approach Delay (s/veh)		21.7			22.7			10.2			10.3	
Approach LOS		C			C			B			B	

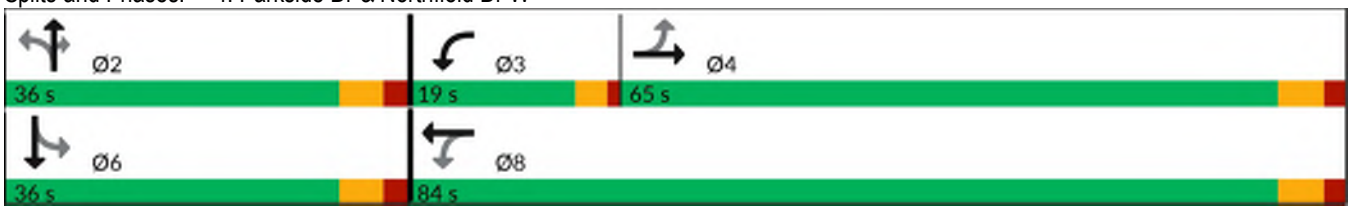
Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	118.8%	ICU Level of Service	H
Analysis Period (min)	15		

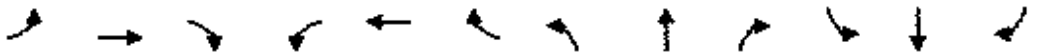
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1006	288	1415	32	15	396	88	28
Future Volume (vph)	1006	288	1415	32	15	396	88	28
Lane Group Flow (vph)	1036	288	1501	0	47	396	88	31
Turn Type	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases	4	3	8		2			6
Permitted Phases		8		2		2	6	
Detector Phase	4	3	8	2	2	2	6	6
Switch Phase								
Minimum Initial (s)	40.0	5.0	40.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	46.0	9.5	46.0	34.0	34.0	34.0	34.0	34.0
Total Split (s)	65.0	19.0	84.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	54.2%	15.8%	70.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	0.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lead						
Lead-Lag Optimize?								
Recall Mode	None	None	None	Max	Max	Max	Max	Max
v/c Ratio	0.74	0.88	0.75		0.12	0.62	0.22	0.06
Control Delay (s/veh)	28.2	48.0	17.3		27.7	14.6	29.1	25.0
Queue Delay	0.0	0.0	0.1		0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.2	48.0	17.4		27.7	14.6	29.1	25.0
Queue Length 50th (m)	94.6	35.1	109.8		6.9	18.5	13.3	4.0
Queue Length 95th (m)	119.3	#85.3	136.5		17.6	58.6	29.2	12.2
Internal Link Dist (m)	123.1		82.8		475.0			37.0
Turn Bay Length (m)		25.0					26.0	
Base Capacity (vph)	1914	343	2561		388	630	394	480
Starvation Cap Reductn	0	0	207		0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0
Reduced v/c Ratio	0.54	0.84	0.64		0.12	0.63	0.22	0.06

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 102.2
Natural Cycle: 90
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Parkside Dr & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1006	30	288	1415	86	32	15	396	88	28	3
Future Volume (vph)	0	1006	30	288	1415	86	32	15	396	88	28	3
Ideal Flow (vphpl)	1775	1775	1775	1775	1775	1775	1650	1650	1750	1775	1650	1650
Grade (%)		0%			0%			0%			-2%	
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99			1.00	0.97	1.00	0.99	
Flpb, ped/bikes		1.00		0.99	1.00			0.99	1.00	0.98	1.00	
Frt		0.99		1.00	0.99			1.00	0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)		3196		1650	3264			1424	1410	1649	1525	
Flt Permitted		1.00		0.12	1.00			0.84	1.00	0.72	1.00	
Satd. Flow (perm)		3196		219	3264			1240	1410	1261	1525	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1006	30	288	1415	86	32	15	396	88	28	3
RTOR Reduction (vph)	0	2	0	0	4	0	0	0	189	0	2	0
Lane Group Flow (vph)	0	1034	0	288	1497	0	0	47	207	88	29	0
Confl. Peds. (#/hr)	9		25	25		9	2		11	11		2
Heavy Vehicles (%)	0%	3%	0%	1%	1%	3%	3%	27%	1%	1%	7%	0%
Bus Blockages (#/hr)	0	4	0	0	0	0	0	0	2	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		42.3		60.1	60.1			30.1	30.1	30.1	30.1	
Effective Green, g (s)		44.3		60.1	62.1			32.1	32.1	32.1	32.1	
Actuated g/C Ratio		0.43		0.59	0.61			0.31	0.31	0.31	0.31	
Clearance Time (s)		6.0		4.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1385		322	1983			389	442	396	478	
v/s Ratio Prot		0.32		c0.12	0.46						0.02	
v/s Ratio Perm				c0.40				0.04	c0.15	0.07		
v/c Ratio		0.74		0.89	0.75			0.12	0.46	0.22	0.06	
Uniform Delay, d1		24.2		22.9	14.5			24.9	28.1	25.8	24.5	
Progression Factor		1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.2		25.4	1.6			0.6	3.5	1.2	0.2	
Delay (s)		26.4		48.4	16.2			25.6	31.7	27.1	24.7	
Level of Service		C		D	B			C	C	C	C	
Approach Delay (s/veh)		26.4			21.3			31.0			26.5	
Approach LOS		C			C			C			C	

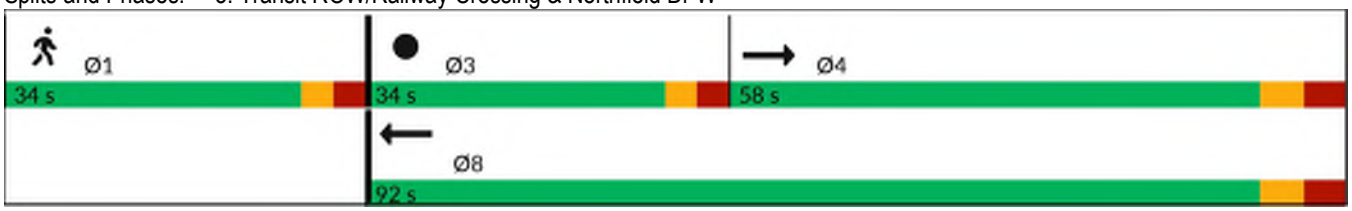
Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	102.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		

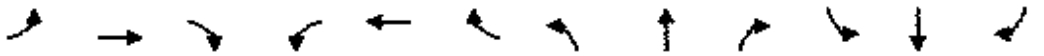
c Critical Lane Group

Lane Group	EBT	WBT	Ø1	Ø3
Lane Configurations				
Traffic Volume (vph)	1490	1789		
Future Volume (vph)	1490	1789		
Lane Group Flow (vph)	1490	1789		
Turn Type	NA	NA		
Protected Phases	4	8	1	3
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	7.0	7.0
Minimum Split (s)	50.0	50.0	34.0	24.0
Total Split (s)	58.0	92.0	34.0	34.0
Total Split (%)	46.0%	73.0%	27%	27%
Yellow Time (s)	4.0	4.0	3.0	3.0
All-Red Time (s)	4.0	4.0	3.0	3.0
Lost Time Adjust (s)	-4.0	-4.0		
Total Lost Time (s)	4.0	4.0		
Lead/Lag	Lag			Lead
Lead-Lag Optimize?	Yes			Yes
Recall Mode	Max	Max	None	Max
v/c Ratio	0.60	0.61		
Control Delay (s/veh)	24.7	9.2		
Queue Delay	0.0	0.0		
Total Delay (s/veh)	24.7	9.2		
Queue Length 50th (m)	114.0	135.6		
Queue Length 95th (m)	131.9	162.1		
Internal Link Dist (m)	82.8	6.9		
Turn Bay Length (m)				
Base Capacity (vph)	2460	2895		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	0.61	0.62		

Intersection Summary
Cycle Length: 126
Actuated Cycle Length: 112.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Transit ROW/Railway Crossing & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑							
Traffic Volume (vph)	0	1490	0	0	1789	0	0	0	0	0	0	0
Future Volume (vph)	0	1490	0	0	1789	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1775	1900	1750	1775	1900	1750	1775	1900	1750	1775	1900	1750
Total Lost time (s)		4.0			4.0							
Lane Util. Factor		0.91			0.95							
Frpb, ped/bikes		1.00			1.00							
Flpb, ped/bikes		1.00			1.00							
Frt		1.00			1.00							
Flt Protected		1.00			1.00							
Satd. Flow (prot)		5002			3535							
Flt Permitted		1.00			1.00							
Satd. Flow (perm)		5002			3535							
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1490	0	0	1789	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1490	0	0	1789	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	9		79	79		9	32		32	32		32
Heavy Vehicles (%)	0%	2%	0%	100%	1%	0%	0%	0%	100%	0%	0%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0					
Turn Type		NA			NA							
Protected Phases		4			8							
Permitted Phases												
Actuated Green, G (s)		51.3			86.0							
Effective Green, g (s)		55.3			90.0							
Actuated g/C Ratio		0.48			0.78							
Clearance Time (s)		8.0			8.0							
Vehicle Extension (s)		3.0			3.0							
Lane Grp Cap (vph)		2405			2766							
v/s Ratio Prot		0.30			c0.51							
v/s Ratio Perm												
v/c Ratio		0.61			0.64							
Uniform Delay, d1		22.0			5.5							
Progression Factor		1.00			1.00							
Incremental Delay, d2		1.2			1.1							
Delay (s)		23.2			6.6							
Level of Service		C			A							
Approach Delay (s/veh)		23.2			6.6			0.0			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	107	416	114	93	674
Future Vol, veh/h	43	107	416	114	93	674
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	6	2	0	0	1
Mvmt Flow	43	107	416	114	93	674

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	999	268	0	0	533	0
Stage 1	476	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Critical Hdwy	6.8	7.02	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.36	-	-	2.2	-
Pot Cap-1 Maneuver	244	718	-	-	1045	-
Stage 1	597	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	209	716	-	-	1043	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	596	-	-	-	-	-
Stage 2	484	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	15.4	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	209	716	1043	-
HCM Lane V/C Ratio	-	-	0.206	0.149	0.089	-
HCM Control Delay (s/veh)	-	-	26.6	10.9	8.8	0.5
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q (veh)	-	-	0.8	0.5	0.3	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	81	29	0	41	43	14	6	0	20	9	95
Future Vol, veh/h	97	81	29	0	41	43	14	6	0	20	9	95
Conflicting Peds, #/hr	14	0	0	0	0	14	15	0	1	1	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	15	0	0	0	0	0	0	0
Mvmt Flow	97	81	29	0	41	43	14	6	0	20	9	95

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	98	0	0	110	0	0	330	388	97	371	381	71
Stage 1	-	-	-	-	-	-	290	290	-	77	77	-
Stage 2	-	-	-	-	-	-	40	98	-	294	304	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1508	-	-	1493	-	-	616	550	965	577	555	983
Stage 1	-	-	-	-	-	-	722	676	-	929	835	-
Stage 2	-	-	-	-	-	-	976	818	-	719	667	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1492	-	-	1493	-	-	513	507	964	535	511	961
Mov Cap-2 Maneuver	-	-	-	-	-	-	513	507	-	535	511	-
Stage 1	-	-	-	-	-	-	672	629	-	856	826	-
Stage 2	-	-	-	-	-	-	860	809	-	662	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	3.6	0	12.3	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	511	1492	-	-	1493	-	-	535	893
HCM Lane V/C Ratio	0.039	0.065	-	-	-	-	-	0.037	0.116
HCM Control Delay (s/veh)	12.3	7.6	0	-	0	-	-	12	9.6
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0.1	0.2	-	-	0	-	-	0.1	0.4

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	98	0	0	67	34	1	0	73	21	7	16
Future Vol, veh/h	3	98	0	0	67	34	1	0	73	21	7	16
Conflicting Peds, #/hr	0	0	2	4	0	0	0	0	5	5	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	9	0	0	0	1	0	0	0
Mvmt Flow	3	98	0	0	67	34	1	0	73	21	7	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	101	0	0	102	0	0	204	209	107	230	192	84
Stage 1	-	-	-	-	-	-	108	108	-	84	84	-
Stage 2	-	-	-	-	-	-	96	101	-	146	108	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1504	-	-	1503	-	-	758	692	950	729	707	981
Stage 1	-	-	-	-	-	-	902	810	-	929	829	-
Stage 2	-	-	-	-	-	-	916	815	-	861	810	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1504	-	-	1498	-	-	737	689	943	669	703	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	737	689	-	669	703	-
Stage 1	-	-	-	-	-	-	897	806	-	927	829	-
Stage 2	-	-	-	-	-	-	893	815	-	790	806	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.2	0	9.2	10
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	939	1504	-	-	1498	-	-	763
HCM Lane V/C Ratio	0.079	0.002	-	-	-	-	-	0.058
HCM Control Delay (s/veh)	9.2	7.4	0	-	0	-	-	10
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q (veh)	0.3	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	1010	1388	62	26	34
Future Vol, veh/h	27	1010	1388	62	26	34
Conflicting Peds, #/hr	13	0	0	13	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	2	1	0	8	0
Mvmt Flow	27	1010	1388	62	26	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1463	0	-	0	1994	738
Stage 1	-	-	-	-	1432	-
Stage 2	-	-	-	-	562	-
Critical Hdwy	4.1	-	-	-	6.96	6.9
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	2.2	-	-	-	3.58	3.3
Pot Cap-1 Maneuver	468	-	-	-	49	365
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	518	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	463	-	-	-	42	361
Mov Cap-2 Maneuver	-	-	-	-	42	-
Stage 1	-	-	-	-	151	-
Stage 2	-	-	-	-	513	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.1	0	87.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	463	-	-	-	42	361
HCM Lane V/C Ratio	0.058	-	-	-	0.619	0.094
HCM Control Delay (s/veh)	13.3	0.8	-	-	181.7	16
HCM Lane LOS	B	A	-	-	F	C
HCM 95th %tile Q (veh)	0.2	-	-	-	2.3	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1484	11	0	1747	124	0	0	43	0	0	45
Future Vol, veh/h	0	1484	11	0	1747	124	0	0	43	0	0	45
Conflicting Peds, #/hr	4	0	2	2	0	4	36	0	0	0	0	36
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	3	0	0	2	0	0	4
Mvmt Flow	0	1484	11	0	1747	124	0	0	43	0	0	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	750	-	-	976
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.34
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	304	0	0	247
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	304	-	-	239
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	18.8	23.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	304	-	-	-	-	239
HCM Lane V/C Ratio	0.141	-	-	-	-	0.188
HCM Control Delay (s/veh)	18.8	-	-	-	-	23.5
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q (veh)	0.5	-	-	-	-	0.7

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	1	0	73	0	0	0	7
Future Vol, veh/h	0	0	0	0	0	1	0	73	0	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	1	0	73	0	0	0	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	78	77	4	77	80	73	7	0	0	73	0	0
Stage 1	4	4	-	73	73	-	-	-	-	-	-	-
Stage 2	74	73	-	4	7	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	916	817	1085	917	814	995	1627	-	-	1540	-	-
Stage 1	1024	897	-	942	838	-	-	-	-	-	-	-
Stage 2	940	838	-	1024	894	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	915	817	1085	917	814	995	1627	-	-	1540	-	-
Mov Cap-2 Maneuver	915	817	-	917	814	-	-	-	-	-	-	-
Stage 1	1024	897	-	942	838	-	-	-	-	-	-	-
Stage 2	939	838	-	1024	894	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.6	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1627	-	-	-	995	1540	-	-
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.6	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	-	0	0	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	0	0	5	0	12	30	11	5	0	0	0
Future Vol, veh/h	50	0	0	5	0	12	30	11	5	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	0	0	5	0	12	30	11	5	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	81	77	1	75	75	14	1	0	0	16	0	0
Stage 1	1	1	-	74	74	-	-	-	-	-	-	-
Stage 2	80	76	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	912	817	1090	920	819	1072	1635	-	-	1615	-	-
Stage 1	1027	899	-	940	837	-	-	-	-	-	-	-
Stage 2	934	836	-	1027	899	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	888	801	1090	907	803	1072	1635	-	-	1615	-	-
Mov Cap-2 Maneuver	888	801	-	907	803	-	-	-	-	-	-	-
Stage 1	1007	899	-	922	821	-	-	-	-	-	-	-
Stage 2	906	820	-	1027	899	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.3	8.6	4.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1635	-	-	888	1018	1615	-	-
HCM Lane V/C Ratio	0.018	-	-	0.056	0.017	-	-	-
HCM Control Delay (s/veh)	7.2	0	-	9.3	8.6	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0.1	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	37	4	0	11	37	35	5	0	5	0
Future Vol, veh/h	0	0	37	4	0	11	37	35	5	0	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	37	4	0	11	37	35	5	0	5	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	122	119	5	136	117	38	5	0	0	40	0	0
Stage 1	5	5	-	112	112	-	-	-	-	-	-	-
Stage 2	117	114	-	24	5	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	858	775	1084	840	777	1040	1630	-	-	1583	-	-
Stage 1	1022	896	-	898	807	-	-	-	-	-	-	-
Stage 2	892	805	-	999	896	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	834	757	1084	797	759	1040	1630	-	-	1583	-	-
Mov Cap-2 Maneuver	834	757	-	797	759	-	-	-	-	-	-	-
Stage 1	998	896	-	877	788	-	-	-	-	-	-	-
Stage 2	862	786	-	965	896	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.4	8.8	3.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1630	-	-	1084	962	1583	-	-
HCM Lane V/C Ratio	0.023	-	-	0.034	0.016	-	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.4	8.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	11	1	0	0	11	77	1	0	46	0
Future Vol, veh/h	0	0	11	1	0	0	11	77	1	0	46	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	11	1	0	0	11	77	1	0	46	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	146	146	46	152	146	78	46	0	0	78	0	0
Stage 1	46	46	-	100	100	-	-	-	-	-	-	-
Stage 2	100	100	-	52	46	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	827	749	1029	820	749	988	1575	-	-	1533	-	-
Stage 1	973	861	-	911	816	-	-	-	-	-	-	-
Stage 2	911	816	-	966	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	823	744	1029	807	744	988	1575	-	-	1533	-	-
Mov Cap-2 Maneuver	823	744	-	807	744	-	-	-	-	-	-	-
Stage 1	966	861	-	905	810	-	-	-	-	-	-	-
Stage 2	905	810	-	956	861	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.5	9.5	0.9	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1575	-	-	1029	807	1533	-	-
HCM Lane V/C Ratio	0.007	-	-	0.011	0.001	-	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.5	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	1	101	119	0
Future Vol, veh/h	0	2	1	101	119	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	100	100	6	1	0
Mvmt Flow	0	2	1	101	119	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	222	119	119	0	-	0
Stage 1	119	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.4	7.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	4.2	3.1	-	-	-
Pot Cap-1 Maneuver	771	724	1032	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	770	724	1032	-	-	-
Mov Cap-2 Maneuver	770	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	926	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1032	-	724	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s/veh)	8.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

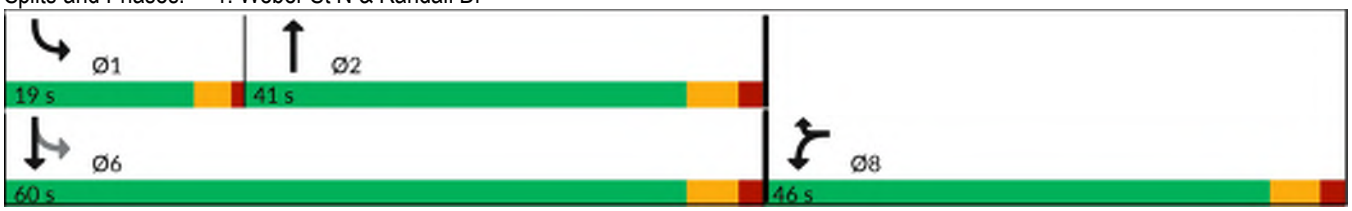
2041 Future Background Intersection Capacity Analysis

Weekday AM Peak Hour

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	72	24	270	45	399
Future Volume (vph)	72	24	270	45	399
Lane Group Flow (vph)	72	24	378	45	399
Turn Type	Prot	Prot	NA	pm+pt	NA
Protected Phases	8	8	2	1	6
Permitted Phases	8	8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	10.0	5.0	10.0
Minimum Split (s)	24.0	24.0	41.0	9.5	42.0
Total Split (s)	46.0	46.0	41.0	19.0	60.0
Total Split (%)	43.4%	43.4%	38.7%	17.9%	56.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
v/c Ratio	0.33	0.10	0.31	0.06	0.28
Control Delay (s/veh)	33.2	12.5	7.2	3.2	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.2	12.5	7.2	3.2	3.8
Queue Length 50th (m)	9.8	0.0	23.4	1.4	15.1
Queue Length 95th (m)	21.5	6.1	45.9	4.3	30.4
Internal Link Dist (m)	723.8		106.7		467.0
Turn Bay Length (m)		30.0		100.0	
Base Capacity (vph)	767	788	1207	777	1413
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	0.09	0.03	0.31	0.06	0.28

Intersection Summary
Cycle Length: 106
Actuated Cycle Length: 76.3
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Weber St N & Randall Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	24	270	108	45	399
Future Volume (vph)	72	24	270	108	45	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.99	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1394	1413	1696		1605	1789
Flt Permitted	0.95	1.00	1.00		0.47	1.00
Satd. Flow (perm)	1394	1413	1696		795	1789
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	24	270	108	45	399
RTOR Reduction (vph)	0	21	7	0	0	0
Lane Group Flow (vph)	72	3	371	0	45	399
Confl. Peds. (#/hr)				6	6	
Heavy Vehicles (%)	28%	13%	6%	5%	11%	5%
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	2		1	6
Permitted Phases	8	8			6	
Actuated Green, G (s)	8.1	8.1	51.3		59.1	59.1
Effective Green, g (s)	10.1	10.1	53.3		59.1	61.1
Actuated g/C Ratio	0.13	0.13	0.67		0.75	0.77
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	177	180	1141		632	1380
v/s Ratio Prot	c0.05	0.00	c0.22		0.00	c0.22
v/s Ratio Perm					0.05	
v/c Ratio	0.40	0.01	0.32		0.07	0.28
Uniform Delay, d1	31.7	30.2	5.4		2.9	2.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.0	0.7		0.0	0.5
Delay (s)	33.3	30.2	6.1		2.9	3.1
Level of Service	C	C	A		A	A
Approach Delay (s/veh)	32.5		6.1			3.1
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

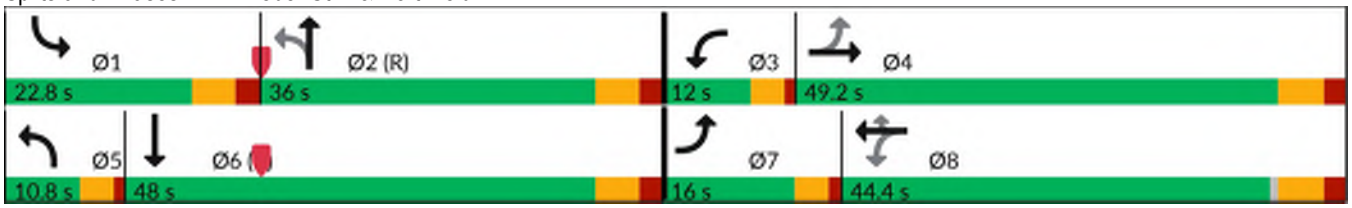
c Critical Lane Group

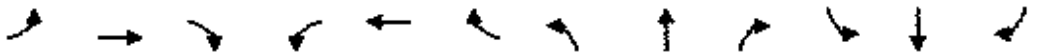
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	144	955	68	571	122	31	110	161	254
Future Volume (vph)	144	955	68	571	122	31	110	161	254
Lane Group Flow (vph)	144	1039	68	571	122	31	209	161	308
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2			
Minimum Split (s)	9.5	44.4	9.0	44.4	44.4	9.5	36.0	13.0	36.0
Total Split (s)	16.0	49.2	12.0	44.4	44.4	10.8	36.0	22.8	48.0
Total Split (%)	13.3%	41.0%	10.0%	37.0%	37.0%	9.0%	30.0%	19.0%	40.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes								
v/c Ratio	0.41	0.84	0.42	0.49	0.21	0.09	0.24	0.34	0.26
Control Delay (s/veh)	21.8	41.5	26.0	32.9	2.8	19.9	18.6	47.4	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.8	41.5	26.0	32.9	2.8	19.9	18.6	47.4	25.1
Queue Length 50th (m)	19.9	121.6	9.0	58.5	0.0	4.2	10.9	18.5	25.6
Queue Length 95th (m)	33.2	151.0	17.6	76.1	7.5	10.1	21.3	29.4	37.1
Internal Link Dist (m)		607.0		127.2			507.4		212.4
Turn Bay Length (m)	90.0		45.0		65.0	95.0		82.5	
Base Capacity (vph)	349	1231	161	1158	572	340	848	471	1165
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	0.41	0.84	0.42	0.49	0.21	0.09	0.25	0.34	0.26

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 15.6 (13%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 105
Control Type: Pretimed

Splits and Phases: 2: Weber St N & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	955	84	68	571	122	31	110	99	161	254	54
Future Volume (vph)	144	955	84	68	571	122	31	110	99	161	254	54
Ideal Flow (vphpl)	1775	1775	1775	1755	1900	1750	1755	1775	1775	1775	1775	1775
Grade (%)		0%			0%			0%			-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.92		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1667	3255		1555	3373	1371	1590	2908		3010	3135	
Flt Permitted	0.27	1.00		0.10	1.00	1.00	0.56	1.00		0.95	1.00	
Satd. Flow (perm)	487	3255		168	3373	1371	945	2908		3010	3135	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	144	955	84	68	571	122	31	110	99	161	254	54
RTOR Reduction (vph)	0	6	0	0	0	80	0	73	0	0	15	0
Lane Group Flow (vph)	144	1033	0	68	571	42	31	136	0	161	293	0
Confl. Peds. (#/hr)	3		16	16		3	16		14	14		16
Heavy Vehicles (%)	0%	1%	1%	6%	5%	4%	3%	7%	3%	8%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	4	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	55.2	43.2		47.2	39.2	39.2	36.8	30.0		16.8	42.0	
Effective Green, g (s)	55.2	45.2		47.2	41.2	41.2	36.8	32.0		18.8	44.0	
Actuated g/C Ratio	0.46	0.38		0.39	0.34	0.34	0.31	0.27		0.16	0.37	
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	342	1226		158	1158	470	326	775		471	1149	
v/s Ratio Prot	c0.04	c0.32		0.03	0.17		0.01	0.05		c0.05	c0.09	
v/s Ratio Perm	0.15			0.14		0.03	0.02					
v/c Ratio	0.42	0.84		0.43	0.49	0.08	0.09	0.17		0.34	0.25	
Uniform Delay, d1	20.4	34.1		26.0	31.1	26.6	29.4	33.8		45.0	26.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.7	7.1		8.3	1.5	0.3	0.5	0.4		1.9	0.5	
Delay (s)	24.2	41.3		34.4	32.6	27.0	29.9	34.3		47.0	27.0	
Level of Service	C	D		C	C	C	C	C		D	C	
Approach Delay (s/veh)		39.2			31.9			33.7			33.9	
Approach LOS		D			C			C			C	

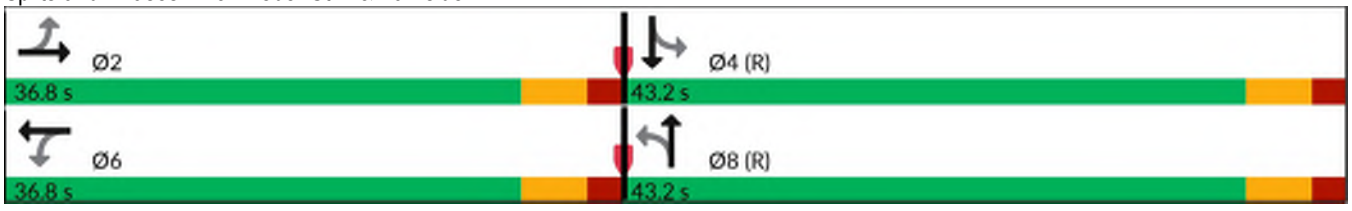
Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

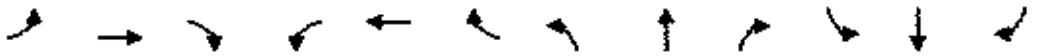
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	62	166	76	191	16	165	30	290
Future Volume (vph)	62	166	76	191	16	165	30	290
Lane Group Flow (vph)	62	215	76	204	16	237	30	376
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Minimum Split (s)	36.8	36.8	36.8	36.8	43.2	43.2	43.2	43.2
Total Split (s)	36.8	36.8	36.8	36.8	43.2	43.2	43.2	43.2
Total Split (%)	46.0%	46.0%	46.0%	46.0%	54.0%	54.0%	54.0%	54.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	6.0	4.0	6.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.15	0.33	0.20	0.30	0.04	0.17	0.06	0.25
Control Delay (s/veh)	16.2	16.0	17.0	17.1	12.1	8.1	12.4	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.2	16.0	17.0	17.1	12.1	8.1	12.4	10.1
Queue Length 50th (m)	6.1	20.1	7.6	20.8	1.3	7.1	2.5	14.0
Queue Length 95th (m)	14.2	36.7	17.1	36.8	4.7	13.4	7.2	22.5
Internal Link Dist (m)		315.6		475.0		572.0		507.4
Turn Bay Length (m)	25.0		15.0		25.0		25.0	
Base Capacity (vph)	404	648	378	664	385	1374	458	1465
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.33	0.20	0.31	0.04	0.17	0.07	0.26

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 42.7 (53%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed

Splits and Phases: 3: Weber St N & Parkside Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	166	49	76	191	13	16	165	72	30	290	86
Future Volume (vph)	62	166	49	76	191	13	16	165	72	30	290	86
Ideal Flow (vphpl)	1775	1650	1650	1755	1650	1650	1650	1650	1650	1650	1650	1650
Total Lost time (s)	4.0	4.0		4.0	4.0		6.0	4.0		6.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1587	1549		1516	1615		1535	2731		1550	2920	
Flt Permitted	0.59	1.00		0.57	1.00		0.51	1.00		0.60	1.00	
Satd. Flow (perm)	987	1549		922	1615		830	2731		986	2920	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	62	166	49	76	191	13	16	165	72	30	290	86
RTOR Reduction (vph)	0	14	0	0	3	0	0	37	0	0	35	0
Lane Group Flow (vph)	62	201	0	76	201	0	16	200	0	30	341	0
Confl. Peds. (#/hr)	1		13	13		1	3					3
Heavy Vehicles (%)	5%	1%	2%	8%	0%	0%	0%	7%	10%	0%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	30.8	30.8		30.8	30.8		37.2	37.2		37.2	37.2	
Effective Green, g (s)	32.8	32.8		32.8	32.8		37.2	39.2		37.2	39.2	
Actuated g/C Ratio	0.41	0.41		0.41	0.41		0.47	0.49		0.47	0.49	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	404	635		378	662		385	1338		458	1430	
v/s Ratio Prot		c0.13			0.12			0.07			c0.12	
v/s Ratio Perm	0.06			0.08			0.02			0.03		
v/c Ratio	0.15	0.31		0.20	0.30		0.04	0.14		0.06	0.23	
Uniform Delay, d1	14.8	16.0		15.1	15.9		11.6	11.2		11.8	11.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.3		1.1	1.1		0.2	0.2		0.2	0.3	
Delay (s)	15.6	17.3		16.3	17.0		11.8	11.4		12.0	12.1	
Level of Service	B	B		B	B		B	B		B	B	
Approach Delay (s/veh)		16.9			16.8			11.4			12.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

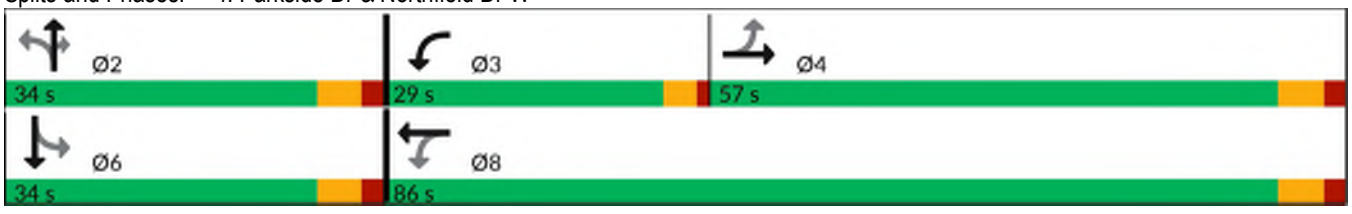
c Critical Lane Group

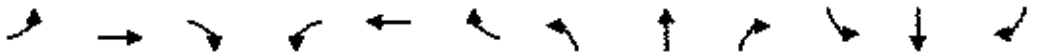
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	2	1198	393	794	16	8	215	45	10
Future Volume (vph)	2	1198	393	794	16	8	215	45	10
Lane Group Flow (vph)	2	1222	393	850	0	24	215	45	11
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4	3	8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	40.0	40.0	5.0	40.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	46.0	46.0	9.5	46.0	34.0	34.0	34.0	34.0	34.0
Total Split (s)	57.0	57.0	29.0	86.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	47.5%	47.5%	24.2%	71.7%	28.3%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max
v/c Ratio	0.00	0.90	0.95	0.39		0.07	0.41	0.13	0.03
Control Delay (s/veh)	19.0	41.5	69.8	8.8		35.2	7.3	36.3	32.4
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.0	41.5	69.8	8.8		35.2	7.3	36.3	32.4
Queue Length 50th (m)	0.3	141.8	80.4	42.7		4.6	0.0	8.7	1.9
Queue Length 95th (m)	2.0	174.9	#145.9	54.0		12.0	19.6	19.2	6.9
Internal Link Dist (m)		123.1		82.8		475.0			54.4
Turn Bay Length (m)	35.0		25.0					30.0	
Base Capacity (vph)	264	1435	410	2212		322	520	323	352
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	0.01	0.85	0.96	0.38		0.07	0.41	0.14	0.03

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.2
Natural Cycle: 100
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Parkside Dr & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1198	24	393	794	56	16	8	215	45	10	1
Future Volume (vph)	2	1198	24	393	794	56	16	8	215	45	10	1
Ideal Flow (vphpl)	1775	1775	1775	1775	1775	1775	1650	1650	1750	1775	1650	1650
Grade (%)		0%			0%			0%			-2%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.98	1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			0.99	1.00	0.99	1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1663	3166		1635	3151			1390	1408	1614	1372	
Flt Permitted	0.33	1.00		0.07	1.00			0.87	1.00	0.74	1.00	
Satd. Flow (perm)	582	3166		132	3151			1256	1408	1260	1372	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1198	24	393	794	56	16	8	215	45	10	1
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	160	0	1	0
Lane Group Flow (vph)	2	1221	0	393	845	0	0	24	55	45	10	0
Confl. Peds. (#/hr)	6		18	18		6	10		3	3		10
Heavy Vehicles (%)	0%	4%	8%	2%	4%	13%	0%	38%	2%	4%	20%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	2	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	48.1	48.1		77.1	77.1			28.0	28.0	28.0	28.0	
Effective Green, g (s)	50.1	50.1		77.1	79.1			30.0	30.0	30.0	30.0	
Actuated g/C Ratio	0.43	0.43		0.66	0.68			0.26	0.26	0.26	0.26	
Clearance Time (s)	6.0	6.0		4.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	249	1354		407	2128			321	360	322	351	
v/s Ratio Prot		0.39		c0.21	0.27						0.01	
v/s Ratio Perm	0.00			c0.43				0.02	c0.04	0.04		
v/c Ratio	0.00	0.90		0.96	0.39			0.07	0.15	0.13	0.02	
Uniform Delay, d1	19.2	31.2		36.6	8.4			33.0	33.7	33.5	32.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	8.5		35.3	0.1			0.4	0.9	0.9	0.1	
Delay (s)	19.2	39.7		72.0	8.5			33.4	34.6	34.5	32.7	
Level of Service	B	D		E	A			C	C	C	C	
Approach Delay (s/veh)		39.7			28.6			34.5			34.1	
Approach LOS		D			C			C			C	

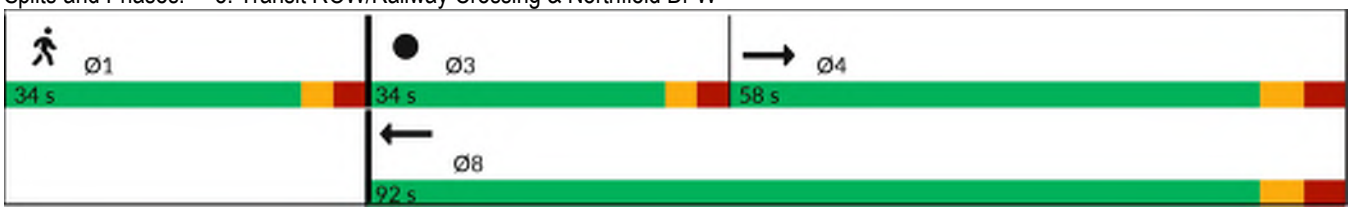
Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	117.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

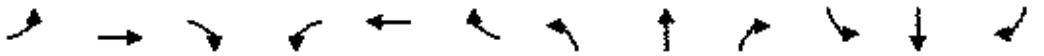
c Critical Lane Group

Lane Group	EBT	WBT	Ø1	Ø3
Lane Configurations				
Traffic Volume (vph)	1458	1243		
Future Volume (vph)	1458	1243		
Lane Group Flow (vph)	1458	1243		
Turn Type	NA	NA		
Protected Phases	4	8	1	3
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	7.0	7.0
Minimum Split (s)	50.0	50.0	34.0	24.0
Total Split (s)	58.0	92.0	34.0	34.0
Total Split (%)	46.0%	73.0%	27%	27%
Yellow Time (s)	4.0	4.0	3.0	3.0
All-Red Time (s)	4.0	4.0	3.0	3.0
Lost Time Adjust (s)	-4.0	-4.0		
Total Lost Time (s)	4.0	4.0		
Lead/Lag	Lag			Lead
Lead-Lag Optimize?	Yes			Yes
Recall Mode	Max	Max	None	Max
v/c Ratio	0.60	0.43		
Control Delay (s/veh)	24.7	6.7		
Queue Delay	0.0	0.0		
Total Delay (s/veh)	24.7	6.7		
Queue Length 50th (m)	111.5	72.6		
Queue Length 95th (m)	129.4	87.7		
Internal Link Dist (m)	82.8	6.9		
Turn Bay Length (m)				
Base Capacity (vph)	2413	2838		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	0.60	0.44		

Intersection Summary
Cycle Length: 126
Actuated Cycle Length: 112.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Transit ROW/Railway Crossing & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑							
Traffic Volume (vph)	0	1458	0	0	1243	0	0	0	0	0	0	0
Future Volume (vph)	0	1458	0	0	1243	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1775	1900	1750	1775	1900	1750	1775	1900	1750	1775	1900	1750
Total Lost time (s)		4.0			4.0							
Lane Util. Factor		0.91			0.95							
Frpb, ped/bikes		1.00			1.00							
Flpb, ped/bikes		1.00			1.00							
Frt		1.00			1.00							
Flt Protected		1.00			1.00							
Satd. Flow (prot)		4906			3466							
Flt Permitted		1.00			1.00							
Satd. Flow (perm)		4906			3466							
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1458	0	0	1243	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1458	0	0	1243	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	19		59	59		19	26		26	26		26
Heavy Vehicles (%)	0%	4%	0%	100%	3%	0%	0%	0%	100%	0%	0%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0					
Turn Type		NA			NA							
Protected Phases		4			8							
Permitted Phases												
Actuated Green, G (s)		51.3			86.0							
Effective Green, g (s)		55.3			90.0							
Actuated g/C Ratio		0.48			0.78							
Clearance Time (s)		8.0			8.0							
Vehicle Extension (s)		3.0			3.0							
Lane Grp Cap (vph)		2359			2712							
v/s Ratio Prot		c0.30			c0.36							
v/s Ratio Perm												
v/c Ratio		0.61			0.45							
Uniform Delay, d1		22.0			4.2							
Progression Factor		1.00			1.00							
Incremental Delay, d2		1.2			0.5							
Delay (s)		23.2			4.7							
Level of Service		C			A							
Approach Delay (s/veh)		23.2			4.7			0.0			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	63	315	61	52	419
Future Vol, veh/h	50	63	315	61	52	419
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	14	4	0	2	5
Mvmt Flow	50	63	315	61	52	419

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	662	190	0	0	378	0
Stage 1	348	-	-	-	-	-
Stage 2	314	-	-	-	-	-
Critical Hdwy	6.8	7.18	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.44	-	-	2.22	-
Pot Cap-1 Maneuver	399	783	-	-	1177	-
Stage 1	692	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	375	782	-	-	1175	-
Mov Cap-2 Maneuver	375	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	678	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.7	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	375	782	1175	-
HCM Lane V/C Ratio	-	-	0.133	0.081	0.044	-
HCM Control Delay (s/veh)	-	-	16.1	10	8.2	0.2
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q (veh)	-	-	0.5	0.3	0.1	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	3	4	0	9	48	0	5	0	45	14	104
Future Vol, veh/h	106	3	4	0	9	48	0	5	0	45	14	104
Conflicting Peds, #/hr	2	0	0	0	0	2	5	0	3	3	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	10	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	33	0	0	100	0	0	0	0	0	0	0
Mvmt Flow	106	3	4	0	9	48	0	5	0	45	14	104

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	7	0	0	234	276	8	258	254	36
Stage 1	-	-	-	-	-	-	217	217	-	35	35	-
Stage 2	-	-	-	-	-	-	17	59	-	223	219	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1558	-	-	1627	-	-	716	635	1080	689	653	1035
Stage 1	-	-	-	-	-	-	790	727	-	982	870	-
Stage 2	-	-	-	-	-	-	1006	850	-	784	726	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1556	-	-	1627	-	-	597	591	1077	646	607	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	597	591	-	646	607	-
Stage 1	-	-	-	-	-	-	736	678	-	914	868	-
Stage 2	-	-	-	-	-	-	886	848	-	724	677	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	7	0	11.1	9.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	591	1556	-	-	1627	-	-	646	951
HCM Lane V/C Ratio	0.008	0.068	-	-	-	-	-	0.07	0.124
HCM Control Delay (s/veh)	11.1	7.5	0	-	0	-	-	11	9.3
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0	0.2	-	-	0	-	-	0.2	0.4

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	46	0	0	56	10	0	7	1	10	13	1
Future Vol, veh/h	2	46	0	0	56	10	0	7	1	10	13	1
Conflicting Peds, #/hr	3	0	3	3	0	3	5	0	2	2	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	0	16	0	0	0	100	0	0	0
Mvmt Flow	2	46	0	0	56	10	0	7	1	10	13	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	49	0	0	126	122	51	120	117	69
Stage 1	-	-	-	-	-	-	53	53	-	64	64	-
Stage 2	-	-	-	-	-	-	73	69	-	56	53	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	7.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	4.2	3.5	4	3.3
Pot Cap-1 Maneuver	1545	-	-	1571	-	-	852	772	797	860	777	1000
Stage 1	-	-	-	-	-	-	965	855	-	952	846	-
Stage 2	-	-	-	-	-	-	942	841	-	961	855	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1541	-	-	1567	-	-	834	768	794	849	773	994
Mov Cap-2 Maneuver	-	-	-	-	-	-	834	768	-	849	773	-
Stage 1	-	-	-	-	-	-	962	852	-	949	844	-
Stage 2	-	-	-	-	-	-	923	839	-	949	852	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.3	0	9.7	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	771	1541	-	-	1567	-	-	811
HCM Lane V/C Ratio	0.01	0.001	-	-	-	-	-	0.03
HCM Control Delay (s/veh)	9.7	7.3	0	-	0	-	-	9.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	1204	745	66	20	16
Future Vol, veh/h	11	1204	745	66	20	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	4	0	10	0
Mvmt Flow	11	1204	745	66	20	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	811	0	-	0	1402	406
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	624	-
Critical Hdwy	4.1	-	-	-	7	6.9
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	2.2	-	-	-	3.6	3.3
Pot Cap-1 Maneuver	824	-	-	-	122	600
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	475	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	824	-	-	-	117	600
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	475	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	28.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	824	-	-	-	117	600
HCM Lane V/C Ratio	0.013	-	-	-	0.171	0.027
HCM Control Delay (s/veh)	9.4	0.2	-	-	42	11.2
HCM Lane LOS	A	A	-	-	E	B
HCM 95th %tile Q (veh)	0	-	-	-	0.6	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1411	53	0	1216	219	0	0	17	0	0	33
Future Vol, veh/h	0	1411	53	0	1216	219	0	0	17	0	0	33
Conflicting Peds, #/hr	3	0	3	3	0	3	10	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	5	0	0	0	0	0	9
Mvmt Flow	0	1411	53	0	1216	219	0	0	17	0	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	735	-	-	731
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	3.39
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	314	0	0	349
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	313	-	-	345
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	17.2	16.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	313	-	-	-	-	345
HCM Lane V/C Ratio	0.054	-	-	-	-	0.096
HCM Control Delay (s/veh)	17.2	-	-	-	-	16.5
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q (veh)	0.2	-	-	-	-	0.3

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	0	0	0	0	0	1	0	0	0	13
Future Vol, veh/h	7	0	0	0	0	0	0	1	0	0	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	0	0	0	0	0	0	1	0	0	0	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	8	8	7	8	14	1	13	0	0	1	0	0
Stage 1	7	7	-	1	1	-	-	-	-	-	-	-
Stage 2	1	1	-	7	13	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1016	891	1081	1016	884	1090	1619	-	-	1635	-	-
Stage 1	1020	894	-	1027	899	-	-	-	-	-	-	-
Stage 2	1027	899	-	1020	889	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1016	891	1081	1016	884	1090	1619	-	-	1635	-	-
Mov Cap-2 Maneuver	1016	891	-	1016	884	-	-	-	-	-	-	-
Stage 1	1020	894	-	1027	899	-	-	-	-	-	-	-
Stage 2	1027	899	-	1020	889	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.6	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1619	-	-	1016	-	1635	-	-
HCM Lane V/C Ratio	-	-	-	0.007	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	8.6	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	8	4	0	1	22	0	18	0	0	0
Future Vol, veh/h	0	0	8	4	0	1	22	0	18	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	8	4	0	1	22	0	18	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	55	63	1	58	54	9	1	0	0	18	0	0
Stage 1	1	1	-	53	53	-	-	-	-	-	-	-
Stage 2	54	62	-	5	1	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	948	832	1090	944	841	1079	1635	-	-	1612	-	-
Stage 1	1027	899	-	965	855	-	-	-	-	-	-	-
Stage 2	963	847	-	1022	899	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	937	820	1090	927	829	1079	1635	-	-	1612	-	-
Mov Cap-2 Maneuver	937	820	-	927	829	-	-	-	-	-	-	-
Stage 1	1013	899	-	951	843	-	-	-	-	-	-	-
Stage 2	949	835	-	1014	899	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.3	8.8	4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1635	-	-	1090	954	1612	-	-
HCM Lane V/C Ratio	0.013	-	-	0.007	0.005	-	-	-
HCM Control Delay (s/veh)	7.2	0	-	8.3	8.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	17	3	0	0	11	40	15	0	12	0
Future Vol, veh/h	0	0	17	3	0	0	11	40	15	0	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	17	3	0	0	11	40	15	0	12	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	82	89	12	91	82	48	12	0	0	55	0	0
Stage 1	12	12	-	70	70	-	-	-	-	-	-	-
Stage 2	70	77	-	21	12	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	910	805	1074	898	812	1027	1620	-	-	1563	-	-
Stage 1	1014	890	-	945	841	-	-	-	-	-	-	-
Stage 2	945	835	-	1003	890	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	905	799	1074	879	806	1027	1620	-	-	1563	-	-
Mov Cap-2 Maneuver	905	799	-	879	806	-	-	-	-	-	-	-
Stage 1	1007	890	-	938	835	-	-	-	-	-	-	-
Stage 2	938	829	-	987	890	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.4	9.1	1.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1620	-	-	1074	879	1563	-	-
HCM Lane V/C Ratio	0.007	-	-	0.016	0.003	-	-	-
HCM Control Delay (s/veh)	7.2	0	-	8.4	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	3	1	0	0	8	66	3	0	32	0
Future Vol, veh/h	0	0	3	1	0	0	8	66	3	0	32	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	3	1	0	0	8	66	3	0	32	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	116	117	32	118	116	68	32	0	0	69	0	0
Stage 1	32	32	-	84	84	-	-	-	-	-	-	-
Stage 2	84	85	-	34	32	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	865	777	1048	863	778	1001	1593	-	-	1545	-	-
Stage 1	990	872	-	929	829	-	-	-	-	-	-	-
Stage 2	929	828	-	987	872	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	862	773	1048	857	774	1001	1593	-	-	1545	-	-
Mov Cap-2 Maneuver	862	773	-	857	774	-	-	-	-	-	-	-
Stage 1	985	872	-	924	825	-	-	-	-	-	-	-
Stage 2	924	824	-	984	872	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.4	9.2	0.8	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1593	-	-	1048	857	1545	-	-
HCM Lane V/C Ratio	0.005	-	-	0.003	0.001	-	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.4	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	1	66	56	0
Future Vol, veh/h	0	2	1	66	56	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	100	100	14	4	0
Mvmt Flow	0	2	1	66	56	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	124	56	56	0	-	0
Stage 1	56	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.4	7.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	4.2	3.1	-	-	-
Pot Cap-1 Maneuver	876	792	1099	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	875	792	1099	-	-	-
Mov Cap-2 Maneuver	875	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	960	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.6	0.1	0
HCM LOS	A		

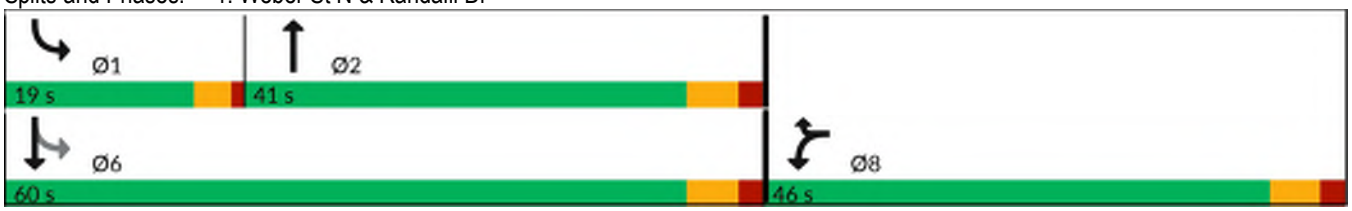
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1099	-	792	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s/veh)	8.3	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Weekday PM Peak Hour

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	295	136	451	28	472
Future Volume (vph)	295	136	451	28	472
Lane Group Flow (vph)	295	136	523	28	472
Turn Type	Prot	Prot	NA	pm+pt	NA
Protected Phases	8	8	2	1	6
Permitted Phases	8	8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	10.0	5.0	10.0
Minimum Split (s)	24.0	24.0	41.0	9.5	42.0
Total Split (s)	46.0	46.0	41.0	19.0	60.0
Total Split (%)	43.4%	43.4%	38.7%	17.9%	56.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	8.0	4.0	4.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
v/c Ratio	0.68	0.28	0.52	0.07	0.39
Control Delay (s/veh)	37.4	7.4	16.9	7.1	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.4	7.4	16.9	7.1	9.0
Queue Length 50th (m)	46.1	1.7	45.0	1.5	33.6
Queue Length 95th (m)	72.5	14.8	115.3	5.6	67.5
Internal Link Dist (m)	723.8		106.7		467.0
Turn Bay Length (m)		30.0		100.0	
Base Capacity (vph)	831	814	991	481	1201
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	0.35	0.17	0.53	0.06	0.39

Intersection Summary
Cycle Length: 106
Actuated Cycle Length: 86.1
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Weber St N & Randalll Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	295	136	451	72	28	472
Future Volume (vph)	295	136	451	72	28	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	8.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.99	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1700	1536	1772		1351	1842
Flt Permitted	0.95	1.00	1.00		0.36	1.00
Satd. Flow (perm)	1700	1536	1772		513	1842
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	295	136	451	72	28	472
RTOR Reduction (vph)	0	93	4	0	0	0
Lane Group Flow (vph)	295	43	519	0	28	472
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	5%	4%	3%	8%	32%	2%
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	2		1	6
Permitted Phases	8	8			6	
Actuated Green, G (s)	19.9	19.9	50.0		56.6	56.6
Effective Green, g (s)	21.9	21.9	48.0		56.6	58.6
Actuated g/C Ratio	0.25	0.25	0.54		0.64	0.66
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	420	380	961		352	1219
v/s Ratio Prot	c0.17	0.03	c0.29		0.00	c0.26
v/s Ratio Perm					0.05	
v/c Ratio	0.70	0.11	0.54		0.07	0.38
Uniform Delay, d1	30.3	25.7	13.1		6.8	6.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.2	0.1	2.1		0.0	0.9
Delay (s)	35.5	25.9	15.2		6.9	7.7
Level of Service	D	C	B		A	A
Approach Delay (s/veh)	32.5		15.2			7.6
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

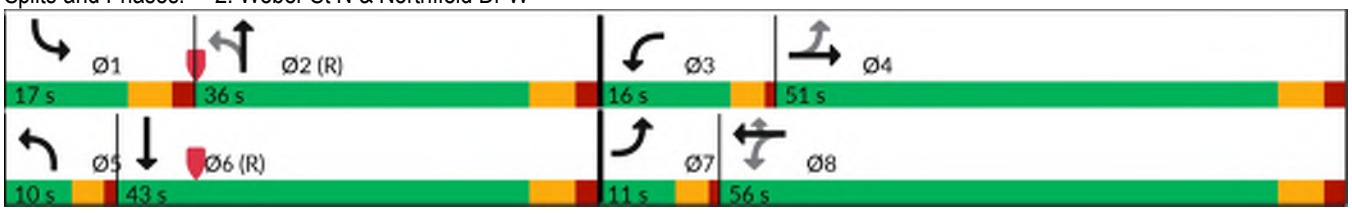
c Critical Lane Group

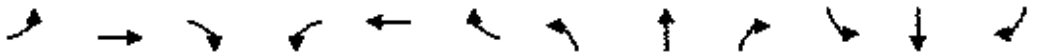
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	112	751	133	1193	154	64	264	258	304
Future Volume (vph)	112	751	133	1193	154	64	264	258	304
Lane Group Flow (vph)	112	820	133	1193	154	64	336	258	457
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2			
Minimum Split (s)	9.0	44.4	9.0	44.4	44.4	9.0	33.6	13.0	33.6
Total Split (s)	11.0	51.0	16.0	56.0	56.0	10.0	36.0	17.0	43.0
Total Split (%)	9.2%	42.5%	13.3%	46.7%	46.7%	8.3%	30.0%	14.2%	35.8%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0	2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	8.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
v/c Ratio	0.71	0.64	0.45	0.78	0.24	0.22	0.38	0.75	0.43
Control Delay (s/veh)	44.9	32.1	20.0	33.7	4.4	24.5	34.3	66.8	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.9	32.1	20.0	33.7	4.4	24.5	34.3	66.8	27.5
Queue Length 50th (m)	13.6	84.9	16.5	131.2	0.0	9.6	32.7	32.5	38.4
Queue Length 95th (m)	#39.1	107.3	27.8	159.8	13.1	19.1	46.9	#51.0	54.2
Internal Link Dist (m)		607.0		127.2			507.4		212.4
Turn Bay Length (m)	90.0		45.0		65.0	95.0		82.5	
Base Capacity (vph)	157	1279	292	1519	640	287	876	341	1061
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	0.71	0.64	0.46	0.79	0.24	0.22	0.38	0.76	0.43

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Weber St N & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	751	69	133	1193	154	64	264	72	258	304	153
Future Volume (vph)	112	751	69	133	1193	154	64	264	72	258	304	153
Ideal Flow (vphpl)	1775	1775	1775	1755	1900	1750	1755	1775	1775	1775	1775	1775
Grade (%)		0%			0%			0%			-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	8.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.96		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1635	3255		1616	3506	1368	1604	3208		3156	3104	
Flt Permitted	0.09	1.00		0.18	1.00	1.00	0.46	1.00		0.95	1.00	
Satd. Flow (perm)	159	3255		309	3506	1368	784	3208		3156	3104	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	112	751	69	133	1193	154	64	264	72	258	304	153
RTOR Reduction (vph)	0	5	0	0	0	92	0	21	0	0	52	0
Lane Group Flow (vph)	112	815	0	133	1193	62	64	315	0	258	405	0
Confl. Peds. (#/hr)	16		18	18		16	26		13	13		26
Heavy Vehicles (%)	2%	1%	0%	2%	1%	3%	2%	0%	0%	3%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	4	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	52.0	45.0		61.0	50.0	50.0	36.0	30.0		11.0	37.0	
Effective Green, g (s)	52.0	47.0		61.0	52.0	48.0	36.0	32.0		13.0	39.0	
Actuated g/C Ratio	0.43	0.39		0.51	0.43	0.40	0.30	0.27		0.11	0.33	
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	155	1274		287	1519	547	276	855		341	1008	
v/s Ratio Prot	c0.04	0.25		0.05	c0.34		0.01	0.10		c0.08	c0.13	
v/s Ratio Perm	0.27			0.19		0.05	0.06					
v/c Ratio	0.72	0.63		0.46	0.78	0.11	0.23	0.36		0.75	0.40	
Uniform Delay, d1	25.0	29.6		18.6	29.2	22.6	30.6	35.7		51.9	31.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	25.1	2.4		5.3	4.1	0.4	1.9	1.2		14.4	1.1	
Delay (s)	50.1	32.0		23.9	33.3	23.0	32.5	37.0		66.4	32.6	
Level of Service	D	C		C	C	C	C	D		E	C	
Approach Delay (s/veh)		34.2			31.4			36.3			44.8	
Approach LOS		C			C			D			D	

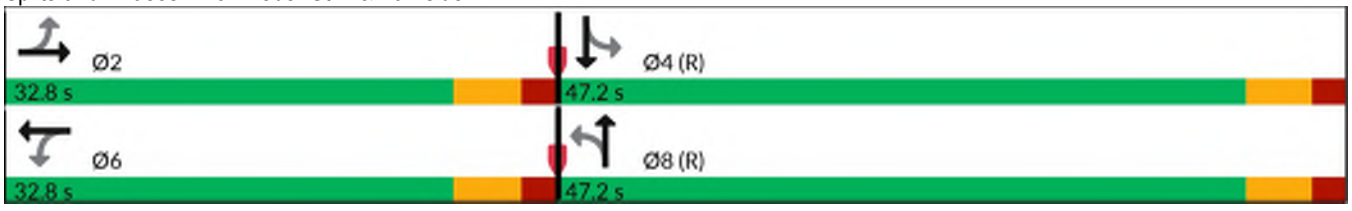
Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

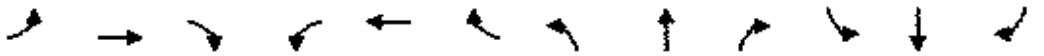
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	64	215	110	261	67	311	35	396
Future Volume (vph)	64	215	110	261	67	311	35	396
Lane Group Flow (vph)	64	264	110	286	67	432	35	471
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Minimum Split (s)	32.8	32.8	32.8	32.8	47.2	47.2	47.2	47.2
Total Split (s)	32.8	32.8	32.8	32.8	47.2	47.2	47.2	47.2
Total Split (%)	41.0%	41.0%	41.0%	41.0%	59.0%	59.0%	59.0%	59.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	6.0	4.0	6.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.21	0.46	0.37	0.49	0.17	0.26	0.08	0.28
Control Delay (s/veh)	20.2	21.6	23.7	22.9	11.9	7.6	10.6	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.2	21.6	23.7	22.9	11.9	7.6	10.6	9.5
Queue Length 50th (m)	7.0	29.8	12.8	34.0	5.4	13.0	2.7	18.0
Queue Length 95th (m)	16.5	51.5	27.2	57.3	12.7	20.9	7.4	26.9
Internal Link Dist (m)		315.6		475.0		572.0		507.4
Turn Bay Length (m)	25.0		15.0		25.0		25.0	
Base Capacity (vph)	295	568	292	581	381	1613	407	1645
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.46	0.38	0.49	0.18	0.27	0.09	0.29

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 2.4 (3%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed

Splits and Phases: 3: Weber St N & Parkside Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	215	49	110	261	25	67	311	121	35	396	75
Future Volume (vph)	64	215	49	110	261	25	67	311	121	35	396	75
Ideal Flow (vphpl)	1775	1650	1650	1755	1650	1650	1650	1650	1650	1650	1650	1650
Total Lost time (s)	4.0	4.0		4.0	4.0		6.0	4.0		6.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1662	1552		1552	1602		1531	2893		1549	3012	
Flt Permitted	0.46	1.00		0.49	1.00		0.46	1.00		0.48	1.00	
Satd. Flow (perm)	821	1552		812	1602		741	2893		790	3012	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	64	215	49	110	261	25	67	311	121	35	396	75
RTOR Reduction (vph)	0	10	0	0	4	0	0	52	0	0	19	0
Lane Group Flow (vph)	64	254	0	110	282	0	67	380	0	35	452	0
Confl. Peds. (#/hr)	6		20	20		6	9		3	3		9
Heavy Vehicles (%)	0%	2%	0%	5%	0%	4%	0%	1%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	26.8	26.8		26.8	26.8		41.2	41.2		41.2	41.2	
Effective Green, g (s)	28.8	28.8		28.8	28.8		41.2	43.2		41.2	43.2	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.52	0.54		0.52	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	295	558		292	576		381	1562		406	1626	
v/s Ratio Prot		0.16			c0.18			0.13			c0.15	
v/s Ratio Perm	0.08			0.14			0.09			0.04		
v/c Ratio	0.21	0.45		0.37	0.48		0.17	0.24		0.08	0.27	
Uniform Delay, d1	17.7	19.5		18.9	19.8		10.3	9.7		9.8	9.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	2.6		3.6	2.9		1.0	0.3		0.4	0.4	
Delay (s)	19.4	22.2		22.6	22.8		11.3	10.1		10.2	10.3	
Level of Service	B	C		C	C		B	B		B	B	
Approach Delay (s/veh)		21.7			22.7			10.2			10.3	
Approach LOS		C			C			B			B	

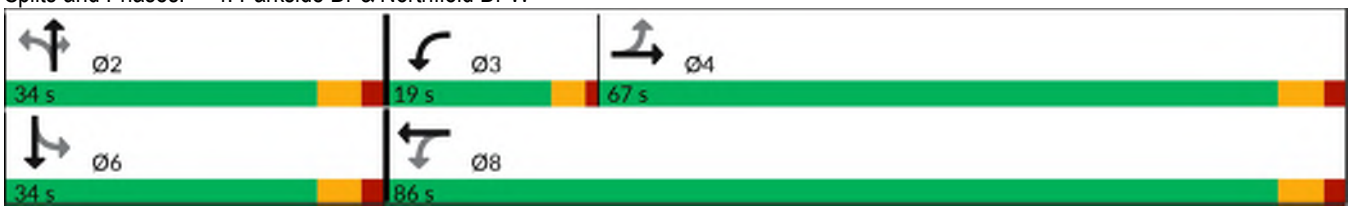
Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	118.8%	ICU Level of Service	H
Analysis Period (min)	15		

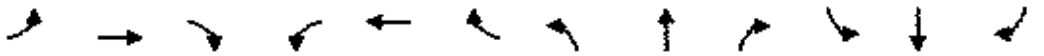
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1050	288	1473	32	15	396	88	28
Future Volume (vph)	1050	288	1473	32	15	396	88	28
Lane Group Flow (vph)	1080	288	1559	0	47	396	88	31
Turn Type	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases	4	3	8		2			6
Permitted Phases		8		2		2	6	
Detector Phase	4	3	8	2	2	2	6	6
Switch Phase								
Minimum Initial (s)	40.0	5.0	40.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	46.0	9.5	46.0	34.0	34.0	34.0	34.0	34.0
Total Split (s)	67.0	19.0	86.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	55.8%	15.8%	71.7%	28.3%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	0.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lead						
Lead-Lag Optimize?								
Recall Mode	None	None	None	Max	Max	Max	Max	Max
v/c Ratio	0.75	0.88	0.76		0.12	0.65	0.23	0.06
Control Delay (s/veh)	27.3	49.6	16.7		28.5	16.0	30.0	25.6
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.3	49.6	16.8		28.5	16.0	30.0	25.6
Queue Length 50th (m)	96.4	35.3	110.8		6.9	20.0	13.3	4.0
Queue Length 95th (m)	121.5	#86.2	138.5		17.9	61.6	29.7	12.5
Internal Link Dist (m)	123.1		82.8		475.0			54.4
Turn Bay Length (m)		25.0					30.0	
Base Capacity (vph)	2033	343	2678		371	609	376	459
Starvation Cap Reductn	0	0	208		0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0
Reduced v/c Ratio	0.53	0.84	0.63		0.13	0.65	0.23	0.07

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 100.3
Natural Cycle: 90
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Parkside Dr & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1050	30	288	1473	86	32	15	396	88	28	3
Future Volume (vph)	0	1050	30	288	1473	86	32	15	396	88	28	3
Ideal Flow (vphpl)	1775	1775	1775	1775	1775	1775	1650	1650	1750	1775	1650	1650
Grade (%)		0%			0%			0%			-2%	
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99			1.00	0.97	1.00	0.99	
Flpb, ped/bikes		1.00		0.99	1.00			0.99	1.00	0.98	1.00	
Frt		0.99		1.00	0.99			1.00	0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)		3227		1650	3266			1424	1411	1649	1525	
Flt Permitted		1.00		0.11	1.00			0.84	1.00	0.72	1.00	
Satd. Flow (perm)		3227		205	3266			1238	1411	1261	1525	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1050	30	288	1473	86	32	15	396	88	28	3
RTOR Reduction (vph)	0	2	0	0	4	0	0	0	188	0	2	0
Lane Group Flow (vph)	0	1078	0	288	1555	0	0	47	208	88	29	0
Confl. Peds. (#/hr)	9		25	25		9	2		11	11		2
Heavy Vehicles (%)	0%	2%	0%	1%	1%	3%	3%	27%	1%	1%	7%	0%
Bus Blockages (#/hr)	0	4	0	0	0	0	0	0	2	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		42.5		60.2	60.2			28.1	28.1	28.1	28.1	
Effective Green, g (s)		44.5		60.2	62.2			30.1	30.1	30.1	30.1	
Actuated g/C Ratio		0.44		0.60	0.62			0.30	0.30	0.30	0.30	
Clearance Time (s)		6.0		4.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1431		320	2025			371	423	378	457	
v/s Ratio Prot		0.33		c0.12	0.48						0.02	
v/s Ratio Perm				c0.42				0.04	c0.15	0.07		
v/c Ratio		0.75		0.90	0.76			0.12	0.49	0.23	0.06	
Uniform Delay, d1		23.3		23.7	13.8			25.5	28.8	26.4	25.0	
Progression Factor		1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.2		26.6	1.8			0.7	4.0	1.4	0.2	
Delay (s)		25.6		50.4	15.6			26.2	32.8	27.8	25.3	
Level of Service		C		D	B			C	C	C	C	
Approach Delay (s/veh)		25.6			21.0			32.1			27.1	
Approach LOS		C			C			C			C	

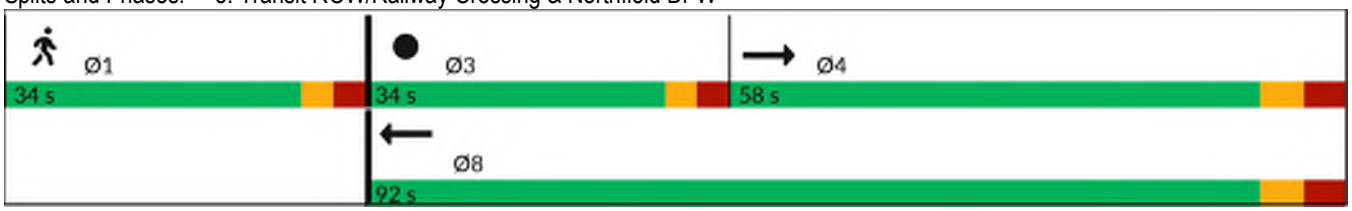
Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		

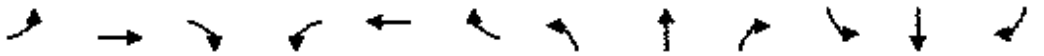
c Critical Lane Group

Lane Group	EBT	WBT	Ø1	Ø3
Lane Configurations				
Traffic Volume (vph)	1534	1847		
Future Volume (vph)	1534	1847		
Lane Group Flow (vph)	1534	1847		
Turn Type	NA	NA		
Protected Phases	4	8	1	3
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	7.0	7.0
Minimum Split (s)	50.0	50.0	34.0	24.0
Total Split (s)	58.0	92.0	34.0	34.0
Total Split (%)	46.0%	73.0%	27%	27%
Yellow Time (s)	4.0	4.0	3.0	3.0
All-Red Time (s)	4.0	4.0	3.0	3.0
Lost Time Adjust (s)	-4.0	-4.0		
Total Lost Time (s)	4.0	4.0		
Lead/Lag	Lag			Lead
Lead-Lag Optimize?	Yes			Yes
Recall Mode	Max	Max	None	Max
v/c Ratio	0.62	0.63		
Control Delay (s/veh)	25.1	9.6		
Queue Delay	0.0	0.0		
Total Delay (s/veh)	25.1	9.6		
Queue Length 50th (m)	118.9	144.8		
Queue Length 95th (m)	137.2	173.2		
Internal Link Dist (m)	82.8	6.9		
Turn Bay Length (m)				
Base Capacity (vph)	2460	2895		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	0.62	0.64		

Intersection Summary
Cycle Length: 126
Actuated Cycle Length: 112.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Transit ROW/Railway Crossing & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑							
Traffic Volume (vph)	0	1534	0	0	1847	0	0	0	0	0	0	0
Future Volume (vph)	0	1534	0	0	1847	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1775	1900	1750	1775	1900	1750	1775	1900	1750	1775	1900	1750
Total Lost time (s)		4.0			4.0							
Lane Util. Factor		0.91			0.95							
Frpb, ped/bikes		1.00			1.00							
Flpb, ped/bikes		1.00			1.00							
Frt		1.00			1.00							
Flt Protected		1.00			1.00							
Satd. Flow (prot)		5002			3535							
Flt Permitted		1.00			1.00							
Satd. Flow (perm)		5002			3535							
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1534	0	0	1847	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1534	0	0	1847	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	9		79	79		9	32		32	32		32
Heavy Vehicles (%)	0%	2%	0%	100%	1%	0%	0%	0%	100%	0%	0%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0					
Turn Type		NA			NA							
Protected Phases		4			8							
Permitted Phases												
Actuated Green, G (s)		51.3			86.0							
Effective Green, g (s)		55.3			90.0							
Actuated g/C Ratio		0.48			0.78							
Clearance Time (s)		8.0			8.0							
Vehicle Extension (s)		3.0			3.0							
Lane Grp Cap (vph)		2405			2766							
v/s Ratio Prot		0.31			c0.52							
v/s Ratio Perm												
v/c Ratio		0.63			0.66							
Uniform Delay, d1		22.3			5.6							
Progression Factor		1.00			1.00							
Incremental Delay, d2		1.3			1.2							
Delay (s)		23.6			6.9							
Level of Service		C			A							
Approach Delay (s/veh)		23.6			6.9			0.0			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	107	416	114	93	674
Future Vol, veh/h	43	107	416	114	93	674
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	6	2	0	0	1
Mvmt Flow	43	107	416	114	93	674

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	999	268	0	0	533	0
Stage 1	476	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Critical Hdwy	6.8	7.02	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.36	-	-	2.2	-
Pot Cap-1 Maneuver	244	718	-	-	1045	-
Stage 1	597	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	209	716	-	-	1043	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	596	-	-	-	-	-
Stage 2	484	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	15.4	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	209	716	1043	-
HCM Lane V/C Ratio	-	-	0.206	0.149	0.089	-
HCM Control Delay (s/veh)	-	-	26.6	10.9	8.8	0.5
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q (veh)	-	-	0.8	0.5	0.3	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	81	29	0	41	43	14	6	0	20	9	95
Future Vol, veh/h	97	81	29	0	41	43	14	6	0	20	9	95
Conflicting Peds, #/hr	14	0	0	0	0	14	15	0	1	1	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	15	0	0	0	0	0	0	0
Mvmt Flow	97	81	29	0	41	43	14	6	0	20	9	95

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	98	0	0	110	0	0	330	388	97	371	381	71
Stage 1	-	-	-	-	-	-	290	290	-	77	77	-
Stage 2	-	-	-	-	-	-	40	98	-	294	304	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1508	-	-	1493	-	-	616	550	965	577	555	983
Stage 1	-	-	-	-	-	-	722	676	-	929	835	-
Stage 2	-	-	-	-	-	-	976	818	-	719	667	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1492	-	-	1493	-	-	513	507	964	535	511	961
Mov Cap-2 Maneuver	-	-	-	-	-	-	513	507	-	535	511	-
Stage 1	-	-	-	-	-	-	672	629	-	856	826	-
Stage 2	-	-	-	-	-	-	860	809	-	662	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	3.6	0	12.3	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	511	1492	-	-	1493	-	-	535	893
HCM Lane V/C Ratio	0.039	0.065	-	-	-	-	-	0.037	0.116
HCM Control Delay (s/veh)	12.3	7.6	0	-	0	-	-	12	9.6
HCM Lane LOS	B	A	A	-	A	-	-	B	A
HCM 95th %tile Q (veh)	0.1	0.2	-	-	0	-	-	0.1	0.4

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	98	0	0	67	34	1	0	73	21	7	16
Future Vol, veh/h	3	98	0	0	67	34	1	0	73	21	7	16
Conflicting Peds, #/hr	0	0	2	4	0	0	0	0	5	5	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	9	0	0	0	1	0	0	0
Mvmt Flow	3	98	0	0	67	34	1	0	73	21	7	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	101	0	0	102	0	0	204	209	107	230	192	84
Stage 1	-	-	-	-	-	-	108	108	-	84	84	-
Stage 2	-	-	-	-	-	-	96	101	-	146	108	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1504	-	-	1503	-	-	758	692	950	729	707	981
Stage 1	-	-	-	-	-	-	902	810	-	929	829	-
Stage 2	-	-	-	-	-	-	916	815	-	861	810	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1504	-	-	1498	-	-	737	689	943	669	703	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	737	689	-	669	703	-
Stage 1	-	-	-	-	-	-	897	806	-	927	829	-
Stage 2	-	-	-	-	-	-	893	815	-	790	806	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.2	0	9.2	10
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	939	1504	-	-	1498	-	-	763
HCM Lane V/C Ratio	0.079	0.002	-	-	-	-	-	0.058
HCM Control Delay (s/veh)	9.2	7.4	0	-	0	-	-	10
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q (veh)	0.3	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	1054	1446	62	26	34
Future Vol, veh/h	27	1054	1446	62	26	34
Conflicting Peds, #/hr	13	0	0	13	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	2	1	0	8	0
Mvmt Flow	27	1054	1446	62	26	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1521	0	-	0	2074	767
Stage 1	-	-	-	-	1490	-
Stage 2	-	-	-	-	584	-
Critical Hdwy	4.1	-	-	-	6.96	6.9
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	2.2	-	-	-	3.58	3.3
Pot Cap-1 Maneuver	445	-	-	-	43	349
Stage 1	-	-	-	-	164	-
Stage 2	-	-	-	-	504	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	441	-	-	-	36	345
Mov Cap-2 Maneuver	-	-	-	-	36	-
Stage 1	-	-	-	-	138	-
Stage 2	-	-	-	-	499	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.3	0	110.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	441	-	-	-	36	345
HCM Lane V/C Ratio	0.061	-	-	-	0.722	0.099
HCM Control Delay (s/veh)	13.7	1	-	-	233.3	16.6
HCM Lane LOS	B	A	-	-	F	C
HCM 95th %tile Q (veh)	0.2	-	-	-	2.6	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1528	11	0	1805	124	0	0	43	0	0	45
Future Vol, veh/h	0	1528	11	0	1805	124	0	0	43	0	0	45
Conflicting Peds, #/hr	4	0	2	2	0	4	36	0	0	0	0	36
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	3	0	0	2	0	0	4
Mvmt Flow	0	1528	11	0	1805	124	0	0	43	0	0	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	772	-	-	1005
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.34
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	294	0	0	236
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	294	-	-	229
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	19.3	24.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	294	-	-	-	-	229
HCM Lane V/C Ratio	0.146	-	-	-	-	0.197
HCM Control Delay (s/veh)	19.3	-	-	-	-	24.5
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q (veh)	0.5	-	-	-	-	0.7

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	1	0	73	0	0	0	7
Future Vol, veh/h	0	0	0	0	0	1	0	73	0	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	1	0	73	0	0	0	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	78	77	4	77	80	73	7	0	0	73	0	0
Stage 1	4	4	-	73	73	-	-	-	-	-	-	-
Stage 2	74	73	-	4	7	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	916	817	1085	917	814	995	1627	-	-	1540	-	-
Stage 1	1024	897	-	942	838	-	-	-	-	-	-	-
Stage 2	940	838	-	1024	894	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	915	817	1085	917	814	995	1627	-	-	1540	-	-
Mov Cap-2 Maneuver	915	817	-	917	814	-	-	-	-	-	-	-
Stage 1	1024	897	-	942	838	-	-	-	-	-	-	-
Stage 2	939	838	-	1024	894	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	8.6	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1627	-	-	-	995	1540	-	-
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	8.6	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	-	0	0	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	0	0	5	0	12	30	11	5	0	0	0
Future Vol, veh/h	50	0	0	5	0	12	30	11	5	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	0	0	5	0	12	30	11	5	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	81	77	1	75	75	14	1	0	0	16	0	0
Stage 1	1	1	-	74	74	-	-	-	-	-	-	-
Stage 2	80	76	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	912	817	1090	920	819	1072	1635	-	-	1615	-	-
Stage 1	1027	899	-	940	837	-	-	-	-	-	-	-
Stage 2	934	836	-	1027	899	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	888	801	1090	907	803	1072	1635	-	-	1615	-	-
Mov Cap-2 Maneuver	888	801	-	907	803	-	-	-	-	-	-	-
Stage 1	1007	899	-	922	821	-	-	-	-	-	-	-
Stage 2	906	820	-	1027	899	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.3	8.6	4.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1635	-	-	888	1018	1615	-	-
HCM Lane V/C Ratio	0.018	-	-	0.056	0.017	-	-	-
HCM Control Delay (s/veh)	7.2	0	-	9.3	8.6	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0.1	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	37	4	0	11	37	35	5	0	5	0
Future Vol, veh/h	0	0	37	4	0	11	37	35	5	0	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	37	4	0	11	37	35	5	0	5	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	122	119	5	136	117	38	5	0	0	40	0	0
Stage 1	5	5	-	112	112	-	-	-	-	-	-	-
Stage 2	117	114	-	24	5	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	858	775	1084	840	777	1040	1630	-	-	1583	-	-
Stage 1	1022	896	-	898	807	-	-	-	-	-	-	-
Stage 2	892	805	-	999	896	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	834	757	1084	797	759	1040	1630	-	-	1583	-	-
Mov Cap-2 Maneuver	834	757	-	797	759	-	-	-	-	-	-	-
Stage 1	998	896	-	877	788	-	-	-	-	-	-	-
Stage 2	862	786	-	965	896	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.4	8.8	3.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1630	-	-	1084	962	1583	-	-
HCM Lane V/C Ratio	0.023	-	-	0.034	0.016	-	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.4	8.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	11	1	0	0	11	77	1	0	46	0
Future Vol, veh/h	0	0	11	1	0	0	11	77	1	0	46	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	11	1	0	0	11	77	1	0	46	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	146	146	46	152	146	78	46	0	0	78	0	0
Stage 1	46	46	-	100	100	-	-	-	-	-	-	-
Stage 2	100	100	-	52	46	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	827	749	1029	820	749	988	1575	-	-	1533	-	-
Stage 1	973	861	-	911	816	-	-	-	-	-	-	-
Stage 2	911	816	-	966	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	823	744	1029	807	744	988	1575	-	-	1533	-	-
Mov Cap-2 Maneuver	823	744	-	807	744	-	-	-	-	-	-	-
Stage 1	966	861	-	905	810	-	-	-	-	-	-	-
Stage 2	905	810	-	956	861	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.5	9.5	0.9	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1575	-	-	1029	807	1533	-	-
HCM Lane V/C Ratio	0.007	-	-	0.011	0.001	-	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.5	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	1	101	119	0
Future Vol, veh/h	0	2	1	101	119	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	100	100	6	1	0
Mvmt Flow	0	2	1	101	119	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	222	119	119	0	-	0
Stage 1	119	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.4	7.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	4.2	3.1	-	-	-
Pot Cap-1 Maneuver	771	724	1032	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	770	724	1032	-	-	-
Mov Cap-2 Maneuver	770	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	926	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1032	-	724	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s/veh)	8.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

APPENDIX G

2031 & 2041 Future Total Intersection Capacity Analysis

2031 Future Total Intersection Capacity Analysis

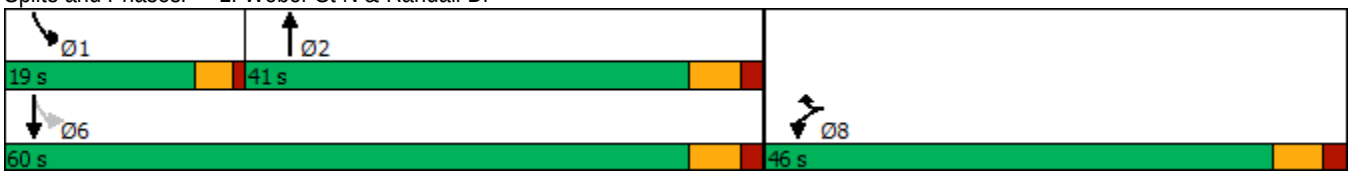
2031

Weekday AM Peak Hour

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	72	24	310	45	399
Future Volume (vph)	72	24	310	45	399
Lane Group Flow (vph)	72	24	418	45	399
Turn Type	Prot	Prot	NA	pm+pt	NA
Protected Phases	8	8	2	1	6
Permitted Phases	8	8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	10.0	5.0	10.0
Minimum Split (s)	24.0	24.0	41.0	9.5	42.0
Total Split (s)	46.0	46.0	41.0	19.0	60.0
Total Split (%)	43.4%	43.4%	38.7%	17.9%	56.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
v/c Ratio	0.34	0.10	0.34	0.07	0.28
Control Delay	33.2	12.5	7.5	3.2	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	12.5	7.5	3.2	3.9
Queue Length 50th (m)	9.8	0.0	26.9	1.4	15.1
Queue Length 95th (m)	21.5	6.1	51.9	4.3	30.5
Internal Link Dist (m)	723.8		106.7		467.0
Turn Bay Length (m)		30.0		100.0	
Base Capacity (vph)	767	788	1228	752	1400
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	0.09	0.03	0.34	0.06	0.28

Intersection Summary
Cycle Length: 106
Actuated Cycle Length: 76.3
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Weber St N & Randall Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	24	310	108	45	399
Future Volume (vph)	72	24	310	108	45	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1394	1413	1727		1606	1773
Flt Permitted	0.95	1.00	1.00		0.44	1.00
Satd. Flow (perm)	1394	1413	1727		751	1773
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	24	310	108	45	399
RTOR Reduction (vph)	0	21	6	0	0	0
Lane Group Flow (vph)	72	3	412	0	45	399
Confl. Peds. (#/hr)				6	6	
Heavy Vehicles (%)	28%	13%	4%	5%	11%	6%
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	2		1	6
Permitted Phases	8	8			6	
Actuated Green, G (s)	8.1	8.1	51.3		59.1	59.1
Effective Green, g (s)	10.1	10.1	53.3		59.1	61.1
Actuated g/C Ratio	0.13	0.13	0.67		0.75	0.77
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	177	180	1162		601	1367
v/s Ratio Prot	c0.05	0.00	c0.24		0.00	c0.23
v/s Ratio Perm					0.05	
v/c Ratio	0.41	0.02	0.35		0.07	0.29
Uniform Delay, d1	31.8	30.2	5.6		3.0	2.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.0	0.8		0.1	0.5
Delay (s)	33.3	30.2	6.4		3.1	3.2
Level of Service	C	C	A		A	A
Approach Delay (s)	32.6		6.4			3.2
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

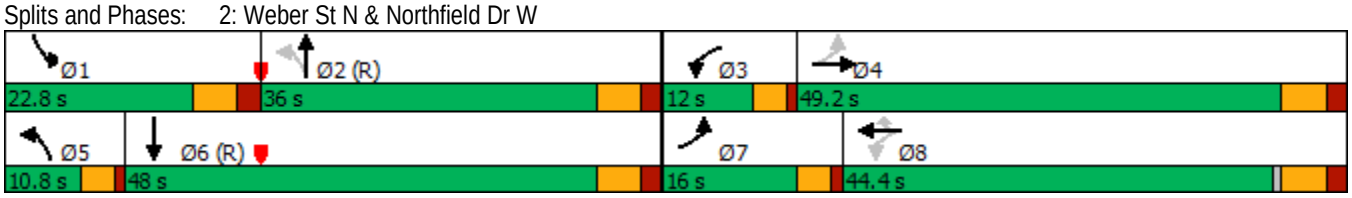
c Critical Lane Group

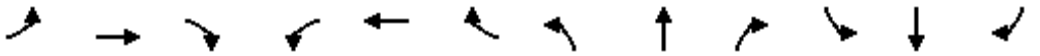
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	145	905	140	558	122	31	153	161	349
Future Volume (vph)	145	905	140	558	122	31	153	161	349
Lane Group Flow (vph)	145	989	140	558	122	31	252	161	464
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2			
Minimum Split (s)	9.5	44.4	9.0	44.4	44.4	9.5	36.0	13.0	36.0
Total Split (s)	16.0	49.2	12.0	44.4	44.4	10.8	36.0	22.8	48.0
Total Split (%)	13.3%	41.0%	10.0%	37.0%	37.0%	9.0%	30.0%	19.0%	40.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes								
v/c Ratio	0.41	0.81	0.81	0.49	0.21	0.10	0.29	0.34	0.40
Control Delay	21.7	39.7	54.8	32.8	2.8	20.1	21.9	47.3	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	39.7	54.8	32.8	2.8	20.1	21.9	47.3	26.7
Queue Length 50th (m)	20.0	113.7	19.4	57.0	0.0	4.2	15.4	18.5	40.3
Queue Length 95th (m)	33.4	141.7	#51.8	74.5	7.5	10.1	27.2	29.4	55.3
Internal Link Dist (m)		607.0		127.2			507.4		212.4
Turn Bay Length (m)	90.0		45.0		65.0	95.0		82.5	
Base Capacity (vph)	355	1219	173	1147	572	306	861	480	1166
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	0.41	0.81	0.81	0.49	0.21	0.10	0.29	0.34	0.40

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 15.6 (13%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 105
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Weber St N & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	905	84	140	558	122	31	153	99	161	349	115
Future Volume (vph)	145	905	84	140	558	122	31	153	99	161	349	115
Ideal Flow (vphpl)	1775	1775	1775	1755	1900	1750	1755	1775	1775	1775	1775	1775
Grade (%)		0%			0%			0%			-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1667	3223		1555	3341	1371	1593	2961		3067	3109	
Flt Permitted	0.29	1.00		0.12	1.00	1.00	0.49	1.00		0.95	1.00	
Satd. Flow (perm)	501	3223		203	3341	1371	814	2961		3067	3109	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	145	905	84	140	558	122	31	153	99	161	349	115
RTOR Reduction (vph)	0	6	0	0	0	80	0	73	0	0	27	0
Lane Group Flow (vph)	145	983	0	140	558	42	31	179	0	161	437	0
Confl. Peds. (#/hr)	3		16	16		3	16		14	14		16
Heavy Vehicles (%)	0%	2%	1%	6%	6%	4%	3%	6%	3%	6%	2%	6%
Bus Blockages (#/hr)	0	0	0	0	4	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	55.2	43.2		47.2	39.2	39.2	36.8	30.0		16.8	42.0	
Effective Green, g (s)	55.2	45.2		47.2	41.2	41.2	36.8	32.0		18.8	44.0	
Actuated g/C Ratio	0.46	0.38		0.39	0.34	0.34	0.31	0.27		0.16	0.37	
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	347	1213		169	1147	470	293	789		480	1139	
v/s Ratio Prot	c0.04	c0.31		c0.05	0.17		0.01	0.06		c0.05	c0.14	
v/s Ratio Perm	0.15			0.27		0.03	0.03					
v/c Ratio	0.42	0.81		0.83	0.49	0.09	0.11	0.23		0.34	0.38	
Uniform Delay, d1	20.4	33.6		27.2	31.1	26.7	29.4	34.3		45.0	28.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.7	5.9		35.3	1.5	0.4	0.7	0.7		1.9	1.0	
Delay (s)	24.0	39.5		62.5	32.5	27.1	30.1	35.0		46.9	29.0	
Level of Service	C	D		E	C	C	C	D		D	C	
Approach Delay (s)		37.5			36.8			34.5			33.6	
Approach LOS		D			D			C			C	

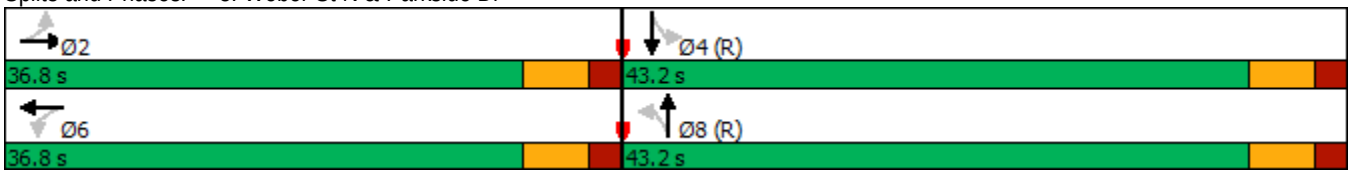
Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	90	167	78	191	16	180	30	358
Future Volume (vph)	90	167	78	191	16	180	30	358
Lane Group Flow (vph)	90	216	78	204	16	253	30	543
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Minimum Split (s)	36.8	36.8	36.8	36.8	43.2	43.2	43.2	43.2
Total Split (s)	36.8	36.8	36.8	36.8	43.2	43.2	43.2	43.2
Total Split (%)	46.0%	46.0%	46.0%	46.0%	54.0%	54.0%	54.0%	54.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	6.0	4.0	6.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.22	0.33	0.20	0.31	0.05	0.18	0.07	0.36
Control Delay	17.2	16.2	16.8	17.1	12.4	8.4	12.4	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	16.2	16.8	17.1	12.4	8.4	12.4	9.4
Queue Length 50th (m)	9.1	20.3	7.8	20.8	1.4	7.8	2.5	17.8
Queue Length 95th (m)	19.6	36.9	17.3	36.8	4.8	14.4	7.2	28.7
Internal Link Dist (m)		315.6		475.0		572.0		507.4
Turn Bay Length (m)	25.0		15.0		25.0		25.0	
Base Capacity (vph)	408	648	399	664	304	1383	451	1489
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.33	0.20	0.31	0.05	0.18	0.07	0.36

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 42.7 (53%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed

Splits and Phases: 3: Weber St N & Parkside Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	167	49	78	191	13	16	180	73	30	358	185
Future Volume (vph)	90	167	49	78	191	13	16	180	73	30	358	185
Ideal Flow (vphpl)	1775	1650	1650	1755	1650	1650	1650	1650	1650	1650	1650	1650
Total Lost time (s)	4.0	4.0		4.0	4.0		6.0	4.0		6.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1602	1549		1605	1615		1535	2746		1550	2871	
Flt Permitted	0.59	1.00		0.58	1.00		0.40	1.00		0.60	1.00	
Satd. Flow (perm)	997	1549		974	1615		654	2746		971	2871	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	90	167	49	78	191	13	16	180	73	30	358	185
RTOR Reduction (vph)	0	13	0	0	3	0	0	37	0	0	83	0
Lane Group Flow (vph)	90	203	0	78	201	0	16	216	0	30	460	0
Confl. Peds. (#/hr)	1		13	13		1	3					3
Heavy Vehicles (%)	4%	1%	2%	2%	0%	0%	0%	7%	9%	0%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	30.8	30.8		30.8	30.8		37.2	37.2		37.2	37.2	
Effective Green, g (s)	32.8	32.8		32.8	32.8		37.2	39.2		37.2	39.2	
Actuated g/C Ratio	0.41	0.41		0.41	0.41		0.47	0.49		0.47	0.49	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	408	635		399	662		304	1345		451	1406	
v/s Ratio Prot		c0.13			0.12			0.08			c0.16	
v/s Ratio Perm	0.09			0.08			0.02			0.03		
v/c Ratio	0.22	0.32		0.20	0.30		0.05	0.16		0.07	0.33	
Uniform Delay, d1	15.3	16.0		15.1	15.9		11.7	11.3		11.8	12.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	1.3		1.1	1.2		0.3	0.3		0.3	0.6	
Delay (s)	16.6	17.4		16.2	17.1		12.1	11.5		12.1	13.0	
Level of Service	B	B		B	B		B	B		B	B	
Approach Delay (s)		17.1			16.8			11.6			13.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	15	1134	393	732	16	10	215	393	12
Future Volume (vph)	15	1134	393	732	16	10	215	393	12
Lane Group Flow (vph)	15	1158	393	941	0	26	215	393	16
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4	3	8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	40.0	40.0	5.0	40.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	46.0	46.0	9.5	46.0	34.0	34.0	34.0	34.0	34.0
Total Split (s)	49.0	49.0	29.0	78.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	40.8%	40.8%	24.2%	65.0%	35.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?									
Recall Mode	Max	Max	None	Max	None	None	None	None	None
v/c Ratio	0.08	0.98	0.98	0.49		0.06	0.36	0.97	0.03
Control Delay	25.6	60.1	76.1	12.8		29.2	5.8	79.1	23.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	25.6	60.1	76.1	12.8		29.2	5.8	79.1	23.7
Queue Length 50th (m)	2.4	147.9	81.4	59.2		4.5	0.0	95.8	2.1
Queue Length 95th (m)	7.5	#198.7	#147.5	75.1		11.5	17.6	#161.0	7.5
Internal Link Dist (m)		123.1		82.8		475.0			37.0
Turn Bay Length (m)	35.0		25.0					26.0	
Base Capacity (vph)	199	1177	400	1907		441	592	405	498
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	0.08	0.98	0.98	0.49		0.06	0.36	0.97	0.03

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 110
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Parkside Dr & Northfield Dr W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1134	24	393	732	209	16	10	215	393	12	4
Future Volume (vph)	15	1134	24	393	732	209	16	10	215	393	12	4
Ideal Flow (vphpl)	1775	1775	1775	1775	1775	1775	1650	1650	1750	1775	1650	1650
Grade (%)		0%			0%			0%			-2%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.97			1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1663	3136		1635	3057			1524	1408	1645	1565	
Flt Permitted	0.30	1.00		0.09	1.00			0.89	1.00	0.74	1.00	
Satd. Flow (perm)	532	3136		146	3057			1393	1408	1282	1565	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	15	1134	24	393	732	209	16	10	215	393	12	4
RTOR Reduction (vph)	0	1	0	0	22	0	0	0	147	0	3	0
Lane Group Flow (vph)	15	1157	0	393	919	0	0	26	68	393	13	0
Confl. Peds. (#/hr)	6		18	18		6	10		3	3		10
Heavy Vehicles (%)	0%	5%	8%	2%	5%	4%	0%	8%	2%	2%	1%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	2	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	43.0	43.0		72.0	72.0			36.0	36.0	36.0	36.0	
Effective Green, g (s)	45.0	45.0		72.0	74.0			38.0	38.0	38.0	38.0	
Actuated g/C Ratio	0.38	0.38		0.60	0.62			0.32	0.32	0.32	0.32	
Clearance Time (s)	6.0	6.0		4.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	199	1176		397	1885			441	445	405	495	
v/s Ratio Prot		0.37		c0.21	0.30						0.01	
v/s Ratio Perm	0.03			c0.39				0.02	0.05	c0.31		
v/c Ratio	0.08	0.98		0.99	0.49			0.06	0.15	0.97	0.03	
Uniform Delay, d1	24.1	37.1		37.9	12.6			28.5	29.4	40.4	28.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	22.6		42.0	0.9			0.1	0.2	36.8	0.0	
Delay (s)	24.9	59.7		79.9	13.5			28.6	29.6	77.3	28.3	
Level of Service	C	E		E	B			C	C	E	C	
Approach Delay (s)		59.3			33.1			29.5			75.4	
Approach LOS		E			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	48.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.6%	ICU Level of Service	G
Analysis Period (min)	15		

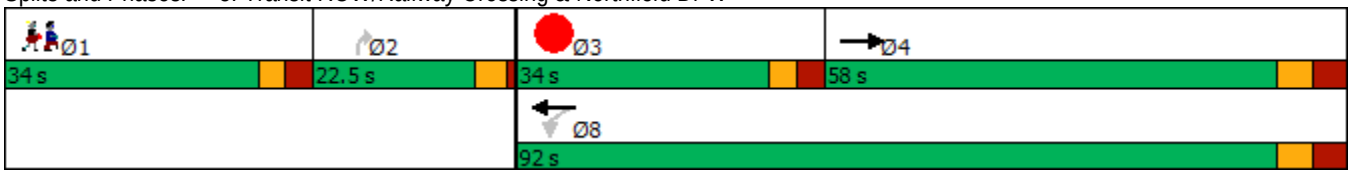
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBR	Ø1	Ø3
Lane Configurations						
Traffic Volume (vph)	1742	6	1334	6		
Future Volume (vph)	1742	6	1334	6		
Lane Group Flow (vph)	1742	6	1334	6		
Turn Type	NA	Perm	NA	Perm		
Protected Phases	4		8		1	3
Permitted Phases		8		2		
Detector Phase	4	8	8	2		
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	7.0	7.0
Minimum Split (s)	50.0	50.0	50.0	22.5	34.0	24.0
Total Split (s)	58.0	92.0	92.0	22.5	34.0	34.0
Total Split (%)	39.1%	62.0%	62.0%	15.2%	23%	23%
Yellow Time (s)	4.0	4.0	4.0	3.5	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	1.0	3.0	3.0
Lost Time Adjust (s)	-4.0	0.0	-4.0	0.0		
Total Lost Time (s)	4.0	8.0	4.0	4.5		
Lead/Lag	Lag			Lag	Lead	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	Max
v/c Ratio	0.87	0.23	0.56	0.01		
Control Delay	44.7	44.0	16.1	0.0		
Queue Delay	0.7	0.0	0.0	0.0		
Total Delay	45.4	44.0	16.1	0.0		
Queue Length 50th (m)	194.6	0.9	135.8	0.0		
Queue Length 95th (m)	#230.6	6.8	158.9	0.0		
Internal Link Dist (m)	82.8		6.9			
Turn Bay Length (m)						
Base Capacity (vph)	1996	26	2366	435		
Starvation Cap Reductn	71	0	0	0		
Spillback Cap Reductn	0	0	0	0		
Storage Cap Reductn	0	0	0	0		
Reduced v/c Ratio	0.90	0.23	0.56	0.01		

Intersection Summary

Cycle Length: 148.5
Actuated Cycle Length: 134.9
Natural Cycle: 135
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Transit ROW/Railway Crossing & Northfield Dr W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1742	0	6	1334	0	0	0	6	0	0	0
Future Volume (vph)	0	1742	0	6	1334	0	0	0	6	0	0	0
Ideal Flow (vphpl)	1775	1900	1750	1775	1900	1750	1775	1900	1750	1775	1900	1750
Total Lost time (s)		4.0		8.0	4.0				4.5			
Lane Util. Factor		0.91		1.00	0.95				1.00			
Frpb, ped/bikes		1.00		1.00	1.00				0.93			
Flpb, ped/bikes		1.00		1.00	1.00				1.00			
Frt		1.00		1.00	1.00				0.86			
Flt Protected		1.00		0.95	1.00				1.00			
Satd. Flow (prot)		4906		832	3570				696			
Flt Permitted		1.00		0.05	1.00				1.00			
Satd. Flow (perm)		4906		41	3570				696			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1742	0	6	1334	0	0	0	6	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	5	0	0	0
Lane Group Flow (vph)	0	1742	0	6	1334	0	0	0	1	0	0	0
Confl. Peds. (#/hr)	19		59	59		19	26		26	26		26
Heavy Vehicles (%)	0%	4%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0					
Turn Type		NA		Perm	NA				Perm			
Protected Phases		4			8							
Permitted Phases				8					2			
Actuated Green, G (s)		50.9		85.4	85.4				18.3			
Effective Green, g (s)		54.9		85.4	89.4				18.3			
Actuated g/C Ratio		0.40		0.62	0.65				0.13			
Clearance Time (s)		8.0		8.0	8.0				4.5			
Vehicle Extension (s)		3.0		3.0	3.0				3.0			
Lane Grp Cap (vph)		1958		25	2321				92			
v/s Ratio Prot		c0.36			c0.37							
v/s Ratio Perm				0.15					c0.00			
v/c Ratio		0.89		0.24	0.57				0.01			
Uniform Delay, d1		38.5		11.6	13.4				51.7			
Progression Factor		1.00		1.00	1.00				1.00			
Incremental Delay, d2		6.5		21.4	1.0				0.2			
Delay (s)		45.0		33.0	14.5				51.9			
Level of Service		D		C	B				D			
Approach Delay (s)		45.0			14.6			51.9			0.0	
Approach LOS		D			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	137.5	Sum of lost time (s)	20.5
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	5.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	206	104	314	106	52	419
Future Vol, veh/h	206	104	314	106	52	419
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	33	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	3	4	0	2	5
Mvmt Flow	206	104	314	106	52	419

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	683	212	0	0	422	0
Stage 1	369	-	-	-	-	-
Stage 2	314	-	-	-	-	-
Critical Hdwy	6.8	6.96	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.33	-	-	2.22	-
Pot Cap-1 Maneuver	387	790	-	-	1134	-
Stage 1	675	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	368	789	-	-	1132	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	687	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.1	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	368	789	1132	-
HCM Lane V/C Ratio	-	-	0.56	0.132	0.046	-
HCM Control Delay (s)	-	-	26.5	10.3	8.3	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	3.3	0.5	0.1	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	47	5	0	206	48	0	5	0	45	14	104
Future Vol, veh/h	106	47	5	0	206	48	0	5	0	45	14	104
Conflicting Peds, #/hr	2	0	0	0	0	2	5	0	3	3	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	10	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	3	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	106	47	5	0	206	48	0	5	0	45	14	104

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	256	0	0	52	0	0	377	518	53	499	496	134
Stage 1	-	-	-	-	-	-	262	262	-	232	232	-
Stage 2	-	-	-	-	-	-	115	256	-	267	264	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1321	-	-	1567	-	-	572	465	1020	472	478	897
Stage 1	-	-	-	-	-	-	747	695	-	756	716	-
Stage 2	-	-	-	-	-	-	883	699	-	743	694	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1319	-	-	1567	-	-	460	425	1018	437	437	892
Mov Cap-2 Maneuver	-	-	-	-	-	-	460	425	-	437	437	-
Stage 1	-	-	-	-	-	-	685	637	-	692	715	-
Stage 2	-	-	-	-	-	-	762	698	-	674	636	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.3	0	13.6	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	425	1319	-	-	1567	-	-	437	794
HCM Lane V/C Ratio	0.012	0.08	-	-	-	-	-	0.103	0.149
HCM Control Delay (s)	13.6	8	0	-	0	-	-	14.2	10.3
HCM Lane LOS	B	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	0.3	0.5

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	90	0	0	248	10	5	7	0	10	13	1
Future Vol, veh/h	2	90	0	0	248	10	5	7	0	10	13	1
Conflicting Peds, #/hr	3	0	3	3	0	3	5	0	2	2	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	2	90	0	0	248	10	5	7	0	10	13	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	261	0	0	93	0	0	362	358	95	356	353	261
Stage 1	-	-	-	-	-	-	97	97	-	256	256	-
Stage 2	-	-	-	-	-	-	265	261	-	100	97	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1315	-	-	1514	-	-	598	572	967	603	575	783
Stage 1	-	-	-	-	-	-	914	819	-	753	699	-
Stage 2	-	-	-	-	-	-	745	696	-	911	819	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1312	-	-	1510	-	-	582	569	963	594	572	778
Mov Cap-2 Maneuver	-	-	-	-	-	-	582	569	-	594	572	-
Stage 1	-	-	-	-	-	-	910	816	-	750	698	-
Stage 2	-	-	-	-	-	-	727	695	-	900	816	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	11.4	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	574	1312	-	-	1510	-	-	588
HCM Lane V/C Ratio	0.021	0.002	-	-	-	-	-	0.041
HCM Control Delay (s)	11.4	7.7	0	-	0	-	-	11.4
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	1153	687	37	16	129
Future Vol, veh/h	4	1153	687	37	16	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	7
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	5	5	0	13	0
Mvmt Flow	4	1153	687	37	16	129

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	724	0	-	0	1291	362
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	585	-
Critical Hdwy	4.1	-	-	-	7.06	6.9
Critical Hdwy Stg 1	-	-	-	-	6.06	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	2.2	-	-	-	3.63	3.3
Pot Cap-1 Maneuver	888	-	-	-	141	641
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	490	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	888	-	-	-	139	641
Mov Cap-2 Maneuver	-	-	-	-	139	-
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	490	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	888	-	-	-	139	641
HCM Lane V/C Ratio	0.005	-	-	-	0.115	0.201
HCM Control Delay (s)	9.1	0.1	-	-	34.2	12
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.7

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1695	53	0	1307	219	0	0	17	0	0	33
Future Vol, veh/h	0	1695	53	0	1307	219	0	0	17	0	0	33
Conflicting Peds, #/hr	3	0	3	3	0	3	10	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	7	0	0	3	5	0	0	0	0	0	9
Mvmt Flow	0	1695	53	0	1307	219	0	0	17	0	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	877	-	-	776
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	3.39
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	254	0	0	325
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	253	-	-	322
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	20.3	17.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	253	-	-	-	-	322
HCM Lane V/C Ratio	0.067	-	-	-	-	0.102
HCM Control Delay (s)	20.3	-	-	-	-	17.5
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.3

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	22	5	0	0
Future Vol, veh/h	0	8	22	5	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	8	22	5	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	50	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	964	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	951	1090	1635	-	-	-
Mov Cap-2 Maneuver	951	-	-	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.3	5.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1635	-	1090	-	-
HCM Lane V/C Ratio	0.013	-	0.007	-	-
HCM Control Delay (s)	7.2	0	8.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	11	27	8	0
Future Vol, veh/h	0	17	11	27	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	17	11	27	8	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	57	8	8	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	955	1080	1625	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	948	1080	1625	-	-	-
Mov Cap-2 Maneuver	948	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	2.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1625	-	1080	-	-
HCM Lane V/C Ratio	0.007	-	0.016	-	-
HCM Control Delay (s)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	11	27	8	0
Future Vol, veh/h	0	17	11	27	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	17	11	27	8	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	57	8	8	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	955	1080	1625	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	948	1080	1625	-	-	-
Mov Cap-2 Maneuver	948	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	2.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1625	-	1080	-	-
HCM Lane V/C Ratio	0.007	-	0.016	-	-
HCM Control Delay (s)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	3	117	0	5	8	33	0	0	25	0
Future Vol, veh/h	0	0	3	117	0	5	8	33	0	0	25	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	3	117	0	5	8	33	0	0	25	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	77	74	25	76	74	33	25	0	0	33	0	0
Stage 1	25	25	-	49	49	-	-	-	-	-	-	-
Stage 2	52	49	-	27	25	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	917	820	1057	919	820	1046	1603	-	-	1592	-	-
Stage 1	998	878	-	969	858	-	-	-	-	-	-	-
Stage 2	966	858	-	996	878	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	909	816	1057	913	816	1046	1603	-	-	1592	-	-
Mov Cap-2 Maneuver	909	816	-	913	816	-	-	-	-	-	-	-
Stage 1	993	878	-	964	854	-	-	-	-	-	-	-
Stage 2	957	854	-	993	878	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.5	1.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1603	-	-	1057	918	1592	-	-
HCM Lane V/C Ratio	0.005	-	-	0.003	0.133	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0	-	-

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	94	2	0	0	253	0	11	0	0	0
Future Vol, veh/h	0	0	94	2	0	0	253	0	11	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	4	0	0	0	2	0	0	0	0	0
Mvmt Flow	0	0	94	2	0	0	253	0	11	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	7.8	9.3	0
HCM LOS	A	A	A	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	96%	0%	100%	0%
Vol Thru, %	0%	0%	0%	100%
Vol Right, %	4%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	264	94	2	0
LT Vol	253	0	2	0
Through Vol	0	0	0	0
RT Vol	11	94	0	0
Lane Flow Rate	264	94	2	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0.313	0.102	0.003	0
Departure Headway (Hd)	4.269	3.917	4.813	4.381
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	840	920	747	0
Service Time	2.306	1.917	2.817	2.381
HCM Lane V/C Ratio	0.314	0.102	0.003	0
HCM Control Delay	9.3	7.4	7.8	7.4
HCM Lane LOS	A	A	A	N
HCM 95th-tile Q	1.3	0.3	0	0

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	8	0	6	198	0	87	70	169	16	23	66	7
Future Vol, veh/h	8	0	6	198	0	87	70	169	16	23	66	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-2	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	6	0
Mvmt Flow	8	0	6	198	0	87	70	169	16	23	66	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	477	441	70	436	436	177	73	0	0	185	0	0
Stage 1	116	116	-	317	317	-	-	-	-	-	-	-
Stage 2	361	325	-	119	119	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	502	513	998	534	517	871	1540	-	-	1402	-	-
Stage 1	894	803	-	698	658	-	-	-	-	-	-	-
Stage 2	662	653	-	890	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	429	479	998	504	482	871	1540	-	-	1402	-	-
Mov Cap-2 Maneuver	429	479	-	504	482	-	-	-	-	-	-	-
Stage 1	848	789	-	662	624	-	-	-	-	-	-	-
Stage 2	565	620	-	870	787	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	17.1	2	1.8
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1540	-	-	568	578	1402	-	-
HCM Lane V/C Ratio	0.045	-	-	0.025	0.493	0.016	-	-
HCM Control Delay (s)	7.4	0	-	11.5	17.1	7.6	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	2.7	0.1	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	146	0	0	88	0	167	67	0	263	7
Future Vol, veh/h	0	0	146	0	0	88	0	167	67	0	263	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-2	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	9	0	0	5	0
Mvmt Flow	0	0	146	0	0	88	0	167	67	0	263	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	512	501	267	541	471	201	270	0	0	234	0	0
Stage 1	267	267	-	201	201	-	-	-	-	-	-	-
Stage 2	245	234	-	340	270	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	476	475	777	455	494	845	1305	-	-	1345	-	-
Stage 1	743	692	-	805	739	-	-	-	-	-	-	-
Stage 2	763	715	-	679	690	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	426	475	777	369	494	845	1305	-	-	1345	-	-
Mov Cap-2 Maneuver	426	475	-	369	494	-	-	-	-	-	-	-
Stage 1	743	692	-	805	739	-	-	-	-	-	-	-
Stage 2	684	715	-	551	690	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	9.8	0	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1305	-	-	777	845	1345	-	-
HCM Lane V/C Ratio	-	-	-	0.188	0.104	-	-	-
HCM Control Delay (s)	0	-	-	10.7	9.8	0	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	93	6	0	249	4	9	0	0	1	0	0
Future Vol, veh/h	1	93	6	0	249	4	9	0	0	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	4	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	1	93	6	0	249	4	9	0	0	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	253	0	0	99	0	0	349	351	96	349	352	251
Stage 1	-	-	-	-	-	-	98	98	-	251	251	-
Stage 2	-	-	-	-	-	-	251	253	-	98	101	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1324	-	-	1507	-	-	609	577	966	609	576	793
Stage 1	-	-	-	-	-	-	913	818	-	758	703	-
Stage 2	-	-	-	-	-	-	758	701	-	913	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1324	-	-	1507	-	-	608	576	966	608	575	793
Mov Cap-2 Maneuver	-	-	-	-	-	-	608	576	-	608	575	-
Stage 1	-	-	-	-	-	-	912	817	-	757	703	-
Stage 2	-	-	-	-	-	-	758	701	-	912	814	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	608	1324	-	-	1507	-	-	608
HCM Lane V/C Ratio	0.015	0.001	-	-	-	-	-	0.002
HCM Control Delay (s)	11	7.7	0	-	0	-	-	10.9
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1	1	1	1	1	0	1	0	0	0	0	0
Stage 1	1	1	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1027	899	1090	1027	899	-	1635	-	-	-	-	-
Stage 1	1027	899	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1027	899	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	899	1090	1027	899	-	1635	-	-	-	-	-
Mov Cap-2 Maneuver	-	899	-	1027	899	-	-	-	-	-	-	-
Stage 1	1027	899	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1027	899	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1635	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	0	0	0	0	2
Future Vol, veh/h	11	0	0	0	0	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	0	0	0	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.2	0	6.3
HCM LOS	A	-	A

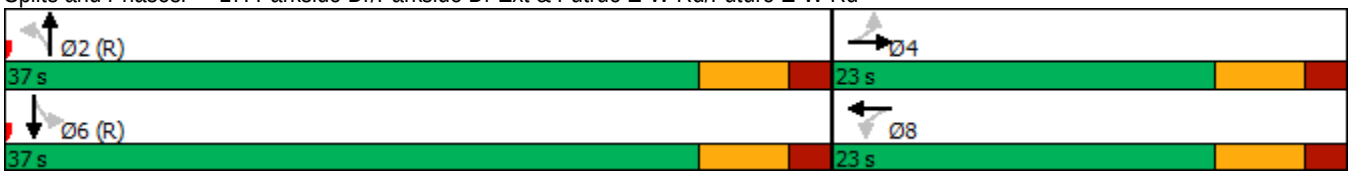
Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	0%	100%	0%
Vol Thru, %	100%	0%	0%
Vol Right, %	0%	0%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	11	2
LT Vol	0	11	0
Through Vol	0	0	0
RT Vol	0	0	2
Lane Flow Rate	0	11	2
Geometry Grp	1	1	1
Degree of Util (X)	0	0.013	0.002
Departure Headway (Hd)	3.921	4.104	3.32
Convergence, Y/N	Yes	Yes	Yes
Cap	0	877	1083
Service Time	1.927	2.104	1.325
HCM Lane V/C Ratio	0	0.013	0.002
HCM Control Delay	6.9	7.2	6.3
HCM Lane LOS	N	A	A
HCM 95th-tile Q	0	0	0

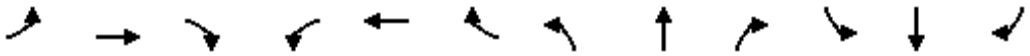
Lane Group	EBT	WBL	WBT	NBL	NBT	Ø6
Lane Configurations						
Traffic Volume (vph)	0	2	0	253	0	
Future Volume (vph)	0	2	0	253	0	
Lane Group Flow (vph)	94	0	2	0	264	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2	6
Permitted Phases		8		2		
Detector Phase	4	8	8	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	28.0
Total Split (s)	23.0	23.0	23.0	37.0	37.0	37.0
Total Split (%)	38.3%	38.3%	38.3%	61.7%	61.7%	62%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0	
Total Lost Time (s)	4.0		4.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.08		0.01		0.24	
Control Delay	0.1		23.0		2.5	
Queue Delay	0.0		0.0		0.0	
Total Delay	0.1		23.0		2.5	
Queue Length 50th (m)	0.0		0.2		5.2	
Queue Length 95th (m)	0.0		1.9		11.4	
Internal Link Dist (m)	81.9		175.6		43.0	
Turn Bay Length (m)						
Base Capacity (vph)	1245		414		1086	
Starvation Cap Reductn	0		0		0	
Spillback Cap Reductn	0		0		0	
Storage Cap Reductn	0		0		0	
Reduced v/c Ratio	0.08		0.00		0.24	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 17: Parkside Dr/Parkside Dr Ext & Futrue E-W Rd/Future E-W Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	94	2	0	0	253	0	11	0	0	0
Future Volume (vph)	0	0	94	2	0	0	253	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			0%			0%			0%	
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			1.00				
Frt		0.86			1.00			0.99				
Flt Protected		1.00			0.95			0.95				
Satd. Flow (prot)		1578			1785			1749				
Flt Permitted		1.00			0.70			0.74				
Satd. Flow (perm)		1578			1308			1360				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	94	2	0	0	253	0	11	0	0	0
RTOR Reduction (vph)	0	84	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	0	10	0	0	2	0	0	251	0	0	0	0
Heavy Vehicles (%)	0%	0%	4%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA				
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		4.6			4.6			43.4				
Effective Green, g (s)		6.6			6.6			45.4				
Actuated g/C Ratio		0.11			0.11			0.76				
Clearance Time (s)		6.0			6.0			6.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		173			143			1029				
v/s Ratio Prot		c0.01										
v/s Ratio Perm					0.00			c0.18				
v/c Ratio		0.06			0.01			0.24				
Uniform Delay, d1		23.9			23.8			2.2				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.1			0.0			0.6				
Delay (s)		24.1			23.8			2.7				
Level of Service		C			C			A				
Approach Delay (s)		24.1			23.8			2.7			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

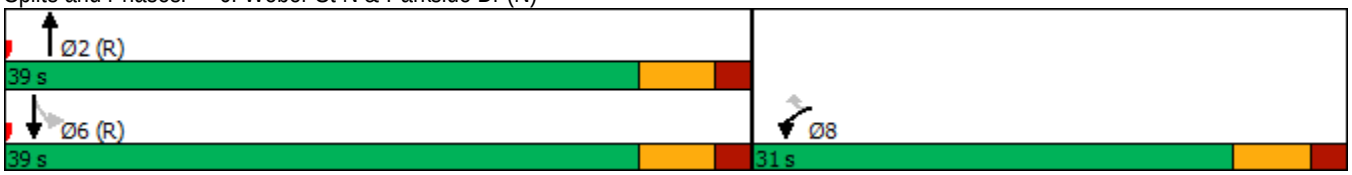
c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	206	104	314	52	419
Future Volume (vph)	206	104	314	52	419
Lane Group Flow (vph)	206	104	420	52	419
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		8		6	
Detector Phase	8	8	2	6	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	30.0	30.0	30.0
Minimum Split (s)	31.0	31.0	36.0	36.0	36.0
Total Split (s)	31.0	31.0	39.0	39.0	39.0
Total Split (%)	44.3%	44.3%	55.7%	55.7%	55.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.54	0.26	0.20	0.09	0.20
Control Delay	28.5	6.2	4.4	6.1	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	6.2	4.4	6.1	5.6
Queue Length 50th (m)	25.1	0.0	7.6	2.2	10.1
Queue Length 95th (m)	40.2	10.0	16.3	7.5	20.0
Internal Link Dist (m)	67.8		212.4		232.9
Turn Bay Length (m)				33.0	
Base Capacity (vph)	643	614	2069	571	2090
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	0.17	0.20	0.09	0.20

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 6: Weber St N & Parkside Dr (N)





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	206	104	314	106	52	419
Future Volume (vph)	206	104	314	106	52	419
Ideal Flow (vphpl)	1775	1750	1775	1775	1775	1775
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1668	1428	3097		1631	3176
Flt Permitted	0.95	1.00	1.00		0.51	1.00
Satd. Flow (perm)	1668	1428	3097		870	3176
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	206	104	314	106	52	419
RTOR Reduction (vph)	0	80	32	0	0	0
Lane Group Flow (vph)	206	24	388	0	52	419
Confl. Peds. (#/hr)				2	2	
Heavy Vehicles (%)	0%	3%	4%	0%	2%	5%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	13.9	13.9	44.1		44.1	44.1
Effective Green, g (s)	15.9	15.9	46.1		46.1	46.1
Actuated g/C Ratio	0.23	0.23	0.66		0.66	0.66
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	378	324	2039		572	2091
v/s Ratio Prot	c0.12		0.13			c0.13
v/s Ratio Perm		0.02			0.06	
v/c Ratio	0.54	0.07	0.19		0.09	0.20
Uniform Delay, d1	23.9	21.3	4.7		4.3	4.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.6	0.1	0.2		0.3	0.2
Delay (s)	25.5	21.4	4.9		4.7	4.9
Level of Service	C	C	A		A	A
Approach Delay (s)	24.1		4.9			4.9
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

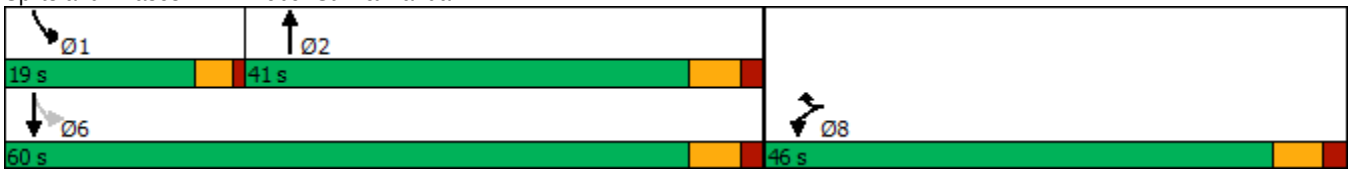
c Critical Lane Group

Weekday PM Peak Hour

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	295	136	451	28	507
Future Volume (vph)	295	136	451	28	507
Lane Group Flow (vph)	295	136	523	28	507
Turn Type	Prot	Prot	NA	pm+pt	NA
Protected Phases	8	8	2	1	6
Permitted Phases	8	8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	10.0	5.0	10.0
Minimum Split (s)	24.0	24.0	41.0	9.5	42.0
Total Split (s)	46.0	46.0	41.0	19.0	60.0
Total Split (%)	43.4%	43.4%	38.7%	17.9%	56.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	8.0	4.0	4.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
v/c Ratio	0.74	0.28	0.56	0.06	0.46
Control Delay	40.4	6.9	20.2	9.0	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	6.9	20.2	9.0	12.0
Queue Length 50th (m)	48.2	1.7	51.9	1.8	43.9
Queue Length 95th (m)	76.8	14.2	131.9	6.6	90.8
Internal Link Dist (m)	723.8		106.7		467.0
Turn Bay Length (m)		30.0		100.0	
Base Capacity (vph)	651	726	929	536	1105
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	0.45	0.19	0.56	0.05	0.46

Intersection Summary
Cycle Length: 106
Actuated Cycle Length: 90.4
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Weber St N & Randalll Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	295	136	451	72	28	507
Future Volume (vph)	295	136	451	72	28	507
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	8.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1394	1413	1736		1607	1773
Flt Permitted	0.95	1.00	1.00		0.35	1.00
Satd. Flow (perm)	1394	1413	1736		586	1773
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	295	136	451	72	28	507
RTOR Reduction (vph)	0	89	4	0	0	0
Lane Group Flow (vph)	295	47	519	0	28	507
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	28%	13%	6%	5%	11%	6%
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	2		1	6
Permitted Phases	8	8			6	
Actuated Green, G (s)	24.0	24.0	50.3		56.9	56.9
Effective Green, g (s)	26.0	26.0	48.3		56.9	58.9
Actuated g/C Ratio	0.28	0.28	0.52		0.61	0.63
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	390	395	902		387	1124
v/s Ratio Prot	c0.21	0.03	c0.30		0.00	c0.29
v/s Ratio Perm					0.04	
v/c Ratio	0.76	0.12	0.58		0.07	0.45
Uniform Delay, d1	30.6	24.9	15.3		8.2	8.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.1	0.1	2.7		0.1	1.3
Delay (s)	38.7	25.1	17.9		8.3	10.0
Level of Service	D	C	B		A	B
Approach Delay (s)	34.4		17.9			9.9
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

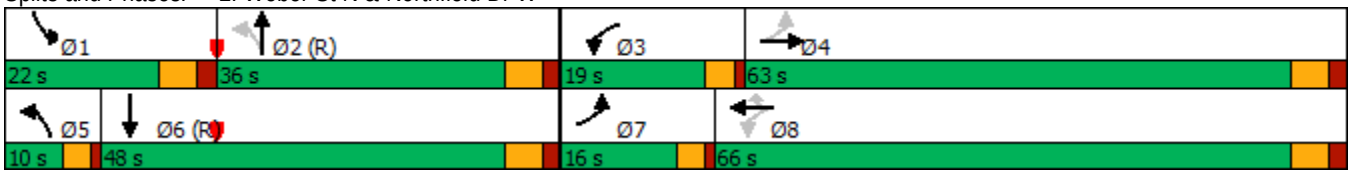
c Critical Lane Group

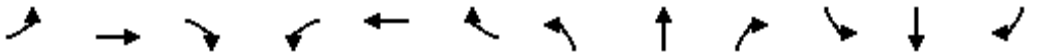
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	120	763	176	1165	154	64	409	258	350
Future Volume (vph)	120	763	176	1165	154	64	409	258	350
Lane Group Flow (vph)	120	832	176	1165	154	64	481	258	528
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2			
Minimum Split (s)	9.0	44.4	9.0	44.4	44.4	9.0	33.6	13.0	33.6
Total Split (s)	16.0	63.0	19.0	66.0	66.0	10.0	36.0	22.0	48.0
Total Split (%)	11.4%	45.0%	13.6%	47.1%	47.1%	7.1%	25.7%	15.7%	34.3%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0	2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	8.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
v/c Ratio	0.55	0.61	0.57	0.80	0.24	0.28	0.67	0.65	0.53
Control Delay	28.3	33.6	23.2	38.5	6.9	32.3	53.3	66.7	36.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	33.6	23.2	38.5	6.9	32.3	53.3	66.7	36.5
Queue Length 50th (m)	16.1	97.3	24.7	151.4	3.8	11.9	66.0	37.4	58.2
Queue Length 95th (m)	31.9	119.9	38.5	181.4	18.3	22.7	86.5	52.9	77.4
Internal Link Dist (m)		607.0		127.2			507.4		212.4
Turn Bay Length (m)	90.0		45.0		65.0	95.0		82.5	
Base Capacity (vph)	217	1363	308	1465	637	232	713	394	990
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	0.55	0.61	0.57	0.80	0.24	0.28	0.67	0.65	0.53

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Pretimed

Splits and Phases: 2: Weber St N & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	763	69	176	1165	154	64	409	72	258	350	178
Future Volume (vph)	120	763	69	176	1165	154	64	409	72	258	350	178
Ideal Flow (vphpl)	1775	1775	1775	1755	1900	1750	1755	1775	1775	1775	1775	1775
Grade (%)		0%			0%			0%			-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	8.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1667	3223		1554	3310	1351	1589	3074		3067	3007	
Flt Permitted	0.10	1.00		0.20	1.00	1.00	0.43	1.00		0.95	1.00	
Satd. Flow (perm)	177	3223		323	3310	1351	724	3074		3067	3007	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	120	763	69	176	1165	154	64	409	72	258	350	178
RTOR Reduction (vph)	0	5	0	0	0	77	0	10	0	0	46	0
Lane Group Flow (vph)	120	827	0	176	1165	77	64	471	0	258	482	0
Confl. Peds. (#/hr)	16		18	18		16	26		13	13		26
Heavy Vehicles (%)	0%	2%	1%	6%	7%	4%	3%	6%	3%	6%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	4	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	69.0	57.0		75.0	60.0	60.0	36.0	30.0		16.0	42.0	
Effective Green, g (s)	69.0	59.0		75.0	62.0	58.0	36.0	32.0		18.0	44.0	
Actuated g/C Ratio	0.49	0.42		0.54	0.44	0.41	0.26	0.23		0.13	0.31	
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	214	1358		304	1465	559	223	702		394	945	
v/s Ratio Prot	0.05	0.26		c0.06	c0.35		0.01	c0.15		c0.08	0.16	
v/s Ratio Perm	0.23			0.25		0.06	0.06					
v/c Ratio	0.56	0.61		0.58	0.80	0.14	0.29	0.67		0.65	0.51	
Uniform Delay, d1	24.9	31.5		20.3	33.5	25.5	40.3	49.2		58.0	39.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.2	2.0		7.8	4.5	0.5	3.2	5.1		8.2	2.0	
Delay (s)	35.1	33.6		28.1	38.1	26.0	43.5	54.3		66.3	41.2	
Level of Service	D	C		C	D	C	D	D		E	D	
Approach Delay (s)		33.8			35.7			53.0			49.4	
Approach LOS		C			D			D			D	

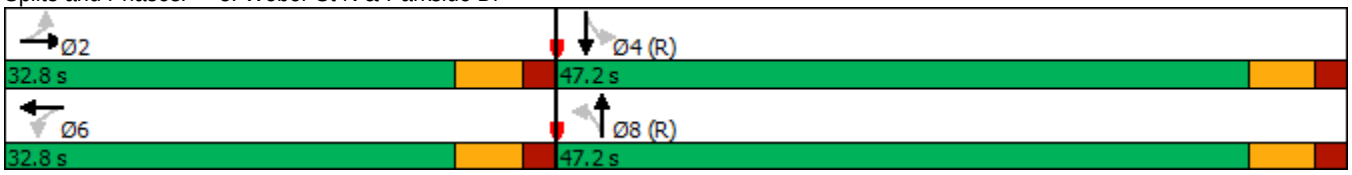
Intersection Summary			
HCM 2000 Control Delay	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

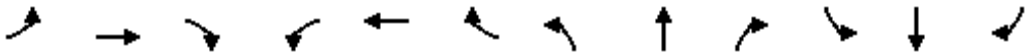
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	150	215	113	261	67	369	35	427
Future Volume (vph)	150	215	113	261	67	369	35	427
Lane Group Flow (vph)	150	264	113	286	67	492	35	560
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Minimum Split (s)	32.8	32.8	32.8	32.8	47.2	47.2	47.2	47.2
Total Split (s)	32.8	32.8	32.8	32.8	47.2	47.2	47.2	47.2
Total Split (%)	41.0%	41.0%	41.0%	41.0%	59.0%	59.0%	59.0%	59.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	6.0	4.0	6.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.52	0.46	0.40	0.49	0.20	0.32	0.09	0.35
Control Delay	28.2	21.6	24.3	22.9	12.4	8.9	10.8	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	21.6	24.3	22.9	12.4	8.9	10.8	9.5
Queue Length 50th (m)	18.6	29.8	13.2	34.0	5.4	17.0	2.7	20.6
Queue Length 95th (m)	38.1	51.4	28.1	57.2	13.1	26.3	7.5	31.1
Internal Link Dist (m)		315.6		475.0		572.0		507.4
Turn Bay Length (m)	25.0		15.0		25.0		25.0	
Base Capacity (vph)	286	571	286	583	338	1541	375	1611
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	0.52	0.46	0.40	0.49	0.20	0.32	0.09	0.35

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 2.4 (3%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed

Splits and Phases: 3: Weber St N & Parkside Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	215	49	113	261	25	67	369	123	35	427	133
Future Volume (vph)	150	215	49	113	261	25	67	369	123	35	427	133
Ideal Flow (vphpl)	1775	1650	1650	1755	1650	1650	1650	1650	1650	1650	1650	1650
Total Lost time (s)	4.0	4.0		4.0	4.0		6.0	4.0		6.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1614	1559		1523	1608		1532	2781		1549	2918	
Flt Permitted	0.47	1.00		0.50	1.00		0.41	1.00		0.45	1.00	
Satd. Flow (perm)	797	1559		797	1608		657	2781		729	2918	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	150	215	49	113	261	25	67	369	123	35	427	133
RTOR Reduction (vph)	0	10	0	0	4	0	0	40	0	0	37	0
Lane Group Flow (vph)	150	254	0	113	282	0	67	452	0	35	523	0
Confl. Peds. (#/hr)	6		20	20		6	9		3	3		9
Heavy Vehicles (%)	3%	1%	2%	7%	0%	0%	0%	6%	8%	0%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	26.8	26.8		26.8	26.8		41.2	41.2		41.2	41.2	
Effective Green, g (s)	28.8	28.8		28.8	28.8		41.2	43.2		41.2	43.2	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.52	0.54		0.52	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	286	561		286	578		338	1501		375	1575	
v/s Ratio Prot		0.16			0.18			0.16			c0.18	
v/s Ratio Perm	c0.19			0.14			0.10			0.05		
v/c Ratio	0.52	0.45		0.40	0.49		0.20	0.30		0.09	0.33	
Uniform Delay, d1	20.2	19.6		19.1	19.9		10.5	10.1		9.9	10.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.7	2.6		4.1	2.9		1.3	0.5		0.5	0.6	
Delay (s)	26.9	22.2		23.2	22.8		11.8	10.6		10.4	10.9	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		23.9			22.9			10.8			10.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	118.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	56	999	288	1405	32	18	396	392	31
Future Volume (vph)	56	999	288	1405	32	18	396	392	31
Lane Group Flow (vph)	56	1029	288	1818	0	50	396	392	46
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases	7	4	3	8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	40.0	5.0	40.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	9.0	46.0	9.5	46.0	34.0	34.0	34.0	34.0	34.0
Total Split (s)	9.0	84.0	20.0	95.0	56.0	56.0	56.0	56.0	56.0
Total Split (%)	5.6%	52.5%	12.5%	59.4%	35.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?									
Recall Mode	None	Max	None	Max	None	None	None	None	None
v/c Ratio	0.58	0.66	0.93	1.02		0.12	0.67	0.98	0.09
Control Delay	43.2	32.2	56.2	58.1		38.9	28.2	92.3	27.4
Queue Delay	0.0	0.0	0.0	32.5		0.0	0.0	0.0	0.0
Total Delay	43.2	32.2	56.2	90.6		38.9	28.2	92.3	27.4
Queue Length 50th (m)	7.0	132.3	44.0	~340.4		11.8	57.5	130.2	7.2
Queue Length 95th (m)	#21.8	157.1	#87.3	#384.0		23.2	99.3	#201.2	17.6
Internal Link Dist (m)		123.1		82.8		475.0			37.0
Turn Bay Length (m)	35.0		25.0					26.0	
Base Capacity (vph)	97	1566	309	1788		433	587	401	506
Starvation Cap Reductn	0	0	0	264		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	0.58	0.66	0.93	1.19		0.12	0.67	0.98	0.09

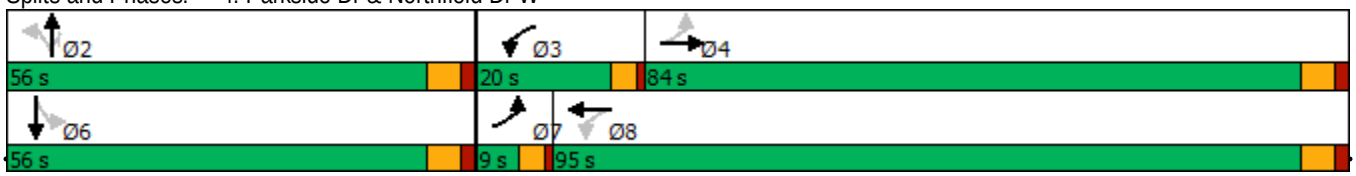
Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Natural Cycle: 150
Control Type: Semi Act-Uncoord

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

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

Splits and Phases: 4: Parkside Dr & Northfield Dr W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	999	30	288	1405	413	32	18	396	392	31	15
Future Volume (vph)	56	999	30	288	1405	413	32	18	396	392	31	15
Ideal Flow (vphpl)	1775	1775	1775	1775	1775	1775	1650	1650	1750	1775	1650	1650
Grade (%)		0%			0%			0%			-2%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	0.98	1.00	
Frt	1.00	1.00		1.00	0.97			1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1668	3128		1633	3055			1550	1387	1622	1529	
Flt Permitted	0.05	1.00		0.16	1.00			0.83	1.00	0.72	1.00	
Satd. Flow (perm)	89	3128		280	3055			1334	1387	1237	1529	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	56	999	30	288	1405	413	32	18	396	392	31	15
RTOR Reduction (vph)	0	1	0	0	17	0	0	0	137	0	10	0
Lane Group Flow (vph)	56	1028	0	288	1801	0	0	50	259	392	36	0
Confl. Peds. (#/hr)	9		25	25		9	2		11	11		2
Heavy Vehicles (%)	0%	5%	8%	2%	5%	3%	0%	5%	2%	2%	3%	0%
Bus Blockages (#/hr)	0	4	0	0	0	0	0	0	2	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	82.8	78.8		98.8	90.8			50.0	50.0	50.0	50.0	
Effective Green, g (s)	82.8	80.8		98.8	92.8			52.0	52.0	52.0	52.0	
Actuated g/C Ratio	0.51	0.50		0.61	0.58			0.32	0.32	0.32	0.32	
Clearance Time (s)	4.0	6.0		4.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	85	1571		306	1763			431	448	400	494	
v/s Ratio Prot	0.02	0.33		c0.09	c0.59						0.02	
v/s Ratio Perm	0.32			0.48				0.04	0.19	c0.32		
v/c Ratio	0.66	0.65		0.94	1.02			0.12	0.58	0.98	0.07	
Uniform Delay, d1	33.1	29.6		24.9	34.0			38.2	45.3	53.9	37.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.9	2.1		36.0	27.1			0.1	1.8	39.2	0.1	
Delay (s)	50.1	31.8		60.9	61.1			38.4	47.1	93.1	37.8	
Level of Service	D	C		E	E			D	D	F	D	
Approach Delay (s)		32.7			61.0			46.1			87.3	
Approach LOS		C			E			D			F	

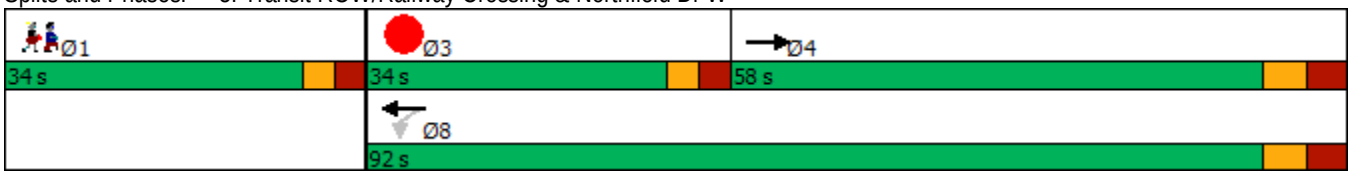
Intersection Summary			
HCM 2000 Control Delay	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	160.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

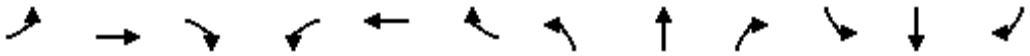
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBT	Ø1	Ø3
Lane Configurations						
Traffic Volume (vph)	1787	3	2106	0		
Future Volume (vph)	1787	3	2106	0		
Lane Group Flow (vph)	1787	0	2109	5		
Turn Type	NA	Perm	NA			
Protected Phases	4		8		1	3
Permitted Phases		8				
Detector Phase	4	8	8			
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		7.0	7.0
Minimum Split (s)	50.0	50.0	50.0		34.0	24.0
Total Split (s)	58.0	92.0	92.0		34.0	34.0
Total Split (%)	46.0%	73.0%	73.0%		27%	27%
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	4.0	4.0	4.0		3.0	3.0
Lost Time Adjust (s)	-4.0		-4.0			
Total Lost Time (s)	4.0		4.0			
Lead/Lag	Lag					Lead
Lead-Lag Optimize?	Yes					Yes
Recall Mode	Max	Max	Max		None	Max
v/c Ratio	0.74		0.76	0.03		
Control Delay	28.2		13.2	0.0		
Queue Delay	0.1		0.0	0.0		
Total Delay	28.3		13.2	0.0		
Queue Length 50th (m)	151.0		208.5	0.0		
Queue Length 95th (m)	172.9		254.3	0.0		
Internal Link Dist (m)	82.8		6.9	82.3		
Turn Bay Length (m)						
Base Capacity (vph)	2413		2780	147		
Starvation Cap Reductn	81		0	0		
Spillback Cap Reductn	0		0	0		
Storage Cap Reductn	0		0	0		
Reduced v/c Ratio	0.77		0.76	0.03		

Intersection Summary
Cycle Length: 126
Actuated Cycle Length: 112.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Transit ROW/Railway Crossing & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑							
Traffic Volume (vph)	0	1787	0	3	2106	0	0	0	5	0	0	0
Future Volume (vph)	0	1787	0	3	2106	0	0	0	5	0	0	0
Ideal Flow (vphpl)	1775	1900	1750	1775	1900	1750	1775	1900	1750	1775	1900	1750
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.91			0.95			1.00				
Frpb, ped/bikes		1.00			1.00			0.54				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			1.00			0.85				
Flt Protected		1.00			1.00			1.00				
Satd. Flow (prot)		4906			3565			0				
Flt Permitted		1.00			0.95			1.00				
Satd. Flow (perm)		4906			3394			0				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1787	0	3	2106	0	0	0	5	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1787	0	0	2109	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	9		79	79		9	32		32	32		32
Heavy Vehicles (%)	0%	4%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0					
Turn Type		NA		Perm	NA							
Protected Phases		4			8							
Permitted Phases				8								
Actuated Green, G (s)		51.3			86.0			0.0				
Effective Green, g (s)		55.3			90.0			0.0				
Actuated g/C Ratio		0.48			0.78			0.00				
Clearance Time (s)		8.0			8.0							
Vehicle Extension (s)		3.0			3.0							
Lane Grp Cap (vph)		2359			2656			0				
v/s Ratio Prot		0.36										
v/s Ratio Perm					c0.62							
v/c Ratio		0.76			0.79			0.00				
Uniform Delay, d1		24.4			7.2			57.5				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		2.3			2.5			0.0				
Delay (s)		26.7			9.7			57.5				
Level of Service		C			A			E				
Approach Delay (s)		26.7			9.7			57.5			0.0	
Approach LOS		C			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	119	110	412	271	133	669
Future Vol, veh/h	119	110	412	271	133	669
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	33	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	7	4	0	2	5
Mvmt Flow	119	110	412	271	133	669

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1152	345	0	0	686	0
Stage 1	551	-	-	-	-	-
Stage 2	601	-	-	-	-	-
Critical Hdwy	6.8	7.04	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.37	-	-	2.22	-
Pot Cap-1 Maneuver	194	637	-	-	904	-
Stage 1	547	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	165	636	-	-	902	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	440	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	41.5	0	1.6
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	165	636	902	-
HCM Lane V/C Ratio	-	-	0.721	0.173	0.147	-
HCM Control Delay (s)	-	-	69	11.8	9.7	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	4.4	0.6	0.5	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	262	29	0	120	43	14	6	0	20	9	95
Future Vol, veh/h	97	262	29	0	120	43	14	6	0	20	9	95
Conflicting Peds, #/hr	14	0	0	0	0	14	15	0	1	1	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	13	0	0	16	0	0	0	0	0	0	0
Mvmt Flow	97	262	29	0	120	43	14	6	0	20	9	95

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	177	0	0	291	0	0	551	648	278	631	641	111
Stage 1	-	-	-	-	-	-	471	471	-	156	156	-
Stage 2	-	-	-	-	-	-	80	177	-	475	485	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1411	-	-	1282	-	-	435	392	766	383	395	927
Stage 1	-	-	-	-	-	-	577	563	-	836	772	-
Stage 2	-	-	-	-	-	-	925	756	-	574	555	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1396	-	-	1282	-	-	354	356	765	350	358	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	354	356	-	350	358	-
Stage 1	-	-	-	-	-	-	529	516	-	758	764	-
Stage 2	-	-	-	-	-	-	809	748	-	520	509	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	15.7	11.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	355	1396	-	-	1282	-	-	350	800
HCM Lane V/C Ratio	0.056	0.069	-	-	-	-	-	0.057	0.13
HCM Control Delay (s)	15.7	7.8	0	-	0	-	-	15.9	10.2
HCM Lane LOS	C	A	A	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	0.2	0.4

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	279	0	0	147	34	0	0	50	21	7	16
Future Vol, veh/h	3	279	0	0	147	34	0	0	50	21	7	16
Conflicting Peds, #/hr	0	0	2	4	0	0	0	0	5	5	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	3	279	0	0	147	34	0	0	50	21	7	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	181	0	0	283	0	0	465	470	288	479	453	164
Stage 1	-	-	-	-	-	-	289	289	-	164	164	-
Stage 2	-	-	-	-	-	-	176	181	-	315	289	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1407	-	-	1291	-	-	511	495	756	500	506	886
Stage 1	-	-	-	-	-	-	723	677	-	843	766	-
Stage 2	-	-	-	-	-	-	831	754	-	700	677	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1407	-	-	1287	-	-	494	492	751	464	503	886
Mov Cap-2 Maneuver	-	-	-	-	-	-	494	492	-	464	503	-
Stage 1	-	-	-	-	-	-	719	673	-	840	766	-
Stage 2	-	-	-	-	-	-	809	754	-	649	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	10.1	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	751	1407	-	-	1287	-	-	570
HCM Lane V/C Ratio	0.067	0.002	-	-	-	-	-	0.077
HCM Control Delay (s)	10.1	7.6	0	-	0	-	-	11.8
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	1063	1393	55	20	94
Future Vol, veh/h	23	1063	1393	55	20	94
Conflicting Peds, #/hr	13	0	0	13	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	7
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	5	0	12	0
Mvmt Flow	23	1063	1393	55	20	94

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1461	0	-	0	2015	737
Stage 1	-	-	-	-	1434	-
Stage 2	-	-	-	-	581	-
Critical Hdwy	4.1	-	-	-	7.04	6.9
Critical Hdwy Stg 1	-	-	-	-	6.04	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	2.2	-	-	-	3.62	3.3
Pot Cap-1 Maneuver	469	-	-	-	45	365
Stage 1	-	-	-	-	169	-
Stage 2	-	-	-	-	495	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	464	-	-	-	39	361
Mov Cap-2 Maneuver	-	-	-	-	39	-
Stage 1	-	-	-	-	147	-
Stage 2	-	-	-	-	490	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	45
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	464	-	-	-	39	361
HCM Lane V/C Ratio	0.05	-	-	-	0.513	0.26
HCM Control Delay (s)	13.2	0.8	-	-	170.2	18.4
HCM Lane LOS	B	A	-	-	F	C
HCM 95th %tile Q(veh)	0.2	-	-	-	1.8	1

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1781	11	0	2064	124	0	0	43	0	0	45
Future Vol, veh/h	0	1781	11	0	2064	124	0	0	43	0	0	45
Conflicting Peds, #/hr	4	0	2	2	0	4	36	0	0	0	0	36
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	6	0	0	3	5	0	0	0	0	0	9
Mvmt Flow	0	1781	11	0	2064	124	0	0	43	0	0	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	898	-	-	1134
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	3.39
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	246	0	0	186
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	246	-	-	180
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	22.7	31.5
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	246	-	-	-	-	180
HCM Lane V/C Ratio	0.175	-	-	-	-	0.25
HCM Control Delay (s)	22.7	-	-	-	-	31.5
HCM Lane LOS	C	-	-	-	-	D
HCM 95th %tile Q(veh)	0.6	-	-	-	-	0.9

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	50	0	7
Future Vol, veh/h	0	0	0	50	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	50	0	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	54	4	7	0	-	0
Stage 1	4	-	-	-	-	-
Stage 2	50	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	959	1085	1627	-	-	-
Stage 1	1024	-	-	-	-	-
Stage 2	978	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	959	1085	1627	-	-	-
Mov Cap-2 Maneuver	959	-	-	-	-	-
Stage 1	1024	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1627	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	0	30	0	0	0
Future Vol, veh/h	50	0	30	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	50	0	30	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	61	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	60	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	950	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	933	1090	1635	-	-	-
Mov Cap-2 Maneuver	933	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	7.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1635	-	933	-	-
HCM Lane V/C Ratio	0.018	-	0.054	-	-
HCM Control Delay (s)	7.2	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	37	37	30	0	0
Future Vol, veh/h	0	37	37	30	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	37	37	30	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	105	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	898	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	877	1090	1635	-	-	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1635	-	1090	-	-
HCM Lane V/C Ratio	0.023	-	0.034	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	11	65	0	0	11	67	0	0	37	0
Future Vol, veh/h	0	0	11	65	0	0	11	67	0	0	37	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	11	65	0	0	11	67	0	0	37	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	126	126	37	132	126	67	37	0	0	67	0	0
Stage 1	37	37	-	89	89	-	-	-	-	-	-	-
Stage 2	89	89	-	43	37	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	852	768	1041	845	768	1002	1587	-	-	1547	-	-
Stage 1	984	868	-	923	825	-	-	-	-	-	-	-
Stage 2	923	825	-	976	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	848	763	1041	831	763	1002	1587	-	-	1547	-	-
Mov Cap-2 Maneuver	848	763	-	831	763	-	-	-	-	-	-	-
Stage 1	977	868	-	917	819	-	-	-	-	-	-	-
Stage 2	917	819	-	966	868	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	9.7	1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1587	-	-	1041	831	1547	-	-
HCM Lane V/C Ratio	0.007	-	-	0.011	0.078	-	-	-
HCM Control Delay (s)	7.3	0	-	8.5	9.7	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	272	10	2	0	172	0	3	0	0	0
Future Vol, veh/h	0	2	272	10	2	0	172	0	3	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	4	0	0	0	4	0	0	0	0	0
Mvmt Flow	0	2	272	10	2	0	172	0	3	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	7.9	9.1	0
HCM LOS	A	A	A	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	83%	0%
Vol Thru, %	0%	1%	17%	100%
Vol Right, %	2%	99%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	175	274	12	0
LT Vol	172	0	10	0
Through Vol	0	2	2	0
RT Vol	3	272	0	0
Lane Flow Rate	175	274	12	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0.226	0.286	0.016	0
Departure Headway (Hd)	4.652	3.761	4.77	4.685
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	761	962	753	0
Service Time	2.742	1.762	2.779	2.708
HCM Lane V/C Ratio	0.23	0.285	0.016	0
HCM Control Delay	9.1	8.3	7.9	7.7
HCM Lane LOS	A	A	A	N
HCM 95th-tile Q	0.9	1.2	0	0

Intersection	
Int Delay, s/veh	17

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	22	161	0	36	184	138	34	103	156	23
Future Vol, veh/h	0	0	22	161	0	36	184	138	34	103	156	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-2	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	0	6	0
Mvmt Flow	0	0	22	161	0	36	184	138	34	103	156	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	915	914	168	908	908	155	179	0	0	172	0	0
Stage 1	374	374	-	523	523	-	-	-	-	-	-	-
Stage 2	541	540	-	385	385	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	256	275	881	258	277	896	1409	-	-	1417	-	-
Stage 1	651	621	-	541	534	-	-	-	-	-	-	-
Stage 2	529	524	-	642	614	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	205	216	881	210	218	896	1409	-	-	1417	-	-
Mov Cap-2 Maneuver	205	216	-	210	218	-	-	-	-	-	-	-
Stage 1	557	571	-	463	457	-	-	-	-	-	-	-
Stage 2	434	448	-	575	564	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	61.5	4.1	2.8
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1409	-	-	881	244	1417	-	-
HCM Lane V/C Ratio	0.131	-	-	0.025	0.807	0.073	-	-
HCM Control Delay (s)	7.9	0	-	9.2	61.5	7.7	0	-
HCM Lane LOS	A	A	-	A	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	6.1	0.2	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	122	0	0	33	0	323	163	0	316	23
Future Vol, veh/h	0	0	122	0	0	33	0	323	163	0	316	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-2	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	9	0	0	4	0
Mvmt Flow	0	0	122	0	0	33	0	323	163	0	316	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	749	814	328	794	744	405	339	0	0	486	0	0
Stage 1	328	328	-	405	405	-	-	-	-	-	-	-
Stage 2	421	486	-	389	339	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	331	315	718	308	345	650	1231	-	-	1087	-	-
Stage 1	689	651	-	626	602	-	-	-	-	-	-	-
Stage 2	614	554	-	639	643	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	314	315	718	256	345	650	1231	-	-	1087	-	-
Mov Cap-2 Maneuver	314	315	-	256	345	-	-	-	-	-	-	-
Stage 1	689	651	-	626	602	-	-	-	-	-	-	-
Stage 2	583	554	-	530	643	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	10.8	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1231	-	-	718	650	1087	-	-
HCM Lane V/C Ratio	-	-	-	0.17	0.051	-	-	-
HCM Control Delay (s)	0	-	-	11	10.8	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	270	30	0	173	1	7	0	0	4	0	1
Future Vol, veh/h	0	270	30	0	173	1	7	0	0	4	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	4	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	0	270	30	0	173	1	7	0	0	4	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	174	0	0	300	0	0	459	459	285	459	474	174
Stage 1	-	-	-	-	-	-	285	285	-	174	174	-
Stage 2	-	-	-	-	-	-	174	174	-	285	300	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1415	-	-	1273	-	-	516	502	759	516	492	875
Stage 1	-	-	-	-	-	-	727	679	-	833	759	-
Stage 2	-	-	-	-	-	-	833	759	-	727	669	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1415	-	-	1273	-	-	515	502	759	516	492	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	515	502	-	516	492	-
Stage 1	-	-	-	-	-	-	727	679	-	833	759	-
Stage 2	-	-	-	-	-	-	832	759	-	727	669	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.1	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	515	1415	-	-	1273	-	-	562
HCM Lane V/C Ratio	0.014	-	-	-	-	-	-	0.009
HCM Control Delay (s)	12.1	0	-	-	0	-	-	11.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	3	3	3	3	3	3	3	3	3	3
Future Vol, veh/h	3	3	3	3	3	3	3	3	3	3	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	3	3	3	3	3	3	3	3	3	3	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	25	23	5	25	23	5	6	0	0	6	0	0
Stage 1	11	11	-	11	11	-	-	-	-	-	-	-
Stage 2	14	12	-	14	12	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	991	874	1084	991	874	1084	1628	-	-	1628	-	-
Stage 1	1015	890	-	1015	890	-	-	-	-	-	-	-
Stage 2	1011	890	-	1011	890	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	983	871	1084	983	871	1084	1628	-	-	1628	-	-
Mov Cap-2 Maneuver	983	871	-	983	871	-	-	-	-	-	-	-
Stage 1	1013	888	-	1013	888	-	-	-	-	-	-	-
Stage 2	1003	888	-	1003	888	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.7	2.4	2.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1628	-	-	972	972	1628	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.009	0.002	-	-
HCM Control Delay (s)	7.2	0	-	8.7	8.7	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Intersection Delay, s/veh	6.5
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	2	2	0	0	10
Future Vol, veh/h	3	2	2	0	0	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	2	2	0	0	10
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.8	7.1	6.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	100%	60%	0%
Vol Thru, %	0%	0%	0%
Vol Right, %	0%	40%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	2	5	10
LT Vol	2	3	0
Through Vol	0	0	0
RT Vol	0	2	10
Lane Flow Rate	2	5	10
Geometry Grp	1	1	1
Degree of Util (X)	0.002	0.005	0.009
Departure Headway (Hd)	4.115	3.801	3.31
Convergence, Y/N	Yes	Yes	Yes
Cap	874	947	1087
Service Time	2.117	1.801	1.311
HCM Lane V/C Ratio	0.002	0.005	0.009
HCM Control Delay	7.1	6.8	6.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0

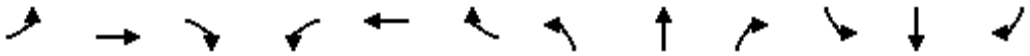
Lane Group	EBT	WBL	WBT	NBL	NBT	Ø6
Lane Configurations						
Traffic Volume (vph)	2	10	2	172	0	
Future Volume (vph)	2	10	2	172	0	
Lane Group Flow (vph)	274	0	12	0	175	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2	6
Permitted Phases		8		2		
Detector Phase	4	8	8	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	23.0	23.0	23.0	37.0	37.0	37.0
Total Split (%)	38.3%	38.3%	38.3%	61.7%	61.7%	62%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.63		0.10		0.19	
Control Delay	10.4		23.1		3.7	
Queue Delay	0.0		0.0		0.0	
Total Delay	10.4		23.1		3.7	
Queue Length 50th (m)	0.2		1.3		3.5	
Queue Length 95th (m)	16.9		4.9		13.2	
Internal Link Dist (m)	81.9		175.6		43.0	
Turn Bay Length (m)						
Base Capacity (vph)	642		256		917	
Starvation Cap Reductn	0		0		0	
Spillback Cap Reductn	0		0		0	
Storage Cap Reductn	0		0		0	
Reduced v/c Ratio	0.43		0.05		0.19	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 17: Parkside Dr & Future E-W Rd & Parkside Dr Ext





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	272	10	2	0	172	0	3	0	0	0
Future Volume (vph)	0	2	272	10	2	0	172	0	3	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			0%			0%			0%	
Total Lost time (s)		6.0			6.0			6.0				
Lane Util. Factor		1.00			1.00			1.00				
Frt		0.87			1.00			1.00				
Flt Protected		1.00			0.96			0.95				
Satd. Flow (prot)		1581			1804			1719				
Flt Permitted		1.00			0.48			0.74				
Satd. Flow (perm)		1581			906			1336				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2	272	10	2	0	172	0	3	0	0	0
RTOR Reduction (vph)	0	238	0	0	0	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	36	0	0	12	0	0	157	0	0	0	0
Heavy Vehicles (%)	0%	0%	4%	0%	0%	0%	4%	0%	0%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA				
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.6			7.6			40.4				
Effective Green, g (s)		7.6			7.6			40.4				
Actuated g/C Ratio		0.13			0.13			0.67				
Clearance Time (s)		6.0			6.0			6.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		200			114			899				
v/s Ratio Prot		c0.02										
v/s Ratio Perm					0.01			c0.12				
v/c Ratio		0.18			0.11			0.17				
Uniform Delay, d1		23.4			23.2			3.6				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.4			0.4			0.4				
Delay (s)		23.9			23.6			4.1				
Level of Service		C			C			A				
Approach Delay (s)		23.9			23.6			4.1			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

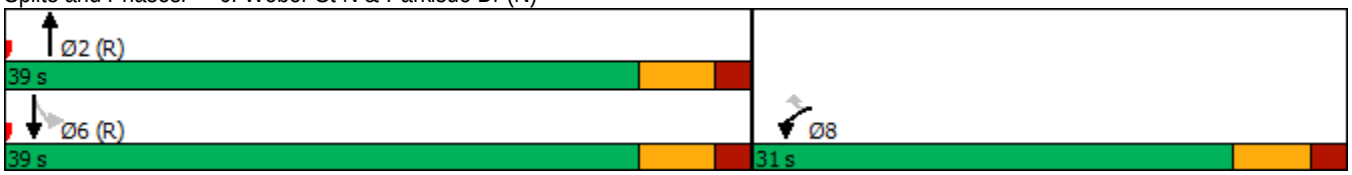
c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	119	110	412	133	669
Future Volume (vph)	119	110	412	133	669
Lane Group Flow (vph)	119	110	683	133	669
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		8		6	
Detector Phase	8	8	2	6	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	30.0	30.0	30.0
Minimum Split (s)	31.0	31.0	36.0	36.0	36.0
Total Split (s)	31.0	31.0	39.0	39.0	39.0
Total Split (%)	44.3%	44.3%	55.7%	55.7%	55.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.39	0.32	0.29	0.27	0.28
Control Delay	28.6	8.0	2.1	6.1	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	8.0	2.1	6.1	4.2
Queue Length 50th (m)	14.7	0.0	1.8	5.3	14.2
Queue Length 95th (m)	27.2	11.5	29.8	15.7	26.2
Internal Link Dist (m)	67.8		212.4		232.9
Turn Bay Length (m)				33.0	
Base Capacity (vph)	643	597	2356	501	2401
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	0.19	0.18	0.29	0.27	0.28

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 6: Weber St N & Parkisde Dr (N)





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	119	110	412	271	133	669
Future Volume (vph)	119	110	412	271	133	669
Ideal Flow (vphpl)	1775	1750	1775	1775	1775	1775
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.94		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1668	1375	3031		1631	3176
Flt Permitted	0.95	1.00	1.00		0.39	1.00
Satd. Flow (perm)	1668	1375	3031		663	3176
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	119	110	412	271	133	669
RTOR Reduction (vph)	0	93	74	0	0	0
Lane Group Flow (vph)	119	17	609	0	133	669
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	0%	7%	4%	0%	2%	5%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	9.1	9.1	48.9		48.9	48.9
Effective Green, g (s)	11.1	11.1	50.9		50.9	50.9
Actuated g/C Ratio	0.16	0.16	0.73		0.73	0.73
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	264	218	2203		482	2309
v/s Ratio Prot	c0.07		0.20			c0.21
v/s Ratio Perm		0.01			0.20	
v/c Ratio	0.45	0.08	0.28		0.28	0.29
Uniform Delay, d1	26.7	25.1	3.3		3.3	3.3
Progression Factor	1.00	1.00	0.82		1.00	1.00
Incremental Delay, d2	1.2	0.2	0.3		1.4	0.3
Delay (s)	27.9	25.3	2.9		4.7	3.6
Level of Service	C	C	A		A	A
Approach Delay (s)	26.6		2.9			3.8
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

2041 Future Total Intersection Capacity Analysis

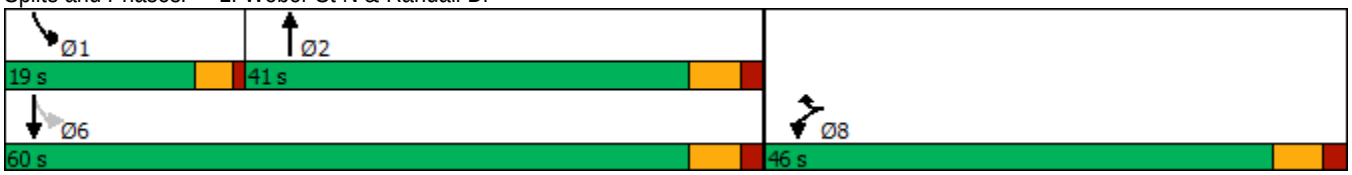
2041

Weekday AM Peak Hour

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	72	24	310	45	399
Future Volume (vph)	72	24	310	45	399
Lane Group Flow (vph)	72	24	418	45	399
Turn Type	Prot	Prot	NA	pm+pt	NA
Protected Phases	8	8	2	1	6
Permitted Phases	8	8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	10.0	5.0	10.0
Minimum Split (s)	24.0	24.0	41.0	9.5	42.0
Total Split (s)	46.0	46.0	41.0	19.0	60.0
Total Split (%)	43.4%	43.4%	38.7%	17.9%	56.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
v/c Ratio	0.34	0.10	0.35	0.07	0.28
Control Delay	33.2	12.5	7.6	3.2	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	12.5	7.6	3.2	3.9
Queue Length 50th (m)	9.8	0.0	27.0	1.4	15.1
Queue Length 95th (m)	21.5	6.1	52.3	4.3	30.5
Internal Link Dist (m)	723.8		106.7		467.0
Turn Bay Length (m)		30.0		100.0	
Base Capacity (vph)	767	788	1211	752	1400
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	0.09	0.03	0.35	0.06	0.28

Intersection Summary
Cycle Length: 106
Actuated Cycle Length: 76.3
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Weber St N & Randall Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	24	310	108	45	399
Future Volume (vph)	72	24	310	108	45	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1394	1413	1703		1606	1773
Flt Permitted	0.95	1.00	1.00		0.44	1.00
Satd. Flow (perm)	1394	1413	1703		751	1773
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	24	310	108	45	399
RTOR Reduction (vph)	0	21	6	0	0	0
Lane Group Flow (vph)	72	3	412	0	45	399
Confl. Peds. (#/hr)				6	6	
Heavy Vehicles (%)	28%	13%	6%	5%	11%	6%
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	2		1	6
Permitted Phases	8	8			6	
Actuated Green, G (s)	8.1	8.1	51.3		59.1	59.1
Effective Green, g (s)	10.1	10.1	53.3		59.1	61.1
Actuated g/C Ratio	0.13	0.13	0.67		0.75	0.77
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	177	180	1146		601	1367
v/s Ratio Prot	c0.05	0.00	c0.24		0.00	c0.23
v/s Ratio Perm					0.05	
v/c Ratio	0.41	0.02	0.36		0.07	0.29
Uniform Delay, d1	31.8	30.2	5.6		3.0	2.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.0	0.9		0.1	0.5
Delay (s)	33.3	30.2	6.5		3.1	3.2
Level of Service	C	C	A		A	A
Approach Delay (s)	32.6		6.5			3.2
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

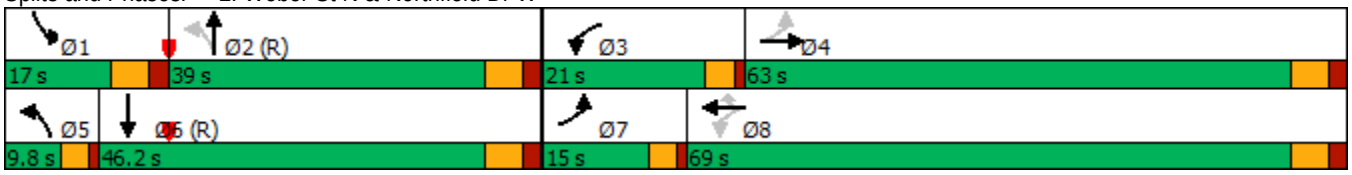
c Critical Lane Group

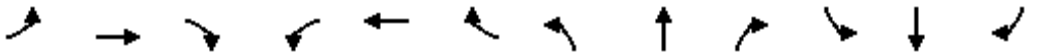
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	145	969	140	620	122	31	153	161	349
Future Volume (vph)	145	969	140	620	122	31	153	161	349
Lane Group Flow (vph)	145	1053	140	620	122	31	252	161	464
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2			
Minimum Split (s)	9.5	44.4	9.0	44.4	44.4	9.5	36.0	13.0	36.0
Total Split (s)	15.0	63.0	21.0	69.0	69.0	9.8	39.0	17.0	46.2
Total Split (%)	10.7%	45.0%	15.0%	49.3%	49.3%	7.0%	27.9%	12.1%	33.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes								
v/c Ratio	0.36	0.77	0.52	0.40	0.17	0.13	0.31	0.58	0.49
Control Delay	17.2	39.2	23.7	25.6	3.3	30.1	26.6	69.7	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	39.2	23.7	25.6	3.3	30.1	26.6	69.7	39.1
Queue Length 50th (m)	19.1	136.0	18.5	61.4	0.0	5.8	18.6	23.6	54.2
Queue Length 95th (m)	30.6	164.6	35.5	77.4	9.8	13.1	31.6	36.1	72.0
Internal Link Dist (m)		607.0		127.2			507.4		212.4
Turn Bay Length (m)	90.0		45.0		65.0	95.0		82.5	
Base Capacity (vph)	403	1363	270	1551	707	243	809	279	952
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	0.36	0.77	0.52	0.40	0.17	0.13	0.31	0.58	0.49

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 105
Control Type: Pretimed

Splits and Phases: 2: Weber St N & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	969	84	140	620	122	31	153	99	161	349	115
Future Volume (vph)	145	969	84	140	620	122	31	153	99	161	349	115
Ideal Flow (vphpl)	1775	1775	1775	1755	1900	1750	1755	1775	1775	1775	1775	1775
Grade (%)		0%			0%			0%			-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1667	3226		1555	3341	1371	1594	2940		3010	3084	
Flt Permitted	0.37	1.00		0.11	1.00	1.00	0.42	1.00		0.95	1.00	
Satd. Flow (perm)	647	3226		182	3341	1371	712	2940		3010	3084	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	145	969	84	140	620	122	31	153	99	161	349	115
RTOR Reduction (vph)	0	5	0	0	0	65	0	74	0	0	23	0
Lane Group Flow (vph)	145	1048	0	140	620	57	31	178	0	161	441	0
Confl. Peds. (#/hr)	3		16	16		3	16		14	14		16
Heavy Vehicles (%)	0%	2%	1%	6%	6%	4%	3%	7%	3%	8%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	4	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	68.0	57.0		78.0	63.0	63.0	38.8	33.0		11.0	40.2	
Effective Green, g (s)	68.0	59.0		78.0	65.0	65.0	38.8	35.0		13.0	42.2	
Actuated g/C Ratio	0.49	0.42		0.56	0.46	0.46	0.28	0.25		0.09	0.30	
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	394	1359		268	1551	636	233	735		279	929	
v/s Ratio Prot	0.03	c0.33		c0.06	0.19		0.01	0.06		c0.05	c0.14	
v/s Ratio Perm	0.15			0.23		0.04	0.03					
v/c Ratio	0.37	0.77		0.52	0.40	0.09	0.13	0.24		0.58	0.47	
Uniform Delay, d1	20.5	34.7		21.9	24.7	21.0	37.4	41.9		60.9	39.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	4.3		7.1	0.8	0.3	1.2	0.8		8.4	1.7	
Delay (s)	23.1	39.0		29.0	25.4	21.2	38.5	42.7		69.3	41.6	
Level of Service	C	D		C	C	C	D	D		E	D	
Approach Delay (s)		37.1			25.4			42.2			48.7	
Approach LOS		D			C			D			D	

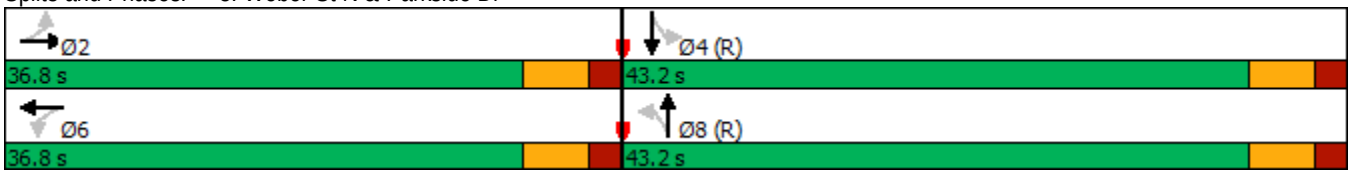
Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

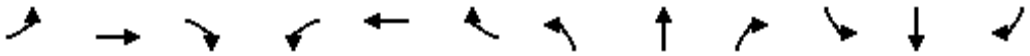
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	90	167	78	191	16	180	30	358
Future Volume (vph)	90	167	78	191	16	180	30	358
Lane Group Flow (vph)	90	216	78	204	16	253	30	543
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Minimum Split (s)	36.8	36.8	36.8	36.8	43.2	43.2	43.2	43.2
Total Split (s)	36.8	36.8	36.8	36.8	43.2	43.2	43.2	43.2
Total Split (%)	46.0%	46.0%	46.0%	46.0%	54.0%	54.0%	54.0%	54.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	6.0	4.0	6.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.22	0.33	0.20	0.31	0.05	0.18	0.07	0.37
Control Delay	17.2	16.2	17.0	17.1	12.4	8.4	12.4	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	16.2	17.0	17.1	12.4	8.4	12.4	9.4
Queue Length 50th (m)	9.1	20.3	7.8	20.8	1.4	7.8	2.5	17.9
Queue Length 95th (m)	19.6	36.9	17.4	36.8	4.8	14.3	7.2	28.8
Internal Link Dist (m)		315.6		475.0		572.0		507.4
Turn Bay Length (m)	25.0		15.0		25.0		25.0	
Base Capacity (vph)	404	648	388	664	304	1386	451	1485
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.33	0.20	0.31	0.05	0.18	0.07	0.37

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 42.7 (53%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed

Splits and Phases: 3: Weber St N & Parkside Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	167	49	78	191	13	16	180	73	30	358	185
Future Volume (vph)	90	167	49	78	191	13	16	180	73	30	358	185
Ideal Flow (vphpl)	1775	1650	1650	1755	1650	1650	1650	1650	1650	1650	1650	1650
Total Lost time (s)	4.0	4.0		4.0	4.0		6.0	4.0		6.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1587	1549		1559	1615		1535	2753		1550	2861	
Flt Permitted	0.59	1.00		0.58	1.00		0.40	1.00		0.60	1.00	
Satd. Flow (perm)	987	1549		946	1615		654	2753		971	2861	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	90	167	49	78	191	13	16	180	73	30	358	185
RTOR Reduction (vph)	0	13	0	0	3	0	0	37	0	0	83	0
Lane Group Flow (vph)	90	203	0	78	201	0	16	216	0	30	460	0
Confl. Peds. (#/hr)	1		13	13		1	3					3
Heavy Vehicles (%)	5%	1%	2%	5%	0%	0%	0%	7%	8%	0%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	30.8	30.8		30.8	30.8		37.2	37.2		37.2	37.2	
Effective Green, g (s)	32.8	32.8		32.8	32.8		37.2	39.2		37.2	39.2	
Actuated g/C Ratio	0.41	0.41		0.41	0.41		0.47	0.49		0.47	0.49	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	404	635		387	662		304	1348		451	1401	
v/s Ratio Prot		c0.13			0.12			0.08			c0.16	
v/s Ratio Perm	0.09			0.08			0.02			0.03		
v/c Ratio	0.22	0.32		0.20	0.30		0.05	0.16		0.07	0.33	
Uniform Delay, d1	15.3	16.0		15.2	15.9		11.7	11.3		11.8	12.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	1.3		1.2	1.2		0.3	0.3		0.3	0.6	
Delay (s)	16.6	17.4		16.3	17.1		12.1	11.5		12.1	13.0	
Level of Service	B	B		B	B		B	B		B	B	
Approach Delay (s)		17.1			16.9			11.6			13.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

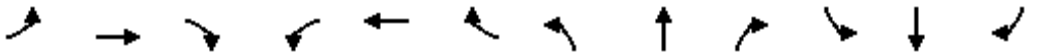
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	15	1198	393	794	16	10	215	393	12
Future Volume (vph)	15	1198	393	794	16	10	215	393	12
Lane Group Flow (vph)	15	1222	393	1003	0	26	215	393	16
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2	1	6		8			4
Permitted Phases	2		6		8		8	4	
Detector Phase	2	2	1	6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	40.0	40.0	5.0	40.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	46.0	46.0	9.5	46.0	34.0	34.0	34.0	34.0	34.0
Total Split (s)	59.0	59.0	34.0	93.0	47.0	47.0	47.0	47.0	47.0
Total Split (%)	42.1%	42.1%	24.3%	66.4%	33.6%	33.6%	33.6%	33.6%	33.6%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?									
Recall Mode	Max	Max	None	Max	None	None	None	None	None
v/c Ratio	0.08	0.99	0.98	0.51		0.06	0.37	0.99	0.03
Control Delay	28.1	65.6	83.0	14.1		34.9	6.3	90.8	28.2
Queue Delay	0.0	0.0	0.0	0.5		0.0	0.0	0.0	0.0
Total Delay	28.1	65.6	83.0	14.6		34.9	6.3	90.8	28.2
Queue Length 50th (m)	2.7	184.6	98.9	74.5		5.4	0.0	114.2	2.5
Queue Length 95th (m)	8.1	#237.9	#167.5	91.3		13.1	19.1	#183.5	8.3
Internal Link Dist (m)		123.1		82.8		475.0			37.0
Turn Bay Length (m)	35.0		25.0					26.0	
Base Capacity (vph)	196	1233	400	1960		429	581	397	479
Starvation Cap Reductn	0	0	0	493		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	0.08	0.99	0.98	0.68		0.06	0.37	0.99	0.03

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Natural Cycle: 110
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Parkside Dr & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1198	24	393	794	209	16	10	215	393	12	4
Future Volume (vph)	15	1198	24	393	794	209	16	10	215	393	12	4
Ideal Flow (vphpl)	1775	1775	1775	1775	1775	1775	1650	1650	1750	1775	1650	1650
Grade (%)		0%			0%			0%			-2%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.97			1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1663	3137		1635	3058			1533	1407	1660	1552	
Flt Permitted	0.29	1.00		0.07	1.00			0.88	1.00	0.74	1.00	
Satd. Flow (perm)	500	3137		121	3058			1397	1407	1294	1552	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	15	1198	24	393	794	209	16	10	215	393	12	4
RTOR Reduction (vph)	0	1	0	0	17	0	0	0	149	0	3	0
Lane Group Flow (vph)	15	1221	0	393	986	0	0	26	66	393	13	0
Confl. Peds. (#/hr)	6		18	18		6	10		3	3		10
Heavy Vehicles (%)	0%	5%	8%	2%	5%	5%	0%	6%	2%	1%	2%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	2	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	53.0	53.0		87.0	87.0			41.0	41.0	41.0	41.0	
Effective Green, g (s)	55.0	55.0		87.0	89.0			43.0	43.0	43.0	43.0	
Actuated g/C Ratio	0.39	0.39		0.62	0.64			0.31	0.31	0.31	0.31	
Clearance Time (s)	6.0	6.0		4.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	196	1232		399	1944			429	432	397	476	
v/s Ratio Prot		0.39		c0.21	0.32						0.01	
v/s Ratio Perm	0.03			c0.40				0.02	0.05	c0.30		
v/c Ratio	0.08	0.99		0.98	0.51			0.06	0.15	0.99	0.03	
Uniform Delay, d1	26.6	42.3		45.6	13.7			34.2	35.3	48.3	33.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	23.6		40.7	0.9			0.1	0.2	42.0	0.0	
Delay (s)	27.4	65.8		86.4	14.7			34.3	35.4	90.3	33.9	
Level of Service	C	E		F	B			C	D	F	C	
Approach Delay (s)		65.3			34.9			35.3			88.1	
Approach LOS		E			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	53.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.6%	ICU Level of Service	G
Analysis Period (min)	15		

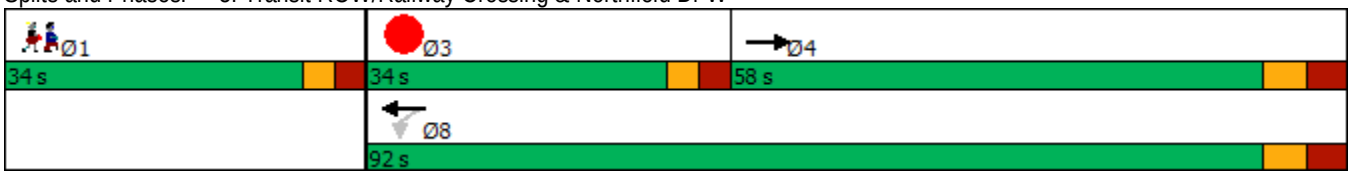
c Critical Lane Group

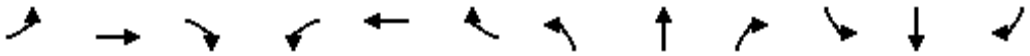
Lane Group	EBT	WBL	WBT	NBT	Ø1	Ø3
Lane Configurations						
Traffic Volume (vph)	1806	6	1396	0		
Future Volume (vph)	1806	6	1396	0		
Lane Group Flow (vph)	1806	0	1402	6		
Turn Type	NA	Perm	NA			
Protected Phases	4		8		1	3
Permitted Phases		8				
Detector Phase	4	8	8			
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		7.0	7.0
Minimum Split (s)	50.0	50.0	50.0		34.0	24.0
Total Split (s)	58.0	92.0	92.0		34.0	34.0
Total Split (%)	46.0%	73.0%	73.0%		27%	27%
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	4.0	4.0	4.0		3.0	3.0
Lost Time Adjust (s)	-4.0		-4.0			
Total Lost Time (s)	4.0		4.0			
Lead/Lag	Lag					Lead
Lead-Lag Optimize?	Yes					Yes
Recall Mode	Max	Max	Max		None	Max
v/c Ratio	0.74		0.52	0.04		
Control Delay	28.2		7.8	0.0		
Queue Delay	0.1		0.0	0.0		
Total Delay	28.3		7.8	0.0		
Queue Length 50th (m)	152.8		91.7	0.0		
Queue Length 95th (m)	174.6		111.0	0.0		
Internal Link Dist (m)	82.8		6.9	82.3		
Turn Bay Length (m)						
Base Capacity (vph)	2436		2689	147		
Starvation Cap Reductn	92		0	0		
Spillback Cap Reductn	0		0	0		
Storage Cap Reductn	0		0	0		
Reduced v/c Ratio	0.77		0.52	0.04		

Intersection Summary

Cycle Length: 126
Actuated Cycle Length: 112.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Transit ROW/Railway Crossing & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑							
Traffic Volume (vph)	0	1806	0	6	1396	0	0	0	6	0	0	0
Future Volume (vph)	0	1806	0	6	1396	0	0	0	6	0	0	0
Ideal Flow (vphpl)	1775	1900	1750	1775	1900	1750	1775	1900	1750	1775	1900	1750
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.91			0.95			1.00				
Frpb, ped/bikes		1.00			1.00			0.58				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			1.00			0.85				
Flt Protected		1.00			1.00			1.00				
Satd. Flow (prot)		4953			3554			0				
Flt Permitted		1.00			0.92			1.00				
Satd. Flow (perm)		4953			3283			0				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1806	0	6	1396	0	0	0	6	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	1806	0	0	1402	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	19		59	59		19	26		26	26		26
Heavy Vehicles (%)	0%	3%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0					
Turn Type		NA		Perm	NA							
Protected Phases		4			8							
Permitted Phases				8								
Actuated Green, G (s)		51.3			86.0			0.0				
Effective Green, g (s)		55.3			90.0			0.0				
Actuated g/C Ratio		0.48			0.78			0.00				
Clearance Time (s)		8.0			8.0							
Vehicle Extension (s)		3.0			3.0							
Lane Grp Cap (vph)		2381			2569			0				
v/s Ratio Prot		c0.36										
v/s Ratio Perm					c0.43							
v/c Ratio		0.76			0.55			0.00				
Uniform Delay, d1		24.4			4.7			57.5				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		2.3			0.8			0.0				
Delay (s)		26.7			5.6			57.5				
Level of Service		C			A			E				
Approach Delay (s)		26.7			5.6			57.5			0.0	
Approach LOS		C			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	5.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	206	104	314	106	52	419
Future Vol, veh/h	206	104	314	106	52	419
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	33	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	9	4	0	2	5
Mvmt Flow	206	104	314	106	52	419

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	683	212	0	0	422	0
Stage 1	369	-	-	-	-	-
Stage 2	314	-	-	-	-	-
Critical Hdwy	6.8	7.08	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	-	-	2.22	-
Pot Cap-1 Maneuver	387	772	-	-	1134	-
Stage 1	675	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	368	771	-	-	1132	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	687	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.1	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	368	771	1132	-
HCM Lane V/C Ratio	-	-	0.56	0.135	0.046	-
HCM Control Delay (s)	-	-	26.5	10.4	8.3	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	3.3	0.5	0.1	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	47	5	0	206	48	0	5	0	45	14	104
Future Vol, veh/h	106	47	5	0	206	48	0	5	0	45	14	104
Conflicting Peds, #/hr	2	0	0	0	0	2	5	0	3	3	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	10	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	20	0	0	18	0	0	0	0	0	0	0
Mvmt Flow	106	47	5	0	206	48	0	5	0	45	14	104

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	256	0	0	52	0	0	377	518	53	499	496	134
Stage 1	-	-	-	-	-	-	262	262	-	232	232	-
Stage 2	-	-	-	-	-	-	115	256	-	267	264	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1321	-	-	1567	-	-	572	465	1020	472	478	897
Stage 1	-	-	-	-	-	-	747	695	-	756	716	-
Stage 2	-	-	-	-	-	-	883	699	-	743	694	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1319	-	-	1567	-	-	460	425	1018	437	437	892
Mov Cap-2 Maneuver	-	-	-	-	-	-	460	425	-	437	437	-
Stage 1	-	-	-	-	-	-	685	637	-	692	715	-
Stage 2	-	-	-	-	-	-	762	698	-	674	636	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.3	0	13.6	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	425	1319	-	-	1567	-	-	437	794
HCM Lane V/C Ratio	0.012	0.08	-	-	-	-	-	0.103	0.149
HCM Control Delay (s)	13.6	8	0	-	0	-	-	14.2	10.3
HCM Lane LOS	B	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	0.3	0.5

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	90	0	0	248	10	5	7	0	10	13	1
Future Vol, veh/h	2	90	0	0	248	10	5	7	0	10	13	1
Conflicting Peds, #/hr	3	0	3	3	0	3	5	0	2	2	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	0	10	0	0	0	0	0	0	0
Mvmt Flow	2	90	0	0	248	10	5	7	0	10	13	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	261	0	0	93	0	0	362	358	95	356	353	261
Stage 1	-	-	-	-	-	-	97	97	-	256	256	-
Stage 2	-	-	-	-	-	-	265	261	-	100	97	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1315	-	-	1514	-	-	598	572	967	603	575	783
Stage 1	-	-	-	-	-	-	914	819	-	753	699	-
Stage 2	-	-	-	-	-	-	745	696	-	911	819	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1312	-	-	1510	-	-	582	569	963	594	572	778
Mov Cap-2 Maneuver	-	-	-	-	-	-	582	569	-	594	572	-
Stage 1	-	-	-	-	-	-	910	816	-	750	698	-
Stage 2	-	-	-	-	-	-	727	695	-	900	816	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	11.4	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	574	1312	-	-	1510	-	-	588
HCM Lane V/C Ratio	0.021	0.002	-	-	-	-	-	0.041
HCM Control Delay (s)	11.4	7.7	0	-	0	-	-	11.4
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	1217	749	37	16	129
Future Vol, veh/h	4	1217	749	37	16	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	7
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	5	5	0	13	0
Mvmt Flow	4	1217	749	37	16	129

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	786	0	-	0	1385	393
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	617	-
Critical Hdwy	4.1	-	-	-	7.06	6.9
Critical Hdwy Stg 1	-	-	-	-	6.06	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	2.2	-	-	-	3.63	3.3
Pot Cap-1 Maneuver	842	-	-	-	122	612
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	471	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	842	-	-	-	120	612
Mov Cap-2 Maneuver	-	-	-	-	120	-
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	471	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	842	-	-	-	120	612
HCM Lane V/C Ratio	0.005	-	-	-	0.133	0.211
HCM Control Delay (s)	9.3	0.1	-	-	39.6	12.4
HCM Lane LOS	A	A	-	-	E	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.8

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1759	53	0	1369	219	0	0	17	0	0	33
Future Vol, veh/h	0	1759	53	0	1369	219	0	0	17	0	0	33
Conflicting Peds, #/hr	3	0	3	3	0	3	10	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	6	0	0	4	5	0	0	0	0	0	9
Mvmt Flow	0	1759	53	0	1369	219	0	0	17	0	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	909	-	-	807
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	3.39
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	242	0	0	310
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	241	-	-	307
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	21.1	18.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	241	-	-	-	-	307
HCM Lane V/C Ratio	0.071	-	-	-	-	0.107
HCM Control Delay (s)	21.1	-	-	-	-	18.1
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	0	0	5	0	13
Future Vol, veh/h	7	0	0	5	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	7	0	0	5	0	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	12	7	13	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1013	1081	1619	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1013	1081	1619	-	-	-
Mov Cap-2 Maneuver	1013	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1023	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1619	-	1013	-	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Control Delay (s)	0	-	8.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	22	5	0	0
Future Vol, veh/h	0	8	22	5	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	8	22	5	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	50	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	964	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	951	1090	1635	-	-	-
Mov Cap-2 Maneuver	951	-	-	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.3	5.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1635	-	1090	-	-
HCM Lane V/C Ratio	0.013	-	0.007	-	-
HCM Control Delay (s)	7.2	0	8.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	11	27	8	0
Future Vol, veh/h	0	17	11	27	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	17	11	27	8	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	57	8	8	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	955	1080	1625	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	948	1080	1625	-	-	-
Mov Cap-2 Maneuver	948	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	2.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1625	-	1080	-	-
HCM Lane V/C Ratio	0.007	-	0.016	-	-
HCM Control Delay (s)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	3	117	0	5	8	33	0	0	25	0
Future Vol, veh/h	0	0	3	117	0	5	8	33	0	0	25	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	3	117	0	5	8	33	0	0	25	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	77	74	25	76	74	33	25	0	0	33	0	0
Stage 1	25	25	-	49	49	-	-	-	-	-	-	-
Stage 2	52	49	-	27	25	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	917	820	1057	919	820	1046	1603	-	-	1592	-	-
Stage 1	998	878	-	969	858	-	-	-	-	-	-	-
Stage 2	966	858	-	996	878	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	909	816	1057	913	816	1046	1603	-	-	1592	-	-
Mov Cap-2 Maneuver	909	816	-	913	816	-	-	-	-	-	-	-
Stage 1	993	878	-	964	854	-	-	-	-	-	-	-
Stage 2	957	854	-	993	878	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.5	1.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1603	-	-	1057	918	1592	-	-
HCM Lane V/C Ratio	0.005	-	-	0.003	0.133	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0	-	-

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	94	2	0	0	253	0	11	0	0	0
Future Vol, veh/h	0	0	94	2	0	0	253	0	11	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	4	0	0	0	9	0	0	0	0	0
Mvmt Flow	0	0	94	2	0	0	253	0	11	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	7.9	9.5	0
HCM LOS	A	A	A	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	96%	0%	100%	0%
Vol Thru, %	0%	0%	0%	100%
Vol Right, %	4%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	264	94	2	0
LT Vol	253	0	2	0
Through Vol	0	0	0	0
RT Vol	11	94	0	0
Lane Flow Rate	264	94	2	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0.322	0.103	0.003	0
Departure Headway (Hd)	4.388	3.934	4.832	4.38
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	818	917	744	0
Service Time	2.427	1.934	2.836	2.391
HCM Lane V/C Ratio	0.323	0.103	0.003	0
HCM Control Delay	9.5	7.4	7.9	7.4
HCM Lane LOS	A	A	A	N
HCM 95th-tile Q	1.4	0.3	0	0

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	8	0	6	198	0	87	70	169	16	23	66	7
Future Vol, veh/h	8	0	6	198	0	87	70	169	16	23	66	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-2	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	15	0	0	13	0
Mvmt Flow	8	0	6	198	0	87	70	169	16	23	66	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	477	441	70	436	436	177	73	0	0	185	0	0
Stage 1	116	116	-	317	317	-	-	-	-	-	-	-
Stage 2	361	325	-	119	119	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	502	513	998	534	517	871	1540	-	-	1402	-	-
Stage 1	894	803	-	698	658	-	-	-	-	-	-	-
Stage 2	662	653	-	890	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	429	479	998	504	482	871	1540	-	-	1402	-	-
Mov Cap-2 Maneuver	429	479	-	504	482	-	-	-	-	-	-	-
Stage 1	848	789	-	662	624	-	-	-	-	-	-	-
Stage 2	565	620	-	870	787	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	17.1	2	1.8
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1540	-	-	568	578	1402	-	-
HCM Lane V/C Ratio	0.045	-	-	0.025	0.493	0.016	-	-
HCM Control Delay (s)	7.4	0	-	11.5	17.1	7.6	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	2.7	0.1	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	146	0	0	88	0	167	67	0	263	7
Future Vol, veh/h	0	0	146	0	0	88	0	167	67	0	263	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-2	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	12	0	0	10	0
Mvmt Flow	0	0	146	0	0	88	0	167	67	0	263	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	512	501	267	541	471	201	-	0	0	-	-	0
Stage 1	267	267	-	201	201	-	-	-	-	-	-	-
Stage 2	245	234	-	340	270	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	-	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	-	-	-
Pot Cap-1 Maneuver	476	475	777	455	494	845	0	-	-	0	-	-
Stage 1	743	692	-	805	739	-	0	-	-	0	-	-
Stage 2	763	715	-	679	690	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	426	475	777	369	494	845	-	-	-	-	-	-
Mov Cap-2 Maneuver	426	475	-	369	494	-	-	-	-	-	-	-
Stage 1	743	692	-	805	739	-	-	-	-	-	-	-
Stage 2	684	715	-	551	690	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	9.8	0	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	777	845	-	-
HCM Lane V/C Ratio	-	-	0.188	0.104	-	-
HCM Control Delay (s)	-	-	10.7	9.8	-	-
HCM Lane LOS	-	-	B	A	-	-
HCM 95th %tile Q(veh)	-	-	0.7	0.3	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	93	6	0	249	4	9	0	0	1	0	0
Future Vol, veh/h	1	93	6	0	249	4	9	0	0	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	4	0	0	10	0	0	0	0	0	0	0
Mvmt Flow	1	93	6	0	249	4	9	0	0	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	253	0	0	99	0	0	349	351	96	349	352	251
Stage 1	-	-	-	-	-	-	98	98	-	251	251	-
Stage 2	-	-	-	-	-	-	251	253	-	98	101	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1324	-	-	1507	-	-	609	577	966	609	576	793
Stage 1	-	-	-	-	-	-	913	818	-	758	703	-
Stage 2	-	-	-	-	-	-	758	701	-	913	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1324	-	-	1507	-	-	608	576	966	608	575	793
Mov Cap-2 Maneuver	-	-	-	-	-	-	608	576	-	608	575	-
Stage 1	-	-	-	-	-	-	912	817	-	757	703	-
Stage 2	-	-	-	-	-	-	758	701	-	912	814	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	608	1324	-	-	1507	-	-	608
HCM Lane V/C Ratio	0.015	0.001	-	-	-	-	-	0.002
HCM Control Delay (s)	11	7.7	0	-	0	-	-	10.9
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	3	3	3	3	3	3	3	3	3	3
Future Vol, veh/h	3	3	3	3	3	3	3	3	3	3	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	3	3	3	3	3	3	3	3	3	3	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	25	23	5	25	23	5	6	0	0	6	0	0
Stage 1	11	11	-	11	11	-	-	-	-	-	-	-
Stage 2	14	12	-	14	12	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	991	874	1084	991	874	1084	1628	-	-	1628	-	-
Stage 1	1015	890	-	1015	890	-	-	-	-	-	-	-
Stage 2	1011	890	-	1011	890	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	983	871	1084	983	871	1084	1628	-	-	1628	-	-
Mov Cap-2 Maneuver	983	871	-	983	871	-	-	-	-	-	-	-
Stage 1	1013	888	-	1013	888	-	-	-	-	-	-	-
Stage 2	1003	888	-	1003	888	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.7	2.4	2.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1628	-	-	972	972	1628	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.009	0.002	-	-
HCM Control Delay (s)	7.2	0	-	8.7	8.7	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	0	0	0	0	2
Future Vol, veh/h	11	0	0	0	0	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	0	0	0	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.2	0	6.3
HCM LOS	A	-	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	0%	100%	0%
Vol Thru, %	100%	0%	0%
Vol Right, %	0%	0%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	11	2
LT Vol	0	11	0
Through Vol	0	0	0
RT Vol	0	0	2
Lane Flow Rate	0	11	2
Geometry Grp	1	1	1
Degree of Util (X)	0	0.013	0.002
Departure Headway (Hd)	3.921	4.104	3.32
Convergence, Y/N	Yes	Yes	Yes
Cap	0	877	1083
Service Time	1.927	2.104	1.325
HCM Lane V/C Ratio	0	0.013	0.002
HCM Control Delay	6.9	7.2	6.3
HCM Lane LOS	N	A	A
HCM 95th-tile Q	0	0	0

Lane Group	EBT	WBL	WBT	NBL	NBT	Ø6
Lane Configurations						
Traffic Volume (vph)	0	2	0	253	0	
Future Volume (vph)	0	2	0	253	0	
Lane Group Flow (vph)	94	0	2	0	264	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2	6
Permitted Phases		8		2		
Detector Phase	4	8	8	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	23.0	23.0	23.0	37.0	37.0	37.0
Total Split (%)	38.3%	38.3%	38.3%	61.7%	61.7%	62%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0	
Total Lost Time (s)	4.0		4.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.08		0.01		0.26	
Control Delay	0.1		23.0		2.7	
Queue Delay	0.0		0.0		0.0	
Total Delay	0.1		23.0		2.7	
Queue Length 50th (m)	0.0		0.2		5.3	
Queue Length 95th (m)	0.0		1.9		11.7	
Internal Link Dist (m)	81.9		175.6		43.0	
Turn Bay Length (m)						
Base Capacity (vph)	1245		414		1020	
Starvation Cap Reductn	0		0		0	
Spillback Cap Reductn	0		0		0	
Storage Cap Reductn	0		0		0	
Reduced v/c Ratio	0.08		0.00		0.26	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 17: Parkside Dr & Future E-W Rd & Parkside Dr Ext



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	94	2	0	0	253	0	11	0	0	0
Future Volume (vph)	0	0	94	2	0	0	253	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			0%			0%			0%	
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			1.00				
Frt		0.86			1.00			0.99				
Flt Protected		1.00			0.95			0.95				
Satd. Flow (prot)		1578			1785			1641				
Flt Permitted		1.00			0.70			0.74				
Satd. Flow (perm)		1578			1308			1276				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	94	2	0	0	253	0	11	0	0	0
RTOR Reduction (vph)	0	84	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	0	10	0	0	2	0	0	251	0	0	0	0
Heavy Vehicles (%)	0%	0%	4%	0%	0%	0%	9%	0%	0%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA				
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		4.6			4.6			43.4				
Effective Green, g (s)		6.6			6.6			45.4				
Actuated g/C Ratio		0.11			0.11			0.76				
Clearance Time (s)		6.0			6.0			6.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		173			143			965				
v/s Ratio Prot		c0.01										
v/s Ratio Perm					0.00			c0.20				
v/c Ratio		0.06			0.01			0.26				
Uniform Delay, d1		23.9			23.8			2.2				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.1			0.0			0.7				
Delay (s)		24.1			23.8			2.9				
Level of Service		C			C			A				
Approach Delay (s)		24.1			23.8			2.9			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

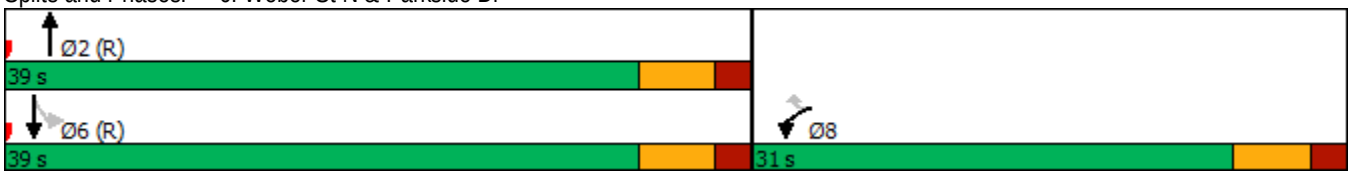
c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	206	104	314	52	419
Future Volume (vph)	206	104	314	52	419
Lane Group Flow (vph)	206	104	420	52	419
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		8		6	
Detector Phase	8	8	2	6	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	30.0	30.0	30.0
Minimum Split (s)	31.0	31.0	36.0	36.0	36.0
Total Split (s)	31.0	31.0	39.0	39.0	39.0
Total Split (%)	44.3%	44.3%	55.7%	55.7%	55.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	6.0	4.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.55	0.27	0.20	0.09	0.20
Control Delay	28.8	6.5	3.4	6.9	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	6.5	3.4	6.9	5.6
Queue Length 50th (m)	25.2	0.0	6.2	2.4	10.0
Queue Length 95th (m)	40.2	10.0	19.6	8.1	19.8
Internal Link Dist (m)	67.8		212.4		232.9
Turn Bay Length (m)				33.0	
Base Capacity (vph)	643	584	2076	549	2097
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	0.18	0.20	0.09	0.20

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 6: Weber St N & Parkside Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	206	104	314	106	52	419
Future Volume (vph)	206	104	314	106	52	419
Ideal Flow (vphpl)	1775	1750	1775	1775	1775	1775
Total Lost time (s)	4.0	4.0	4.0		6.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1668	1350	3097		1631	3176
Flt Permitted	0.95	1.00	1.00		0.51	1.00
Satd. Flow (perm)	1668	1350	3097		870	3176
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	206	104	314	106	52	419
RTOR Reduction (vph)	0	81	32	0	0	0
Lane Group Flow (vph)	206	23	388	0	52	419
Confl. Peds. (#/hr)				2	2	
Heavy Vehicles (%)	0%	9%	4%	0%	2%	5%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	13.8	13.8	44.2		44.2	44.2
Effective Green, g (s)	15.8	15.8	46.2		44.2	46.2
Actuated g/C Ratio	0.23	0.23	0.66		0.63	0.66
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	376	304	2044		549	2096
v/s Ratio Prot	c0.12		0.13			c0.13
v/s Ratio Perm		0.02			0.06	
v/c Ratio	0.55	0.08	0.19		0.09	0.20
Uniform Delay, d1	23.9	21.4	4.6		5.1	4.7
Progression Factor	1.00	1.00	0.81		1.00	1.00
Incremental Delay, d2	1.6	0.1	0.2		0.3	0.2
Delay (s)	25.6	21.5	3.9		5.4	4.9
Level of Service	C	C	A		A	A
Approach Delay (s)	24.2		3.9			4.9
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

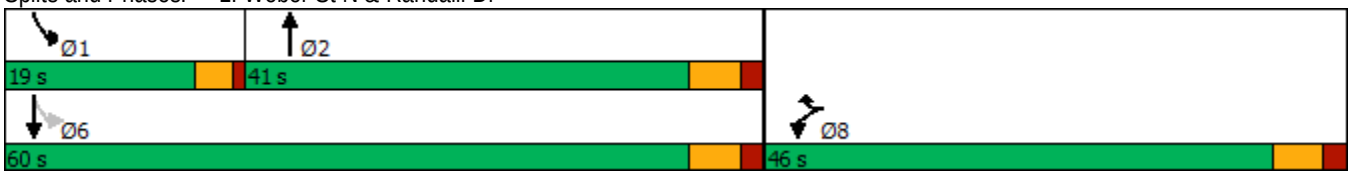
c Critical Lane Group

Weekday PM Peak Hour

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	295	136	451	28	507
Future Volume (vph)	295	136	451	28	507
Lane Group Flow (vph)	295	136	523	28	507
Turn Type	Prot	Prot	NA	pm+pt	NA
Protected Phases	8	8	2	1	6
Permitted Phases	8	8		6	
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	10.0	5.0	10.0
Minimum Split (s)	24.0	24.0	41.0	9.5	42.0
Total Split (s)	46.0	46.0	41.0	19.0	60.0
Total Split (%)	43.4%	43.4%	38.7%	17.9%	56.6%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	8.0	4.0	4.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
v/c Ratio	0.74	0.28	0.57	0.06	0.46
Control Delay	40.4	6.9	20.3	9.0	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	6.9	20.3	9.0	12.0
Queue Length 50th (m)	48.2	1.7	52.2	1.8	43.9
Queue Length 95th (m)	76.8	14.2	132.5	6.6	90.8
Internal Link Dist (m)	723.8		106.7		467.0
Turn Bay Length (m)		30.0		100.0	
Base Capacity (vph)	651	726	922	536	1105
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	0.45	0.19	0.57	0.05	0.46

Intersection Summary
Cycle Length: 106
Actuated Cycle Length: 90.4
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Weber St N & Randalll Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	295	136	451	72	28	507
Future Volume (vph)	295	136	451	72	28	507
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	8.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1394	1413	1721		1607	1773
Flt Permitted	0.95	1.00	1.00		0.35	1.00
Satd. Flow (perm)	1394	1413	1721		586	1773
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	295	136	451	72	28	507
RTOR Reduction (vph)	0	89	4	0	0	0
Lane Group Flow (vph)	295	47	519	0	28	507
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	28%	13%	7%	5%	11%	6%
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	2		1	6
Permitted Phases	8	8			6	
Actuated Green, G (s)	24.0	24.0	50.3		56.9	56.9
Effective Green, g (s)	26.0	26.0	48.3		56.9	58.9
Actuated g/C Ratio	0.28	0.28	0.52		0.61	0.63
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	390	395	894		387	1124
v/s Ratio Prot	c0.21	0.03	c0.30		0.00	c0.29
v/s Ratio Perm					0.04	
v/c Ratio	0.76	0.12	0.58		0.07	0.45
Uniform Delay, d1	30.6	24.9	15.3		8.2	8.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.1	0.1	2.7		0.1	1.3
Delay (s)	38.7	25.1	18.1		8.3	10.0
Level of Service	D	C	B		A	B
Approach Delay (s)	34.4		18.1			9.9
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

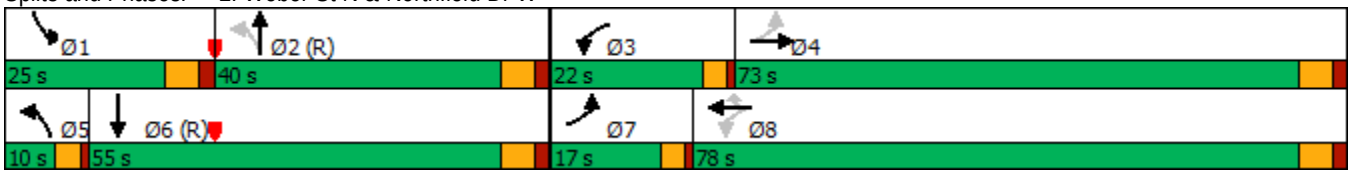
c Critical Lane Group

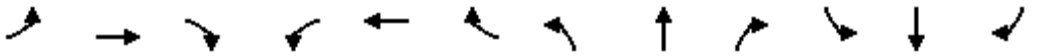
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	120	807	176	1223	154	64	409	258	350
Future Volume (vph)	120	807	176	1223	154	64	409	258	350
Lane Group Flow (vph)	120	876	176	1223	154	64	481	258	528
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2			
Minimum Split (s)	9.0	44.4	9.0	44.4	44.4	9.0	33.6	13.0	33.6
Total Split (s)	17.0	73.0	22.0	78.0	78.0	10.0	40.0	25.0	55.0
Total Split (%)	10.6%	45.6%	13.8%	48.8%	48.8%	6.3%	25.0%	15.6%	34.4%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0	2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	8.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
v/c Ratio	0.58	0.63	0.57	0.80	0.24	0.29	0.69	0.65	0.53
Control Delay	32.3	37.7	24.4	41.6	8.9	42.0	65.7	74.6	41.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.3	37.7	24.4	41.6	8.9	42.0	65.7	74.6	41.6
Queue Length 50th (m)	18.1	118.5	27.8	181.4	7.3	15.2	81.1	42.9	68.0
Queue Length 95th (m)	36.1	142.1	42.1	212.4	22.8	28.2	101.0	59.3	87.7
Internal Link Dist (m)		607.0		127.2			507.4		212.4
Turn Bay Length (m)	90.0		45.0		65.0	95.0		82.5	
Base Capacity (vph)	208	1394	309	1530	655	224	695	395	996
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	0.58	0.63	0.57	0.80	0.24	0.29	0.69	0.65	0.53

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Pretimed

Splits and Phases: 2: Weber St N & Northfield Dr W





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	807	69	176	1223	154	64	409	72	258	350	178
Future Volume (vph)	120	807	69	176	1223	154	64	409	72	258	350	178
Ideal Flow (vphpl)	1775	1775	1775	1755	1900	1750	1755	1775	1775	1775	1775	1775
Grade (%)		0%			0%			0%			-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	8.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1668	3225		1555	3310	1348	1587	3048		3010	3001	
Flt Permitted	0.10	1.00		0.18	1.00	1.00	0.44	1.00		0.95	1.00	
Satd. Flow (perm)	169	3225		296	3310	1348	741	3048		3010	3001	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	120	807	69	176	1223	154	64	409	72	258	350	178
RTOR Reduction (vph)	0	4	0	0	0	65	0	9	0	0	40	0
Lane Group Flow (vph)	120	872	0	176	1223	89	64	472	0	258	488	0
Confl. Peds. (#/hr)	16		18	18		16	26		13	13		26
Heavy Vehicles (%)	0%	2%	1%	6%	7%	4%	3%	7%	3%	8%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	4	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	80.0	67.0		89.0	72.0	72.0	40.0	34.0		19.0	49.0	
Effective Green, g (s)	80.0	69.0		89.0	74.0	70.0	40.0	36.0		21.0	51.0	
Actuated g/C Ratio	0.50	0.43		0.56	0.46	0.44	0.25	0.22		0.13	0.32	
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	206	1390		306	1530	589	216	685		395	956	
v/s Ratio Prot	0.05	0.27		c0.06	c0.37		0.01	c0.15		c0.09	0.16	
v/s Ratio Perm	0.24			0.25		0.07	0.06					
v/c Ratio	0.58	0.63		0.58	0.80	0.15	0.30	0.69		0.65	0.51	
Uniform Delay, d1	28.3	35.5		22.4	36.7	27.1	46.9	56.9		66.0	44.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.13	1.08		1.00	1.00	
Incremental Delay, d2	11.5	2.2		7.7	4.5	0.5	3.3	5.3		8.2	1.9	
Delay (s)	39.8	37.6		30.0	41.1	27.6	56.2	66.8		74.2	46.3	
Level of Service	D	D		C	D	C	E	E		E	D	
Approach Delay (s)		37.9			38.5			65.5			55.4	
Approach LOS		D			D			E			E	

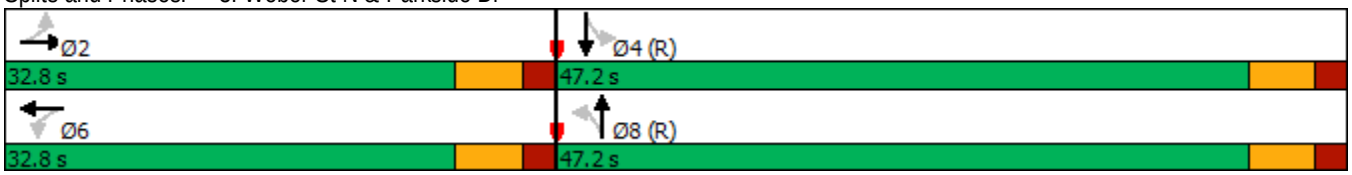
Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

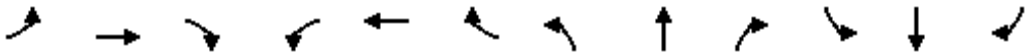
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	150	215	113	261	67	369	35	427
Future Volume (vph)	150	215	113	261	67	369	35	427
Lane Group Flow (vph)	150	264	113	286	67	492	35	560
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Minimum Split (s)	32.8	32.8	32.8	32.8	47.2	47.2	47.2	47.2
Total Split (s)	32.8	32.8	32.8	32.8	47.2	47.2	47.2	47.2
Total Split (%)	41.0%	41.0%	41.0%	41.0%	59.0%	59.0%	59.0%	59.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	6.0	4.0	6.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.53	0.46	0.40	0.49	0.20	0.32	0.09	0.35
Control Delay	28.8	21.6	24.3	22.9	12.4	8.9	7.1	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	21.6	24.3	22.9	12.4	8.9	7.1	5.4
Queue Length 50th (m)	18.7	29.8	13.2	34.0	5.4	17.0	2.4	21.4
Queue Length 95th (m)	38.5	51.4	28.1	57.2	13.1	26.4	m4.4	23.6
Internal Link Dist (m)		315.6		475.0		572.0		507.4
Turn Bay Length (m)	25.0		15.0		25.0		25.0	
Base Capacity (vph)	281	571	286	583	338	1530	375	1608
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	0.53	0.46	0.40	0.49	0.20	0.32	0.09	0.35

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 2.4 (3%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Weber St N & Parkside Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	215	49	113	261	25	67	369	123	35	427	133
Future Volume (vph)	150	215	49	113	261	25	67	369	123	35	427	133
Ideal Flow (vphpl)	1775	1650	1650	1755	1650	1650	1650	1650	1650	1650	1650	1650
Total Lost time (s)	4.0	4.0		4.0	4.0		6.0	4.0		6.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1559		1523	1608		1532	2762		1549	2911	
Flt Permitted	0.47	1.00		0.50	1.00		0.41	1.00		0.45	1.00	
Satd. Flow (perm)	782	1559		797	1608		657	2762		729	2911	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	150	215	49	113	261	25	67	369	123	35	427	133
RTOR Reduction (vph)	0	10	0	0	4	0	0	40	0	0	37	0
Lane Group Flow (vph)	150	254	0	113	282	0	67	452	0	35	523	0
Confl. Peds. (#/hr)	6		20	20		6	9		3	3		9
Heavy Vehicles (%)	5%	1%	2%	7%	0%	0%	0%	7%	8%	0%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	26.8	26.8		26.8	26.8		41.2	41.2		41.2	41.2	
Effective Green, g (s)	28.8	28.8		28.8	28.8		41.2	43.2		41.2	43.2	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.52	0.54		0.52	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	281	561		286	578		338	1491		375	1571	
v/s Ratio Prot		0.16			0.18			0.16			c0.18	
v/s Ratio Perm	c0.19			0.14			0.10			0.05		
v/c Ratio	0.53	0.45		0.40	0.49		0.20	0.30		0.09	0.33	
Uniform Delay, d1	20.3	19.6		19.1	19.9		10.5	10.1		9.9	10.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.66	0.55	
Incremental Delay, d2	7.1	2.6		4.1	2.9		1.3	0.5		0.4	0.5	
Delay (s)	27.4	22.2		23.2	22.8		11.8	10.6		7.0	6.2	
Level of Service	C	C		C	C		B	B		A	A	
Approach Delay (s)		24.1			22.9			10.8			6.2	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	118.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	56	1043	288	1463	32	18	396	392	31
Future Volume (vph)	56	1043	288	1463	32	18	396	392	31
Lane Group Flow (vph)	56	1073	288	1876	0	50	396	392	46
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6		8			4
Permitted Phases	2		6		8		8	4	
Detector Phase	5	2	1	6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	40.0	5.0	40.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	9.0	46.0	9.5	46.0	34.0	34.0	34.0	34.0	34.0
Total Split (s)	9.0	75.4	31.6	98.0	53.0	53.0	53.0	53.0	53.0
Total Split (%)	5.6%	47.1%	19.8%	61.3%	33.1%	33.1%	33.1%	33.1%	33.1%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	-2.0	0.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?									
Recall Mode	None	Max	None	Max	None	None	None	None	None
v/c Ratio	0.58	0.72	0.84	1.02		0.12	0.62	1.02	0.10
Control Delay	46.8	37.3	45.3	58.2		41.0	15.3	105.1	29.2
Queue Delay	0.0	0.0	0.0	30.6		0.0	0.0	0.0	0.0
Total Delay	46.8	37.3	45.3	88.8		41.0	15.3	105.1	29.2
Queue Length 50th (m)	6.6	148.8	50.8	~351.1		12.1	23.3	~140.6	7.4
Queue Length 95th (m)	#23.7	186.6	86.7	#394.3		23.9	62.3	#209.3	18.2
Internal Link Dist (m)		123.1		82.8		475.0			37.0
Turn Bay Length (m)	35.0		25.0					26.0	
Base Capacity (vph)	97	1490	395	1834		414	641	383	474
Starvation Cap Reductn	0	0	0	273		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	0.58	0.72	0.73	1.20		0.12	0.62	1.02	0.10

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 158.2
Natural Cycle: 120
Control Type: Semi Act-Uncoord

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

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

Splits and Phases: 4: Parkside Dr & Northfield Dr W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	1043	30	288	1463	413	32	18	396	392	31	15
Future Volume (vph)	56	1043	30	288	1463	413	32	18	396	392	31	15
Ideal Flow (vphpl)	1775	1775	1775	1775	1775	1775	1650	1650	1750	1775	1650	1650
Grade (%)		0%			0%			0%			-2%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	0.98	1.00	
Frt	1.00	1.00		1.00	0.97			1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1668	3129		1634	3059			1555	1387	1622	1499	
Flt Permitted	0.05	1.00		0.14	1.00			0.83	1.00	0.72	1.00	
Satd. Flow (perm)	95	3129		236	3059			1338	1387	1237	1499	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	56	1043	30	288	1463	413	32	18	396	392	31	15
RTOR Reduction (vph)	0	1	0	0	16	0	0	0	212	0	10	0
Lane Group Flow (vph)	56	1072	0	288	1860	0	0	50	184	392	36	0
Confl. Peds. (#/hr)	9		25	25		9	2		11	11		2
Heavy Vehicles (%)	0%	5%	8%	2%	5%	3%	0%	4%	2%	2%	6%	0%
Bus Blockages (#/hr)	0	4	0	0	0	0	0	0	2	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	78.1	74.1		100.0	92.0			47.0	47.0	47.0	47.0	
Effective Green, g (s)	78.1	76.1		100.0	94.0			49.0	49.0	49.0	49.0	
Actuated g/C Ratio	0.49	0.48		0.63	0.59			0.31	0.31	0.31	0.31	
Clearance Time (s)	4.0	6.0		4.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	86	1497		340	1808			412	427	381	461	
v/s Ratio Prot	0.02	0.34		c0.12	c0.61						0.02	
v/s Ratio Perm	0.30			0.41				0.04	0.13	c0.32		
v/c Ratio	0.65	0.72		0.85	1.03			0.12	0.43	1.03	0.08	
Uniform Delay, d1	33.2	32.9		30.9	32.5			39.5	43.9	55.0	39.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.3	3.0		17.4	28.9			0.1	0.7	53.7	0.1	
Delay (s)	49.4	35.8		48.3	61.4			39.7	44.6	108.7	39.1	
Level of Service	D	D		D	E			D	D	F	D	
Approach Delay (s)		36.5			59.7			44.0			101.4	
Approach LOS		D			E			D			F	

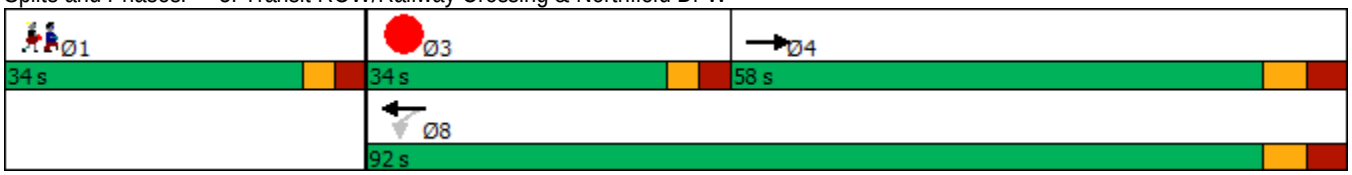
Intersection Summary			
HCM 2000 Control Delay	56.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	159.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBT	Ø1	Ø3
Lane Configurations						
Traffic Volume (vph)	1831	3	2164	0		
Future Volume (vph)	1831	3	2164	0		
Lane Group Flow (vph)	1831	0	2167	5		
Turn Type	NA	Perm	NA			
Protected Phases	4		8		1	3
Permitted Phases		8				
Detector Phase	4	8	8			
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		7.0	7.0
Minimum Split (s)	50.0	50.0	50.0		34.0	24.0
Total Split (s)	58.0	92.0	92.0		34.0	34.0
Total Split (%)	46.0%	73.0%	73.0%		27%	27%
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	4.0	4.0	4.0		3.0	3.0
Lost Time Adjust (s)	-4.0		-4.0			
Total Lost Time (s)	4.0		4.0			
Lead/Lag	Lag					Lead
Lead-Lag Optimize?	Yes					Yes
Recall Mode	Max	Max	Max		None	Max
v/c Ratio	0.76		0.78	0.03		
Control Delay	28.8		14.0	0.0		
Queue Delay	0.1		0.0	0.0		
Total Delay	28.9		14.0	0.0		
Queue Length 50th (m)	157.0		224.6	0.0		
Queue Length 95th (m)	179.3		273.9	0.0		
Internal Link Dist (m)	82.8		6.9	82.3		
Turn Bay Length (m)						
Base Capacity (vph)	2413		2780	147		
Starvation Cap Reductn	80		0	0		
Spillback Cap Reductn	0		0	0		
Storage Cap Reductn	0		0	0		
Reduced v/c Ratio	0.78		0.78	0.03		

Intersection Summary
Cycle Length: 126
Actuated Cycle Length: 112.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 5: Transit ROW/Railway Crossing & Northfield Dr W



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑							
Traffic Volume (vph)	0	1831	0	3	2164	0	0	0	5	0	0	0
Future Volume (vph)	0	1831	0	3	2164	0	0	0	5	0	0	0
Ideal Flow (vphpl)	1775	1900	1750	1775	1900	1750	1775	1900	1750	1775	1900	1750
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.91			0.95			1.00				
Frpb, ped/bikes		1.00			1.00			0.54				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			1.00			0.85				
Flt Protected		1.00			1.00			1.00				
Satd. Flow (prot)		4906			3565			0				
Flt Permitted		1.00			0.95			1.00				
Satd. Flow (perm)		4906			3394			0				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1831	0	3	2164	0	0	0	5	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1831	0	0	2167	0	0	0	0	0	0	0
Confl. Peds. (#/hr)	9		79	79		9	32		32	32		32
Heavy Vehicles (%)	0%	4%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Bus Blockages (#/hr)	0	4	4	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0					
Turn Type		NA		Perm	NA							
Protected Phases		4			8							
Permitted Phases				8								
Actuated Green, G (s)		51.3			86.0			0.0				
Effective Green, g (s)		55.3			90.0			0.0				
Actuated g/C Ratio		0.48			0.78			0.00				
Clearance Time (s)		8.0			8.0							
Vehicle Extension (s)		3.0			3.0							
Lane Grp Cap (vph)		2359			2656			0				
v/s Ratio Prot		0.37										
v/s Ratio Perm					c0.64							
v/c Ratio		0.78			0.82			0.00				
Uniform Delay, d1		24.7			7.5			57.5				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		2.6			2.9			0.0				
Delay (s)		27.3			10.4			57.5				
Level of Service		C			B			E				
Approach Delay (s)		27.3			10.4			57.5			0.0	
Approach LOS		C			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	119	110	412	271	133	669
Future Vol, veh/h	119	110	412	271	133	669
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	33	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	14	4	0	1	5
Mvmt Flow	119	110	412	271	133	669

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1152	345	0	0	686	0
Stage 1	551	-	-	-	-	-
Stage 2	601	-	-	-	-	-
Critical Hdwy	6.8	7.18	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.44	-	-	2.21	-
Pot Cap-1 Maneuver	194	617	-	-	910	-
Stage 1	547	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	165	616	-	-	908	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	441	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	41.7	0	1.6
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	165	616	908	-
HCM Lane V/C Ratio	-	-	0.721	0.179	0.146	-
HCM Control Delay (s)	-	-	69	12.1	9.6	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	4.4	0.6	0.5	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	262	29	0	120	43	14	6	0	20	9	95
Future Vol, veh/h	97	262	29	0	120	43	14	6	0	20	9	95
Conflicting Peds, #/hr	14	0	0	0	0	14	15	0	1	1	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	21	0	0	80	0	0	0	0	0	0	0
Mvmt Flow	97	262	29	0	120	43	14	6	0	20	9	95

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	177	0	0	291	0	0	551	648	278	631	641	111
Stage 1	-	-	-	-	-	-	471	471	-	156	156	-
Stage 2	-	-	-	-	-	-	80	177	-	475	485	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1411	-	-	1282	-	-	435	392	766	383	395	927
Stage 1	-	-	-	-	-	-	577	563	-	836	772	-
Stage 2	-	-	-	-	-	-	925	756	-	574	555	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1396	-	-	1282	-	-	354	356	765	350	358	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	354	356	-	350	358	-
Stage 1	-	-	-	-	-	-	529	516	-	758	764	-
Stage 2	-	-	-	-	-	-	809	748	-	520	509	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	15.7	11.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	355	1396	-	-	1282	-	-	350	800
HCM Lane V/C Ratio	0.056	0.069	-	-	-	-	-	0.057	0.13
HCM Control Delay (s)	15.7	7.8	0	-	0	-	-	15.9	10.2
HCM Lane LOS	C	A	A	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	0.2	0.4

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	279	0	0	147	34	0	0	50	21	7	16
Future Vol, veh/h	3	279	0	0	147	34	0	0	50	21	7	16
Conflicting Peds, #/hr	0	0	2	4	0	0	0	0	5	5	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	1	0	0	14	0	0	0	0	0	0	0
Mvmt Flow	3	279	0	0	147	34	0	0	50	21	7	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	181	0	0	283	0	0	465	470	288	479	453	164
Stage 1	-	-	-	-	-	-	289	289	-	164	164	-
Stage 2	-	-	-	-	-	-	176	181	-	315	289	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1407	-	-	1291	-	-	511	495	756	500	506	886
Stage 1	-	-	-	-	-	-	723	677	-	843	766	-
Stage 2	-	-	-	-	-	-	831	754	-	700	677	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1407	-	-	1287	-	-	494	492	751	464	503	886
Mov Cap-2 Maneuver	-	-	-	-	-	-	494	492	-	464	503	-
Stage 1	-	-	-	-	-	-	719	673	-	840	766	-
Stage 2	-	-	-	-	-	-	809	754	-	649	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	10.1	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	751	1407	-	-	1287	-	-	570
HCM Lane V/C Ratio	0.067	0.002	-	-	-	-	-	0.077
HCM Control Delay (s)	10.1	7.6	0	-	0	-	-	11.8
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	1107	1451	55	20	94
Future Vol, veh/h	23	1107	1451	55	20	94
Conflicting Peds, #/hr	13	0	0	13	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	7
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	5	5	0	12	0
Mvmt Flow	23	1107	1451	55	20	94

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1519	0	-	0	2095	766
Stage 1	-	-	-	-	1492	-
Stage 2	-	-	-	-	603	-
Critical Hdwy	4.1	-	-	-	7.04	6.9
Critical Hdwy Stg 1	-	-	-	-	6.04	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	2.2	-	-	-	3.62	3.3
Pot Cap-1 Maneuver	445	-	-	-	40	350
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	441	-	-	-	34	346
Mov Cap-2 Maneuver	-	-	-	-	34	-
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	477	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	52.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	441	-	-	-	34	346
HCM Lane V/C Ratio	0.052	-	-	-	0.588	0.272
HCM Control Delay (s)	13.6	0.9	-	-	209.6	19.2
HCM Lane LOS	B	A	-	-	F	C
HCM 95th %tile Q(veh)	0.2	-	-	-	2	1.1

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1825	11	0	2122	124	0	0	43	0	0	45
Future Vol, veh/h	0	1825	11	0	2122	124	0	0	43	0	0	45
Conflicting Peds, #/hr	4	0	2	2	0	4	36	0	0	0	0	36
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	6	0	0	3	5	0	0	0	0	0	9
Mvmt Flow	0	1825	11	0	2122	124	0	0	43	0	0	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	920	-	-	1163
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	3.39
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	238	0	0	177
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	238	-	-	172
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	23.4	33.2
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	238	-	-	-	-	172
HCM Lane V/C Ratio	0.181	-	-	-	-	0.262
HCM Control Delay (s)	23.4	-	-	-	-	33.2
HCM Lane LOS	C	-	-	-	-	D
HCM 95th %tile Q(veh)	0.6	-	-	-	-	1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	50	0	7
Future Vol, veh/h	0	0	0	50	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	50	0	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	54	4	7	0	-	0
Stage 1	4	-	-	-	-	-
Stage 2	50	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	959	1085	1627	-	-	-
Stage 1	1024	-	-	-	-	-
Stage 2	978	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	959	1085	1627	-	-	-
Mov Cap-2 Maneuver	959	-	-	-	-	-
Stage 1	1024	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1627	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	0	30	0	0	0
Future Vol, veh/h	50	0	30	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	50	0	30	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	61	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	60	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	950	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	933	1090	1635	-	-	-
Mov Cap-2 Maneuver	933	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	7.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1635	-	933	-	-
HCM Lane V/C Ratio	0.018	-	0.054	-	-
HCM Control Delay (s)	7.2	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	37	37	30	0	0
Future Vol, veh/h	0	37	37	30	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	37	37	30	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	105	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	898	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	877	1090	1635	-	-	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1635	-	1090	-	-
HCM Lane V/C Ratio	0.023	-	0.034	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	11	65	0	0	11	67	0	0	37	0
Future Vol, veh/h	0	0	11	65	0	0	11	67	0	0	37	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	11	65	0	0	11	67	0	0	37	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	126	126	37	132	126	67	37	0	0	67	0	0
Stage 1	37	37	-	89	89	-	-	-	-	-	-	-
Stage 2	89	89	-	43	37	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	852	768	1041	845	768	1002	1587	-	-	1547	-	-
Stage 1	984	868	-	923	825	-	-	-	-	-	-	-
Stage 2	923	825	-	976	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	848	763	1041	831	763	1002	1587	-	-	1547	-	-
Mov Cap-2 Maneuver	848	763	-	831	763	-	-	-	-	-	-	-
Stage 1	977	868	-	917	819	-	-	-	-	-	-	-
Stage 2	917	819	-	966	868	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	9.7	1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1587	-	-	1041	831	1547	-	-
HCM Lane V/C Ratio	0.007	-	-	0.011	0.078	-	-	-
HCM Control Delay (s)	7.3	0	-	8.5	9.7	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	272	10	2	0	172	0	3	0	0	0
Future Vol, veh/h	0	2	272	10	2	0	172	0	3	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	3	0	0	0	13	0	0	0	0	0
Mvmt Flow	0	2	272	10	2	0	172	0	3	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	7.9	9.4	0
HCM LOS	A	A	A	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	83%	0%
Vol Thru, %	0%	1%	17%	100%
Vol Right, %	2%	99%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	175	274	12	0
LT Vol	172	0	10	0
Through Vol	0	2	2	0
RT Vol	3	272	0	0
Lane Flow Rate	175	274	12	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0.234	0.287	0.016	0
Departure Headway (Hd)	4.805	3.777	4.787	4.693
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	737	956	751	0
Service Time	2.898	1.778	2.797	2.718
HCM Lane V/C Ratio	0.237	0.287	0.016	0
HCM Control Delay	9.4	8.3	7.9	7.7
HCM Lane LOS	A	A	A	N
HCM 95th-tile Q	0.9	1.2	0	0

Intersection	
Int Delay, s/veh	17

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	22	161	0	36	184	138	34	103	156	23
Future Vol, veh/h	0	0	22	161	0	36	184	138	34	103	156	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-2	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	17	0	0	9	0
Mvmt Flow	0	0	22	161	0	36	184	138	34	103	156	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	915	914	168	908	908	155	179	0	0	172	0	0
Stage 1	374	374	-	523	523	-	-	-	-	-	-	-
Stage 2	541	540	-	385	385	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	256	275	881	258	277	896	1409	-	-	1417	-	-
Stage 1	651	621	-	541	534	-	-	-	-	-	-	-
Stage 2	529	524	-	642	614	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	205	216	881	210	218	896	1409	-	-	1417	-	-
Mov Cap-2 Maneuver	205	216	-	210	218	-	-	-	-	-	-	-
Stage 1	557	571	-	463	457	-	-	-	-	-	-	-
Stage 2	434	448	-	575	564	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	61.5	4.1	2.8
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1409	-	-	881	244	1417	-	-
HCM Lane V/C Ratio	0.131	-	-	0.025	0.807	0.073	-	-
HCM Control Delay (s)	7.9	0	-	9.2	61.5	7.7	0	-
HCM Lane LOS	A	A	-	A	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	6.1	0.2	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	122	0	0	33	0	323	163	0	316	23
Future Vol, veh/h	0	0	122	0	0	33	0	323	163	0	316	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-2	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	11	0	0	6	0
Mvmt Flow	0	0	122	0	0	33	0	323	163	0	316	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	749	814	328	794	744	405	339	0	0	486	0	0
Stage 1	328	328	-	405	405	-	-	-	-	-	-	-
Stage 2	421	486	-	389	339	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	331	315	718	308	345	650	1231	-	-	1087	-	-
Stage 1	689	651	-	626	602	-	-	-	-	-	-	-
Stage 2	614	554	-	639	643	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	314	315	718	256	345	650	1231	-	-	1087	-	-
Mov Cap-2 Maneuver	314	315	-	256	345	-	-	-	-	-	-	-
Stage 1	689	651	-	626	602	-	-	-	-	-	-	-
Stage 2	583	554	-	530	643	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	10.8	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1231	-	-	718	650	1087	-	-
HCM Lane V/C Ratio	-	-	-	0.17	0.051	-	-	-
HCM Control Delay (s)	0	-	-	11	10.8	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	270	30	0	173	1	7	0	0	4	0	1
Future Vol, veh/h	0	270	30	0	173	1	7	0	0	4	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	3	0	0	13	0	0	0	0	0	0	0
Mvmt Flow	0	270	30	0	173	1	7	0	0	4	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	174	0	0	300	0	0	459	459	285	459	474	174
Stage 1	-	-	-	-	-	-	285	285	-	174	174	-
Stage 2	-	-	-	-	-	-	174	174	-	285	300	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1415	-	-	1273	-	-	516	502	759	516	492	875
Stage 1	-	-	-	-	-	-	727	679	-	833	759	-
Stage 2	-	-	-	-	-	-	833	759	-	727	669	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1415	-	-	1273	-	-	515	502	759	516	492	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	515	502	-	516	492	-
Stage 1	-	-	-	-	-	-	727	679	-	833	759	-
Stage 2	-	-	-	-	-	-	832	759	-	727	669	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.1	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	515	1415	-	-	1273	-	-	562
HCM Lane V/C Ratio	0.014	-	-	-	-	-	-	0.009
HCM Control Delay (s)	12.1	0	-	-	0	-	-	11.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1	1	1	1	1	0	1	0	0	0	0	0
Stage 1	1	1	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	1027	899	1090	1027	899	-	1635	-	-	-	-	-
Stage 1	1027	899	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1027	899	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	899	1090	1027	899	-	1635	-	-	-	-	-
Mov Cap-2 Maneuver	-	899	-	1027	899	-	-	-	-	-	-	-
Stage 1	1027	899	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1027	899	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1635	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Intersection	
Intersection Delay, s/veh	6.5
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	2	2	0	0	10
Future Vol, veh/h	3	2	2	0	0	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	2	2	0	0	10
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.8	7.1	6.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	100%	60%	0%
Vol Thru, %	0%	0%	0%
Vol Right, %	0%	40%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	2	5	10
LT Vol	2	3	0
Through Vol	0	0	0
RT Vol	0	2	10
Lane Flow Rate	2	5	10
Geometry Grp	1	1	1
Degree of Util (X)	0.002	0.005	0.009
Departure Headway (Hd)	4.115	3.801	3.31
Convergence, Y/N	Yes	Yes	Yes
Cap	874	947	1087
Service Time	2.117	1.801	1.311
HCM Lane V/C Ratio	0.002	0.005	0.009
HCM Control Delay	7.1	6.8	6.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0

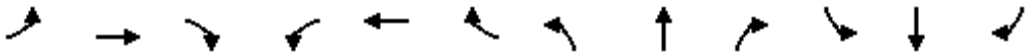
Lane Group	EBT	WBL	WBT	NBL	NBT	Ø6
Lane Configurations						
Traffic Volume (vph)	2	10	2	172	0	
Future Volume (vph)	2	10	2	172	0	
Lane Group Flow (vph)	274	0	12	0	175	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2	6
Permitted Phases		8		2		
Detector Phase	4	8	8	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	23.0	23.0	23.0	37.0	37.0	37.0
Total Split (%)	38.3%	38.3%	38.3%	61.7%	61.7%	62%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.62		0.11		0.21	
Control Delay	10.3		23.2		3.8	
Queue Delay	0.0		0.0		0.0	
Total Delay	10.3		23.2		3.8	
Queue Length 50th (m)	0.2		1.3		3.6	
Queue Length 95th (m)	16.9		4.9		13.4	
Internal Link Dist (m)	81.9		175.6		43.0	
Turn Bay Length (m)						
Base Capacity (vph)	647		256		847	
Starvation Cap Reductn	0		0		0	
Spillback Cap Reductn	0		0		0	
Storage Cap Reductn	0		0		0	
Reduced v/c Ratio	0.42		0.05		0.21	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 17: Parkside Dr & Future E-W Rd & Parkside Dr Ext





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	272	10	2	0	172	0	3	0	0	0
Future Volume (vph)	0	2	272	10	2	0	172	0	3	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			0%			0%			0%	
Total Lost time (s)		6.0			6.0			6.0				
Lane Util. Factor		1.00			1.00			1.00				
Frt		0.87			1.00			1.00				
Flt Protected		1.00			0.96			0.95				
Satd. Flow (prot)		1596			1804			1584				
Flt Permitted		1.00			0.48			0.74				
Satd. Flow (perm)		1596			906			1231				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2	272	10	2	0	172	0	3	0	0	0
RTOR Reduction (vph)	0	238	0	0	0	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	36	0	0	12	0	0	157	0	0	0	0
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	13%	0%	0%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA				
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.6			7.6			40.4				
Effective Green, g (s)		7.6			7.6			40.4				
Actuated g/C Ratio		0.13			0.13			0.67				
Clearance Time (s)		6.0			6.0			6.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		202			114			828				
v/s Ratio Prot		c0.02										
v/s Ratio Perm					0.01			c0.13				
v/c Ratio		0.18			0.11			0.19				
Uniform Delay, d1		23.4			23.2			3.7				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.4			0.4			0.5				
Delay (s)		23.8			23.6			4.2				
Level of Service		C			C			A				
Approach Delay (s)		23.8			23.6			4.2			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

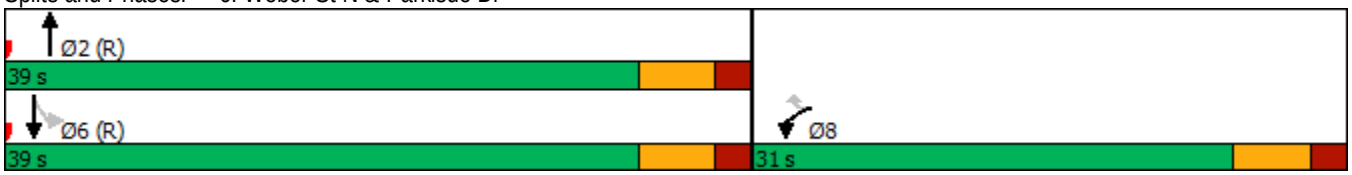
c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	119	110	412	133	669
Future Volume (vph)	119	110	412	133	669
Lane Group Flow (vph)	119	110	683	133	669
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		8		6	
Detector Phase	8	8	2	6	6
Switch Phase					
Minimum Initial (s)	8.0	8.0	30.0	30.0	30.0
Minimum Split (s)	31.0	31.0	36.0	36.0	36.0
Total Split (s)	31.0	31.0	39.0	39.0	39.0
Total Split (%)	44.3%	44.3%	55.7%	55.7%	55.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	6.0	4.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.40	0.34	0.29	0.27	0.28
Control Delay	28.9	8.5	2.6	6.9	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	8.5	2.6	6.9	4.1
Queue Length 50th (m)	14.8	0.0	7.8	6.0	13.9
Queue Length 95th (m)	27.3	11.6	16.7	17.1	25.8
Internal Link Dist (m)	67.8		212.4		232.9
Turn Bay Length (m)				33.0	
Base Capacity (vph)	643	565	2363	492	2408
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	0.19	0.19	0.29	0.27	0.28

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 6: Weber St N & Parkisde Dr





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	119	110	412	271	133	669
Future Volume (vph)	119	110	412	271	133	669
Ideal Flow (vphpl)	1775	1750	1775	1775	1775	1775
Total Lost time (s)	4.0	4.0	4.0		6.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.94		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1668	1290	3031		1647	3176
Flt Permitted	0.95	1.00	1.00		0.39	1.00
Satd. Flow (perm)	1668	1290	3031		670	3176
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	119	110	412	271	133	669
RTOR Reduction (vph)	0	93	73	0	0	0
Lane Group Flow (vph)	119	17	610	0	133	669
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	0%	14%	4%	0%	1%	5%
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	8.9	8.9	49.1		49.1	49.1
Effective Green, g (s)	10.9	10.9	51.1		49.1	51.1
Actuated g/C Ratio	0.16	0.16	0.73		0.70	0.73
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	259	200	2212		469	2318
v/s Ratio Prot	c0.07		0.20			c0.21
v/s Ratio Perm		0.01			0.20	
v/c Ratio	0.46	0.09	0.28		0.28	0.29
Uniform Delay, d1	26.9	25.3	3.2		3.9	3.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.2	0.3		1.5	0.3
Delay (s)	28.2	25.5	3.5		5.4	3.5
Level of Service	C	C	A		A	A
Approach Delay (s)	26.9		3.5			3.9
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX H

Traffic Operations Review

M.T.O. MINIMUM REQUIREMENTS
FOR INSTALLATION OF TRAFFIC SIGNAL

Methodology from Section 4 of *Ontario Traffic Manual Book 12: Traffic Signals*

INTERSECTION: Parkside Dr/Parkside Dr Ext & Future E-W Road

HORIZON / DESCRIPTION: Future Total (2031 and 2041)

Number of lanes on main road: 1

Flow conditions: Restricted (speeds less than 70 km/h with frequent side friction)

Number of approach legs: 4

Number of existing roads: 2 (all approach legs exist)

Major direction: North-South

Result
Condition not met
Condition not met
Condition not met

Justification 1: if both Justification 1A and 1B are 100% fulfilled.

Justification 2: if both Justification 2A and 2B are 100% fulfilled.

Justification 3: if all of Justifications 1A, 1B, 2A, and 2B are at least 80% fulfilled (only if both roads exist).

All justifications modified by Justification 7 to use peak hour projected volumes.

Justification 1: Minimum Vehicle Volume

A. Base volume requirement: 720
Requirement after 120% expansion: 864

Value	Percent Met
205.25	24%

B. Base volume requirement (minor street): 170
Requirement after 120% expansion: 204

Value	Percent Met
95.5	47%

Justification 2: Delay to Cross Traffic

A. Base volume requirement (major street): 720
Requirement after 120% expansion: 864

Value	Percent Met
109.75	13%

B. Base volume requirement (crossing major): 75
Requirement after 120% expansion: 90

Value	Percent Met
3.5	4%

	Volumes		Sum	Average Hourly
	AM	PM		
NBL	253	172	425	106.25
NBT	0	0	0	0
NBR	11	3	14	3.5
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	0	0
EBT	0	2	2	0.5
EBR	94	272	366	91.5
WBL	2	10	12	3
WBT	0	2	2	0.5
WBR	0	0	0	0
Peds	0	0	0	0

Pedestrians crossing major road

Roundabout Analysis

2031

Junctions 8

ARCADY 8 Lite

Version: 8.0.6.541 [19821,26/11/2015]
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Filename: FT2031.arc8
Path: F:\24063\Traffic\Roundabout
Report generation date: 2025-02-21 1:44:38 PM

Summary of intersection performance

	Weekday AM Peak Hour								Weekday PM Peak Hour							
	Queue (PCE)	95% Queue (PCE)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	Network Residual Capacity	Queue (PCE)	95% Queue (PCE)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	Network Residual Capacity
	Future Total 2031 Network - Future Total 2031															
Leg 1 WB	0.00	~1	0.00	0.00	A	3.83	A	319 % [Leg 4 NB]	0.01	~1	3.26	0.01	A	3.79	A	298 % [Leg 3 EB]
Leg 2 SB	0.00	~1	0.00	0.00	A				0.00	~1	0.00	0.00	A			
Leg 3 EB	0.09	~1	3.30	0.08	A				0.30	~1	3.89	0.23	A			
Leg 4 NB	0.29	~1	4.01	0.22	A				0.18	~1	3.68	0.15	A			

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

"D1 - Future Total 2031, Weekday AM Peak Hour " model duration: 7:45 AM - 8:45 AM
"D2 - Future Total 2031, Weekday PM Peak Hour" model duration: 4:45 PM - 5:45 PM

Run using Junctions 8.0.6.541 at 2025-02-21 1:44:34 PM

File summary

Title	24063 170 Northfield Dr W Roundabout Analysis
Date	2024-01-11
Version	
Status	(new file)
Client	
Analyst	AKung
Description	24063 170 Northfield Dr W Roundabout Analysis - Future Total

Analysis Options

Calculate Residual Capacity	Residual Capacity Criteria Type	V/C Ratio Threshold	Average Delay Threshold (s)	Queue Threshold (PCE)
✓	Delay	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCE	PCE	perHour	s	-Min	perMin

Future Total 2031 Network - Future Total 2031, Weekday AM Peak Hour

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Network Flow Scaling Factor (%)	Use Second Intercept Adjustment
Future Total 2031 Network	ARCADY	Project 24063 170 Northfield Dr W Roundabout Analysis	100.000	

Demand Set Details

Year	Time of day	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only
Future Total 2031	Weekday AM Peak Hour	PHF	07:45	08:45	60	15	

Roundabout details

Legs

Leg	Leg	Name	Truck Proportion
1 WB	1 WB	Future E-W Road (WB)	0.0
2 SB	2 SB	Parkside Dr Ext (SB)	0.0
3 EB	3 EB	Future E-W Road (EB)	2.0
4 NB	4 NB	Parkside Dr (NB)	5.0

Capacity Options

Leg	Minimum Capacity (PCE/hr)	Maximum Capacity (PCE/hr)	Percentage Intercept Adjustment (%)	Percentage Intercept Adjustment2 (%)	Final Slope	Final Intercept (PCE/hr)
1 WB	0.00	99999.00	100.00	100.00	0.509	1205.516
2 SB	0.00	99999.00	100.00	100.00	0.509	1205.516
3 EB	0.00	99999.00	100.00	100.00	0.509	1205.516
4 NB	0.00	99999.00	100.00	100.00	0.509	1205.516

Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1 WB	3.50	6.00	3.50	15.50	46.00	45.00	
2 SB	3.50	6.00	3.50	15.50	46.00	45.00	
3 EB	3.50	6.00	3.50	15.50	46.00	45.00	
4 NB	3.50	6.00	3.50	15.50	46.00	45.00	

Traffic Demand

Turning Counts / Proportions (PCE/hr) - Roundabout 1 (for whole period)

		To			
		1 WB	2 SB	3 EB	4 NB
From	1 WB	0.000	0.000	0.000	2.000
	2 SB	0.000	0.000	0.000	0.000
	3 EB	0.000	0.000	0.000	94.000
	4 NB	11.000	0.000	253.000	0.000

PHF details

Hourly Volume (PCE/hr)	Peak Hour Factor	Peak Time Segment
2.00	1.00	SecondQuarter
0.00	1.00	SecondQuarter
94.00	1.00	SecondQuarter
264.00	1.00	SecondQuarter

Results

Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (PCE)	Max 95th percentile Queue (PCE)	Max LOS
1 WB	0.00	0.00	0.00	~1	A
2 SB	0.00	0.00	0.00	~1	A
3 EB	0.08	3.30	0.09	~1	A
4 NB	0.22	4.01	0.29	~1	A

Roundabout performance

Driving Side	Name	Intersection Delay (s)	Intersection LOS	Network Residual Capacity (%)	First Leg Reaching Threshold
Right	Parkside Dr / Parkside Dr Ext & Future E-W Road	3.83	A	319	Leg 4 NB

Main Results for each time segment

Main results: (07:45-08:00)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	0.00	0.00	251.88	0.00	1077.35	0.000	0.00	0.000	A
2 SB	0.00	0.00	251.88	0.00	1077.35	0.000	0.00	0.000	A
3 EB	94.00	93.66	0.00	0.00	1205.52	0.078	0.09	3.302	A
4 NB	264.00	262.83	0.00	0.00	1205.52	0.219	0.29	4.005	A

Main results: (08:00-08:15)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	0.00	0.00	253.00	0.00	1076.78	0.000	0.00	0.000	A
2 SB	0.00	0.00	253.00	0.00	1076.78	0.000	0.00	0.000	A
3 EB	94.00	94.00	0.00	0.00	1205.52	0.078	0.09	3.302	A
4 NB	264.00	264.00	0.00	0.00	1205.52	0.219	0.29	4.014	A

Main results: (08:15-08:30)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	0.00	0.00	253.00	0.00	1076.77	0.000	0.00	0.000	A
2 SB	0.00	0.00	253.00	0.00	1076.77	0.000	0.00	0.000	A
3 EB	94.00	94.00	0.00	0.00	1205.52	0.078	0.09	3.302	A
4 NB	264.00	264.00	0.00	0.00	1205.52	0.219	0.29	4.014	A

Main results: (08:30-08:45)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	0.00	0.00	253.00	0.00	1076.77	0.000	0.00	0.000	A
2 SB	0.00	0.00	253.00	0.00	1076.77	0.000	0.00	0.000	A
3 EB	94.00	94.00	0.00	0.00	1205.52	0.078	0.09	3.302	A
4 NB	264.00	264.00	0.00	0.00	1205.52	0.219	0.29	4.014	A

Future Total 2031 Network - Future Total 2031, Weekday PM Peak Hour

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Network Flow Scaling Factor (%)	Use Second Intercept Adjustment
Future Total 2031 Network	ARCADY	Project 24063 170 Northfield Dr W Roundabout Analysis	100.000	

Demand Set Details

Year	Time of day	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only
Future Total 2031	Weekday PM Peak Hour	PHF	16:45	17:45	60	15	

Roundabout details

Legs

Leg	Leg	Name	Truck Proportion
1 WB	1 WB	Future E-W Road (WB)	0.0
2 SB	2 SB	Parkside Dr Ext (SB)	0.0
3 EB	3 EB	Future E-W Road (EB)	0.0
4 NB	4 NB	Parkside Dr (NB)	5.0

Capacity Options

Leg	Minimum Capacity (PCE/hr)	Maximum Capacity (PCE/hr)	Percentage Intercept Adjustment (%)	Percentage Intercept Adjustment2 (%)	Final Slope	Final Intercept (PCE/hr)
1 WB	0.00	99999.00	100.00	100.00	0.509	1205.516
2 SB	0.00	99999.00	100.00	100.00	0.509	1205.516
3 EB	0.00	99999.00	100.00	100.00	0.509	1205.516
4 NB	0.00	99999.00	100.00	100.00	0.509	1205.516

Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1 WB	3.50	6.00	3.50	15.50	46.00	45.00	
2 SB	3.50	6.00	3.50	15.50	46.00	45.00	
3 EB	3.50	6.00	3.50	15.50	46.00	45.00	
4 NB	3.50	6.00	3.50	15.50	46.00	45.00	

Traffic Demand

Turning Counts / Proportions (PCE/hr) - Roundabout 1 (for whole period)

		To			
		1 WB	2 SB	3 EB	4 NB
From	1 WB	0.000	0.000	2.000	10.000
	2 SB	0.000	0.000	0.000	0.000
	3 EB	2.000	0.000	0.000	272.000
	4 NB	3.000	3.000	172.000	0.000

PHF details

Hourly Volume (PCE/hr)	Peak Hour Factor	Peak Time Segment
12.00	1.00	SecondQuarter
0.00	1.00	SecondQuarter

274.00	1.00	SecondQuarter
178.00	1.00	SecondQuarter

Results

Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (PCE)	Max 95th percentile Queue (PCE)	Max LOS
1 WB	0.01	3.26	0.01	~1	A
2 SB	0.00	0.00	0.00	~1	A
3 EB	0.23	3.89	0.30	~1	A
4 NB	0.15	3.68	0.18	~1	A

Roundabout performance

Driving Side	Name	Intersection Delay (s)	Intersection LOS	Network Residual Capacity (%)	First Leg Reaching Threshold
Right	Parkside Dr / Parkside Dr Ext & Future E-W Road	3.79	A	298	Leg 3 EB

Main Results for each time segment

Main results: (16:45-17:00)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	12.00	11.96	174.29	0.00	1116.83	0.011	0.01	3.257	A
2 SB	0.00	0.00	183.26	0.00	1112.26	0.000	0.00	0.000	A
3 EB	274.00	272.82	9.96	0.00	1200.45	0.228	0.29	3.876	A
4 NB	178.00	177.28	1.99	0.00	1204.50	0.148	0.18	3.678	A

Main results: (17:00-17:15)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	12.00	12.00	175.00	0.00	1116.47	0.011	0.01	3.258	A
2 SB	0.00	0.00	184.00	0.00	1111.89	0.000	0.00	0.000	A
3 EB	274.00	274.00	10.00	0.00	1200.43	0.228	0.29	3.885	A
4 NB	178.00	178.00	2.00	0.00	1204.50	0.148	0.18	3.681	A

Main results: (17:15-17:30)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	12.00	12.00	175.00	0.00	1116.47	0.011	0.01	3.258	A
2 SB	0.00	0.00	184.00	0.00	1111.89	0.000	0.00	0.000	A
3 EB	274.00	274.00	10.00	0.00	1200.43	0.228	0.30	3.885	A
4 NB	178.00	178.00	2.00	0.00	1204.50	0.148	0.18	3.681	A

Main results: (17:30-17:45)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	12.00	12.00	175.00	0.00	1116.47	0.011	0.01	3.258	A
2 SB	0.00	0.00	184.00	0.00	1111.89	0.000	0.00	0.000	A
3 EB	274.00	274.00	10.00	0.00	1200.43	0.228	0.30	3.885	A
4 NB	178.00	178.00	2.00	0.00	1204.50	0.148	0.18	3.681	A

2041

Junctions 8

ARCADY 8 Lite

Version: 8.0.6.541 [19821,26/11/2015]
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Filename: FT2041.arc8
Path: F:\24063\Traffic\Roundabout
Report generation date: 2025-02-21 1:25:01 PM

Summary of intersection performance

	Weekday AM Peak Hour								Weekday PM Peak Hour							
	Queue (PCE)	95% Queue (PCE)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	Network Residual Capacity	Queue (PCE)	95% Queue (PCE)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS	Network Residual Capacity
	Future Total 2041 Network - Future Total 2041															
Leg 1 WB	0.00	~1	0.00	0.00	A	3.84	A	314 % [Leg 4 NB]	0.01	~1	3.26	0.01	A	3.79	A	298 % [Leg 3 EB]
Leg 2 SB	0.00	~1	0.00	0.00	A				0.00	~1	0.00	0.00	A			
Leg 3 EB	0.09	~1	3.30	0.08	A				0.30	~1	3.89	0.23	A			
Leg 4 NB	0.30	~1	4.03	0.22	A				0.18	~1	3.68	0.15	A			

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

"D1 - Future Total 2041, Weekday AM Peak Hour " model duration: 7:45 AM - 8:45 AM
"D2 - Future Total 2041, Weekday PM Peak Hour" model duration: 4:45 PM - 5:45 PM

Run using Junctions 8.0.6.541 at 2025-02-21 1:24:58 PM

File summary

Title	24063 170 Northfield Dr W Roundabout Analysis
Date	2024-01-11
Version	
Status	(new file)
Client	
Analyst	AKung
Description	24063 170 Northfield Dr W Roundabout Analysis - Future Total

Analysis Options

Calculate Residual Capacity	Residual Capacity Criteria Type	V/C Ratio Threshold	Average Delay Threshold (s)	Queue Threshold (PCE)
✓	Delay	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCE	PCE	perHour	s	-Min	perMin

Future Total 2041 Network - Future Total 2041, Weekday AM Peak Hour

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Network Flow Scaling Factor (%)	Use Second Intercept Adjustment
Future Total 2041 Network	ARCADY	Project 24063 170 Northfield Dr W Roundabout Analysis	100.000	

Demand Set Details

Year	Time of day	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only
Future Total 2041	Weekday AM Peak Hour	PHF	07:45	08:45	60	15	

Roundabout details

Legs

Leg	Leg	Name	Truck Proportion
1 WB	1 WB	Future E-W Road (WB)	0.0
2 SB	2 SB	Parkside Dr Ext (SB)	0.0
3 EB	3 EB	Future E-W Road (EB)	2.0
4 NB	4 NB	Parkside Dr (NB)	5.0

Capacity Options

Leg	Minimum Capacity (PCE/hr)	Maximum Capacity (PCE/hr)	Percentage Intercept Adjustment (%)	Percentage Intercept Adjustment2 (%)	Final Slope	Final Intercept (PCE/hr)
1 WB	0.00	99999.00	100.00	100.00	0.509	1205.516
2 SB	0.00	99999.00	100.00	100.00	0.509	1205.516
3 EB	0.00	99999.00	100.00	100.00	0.509	1205.516
4 NB	0.00	99999.00	100.00	100.00	0.509	1205.516

Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1 WB	3.50	6.00	3.50	15.50	46.00	45.00	
2 SB	3.50	6.00	3.50	15.50	46.00	45.00	
3 EB	3.50	6.00	3.50	15.50	46.00	45.00	
4 NB	3.50	6.00	3.50	15.50	46.00	45.00	

Traffic Demand

Turning Counts / Proportions (PCE/hr) - Roundabout 1 (for whole period)

		To			
		1 WB	2 SB	3 EB	4 NB
From	1 WB	0.000	0.000	0.000	2.000
	2 SB	0.000	0.000	0.000	0.000
	3 EB	0.000	0.000	0.000	94.000
	4 NB	11.000	3.000	253.000	0.000

PHF details

Hourly Volume (PCE/hr)	Peak Hour Factor	Peak Time Segment
2.00	1.00	SecondQuarter
0.00	1.00	SecondQuarter
94.00	1.00	SecondQuarter
267.00	1.00	SecondQuarter

Results

Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (PCE)	Max 95th percentile Queue (PCE)	Max LOS
1 WB	0.00	0.00	0.00	~1	A
2 SB	0.00	0.00	0.00	~1	A
3 EB	0.08	3.30	0.09	~1	A
4 NB	0.22	4.03	0.30	~1	A

Roundabout performance

Driving Side	Name	Intersection Delay (s)	Intersection LOS	Network Residual Capacity (%)	First Leg Reaching Threshold
Right	Parkside Dr / Parkside Dr Ext & Future E-W Road	3.84	A	314	Leg 4 NB

Main Results for each time segment

Main results: (07:45-08:00)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	0.00	0.00	254.86	0.00	1075.83	0.000	0.00	0.000	A
2 SB	0.00	0.00	251.87	0.00	1077.35	0.000	0.00	0.000	A

3 EB	94.00	93.66	0.00	0.00	1205.52	0.078	0.09	3.302	A
4 NB	267.00	265.81	0.00	0.00	1205.52	0.221	0.30	4.017	A

Main results: (08:00-08:15)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	0.00	0.00	256.00	0.00	1075.25	0.000	0.00	0.000	A
2 SB	0.00	0.00	253.00	0.00	1076.78	0.000	0.00	0.000	A
3 EB	94.00	94.00	0.00	0.00	1205.52	0.078	0.09	3.302	A
4 NB	267.00	267.00	0.00	0.00	1205.52	0.221	0.30	4.027	A

Main results: (08:15-08:30)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	0.00	0.00	256.00	0.00	1075.25	0.000	0.00	0.000	A
2 SB	0.00	0.00	253.00	0.00	1076.77	0.000	0.00	0.000	A
3 EB	94.00	94.00	0.00	0.00	1205.52	0.078	0.09	3.302	A
4 NB	267.00	267.00	0.00	0.00	1205.52	0.221	0.30	4.027	A

Main results: (08:30-08:45)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	0.00	0.00	256.00	0.00	1075.25	0.000	0.00	0.000	A
2 SB	0.00	0.00	253.00	0.00	1076.77	0.000	0.00	0.000	A
3 EB	94.00	94.00	0.00	0.00	1205.52	0.078	0.09	3.302	A
4 NB	267.00	267.00	0.00	0.00	1205.52	0.221	0.30	4.027	A

Future Total 2041 Network - Future Total 2041, Weekday PM Peak Hour

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Network Flow Scaling Factor (%)	Use Second Intercept Adjustment
Future Total 2041 Network	ARCADY	Project 24063 170 Northfield Dr W Roundabout Analysis	100.000	

Demand Set Details

Year	Time of day	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only
Future Total 2041	Weekday PM Peak Hour	PHF	16:45	17:45	60	15	

Roundabout details

Legs

Leg	Leg	Name	Truck Proportion
1 WB	1 WB	Future E-W Road (WB)	0.0
2 SB	2 SB	Parkside Dr Ext (SB)	0.0
3 EB	3 EB	Future E-W Road (EB)	0.0
4 NB	4 NB	Parkside Dr (NB)	5.0

Capacity Options

Leg	Minimum Capacity (PCE/hr)	Maximum Capacity (PCE/hr)	Percentage Intercept Adjustment (%)	Percentage Intercept Adjustment2 (%)	Final Slope	Final Intercept (PCE/hr)
1 WB	0.00	99999.00	100.00	100.00	0.509	1205.516
2 SB	0.00	99999.00	100.00	100.00	0.509	1205.516
3 EB	0.00	99999.00	100.00	100.00	0.509	1205.516
4 NB	0.00	99999.00	100.00	100.00	0.509	1205.516

Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1 WB	3.50	6.00	3.50	15.50	46.00	45.00	
2 SB	3.50	6.00	3.50	15.50	46.00	45.00	
3 EB	3.50	6.00	3.50	15.50	46.00	45.00	
4 NB	3.50	6.00	3.50	15.50	46.00	45.00	

Traffic Demand

Turning Counts / Proportions (PCE/hr) - Roundabout 1 (for whole period)

		To			
		1 WB	2 SB	3 EB	4 NB
From	1 WB	0.000	0.000	2.000	10.000
	2 SB	0.000	0.000	0.000	0.000
	3 EB	2.000	0.000	0.000	272.000
	4 NB	3.000	3.000	172.000	0.000

PHF details

Hourly Volume (PCE/hr)	Peak Hour Factor	Peak Time Segment
12.00	1.00	SecondQuarter
0.00	1.00	SecondQuarter
274.00	1.00	SecondQuarter
178.00	1.00	SecondQuarter

Results

Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (PCE)	Max 95th percentile Queue (PCE)	Max LOS
1 WB	0.01	3.26	0.01	~1	A
2 SB	0.00	0.00	0.00	~1	A
3 EB	0.23	3.89	0.30	~1	A
4 NB	0.15	3.68	0.18	~1	A

Roundabout performance

Driving Side	Name	Intersection Delay (s)	Intersection LOS	Network Residual Capacity (%)	First Leg Reaching Threshold
Right	Parkside Dr / Parkside Dr Ext & Future E-W Road	3.79	A	298	Leg 3 EB

Main Results for each time segment

Main results: (16:45-17:00)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	12.00	11.96	174.29	0.00	1116.83	0.011	0.01	3.257	A
2 SB	0.00	0.00	183.26	0.00	1112.26	0.000	0.00	0.000	A
3 EB	274.00	272.82	9.96	0.00	1200.45	0.228	0.29	3.876	A
4 NB	178.00	177.28	1.99	0.00	1204.50	0.148	0.18	3.678	A

Main results: (17:00-17:15)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	12.00	12.00	175.00	0.00	1116.47	0.011	0.01	3.258	A
2 SB	0.00	0.00	184.00	0.00	1111.89	0.000	0.00	0.000	A
3 EB	274.00	274.00	10.00	0.00	1200.43	0.228	0.29	3.885	A
4 NB	178.00	178.00	2.00	0.00	1204.50	0.148	0.18	3.681	A

Main results: (17:15-17:30)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	12.00	12.00	175.00	0.00	1116.47	0.011	0.01	3.258	A
2 SB	0.00	0.00	184.00	0.00	1111.89	0.000	0.00	0.000	A
3 EB	274.00	274.00	10.00	0.00	1200.43	0.228	0.30	3.885	A
4 NB	178.00	178.00	2.00	0.00	1204.50	0.148	0.18	3.681	A

Main results: (17:30-17:45)

Leg	Total Demand (PCE/hr)	Entry Flow (PCE/hr)	Circulating Flow (PCE/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCE/hr)	V/C Ratio	End Queue (PCE)	Delay (s)	LOS
1 WB	12.00	12.00	175.00	0.00	1116.47	0.011	0.01	3.258	A
2 SB	0.00	0.00	184.00	0.00	1111.89	0.000	0.00	0.000	A
3 EB	274.00	274.00	10.00	0.00	1200.43	0.228	0.30	3.885	A
4 NB	178.00	178.00	2.00	0.00	1204.50	0.148	0.18	3.681	A

APPENDIX I

Transportation Demand Management Checklist

Travel Demand Management (TDM) Implementation Checklist

Version 9/18/2013

Appendix H

Case Study: _____ **Site Context:** _____

TDM Checklist No: _____ **ZBL Parking Requirement:** _____

Date: _____ **Applicable Parking Reduction:** _____

The Transportation Demand Management (TDM) Checklist and Parking Management Worksheet are not designed for residential properties, but can be used to inform mixed-use developments.

TABLE A		Site Access					
In creating an environment that supports pedestrian and cycling activity, the public realm must be accessible, safe, and comfortable to encourage movement on the street and in the surrounding area(s). These facilities and features should encourage walking and cycling.							
Points		**Features**				**Yes**	**N/A**
A1	**2**	Development incorporates functional building entrances that are oriented to public space or to locations where pedestrians and transit users arrive from such as a street, square, park or plaza.				**Yes**	
A2	**1**	External to site: Continuous sidewalks (consistent with AODA Accessible Built Environment Standard) are provided along both sides of all adjacent public streets (over and above requirement) AND Internal to site: Pedestrian walkways (consistent with AODA Accessible Built Environment Standard e.g.1.8m min width) are provided through large parking areas to link the building with the public street sidewalk system				**Yes**	
A3	**3**	Non-residential: development provides secure bike storage for 5% of the building occupants. Consistent with LEED requirements.					
A4	**4**	Shower and change facilities for employees provided on-site consistent with LEED requirements.					
A5	**2**	Provision of active uses at-grade along street frontages (e.g. retail).				**Yes**	
Category Max =		10	**Total Points Applicable =**	10	**Score =**	5	

TABLE B		Public Transportation Access					
The availability and proximity of convenient public transit service with direct pedestrian linkages to the building will provide viable travel options for employees, visitors and residents.							
Points		**Features**				**Yes**	**N/A**
B1	**1**	Bus shelters with seating are provided at the transit stop immediately adjacent to the development in consultation with Transportation Planning at the Region of Waterloo				**Yes**	
B2	**1**	Information regarding public transit routes, schedules and fares are provided in an accessible and visible location on site and in adjacent bus stops					
B3a	**5**	Located within 800m of a Rapid Transit Station				**Yes**	
B3b	**3**	Located within 600 m of a bus service with headways of 15 min or less or is located in a designated mixed use corridor or node. **Note: Points are awarded for either B3a, B3b or B3c only. Please choose whichever represents the highest order of transit.**					
B3c	**1**	Located within 400 m of a bus service with headways of 16 min to 30 min. **Note: Points are awarded for either B3a, B3b or B3c only. Please choose whichever represents the highest order of transit.**					
Category Max =		5	**Total Points Applicable =**	5	**Score =**	5	

TABLE C		Parking					
Vehicle parking facilities can affect the character, travel mode and cost of a development. Reducing parking supply to match expected demand can a have a positive influence on the selection of alternative travel modes.							
Points		**Features**				**Yes**	**N/A**
C1	**24**	Utilizes reduced parking supply consistent with the TDM Parking Management Worksheet. Contact your Area Municipal planning authority to determine whether the Worksheet is applicable to your development. **Note: Points are awarded for either C1, C2, or C3 only. Please choose whichever applies with the highest value.**					
C2	**24**	Includes allowances for shared parking in mixed-use zones. **Note: Points are awarded for C1, C2, or C3 only. Please choose whichever applies after consulting with the Area Municipal planning authority.**					
C3	**15**	Provides no more than the minimum number of parking spaces, as required by applicable Zoning By-Law. **Note: Points are awarded for either C1, C2, or C3 only. Please choose whichever applies.**					
C4	**10**	Implements paid parking on part or all of the site (e.g. parking permits, paid parking zones near main entrances)					
C5	**3**	Provides priority parking for carpooling/vanpooling participants equivalent to 5% of employee spaces					
C6	**5**	Commercial Uses: Provide car-share spaces equivalent to 2% of building occupants					
C7	**3**	Parking is not located on major street frontage or between a road right of way and the building facade.				**Yes**	
C8	**5**	25% to 50% of parking is located underground or in a structure					
C9	**10**	50% to 75% of parking is located underground or in a structure					
C10	**15**	75% of parking or more is located underground or in a structure				**yes**	
C11	**3**	Parking spaces provided off-site on a lot within 300 metres of the lot containing such use.					
Category Max =		25	**Total Points Applicable =**	25	**Score =**	18	

Case Study: 0 **Checklist No:** 0
Date: January 0, 1900 **Site Context:** 0

TABLE D		Trip Reduction Incentives		
A formal TDM plan will identify specific initiatives that will be initiated in order to encourage reduced single occupant vehicle travel.				
Points		**Features**		**N/A**
D1	**2**	The building owner/occupant will make available a ride matching service for car/vanpooling		
D2	**2**	The building owner/occupant will make available emergency ride home options		
D3	**5**	The building owner/occupant will make available subsidized transit passes for all occupants for a period of two years		
D4	**5**	The building owner/occupant agrees to charge for parking as an unbundled cost to occupants	**Yes**	
D5	**2**	The building owner/occupant agrees to provide reduced cost parking for users of car/van pool, bicycle, moped/motorcycle spaces		
D6	**10**	The building owner/occupant has prepared a TDM plan to the satisfaction of the Region of Waterloo and the Area Municipality that targets a 10% reduction in peak hour trips using forecast trip generation with status quo travel characteristics	**Yes**	
D7	**5**	The employer has provided flexible working hours, telework or shift work arrangements.		
D8	**14**	The development agrees to join Travelwise (TMA) that provides the same services outlined under items D1, D2, D6		
D9	**5**	The building owner/occupant will make available car sharing services		
D10	**2**	The development includes mixed uses (i.e. retail, commercial or food services, daycares, or other complementary uses) on-site or located within 400 metres.	**Yes**	
Category Max =	25	**Total Points Applicable =** 25	**Score =**	17

TABLE E	Checklist Summary			
For each item, a "Yes" answer is equivalent to the points as indicated in the section. N/A sections should be explained in an attachment to this table. The score for each section is reflected as a percentage and calculated by dividing the points by the "Total Applicable".				
Category	**Minimum Requirement**	**Total Applicable**	**Points Scored**	**Comments**
Pedestrian & Cyclist Orientation	24	10	5	
Public Transit Access		5	5	
Parking		25	18	
SUB-TOTAL		**40**	**28**	
Trip Reduction Incentives		*25*	17	
OVERALL TOTAL		***65***	**45**	

TABLE F	Scoring Summary		
FINAL SCORE	**RATING (check one)**		
50 - 65	****		**TDM SUPPORTIVE DEVELOPMENT**
40 -49	***	**X**	
30 - 39	**		
24 - 29	*		
0 - 23			Non-TDM Supportive Development (Review and upgrade TDM elements to pass)

Comments:

Parking Management Worksheet
Version 9/18/2013

Appendix I

Case Study: 170 Northfield Drive, Waterloo **Site Context:** Intensification Corridor

Date: **Reduction Worksheet No:** 1

"**Urban Growth Centres -** (UGC) area classification includes the Downtown / Uptown and RT Station Areas of Kitchener, Waterloo and Cambridge.

"**Intensification Corridor**" (IC) classification is applied to sites within 800 metres of the future CTC line

"**Other**" classification applies to all other sites

Please highlight the cell percentages applicable to your development under the appropriate classification. Please note that the Parking Management Worksheet and the Transportation Demand Management (TDM) Checklist are not designed for residential properties, but can be used for mixed-use developments. Local municipalities are the decision-making bodies with respect to consideration of parking reductions below Zoning By-law requirements.

TABLE A	Pedestrian and Cyclist Orientation			
In creating an environment that supports pedestrian and cycling activity, the public realm must be accessible, safe, and comfortable to encourage movement on the street and in the surrounding area(s). These facilities and features should encourage walking and cycling.				
	Features	**UGC**	**IC**	**Other**
A1	Development incorporates functional building entrances that are oriented to public space or to locations where pedestrians and transit users arrive from such as a street, square, park or plaza.	1%	1%	1%
A2	Continuous sidewalks (1.5m min. width) are provided along both sides of all adjacent public streets and pedestrian walkways (1.5m min width) are provided through large parking areas to link the building with the public street sidewalk system	0%	0%	1%
A3	Non-Residential: Development provides secure bike storage for 4% of the building occupants	2%	2%	1%
A4	Shower and change facilities provided on-site consistent with LEED requirements.	1%	1%	1%
A5	Provision of active uses at-grade along street frontages.	1%	1%	1%
	Category Maximum	**4%**	**4%**	**4%**
	Available Parking Reduction		**2%**	

TABLE B	Public Transportation Access			
The availability and proximity of convenient public transit service with direct pedestrian linkages to the building will provide viable travel options for employees, visitors and residents.				
	Features	**UGC**	**IC**	**Other**
B1	Bus shelters with seating are provided at the transit stop immediately adjacent to the development, in consultation with Transportation Planning at the Region of Waterloo	0%	0%	1%
B2	Information regarding public transit routes, schedules and fares are provided in an accessible and visible location on site and in adjacent bus stops	0%	0%	1%
B3a	Located in an UGC or within 800 m of a future Rapid Transit Station	24%	12%	0%
B3b	Located within 600m a transit route with 15 minute headways (or less) or is located in a designated mixed use corridor or node. **Note: Points are awarded for either B3a, B3b or B3c only. Please choose whichever represents the highest order of transit.**	-	-	3%
B3c	Located within 400 metres of a bus service with headways of 15 min to 30 min. **Note: Points are awarded for either B3a, B3b or B3c only. Please choose whichever represents the highest order of transit.**	-	-	1%
	Category Maximum	**24%**	**12%**	**5%**
	Available Parking Reduction		**12%**	

TABLE C	Parking			
Vehicle parking facilities can affect the character, travel mode and cost of a development. Reducing parking supply to match expected demand can have a positive influence on the selection of alternative travel modes.				
	Features	**UGC**	**IC**	**Other**
C1	Provides priority parking for carpooling/vanpooling participants equivalent to 5% of employee spaces	0%	0%	5%
C2	Commercial Uses: Provide car-share spaces equivalent to 2% of building occupants	2%	2%	0%
C3	Implements paid parking system on all or part of the site (e.g. parking permits, paid parking zones near main entrances)	2%	2%	1%
C4	Parking is not located on major street frontage.	0%	0%	1%
C5	25% to 50% of parking is located underground or in a structure	2%	1%	0%
C6	50% to 75% of parking is located underground or in a structure	4%	2%	0%
C7	75% of parking or more is located underground or in a structure	5%	3%	0%
	Category Maximum	**6%**	**4%**	**6%**
	Available Parking Reduction		**3%**	

Sample Parking Reduction Worksheet **FORM-2**

Case Study: 170 Northfield Drive, Waterloo **Site Context:** Intensification Corridor
Date: 1900-01-00 **Worksheet No:** 1

TABLE D	Trip Reduction Incentives			
A formal TDM plan will identify specific initiatives that will be initiated in order to encourage reduced single occupant vehicle travel.				
	Features	**UGC**	**IC**	**Other**
D1	The building owner/occupant will provide a ride matching service for car/vanpooling	0%	0%	1%
D2	The building owner/occupant will provide emergency ride home options	3%	2%	1%
D3	The building owner/occupant will provide subsidized transit passes for all occupants for a period of two years	10%	4%	2%
D4	The building owner/occupant agrees to charge for parking as a separate cost to occupants	10%	5%	2%
D5	The building owner/occupant agrees to provide reduced cost for users of car/van pool, bicycle, moped/motorcycle spaces	0%	0%	1%
D6	The development agrees to join Travelwise (TMA) that provides the same services outlined under items D1 and D2	9%	6%	4%
	Category Maximum	**23%**	**11%**	**7%**
	Available Parking Reduction		**5%**	

TABLE E	Parking Reduction Summary				
Please indicate the total reduction available based upon Tables A through D above.					
		Maximum Achievable Reduction			
Category	**Reduction Achieved**	**UGC**	**IC**	**Other**	**Comments**
Pedestrian & Cyclist Orientation	**2%**	4%	4%	4%	
Public Transit Access	**12%**	24%	12%	5%	
Parking	**3%**	6%	4%	6%	
Trip Reduction Incentives	**5%**	23%	11%	7%	
TOTAL	**22%**	**57%**	**31%**	**22%**	

TABLE F	TOTAL REDUCTION ACHIEVED	22%

Comments: