TRANSPORTATION IMPACT STUDY

CHIPWOODS PARK
PROPOSED RESIDENTIAL DEVELOPMENT

TOWNSHIP OF MELANCTHON,
COUNTY OF DUFFERIN

PREPARED FOR:

1000719578 ONTARIO INC.

PREPARED BY:

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JUNE 2025

CFCA FILE NO. 2621-7000

CROZIER
CONSULTING ENGINEERS

Revision Number	Date	Comments
Rev.0	March 2025	Submitted as Draft
Rev.1	June 2025	First Submission

Executive Summary

CF Crozier & Associates Inc. (Crozier) was retained by 1000719578 Ontario Inc. to undertake a Transportation Impact Study (TIS). This study supports future Official Plan Amendment and Zoning By-Law Amendment applications for a residential redevelopment of the existing Chipwoods Park Community to an affordable leasehold community located west of 3rd Line, south of Dufferin Road 17, and north of Side Road 5, in the Township of Melancthon (Town), Dufferin County (County).

The purpose of the study is to assess the impacts of the proposed redevelopment on the study road network and to recommend any required mitigation measures, if warranted.

The study has been completed with general conformance of the MTO's Traffic Impact Study Guidelines, with the associated analyses and findings outlined herein. The MTO's guidelines were used since there are no local guidelines.

The Development Concept Plan prepared by Glen Schnarr & Associates Inc. (GSAI), proposes the development of an affordable leasehold community consisting of 224 homes with a total site area of approximately 37.38 ha. The existing stop-controlled "T" intersection of Chipwoods and 3rd line will be used as the main access to the community.

Existing Conditions

Under existing conditions, each intersection included in the study road network is currently operating at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 9.7 seconds, and the maximum volume-to-capacity (v/c) ratio is 0.04, both occurring at the minor, stop-controlled approach of an intersection.

Under existing conditions, no queuing issues were observed, and the study road network operates efficiently, with no critical movements.

Future Background Conditions

Under future background conditions in the ultimate horizon year (2038), the 3rd Line and Dufferin Road 17 intersection operates at an LOS "B" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 11.9 seconds, and the maximum v/c ratio is 0.06, both occurring at minor, stop-controlled approaches.

The intersections of 3rd Line and Side Road 5, as well as 3rd Line and Chipwoods operate at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 9.7 seconds, and the maximum v/c ratio is 0.06, both occurring at minor, stop-controlled approaches.

Under future background conditions, no queuing issues were observed, and the study road network is expected to operate efficiently, with no critical movements.

Future Total Conditions

Under future total conditions in the ultimate horizon year (2038), the 3rd Line and Dufferin Road 17 intersection operates at an LOS "B" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 12.3 seconds, and the maximum v/c ratio is 0.14, both occurring at minor, stop-controlled approaches.

The 3rd Line and Side Road 5 intersection, as well as the 3rd Line and Chipwoods intersection operate at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 10.0 seconds, and the maximum v/c ratio is 0.08, both occurring at minor, stop-controlled approaches.

Under future total conditions, no queuing issues were observed, and the study road network is expected to operate efficiently, with no critical movements.

Traffic Safety

The assessment of sight distance at the proposed site access indicate that no sight distance issues are expected for vehicles exiting the Site.

The analysis undertaken herein was prepared using the most recent Development Concept Plan. Any minor change to the plans should not materially affect the conclusions contained within this report.

Parking

The Town of Melancthon ZBL requires the proposed redevelopment to provide a minimum parking supply of 448 parking spaces, or two (2) spaces per dwelling unit. As the development proposes one (1) parking space per unit plus 43 additional visitor parking spaces for a total of 267 spaces, the development proposes a parking deficit of 181 spaces, in comparison to the Town's ZBL.

According to ITE ParkGen, a peak parking demand of 231 spaces (inclusive of tenants and visitors) is estimated. As the most recent Development Concept Plan proposes 267 spaces, the proposed parking supply should adequately accommodate the peak parking demand of the proposed redevelopment.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 Introduction

1.1 Background

CF Crozier & Associates Inc. (Crozier) was retained by 1000719578 Ontario Inc. to undertake a Transportation Impact Study (TIS). This study supports future Official Plan Amendment and Zoning By-Law Amendment applications for a residential redevelopment of the existing Chipwoods Park Community to an affordable leasehold community located west of 3rd Line, south of Dufferin Road 17, and north of Side Road 5, in the Township of Melancthon (Town), Dufferin County (County).

The purpose of the study is to assess the impacts of the proposed redevelopment on the study road network, and to recommend any required mitigation measures, if warranted.

The study analyzes the operations of the study road network. Future traffic operations with and without the addition of the site generated vehicular trips are also analyzed.

The study has been completed with general conformance of the MTO's Traffic Impact Study Guidelines, with the associated analyses and findings outlined herein. The MTO's guidelines were used since there are no local TIS guidelines. The Terms of Reference for the study that were sent can be found in correspondence included in **APPENDIX A,** however, no response was received by the time of writing this study.

1.2 Development Proposal

According to the most recent Development Concept Plan prepared by Glen Schnarr & Associates Inc. (GSAI), the proposed redevelopment has a total site area of approximately 37.38 ha. The proposed redevelopment is envisioned to consist of 224 residential units. The existing stop-controlled "T" intersection of Chipwoods and 3rd line will be used as the main access to the community.

Table 1 below outlines the breakdown of the proposed redevelopment.

Table 1: Proposed Redevelopment Breakdown

Site Statistic	Phase 1
Residential – Single Detached Units	224
Residential Area	6.26 ha
Roads/Sidewalks	2.06 ha
Recreational Area/Open Space	1.54 ha
Total Site Area	37.38 ha

The most recent Development Concept Plan prepared by GSAI Inc. has been included as **Figure 1**.

The Site location is attached as **Figure 2**.

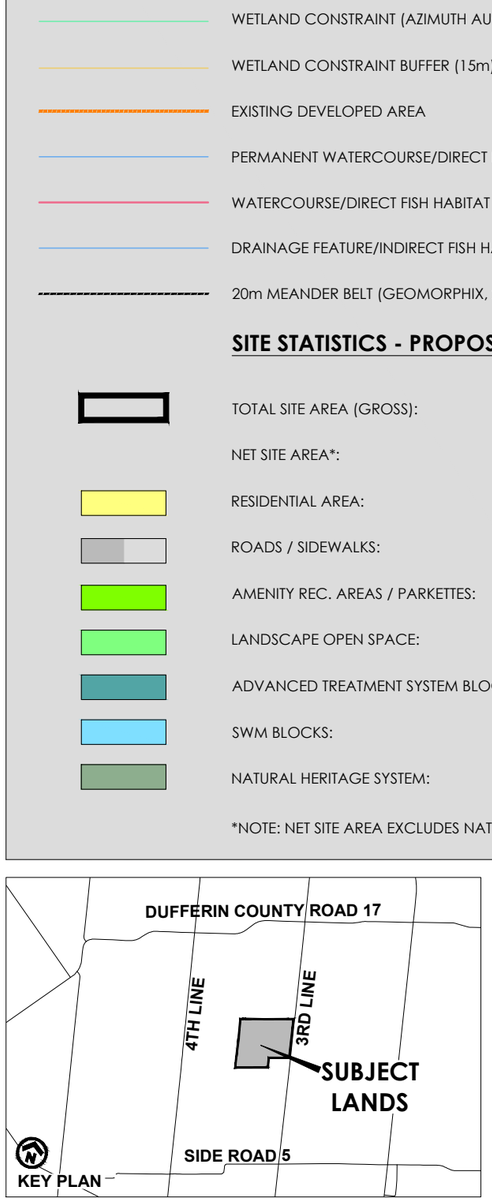
LEGEND

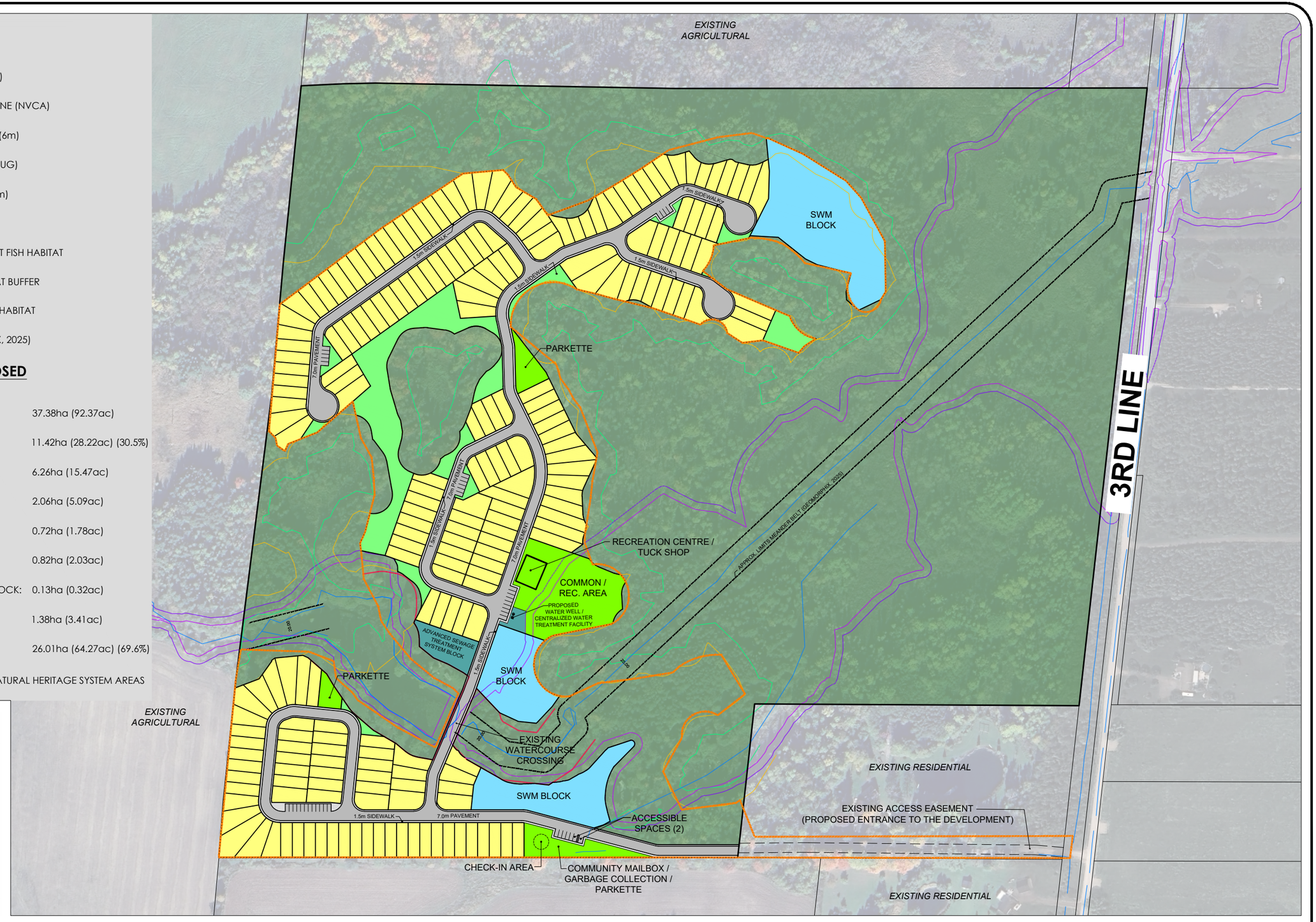
- EXISTING WATERCOURSE
- EXISTING WATER FEATURE (AZIMUTH)
- ESTIMATED EX. REGIONAL FLOOD LINE (NVCA)
- EX. REGIONAL FLOOD LINE BUFFER (6m)
- WETLAND CONSTRAINT (AZIMUTH AUG)
- WETLAND CONSTRAINT BUFFER (15m)
- EXISTING DEVELOPED AREA
- PERMANENT WATERCOURSE/DIRECT FISH HABITAT
- WATERCOURSE/DIRECT FISH HABITAT BUFFER
- DRAINAGE FEATURE/INDIRECT FISH HABITAT
- 20m MEANDER BELT (GEOMORPHIX, 2025)

SITE STATISTICS - PROPOSED

TOTAL SITE AREA (GROSS):	37.38ha (92.37ac)
NET SITE AREA*:	11.42ha (28.22ac) (30.5%)
RESIDENTIAL AREA:	6.26ha (15.47ac)
ROADS / SIDEWALKS:	2.06ha (5.09ac)
AMENITY REC. AREAS / PARKETTES:	0.72ha (1.78ac)
LANDSCAPE OPEN SPACE:	0.82ha (2.03ac)
ADVANCED TREATMENT SYSTEM BLOCK:	0.13ha (0.32ac)
SWM BLOCKS:	1.38ha (3.41ac)
NATURAL HERITAGE SYSTEM:	26.01ha (64.27ac) (69.6%)

*NOTE: NET SITE AREA EXCLUDES NATURAL HERITAGE SYSTEM AREAS





CONCEPT PLAN
CHIPWOODS

476420 3RD LINE, PART OF LOT 8, CONCESSION 3, OLD SURVEY,
TOWNSHIP OF MELANCTHON, COUNTY OF DUFFERIN

ADDITIONAL SITE STATISTICS

UNIT COUNTS:	224 UNITS (9.14m x 27.5m)
AMENITY AREA / RECREATION AREA / PARKETTES:	7,145m² (6.26% OF NET SITE AREA)
VISITOR PARKING PROVIDED:	43 SPACES (0.19 SPACES / UNIT)

SCALE 1:3000
JUNE 20, 2025

GSAI
Glen Schnarr & Associates Inc.

Legend	Chipwoods Park	CROZIER CONSULTING ENGINEERS	Figure 2
Site Location	Site Location		Project No. 2621-7000 Date: 04/11/25 Analyst: Andrew B

2.0 Existing Conditions

2.1 Development Lands

The proposed redevelopment is bounded by 3rd Line to the east, Chipwoods to the south, and existing agricultural lands to the north and west. Based on the Town's Official Plan, Schedule A, the Subject Site is primarily designated "environmental conservation" and currently consists of open agricultural lands throughout.

2.2 Study Area

The study area encompasses the study road network surrounding the proposed redevelopment and is described in **Section 2.3**. The Transportation Impact Study analyzes the following existing intersections:

- 3rd Line and Dufferin Road 17
- 3rd Line and Side Road 5
- 3rd Line and Chipwoods

2.3 Study Road Network

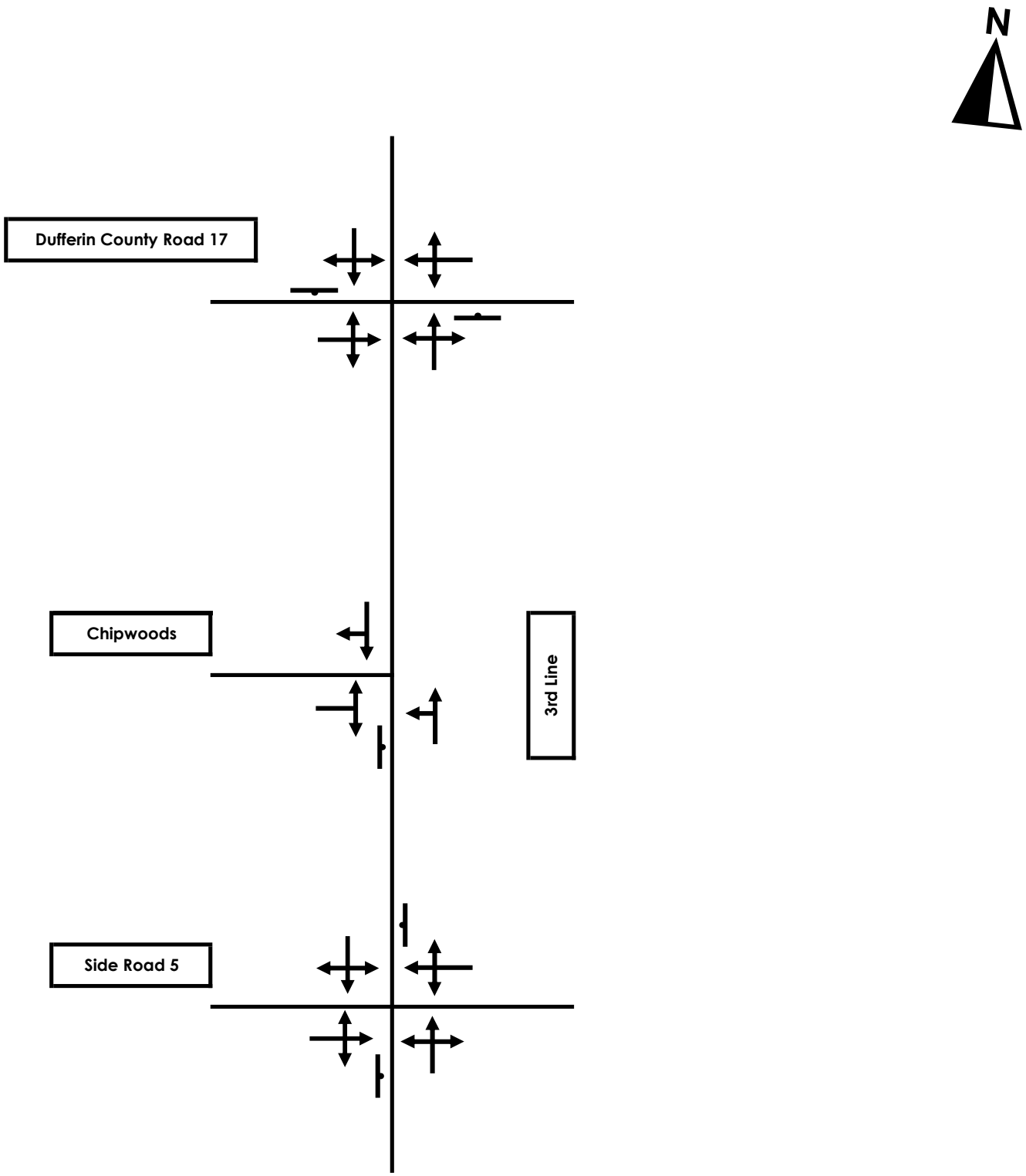
The study road network is described in **Table 2** and is illustrated in **Figure 3**. As the study area is not envisioned for pedestrians or cyclists, the focus of this study is on vehicular traffic.

Table 2: Study Road Network

Feature	Roadway			
	3rd Line	**Dufferin Road 17**	**Side Road 5**	**Chipwoods**
Direction	Two-Way (North-South)	Two-Way (East-West)	Two-Way (East-West)	Cresent
Classification[1]	Local Road	Arterial Road	Local Road	Local Road
Jurisdiction	Town of Melancthon	Dufferin County	Town of Melancthon	Town of Melancthon
Speed Limit	60 km/h (Posted)	80 km/h (Posted)	80 km/h (Assumed)[2]	40 km/h (Assumed)
Span	Side Road 30 to Owen Sound Street	Highway 89 to Mulmur Tosorontio Townline	Highway 10 to 1st Line East	Chipwoods Park to 3rd Line
Number of lanes total	Two travel lanes	Two travel lanes	Two travel lanes	Two travel lanes
Median type	No Median	No Median	No Median	No Median
Pedestrian Facilities	None	None	None	None
Cycling Facilities	None	None	None	None

Note 1: Based on Township of Melancthon Official Plan Schedule A-5 (October 2017)
Note 2: Based on Township of Melancthon Road Sub-Committee Meeting (September 2016)

Relevant town planning excerpts can be found in **APPENDIX B.**



Legend

Stop Sign

Chipwoods Park

Existing Study Road Network

CROZIER CONSULTING ENGINEERS

Figure 3

Project No. 2621-7000
Date: 04/11/25
Analyst: Andrew B

2.4 Existing Automobile Review

This section reviews the existing automobile capacity analysis, and the network modelling associated with the study road network.

2.4.1 Traffic Data

Traffic movement counts (TMCs) were conducted by Spectrum Traffic at the study intersections. The TMCs were conducted on Wednesday, March 5th, 2025, from 7:00 a.m. to 9:00 a.m. as well as 4:00 p.m. to 7:00 p.m., to reflect the typical commuter peak hours.

The TMCs are included in **APPENDIX C.**

2.4.2 Intersection Modelling

As there are no specific modelling guidelines outlined by the Town or County, default synchro parameters were used, with the exception of peak-hour factors (PHFs) and heavy vehicle percentages, which were collected from the TMCs.

The assessment of intersections is based on the "Highway Capacity Manual (HCM)" methodology. Intersections are assessed using a Level of Service LOS metric with ranges of delay assigned a letter from "A" to "F"; "A" representing low delays and "F" representing heavy delays. 95th percentile queue lengths at the intersections were derived from Sim Traffic. Sim Traffic modelling was prepared using a minimum of 5 simulations with 15 minutes seeding and 60 minutes recording.

2.4.3 Intersection Operations

The operations of the study intersections were analyzed based on the existing traffic volumes illustrated in **Figure 4. Table 3** outlines the existing traffic level of service for the intersection under existing conditions.

APPENDIX D contains detailed capacity analysis worksheets.

Table 3: Existing Level of Service

Intersection (Control)	Performance Metrics						
	Movement	LOS[1]		Delay (s)		v/c ratio	
		AM	PM	AM	PM	AM	PM
3rd Line and Dufferin Road 17 (Stop-Controlled)	**Overall**	**A**	**A**	**9.7**	**9.6**	**0.02**	**0.03**
	EBLTR	A	A	0.4	0.4	0.00	0.00
	WBLTR	A	A	2.0	1.0	0.01	0.01
	NBLTR	A	A	9.2	9.6	0.02	0.03
	SBLTR	A	A	9.7	9.6	0.02	0.01
3rd Line and Side Road 5 (Stop-Controlled)	**Overall**	**A**	**A**	**9.5**	**9.0**	**0.04**	**0.04**
	EBLTR	A	A	9.5	0.0	0.00	0.00
	WBLTR	A	A	9.2	9.0	0.04	0.04
	NBLTR	A	A	0.0	0.2	0.00	0.00
	SBLTR	A	A	2.0	2.5	0.01	0.01
3rd Line and Chipwoods (Stop-Controlled)	**Overall**	**A**	**A**	**0.0**	**0.0**	**0.02**	**0.02**
	EBLR[3]	N/A	N/A	N/A	N/A	N/A	N/A
	NBLT	A	A	0.0	0.0	0.00	0.00
	SBTR	A	A	0.0	0.0	0.02	0.02

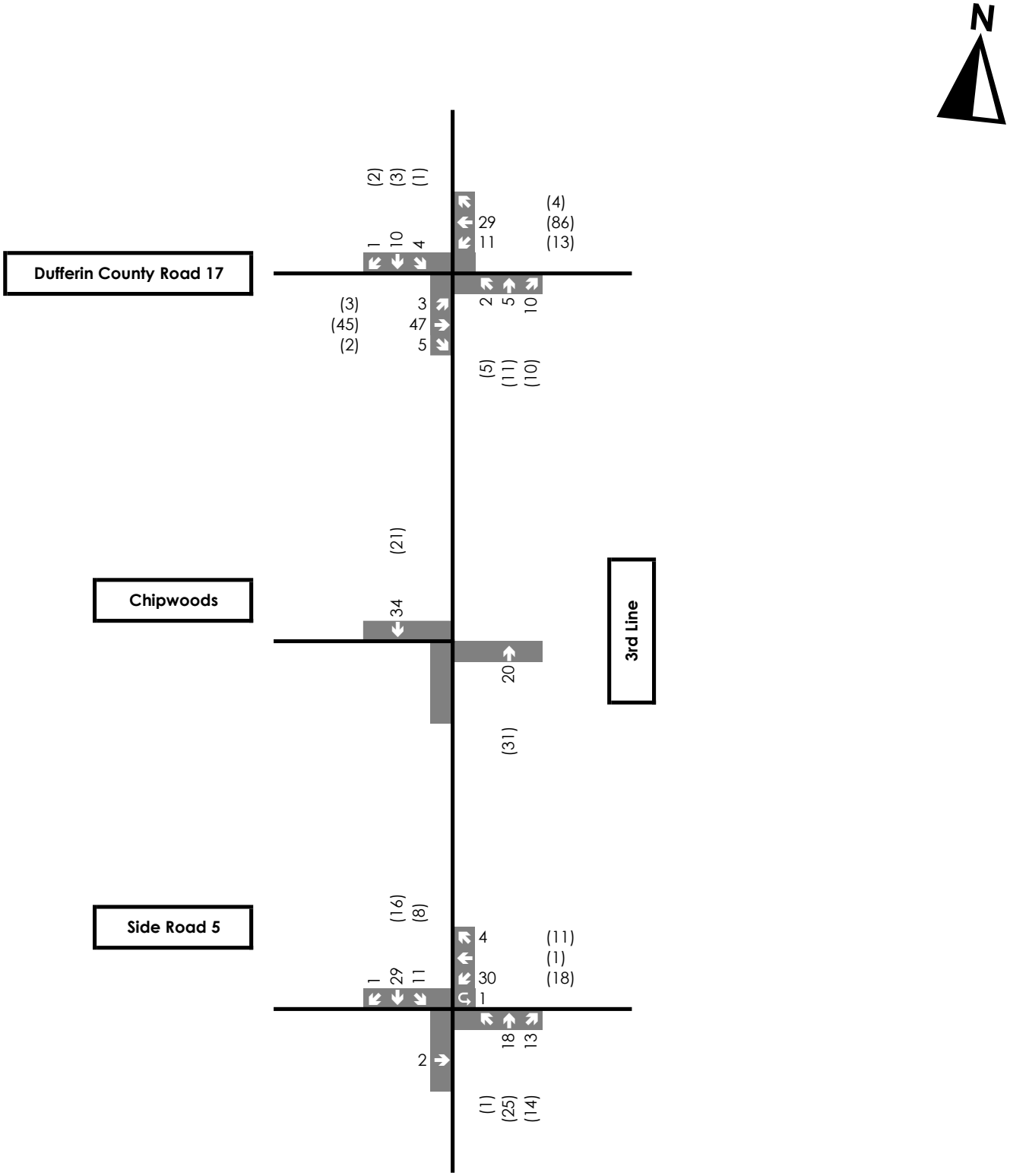
Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The Level of Service of an unsigned intersection is based on the most critical minor approach.
Note 2: movements with a v/c ratio greater than 0.85 are deemed to be "critical" in terms of operations.
Note 3: The TMCs were not collected on Chipwoods as all existing traffic is expected to be replaced by site generated traffic.

Under existing conditions, each intersection included in the study road network is currently operating at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 9.7 seconds, and the maximum volume-to-capacity (v/c) ratio is 0.04, both occurring at the minor, stop-controlled approach of an intersection.

Under existing conditions, the study road network operates efficiently, with no critical movements.

2.4.4 Queueing Assessment

SimTraffic software was used to assess the queues for the existing study road network. The existing a.m. and p.m. peak hour 95th percentile queues were compared against the available storage lane lengths at the study intersections to analyze the potential for occasional queuing exceedances. Under existing conditions, no queueing issues were observed.



Legend	Chipwoods Park	CROZIER CONSULTING ENGINEERS	Figure 4
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	Existing Traffic Volumes		Project No. 2621-7000 Date: 04/11/25 Analyst: Andrew B

3.0 Future Background Conditions

This section summarizes the future background conditions of the study road network and provides details relating to growth rates, future network improvements, and background developments within the study area.

3.1 Future Road Network

There are currently no planned improvements to the existing road network within the study area.

3.2 Horizon Years

The proposed redevelopment is anticipated to be fully built out within three years; thus, analysis of horizon years at full build-out (2028), as well as five and ten years from build-out (2033 and 2038) have been evaluated, per the Terms of Reference for the study included in **APPENDIX A,** however, no response was received by the time of writing this study.

3.3 Growth Rates

As proposed in the Terms of Reference, an annual compounded growth rate of 2% was applied to study road network.

3.4 Background Developments

According to the Township of Melancthon planning website, two background developments have been identified which may have site generated trips forecasted along the study road network. The development details and respective traffic volume forecasts are discussed in the subsequent sections, and the forecasted volumes have been incorporated into the future background volumes for all horizon years. **Table 4** summarizes the background developments included in this study.

Table 4: Summary of Background Developments

Development	Development Proposal	Background Report/Reference
DHL Shelbourne Pit Expansion	- Site expansion - License to permit mineral extraction above the water table - License to increase extraction limit to 500,000 tonnes annually	Traffic Review (Tatham Engineering, February 2021)
Strada Pit and Quarry	- License to increase the yearly shipping limit to 2 million tonnes per year	TIS (HDR, August 2024)

3.4.1 Duivenvoorden Haulage Ltd (DHL) Shelbourne Pit Expansion

The DHL Shelbourne Pit Expansion development comprises of the expansion of its existing operations, located on the west side of 4th Line, approximately 1.35 km north of Dufferin Road 17. The proposed development aims to expand operations to the north, to generate an expected extraction rate from 150,000 to 250,000 tonnes per year total.

Based on Tatham's Traffic Review, the background development is expected to generate a total of 56 trips during the peak hour of the peak day.

The trips generated by the DHL Shelbourne Pit Expansion were assigned to the study road network based on the distributions outlined in the TIS dated February 2021. As Tatham's report did not assign trips east of 4th Line, it is assumed that vehicles approaching or departing 4th Line to the east also drove through 3rd Line.

3.4.2 Strada Pit and Quarry

The Strada Pit and Quarry development comprises of the expansion of its existing operations, located on the east side of 4th Line, with the pit's southern access approximately 600m north of Dufferin Road 17. Strada aims to apply for a new license to increase the yearly shipping limit by 750,000 tonnes per year, for a total of 2 million tonnes per year.

Based on HDR's Transportation Impact Study, the background development is expected to generate a total of 19 and 5 passenger car trips during the a.m. and p.m. peak periods respectively, and a total of 152 and 76 heavy vehicle trips during the a.m. and p.m. peak periods respectively. The expansion is expected to happen in different phases, although the change in phase is not expected to impact the study road network.

The trips generated by the Strada Pit and Quarry Development were assigned to the study road network based on the distributions outlined in the TIS dated August 2024. As HDR's report analyzed roadways to the east and west of 3rd Line but did not explicitly assess 3rd Line itself, it is assumed that vehicles traveling between 4th Line and Dufferin Road 17 utilized 3rd Line as part of their route.

Excerpts including details and locations of these developments can be found in **APPENDIX E.**

3.5 Future Background Automobile Review

This section reviews the future background automobile capacity analysis, and the network modelling associated with the study road network.

3.5.1 Intersection Modelling

For consistency, PHFs and heavy vehicle percentages obtained from the TMCs were applied to the future background modelling. The Synchro set-up remained consistent with the existing conditions in the future background model.

Traffic from background developments were assigned to the study road network as outlined in **Section 3.4.**

3.5.2 *Intersection Operations*

Table 5, Table 6, and **Table 7** outline the 2028, 2033 and 2038 future background traffic operations, respectively. Synchro 12 was used to determine intersection operations at the study intersections. **Figure 5, Figure 6,** and **Figure 7** illustrate the 2028, 2033, and 2038 future background traffic volumes, respectively.

APPENDIX D contains detailed capacity analysis worksheets.

Table 5: 2028 Future Background Traffic Operations

Intersection (Control)	Performance Metrics						
	Movement	LOS[1]		Delay (s)		v/c ratio	
		AM	PM	AM	PM	AM	PM
3rd Line and Dufferin Road 17 (Stop-Controlled)	**Overall**	**B**	**B**	**11.5**	**10.3**	**0.03**	**0.04**
	EBLTR	A	A	0.2	0.3	0.00	0.00
	WBLTR	A	A	0.7	0.8	0.01	0.01
	NBLTR	B	B	10.5	10.3	0.03	0.04
	SBLTR	B	B	11.5	10.2	0.03	0.01
3rd Line and Side Road 5 (Stop-Controlled)	**Overall**	**A**	**A**	**9.6**	**9.0**	**0.05**	**0.04**
	EBLTR	A	A	9.6	0.0	0.00	0.00
	WBLTR	A	A	9.3	9.0	0.05	0.04
	NBLTR	A	A	0.0	0.3	0.00	0.00
	SBLTR	A	A	2.0	2.6	0.01	0.01
3rd Line and Chipwoods (Stop-Controlled)	**Overall**	**A**	**A**	**0.0**	**0.0**	**0.02**	**0.02**
	EBLR[3]	N/A	N/A	N/A	N/A	N/A	N/A
	NBLT	A	A	0.0	0.0	0.00	0.00
	SBTR	A	A	0.0	0.0	0.02	0.02

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The Level of Service of an unsigned intersection is based on the most critical minor approach.
Note 2: movements with a v/c ratio greater than 0.85 are deemed to be "critical" in terms of operations.
Note 3: The TMCs were not collected on Chipwoods as all existing traffic is expected to be replaced by site generated traffic.

Under 2028 future background conditions, the 3rd Line and Dufferin Road 17 intersection operates at an LOS "B" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 11.5 seconds, and the maximum v/c ratio is 0.04, both occurring at minor, stop-controlled approaches.

The intersections of 3rd Line and Side Road 5, as well as 3rd Line and Chipwoods, operate at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 9.6 seconds, and the maximum v/c ratio is 0.05, both occurring at minor, stop-controlled approaches.

Table 6: 2033 Future Background Traffic Operations

Intersection (Control)	Performance Metrics						
	Movement	LOS[1]		Delay (s)		v/c ratio	
		AM	PM	AM	PM	AM	PM
3rd Line and Dufferin Road 17 (Stop-Controlled)	**Overall**	**B**	**B**	**11.7**	**10.4**	**0.04**	**0.05**
	EBLTR	A	A	0.2	0.3	0.00	0.00
	WBLTR	A	A	0.07	0.8	0.01	0.01
	NBLTR	B	B	10.5	10.4	0.04	0.05
	SBLTR	B	B	11.7	10.4	0.04	0.01
3rd Line and Side Road 5 (Stop-Controlled)	**Overall**	**A**	**A**	**9.6**	**9.1**	**0.05**	**0.05**
	EBLTR	A	A	9.6	0.0	0.00	0.00
	WBLTR	A	A	9.4	9.1	0.05	0.05
	NBLTR	A	A	0.0	0.3	0.00	0.00
	SBLTR	A	A	1.9	2.5	0.01	0.01
3rd Line and Chipwoods (Stop-Controlled)	**Overall**	**A**	**A**	**0.0**	**0.0**	**0.03**	**0.02**
	EBLR[3]	N/A	N/A	N/A	N/A	N/A	N/A
	NBLT	A	A	0.0	0.0	0.00	0.00
	SBTR	A	A	0.0	0.0	0.03	0.02

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The Level of Service of an unsigned intersection is based on the most critical minor approach.
Note 2: movements with a v/c ratio greater than 0.85 are deemed to be "critical" in terms of operations.
Note 3: The TMCs were not collected on Chipwoods as all existing traffic is expected to be replaced by site generated traffic.

Under 2033 future background conditions, the 3rd Line and Dufferin Road 17 intersection operates at an LOS "B" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 11.7 seconds, and the maximum v/c ratio is 0.05, both occurring at minor, stop-controlled approaches.

The intersections of 3rd Line and Side Road 5, as well as 3rd Line and Chipwoods, operate at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 9.6 seconds, and the maximum v/c ratio is 0.05, both occurring at minor, stop-controlled approaches.

Table 7: 2038 Future Background Traffic Operations

Intersection (Control)	Performance Metrics						
	Movement	LOS[1]		Delay (s)		v/c ratio	
		AM	PM	AM	PM	AM	PM
3rd Line and Dufferin Road 17 (Stop-Controlled)	**Overall**	**B**	**B**	**11.9**	**10.6**	**0.04**	**0.06**
	EBLTR	A	A	0.2	0.3	0.00	0.00
	WBLTR	A	A	0.8	0.8	0.01	0.01
	NBLTR	B	B	10.6	10.6	0.04	0.06
	SBLTR	B	B	11.9	10.6	0.04	0.01
3rd Line and Side Road 5 (Stop-Controlled)	**Overall**	**A**	**A**	**9.7**	**9.2**	**0.06**	**0.05**
	EBLTR	A	A	9.7	0.0	0.00	0.00
	WBLTR	A	A	9.5	9.2	0.06	0.05
	NBLTR	A	A	0.0	0.2	0.00	0.00
	SBLTR	A	A	2.1	2.6	0.01	0.01
3rd Line and Chipwoods (Stop-Controlled)	**Overall**	**A**	**A**	**0.0**	**0.0**	**0.03**	**0.02**
	EBLR[3]	N/A	N/A	N/A	N/A	N/A	N/A
	NBLT	A	A	0.0	0.0	0.00	0.00
	SBTR	A	A	0.0	0.0	0.03	0.02

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The Level of Service of an unsigned intersection is based on the most critical minor approach
Note 2: movements with a v/c ratio greater than 0.85 are deemed to be "critical" in terms of operations.
Note 3: The TMCs were not collected on Chipwoods as all existing traffic is expected to be replaced by site generated traffic.

Under 2038 future background conditions, the 3rd Line and Dufferin Road 17 intersection operates at an LOS "B" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 11.9 seconds, and the maximum v/c ratio is 0.06, both occurring at minor, stop-controlled approaches.

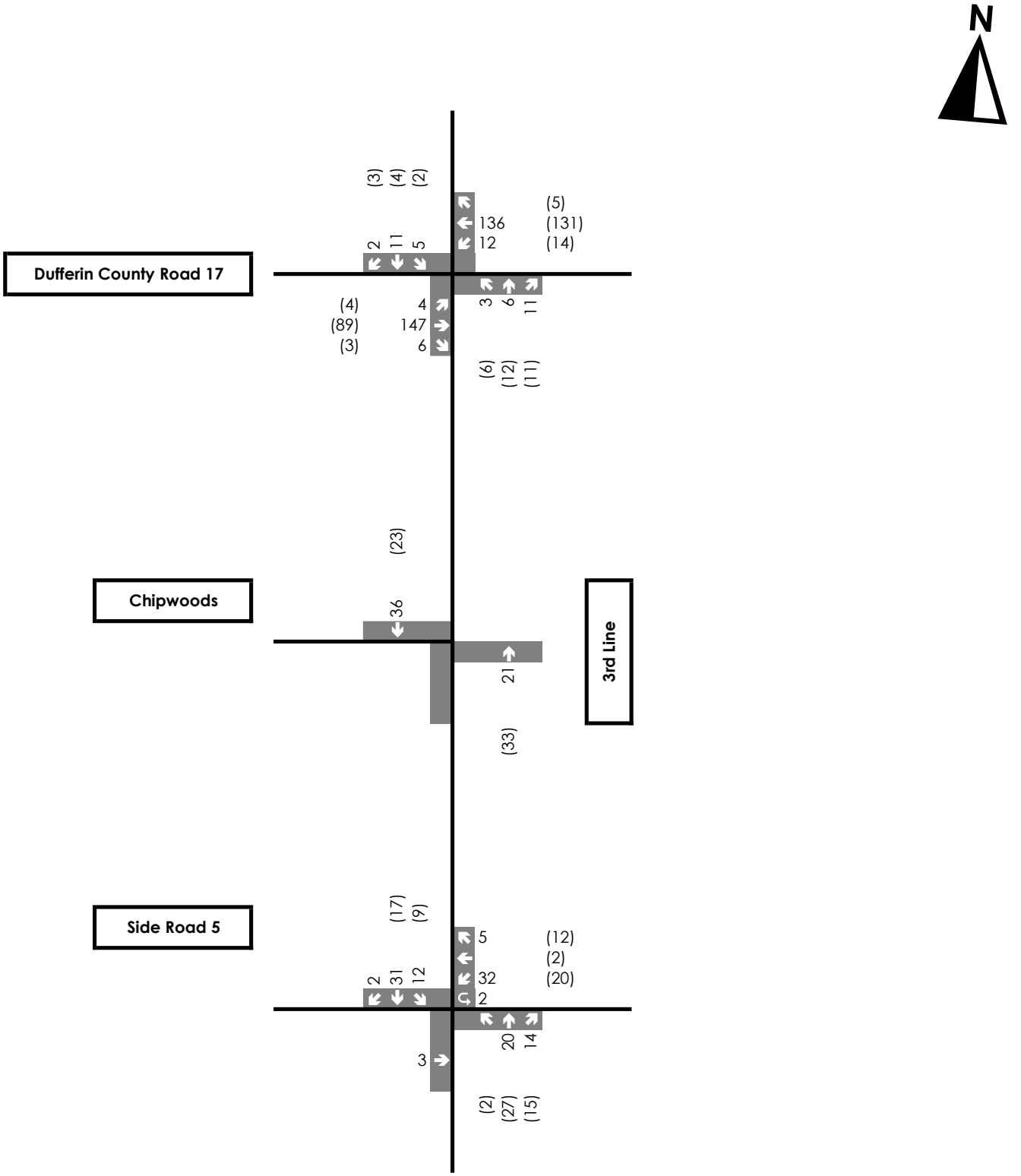
The intersections of 3rd Line and Side Road 5, as well as 3rd Line and Chipwoods, operate at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 9.7 seconds, and the maximum v/c ratio is 0.06, both occurring at minor, stop-controlled approaches.

Under future background conditions, the study road network operates efficiently, with no critical movements.

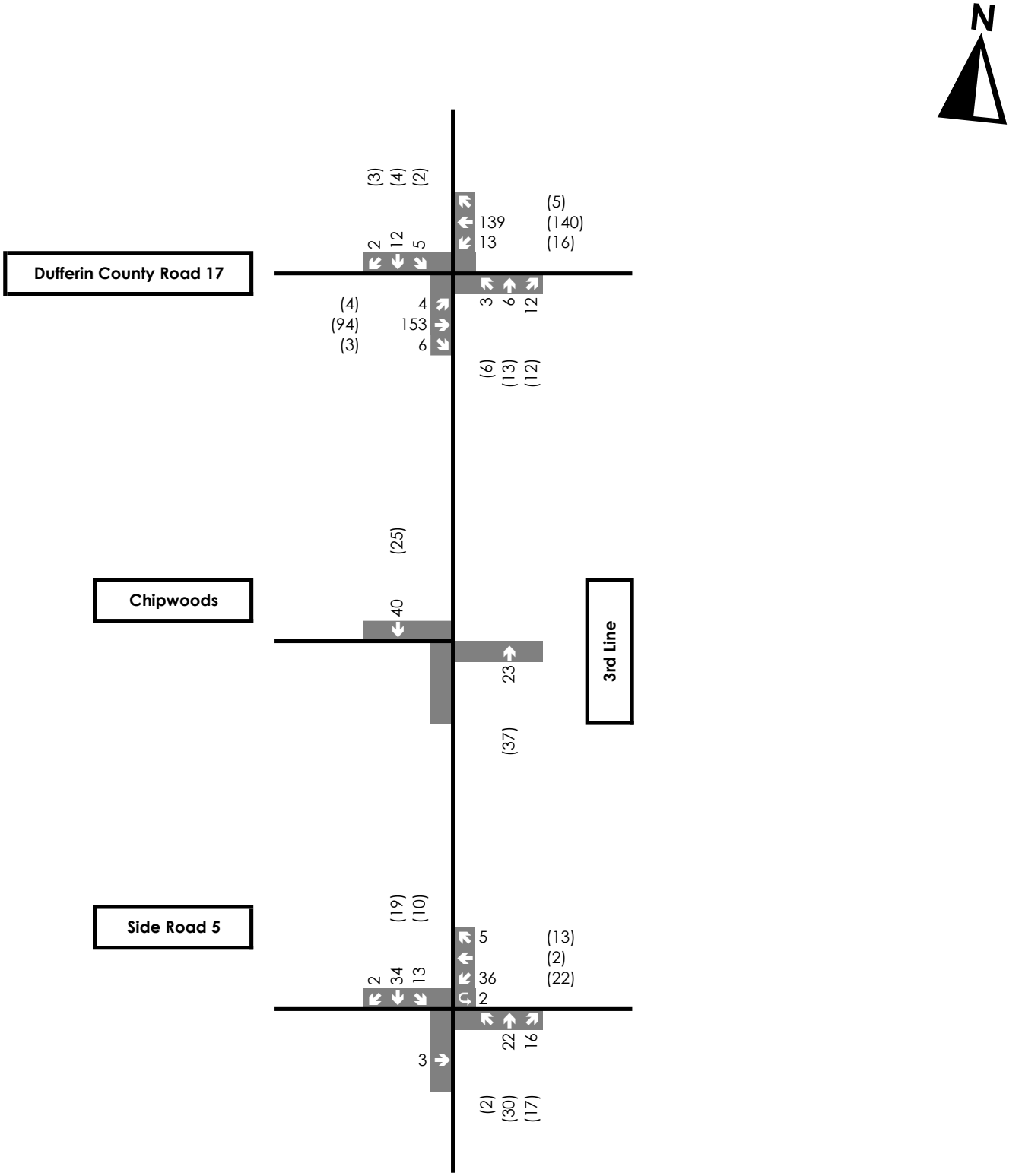
3.5.3 Queueing Assessment

SimTraffic software was used to assess the queues for the future background study road network. The future background a.m. and p.m. peak hour 95th percentile queues were compared against the available storage lane lengths at the study intersections to analyze the potential for occasional queuing exceedances. Under future background conditions, no queueing issues are expected.

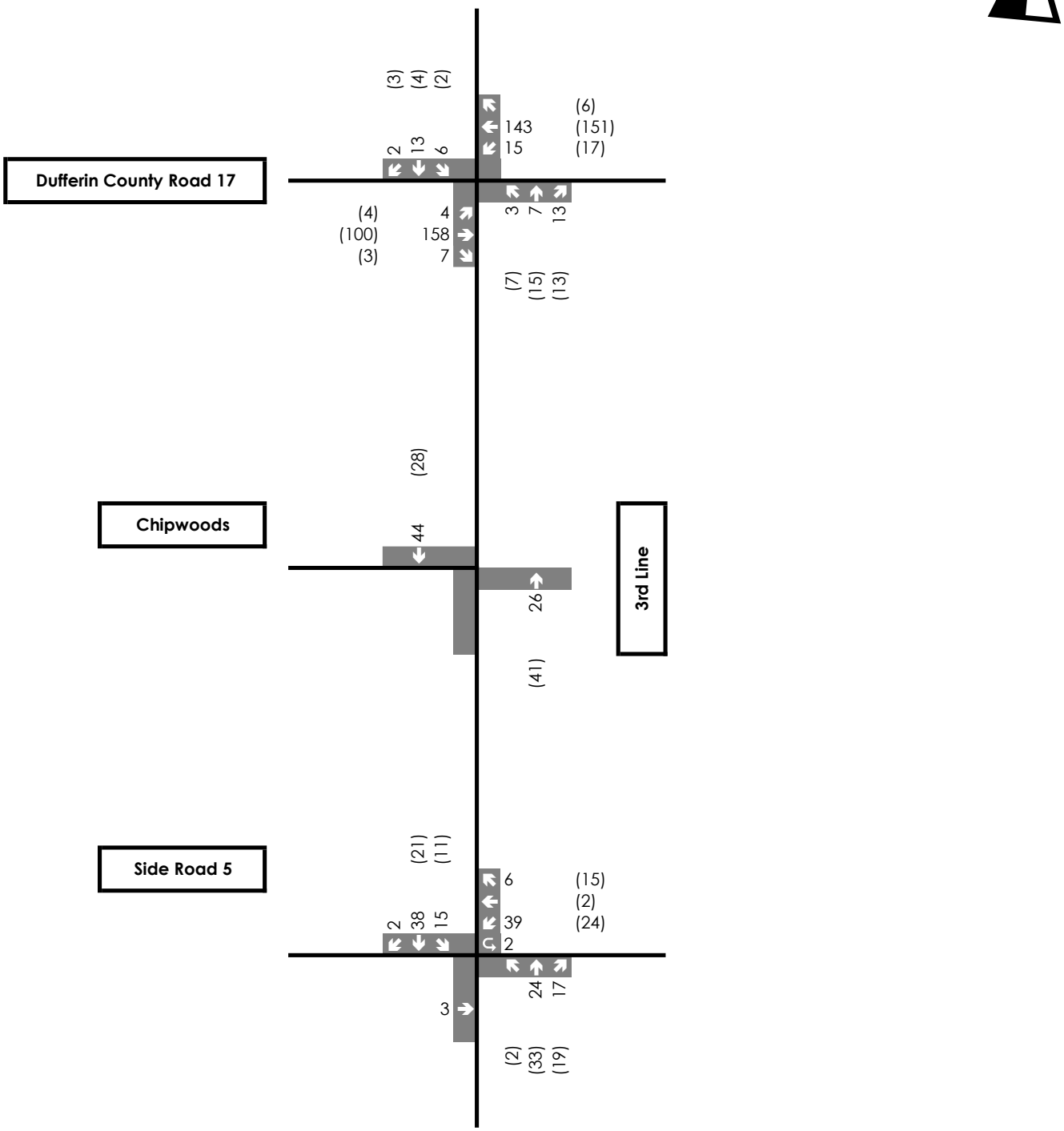
APPENDIX D contains detailed capacity analysis worksheets.



Legend	Chipwoods Park		Figure 5
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2028 Future Background Traffic Volumes	CROZIER CONSULTING ENGINEERS	Project No. 2621-7000 Date: 04/11/25 Analyst: Andrew B



Legend	Chipwoods Park	CROZIER CONSULTING ENGINEERS	Figure 6
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2033 Future Background Traffic Volumes		Project No. 2621-7000 Date: 04/11/25 Analyst: Andrew B



Legend	Chipwoods Park	CROZIER CONSULTING ENGINEERS	Figure 7
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2038 Future Background Traffic Volumes		Project No. 2621-7000 Date: 04/11/25 Analyst: Andrew B

4.0 Site Generated Traffic

The proposed redevelopment will result in additional turning movements at the study intersections. Therefore, this section describes the trip forecasting methodology and results of this forecast for the development proposal.

The site generated traffic forecasting methodology for this study consists of two steps. The first step, trip generation, projects the number of trips that originate or are destined for the proposed redevelopment, while the second step, trip distribution and assignment, assigns trips to the study road network based on the expected distribution of trips to catchment areas and expected shortest paths for trips destined for particular locations.

4.1 Trip Generation

The trip generation of the proposed redevelopment was forecasted using the fitted curve equations provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. Land Use Category 240 "Mobile Home Park" was used to forecast the trips generated by the proposed detached units in the a.m. and p.m. peak periods. The trip generation was calculated using 224 units.

The forecasted trips are tabulated in **Table 8**. ITE Trip Generation Excerpts are included in **APPENDIX F**.

Table 8: Trip Generation

Use	Roadway Peak Hour	Number of Trips		
		Inbound	Outbound	Total
LUC 240: Mobile Home Park (224 Units)	Weekday A.M.	17	65	82
	Weekday P.M.	79	49	128

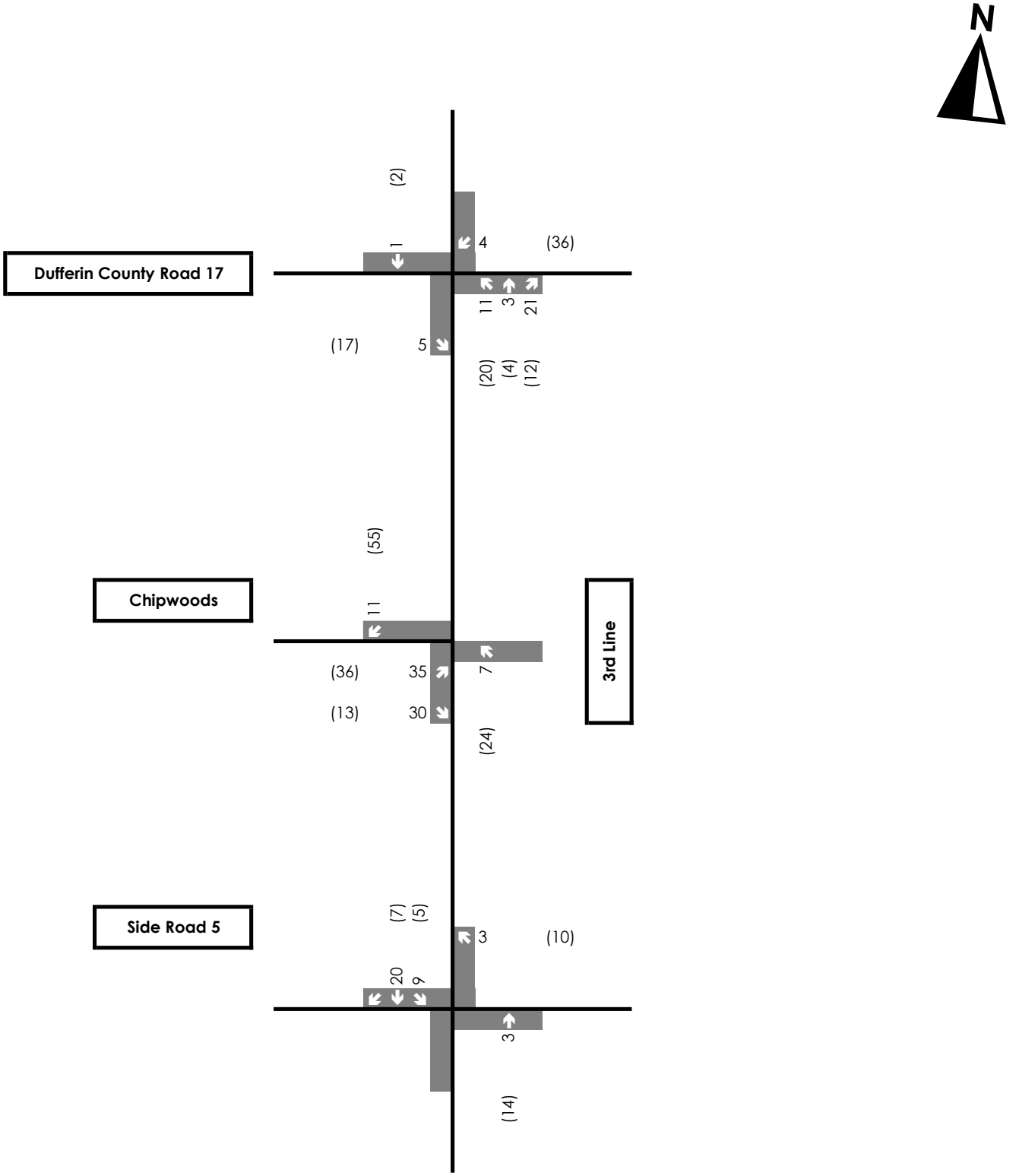
4.2 Trip Distribution and Assignment

The trips generated by the proposed redevelopment were distributed to the study road network using existing travel patterns captured from the TMCs. **Table 9** summarizes the vehicle trip distribution.

Table 9: Trip Distribution

Direction	A.M.		P.M.	
	Inbound	Outbound	Inbound	Outbound
3rd Line North	8%	4%	3%	8%
3rd Line South	17%	31%	17%	15%
Dufferin Road 17 East	22%	32%	45%	25%
Dufferin Road 17 West	31%	17%	22%	41%
Side Road 5 East	20%	14%	13%	10%
Side Road 5 West	1%	1%	0%	1%

Figure 8 outlines the vehicle trip assignment for the proposed redevelopment.



Legend	Chipwoods Park		Figure 8
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	Trip Assignment	CROZIER CONSULTING ENGINEERS	Project No. 2621-7000 Date: 04/28/25 Analyst: Andrew B

5.0 Future Total Conditions

This section summarizes the future total conditions of the study road network and provides details relating to the impacts of the site generated traffic from the proposed redevelopment, in conjunction with the future background traffic volumes from the corresponding horizon year.

Figure 9, **Figure 10,** and **Figure 11** illustrate the resulting 2028, 2033, and 2038 future total traffic volumes, respectively.

5.1 Future Total Automobile Review

This section reviews the future total automobile capacity analysis, and the network modelling associated with the study road network.

5.1.1 Intersection Modelling

For consistency, PHFs and heavy vehicle percentages obtained from the TMCs were applied to the future total modelling. The Synchro set-up remained consistent with the existing conditions in the future total model.

Site generated traffic was assigned to the study road network as outlined in **Section 4.0.**

5.1.2 Intersection Operations

Table 10, Table 11, and **Table 12** outline the 2028, 2033 and 2038 future total traffic operations for the study road network, respectively. Synchro 12 was used to determine intersection operations at the study intersections. **Figure 9**, **Figure 10**, and **Figure 11** illustrate the 2028, 2033, and 2038 future total traffic volumes, respectively.

APPENDIX D contains detailed capacity analysis worksheets.

Table 10: 2028 Future Total Traffic Operations

Intersection (Control)	Movement	Performance Metrics					
		LOS[1]		Delay (s)		v/c ratio	
		AM	PM	AM	PM	AM	PM
3rd Line and Dufferin Road 17 (Stop-Controlled)	**Overall**	**B**	**B**	**11.9**	**11.5**	**0.09**	**0.12**
	EBLTR	A	A	0.2	0.3	0.00	0.00
	WBLTR	A	A	0.09	2.3	0.01	0.04
	NBLTR	B	B	10.7	11.5	0.09	0.12
	SBLTR	B	B	11.9	11.3	0.04	0.02
3rd Line and Side Road 5 (Stop-Controlled)	**Overall**	**A**	**A**	**9.8**	**9.2**	**0.06**	**0.06**
	EBLTR	A	A	9.8	0.0	0.01	0.00
	WBLTR	A	A	9.6	9.2	0.06	0.06
	NBLTR	A	A	0.0	0.2	0.00	0.00
	SBLTR	A	A	2.1	2.7	0.02	0.01
3rd Line and Chipwoods (Stop-Controlled)	**Overall**	**A**	**A**	**9.0**	**9.6**	**0.07**	**0.08**
	EBLR	A	A	9.0	9.6	0.07	0.08
	NBLT	A	A	1.9	3.3	0.01	0.02
	SBTR	A	A	0.0	0.0	0.03	0.06

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The Level of Service of an unsigned intersection is based on the most critical minor approach.
Note 2: movements with a v/c ratio greater than 0.85 are deemed to be "critical" in terms of operations.

Under 2028 future total conditions, the 3rd Line and Dufferin Road 17 intersection operates at an LOS "B" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 11.9 seconds, and the maximum v/c ratio is 0.12, both occurring at minor, stop-controlled approaches.

The intersections of 3rd Line and Side Road 5, as well as 3rd Line and Chipwoods, operate at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 9.8 seconds, and the maximum v/c ratio is 0.08, both occurring at minor, stop-controlled approaches.

Table 11: 2033 Future Total Traffic Operations

Intersection (Control)	Performance Metrics						
	Movement	LOS[1]		Delay (s)		v/c ratio	
		AM	PM	AM	PM	AM	PM
3rd Line and Dufferin Road 17 (Stop-Controlled)	**Overall**	**B**	**B**	**12.0**	**11.7**	**0.09**	**0.12**
	EBLTR	A	A	0.2	0.3	0.00	0.00
	WBLTR	A	A	0.9	2.2	0.01	0.04
	NBLTR	B	B	10.8	11.7	0.09	0.12
	SBLTR	B	B	12.0	11.5	0.04	0.02
3rd Line and Side Road 5 (Stop-Controlled)	**Overall**	**A**	**A**	**9.9**	**9.3**	**0.06**	**0.06**
	EBLTR	A	A	9.9	0.0	0.01	0.00
	WBLTR	A	A	9.7	9.3	0.06	0.06
	NBLTR	A	A	0.0	0.2	0.00	0.00
	SBLTR	A	A	2.2	2.7	0.02	0.01
3rd Line and Chipwoods (Stop-Controlled)	**Overall**	**A**	**A**	**9.1**	**9.7**	**0.07**	**0.08**
	EBLR	A	A	9.1	9.7	0.07	0.08
	NBLT	A	A	1.8	3.1	0.01	0.02
	SBTR	A	A	0.0	0.0	0.03	0.06

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The Level of Service of an unsigned intersection is based on the most critical minor approach.
Note 2: movements with a v/c ratio greater than 0.85 are deemed to be "critical" in terms of operations.

Under 2033 future total conditions, the 3rd Line and Dufferin Road 17 intersection operates at an LOS "B" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 12.0 seconds, and the maximum v/c ratio is 0.12, both occurring at minor, stop-controlled approaches.

The intersections of 3rd Line and Side Road 5, as well as 3rd Line and Chipwoods, operate at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 9.9 seconds, and the maximum v/c ratio is 0.08, both occurring at minor, stop-controlled approaches.

Table 12: 2038 Future Total Traffic Operations

Intersection (Control)	Movement	Performance Metrics					
		LOS[1]		Delay (s)		v/c ratio	
		AM	PM	AM	PM	AM	PM
3rd Line and Dufferin Road 17 (Stop-Controlled)	**Overall**	**B**	**B**	**12.3**	**11.7**	**0.10**	**0.14**
	EBLTR	A	A	0.2	0.2	0.00	0.00
	WBLTR	A	A	1.0	2.1	0.02	0.04
	NBLTR	B	B	11.0	12.0	0.10	0.14
	SBLTR	B	B	12.3	11.7	0.05	0.02
3rd Line and Side Road 5 (Stop-Controlled)	**Overall**	**A**	**A**	**10.0**	**9.4**	**0.07**	**0.07**
	EBLTR	A	A	10.0	0.0	0.01	0.00
	WBLTR	A	A	9.8	9.4	0.07	0.07
	NBLTR	A	A	0.0	0.2	0.00	0.00
	SBLTR	A	A	2.2	2.6	0.02	0.01
3rd Line and Chipwoods (Stop-Controlled)	**Overall**	**A**	**A**	**9.1**	**9.7**	**0.07**	**0.08**
	EBLR	A	A	9.1	9.7	0.07	0.08
	NBLT	A	A	1.6	2.9	0.01	0.02
	SBTR	A	A	0.0	0.0	0.04	0.07

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The Level of Service of an unsigned intersection is based on the most critical minor approach.
Note 2: movements with a v/c ratio greater than 0.85 are deemed to be "critical" in terms of operations.

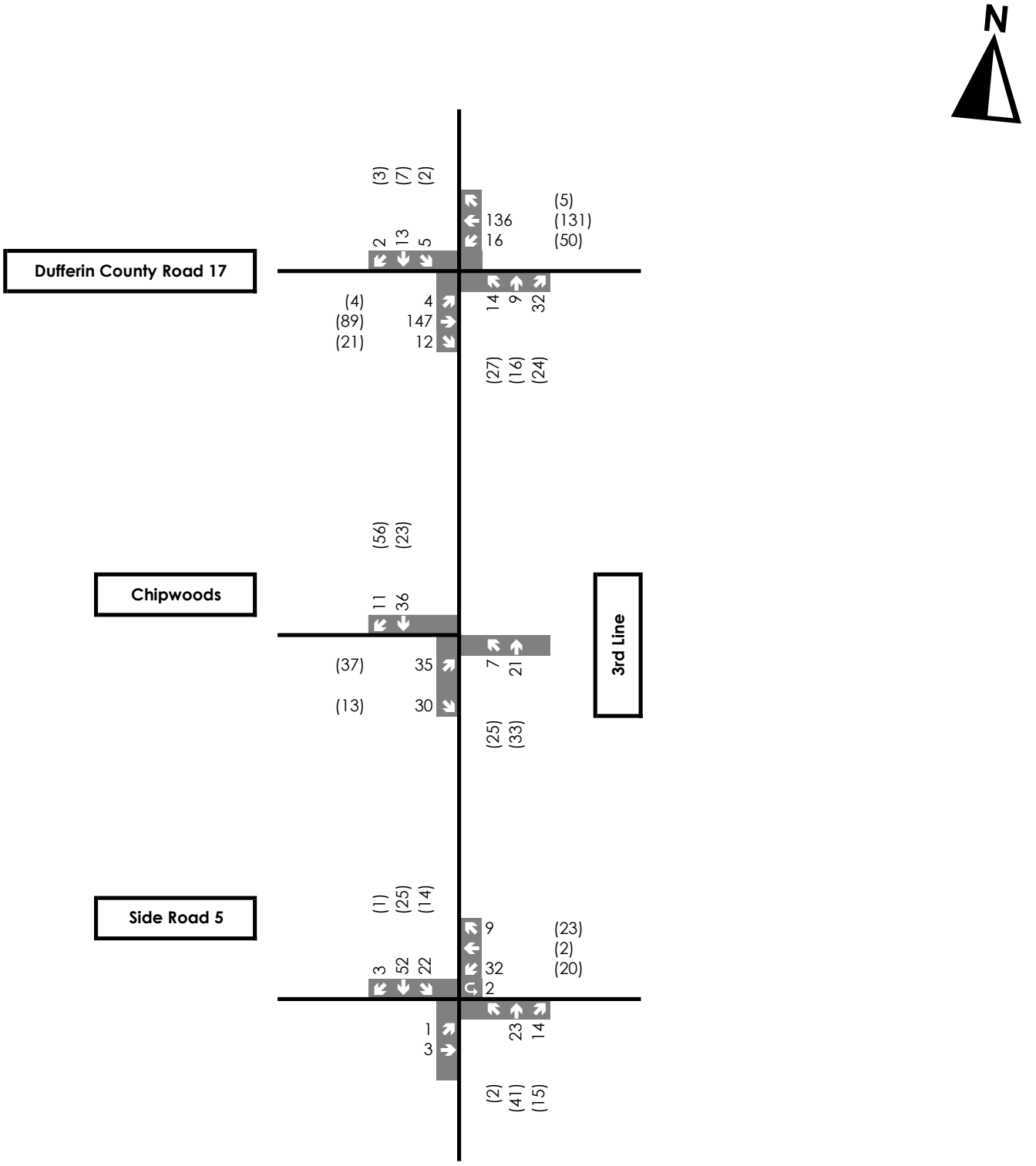
Under 2038 future total conditions, the 3rd Line and Dufferin Road 17 intersection operates at an LOS "B" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 12.3 seconds, and the maximum v/c ratio is 0.14, both occurring at minor, stop-controlled approaches.

The intersections of 3rd Line and Side Road 5, as well as 3rd Line and Chipwoods, operate at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 10.0 seconds, and the maximum v/c ratio is 0.08, both occurring at minor, stop-controlled approaches.

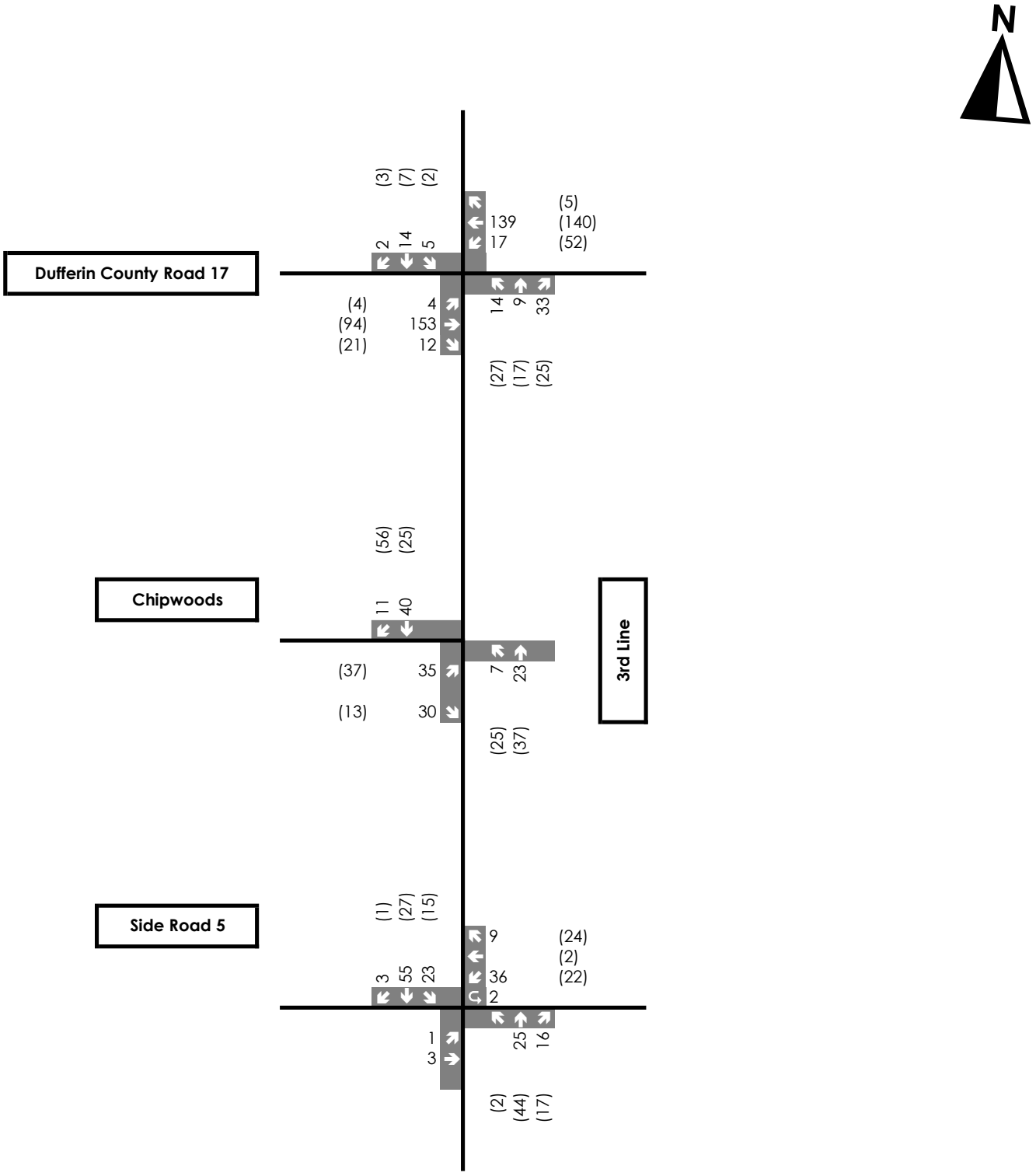
Under future total conditions, the study road network operates efficiently, with no critical movements.

5.1.3 Queueing Assessment

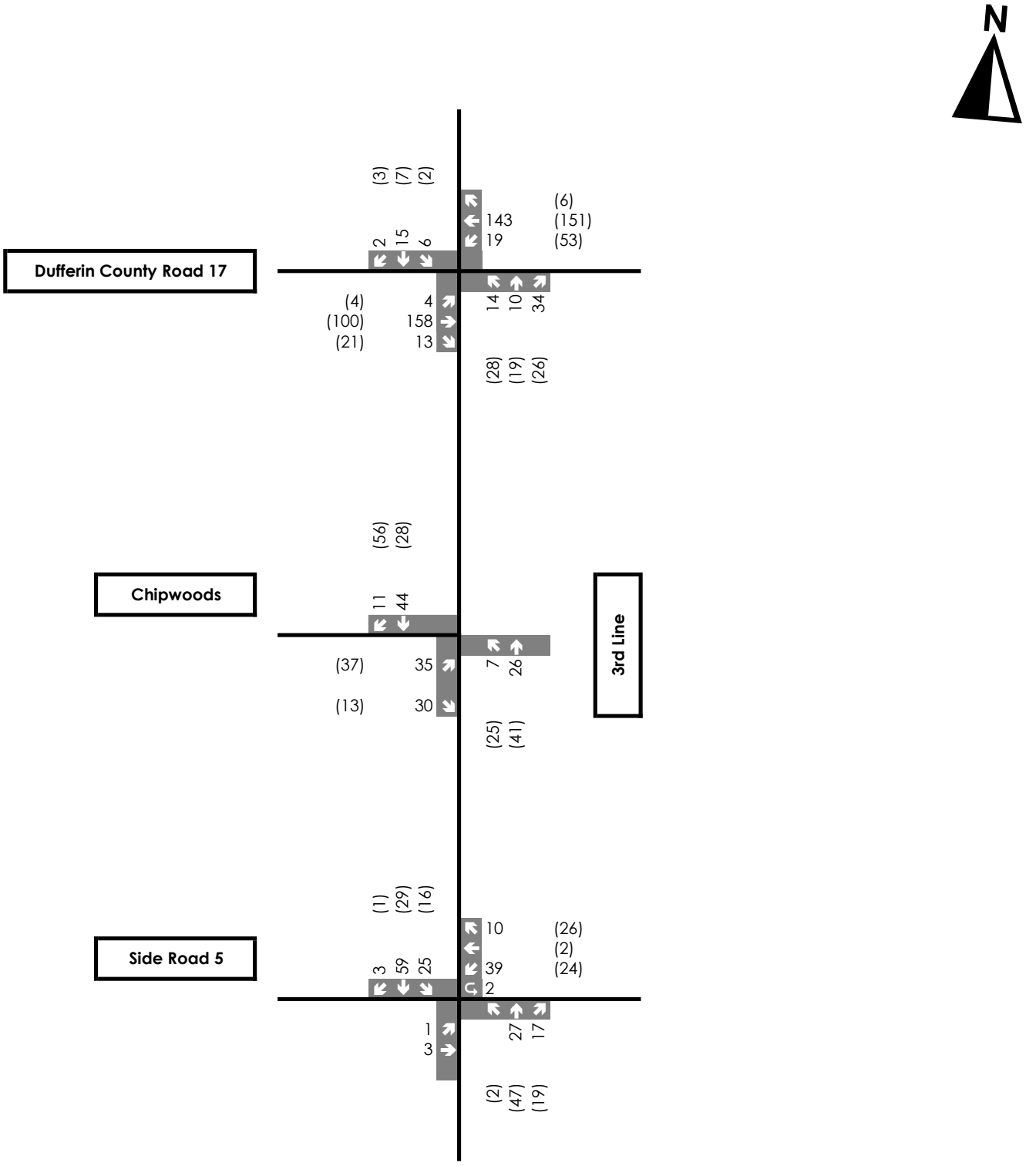
SimTraffic software was used to assess the queues for the future total study road network. The future total a.m. and p.m. peak hour 95th percentile queues were compared against the available storage lane lengths at the study intersections to analyze the potential for occasional queuing exceedances. Under future total conditions, no queueing issues were observed.



Legend	Chipwoods Park	CROZIER CONSULTING ENGINEERS	Figure 9
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2028 Future Total Traffic Volumes		Project No. 2621-7000 Date: 04/27/25 Analyst: Andrew B



Legend	Chipwoods Park	CROZIER CONSULTING ENGINEERS	Figure 10
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2033 Future Total Traffic Volumes		Project No. 2621-7000 Date: 04/27/25 Analyst: Andrew B



Legend	Chipwoods Park	CROZIER CONSULTING ENGINEERS	Figure 11
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2038 Future Total Traffic Volumes		Project No. 2621-7000 Date: 04/27/25 Analyst: Andrew B

6.0 Site Access Safety Review

6.1 Sight Distance Assessment

The available sightlines at the western leg of the Chipwoods and 3rd Line intersection were measured and compared to the standard set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR). Sight distances were measured from Chipwoods using the following assumptions:

- A standard drive eye height of 1.08 meters for a passenger car, and
- A 4.4-5.4 meter setback from the approximate extension of the outer curb to represent a vehicle waiting to exit the site.

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

$$ISD = 0.278 * V_{major} * t_g$$

Where:

ISD = Intersection Sight Distance
V_{major} = design speed of roadway (km/h)
t_g = assumed time gap for vehicles to turn from stop onto roadway (s)

The design speed of a roadway in a rural environment is typically 10-20 km/h greater than the posted speed limit. The posted speed limit on 3rd Line is 60 km/h, therefore, a design speed of 80 km/h was assumed for the sight distance analysis.

Table 13 outlines the sight distance analysis for the Chipwoods site access.

Table 13: Sight Distance Analysis

Parameter	Chipwoods Site Access
Access Type	Full Moves
Intersection Control	Case B: Stop Control on Minor Road
Posted Speed Limit	60 km/h (Posted)
Assumed Design Speed	80 km/h
Base Time Gap	Left Turn: 7.5 seconds Right Turn: 6.5 seconds
Grade of Roadway	Less than 3%
Additional Time Gap	Left Turn: 0.0 seconds Right Turn: 0.0 seconds
Horizontal Alignment of Roadway	Straight
Intersection Sight Distance Required (TAC GDGCR Eqn. 9.9.1)	Left Turn: 170 m Right Turn: 145 m
Intersection Sight Distance Available	Left Turn: 170 m + Right Turn: 145 m+

As outlined in **Table 13,** the minimum sight distance requirements are satisfied at the Chipwoods site access off 3rd Line. At the access, 3rd Line is straight, with no curve or significant grade changes, and no visual obstructions.

As typically seen in rural environments, egressing vehicles are expected to conduct a two-stage egress maneuver. From this perspective, egressing vehicles can observe cyclists without expected sight distance issues while stopped at 4.4 m to 5.4 m from the edge of roadway. Once moved closer to the edge of roadway, drivers are expected to have a clear visual of the roadway.

The proposed redevelopment is supportable from a sight distance perspective as the minimum sight distance requirements are satisfied. All relevant TAC excerpts are included in **APPENDIX G.**

7.0 Vehicle Parking Requirements

This section reviews the parking requirements for the proposed redevelopment based on the Town of Melancthon Zoning By-Law 12-1979 (ZBL).

APPENDIX H contains ZBL excerpts.

7.1 Town of Melancthon Zoning By-Law Requirements

It is assumed that the residential units will feature driveways sufficient for one (1) vehicle to park and that additional spaces near the common areas will be used for parking outside of this one (1) space per unit. The proposed parking supply was assessed against the Town of Melancthon ZBL. The minimum parking requirements per the Town of Melancthon ZBL are outlined in **Table 14.**

Table 14: Melancthon Zoning By-Law Parking Requirements

Land Use	Size	Minimum Vehicle Parking Rates	Parking Spaces Required
Residential (Any dwelling in any zone)	224 Dwelling units	2 spaces per dwelling unit	448 spaces
Parking Supplied			**267 spaces**
Surplus/Deficiency			**-181 Spaces**

As outlined in **Table 14**, the Town of Melancthon ZBL requires the proposed redevelopment to provide a minimum parking supply of 448 parking spaces, or two (2) spaces per dwelling unit. As the development proposes one (1) parking space per unit plus 43 additional visitor parking spaces for a total of 267 spaces, the development proposes a parking deficit of 181 spaces, in comparison to the Town's ZBL.

It is noted that these units are smaller than other detached residential units and these units are not expected to have two vehicles per unit. Additional spaces are provided near common areas in order to provide areas for overflow parking including visitors to this redevelopment.

7.2 ITE Parking Generation Manual, 6th Edition

To assess the parking supply at the proposed redevelopment, the Institute of Transportation Engineers (ITE) Parking Generation Manual, 6th Edition (ITE ParkGen) was used to forecast the peak parking demand. As the Land Use Category (LUC) 240 "Mobile Home Park" is not available for ITE ParkGen, the LUC 223 "Affordable Housing" was used for the development. Considering the size of the homes, the affordable housing LUC is an appropriate substitute to estimate the parking needs of the proposed redevelopment.

It is noted that the ITE ParkGen rate considers both the tenant and visitor parking. For the analysis, the "Income Limits" subcategory was used, and the fitted curve rate was used as it provided the most conservative analysis.

Table 15: ITE ParkGen Rates

Land Use[1]	Total Units	Fitted Curve Equation	Peak Parking Demand
LUC 233 "Affordable Housing"	224 Dwelling units	= 1.12(x) – 19.50	231 spaces
Parking Supplied			**267 spaces**
Surplus/Deficiency			**+ 36 Spaces**

Note 1: Subcategory "Income Limits" applied.

As outlined in **Table 15,** a peak parking demand of 231 spaces (inclusive of tenants and visitors) are estimated using ITE ParkGen. As the most recent Development Concept Plan proposes 267 spaces, the proposed parking supply should adequately accommodate the peak parking demand of the proposed redevelopment.

ITE ParkGen Excerpts are included in **APPENDIX F**.

8.0 Conclusions

CF Crozier & Associates Inc. (Crozier) was retained by 1000719578 Ontario Inc. to undertake a Transportation Impact Study (TIS). This study supports future Official Plan Amendment and Zoning By-Law Amendment applications for a proposed affordable leasehold community located west of 3rd Line, south of Dufferin Road 17 and north of Side Road 5, in the Township of Melancthon (Town), Dufferin County (County).

The purpose of the study is to assess the impacts of the proposed redevelopment on the study road network and to recommend any required mitigation measures, if warranted.

The study has been completed with general conformance of the MTO's Traffic Impact Study Guidelines, with the associated analyses and findings outlined herein. The MTO's guidelines were used since there are no local guidelines.

The Development Concept Plan prepared by Glen Schnarr & Associates Inc. (GSAI), proposes the development of an affordable leasehold community consisting of 224 prefabricated homes with a total site area of approximately 37.38 ha. The existing stop-controlled "T" intersection of Chipwoods and 3rd line will be used as the main access to the community.

Existing Conditions

Under existing conditions, each intersection included in the study road network is currently operating at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 9.7 seconds, and the maximum volume-to-capacity (v/c) ratio is 0.04, both occurring at the minor, stop-controlled approach of an intersection.

Under existing conditions, no queuing issues were observed, and the study road network operates efficiently, with no critical movements.

Future Background Conditions

Under future background conditions in the ultimate horizon year (2038), the 3rd Line and Dufferin Road 17 intersection operates at an LOS "B" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 11.9 seconds, and the maximum v/c ratio is 0.06, both occurring at minor, stop-controlled approaches.

The intersections of 3rd Line and Side Road 5, as well as 3rd Line and Chipwoods operate at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 9.7 seconds, and the maximum v/c ratio is 0.06, both occurring at minor, stop-controlled approaches.

Under future background conditions, no queuing issues were observed, and the study road network is expected to operate efficiently, with no critical movements.

Future Total Conditions

Under future total conditions in the ultimate horizon year (2038), the 3rd Line and Dufferin Road 17 intersection operates at an LOS "B" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 12.3 seconds, and the maximum v/c ratio is 0.14, both occurring at minor, stop-controlled approaches.

The intersections of 3rd Line and Side Road 5, as well as 3rd Line and Chipwoods operate at an LOS "A" during the weekday a.m. and p.m. peak periods. The maximum intersection control delay is 10.0 seconds, and the maximum v/c ratio is 0.08, both occurring at minor, stop-controlled approaches.

Under future total conditions, no queuing issues were observed, and the study road network is expected to operate efficiently, with no critical movements.

Traffic Safety

The assessment of sight distance at the proposed site access indicate that no sight distance issues are expected for vehicles exiting the Site.

Parking

The Town of Melancthon ZBL requires the proposed redevelopment to provide a minimum parking supply of 448 parking spaces, or two (2) spaces per dwelling unit. As the development proposes one (1) parking space per unit plus 43 additional visitor parking spaces for a total of 267 spaces, the development proposes a parking deficit of 181 spaces, in comparison to the Town's ZBL.

According to ITE ParkGen, a peak parking demand of 231 spaces (inclusive of tenants and visitors) is estimated. As the most recent Development Concept Plan proposes 267 spaces, the proposed parking supply should adequately accommodate the peak parking demand of the proposed redevelopment.

Summary

In conclusion, the proposed redevelopment is supportable from a transportation operations perspective.

The analysis undertaken herein was prepared using the most recent Development Concept Plan. Any minor change to the Plan will not materially affect the conclusions contained within this report.

Respectfully submitted by,

C.F. CROZIER & ASSOCIATES INC.

Andrew Bader
Engineering Intern, Transportation

C.F. CROZIER & ASSOCIATES INC.

Ian Lindley, P.Eng
Project Engineer, Transportation

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APPENDIX A

Terms of Reference and Correspondence

Andrew Bader

From: Andrew Bader
Sent: Friday, February 28, 2025 4:13 PM
To: Gord.Feniak@rjburnside.com
Cc: Ian Lindley
Subject: FW: Chipwoods Park Development: Terms of Reference

Good afternoon Gord,

Hope all is well, Crozier has been retained to prepare a Transportation Impact Study in support of the Official Plan Amendment and Zoning By-Law Amendment applications for the proposed Chipwoods residential development located at 476420 3rd Line, north of Side Road 5 and south of Dufferin Conty Road 17, Town of Melancthon, County of Dufferin.

It is my understanding that R.J. Burnside will be the reviewer on behalf of the Town. Accordingly, please see the Terms of Reference below, previously sent to Dufferin County.

Should you have any questions or concerns, please feel free to reach out.

Thanks,
Andrew

Andrew Bader
Engineering Intern, Transportation
Office: 289.204.8341
Collingwood | Milton | Toronto | Bradford | Guelph

Our award-winning team has done it again.
Read more about our latest recognition.

CROZIER

From: Andrew Bader <abader@cfcrozier.ca>
Sent: Monday, February 24, 2025 11:36 AM
To: bgibbons@dufferincounty.ca; Mike Hooper <mhooper@dufferincounty.ca>
Cc: Ian Lindley <ilindley@cfcrozier.ca>
Subject: Chipwoods Park Development: Terms of Reference

Good morning,

Hope you are doing well, Crozier has been retained to prepare a Transportation Impact Study in support of the Official Plan Amendment and Zoning By-Law Amendment applications for the proposed residential development located at 476420 3rd Line, north of Side Road 5 and south of Dufferin Conty Road 17, Town of Melancthon, County of Dufferin. The overall concept plan has yet to be confirmed, but it is expected to include an affordable permanent residential subdivision with prefabricated homes. Based on discussions with the Client, the subdivision will ideally include 150 to 200 lots.

The study will be prepared in general conformance with the MTO's Traffic Impact Study Guidelines. We propose the following term of reference:

Study Intersections

- 3rd Line and Chipwoods
- 3rd Line and Dufferin County Road 17
- 3rd Line and Side Road 5

Existing Conditions

The existing traffic conditions will be analyzed based on new peak hour traffic counts using Synchro 12.0 software. Level of Service, control delays, maximum volume-to-capacity ratios and queue lengths will be evaluated for each study intersection. The following study horizon and analysis periods are proposed:

- Existing conditions (2025), full build-out year (assumed to be 2028), five (5) years from the full build-out (2033), and 10 years from full build-out (2038).
- Weekday a.m. and p.m. peak periods, reflective of the typical commuter peak periods for a residential development (7:00 a.m. to 9:00 a.m. & 4:00 p.m. to 7:00 p.m.).

Roadway Improvements

According to the Dufferin County Road Construction Projects website, there are no planned roadway improvements in the area surrounding the study road network. Within the town of Melancthon 2024 Asset Management Plan, the Ten-Year Road Improvement Plan indicates that road resurfacing is planned on 3rd Line between Dufferin County Road 17 and Side Road 5.

Please confirm if there are any additional improvements that should be accounted for in the study.

Background Developments

According to the Dufferin County Planning and Development Projects website, as well as the Township of Melancthon planning page , the following developments were identified:

- 537086 Main Street Horning's Mills (No TIS found)
- Strada Aggregates (Traffic Review found, No TIS found)
- DHL Shelburne Pit (TIS found)

Please advise if any additional developments should be included in our analysis, and if a TIS is available for the 537086 Main Street Horning's Mills and Strada Aggregates developments.

Growth Rates

An industry standard of 2% is typically applied to the study roadways. Please advise if this growth rate is applicable for the roadways included in the study intersections.

Future Conditions

- Trip Generation will be based on ITE Manual, 11th Edition.
- Trip Distribution will be based on Transportation Tomorrow Survey data and/or existing/forecasted travel patterns.

- Future background and future total conditions will be compared to identify if capacity and queueing issues are forecasted and if mitigation measures are required.

Traffic Safety

- The available sight distance at the intersections will be compared to standards set out by Transportation Association of Canada Geometric Design Guide for Canadian Roads.

Parking Review

- Vehicle and bicycle parking requirements will be assessed based on the Town of Melancthon Zoning By-Law 12-1979 (As amended by 12-1982.)

Loading Review

- Loading requirements will be assessed based on the Town of Melancthon Zoning By-Law 12-1979 (As amended by 12-1982.)
- Vehicle Turning Diagrams will be provided to illustrate the movement of vehicles entering and exiting the properties as well as general circulation of the development for the following design vehicles
    - Waste Collection Vehicles
    - Fire Trucks
    - Delivery Vehicles (Medium Single Unit Truck)
    - Passenger Vehicles

Transportation Demand Management

- Transportation Demand Management opportunities will be assessed, and site-specific measures for the development will be recommended to reduce single-occupancy vehicle trips and promote sustainable transportation.
- Site specific transportation demand management recommendations will be made to support the development.

I would appreciate it if you could provide the appropriate contact at the Town of Melancthon to send this Terms of Reference to. Thank you in advance for your help.

Should you have any questions or concerns, please feel free to reach out.

Thanks,
Andrew

Andrew Bader
Engineering Intern, Transportation
Office: 289.204.8341
Collingwood | Milton | Toronto | Bradford | Guelph

Andrew Bader

From: Andrew Bader
Sent: Monday, February 24, 2025 11:36 AM
To: bgibbons@dufferincounty.ca; Mike Hooper
Cc: Ian Lindley
Subject: Chipwoods Park Development: Terms of Reference

Good morning,

Hope you are doing well, Crozier has been retained to prepare a Transportation Impact Study in support of the Official Plan Amendment and Zoning By-Law Amendment applications for the proposed residential development located at 476420 3rd Line, north of Side Road 5 and south of Dufferin Conty Road 17, Town of Melancthon, County of Dufferin. The overall concept plan has yet to be confirmed, but it is expected to include an affordable permanent residential subdivision with prefabricated homes. Based on discussions with the Client, the subdivision will ideally include 150 to 200 lots.

The study will be prepared in general conformance with the MTO's Traffic Impact Study Guidelines. We propose the following term of reference:

Study Intersections

- 3rd Line and Chipwoods
- 3rd Line and Dufferin County Road 17
- 3rd Line and Side Road 5

Existing Conditions

The existing traffic conditions will be analyzed based on new peak hour traffic counts using Synchro 12.0 software. Level of Service, control delays, maximum volume-to-capacity ratios and queue lengths will be evaluated for each study intersection. The following study horizon and analysis periods are proposed:

- Existing conditions (2025), full build-out year (assumed to be 2028), five (5) years from the full build-out (2033), and 10 years from full build-out (2038).
- Weekday a.m. and p.m. peak periods, reflective of the typical commuter peak periods for a residential development (7:00 a.m. to 9:00 a.m. & 4:00 p.m. to 7:00 p.m.).

Roadway Improvements

According to the Dufferin County Road Construction Projects website, there are no planned roadway improvements in the area surrounding the study road network. Within the town of Melancthon 2024 Asset Management Plan, the Ten-Year Road Improvement Plan indicates that road resurfacing is planned on 3rd Line between Dufferin County Road 17 and Side Road 5.

Please confirm if there are any additional improvements that should be accounted for in the study.

Background Developments

According to the Dufferin County Planning and Development Projects website, as well as the Township of Melancthon planning page , the following developments were identified:

- 537086 Main Street Horning's Mills (No TIS found)
- Strada Aggregates (Traffic Review found, No TIS found)
- DHL Shelburne Pit (TIS found)

Please advise if any additional developments should be included in our analysis, and if a TIS is available for the 537086 Main Street Horning's Mills and Strada Aggregates developments.

Growth Rates

An industry standard of 2% is typically applied to the study roadways. Please advise if this growth rate is applicable for the roadways included in the study intersections.

Future Conditions

- Trip Generation will be based on ITE Manual, 11th Edition.
- Trip Distribution will be based on Transportation Tomorrow Survey data and/or existing/forecasted travel patterns.
- Future background and future total conditions will be compared to identify if capacity and queueing issues are forecasted and if mitigation measures are required.

Traffic Safety

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Should you have any questions or concerns, please feel free to reach out.

Thanks,
Andrew

Andrew Bader
Engineering Intern, Transportation
Office: 289.204.8341
Collingwood | Milton | Toronto | Bradford | Guelph

Our award-winning team has done it again.
Read more about our latest recognition.

CROZIER

APPENDIX B

Town Planning Excerpts

The Corporation of

THE TOWNSHIP OF MELANCTHON

157101 Highway 10,

Melancthon, Ontario, L9V 2E6

MINUTES OF THE ROAD SUB-COMMITTEE
SEPTEMBER 27, 2016

CALL TO ORDER

The Road Sub-committee meeting was called to order on September 27, 2016 at 1:28 p.m. with Chair Dave Besley, Councillor Wayne Hannon, Arunas Kalinauskas, CAO Denise Holmes, Treasurer/Deputy Clerk Wendy Atkinson, Road Superintendent Craig Micks & Roads Secretary Joyce Clarke attending.

ASSET MANAGEMENT

Arunas Kalinauskas spoke to the committee regarding the Asset Management program. R.J. Burnside has asset management software that we are using. The program looks at the cost of owning, condition & value of asset, and maintenance cost.

The program has an age analysis for roads & bridges. The life expectancy of the bridges will be longer due to the inspections completed by R.J. Burnside.

Arunas also explained what Level of Service and Risk Management means.

W. Atkinson mentioned that an application for an OCIF grant must be completed by Oct. 21st, 2016.

C. Micks and D. Besley will speak to Chris Knetchel regarding which bridge is the biggest health risk. The road with the biggest health risk is the 4th Line NE between County Road 9 and County Road 21. A decision will be made before the next council meeting.

A break was taken at 3:05 at which time A. Kalinauskas, D. Holmes & W. Atkinson left the meeting.

The meeting was reconvened at 3:10 p.m.

ADDITIONS/DELETIONS/APPROVAL OF AGENDA

1. Decrease Speed on the 3rd Line
2. Bretton Estates

Agenda with additions was adopted by W. Hannon, Seconded by C. Micks. Carried

APPROVAL OF DRAFT MINUTES FROM JULY 19TH, 2016 & AUGUST 30TH, 2016.

The minutes of the July 19th and the August 30th meeting were adopted by C. Micks, Seconded by W. Hannon. Carried.

BUSINESS ARISING FROM MINUTES

J. Clarke mentioned that the fee for the 300 road crossing has not been paid.

ITEMS FOR INFORMATION

2nd Line SW Road Counter Report was read.

ITEMS FOR DISCUSSION

1. **Decreased Speed on the 3rd Line**

   A discussion occurred with the following Recommendation to Council

   Due to the fact lowering the speed limit on the 3rd Line OS might change the road classification, the Road Sub-committee recommends the speed limit on the 3rd Line OS remains at 80 km. per hour.

   The road counter will be put back on the 3rd Line to see if the OPP Radar program decreased the number of speeders.

2. **Bretton Estates**

   Craig had a complaint that the dirt is going over the stones that are to stop erosion.
   Due to the fact the Township has not taken ownership of the road, the committee directed Craig to get the complainant to send a letter to council.

3. **Truck Traffic on 15 Sideroad**

   J. Clarke presented the road counter report on the 15th Sideroad.
   Most of the truck traffic is heading to Downey Potato Storage.
   Trevor Downey offered to put up a sign to use 20 Sideroad for the Truck Route in his storage. Craig hopes this might decrease the volume of trucks.

4. **Plan for Placing Road Counter**

   The road counter will be put on a rotation between the busiest roads. The roads recommended originally will be 4th Line NE, 2nd Line SW, 7th Line SW and 3rd Line OS. Other roads will be added as indicated.

5. **New Building**

   J. Clarke told the committee the truss plans were in. Craig will have them sent down to the County for the building permit.

6. **Bridge Replacement**

   This item was deferred until after C. Micks & D. Besley meet with Chris Knetchel.

7. **Moving Speed Detector Signs**

The Road Sub-committee received a letter from Kelly McDowell regarding moving the Speed Sign Detectors to the other end of the village of Horning's Mills.

The Road Sub-committee directed J. Clarke to send a letter thanking Ms. McDowell and indicating we will see if the sign can be moved in the spring.

The Road Sub-committee suggested the Speed Detector Signs be moved onto the 2nd Line SW and the 3rd Line OS for a few weeks before being stored for winter.

8. **Speed Signs on the 3rd Line OS**

The Road Sub-Committee recommends that the following recommendation from August 11th be rescinded.

The Road Sub-committee recommends signs indicating all Melancthon Township roads have speed limits of 80 km/hr. unless otherwise posted, be erected on township roads with large volume traffic.

9. **Horning's Mills Ditch**

Mrs. Staveley complained to C. Micks due to the ditching in Horning's Mills the road crew re-routed the water course from her property. C. Micks presented photos indicating the ditching did not change the original water course as they did not change the direction or depth of the ditch. C. Micks will call her.

ADJOURNMENT

W. Hannon made a motion seconded by C. Micks for adjournment at with the next meeting being called by the Chair of the Road Sub-committee. Carried.

CHAIR SECRETARY

Township of Melancthon

OFFICIAL PLAN

Adopted by Township By-law August 14, 2014
Approved by the Ministry of
Municipal Affairs and Housing March 9, 2015
Approved by the Ontario Municipal Board, September 5, 2017

Township of Melancthon

OFFICIAL PLAN

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Municipal Affairs and Housing March 9, 2015
Approved by the Ontario Municipal Board, September 5, 2017

OFFICIAL PLAN

FOR

THE TOWNSHIP OF MELANCTHON

The attached text and map schedules constituting the Official Plan for the Township of Melancthon was prepared and adopted by the Council of the Corporation of the Township of Melancthon under By-law No. 38-2014 in accordance with Section 17 of the Planning Act, R. S. O. 1990, c. P. 13, as amended to March, 2014, on the 14th day of August, 2014.

"Bill Hill"
MAYOR BILL HILL

"Denise Holmes"
CAO/CLERK DENISE HOLMES

Schedule A-2

Schedule A-3

Schedule A-4

Township of Mulmur

Town of Shelburne

Schedule B
Horning's Mills

AREA SUBJECT TO SECTION 5.6.2 (y)

AREA SUBJECT TO SECTION 5.6.2 (z)

AREA SUBJECT TO SECTION 5.3.1 (f)

AREA SUBJECT TO SECTION 5.4.2 (i)

AREA SUBJECT TO SECTION 3.5.2

LIMIT OF AREA SUBJECT TO SECTION 3.10 (f)

COUNTY ROAD 17

COUNTY ROAD 124

SIDEROAD 15

SIDEROAD 30

HIGHWAY 89

HIGHWAY 89

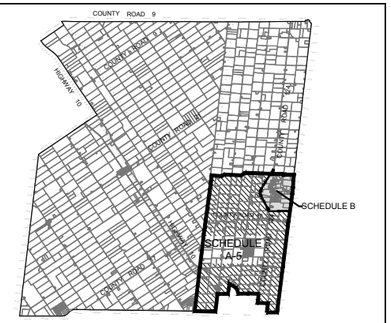
3 LINE

CON. IV O.S.

CON. III O.S.

CON. II O.S.

CON. I O.S.



SCHEDULE A-5
LAND USE & ROADS PLAN

OFFICIAL PLAN
FOR
TOWNSHIP OF
MELANCTHON

400 0 400 800 1200 1600 2000
SCALE = 1:40,000

- AGRICULTURAL
- RURAL
- ENVIRONMENTAL PROTECTION
- ENVIRONMENTAL CONSERVATION (Also see Section 5.5.3 (g))
- EXTRACTIVE INDUSTRIAL
- LIGHT INDUSTRIAL
- NIAGARA ESCARPMENT DEVELOPMENT CONTROL AREA
- PROVINCIAL HIGHWAY
- ARTERIAL ROAD
- LOCAL ROAD
- EXISTING MINERAL AGGREGATE HAUL ROUTE
- RAIL LINE RIGHT-OF-WAY

This schedule must be read in conjunction with the Official Plan's policies and Schedules D to H.

N

TOWNSHIP OF MELANCTHON

OCTOBER, 2017

APPENDIX C

Traffic Data

Spectrum

Turning Movement Count
Location Name: SIDE RD 5 & 3RD LINE
Date: Wed, Mar 05, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (2 . SIDE RD 5 & 3RD LINE)

Start Time	N Approach 3RD LINE						E Approach SIDE RD 5						S Approach 3RD LINE						W Approach SIDE RD 5						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-03-05 07:00:00	0	0	1	0	0	1	0	0	2	0	0	2	7	2	0	0	0	9	0	0	0	0	0	0	12	
2025-03-05 07:15:00	0	2	1	0	0	3	1	0	3	0	0	4	1	2	1	0	0	4	0	0	1	0	0	1	12	
2025-03-05 07:30:00	0	3	1	0	0	4	0	0	3	0	0	3	2	1	0	0	0	3	0	2	0	0	0	2	12	
2025-03-05 07:45:00	0	8	2	0	0	10	1	0	4	0	0	5	4	4	0	0	0	8	0	0	0	0	0	0	23	59
2025-03-05 08:00:00	0	10	4	0	0	14	1	0	8	0	0	9	2	5	0	0	0	7	0	0	0	0	0	0	30	77
2025-03-05 08:15:00	0	6	5	0	0	11	2	0	6	0	0	8	3	3	0	0	0	6	0	1	0	0	0	1	26	91
2025-03-05 08:30:00	1	9	1	0	0	11	1	0	8	0	0	9	5	4	0	0	0	9	0	0	0	0	0	0	29	108
2025-03-05 08:45:00	0	4	1	0	0	5	0	0	8	1	0	9	3	6	0	0	0	9	0	1	0	0	0	1	24	109
BREAK																										
2025-03-05 16:00:00	0	3	0	0	0	3	2	1	3	0	0	6	1	8	0	0	0	9	0	1	0	0	0	1	19	
2025-03-05 16:15:00	0	5	2	0	0	7	1	0	4	0	0	5	7	5	0	0	0	12	0	0	0	0	0	0	24	
2025-03-05 16:30:00	0	1	1	0	0	2	1	1	7	0	0	9	3	3	0	0	0	6	0	0	1	0	0	1	18	
2025-03-05 16:45:00	0	1	1	0	0	2	5	0	4	0	0	9	3	5	1	0	0	9	0	0	0	0	0	0	20	81
2025-03-05 17:00:00	0	6	1	0	0	7	5	1	6	0	0	12	6	6	0	0	0	12	0	0	0	0	0	0	31	93
2025-03-05 17:15:00	0	5	3	0	0	8	0	0	4	0	0	4	3	9	0	0	0	12	0	0	0	0	0	0	24	93
2025-03-05 17:30:00	0	4	3	0	0	7	1	0	4	0	0	5	2	5	0	0	0	7	0	0	0	0	0	0	19	94
2025-03-05 17:45:00	0	2	1	0	0	3	2	0	5	0	0	7	4	4	0	0	0	8	0	0	0	0	0	0	18	92
2025-03-05 18:00:00	0	4	0	0	0	4	4	0	4	0	0	8	5	8	0	0	0	13	0	0	0	0	0	0	25	86
2025-03-05 18:15:00	0	2	2	0	0	4	1	0	3	0	0	4	2	1	0	0	0	3	0	0	0	0	0	0	11	73
2025-03-05 18:30:00	0	0	1	0	0	1	1	0	4	0	0	5	4	1	0	0	0	5	0	0	0	0	0	0	11	65
2025-03-05 18:45:00	0	2	1	0	0	3	0	0	3	0	0	3	2	1	0	0	0	3	0	0	0	0	0	0	9	56
Grand Total	1	77	32	0	0	110	29	3	93	1	0	126	69	83	2	0	0	154	0	5	2	0	0	7	**397**	-
Approach%	0.9%	70%	29.1%	0%		-	23%	2.4%	73.8%	0.8%		-	44.8%	53.9%	1.3%	0%		-	0%	71.4%	28.6%	0%		-	**-**	-
Totals %	0.3%	19.4%	8.1%	0%		27.7%	7.3%	0.8%	23.4%	0.3%		31.7%	17.4%	20.9%	0.5%	0%		38.8%	0%	1.3%	0.5%	0%		1.8%	**-**	-
Heavy	0	3	1	0		-	1	0	10	0		-	4	1	0	0		-	0	1	1	0		-	**-**	-
Heavy %	0%	3.9%	3.1%	0%		-	3.4%	0%	10.8%	0%		-	5.8%	1.2%	0%	0%		-	0%	20%	50%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Moderate Rain (2 °C)

Start Time	N Approach 3RD LINE						E Approach SIDE RD 5						S Approach 3RD LINE						W Approach SIDE RD 5						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-03-05 08:00:00	0	10	4	0	0	14	1	0	8	0	0	9	2	5	0	0	0	7	0	0	0	0	0	0	30
2025-03-05 08:15:00	0	6	5	0	0	11	2	0	6	0	0	8	3	3	0	0	0	6	0	1	0	0	0	1	26
2025-03-05 08:30:00	1	9	1	0	0	11	1	0	8	0	0	9	5	4	0	0	0	9	0	0	0	0	0	0	29
2025-03-05 08:45:00	0	4	1	0	0	5	0	0	8	1	0	9	3	6	0	0	0	9	0	1	0	0	0	1	24
Grand Total	1	29	11	0	0	41	4	0	30	1	0	35	13	18	0	0	0	31	0	2	0	0	0	2	**109**
Approach%	2.4%	70.7%	26.8%	0%		-	11.4%	0%	85.7%	2.9%		-	41.9%	58.1%	0%	0%		-	0%	100%	0%	0%		-	**-**
Totals %	0.9%	26.6%	10.1%	0%		37.6%	3.7%	0%	27.5%	0.9%		32.1%	11.9%	16.5%	0%	0%		28.4%	0%	1.8%	0%	0%		1.8%	**-**
PHF	0.25	0.73	0.55	0		0.73	0.5	0	0.94	0.25		0.97	0.65	0.75	0	0		0.86	0	0.5	0	0		0.5	0.91
Heavy	0	3	0	0		3	0	0	4	0		4	1	1	0	0		2	0	0	0	0		0	9
Heavy %	0%	10.3%	0%	0%		7.3%	0%	0%	13.3%	0%		11.4%	7.7%	5.6%	0%	0%		6.5%	0%	0%	0%	0%		0%	8.3%
Lights	1	26	11	0		38	4	0	26	1		31	12	17	0	0		29	0	2	0	0		2	100
Lights %	100%	89.7%	100%	0%		92.7%	100%	0%	86.7%	100%		88.6%	92.3%	94.4%	0%	0%		93.5%	0%	100%	0%	0%		100%	91.7%
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Buses	0	3	0	0		3	0	0	4	0		4	1	1	0	0		2	0	0	0	0		0	9
Buses %	0%	10.3%	0%	0%		7.3%	0%	0%	13.3%	0%		11.4%	7.7%	5.6%	0%	0%		6.5%	0%	0%	0%	0%		0%	8.3%

Spectrum

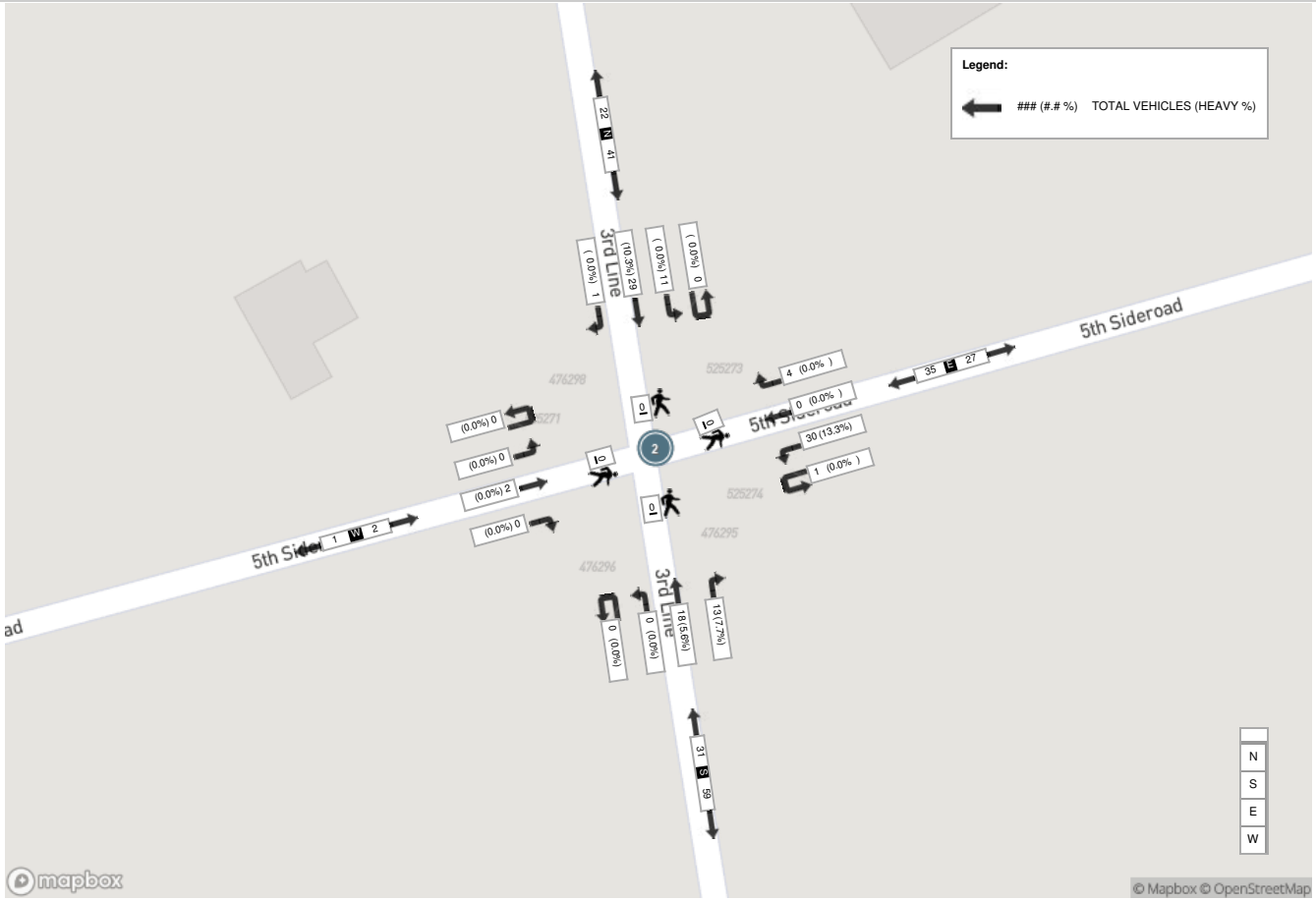
Turning Movement Count
Location Name: SIDE RD 5 & 3RD LINE
Date: Wed, Mar 05, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

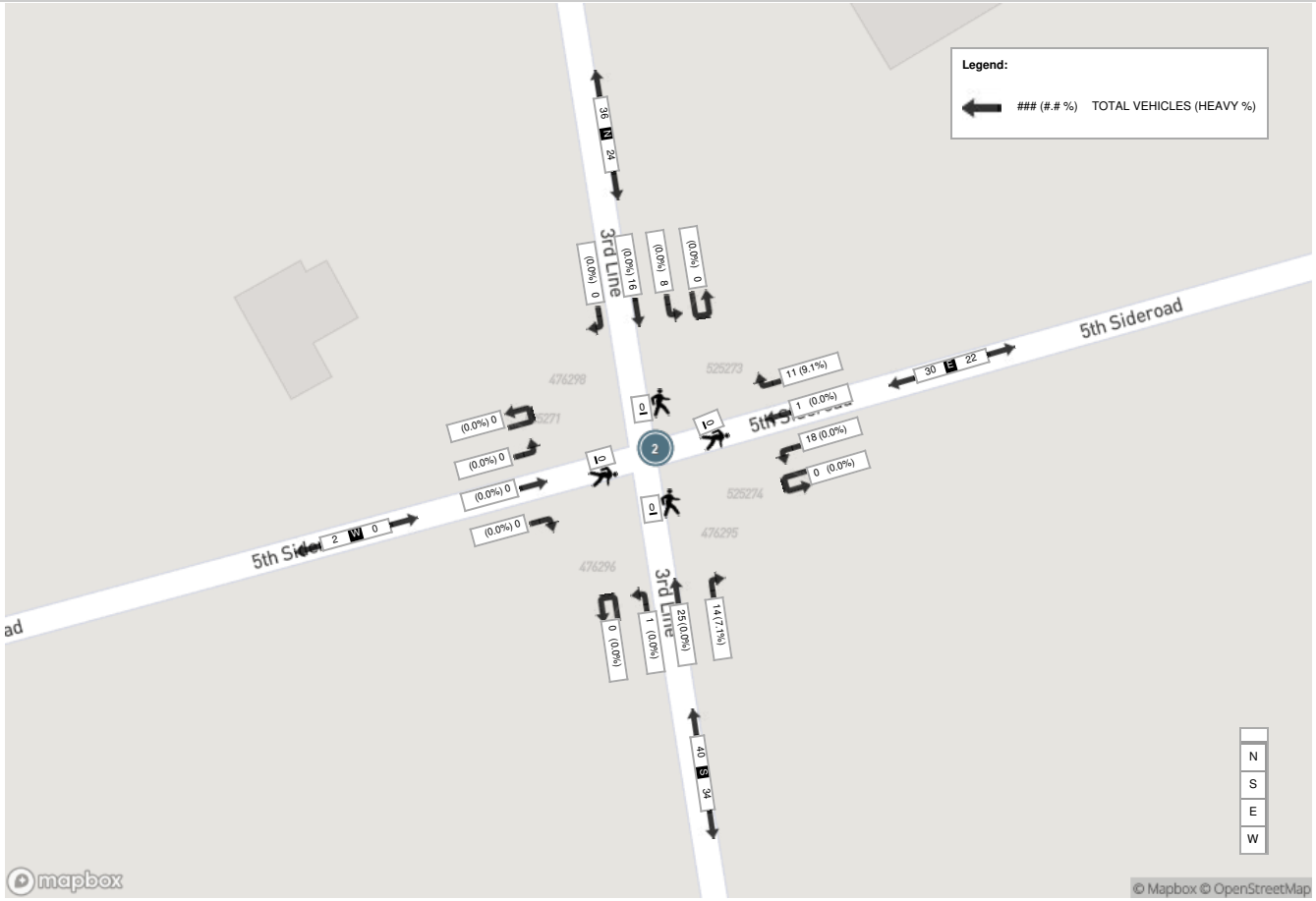
Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (5 °C)

Start Time	N Approach 3RD LINE						E Approach SIDE RD 5						S Approach 3RD LINE						W Approach SIDE RD 5						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-03-05 16:45:00	0	1	1	0	0	2	5	0	4	0	0	9	3	5	1	0	0	9	0	0	0	0	0	0	20
2025-03-05 17:00:00	0	6	1	0	0	7	5	1	6	0	0	12	6	6	0	0	0	12	0	0	0	0	0	0	31
2025-03-05 17:15:00	0	5	3	0	0	8	0	0	4	0	0	4	3	9	0	0	0	12	0	0	0	0	0	0	24
2025-03-05 17:30:00	0	4	3	0	0	7	1	0	4	0	0	5	2	5	0	0	0	7	0	0	0	0	0	0	19
Grand Total	0	16	8	0	0	24	11	1	18	0	0	30	14	25	1	0	0	40	0	0	0	0	0	0	**94**
Approach%	0%	66.7%	33.3%	0%		-	36.7%	3.3%	60%	0%		-	35%	62.5%	2.5%	0%		-	0%	0%	0%	0%		-	**-**
Totals %	0%	17%	8.5%	0%		25.5%	11.7%	1.1%	19.1%	0%		31.9%	14.9%	26.6%	1.1%	0%		42.6%	0%	0%	0%	0%		0%	**-**
PHF	0	0.67	0.67	0		0.75	0.55	0.25	0.75	0		0.63	0.58	0.69	0.25	0		0.83	0	0	0	0		0	0.76
Heavy	0	0	0	0		0	1	0	0	0		1	1	0	0	0		1	0	0	0	0		0	2
Heavy %	0%	0%	0%	0%		0%	9.1%	0%	0%	0%		3.3%	7.1%	0%	0%	0%		2.5%	0%	0%	0%	0%		0%	2.1%
Lights	0	16	8	0		24	10	1	18	0		29	13	25	1	0		39	0	0	0	0		0	92
Lights %	0%	100%	100%	0%		100%	90.9%	100%	100%	0%		96.7%	92.9%	100%	100%	0%		97.5%	0%	0%	0%	0%		0%	97.9%
Single-Unit Trucks	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Single-Unit Trucks %	0%	0%	0%	0%		0%	9.1%	0%	0%	0%		3.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	1.1%
Buses	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	1
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	7.1%	0%	0%	0%		2.5%	0%	0%	0%	0%		0%	1.1%

Peak Hour: 08:00 AM - 09:00 AM Weather: Moderate Rain (2 °C)



Peak Hour: 04:45 PM - 05:45 PM **Weather: Overcast Clouds (5 °C)**



Spectrum

Turning Movement Count
Location Name: DUFFERIN COUNTY RD 17 & 3RD LINE
Date: Wed, Mar 05, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (1 . DUFFERIN COUNTY RD 17 & 3RD LINE)

Start Time	N Approach 3RD LINE						E Approach DUFFERIN COUNTY RD 17						S Approach 3RD LINE						W Approach DUFFERIN COUNTY RD 17						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-03-05 07:00:00	0	0	0	0	0	0	0	10	0	0	0	10	1	1	0	0	0	2	0	10	0	0	0	10	22	
2025-03-05 07:15:00	0	1	1	0	0	2	0	4	2	0	0	6	0	2	0	0	0	2	0	11	0	0	0	11	21	
2025-03-05 07:30:00	1	1	2	0	0	4	0	11	2	0	0	13	2	2	0	0	0	4	0	13	0	0	0	13	34	
2025-03-05 07:45:00	0	4	1	0	0	5	0	6	5	0	0	11	2	0	0	0	0	2	1	15	2	0	0	18	36	113
2025-03-05 08:00:00	0	3	1	0	0	4	0	3	3	0	0	6	4	2	1	0	0	7	2	6	1	0	0	9	26	117
2025-03-05 08:15:00	0	2	0	0	0	2	0	9	1	0	0	10	2	1	1	0	0	4	2	13	0	0	0	15	31	127
2025-03-05 08:30:00	1	2	1	0	0	4	1	7	0	0	0	8	0	0	0	0	0	0	0	15	0	0	0	15	27	120
2025-03-05 08:45:00	0	2	3	0	0	5	3	8	1	0	0	12	4	2	0	0	0	6	0	8	1	0	0	9	32	116
BREAK																										
2025-03-05 16:00:00	3	1	0	0	0	4	1	14	1	0	0	16	2	5	0	0	0	7	1	12	0	0	0	13	40	
2025-03-05 16:15:00	1	1	0	0	0	2	1	18	4	0	0	23	4	0	0	0	0	4	0	12	1	0	0	13	42	
2025-03-05 16:30:00	0	0	1	0	0	1	2	25	4	0	0	31	2	2	1	0	0	5	1	12	1	0	0	14	51	
2025-03-05 16:45:00	0	0	0	0	0	0	0	22	1	0	0	23	3	1	2	0	0	6	0	9	2	0	0	11	40	173
2025-03-05 17:00:00	1	2	0	0	0	3	2	21	4	0	0	27	2	4	0	0	0	6	0	15	0	0	0	15	51	184
2025-03-05 17:15:00	1	1	0	0	0	2	0	18	4	0	0	22	3	4	2	0	0	9	1	9	0	0	0	10	43	185
2025-03-05 17:30:00	0	0	0	0	0	0	1	15	2	0	0	18	2	5	0	0	0	7	1	10	1	0	0	12	37	171
2025-03-05 17:45:00	2	0	0	0	0	2	3	17	1	0	0	21	1	1	2	0	0	4	0	2	0	0	0	2	29	160
2025-03-05 18:00:00	0	0	0	0	0	0	0	19	3	0	0	22	4	1	1	0	0	6	0	9	0	0	0	9	37	146
2025-03-05 18:15:00	1	2	0	0	0	3	3	9	0	0	0	12	1	2	0	0	0	3	0	6	0	0	0	6	24	127
2025-03-05 18:30:00	2	1	3	0	0	6	0	3	0	0	0	3	0	1	0	0	0	1	0	5	1	0	0	6	16	106
2025-03-05 18:45:00	0	0	1	0	0	1	0	9	1	0	0	10	1	0	0	0	0	1	1	7	1	0	0	9	21	98
Grand Total	13	23	14	0	0	50	17	248	39	0	0	304	40	36	10	0	0	86	10	199	11	0	0	220	**660**	-
Approach%	26%	46%	28%	0%		-	5.6%	81.6%	12.8%	0%		-	46.5%	41.9%	11.6%	0%		-	4.5%	90.5%	5%	0%		-	-	-
Totals %	2%	3.5%	2.1%	0%		7.6%	2.6%	37.6%	5.9%	0%		46.1%	6.1%	5.5%	1.5%	0%		13%	1.5%	30.2%	1.7%	0%		33.3%	-	-
Heavy	0	1	0	0		-	2	14	1	0		-	2	1	1	0		-	3	7	0	0		-	-	-
Heavy %	0%	4.3%	0%	0%		-	11.8%	5.6%	2.6%	0%		-	5%	2.8%	10%	0%		-	30%	3.5%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: DUFFERIN COUNTY RD 17 & 3RD LINE
Date: Wed, Mar 05, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Moderate Rain (2 °C)

Start Time	N Approach 3RD LINE						E Approach DUFFERIN COUNTY RD 17						S Approach 3RD LINE						W Approach DUFFERIN COUNTY RD 17						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-03-05 07:30:00	1	1	2	0	0	4	0	11	2	0	0	13	2	2	0	0	0	4	0	13	0	0	0	13	34
2025-03-05 07:45:00	0	4	1	0	0	5	0	6	5	0	0	11	2	0	0	0	0	2	1	15	2	0	0	18	36
2025-03-05 08:00:00	0	3	1	0	0	4	0	3	3	0	0	6	4	2	1	0	0	7	2	6	1	0	0	9	26
2025-03-05 08:15:00	0	2	0	0	0	2	0	9	1	0	0	10	2	1	1	0	0	4	2	13	0	0	0	15	31
Grand Total	1	10	4	0	0	15	0	29	11	0	0	40	10	5	2	0	0	17	5	47	3	0	0	55	**127**
Approach%	6.7%	66.7%	26.7%	0%		-	0%	72.5%	27.5%	0%		-	58.8%	29.4%	11.8%	0%		-	9.1%	85.5%	5.5%	0%		-	**-**
Totals %	0.8%	7.9%	3.1%	0%		11.8%	0%	22.8%	8.7%	0%		31.5%	7.9%	3.9%	1.6%	0%		13.4%	3.9%	37%	2.4%	0%		43.3%	**-**
PHF	0.25	0.63	0.5	0		0.75	0	0.66	0.55	0		0.77	0.63	0.63	0.5	0		0.61	0.63	0.78	0.38	0		0.76	0.88
Heavy	0	1	0	0		1	0	3	0	0		3	1	1	0	0		2	2	1	0	0		3	9
Heavy %	0%	10%	0%	0%		6.7%	0%	10.3%	0%	0%		7.5%	10%	20%	0%	0%		11.8%	40%	2.1%	0%	0%		5.5%	7.1%
Lights	1	9	4	0		14	0	26	11	0		37	9	4	2	0		15	3	46	3	0		52	118
Lights %	100%	90%	100%	0%		93.3%	0%	89.7%	100%	0%		92.5%	90%	80%	100%	0%		88.2%	60%	97.9%	100%	0%		94.5%	92.9%
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	1
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	20%	0%	0%		5.9%	0%	0%	0%	0%		0%	0.8%
Buses	0	1	0	0		1	0	1	0	0		1	1	0	0	0		1	2	1	0	0		3	6
Buses %	0%	10%	0%	0%		6.7%	0%	3.4%	0%	0%		2.5%	10%	0%	0%	0%		5.9%	40%	2.1%	0%	0%		5.5%	4.7%
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	2
Articulated Trucks %	0%	0%	0%	0%		0%	0%	6.9%	0%	0%		5%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	1.6%

Spectrum

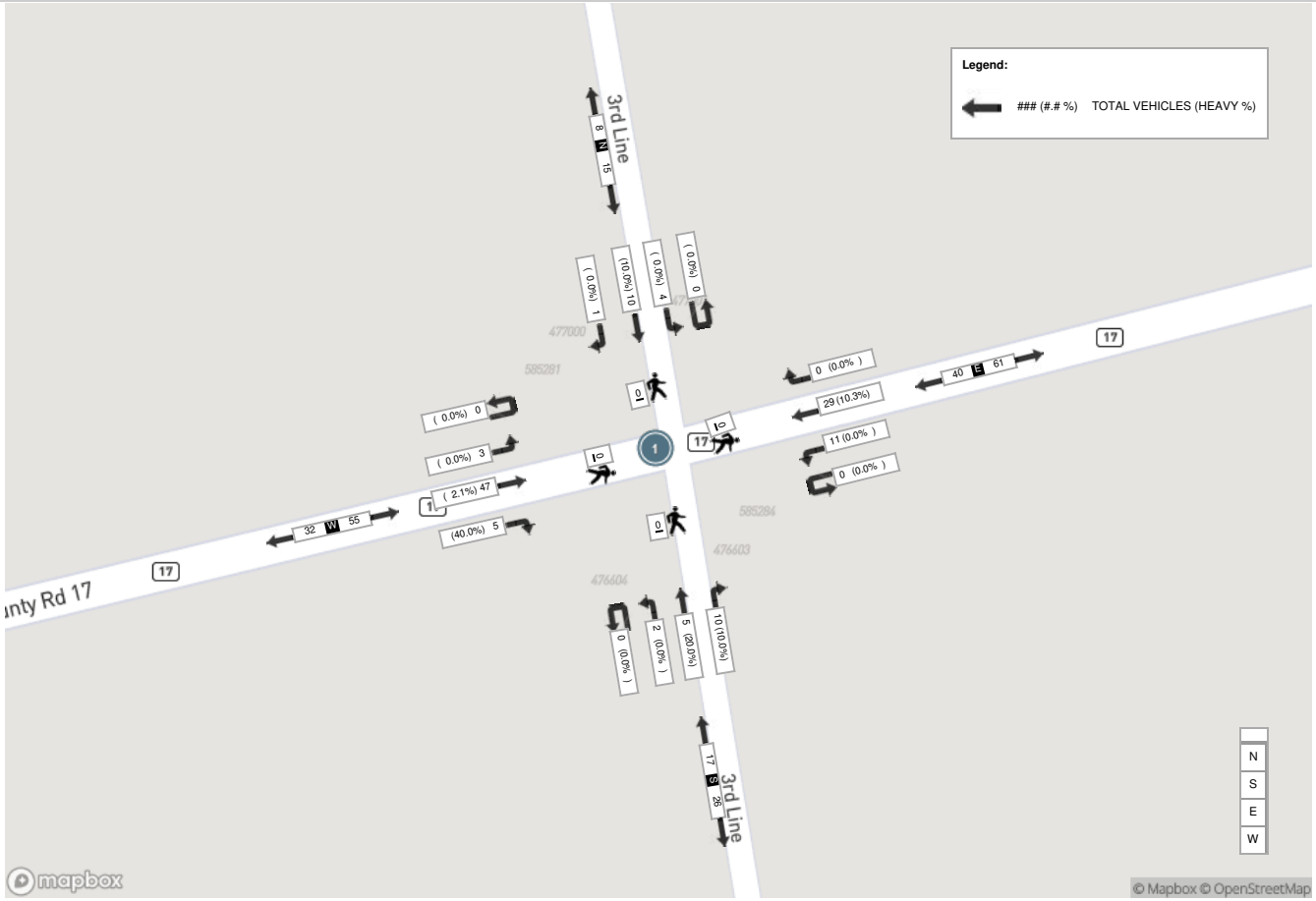
Turning Movement Count
Location Name: DUFFERIN COUNTY RD 17 & 3RD LINE
Date: Wed, Mar 05, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

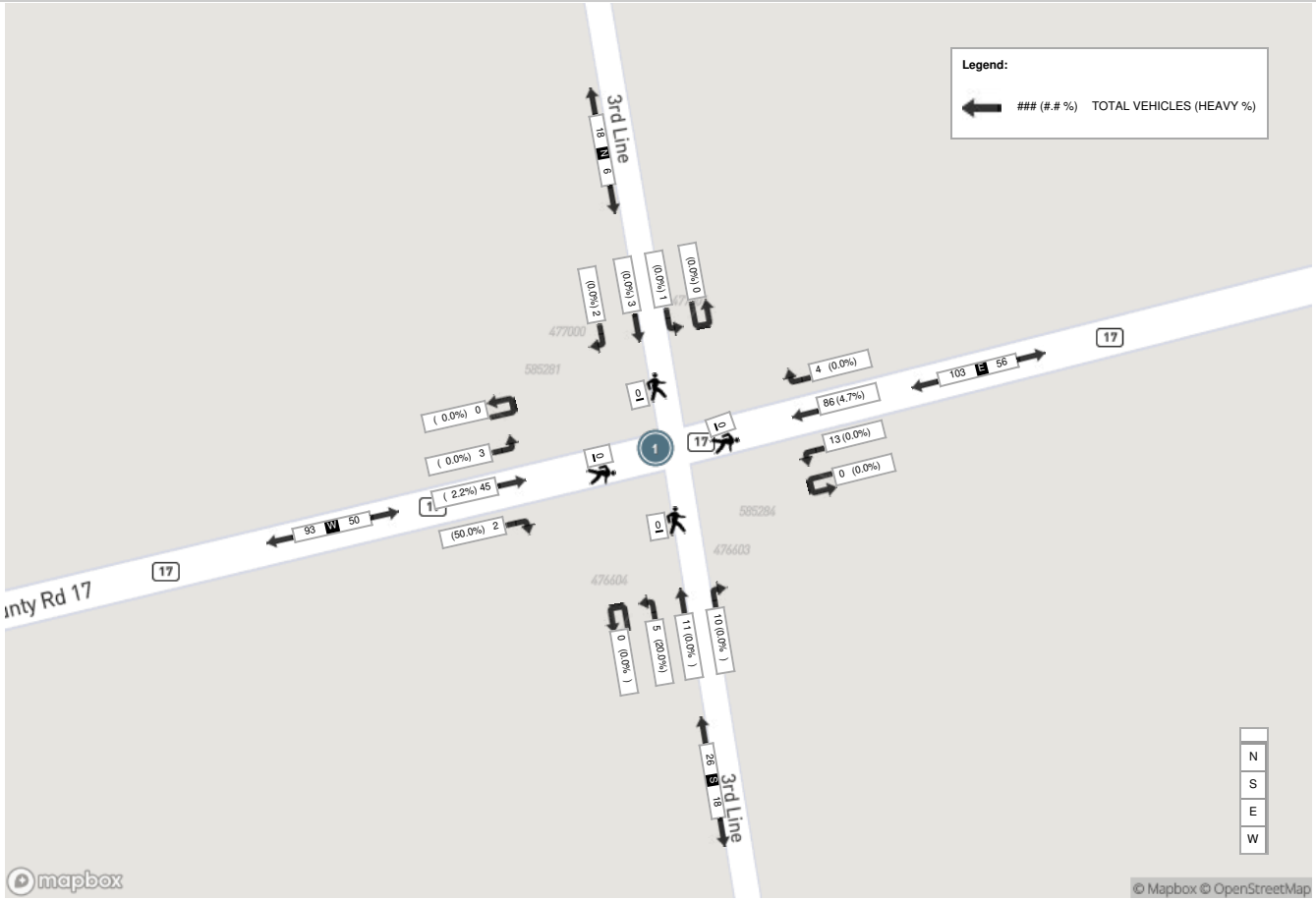
Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (5 °C)

Start Time	N Approach 3RD LINE						E Approach DUFFERIN COUNTY RD 17						S Approach 3RD LINE						W Approach DUFFERIN COUNTY RD 17						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-03-05 16:30:00	0	0	1	0	0	1	2	25	4	0	0	31	2	2	1	0	0	5	1	12	1	0	0	14	51
2025-03-05 16:45:00	0	0	0	0	0	0	0	22	1	0	0	23	3	1	2	0	0	6	0	9	2	0	0	11	40
2025-03-05 17:00:00	1	2	0	0	0	3	2	21	4	0	0	27	2	4	0	0	0	6	0	15	0	0	0	15	51
2025-03-05 17:15:00	1	1	0	0	0	2	0	18	4	0	0	22	3	4	2	0	0	9	1	9	0	0	0	10	43
Grand Total	2	3	1	0	0	6	4	86	13	0	0	103	10	11	5	0	0	26	2	45	3	0	0	50	**185**
Approach%	33.3%	50%	16.7%	0%		-	3.9%	83.5%	12.6%	0%		-	38.5%	42.3%	19.2%	0%		-	4%	90%	6%	0%		-	**-**
Totals %	1.1%	1.6%	0.5%	0%		3.2%	2.2%	46.5%	7%	0%		55.7%	5.4%	5.9%	2.7%	0%		14.1%	1.1%	24.3%	1.6%	0%		27%	**-**
PHF	0.5	0.38	0.25	0		0.5	0.5	0.86	0.81	0		0.83	0.83	0.69	0.63	0		0.72	0.5	0.75	0.38	0		0.83	0.91
Heavy	0	0	0	0		0	0	4	0	0		4	0	0	1	0		1	1	1	0	0		2	7
Heavy %	0%	0%	0%	0%		0%	0%	4.7%	0%	0%		3.9%	0%	0%	20%	0%		3.8%	50%	2.2%	0%	0%		4%	3.8%
Lights	2	3	1	0		6	4	82	13	0		99	10	11	4	0		25	1	44	3	0		48	178
Lights %	100%	100%	100%	0%		100%	100%	95.3%	100%	0%		96.1%	100%	100%	80%	0%		96.2%	50%	97.8%	100%	0%		96%	96.2%
Single-Unit Trucks	0	0	0	0		0	0	3	0	0		3	0	0	1	0		1	0	0	0	0		0	4
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	3.5%	0%	0%		2.9%	0%	0%	20%	0%		3.8%	0%	0%	0%	0%		0%	2.2%
Buses	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	1	0	0	0		1	2
Buses %	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1%	0%	0%	0%	0%		0%	50%	0%	0%	0%		2%	1.1%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	2.2%	0%	0%		2%	0.5%

Peak Hour: 07:30 AM - 08:30 AM **Weather: Moderate Rain (2 °C)**

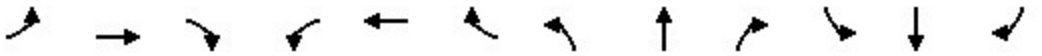


Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (5 °C)



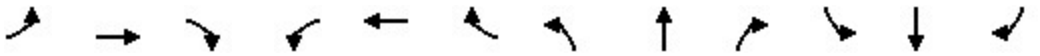
APPENDIX D

Detailed Capacity Analysis



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	47	5	11	29	0	2	5	10	4	10	1
Future Volume (vph)	3	47	5	11	29	0	2	5	10	4	10	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987						0.922			0.992	
Flt Protected		0.998			0.986			0.995			0.986	
Satd. Flow (prot)	0	1778	0	0	1756	0	0	1572	0	0	1765	0
Flt Permitted		0.998			0.986			0.995			0.986	
Satd. Flow (perm)	0	1778	0	0	1756	0	0	1572	0	0	1765	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	3%	40%	0%	11%	2%	0%	20%	10%	0%	10%	0%
Adj. Flow (vph)	3	53	6	13	33	0	2	6	11	5	11	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	62	0	0	46	0	0	19	0	0	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

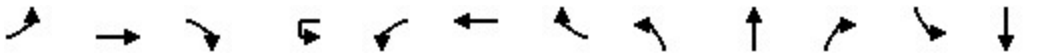
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	47	5	11	29	0	2	5	10	4	10	1
Future Volume (Veh/h)	3	47	5	11	29	0	2	5	10	4	10	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	53	6	12	33	0	2	6	11	5	11	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	33			59			126	119	56	133	122	33
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33			59			126	119	56	133	122	33
tC, single (s)	4.1			4.1			7.1	6.7	6.3	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.2	3.4	3.5	4.1	3.3
p0 queue free %	100			99			100	99	99	99	99	100
cM capacity (veh/h)	1592			1558			836	732	988	823	746	1046

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	62	45	19	17
Volume Left	3	12	2	5
Volume Right	6	0	11	1
cSH	1592	1558	875	781
Volume to Capacity	0.00	0.01	0.02	0.02
Queue Length 95th (m)	0.0	0.2	0.5	0.5
Control Delay (s/veh)	0.4	2.0	9.2	9.7
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.4	2.0	9.2	9.7
Approach LOS			A	A

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	15.8%	ICU Level of Service	A	
Analysis Period (min)	15			

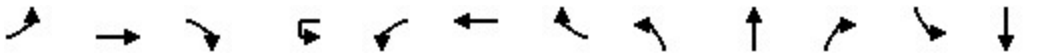


Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	2	0	1	30	0	4	0	18	13	11	29
Future Volume (vph)	0	2	0	1	30	0	4	0	18	13	11	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.986			0.944			0.997
Flt Protected						0.957						0.987
Satd. Flow (prot)	0	1921	0	0	0	1616	0	0	1698	0	0	1753
Flt Permitted						0.957						0.987
Satd. Flow (perm)	0	1921	0	0	0	1616	0	0	1698	0	0	1753
Link Speed (k/h)		50				50			60			60
Link Distance (m)		628.1				818.9			680.3			1226.0
Travel Time (s)		45.2				59.0			40.8			73.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	2%	2%	14%	2%	0%	2%	6%	8%	0%	11%
Adj. Flow (vph)	0	2	0	1	33	0	4	0	20	14	12	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	0	38	0	0	34	0	0	45
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		0.0				0.0			0.0			0.0
Link Offset(m)		0.0				0.0			0.0			0.0
Crosswalk Width(m)		4.9				4.9			4.9			4.9
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Sign Control		Stop				Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	1
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	0.99
Turning Speed (k/h)	14
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	0	2	0	1	30	0	4	0	18	13	11	29
Future Volume (Veh/h)	0	2	0	1	30	0	4	0	18	13	11	29
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	2	0	0	33	0	4	0	20	14	12	32
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked				0.00								
vC, conflicting volume	88	91	33	0	85	84	27	33			34	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	88	91	33	0	85	84	27	33			34	
tC, single (s)	7.1	6.5	6.2	0.0	7.2	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.6	4.0	3.3	2.2			2.2	
p0 queue free %	100	100	100	0	96	100	100	100			99	
cM capacity (veh/h)	889	797	1041	0	867	800	1054	1579			1591	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	2	37	34	45
Volume Left	0	33	0	12
Volume Right	0	4	14	1
cSH	797	884	1579	1591
Volume to Capacity	0.00	0.04	0.00	0.01
Queue Length 95th (m)	0.1	1.0	0.0	0.2
Control Delay (s/veh)	9.5	9.2	0.0	2.0
Lane LOS	A	A		A
Approach Delay (s/veh)	9.5	9.2	0.0	2.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	24.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	1
Future Volume (Veh/h)	1
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	1
Pedestrians	
Lane Width (m)	
Walking Speed (m/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (m)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

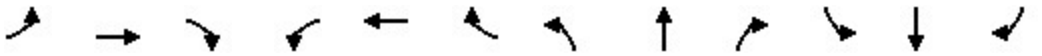
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	19	33	0
Future Volume (vph)	0	0	0	19	33	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1779	1779	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1779	1779	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	8%	8%	2%
Adj. Flow (vph)	0	0	0	21	36	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	21	36	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	19	33	0
Future Volume (Veh/h)	0	0	0	19	33	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	0	21	36	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	57	36	36			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	57	36	36			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	950	1037	1575			

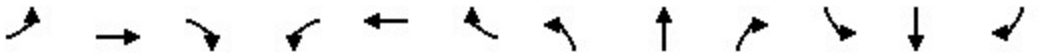
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	21	36
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1575	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	45	2	13	86	4	5	11	10	1	3	2
Future Volume (vph)	3	45	2	13	86	4	5	11	10	1	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.995			0.947			0.955	
Flt Protected		0.997			0.994			0.991			0.992	
Satd. Flow (prot)	0	1822	0	0	1823	0	0	1741	0	0	1820	0
Flt Permitted		0.997			0.994			0.991			0.992	
Satd. Flow (perm)	0	1822	0	0	1823	0	0	1741	0	0	1820	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	3%	50%	0%	5%	0%	20%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	49	2	14	95	4	5	12	11	1	3	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	113	0	0	28	0	0	6	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.0%		ICU Level of Service A	
Analysis Period (min) 15			



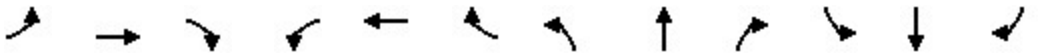
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	45	2	13	86	4	5	11	10	1	3	2
Future Volume (Veh/h)	3	45	2	13	86	4	5	11	10	1	3	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	3	49	2	14	95	4	5	12	11	1	3	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	99			51			185	183	50	198	182	97
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	99			51			185	183	50	198	182	97
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	98	99	100	100	100
cM capacity (veh/h)	1507			1568			728	707	1024	741	708	965

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	54	113	28	6
Volume Left	3	14	5	1
Volume Right	2	4	11	2
cSH	1507	1568	810	783
Volume to Capacity	0.00	0.01	0.03	0.01
Queue Length 95th (m)	0.0	0.2	0.8	0.2
Control Delay (s/veh)	0.4	1.0	9.6	9.6
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.4	1.0	9.6	9.6
Approach LOS			A	A

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	19.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	18	1	11	1	25	14	8	16	0
Future Volume (vph)	0	0	0	18	1	11	1	25	14	8	16	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.950			0.952				
Flt Protected					0.971			0.999			0.983	
Satd. Flow (prot)	0	1883	0	0	1709	0	0	1777	0	0	1888	0
Flt Permitted					0.971			0.999			0.983	
Satd. Flow (perm)	0	1883	0	0	1709	0	0	1777	0	0	1888	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		628.1			818.9			680.3			1226.0	
Travel Time (s)		45.2			59.0			40.8			73.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	2%	2%	0%	0%	10%	0%	0%	8%	0%	0%	2%
Adj. Flow (vph)	0	0	0	21	1	13	1	30	17	10	19	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	35	0	0	48	0	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	18	1	11	1	25	14	8	16	0
Future Volume (Veh/h)	0	0	0	18	1	11	1	25	14	8	16	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	21	1	13	1	30	17	10	19	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	93	88	19	80	80	39	19			47		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	93	88	19	80	80	39	19			47		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	100	98	100	99	100			99		
cM capacity (veh/h)	874	797	1059	909	809	1011	1611			1573		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	35	48	29
Volume Left	0	21	1	10
Volume Right	0	13	17	0
cSH	1700	941	1611	1573
Volume to Capacity	0.00	0.04	0.00	0.01
Queue Length 95th (m)	0.0	0.9	0.0	0.1
Control Delay (s/veh)	0.0	9.0	0.2	2.5
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.0	9.0	0.2	2.5
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

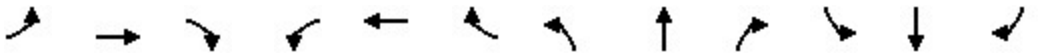
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	31	21	0
Future Volume (vph)	0	0	0	31	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1865	1865	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1865	1865	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	2%	2%	2%	3%	3%	2%
Adj. Flow (vph)	0	0	0	41	28	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	41	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	31	21	0
Future Volume (Veh/h)	0	0	0	31	21	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	0	0	0	41	28	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	69	28	28			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	69	28	28			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	936	1047	1585			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	41	28
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1585	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	147	6	12	136	0	3	6	11	5	11	2
Future Volume (vph)	4	147	6	12	136	0	3	6	11	5	11	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995						0.924			0.987	
Flt Protected		0.999			0.996			0.994			0.986	
Satd. Flow (prot)	0	1179	0	0	1152	0	0	1600	0	0	1771	0
Flt Permitted		0.999			0.996			0.994			0.986	
Satd. Flow (perm)	0	1179	0	0	1152	0	0	1600	0	0	1771	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	65%	33%	0%	72%	0%	0%	17%	9%	0%	9%	0%
Adj. Flow (vph)	5	167	7	14	155	0	3	7	13	6	13	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	179	0	0	169	0	0	23	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	147	6	12	136	0	3	6	11	5	11	2
Future Volume (Veh/h)	4	147	6	12	136	0	3	6	11	5	11	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	5	167	7	14	155	0	3	7	12	6	12	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	155			174			372	364	171	379	367	155
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	155			174			372	364	171	379	367	155
tC, single (s)	4.1			4.1			7.1	6.7	6.3	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.2	3.4	3.5	4.1	3.3
p0 queue free %	100			99			99	99	99	99	98	100
cM capacity (veh/h)	1438			1415			572	534	855	563	543	896

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	179	169	22	20
Volume Left	5	14	3	6
Volume Right	7	0	12	2
cSH	1438	1415	679	572
Volume to Capacity	0.00	0.01	0.03	0.03
Queue Length 95th (m)	0.1	0.2	0.8	0.8
Control Delay (s/veh)	0.2	0.7	10.5	11.5
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.2	0.7	10.5	11.5
Approach LOS			B	B

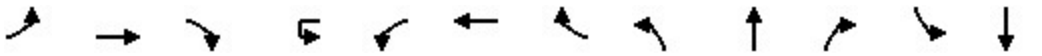
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	3	0	2	32	0	5	0	20	14	12	31
Future Volume (vph)	0	3	0	2	32	0	5	0	20	14	12	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.982			0.943			0.994
Flt Protected						0.959						0.987
Satd. Flow (prot)	0	1921	0	0	0	1635	0	0	1712	0	0	1762
Flt Permitted						0.959						0.987
Satd. Flow (perm)	0	1921	0	0	0	1635	0	0	1712	0	0	1762
Link Speed (k/h)		50				50			60			60
Link Distance (m)		628.1				818.9			680.3			1226.0
Travel Time (s)		45.2				59.0			40.8			73.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	5%	7%	0%	10%
Adj. Flow (vph)	0	3	0	2	36	0	6	0	22	16	13	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	0	44	0	0	38	0	0	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		0.0				0.0			0.0			0.0
Link Offset(m)		0.0				0.0			0.0			0.0
Crosswalk Width(m)		4.9				4.9			4.9			4.9
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Sign Control		Stop				Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	2
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	0.99
Turning Speed (k/h)	14
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	0	3	0	2	32	0	5	0	20	14	12	31
Future Volume (Veh/h)	0	3	0	2	32	0	5	0	20	14	12	31
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	3	0	0	36	0	6	0	22	16	13	34
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked				0.00								
vC, conflicting volume	97	99	35	0	93	92	30	36			38	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	97	99	35	0	93	92	30	36			38	
tC, single (s)	7.1	6.5	6.2	0.0	7.2	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.6	4.0	3.3	2.2			2.2	
p0 queue free %	100	100	100	0	96	100	99	100			99	
cM capacity (veh/h)	880	788	1044	0	858	795	1050	1588			1585	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	42	38	49
Volume Left	0	36	0	13
Volume Right	0	6	16	2
cSH	788	881	1588	1585
Volume to Capacity	0.00	0.05	0.00	0.01
Queue Length 95th (m)	0.1	1.1	0.0	0.2
Control Delay (s/veh)	9.6	9.3	0.0	2.0
Lane LOS	A	A		A
Approach Delay (s/veh)	9.6	9.3	0.0	2.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	24.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	2
Future Volume (Veh/h)	2
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	2
Pedestrians	
Lane Width (m)	
Walking Speed (m/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (m)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

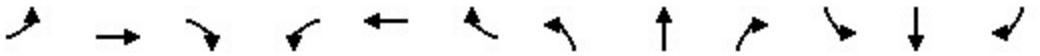
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	21	36	0
Future Volume (vph)	0	0	0	21	36	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1921	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	23	40	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	23	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	21	36	0
Future Volume (Veh/h)	0	0	0	21	36	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	0	23	40	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	63	40	40			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	63	40	40			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	948	1037	1583			

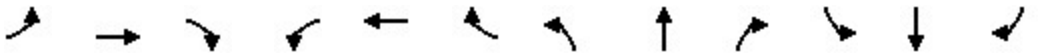
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	23	40
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1583	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	89	3	14	131	5	6	12	11	2	4	3
Future Volume (vph)	4	89	3	14	131	5	6	12	11	2	4	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.996			0.949			0.955	
Flt Protected		0.998			0.995			0.989			0.989	
Satd. Flow (prot)	0	1345	0	0	1486	0	0	1738	0	0	1814	0
Flt Permitted		0.998			0.995			0.989			0.989	
Satd. Flow (perm)	0	1345	0	0	1486	0	0	1738	0	0	1814	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	44%	33%	0%	32%	0%	17%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	98	3	15	144	5	7	13	12	2	4	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	164	0	0	32	0	0	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

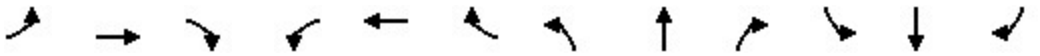
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	89	3	14	131	5	6	12	11	2	4	3
Future Volume (Veh/h)	4	89	3	14	131	5	6	12	11	2	4	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	98	3	15	144	5	7	13	12	2	4	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	149			101			289	287	100	303	286	147
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	149			101			289	287	100	303	286	147
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	98	99	100	99	100
cM capacity (veh/h)	1445			1504			623	618	962	629	619	906

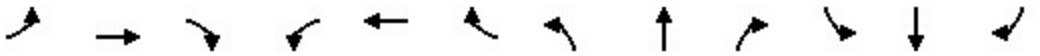
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	105	164	32	9
Volume Left	4	15	7	2
Volume Right	3	5	12	3
cSH	1445	1504	715	695
Volume to Capacity	0.00	0.01	0.04	0.01
Queue Length 95th (m)	0.1	0.2	1.1	0.3
Control Delay (s/veh)	0.3	0.8	10.3	10.2
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.3	0.8	10.3	10.2
Approach LOS			B	B

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	22.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	20	2	12	2	27	15	9	17	0
Future Volume (vph)	0	0	0	20	2	12	2	27	15	9	17	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.953			0.953				
Flt Protected					0.971			0.998			0.983	
Satd. Flow (prot)	0	1921	0	0	1729	0	0	1784	0	0	1888	0
Flt Permitted					0.971			0.998			0.983	
Satd. Flow (perm)	0	1921	0	0	1729	0	0	1784	0	0	1888	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		628.1			818.9			680.3			1226.0	
Travel Time (s)		45.2			59.0			40.8			73.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	0%	0%	0%	0%	8%	0%	0%	7%	0%	0%	0%
Adj. Flow (vph)	0	0	0	24	2	14	2	32	18	11	20	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	40	0	0	52	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	20	2	12	2	27	15	9	17	0
Future Volume (Veh/h)	0	0	0	20	2	12	2	27	15	9	17	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	24	2	14	2	32	18	11	20	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	102	96	20	87	87	41	20			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	102	96	20	87	87	41	20			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	100	97	100	99	100			99		
cM capacity (veh/h)	864	791	1064	898	800	1013	1609			1570		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	40	52	31
Volume Left	0	24	2	11
Volume Right	0	14	18	0
cSH	1700	929	1609	1570
Volume to Capacity	0.00	0.04	0.00	0.01
Queue Length 95th (m)	0.0	1.0	0.0	0.2
Control Delay (s/veh)	0.0	9.0	0.3	2.6
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.0	9.0	0.3	2.6
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		

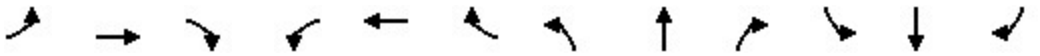
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	33	23	0
Future Volume (vph)	0	0	0	33	23	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1921	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	43	30	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	43	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	33	23	0
Future Volume (Veh/h)	0	0	0	33	23	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	0	0	0	43	30	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	73	30	30			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	73	30	30			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	936	1050	1596			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	43	30
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1596	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	153	6	13	139	0	3	6	12	5	12	2
Future Volume (vph)	4	153	6	13	139	0	3	6	12	5	12	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995						0.921			0.988	
Flt Protected		0.999			0.996			0.994			0.987	
Satd. Flow (prot)	0	1178	0	0	1154	0	0	1596	0	0	1772	0
Flt Permitted		0.999			0.996			0.994			0.987	
Satd. Flow (perm)	0	1178	0	0	1154	0	0	1596	0	0	1772	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	65%	33%	0%	72%	0%	0%	17%	9%	0%	9%	0%
Adj. Flow (vph)	5	174	7	15	158	0	3	7	14	6	14	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	186	0	0	173	0	0	24	0	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	153	6	13	139	0	3	6	12	5	12	2
Future Volume (Veh/h)	4	153	6	13	139	0	3	6	12	5	12	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	5	174	7	15	158	0	3	7	14	6	14	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	158			181			385	376	178	393	379	158
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158			181			385	376	178	393	379	158
tC, single (s)	4.1			4.1			7.1	6.7	6.3	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.2	3.4	3.5	4.1	3.3
p0 queue free %	100			99			99	99	98	99	97	100
cM capacity (veh/h)	1434			1407			559	525	848	549	535	893

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	186	173	24	22
Volume Left	5	15	3	6
Volume Right	7	0	14	2
cSH	1434	1407	682	559
Volume to Capacity	0.00	0.01	0.04	0.04
Queue Length 95th (m)	0.1	0.2	0.8	0.9
Control Delay (s/veh)	0.2	0.7	10.5	11.7
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.2	0.7	10.5	11.7
Approach LOS			B	B

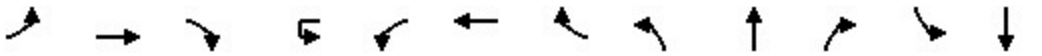
Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	3	0	2	36	0	5	0	22	16	13	34
Future Volume (vph)	0	3	0	2	36	0	5	0	22	16	13	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.983			0.942			0.995
Flt Protected						0.958						0.987
Satd. Flow (prot)	0	1921	0	0	0	1632	0	0	1710	0	0	1763
Flt Permitted						0.958						0.987
Satd. Flow (perm)	0	1921	0	0	0	1632	0	0	1710	0	0	1763
Link Speed (k/h)		50				50			60			60
Link Distance (m)		628.1				818.9			680.3			1226.0
Travel Time (s)		45.2				59.0			40.8			73.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	5%	7%	0%	10%
Adj. Flow (vph)	0	3	0	2	40	0	6	0	24	18	14	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	0	48	0	0	42	0	0	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		0.0				0.0			0.0			0.0
Link Offset(m)		0.0				0.0			0.0			0.0
Crosswalk Width(m)		4.9				4.9			4.9			4.9
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Sign Control		Stop				Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.0%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	2
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	0.99
Turning Speed (k/h)	14
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	0	3	0	2	36	0	5	0	22	16	13	34
Future Volume (Veh/h)	0	3	0	2	36	0	5	0	22	16	13	34
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	3	0	0	40	0	6	0	24	18	14	38
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked				0.00								
vC, conflicting volume	106	109	39	0	102	101	33	40			42	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	106	109	39	0	102	101	33	40			42	
tC, single (s)	7.1	6.5	6.2	0.0	7.2	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.6	4.0	3.3	2.2			2.2	
p0 queue free %	100	100	100	0	95	100	99	100			99	
cM capacity (veh/h)	867	778	1038	0	846	786	1046	1583			1580	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	46	42	54
Volume Left	0	40	0	14
Volume Right	0	6	18	2
cSH	778	867	1583	1580
Volume to Capacity	0.00	0.05	0.00	0.01
Queue Length 95th (m)	0.1	1.3	0.0	0.2
Control Delay (s/veh)	9.6	9.4	0.0	1.9
Lane LOS	A	A		A
Approach Delay (s/veh)	9.6	9.4	0.0	1.9
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	25.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	2
Future Volume (Veh/h)	2
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	2
Pedestrians	
Lane Width (m)	
Walking Speed (m/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (m)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

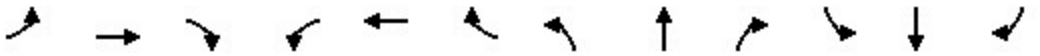
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	23	40	0
Future Volume (vph)	0	0	0	23	40	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1921	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	25	44	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	25	44	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	23	40	0
Future Volume (Veh/h)	0	0	0	23	40	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	0	25	44	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	69	44	44			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	69	44	44			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	941	1032	1577			

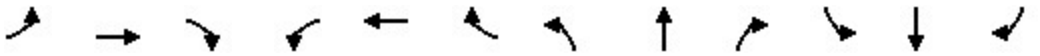
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	25	44
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1577	1700
Volume to Capacity	0.00	0.00	0.03
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	94	3	16	140	5	6	13	12	2	4	3
Future Volume (vph)	4	94	3	16	140	5	6	13	12	2	4	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.996			0.948			0.955	
Flt Protected		0.998			0.995			0.990			0.989	
Satd. Flow (prot)	0	1344	0	0	1489	0	0	1742	0	0	1814	0
Flt Permitted		0.998			0.995			0.990			0.989	
Satd. Flow (perm)	0	1344	0	0	1489	0	0	1742	0	0	1814	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	44%	33%	0%	32%	0%	17%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	103	3	18	154	5	7	14	13	2	4	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	110	0	0	177	0	0	34	0	0	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

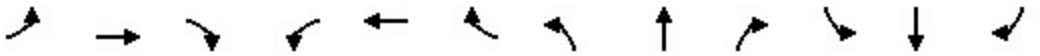
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	94	3	16	140	5	6	13	12	2	4	3
Future Volume (Veh/h)	4	94	3	16	140	5	6	13	12	2	4	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	103	3	18	154	5	7	14	13	2	4	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	159			106			310	308	105	325	307	157
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	159			106			310	308	105	325	307	157
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	98	99	100	99	100
cM capacity (veh/h)	1433			1498			602	601	956	605	602	894

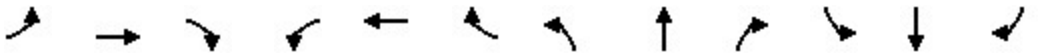
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	110	177	34	9
Volume Left	4	18	7	2
Volume Right	3	5	13	3
cSH	1433	1498	701	676
Volume to Capacity	0.00	0.01	0.05	0.01
Queue Length 95th (m)	0.1	0.3	1.2	0.3
Control Delay (s/veh)	0.3	0.8	10.4	10.4
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.3	0.8	10.4	10.4
Approach LOS			B	B

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	24.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	22	2	13	2	30	17	10	19	0
Future Volume (vph)	0	0	0	22	2	13	2	30	17	10	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.953			0.953				
Flt Protected					0.971			0.998			0.983	
Satd. Flow (prot)	0	1921	0	0	1729	0	0	1784	0	0	1888	0
Flt Permitted					0.971			0.998			0.983	
Satd. Flow (perm)	0	1921	0	0	1729	0	0	1784	0	0	1888	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		628.1			818.9			680.3			1226.0	
Travel Time (s)		45.2			59.0			40.8			73.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	0%	0%	0%	0%	8%	0%	0%	7%	0%	0%	0%
Adj. Flow (vph)	0	0	0	26	2	15	2	36	20	12	23	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	43	0	0	58	0	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	22	2	13	2	30	17	10	19	0
Future Volume (Veh/h)	0	0	0	22	2	13	2	30	17	10	19	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	26	2	15	2	36	20	12	23	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	113	107	23	97	97	46	23			56		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	113	107	23	97	97	46	23			56		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	100	97	100	99	100			99		
cM capacity (veh/h)	849	780	1060	884	790	1007	1605			1562		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	43	58	35
Volume Left	0	26	2	12
Volume Right	0	15	20	0
cSH	1700	918	1605	1562
Volume to Capacity	0.00	0.05	0.00	0.01
Queue Length 95th (m)	0.0	1.1	0.0	0.2
Control Delay (s/veh)	0.0	9.1	0.3	2.5
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.0	9.1	0.3	2.5
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	15.6%	ICU Level of Service	A
Analysis Period (min)	15		

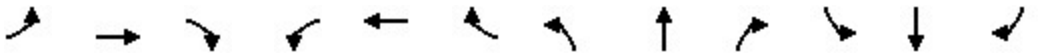
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	37	25	0
Future Volume (vph)	0	0	0	37	25	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1921	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	49	33	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	49	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	37	25	0
Future Volume (Veh/h)	0	0	0	37	25	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	0	0	0	49	33	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	82	33	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	82	33	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	925	1046	1592			

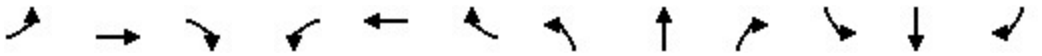
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	49	33
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1592	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	158	7	15	143	0	3	7	13	6	13	2
Future Volume (vph)	4	158	7	15	143	0	3	7	13	6	13	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994						0.922			0.989	
Flt Protected		0.999			0.995			0.994			0.986	
Satd. Flow (prot)	0	1178	0	0	1157	0	0	1594	0	0	1774	0
Flt Permitted		0.999			0.995			0.994			0.986	
Satd. Flow (perm)	0	1178	0	0	1157	0	0	1594	0	0	1774	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	65%	33%	0%	72%	0%	0%	17%	9%	0%	9%	0%
Adj. Flow (vph)	5	180	8	17	163	0	3	8	15	7	15	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	180	0	0	26	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	158	7	15	143	0	3	7	13	6	13	2
Future Volume (Veh/h)	4	158	7	15	143	0	3	7	13	6	13	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	5	180	8	17	162	0	3	8	15	7	15	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	162			188			400	390	184	409	394	162
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162			188			400	390	184	409	394	162
tC, single (s)	4.1			4.1			7.1	6.7	6.3	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.2	3.4	3.5	4.1	3.3
p0 queue free %	100			99			99	98	98	99	97	100
cM capacity (veh/h)	1429			1398			544	514	841	534	523	888

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	193	179	26	24
Volume Left	5	17	3	7
Volume Right	8	0	15	2
cSH	1429	1398	668	545
Volume to Capacity	0.00	0.01	0.04	0.04
Queue Length 95th (m)	0.1	0.3	0.9	1.0
Control Delay (s/veh)	0.2	0.8	10.6	11.9
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.2	0.8	10.6	11.9
Approach LOS			B	B

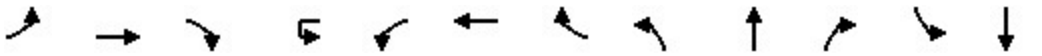
Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	25.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	3	0	2	39	0	6	0	24	17	15	38
Future Volume (vph)	0	3	0	2	39	0	6	0	24	17	15	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.982			0.944			0.996
Flt Protected						0.959						0.986
Satd. Flow (prot)	0	1921	0	0	0	1634	0	0	1714	0	0	1765
Flt Permitted						0.959						0.986
Satd. Flow (perm)	0	1921	0	0	0	1634	0	0	1714	0	0	1765
Link Speed (k/h)		50				50			60			60
Link Distance (m)		628.1				818.9			680.3			1226.0
Travel Time (s)		45.2				59.0			40.8			73.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	5%	7%	0%	10%
Adj. Flow (vph)	0	3	0	2	43	0	7	0	27	19	17	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	0	52	0	0	46	0	0	61
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		0.0				0.0			0.0			0.0
Link Offset(m)		0.0				0.0			0.0			0.0
Crosswalk Width(m)		4.9				4.9			4.9			4.9
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Sign Control		Stop				Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	2
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	0.99
Turning Speed (k/h)	14
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	0	3	0	2	39	0	6	0	24	17	15	38
Future Volume (Veh/h)	0	3	0	2	39	0	6	0	24	17	15	38
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	3	0	0	43	0	7	0	27	19	17	42
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked				0.00								
vC, conflicting volume	121	123	43	0	115	115	37	44			46	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	121	123	43	0	115	115	37	44			46	
tC, single (s)	7.1	6.5	6.2	0.0	7.2	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.6	4.0	3.3	2.2			2.2	
p0 queue free %	100	100	100	0	95	100	99	100			99	
cM capacity (veh/h)	847	763	1033	0	827	771	1042	1577			1575	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	50	46	61
Volume Left	0	43	0	17
Volume Right	0	7	19	2
cSH	763	852	1577	1575
Volume to Capacity	0.00	0.06	0.00	0.01
Queue Length 95th (m)	0.1	1.4	0.0	0.2
Control Delay (s/veh)	9.7	9.5	0.0	2.1
Lane LOS	A	A		A
Approach Delay (s/veh)	9.7	9.5	0.0	2.1
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	25.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	2
Future Volume (Veh/h)	2
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	2
Pedestrians	
Lane Width (m)	
Walking Speed (m/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (m)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

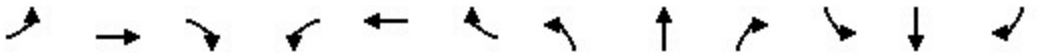
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	26	44	0
Future Volume (vph)	0	0	0	26	44	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1921	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	29	48	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	29	48	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	26	44	0
Future Volume (Veh/h)	0	0	0	26	44	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	0	29	48	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	77	48	48			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	77	48	48			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	931	1027	1572			

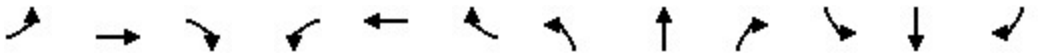
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	29	48
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1572	1700
Volume to Capacity	0.00	0.00	0.03
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	100	3	17	151	6	7	15	13	2	4	3
Future Volume (vph)	4	100	3	17	151	6	7	15	13	2	4	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.995			0.950			0.955	
Flt Protected		0.998			0.995			0.990			0.989	
Satd. Flow (prot)	0	1344	0	0	1490	0	0	1744	0	0	1814	0
Flt Permitted		0.998			0.995			0.990			0.989	
Satd. Flow (perm)	0	1344	0	0	1490	0	0	1744	0	0	1814	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	44%	33%	0%	32%	0%	17%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	110	3	19	166	7	8	16	14	2	4	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	192	0	0	38	0	0	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

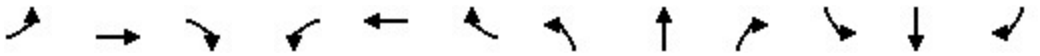
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	100	3	17	151	6	7	15	13	2	4	3
Future Volume (Veh/h)	4	100	3	17	151	6	7	15	13	2	4	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	110	3	19	166	7	8	16	14	2	4	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	173			113			332	331	112	349	329	170
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	173			113			332	331	112	349	329	170
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	97	99	100	99	100
cM capacity (veh/h)	1416			1489			582	583	947	581	584	880

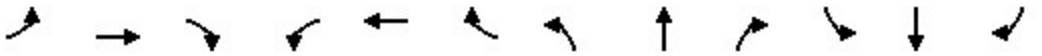
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	117	192	38	9
Volume Left	4	19	8	2
Volume Right	3	7	14	3
cSH	1416	1489	679	657
Volume to Capacity	0.00	0.01	0.06	0.01
Queue Length 95th (m)	0.1	0.3	1.3	0.3
Control Delay (s/veh)	0.3	0.8	10.6	10.6
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.3	0.8	10.6	10.6
Approach LOS			B	B

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	25.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	24	2	15	2	33	19	11	21	0
Future Volume (vph)	0	0	0	24	2	15	2	33	19	11	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.950			0.951				
Flt Protected					0.971			0.998			0.983	
Satd. Flow (prot)	0	1921	0	0	1722	0	0	1779	0	0	1888	0
Flt Permitted					0.971			0.998			0.983	
Satd. Flow (perm)	0	1921	0	0	1722	0	0	1779	0	0	1888	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		628.1			818.9			680.3			1226.0	
Travel Time (s)		45.2			59.0			40.8			73.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	0%	0%	0%	0%	8%	0%	0%	7%	0%	0%	0%
Adj. Flow (vph)	0	0	0	29	2	18	2	39	23	13	25	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	49	0	0	64	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	24	2	15	2	33	19	11	21	0
Future Volume (Veh/h)	0	0	0	24	2	15	2	33	19	11	21	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	29	2	18	2	39	23	13	25	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	125	117	25	106	106	51	25			62		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	125	117	25	106	106	51	25			62		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	100	97	100	98	100			99		
cM capacity (veh/h)	831	770	1057	872	781	1001	1603			1554		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	49	64	38
Volume Left	0	29	2	13
Volume Right	0	18	23	0
cSH	1700	911	1603	1554
Volume to Capacity	0.00	0.05	0.00	0.01
Queue Length 95th (m)	0.0	1.3	0.0	0.2
Control Delay (s/veh)	0.0	9.2	0.2	2.6
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.0	9.2	0.2	2.6
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	16.4%	ICU Level of Service	A
Analysis Period (min)	15		

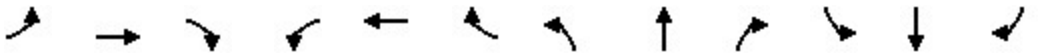
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	41	28	0
Future Volume (vph)	0	0	0	41	28	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1921	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	54	37	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	54	37	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	41	28	0
Future Volume (Veh/h)	0	0	0	41	28	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	0	0	0	54	37	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	91	37	37			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	91	37	37			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	914	1041	1587			

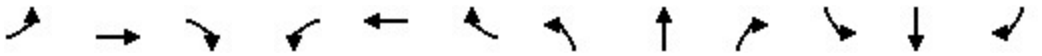
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	54	37
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1587	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	147	12	16	136	0	14	9	32	5	13	2
Future Volume (vph)	4	147	12	16	136	0	14	9	32	5	13	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990						0.922			0.988	
Flt Protected		0.999			0.995			0.987			0.987	
Satd. Flow (prot)	0	1181	0	0	1162	0	0	1619	0	0	1770	0
Flt Permitted		0.999			0.995			0.987			0.987	
Satd. Flow (perm)	0	1181	0	0	1162	0	0	1619	0	0	1770	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	65%	33%	0%	72%	0%	0%	17%	9%	0%	9%	0%
Adj. Flow (vph)	5	167	14	18	155	0	16	10	36	6	15	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	186	0	0	173	0	0	62	0	0	23	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	147	12	16	136	0	14	9	32	5	13	2
Future Volume (Veh/h)	4	147	12	16	136	0	14	9	32	5	13	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	5	167	14	18	155	0	16	10	36	6	15	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	155			181			385	375	174	416	382	155
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	155			181			385	375	174	416	382	155
tC, single (s)	4.1			4.1			7.1	6.7	6.3	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.2	3.4	3.5	4.1	3.3
p0 queue free %	100			99			97	98	96	99	97	100
cM capacity (veh/h)	1438			1407			557	524	852	513	531	896

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	186	173	62	23
Volume Left	5	18	16	6
Volume Right	14	0	36	2
cSH	1438	1407	688	546
Volume to Capacity	0.00	0.01	0.09	0.04
Queue Length 95th (m)	0.1	0.3	2.2	1.0
Control Delay (s/veh)	0.2	0.9	10.7	11.9
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.2	0.9	10.7	11.9
Approach LOS			B	B

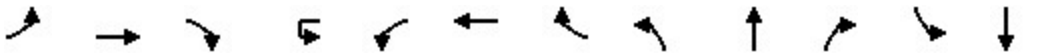
Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	26.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	3	0	2	32	0	9	0	23	14	22	52
Future Volume (vph)	1	3	0	2	32	0	9	0	23	14	22	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.972			0.949			0.995
Flt Protected		0.988				0.962						0.986
Satd. Flow (prot)	0	1898	0	0	0	1637	0	0	1724	0	0	1764
Flt Permitted		0.988				0.962						0.986
Satd. Flow (perm)	0	1898	0	0	0	1637	0	0	1724	0	0	1764
Link Speed (k/h)		50				50			60			60
Link Distance (m)		628.1				818.9			680.3			1226.0
Travel Time (s)		45.2				59.0			40.8			73.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	5%	7%	0%	10%
Adj. Flow (vph)	1	3	0	2	36	0	10	0	26	16	24	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	0	48	0	0	42	0	0	85
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		0.0				0.0			0.0			0.0
Link Offset(m)		0.0				0.0			0.0			0.0
Crosswalk Width(m)		4.9				4.9			4.9			4.9
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Sign Control		Stop				Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	3
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	0.99
Turning Speed (k/h)	14
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	1	3	0	2	32	0	9	0	23	14	22	52
Future Volume (Veh/h)	1	3	0	2	32	0	9	0	23	14	22	52
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	3	0	0	36	0	10	0	26	16	24	58
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked				0.00								
vC, conflicting volume	152	150	60	0	143	143	34	61			42	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	152	150	60	0	143	143	34	61			42	
tC, single (s)	7.1	6.5	6.2	0.0	7.2	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.6	4.0	3.3	2.2			2.2	
p0 queue free %	100	100	100	0	95	100	99	100			98	
cM capacity (veh/h)	803	734	1012	0	790	740	1045	1555			1580	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	46	42	85
Volume Left	1	36	0	24
Volume Right	0	10	16	3
cSH	750	834	1555	1580
Volume to Capacity	0.01	0.06	0.00	0.02
Queue Length 95th (m)	0.1	1.3	0.0	0.4
Control Delay (s/veh)	9.8	9.6	0.0	2.1
Lane LOS	A	A		A
Approach Delay (s/veh)	9.8	9.6	0.0	2.1
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	23.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	3
Future Volume (Veh/h)	3
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	3
Pedestrians	
Lane Width (m)	
Walking Speed (m/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (m)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

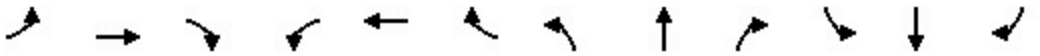
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	30	7	21	36	11
Future Volume (vph)	35	30	7	21	36	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.937				0.969	
Flt Protected	0.974			0.987		
Satd. Flow (prot)	1753	0	0	1896	1862	0
Flt Permitted	0.974			0.987		
Satd. Flow (perm)	1753	0	0	1896	1862	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	38	33	8	23	40	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	0	31	52	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	30	7	21	36	11
Future Volume (Veh/h)	35	30	7	21	36	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	38	33	8	23	40	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	85	46	52			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	85	46	52			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	97	99			
cM capacity (veh/h)	917	1029	1567			

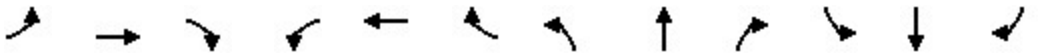
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	71	31	52
Volume Left	38	8	0
Volume Right	33	0	12
cSH	966	1567	1700
Volume to Capacity	0.07	0.01	0.03
Queue Length 95th (m)	1.8	0.1	0.0
Control Delay (s/veh)	9.0	1.9	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	9.0	1.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	17.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	89	21	50	131	5	27	16	24	2	7	3
Future Volume (vph)	4	89	21	50	131	5	27	16	24	2	7	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.997			0.953			0.969	
Flt Protected		0.998			0.987			0.980			0.992	
Satd. Flow (prot)	0	1330	0	0	1542	0	0	1679	0	0	1847	0
Flt Permitted		0.998			0.987			0.980			0.992	
Satd. Flow (perm)	0	1330	0	0	1542	0	0	1679	0	0	1847	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	44%	33%	0%	32%	0%	17%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	98	23	55	144	5	30	18	26	2	8	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	204	0	0	74	0	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

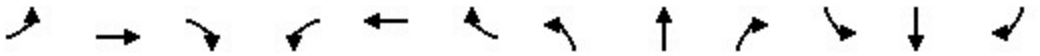
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	89	21	50	131	5	27	16	24	2	7	3
Future Volume (Veh/h)	4	89	21	50	131	5	27	16	24	2	7	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	98	23	55	144	5	30	18	26	2	8	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	149			121			381	377	110	409	386	147
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	149			121			381	377	110	409	386	147
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			94	97	97	100	98	100
cM capacity (veh/h)	1445			1479			526	536	950	511	530	906

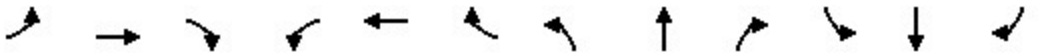
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	125	204	74	13
Volume Left	4	55	30	2
Volume Right	23	5	26	3
cSH	1445	1479	627	582
Volume to Capacity	0.00	0.04	0.12	0.02
Queue Length 95th (m)	0.1	0.9	3.0	0.5
Control Delay (s/veh)	0.3	2.3	11.5	11.3
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.3	2.3	11.5	11.3
Approach LOS			B	B

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	31.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	20	2	23	2	41	15	14	25	1
Future Volume (vph)	0	0	0	20	2	23	2	41	15	14	25	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931			0.965			0.997	
Flt Protected					0.978			0.999			0.983	
Satd. Flow (prot)	0	1921	0	0	1681	0	0	1819	0	0	1883	0
Flt Permitted					0.978			0.999			0.983	
Satd. Flow (perm)	0	1921	0	0	1681	0	0	1819	0	0	1883	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		628.1			818.9			680.3			1226.0	
Travel Time (s)		45.2			59.0			40.8			73.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	0%	0%	0%	0%	8%	0%	0%	7%	0%	0%	0%
Adj. Flow (vph)	0	0	0	24	2	27	2	49	18	17	30	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	53	0	0	69	0	0	48	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	20	2	23	2	41	15	14	25	1
Future Volume (Veh/h)	0	0	0	20	2	23	2	41	15	14	25	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	24	2	27	2	49	18	17	30	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	155	136	31	127	127	58	31			67		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	155	136	31	127	127	58	31			67		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	100	97	100	97	100			99		
cM capacity (veh/h)	786	750	1050	844	758	991	1595			1547		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	53	69	48
Volume Left	0	24	2	17
Volume Right	0	27	18	1
cSH	1700	909	1595	1547
Volume to Capacity	0.00	0.06	0.00	0.01
Queue Length 95th (m)	0.0	1.4	0.0	0.3
Control Delay (s/veh)	0.0	9.2	0.2	2.7
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.0	9.2	0.2	2.7
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	18.4%	ICU Level of Service	A	
Analysis Period (min)	15			

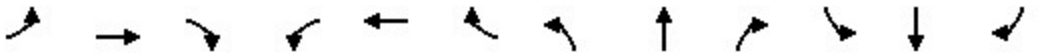
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	13	25	33	23	56
Future Volume (vph)	37	13	25	33	23	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.965				0.904	
Flt Protected	0.964			0.979		
Satd. Flow (prot)	1787	0	0	1881	1737	0
Flt Permitted	0.964			0.979		
Satd. Flow (perm)	1787	0	0	1881	1737	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	49	17	33	43	30	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	0	0	76	104	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	13	25	33	23	56
Future Volume (Veh/h)	37	13	25	33	23	56
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	49	17	33	43	30	74
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	176	67	104			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	176	67	104			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	98	98			
cM capacity (veh/h)	800	1002	1500			

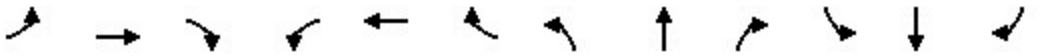
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	66	76	104
Volume Left	49	33	0
Volume Right	17	0	74
cSH	844	1500	1700
Volume to Capacity	0.08	0.02	0.06
Queue Length 95th (m)	1.9	0.5	0.0
Control Delay (s/veh)	9.6	3.3	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	9.6	3.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		3.6	
Intersection Capacity Utilization		19.8%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	153	12	17	139	0	14	9	33	5	14	2
Future Volume (vph)	4	153	12	17	139	0	14	9	33	5	14	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990						0.920			0.989	
Flt Protected		0.999			0.995			0.988			0.988	
Satd. Flow (prot)	0	1180	0	0	1164	0	0	1617	0	0	1771	0
Flt Permitted		0.999			0.995			0.988			0.988	
Satd. Flow (perm)	0	1180	0	0	1164	0	0	1617	0	0	1771	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	65%	33%	0%	72%	0%	0%	17%	9%	0%	9%	0%
Adj. Flow (vph)	5	174	14	19	158	0	16	10	38	6	16	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	177	0	0	64	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	153	12	17	139	0	14	9	33	5	14	2
Future Volume (Veh/h)	4	153	12	17	139	0	14	9	33	5	14	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	5	174	14	19	158	0	16	10	38	6	16	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	158			188			397	387	181	430	394	158
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158			188			397	387	181	430	394	158
tC, single (s)	4.1			4.1			7.1	6.7	6.3	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.2	3.4	3.5	4.1	3.3
p0 queue free %	100			99			97	98	95	99	97	100
cM capacity (veh/h)	1434			1398			545	516	844	501	523	893

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	193	177	64	24
Volume Left	5	19	16	6
Volume Right	14	0	38	2
cSH	1434	1398	682	535
Volume to Capacity	0.00	0.01	0.09	0.04
Queue Length 95th (m)	0.1	0.3	2.3	1.1
Control Delay (s/veh)	0.2	0.9	10.8	12.0
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.2	0.9	10.8	12.0
Approach LOS			B	B

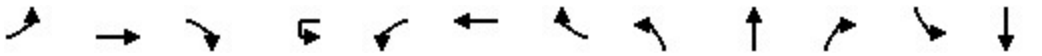
Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	27.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	3	0	2	36	0	9	0	25	16	23	55
Future Volume (vph)	1	3	0	2	36	0	9	0	25	16	23	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.974			0.947			0.995
Flt Protected		0.988				0.961						0.986
Satd. Flow (prot)	0	1898	0	0	0	1635	0	0	1720	0	0	1765
Flt Permitted		0.988				0.961						0.986
Satd. Flow (perm)	0	1898	0	0	0	1635	0	0	1720	0	0	1765
Link Speed (k/h)		50				50			60			60
Link Distance (m)		628.1				818.9			680.3			1226.0
Travel Time (s)		45.2				59.0			40.8			73.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	5%	7%	0%	10%
Adj. Flow (vph)	1	3	0	2	40	0	10	0	28	18	26	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	0	52	0	0	46	0	0	90
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		0.0				0.0			0.0			0.0
Link Offset(m)		0.0				0.0			0.0			0.0
Crosswalk Width(m)		4.9				4.9			4.9			4.9
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Sign Control		Stop				Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	3
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	0.99
Turning Speed (k/h)	14
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	1	3	0	2	36	0	9	0	25	16	23	55
Future Volume (Veh/h)	1	3	0	2	36	0	9	0	25	16	23	55
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	3	0	0	40	0	10	0	28	18	26	61
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked				0.00								
vC, conflicting volume	162	161	63	0	153	153	37	64			46	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162	161	63	0	153	153	37	64			46	
tC, single (s)	7.1	6.5	6.2	0.0	7.2	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.6	4.0	3.3	2.2			2.2	
p0 queue free %	100	100	100	0	95	100	99	100			98	
cM capacity (veh/h)	790	723	1008	0	777	730	1041	1551			1575	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	50	46	90
Volume Left	1	40	0	26
Volume Right	0	10	18	3
cSH	739	819	1551	1575
Volume to Capacity	0.01	0.06	0.00	0.02
Queue Length 95th (m)	0.1	1.5	0.0	0.4
Control Delay (s/veh)	9.9	9.7	0.0	2.2
Lane LOS	A	A		A
Approach Delay (s/veh)	9.9	9.7	0.0	2.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	24.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	3
Future Volume (Veh/h)	3
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	3
Pedestrians	
Lane Width (m)	
Walking Speed (m/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (m)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

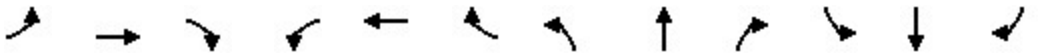
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	30	7	23	40	11
Future Volume (vph)	35	30	7	23	40	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.937				0.971	
Flt Protected	0.974			0.988		
Satd. Flow (prot)	1753	0	0	1898	1865	0
Flt Permitted	0.974			0.988		
Satd. Flow (perm)	1753	0	0	1898	1865	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	38	33	8	25	44	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	0	33	56	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	30	7	23	40	11
Future Volume (Veh/h)	35	30	7	23	40	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	38	33	8	25	44	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	91	50	56			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	91	50	56			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	97	99			
cM capacity (veh/h)	910	1024	1562			

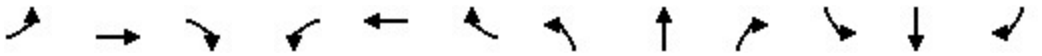
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	71	33	56
Volume Left	38	8	0
Volume Right	33	0	12
cSH	959	1562	1700
Volume to Capacity	0.07	0.01	0.03
Queue Length 95th (m)	1.8	0.1	0.0
Control Delay (s/veh)	9.1	1.8	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	9.1	1.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	17.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	94	21	52	140	5	27	17	25	2	7	3
Future Volume (vph)	4	94	21	52	140	5	27	17	25	2	7	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.997			0.952			0.969	
Flt Protected		0.998			0.987			0.981			0.992	
Satd. Flow (prot)	0	1330	0	0	1539	0	0	1681	0	0	1847	0
Flt Permitted		0.998			0.987			0.981			0.992	
Satd. Flow (perm)	0	1330	0	0	1539	0	0	1681	0	0	1847	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	44%	33%	0%	32%	0%	17%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	103	23	57	154	5	30	19	27	2	8	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	216	0	0	76	0	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

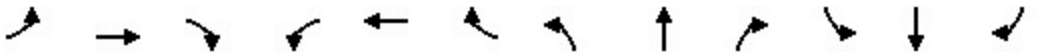
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	94	21	52	140	5	27	17	25	2	7	3
Future Volume (Veh/h)	4	94	21	52	140	5	27	17	25	2	7	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	103	23	57	154	5	30	19	27	2	8	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	159			126			400	396	115	430	405	157
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	159			126			400	396	115	430	405	157
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			94	96	97	100	98	100
cM capacity (veh/h)	1433			1473			510	522	943	493	516	894

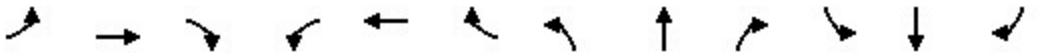
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	130	216	76	13
Volume Left	4	57	30	2
Volume Right	23	5	27	3
cSH	1433	1473	614	567
Volume to Capacity	0.00	0.04	0.12	0.02
Queue Length 95th (m)	0.1	0.9	3.2	0.5
Control Delay (s/veh)	0.3	2.2	11.7	11.5
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.3	2.2	11.7	11.5
Approach LOS			B	B

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	31.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	22	2	24	2	44	17	15	27	1
Future Volume (vph)	0	0	0	22	2	24	2	44	17	15	27	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931			0.964			0.997	
Flt Protected					0.978			0.999			0.983	
Satd. Flow (prot)	0	1921	0	0	1681	0	0	1816	0	0	1883	0
Flt Permitted					0.978			0.999			0.983	
Satd. Flow (perm)	0	1921	0	0	1681	0	0	1816	0	0	1883	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		628.1			818.9			680.3			1226.0	
Travel Time (s)		45.2			59.0			40.8			73.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	0%	0%	0%	0%	8%	0%	0%	7%	0%	0%	0%
Adj. Flow (vph)	0	0	0	26	2	29	2	52	20	18	32	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	57	0	0	74	0	0	51	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	22	2	24	2	44	17	15	27	1
Future Volume (Veh/h)	0	0	0	22	2	24	2	44	17	15	27	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	26	2	29	2	52	20	18	32	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	165	145	33	135	135	62	33			72		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	165	145	33	135	135	62	33			72		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	100	97	100	97	100			99		
cM capacity (veh/h)	772	741	1047	833	750	986	1592			1541		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	57	74	51
Volume Left	0	26	2	18
Volume Right	0	29	20	1
cSH	1700	901	1592	1541
Volume to Capacity	0.00	0.06	0.00	0.01
Queue Length 95th (m)	0.0	1.5	0.0	0.3
Control Delay (s/veh)	0.0	9.3	0.2	2.7
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.0	9.3	0.2	2.7
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	19.0%	ICU Level of Service	A	
Analysis Period (min)	15			

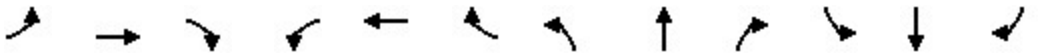
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	13	25	37	25	56
Future Volume (vph)	37	13	25	37	25	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.965				0.907	
Flt Protected	0.964			0.980		
Satd. Flow (prot)	1787	0	0	1883	1742	0
Flt Permitted	0.964			0.980		
Satd. Flow (perm)	1787	0	0	1883	1742	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	49	17	33	49	33	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	0	0	82	107	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	13	25	37	25	56
Future Volume (Veh/h)	37	13	25	37	25	56
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	49	17	33	49	33	74
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	185	70	107			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	185	70	107			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	98	98			
cM capacity (veh/h)	791	998	1497			

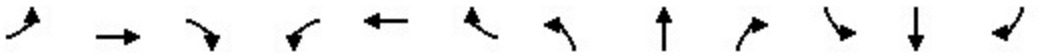
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	66	82	107
Volume Left	49	33	0
Volume Right	17	0	74
cSH	836	1497	1700
Volume to Capacity	0.08	0.02	0.06
Queue Length 95th (m)	1.9	0.5	0.0
Control Delay (s/veh)	9.7	3.1	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	9.7	3.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	158	13	19	143	0	14	10	34	6	15	2
Future Volume (vph)	4	158	13	19	143	0	14	10	34	6	15	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990						0.920			0.990	
Flt Protected		0.999			0.994			0.988			0.987	
Satd. Flow (prot)	0	1180	0	0	1168	0	0	1615	0	0	1773	0
Flt Permitted		0.999			0.994			0.988			0.987	
Satd. Flow (perm)	0	1180	0	0	1168	0	0	1615	0	0	1773	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	65%	33%	0%	72%	0%	0%	17%	9%	0%	9%	0%
Adj. Flow (vph)	5	180	15	22	163	0	16	11	39	7	17	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	200	0	0	185	0	0	66	0	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	158	13	19	143	0	14	10	34	6	15	2
Future Volume (Veh/h)	4	158	13	19	143	0	14	10	34	6	15	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	5	180	15	22	162	0	16	11	39	7	17	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	162			195			414	404	188	448	411	162
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162			195			414	404	188	448	411	162
tC, single (s)	4.1			4.1			7.1	6.7	6.3	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.2	3.4	3.5	4.1	3.3
p0 queue free %	100			98			97	98	95	99	97	100
cM capacity (veh/h)	1429			1390			529	503	837	484	510	888

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	200	184	66	26
Volume Left	5	22	16	7
Volume Right	15	0	39	2
cSH	1429	1390	669	520
Volume to Capacity	0.00	0.02	0.10	0.05
Queue Length 95th (m)	0.1	0.4	2.5	1.2
Control Delay (s/veh)	0.2	1.0	11.0	12.3
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.2	1.0	11.0	12.3
Approach LOS			B	B

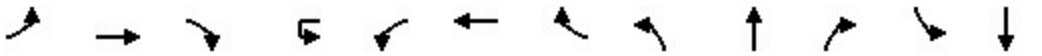
Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	28.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	3	0	2	39	0	10	0	27	17	25	59
Future Volume (vph)	1	3	0	2	39	0	10	0	27	17	25	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.973			0.948			0.996
Flt Protected		0.988				0.961						0.986
Satd. Flow (prot)	0	1898	0	0	0	1633	0	0	1722	0	0	1766
Flt Permitted		0.988				0.961						0.986
Satd. Flow (perm)	0	1898	0	0	0	1633	0	0	1722	0	0	1766
Link Speed (k/h)		50				50			60			60
Link Distance (m)		628.1				818.9			680.3			1226.0
Travel Time (s)		45.2				59.0			40.8			73.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	5%	7%	0%	10%
Adj. Flow (vph)	1	3	0	2	43	0	11	0	30	19	28	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	0	56	0	0	49	0	0	97
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		0.0				0.0			0.0			0.0
Link Offset(m)		0.0				0.0			0.0			0.0
Crosswalk Width(m)		4.9				4.9			4.9			4.9
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Sign Control		Stop				Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.7%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	3
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	0.99
Turning Speed (k/h)	14
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	1	3	0	2	39	0	10	0	27	17	25	59
Future Volume (Veh/h)	1	3	0	2	39	0	10	0	27	17	25	59
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	3	0	0	43	0	11	0	30	19	28	66
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked				0.00								
vC, conflicting volume	174	173	68	0	165	165	40	69			49	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	174	173	68	0	165	165	40	69			49	
tC, single (s)	7.1	6.5	6.2	0.0	7.2	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.6	4.0	3.3	2.2			2.2	
p0 queue free %	100	100	100	0	94	100	99	100			98	
cM capacity (veh/h)	774	711	1002	0	763	719	1038	1545			1571	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	54	49	97
Volume Left	1	43	0	28
Volume Right	0	11	19	3
cSH	726	806	1545	1571
Volume to Capacity	0.01	0.07	0.00	0.02
Queue Length 95th (m)	0.1	1.6	0.0	0.4
Control Delay (s/veh)	10.0	9.8	0.0	2.2
Lane LOS	A	A		A
Approach Delay (s/veh)	10.0	9.8	0.0	2.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	25.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	3
Future Volume (Veh/h)	3
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	3
Pedestrians	
Lane Width (m)	
Walking Speed (m/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (m)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

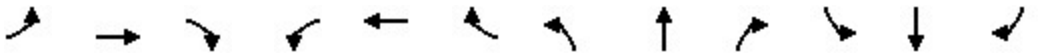
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	30	7	26	44	11
Future Volume (vph)	35	30	7	26	44	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.937				0.973	
Flt Protected	0.974			0.989		
Satd. Flow (prot)	1753	0	0	1900	1869	0
Flt Permitted	0.974			0.989		
Satd. Flow (perm)	1753	0	0	1900	1869	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	38	33	8	29	48	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	0	37	60	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.9%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	30	7	26	44	11
Future Volume (Veh/h)	35	30	7	26	44	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	38	33	8	29	48	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	99	54	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	99	54	60			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	97	99			
cM capacity (veh/h)	900	1019	1556			

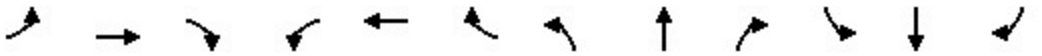
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	71	37	60
Volume Left	38	8	0
Volume Right	33	0	12
cSH	952	1556	1700
Volume to Capacity	0.07	0.01	0.04
Queue Length 95th (m)	1.8	0.1	0.0
Control Delay (s/veh)	9.1	1.6	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	9.1	1.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	100	21	53	151	6	28	19	26	2	7	3
Future Volume (vph)	4	100	21	53	151	6	28	19	26	2	7	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.996			0.952			0.969	
Flt Protected		0.999			0.988			0.981			0.992	
Satd. Flow (prot)	0	1331	0	0	1537	0	0	1685	0	0	1847	0
Flt Permitted		0.999			0.988			0.981			0.992	
Satd. Flow (perm)	0	1331	0	0	1537	0	0	1685	0	0	1847	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		356.3			365.6			1834.5			471.8	
Travel Time (s)		16.0			16.5			110.1			28.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	44%	33%	0%	32%	0%	17%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	110	23	58	166	7	31	21	29	2	8	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	137	0	0	231	0	0	81	0	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

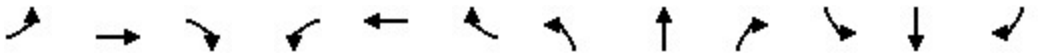
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	100	21	53	151	6	28	19	26	2	7	3
Future Volume (Veh/h)	4	100	21	53	151	6	28	19	26	2	7	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	110	23	58	166	7	31	21	29	2	8	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	173			133			422	419	122	455	427	170
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	173			133			422	419	122	455	427	170
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			94	96	97	100	98	100
cM capacity (veh/h)	1416			1464			492	506	935	472	501	880

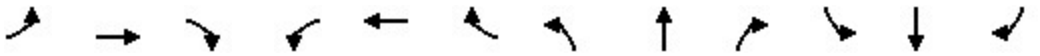
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	137	231	81	13
Volume Left	4	58	31	2
Volume Right	23	7	29	3
cSH	1416	1464	598	550
Volume to Capacity	0.00	0.04	0.14	0.02
Queue Length 95th (m)	0.1	0.9	3.5	0.6
Control Delay (s/veh)	0.2	2.1	12.0	11.7
Lane LOS	A	A	B	B
Approach Delay (s/veh)	0.2	2.1	12.0	11.7
Approach LOS			B	B

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	36.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	24	2	26	2	47	19	16	29	1
Future Volume (vph)	0	0	0	24	2	26	2	47	19	16	29	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.932			0.962			0.998	
Flt Protected					0.977			0.999			0.983	
Satd. Flow (prot)	0	1921	0	0	1682	0	0	1810	0	0	1885	0
Flt Permitted					0.977			0.999			0.983	
Satd. Flow (perm)	0	1921	0	0	1682	0	0	1810	0	0	1885	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		628.1			818.9			680.3			1226.0	
Travel Time (s)		45.2			59.0			40.8			73.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	0%	0%	0%	0%	8%	0%	0%	7%	0%	0%	0%
Adj. Flow (vph)	0	0	0	29	2	31	2	56	23	19	35	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	62	0	0	81	0	0	55	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	24	2	26	2	47	19	16	29	1
Future Volume (Veh/h)	0	0	0	24	2	26	2	47	19	16	29	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	29	2	31	2	56	23	19	35	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	177	157	36	145	146	68	36			79		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	177	157	36	145	146	68	36			79		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	100	96	100	97	100			99		
cM capacity (veh/h)	755	729	1043	820	739	979	1588			1532		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	62	81	55
Volume Left	0	29	2	19
Volume Right	0	31	23	1
cSH	1700	889	1588	1532
Volume to Capacity	0.00	0.07	0.00	0.01
Queue Length 95th (m)	0.0	1.7	0.0	0.3
Control Delay (s/veh)	0.0	9.4	0.2	2.6
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.0	9.4	0.2	2.6
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	19.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	13	25	41	28	56
Future Volume (vph)	37	13	25	41	28	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.965				0.910	
Flt Protected	0.964			0.981		
Satd. Flow (prot)	1787	0	0	1885	1748	0
Flt Permitted	0.964			0.981		
Satd. Flow (perm)	1787	0	0	1885	1748	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	323.4			1226.0	1834.5	
Travel Time (s)	23.3			73.6	110.1	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	49	17	33	54	37	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	0	0	87	111	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	13	25	41	28	56
Future Volume (Veh/h)	37	13	25	41	28	56
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	49	17	33	54	37	74
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	194	74	111			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	194	74	111			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	98	98			
cM capacity (veh/h)	782	993	1492			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	66	87	111
Volume Left	49	33	0
Volume Right	17	0	74
cSH	827	1492	1700
Volume to Capacity	0.08	0.02	0.07
Queue Length 95th (m)	2.0	0.5	0.0
Control Delay (s/veh)	9.7	2.9	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	9.7	2.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	4.5	14.5	12.5
Average Queue (m)	0.1	3.5	3.8
95th Queue (m)	1.9	11.2	11.4
Link Distance (m)	356.2	1818.3	462.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: 3rd Line & 5th Sideroad

Movement	EB	WB	SB
Directions Served	LTR	ULTR	LTR
Maximum Queue (m)	5.3	17.8	3.0
Average Queue (m)	0.4	6.4	0.1
95th Queue (m)	3.2	15.3	1.5
Link Distance (m)	618.4	809.2	1212.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 3rd Line & Chipwoods

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	1.4	17.7	8.4
Average Queue (m)	0.0	5.3	1.5
95th Queue (m)	1.0	13.1	6.5
Link Distance (m)	356.2	1818.3	462.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: 3rd Line & 5th Sideroad

Movement	WB
Directions Served	LTR
Maximum Queue (m)	13.8
Average Queue (m)	5.6
95th Queue (m)	13.0
Link Distance (m)	809.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: 3rd Line & Chipwoods

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	4.5	5.8	15.2	11.0
Average Queue (m)	0.2	0.4	4.2	3.6
95th Queue (m)	1.9	3.0	11.9	10.5
Link Distance (m)	346.9	356.2	1818.3	462.4
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Line & 5th Sideroad

Movement	EB	WB	SB
Directions Served	LTR	ULTR	LTR
Maximum Queue (m)	7.1	20.4	3.0
Average Queue (m)	1.0	7.4	0.1
95th Queue (m)	5.6	16.2	1.5
Link Distance (m)	618.4	809.2	1212.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 3rd Line & Chipwoods

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	4.5	7.6	15.9	9.9
Average Queue (m)	0.2	0.3	4.8	2.1
95th Queue (m)	2.4	3.0	12.9	8.1
Link Distance (m)	346.9	356.2	1818.3	462.4
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Line & 5th Sideroad

Movement	WB
Directions Served	LTR
Maximum Queue (m)	16.5
Average Queue (m)	6.2
95th Queue (m)	14.2
Link Distance (m)	809.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: 3rd Line & Chipwoods

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	5.8	17.4	10.0
Average Queue (m)	0.4	4.2	3.5
95th Queue (m)	3.0	12.5	10.2
Link Distance (m)	356.2	1818.3	462.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: 3rd Line & 5th Sideroad

Movement	EB	WB	SB
Directions Served	LTR	ULTR	LTR
Maximum Queue (m)	8.8	20.4	5.8
Average Queue (m)	1.0	7.8	0.4
95th Queue (m)	5.4	17.2	3.4
Link Distance (m)	618.4	809.2	1212.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 3rd Line & Chipwoods

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	3.0	7.6	14.3	10.0
Average Queue (m)	0.2	0.3	5.1	1.8
95th Queue (m)	2.1	2.7	12.5	7.5
Link Distance (m)	346.9	356.2	1818.3	462.4
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Line & 5th Sideroad

Movement	WB
Directions Served	LTR
Maximum Queue (m)	16.3
Average Queue (m)	6.5
95th Queue (m)	13.9
Link Distance (m)	809.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: 3rd Line & Chipwoods

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	5.8	14.9	10.8
Average Queue (m)	0.5	4.2	4.2
95th Queue (m)	3.4	12.1	11.0
Link Distance (m)	356.2	1818.3	462.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: 3rd Line & 5th Sideroad

Movement	EB	WB	SB
Directions Served	LTR	ULTR	LTR
Maximum Queue (m)	8.8	21.1	4.4
Average Queue (m)	1.1	7.9	0.2
95th Queue (m)	5.7	17.9	2.8
Link Distance (m)	618.4	809.2	1212.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 3rd Line & Chipwoods

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	2.8	4.7	15.6	10.0
Average Queue (m)	0.1	0.2	5.9	2.1
95th Queue (m)	1.4	2.0	13.4	8.1
Link Distance (m)	346.9	356.2	1818.3	462.4
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Line & 5th Sideroad

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (m)	15.6	3.0
Average Queue (m)	6.4	0.1
95th Queue (m)	13.9	1.9
Link Distance (m)	809.2	1212.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 3rd Line & Chipwoods

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	3.9	8.2	18.8	17.9
Average Queue (m)	0.1	0.7	7.5	4.9
95th Queue (m)	2.0	4.5	15.5	13.5
Link Distance (m)	346.9	356.2	1818.3	462.4
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Line & 5th Sideroad

Movement	EB	WB	SB
Directions Served	LTR	ULTR	LTR
Maximum Queue (m)	8.9	20.9	4.5
Average Queue (m)	1.0	7.9	0.2
95th Queue (m)	5.5	17.3	2.4
Link Distance (m)	618.4	809.2	1212.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 3rd Line & Chipwoods

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	12.1	3.1
Average Queue (m)	7.6	0.1
95th Queue (m)	13.2	2.2
Link Distance (m)	317.5	1212.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	5.4	7.8	19.0	8.4
Average Queue (m)	0.2	0.8	8.2	2.2
95th Queue (m)	2.2	4.6	15.6	8.0
Link Distance (m)	346.9	356.2	1818.3	462.4
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Line & 5th Sideroad

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (m)	15.2	3.0
Average Queue (m)	6.7	0.2
95th Queue (m)	13.7	1.9
Link Distance (m)	809.2	1212.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 3rd Line & Chipwoods

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	13.2	6.8
Average Queue (m)	7.0	0.3
95th Queue (m)	14.0	2.8
Link Distance (m)	317.5	1212.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	8.5	18.6	16.3
Average Queue (m)	0.7	7.5	4.6
95th Queue (m)	4.8	15.3	12.4
Link Distance (m)	356.2	1818.3	462.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: 3rd Line & 5th Sideroad

Movement	EB	WB	SB
Directions Served	LTR	ULTR	LTR
Maximum Queue (m)	8.9	22.0	2.8
Average Queue (m)	1.0	8.9	0.1
95th Queue (m)	5.7	18.5	1.4
Link Distance (m)	618.4	809.2	1212.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 3rd Line & Chipwoods

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	13.5	4.8
Average Queue (m)	8.0	0.2
95th Queue (m)	13.7	2.5
Link Distance (m)	317.5	1212.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	2.9	8.1	19.1	8.4
Average Queue (m)	0.1	1.3	8.6	3.0
95th Queue (m)	1.5	5.9	16.0	9.3
Link Distance (m)	346.9	356.2	1818.3	462.4
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Line & 5th Sideroad

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (m)	13.0	3.0
Average Queue (m)	7.2	0.1
95th Queue (m)	14.1	1.8
Link Distance (m)	809.2	1212.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 3rd Line & Chipwoods

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	13.2	8.2
Average Queue (m)	7.4	0.7
95th Queue (m)	13.9	4.6
Link Distance (m)	317.5	1212.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	5.9	19.8	17.7
Average Queue (m)	0.8	8.1	4.8
95th Queue (m)	4.4	16.6	12.6
Link Distance (m)	356.2	1818.3	462.4
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: 3rd Line & 5th Sideroad

Movement	EB	WB	SB
Directions Served	LTR	ULTR	LTR
Maximum Queue (m)	8.8	20.3	5.9
Average Queue (m)	1.2	8.7	0.3
95th Queue (m)	6.0	17.3	2.6
Link Distance (m)	618.4	809.2	1212.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 3rd Line & Chipwoods

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	14.8	4.8
Average Queue (m)	8.3	0.2
95th Queue (m)	13.2	2.5
Link Distance (m)	317.5	1212.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: 3rd Line & Dufferin County Road 17

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	2.9	9.4	23.1	8.4
Average Queue (m)	0.1	1.3	9.0	2.7
95th Queue (m)	1.8	6.1	17.5	8.9
Link Distance (m)	346.9	356.2	1818.3	462.4
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Line & 5th Sideroad

Movement	WB	SB
Directions Served	LTR	LTR
Maximum Queue (m)	17.0	5.8
Average Queue (m)	7.7	0.3
95th Queue (m)	15.1	2.6
Link Distance (m)	809.2	1212.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 3rd Line & Chipwoods

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	13.1	8.3	1.4
Average Queue (m)	7.4	0.5	0.1
95th Queue (m)	13.7	4.0	1.3
Link Distance (m)	317.5	1212.1	1818.3
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

APPENDIX E

Background Development Excerpts

TATHAM ENGINEERING

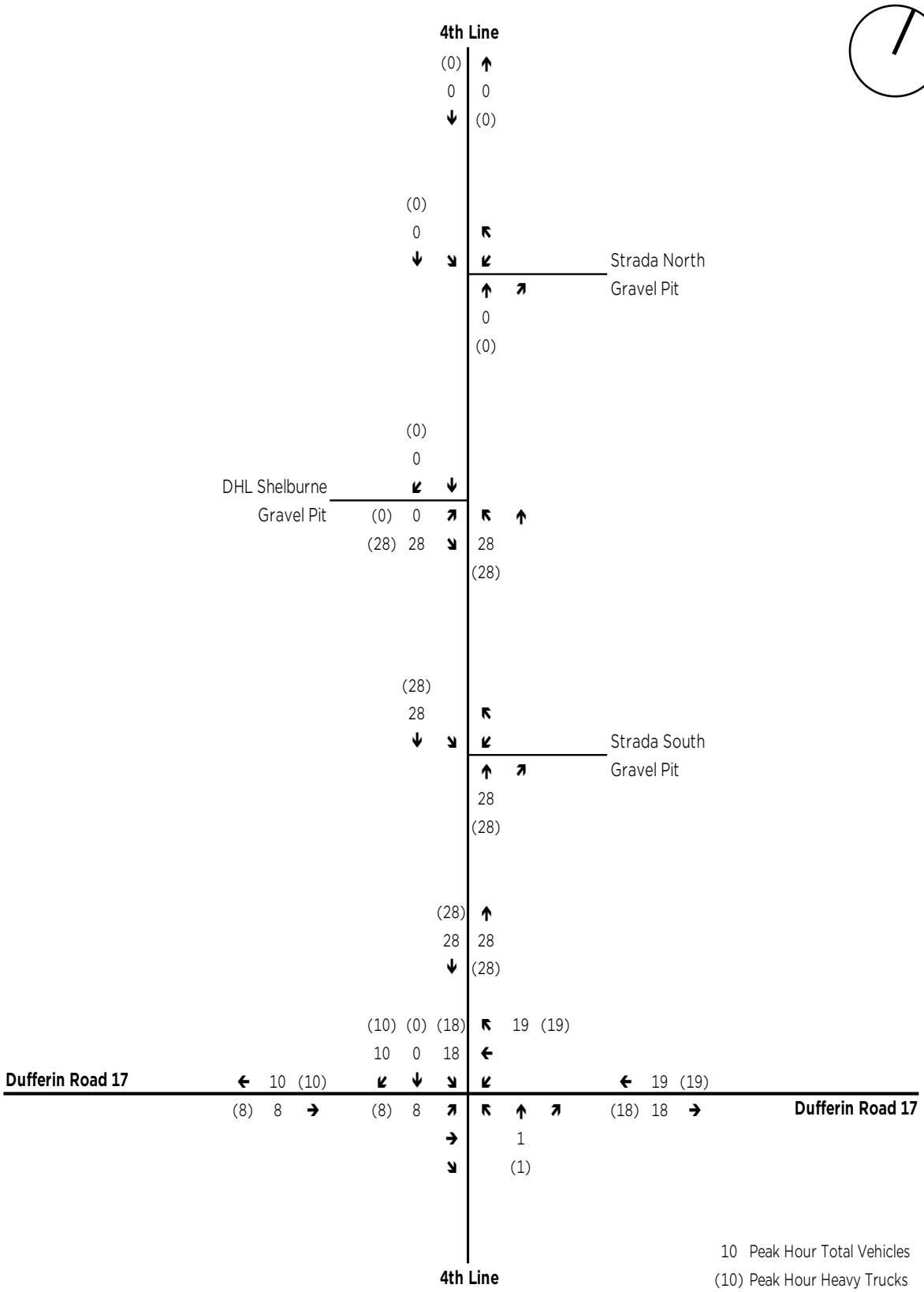
Enhancing our communities

DHL Shelburne Pit Expansion

TRAFFIC REVIEW

Duivenvoorden Haulage Ltd.

119177 | February 10, 2021



DHL SHELBURNE PIT

Figure 10: DHL Site Volumes – Peak Season Peak Day Peak Hour

Traffic Impact Study

Strada Aggregates

Strada Pit and Quarry

Township of Melancthon, Ontario

August 20, 2024

hdrinc.com 100 York Boulevard, Suite 300, Richmond Hill, ON, CA L4B 1J8
(289) 695-4600

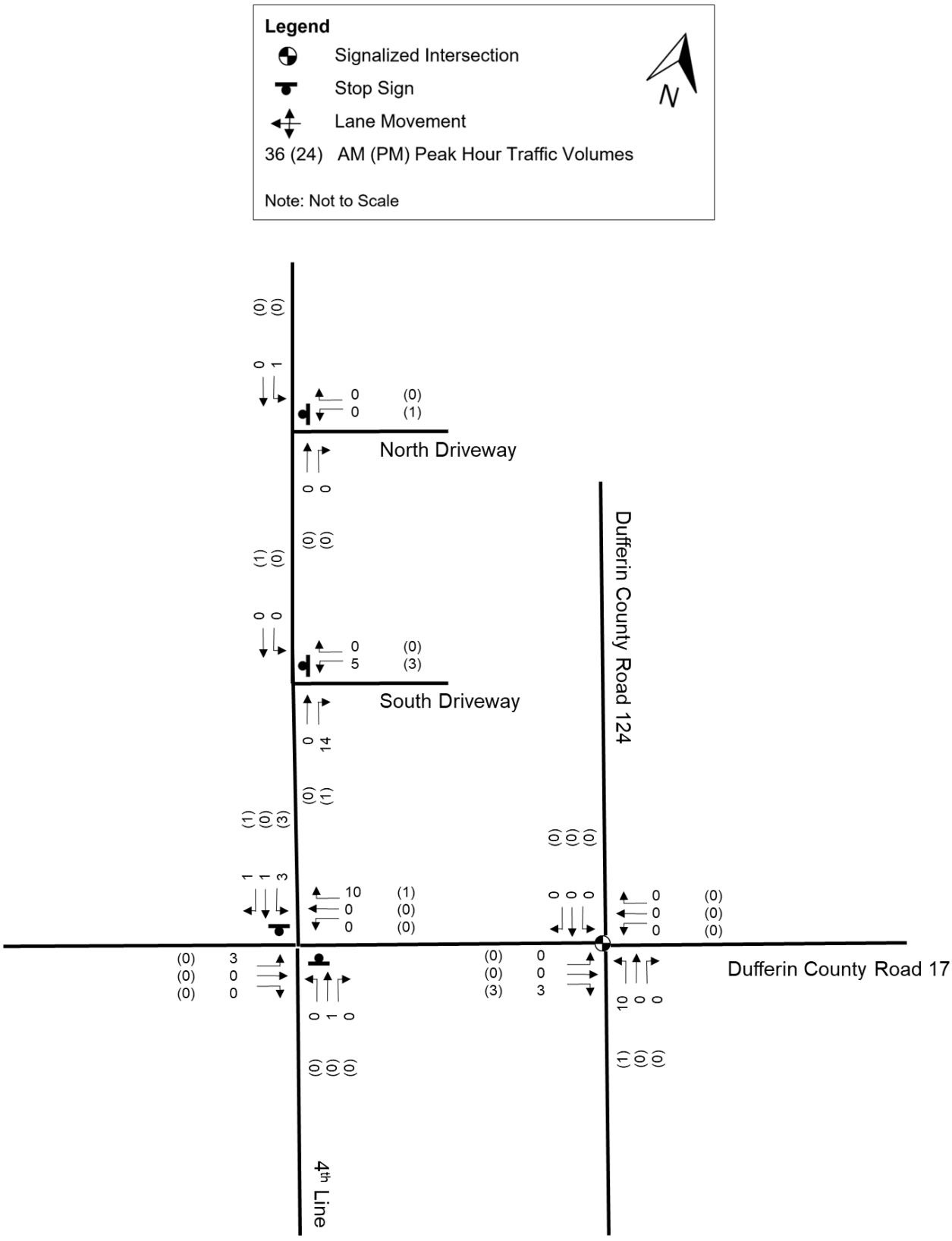


Exhibit 12: Future Site Traffic (Cars) – Phases 1 and 2

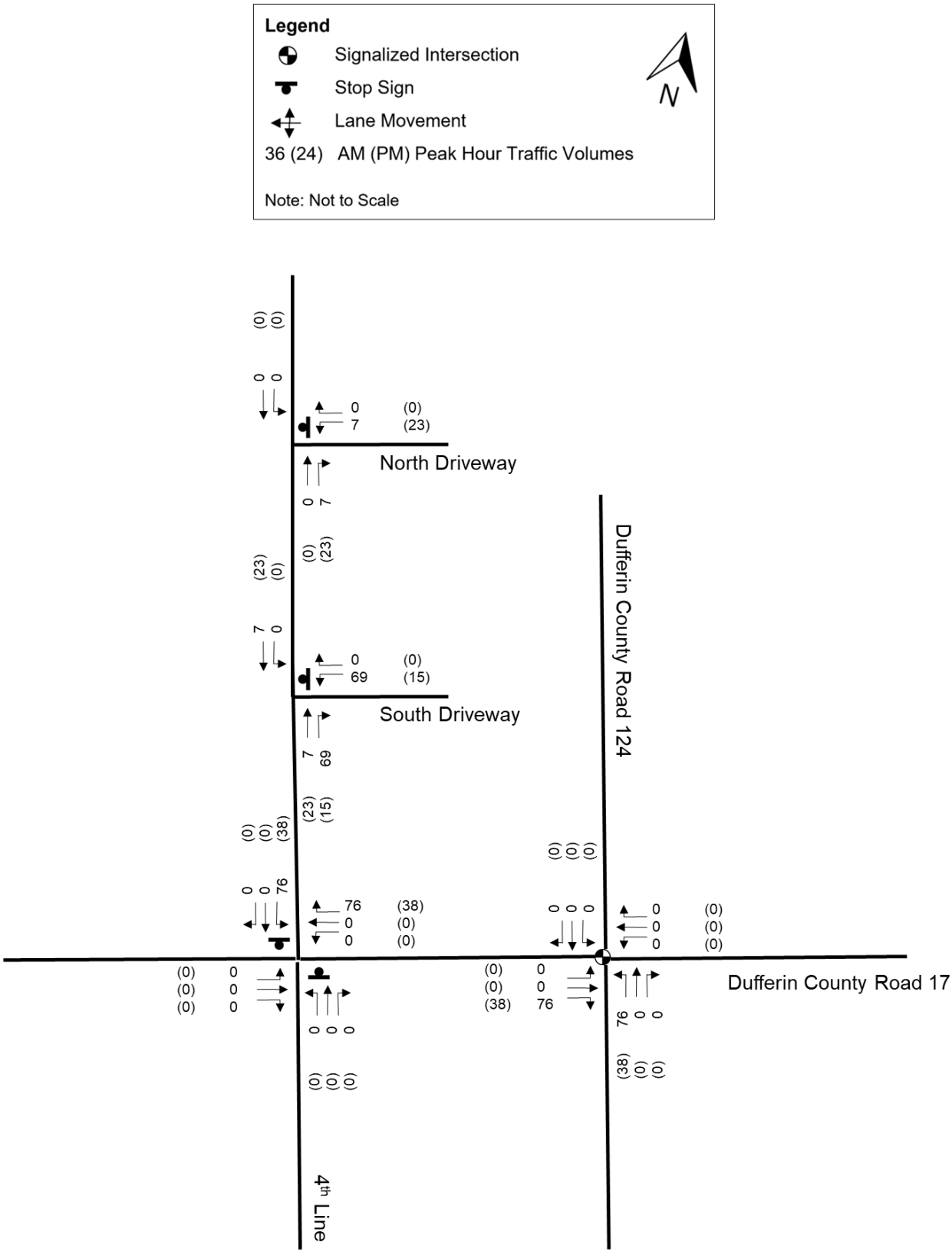


Exhibit 13: Future Site Traffic (Truck) – Phases 1 and 2

APPENDIX F

ITE Manual Excerpts

Land Use: 240
Mobile Home Park

Description

A mobile home park generally consists of manufactured homes that are sited and installed on permanent foundations. The mobile home park typically includes community facilities such as a recreation room, swimming pool, and laundry facilities.

Additional Data

The sites were surveyed in the 1980s, the 1990s, and the 2000s in Delaware, Indiana, Oregon, Virginia, and West Virginia.

Source Numbers

155, 169, 252, 936, 1066

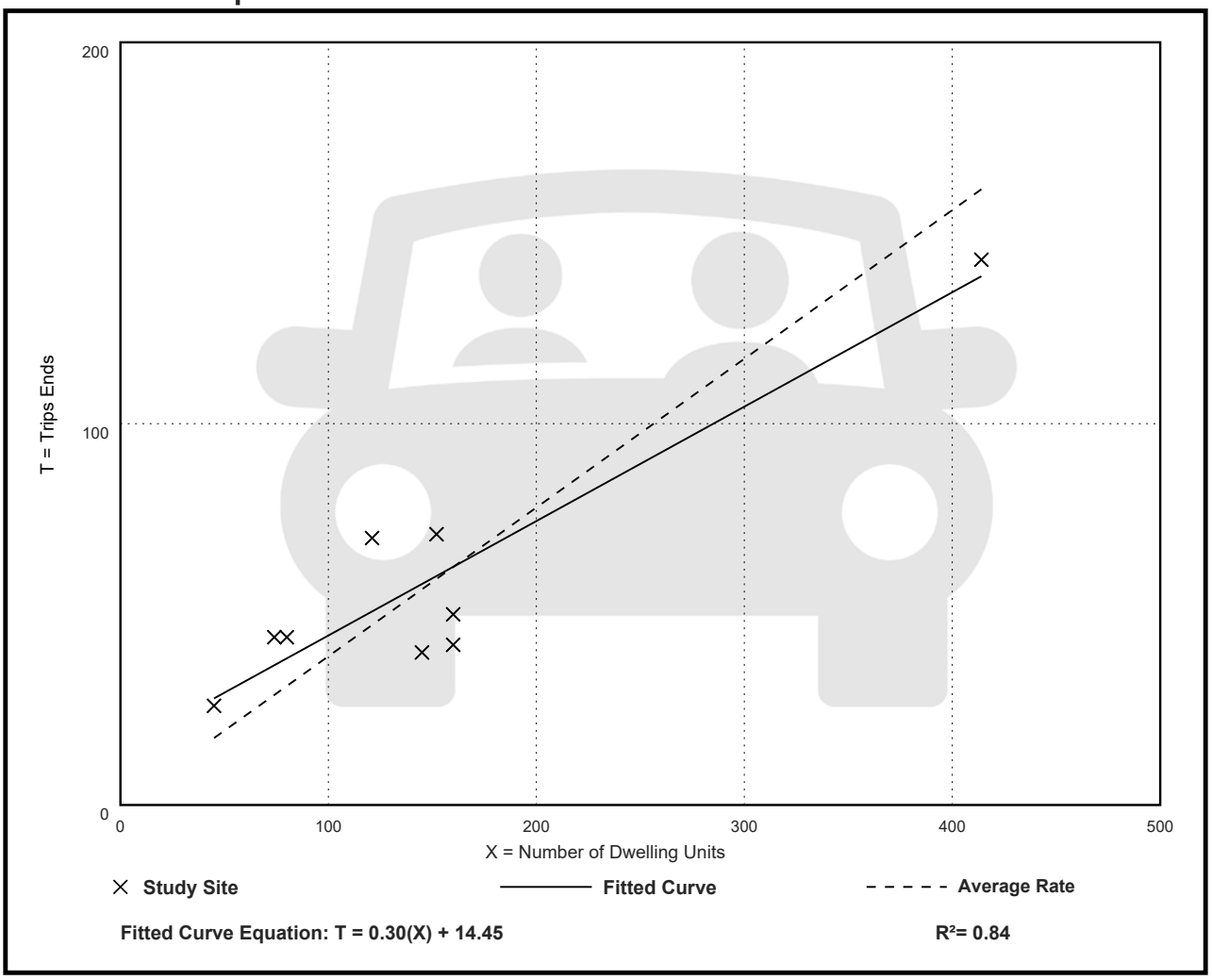
Mobile Home Park
(240)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 9
Avg. Num. of Dwelling Units: 150
Directional Distribution: 21% entering, 79% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.26 - 0.59	0.12

Data Plot and Equation



Fitted Curve Equation: T = 0.30(X) + 14.45

R^2= 0.84

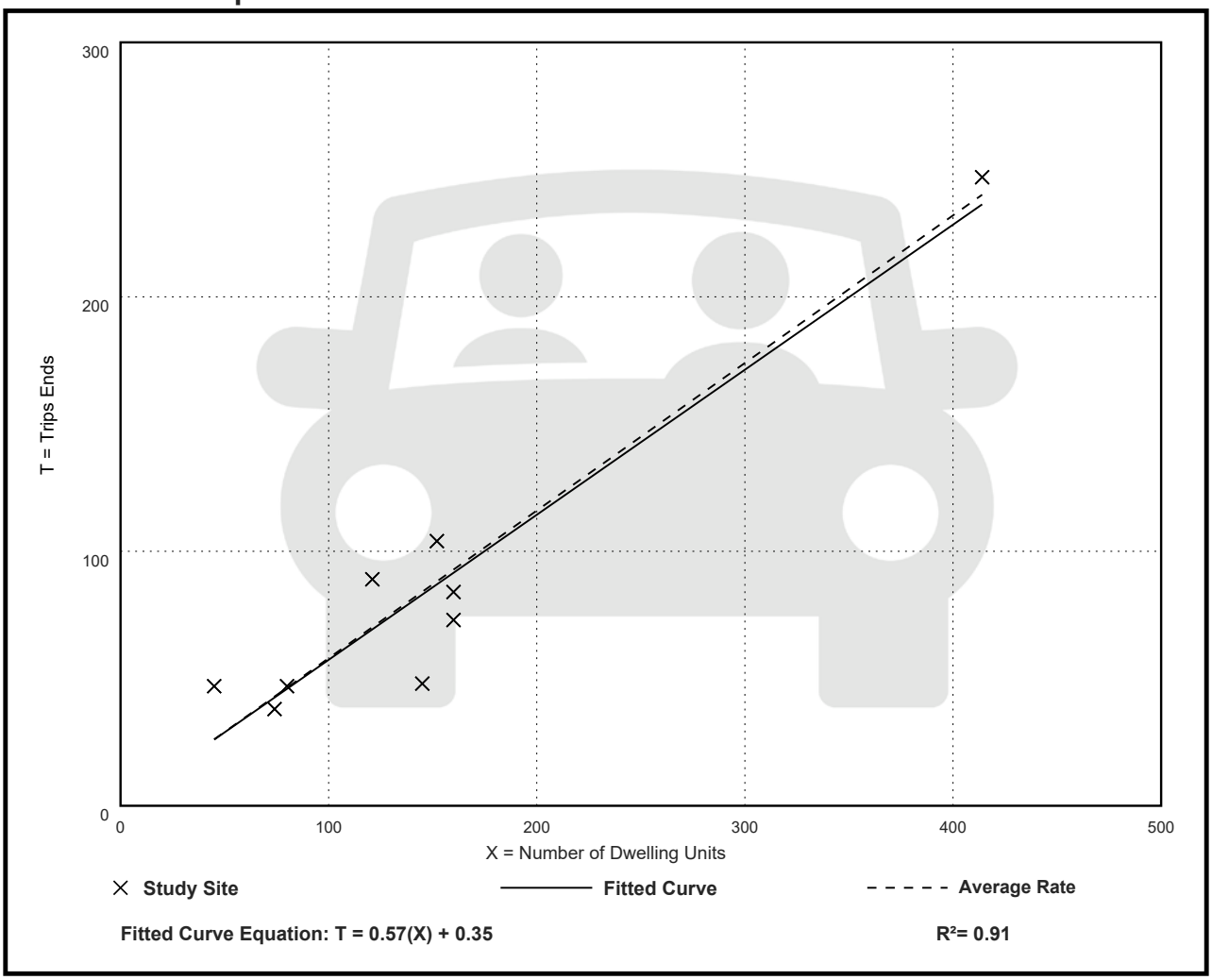
Mobile Home Park
(240)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 9
Avg. Num. of Dwelling Units: 150
Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.58	0.33 - 1.04	0.15

Data Plot and Equation



Fitted Curve Equation: T = 0.57(X) + 0.35

R^2= 0.91

Land Use: 223 Affordable Housing

Description

Affordable housing includes all multifamily housing that is rented at below market rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age.

Land Use Subcategory

Data are separated into three subcategories for this land use: (1) sites with income limitations for its tenants (denoted as income limits in the data plots), (2) sites with both minimum age thresholds and income limitations for its tenants (denoted as senior in the data plots), and (3) sites designed for and occupied by residents with special needs, such as persons with physical and mental impairments, recovering addicts, and others living in a group setting (denoted as special needs in the data plots).

Time-of-Day Distribution for Parking Demand

The following table presents a Time-of-Day distribution of parking demand on a weekday in a general urban/suburban setting for the three land use subcategories: income limits (two study sites), senior (one study site), and special needs (two study sites).

	Percent of Weekday Peak Parking Demand		
Hour Beginning	Income Limits	Senior	Special Needs
12:00–4:00 a.m.	—	—	—
5:00 a.m.	100	74	86
6:00 a.m.	94	74	86
7:00 a.m.	85	70	93
8:00 a.m.	77	93	100
9:00 a.m.	73	100	93
10:00 a.m.	71	93	93
11:00 a.m.	—	70	100
12:00 p.m.	—	74	100
1:00 p.m.	—	70	93
2:00 p.m.	—	81	79
3:00 p.m.	—	81	93
4:00 p.m.	—	74	64
5:00 p.m.	—	74	86
6:00 p.m.	79	67	79
7:00 p.m.	83	67	71
8:00 p.m.	90	70	71
9:00 p.m.	93	70	79
10:00 p.m.	97	74	93
11:00 p.m.	—	74	93

Additional Data

For the majority of study sites in this land use code, 100 percent of the dwelling units are considered affordable. For residential study sites that provide a mix of market value and affordable units, the study sites with at least 75 percent of the dwelling units designated as affordable are also included in this land use.

The average parking supply ratios for the study sites with parking supply information are shown in the table below.

Setting	Land Use Subcategory	Parking Supply Per Dwelling Unit	Average Peak Parking Occupancy
Center City Core	Income Limits	0.32 (6 sites)	67%
	Senior	0.11 (1 site)	100%
Dense Multi-Use Urban	Income Limits	0.74 (24 sites)	75%
	Senior	0.69 (4 sites)	67%
General Urban/ Suburban	Income Limits	1.4 (26 sites)	75%
	Senior	0.43 (3 sites)	90%
	Special Needs	0.57 (2 sites)	68%

The sites were surveyed in the 1990s, the 2010s, and the 2020s in Alabama, California, Connecticut, District of Columbia, Maryland, Massachusetts, New Jersey, and Oregon.

Source Numbers

314, 514, 533, 535, 536, 537, 539, 541, 579, 582, 585, 586, 603, 611, 622

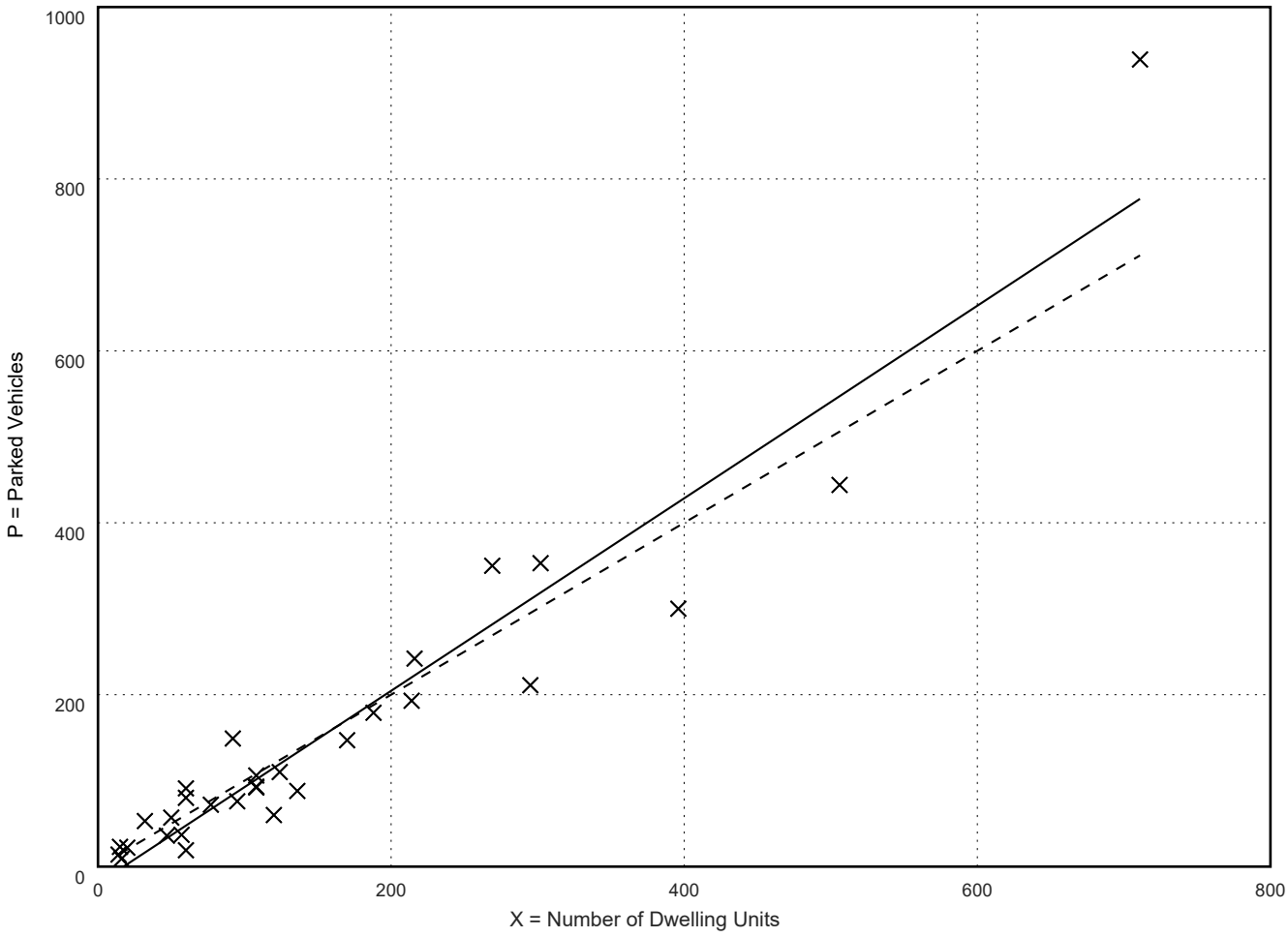
Affordable Housing - Income Limits (223)

Peak Period Parking Demand vs: **Dwelling Units**
On a: **Weekday (Monday - Friday)**
Setting/Location: **General Urban/Suburban**
Number of Studies: 30
Avg. Num. of Dwelling Units: 156

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.00	0.32 - 1.66	0.85 / 1.40	0.9 - 1.1	0.28 (28%)

Data Plot and Equation



Fitted Curve Equation: P = 1.12(X) - 19.50

R^2= 0.91

APPENDIX G

Transportation Association of Canada Excerpts

Stopping sight distance is the sum of the distance travelled during the perception and reaction time and the braking distance.

$$SSD = 0.278Vt + 0.039 \frac{V^2}{a} \quad (2.5.2)$$

Where:

SSD = Stopping sight distance (m)
t = Brake reaction time, 2.5 s
V = Design speed (km/h)
a = Deceleration rate (m/s^2)

Table 2.5.2 gives the minimum stopping sight distances on level grade, on wet pavement, for a range of design speeds. These values are used for vertical curve design, intersection geometry and the placement of traffic control devices. The stopping sight distances quoted in **Table 2.5.2** may need to be increased for a variety of reasons related to grade and vehicle type as noted below.

Table 2.5.2: Stopping Sight Distance on level roadways for Automobiles[54]

Design speed (km/h)	Brake reaction distance (m)	Braking distance on level (m)	Stopping sight distance	
			Calculated (m)	Design (m)
20	13.9	4.6	18.5	20
30	20.9	10.3	31.2	35
40	27.8	18.4	46.2	50
50	34.8	28.7	63.5	65
60	41.7	41.3	83.0	85
70	48.7	56.2	104.9	105
80	55.6	73.4	129.0	130
90	62.6	92.9	155.5	160
100	69.5	114.7	184.2	185
110	76.5	138.8	215.3	220
120	83.4	165.2	248.6	250
130	90.4	193.8	284.2	285

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 3.4 m/s^2 used to determine calculated sight distance.

Table 9.9.3: Time Gap for Case B1, Left Turn from Stop

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	7.5
Single-unit truck	9.5
Combination truck (WB 19 and WB 20)	11.5
Longer truck	To be established by road authority

Notes: Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and with grades of 3% or less. The table values should be adjusted as follows:

- For multi-lane highways: For left turns onto two-lane highways with more than two lanes, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.
- For minor approach grades: If the approach grade is an upgrade that exceeds 3%, add 0.2 s for each percent grade for left turns.
- Some road authorities use higher values for certain specialized vehicles (e.g., Alberta uses 22 s for very long log trucks).

The intersection sight distance along the major road (distance b in **Figure 9.9.2**) is determined by:

$$ISD = 0.278\ V_{major}\ t_g \qquad (9.9.1)$$

Where:

ISD = intersection sight distance (length of the leg of sight triangle along the major road) (m)
V_{major} = design speed of the major road (km/h)
t_g = time gap for minor road vehicle to enter the major road (s)

For example, a passenger car turning left onto a two-lane major road should be provided sight distance equivalent to a time gap of 7.5 s in major-road traffic. If the design speed of the major road is 100 km/h, this corresponds to a sight distance of 0.278(100)(7.5) = 208.5 or 210 m, rounded for design.

A passenger car turning left onto a four-lane undivided roadway will need to cross two near lanes, rather than one. This increases the recommended gap in major-road traffic from 7.5 to 8.0 s. The corresponding value of sight distance for this example would be 223 m. If the minor-road approach to such an intersection is located on a 4% upgrade, then the time gap selected for intersection sight distance design for left turns should be increased from 8.0 to 8.8 s, equivalent to an increase of 0.2 s for each percent grade.

The design values for intersection sight distance for passenger cars are shown in **Table 9.9.4**. **Figure 9.9.4** includes design values, based on the time gaps for the design vehicles included in **Table 9.9.3**.

No adjustment of the recommended sight distance values for the major-road grade is generally needed because both the major- and minor-road vehicle will be on the same grade when departing from the intersection. However, if the minor-road design vehicle is a heavy truck and the intersection is located near a sag vertical curve with grades over 3%, then an adjustment to extend the recommended sight distance based on the major-road grade should be considered.

Table 9.9.4: Design Intersection Sight Distance – Case B1, Left Turn From Stop

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	41.7	45
30	35	62.6	65
40	50	83.4	85
50	65	104.3	105
60	85	125.1	130
70	105	146.0	150
80	130	166.8	170
90	160	187.7	190
100	185	208.5	210
110	220	229.4	230
120	250	250.2	255
130	285	271.1	275

Note: Intersection sight distance shown is for a stopped passenger car to turn left onto a two-lane highway with no median and grades 3% or less. For other conditions, the time gap should be adjusted and the sight distance recalculated.

Sight distance design for left turns at divided-highway intersections should consider multiple design vehicles and median width. If the design vehicle used to determine sight distance for a divided-highway intersection is larger than a passenger car, then sight distance for left turns will need to be checked for that selected design vehicle and for smaller design vehicles as well. If the divided-highway median is wide enough to store the design vehicle with a clearance to the through lanes of approximately 1 m at both ends of the vehicle, no separate analysis for the departure sight triangle for left turns is needed on the minor-road approach for the near roadway to the left. In most cases, the departure sight triangle for right turns (case B2) will provide sufficient sight distance for a passenger car to cross the near roadway to reach the median. Possible exceptions are addressed in the discussion of case B3.

The time gaps in **Table 9.9.3** can be decreased by 1.0 s for right-turn maneuvers without undue interference with major-road traffic. These adjusted time gaps for the right turn from the minor road are shown in **Table 9.9.5**. Design values based on these adjusted time gaps are shown in **Table 9.9.6** for passenger cars. **Figure 9.9.5** includes the design values for the design vehicles for each of the time gaps in **Table 9.9.5**.

Table 9.9.5: Time Gap for Case B2—Right Turn from Stop and Case B3—Crossing Maneuver

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	6.5
Single-unit truck	8.5
Combination truck (WB 19 and WB 20)	10.5

Note: Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and with grades of 3% or less. The table values should be adjusted as follows:

- For multi-lane highways: For left turns onto two-lane highways with more than two lanes, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.
- For minor approach grades: If the approach grade is an upgrade that exceeds 3%, add 0.1 s for each percent grade for left turns.

Table 9.9.6: Design Intersection Sight Distance – Case B2, Right Turn from Stop, and Case B3, Crossing Maneuver

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	36.1	40
30	35	54.2	55
40	50	72.3	75
50	65	90.4	95
60	85	108.4	110
70	105	126.5	130
80	130	144.6	145
90	160	162.6	165
100	185	180.7	185
110	220	198.8	200
120	250	216.8	220
130	285	234.9	235

Note: Intersection sight distance shown is for a stopped passenger car to turn right onto or to cross a two-lane highway with no median and with grades of 3% or less. For other conditions, the time gap should be adjusted and the sight distance recalculated.

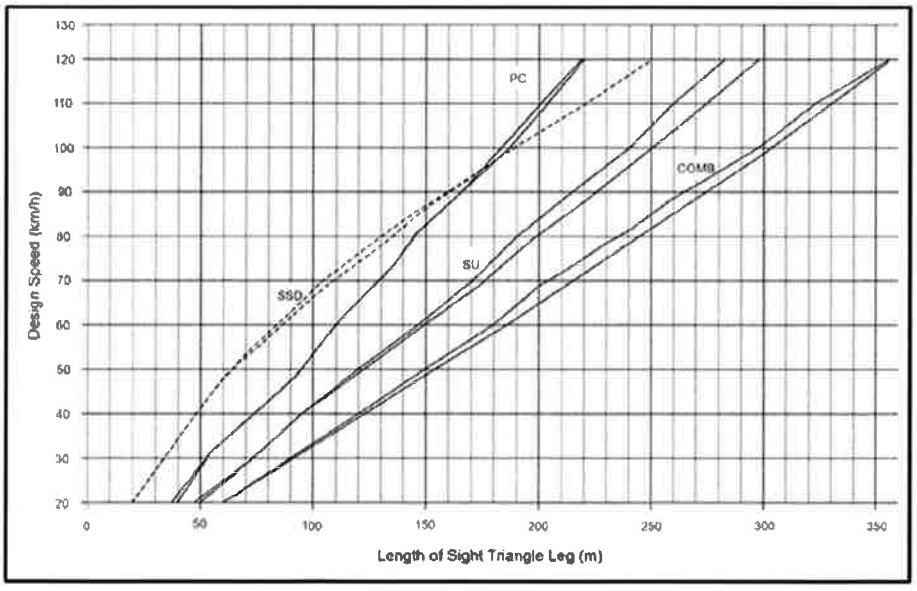


Figure 9.9.5: Intersection Sight Distance – Case B2, Right Turn from Stop, and Case B3, Crossing Maneuver (Calculated and Design Values Plotted)

Case F – Left Turns from the Major Road

All locations along a major highway from which vehicles are permitted to turn left across opposing traffic, including intersections and driveways, should have sufficient sight distance to accommodate the left-turn maneuver. Left-turning drivers need sufficient sight distance to decide when to turn left across the lane(s) used by opposing traffic. Sight distance design should be based on a left turn by a stopped vehicle, since a vehicle that turns left without stopping would need less sight distance. The sight distance along the major road to accommodate left turns is the distance traversed at the design speed of the major road in the travel time for the design vehicle given in **Table 9.9.11**.

Table 9.9.11: Time Gap for Case F, Left Turns from the Major Road

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	5.5
Single-unit truck	6.5
Combination truck (WB 19 and WB 20)	7.5

Note: Adjustment for multi-lane highways: For turning vehicles that cross more than one opposing lane, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane to be crossed.

The table also contains appropriate adjustment factors for the number of major-road lanes to be crossed by the turning vehicle. The unadjusted time gap in **Table 9.9.11** for passenger cars was used to develop the sight distances in **Table 9.9.12** and is illustrated in **Figure 9.9.8.**

Table 9.9.12: Intersection Sight Distance – Case F, Left Turn from the Major Road

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance	
		Passenger Cars	
		Calculated (m)	Design (m)
20	20	30.6	35
30	35	45.9	50
40	50	61.2	65
50	65	76.5	80
60	85	91.7	95
70	105	107.0	110
80	130	122.3	125
90	160	137.6	140
100	185	152.9	155
110	220	168.2	170
120	250	183.5	185
130	285	198.8	200

Note: Intersection sight distance shown is for a passenger car making a left turn from an undivided highway. For other conditions and design vehicles, the time gap should be adjusted and the sight distance recalculated.

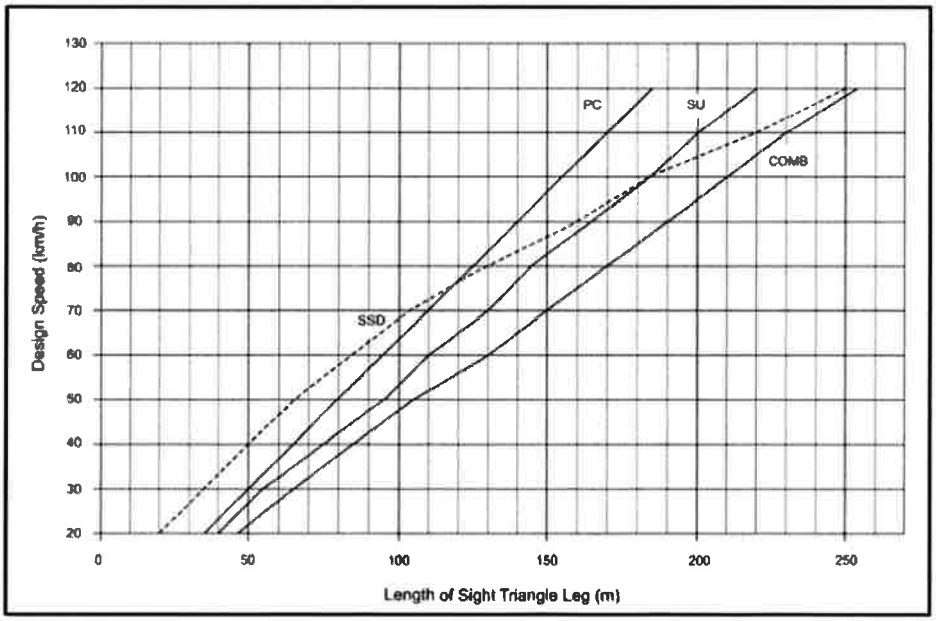


Figure 9.9.8: Intersection Sight Distance – Case F, Left Turn from the Major Road

APPENDIX H

Town of Melancthon Zoning By-Law 12-1979 Excerpts

TOWNSHIP OF MELANCTHON

Zoning By-law No. 12-1979
As Amended By 12-1982

Office Consolidation

This document is prepared for purposes of convenience only. For accurate reference please consult the original approved by-laws.

August 1996

THE CORPORATION OF THE TOWNSHIP OF MELANCTHON

BY-LAW NO. 12-79

A by-law to prohibit the use of land and the erection or use of buildings or structures except for certain purposes; to regulate the height, bulk, location, size, floor area, spacing, character and use of buildings or structures; to required loading and parking facilities for buildings or structures erected or used for certain purposes; to prohibit the making or establishment of pits and quarries within defined areas in the Township of Melancthon.

THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF MELANCTHON ENACTS AS FOLLOWS:

SECTION 1: TITLE

This By-law may be cited as "The Zoning By-law of the Township of Melancthon".

c) Loading Space Surface

The driveways, loading and unloading spaces shall be constructed and maintained with a stable surface which is treated so as to prevent the raising of dust or loose particles and with provisions for drainage facilities.

d) Location

The loading space or spaces required shall be located in the interior side or rear yard.

e) When a building or structure has insufficient loading space at the date of passing of this By-law to comply with the requirements herein, this By-law shall not be construed to require that the deficiency be made up prior to the construction of any addition. No addition may be built however, and no change of use may occur, the effect of which would be an increase in that deficiency.

3.15 PARKING AREA REGULATIONS

Parking spaces and areas are required under this By-law in accordance with the following provisions:

a) Parking Space Requirements

The owner of every building or structure erected or used for any of the purposes hereinafter set forth shall provide and maintain for the sole use of the owner, occupant or other persons entering upon or making use of the said premises from time to time, parking spaces and areas as follows:

Type of Building or Use	Minimum Parking Required
Automobile sales establishment, new and used	a minimum of ten (10) spaces plus one (1) space for every person employed on the premises during the peak business period.
Business or professional office	one (1) space for every thirty (30) square metres of gross floor area.
Church or place of worship, community halls, assembly halls, arenas, and other places of assembly	one (1) space for every four (4) persons to be accommodated according to maximum permitted capacity.

Type of Building or Use	Minimum Parking Required
Club	one (1) space for every four (4) persons to be accommodated in the design capacity of the building
Home occupation	one (1) space for every forty (40) square metres of floor area devoted to the home occupation use and where such a use consists of the office of a doctor or dentist, there shall be a minimum of three (3) parking spaces provided on the same lot.
Hotel and motel	one (1) space for every guest room and one (1) space for every ten (10) square metres of gross floor area devoted to public use.
Industrial establishment	one (1) space for every forty (40) square metres of gross floor area
Nursing home or convalescent home	one (1) space for every two (2) beds.
Retail store or service shop	one (1) space for every thirty (30) square metres of gross floor area and (1) space for every person employed on the premises during the peak business period.
Residential (including any dwelling in any zone)	two (2) spaces for every dwelling unit.
Restaurant	one (1) space for every ten (10) square metres of public floor area or one (1) space for every four (4) persons of design capcity, whichever is the greater and one (1) space for every person employed on the premises during the peak business period.
School	one and one-half (1 ½) spaces for every teaching area or classroom.

Type of Building or Use	Minimum Park Required
Warehouse or bulk storage yard	one (1) space for every person employed on the premises during the peak business period.
Other commercial, industrial or institutional uses permitted by this By-law, but not listed above	one (1) space for every twenty (20) square metres of total floor area.

b) Parking Area Requirements

Parking areas shall conform to the following requirements:

i) the parking area shall be located on the same lots as the use it is intended to serve; and

ii) each parking space shall be at least 3 metres by 6 metres and shall be provided with unobstructed access to a street by a driveway, aisle or lane.

c) Parking Area Surface

In a Commercial or Industrial Zone, a parking area and driveway connecting the parking area with a street shall be maintained with a stable surface which is treated so as to prevent the raising of dust or loose particles. They shall, before being used, be constructed of crushed stone, gravel, crushed brick or tile, cinders, asphalt, concrete, Portland cement binder or like material and with provisions for drainage facilities.

d) Ingress and Egress

i) Ingress and egress, to and from the required parking spaces and areas, shall be provided by means of unobstructed driveways or passageways at least 3 metres, but not more than 10 metres in perpendicular width.

ii) The maximum width of any joint ingress and egress driveway ramp measured along the street line, shall be 10 metres

iii) The minimum distance between a driveway and an intersection of street lines measured along the street lines intersected by such driveway, shall be 8 metres.

iv) The minimum angle of intersection between a driveway and a street line shall be 60 degrees.