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Transportation Impact Study

PROPOSED COMMERCIAL RETAIL DEVELOPMENT

580 Burloak Drive
Town of Oakville

December 7, 2025
Project No: NT-25-075

Prepared for: Theeb Investments Inc.
c/o W.E. Oughtred and Associates Inc.
Prepared by: Nextrans Consulting Engineers

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NextEng Consulting Group Inc

December 7, 2025

Theeb Investments Inc.
c/o W.E. Oughtred and Associates Inc.
2140 Falkland Crescent
Oakville, ON L6M 4Y3

Attention: Arlene Beaumont

Re: Engineering Service – Transportation Impact Study
Proposed Commercial Development
580 Burloak Drive, Town of Oakville
Project No. NT-25-075

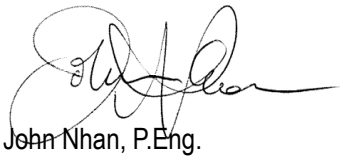
Nextrans Consulting Engineers (a Division of NextEng Consulting Group Inc.) has prepared the enclosed Transportation Impact Study in support of a Zoning By-law Amendment Application for a commercial retail development located at the property of 580 Burloak Drive in the Town of Oakville. The development proposes two commercial retail buildings with a total net floor area of 3,221.07 sqm.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

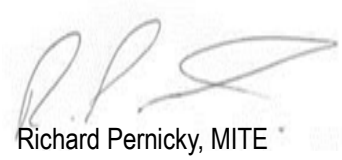
NEXTRANS CONSULTING ENGINEERS

Prepared by:



John Nhan, P.Eng.
Project Engineer

Reviewed and Approved by:



Richard Pernicky, MITE
Principal

Issues and Revisions Registry

Identification	Date	Description of issued and/or revision
Transportation Impact Study	December 7, 2025	First submission.

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APPENDICES

1.0 INTRODUCTION

Nextrans Consulting Engineers ("Nextrans"), a Division of NextEng Consulting Group Inc., was retained by Theeb Investments Inc. ("client") to prepare this Transportation Impact Study (TIS) in support of a Zoning By-law Amendment Application for a commercial retail development located at the property of 580 Burloak Drive (herein referred as the "subject site") in the Town of Oakville. The subject site location is provided in **Figure 1-1**.

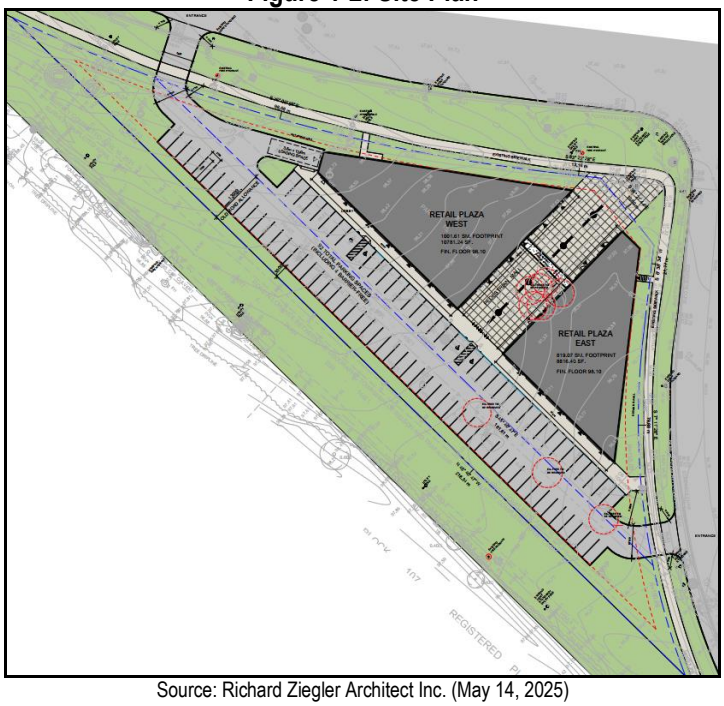
Figure 1-1: Subject Site Location

Source: Google Maps

1.1. PROPOSED DEVELOPMENT

Figure 1-2 illustrates the architectural site plan which is enclosed in **Appendix A**.

Figure 1-2: Site Plan



Source: Richard Ziegler Architect Inc. (May 14, 2025)

The subject site is vacant. The development proposes two commercial retail buildings of two storeys each with a total net floor area of 3,221.07 sqm (34,671 sqft). Two site driveway accesses are proposed, including a right-in/right-out access for the north driveway along Burloak Drive and a left-in/right-in/right-out access for the south driveway along Burloak Drive. One loading space will be provided. A vehicle parking provision of 92 parking spaces (including four barrier-free spaces) will be provided. A bicycle parking provision of eight spaces will be provided.

1.2. TERMS OF REFERENCE

A TIS Terms of Reference was submitted to Town of Oakville ("Town") transportation staff for confirmation of the scope of work to be provided as part of this study. The Terms of Reference and Town correspondence are enclosed in **Appendix B**.

1.3. METHODOLOGY

The study adheres to the Halton Region Transportation Impact Study Guidelines dated January 2015. The intersection capacity analysis for the study area was assessed for the weekday AM and PM peak hours for the existing condition (existing baseline year of 2025), and future background and future total conditions based on a five-year horizon of 2030. The traffic operations were analyzed using Synchro 10 which incorporates the Highway Capacity Manual (HCM) 2000 methodology published by the Transportation Research Board, for signalized and unsignalized intersections. SimTraffic was used to assess the 95th percentile queue lengths.

Mitigation measures for the future conditions were applied based on the following criteria.

Signalized intersection operations

- Volume/capacity (v/c) ratio for overall intersection operations, through movements, or shared through/turning movements increased to 0.85 or above;
- Volume/capacity (v/c) ratio for exclusive movements increased to 0.95 or above; or
- Estimated 95th percentile queue length for an individual movement is projected to exceed the available turning lane storage length.

Unsignalized intersection operations

- Level of service (LOS) exceeds LOS D for an individual movement; or
- Estimated 95th percentile queue length for an individual movement is projected to exceed the available lane storage length.

1.4. STUDY AREA

The intersection study area was determined by assessing the size of the proposed development and the transportation impact that is anticipated from the proposed development. The study area was confirmed through the Terms of Reference with the Town. The intersection study area includes the following existing unsignalized intersections.

Existing Intersections

- Burloak Drive and Flora Drive (Unsignalized)
- Burloak Drive and Adele Road (Unsignalized)
- Burloak Drive / Michigan Drive and Great Lakes Boulevard / Burloak Drive (Signalized)

Proposed Intersections

- Burloak Drive and North Right-In/Right-Out Site Access (Unsignalized)
- Burloak Drive and South Left-In/Right-In/Right-Out Site Access (Unsignalized)

2.0 EXISTING TRANSPORTATION CONDITIONS

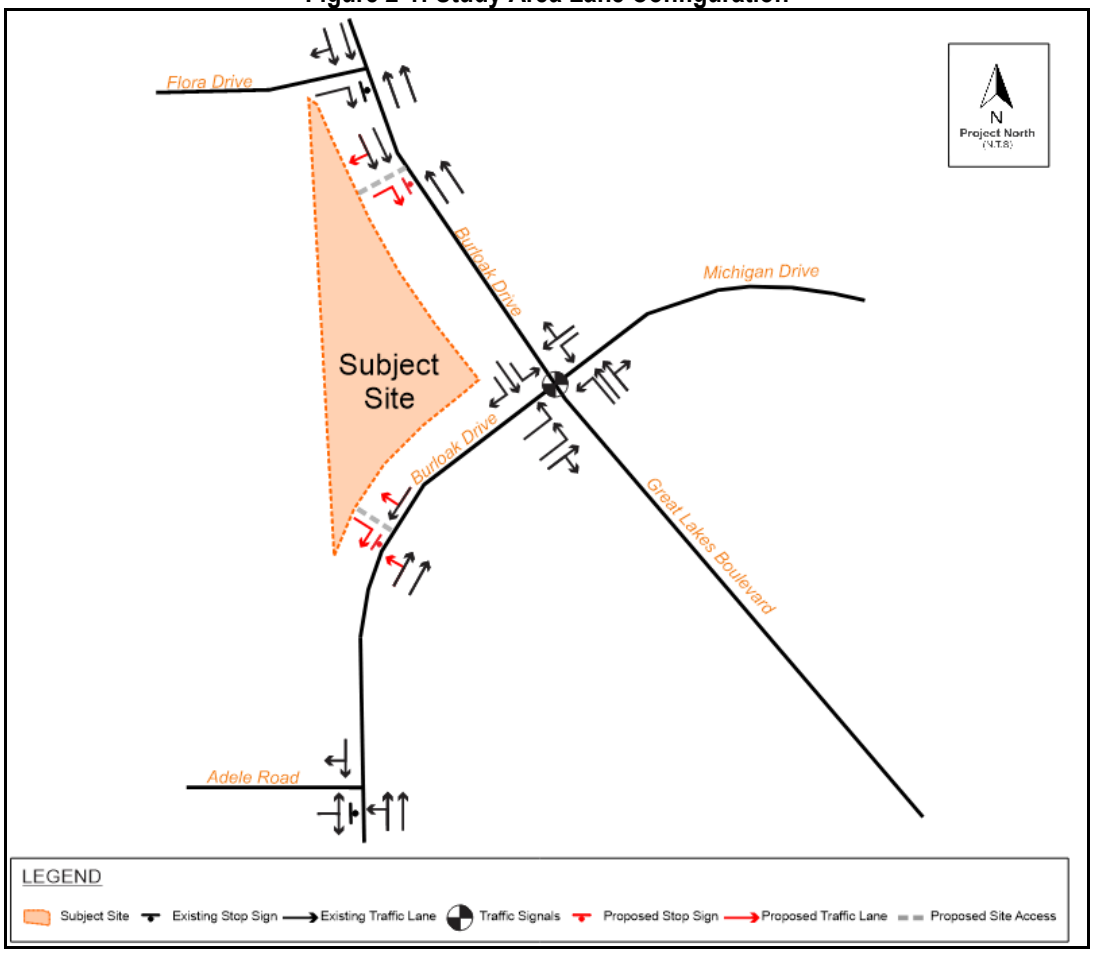
This section will identify and consider the existing transportation conditions for the road, transit, bicycling, and pedestrian networks within the study area.

2.1. ROAD NETWORK

Illustrated in **Figure 2-1** is the lane configuration and intersection control within the study area. All roads within the study area are under the jurisdiction of the Town.

- **Burloak Drive** is a north-south minor arterial road consisting of a typical four-lane cross-section (two lane per direction) north of Michigan Drive and a three-lane cross section (one southbound lane, two northbound lanes) west of Great Lakes Boulevard. Burloak Drive maintains a posted speed limit of 60km/h in the within the study area.
- **Great Lakes Boulevard** is a north-south minor arterial road consisting of a four-lane cross-section (two lanes per direction) and maintains a posted speed limit of 60km/h within the study area.
- **Adele Road** is an east-west local road consisting of a two-lane cross-section (one lane per direction) and maintains a posted speed limit of 40km/h.
- **Flora Road** is an east-west local road consisting of a two-lane cross-section (one lane per direction) with an assumed speed limit of 40km/h. Flora Road is restricted to right-in/right-out movements at Burloak Drive due to the existing raised centre median along Burloak Drive.

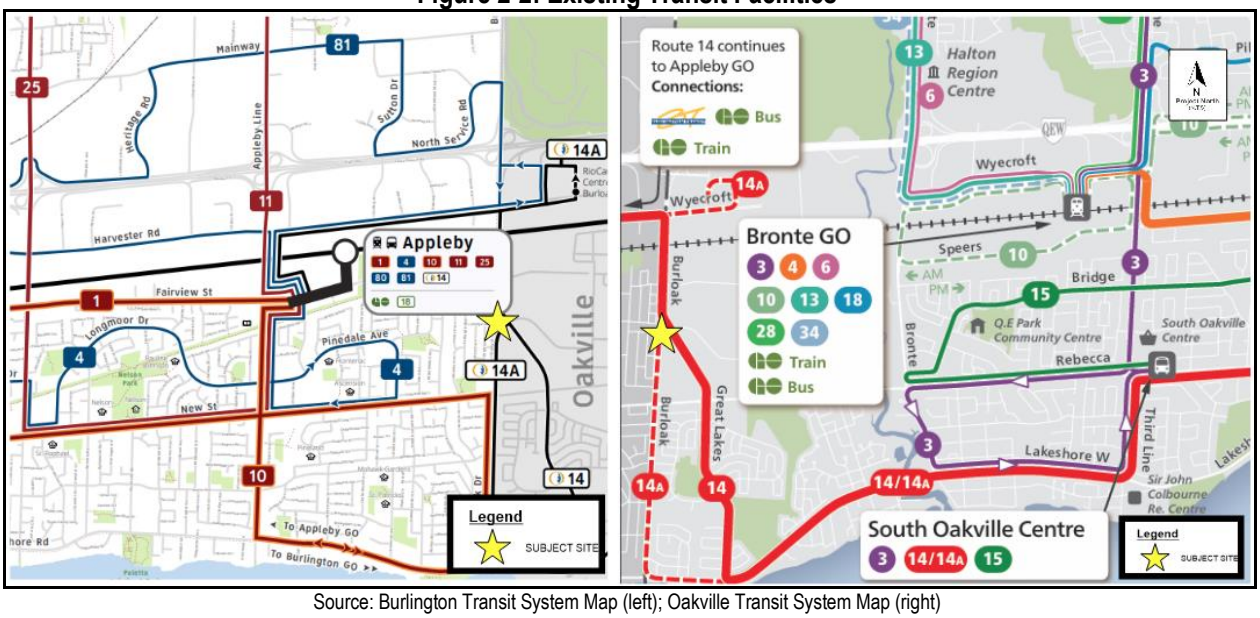
Figure 2-1: Study Area Lane Configuration



2.2. EXISTING TRANSIT FACILITIES

The subject site is located along the border of the Town of Oakville and the City of Burlington. **Figure 2-2** illustrates a number of transit routes and facilities including bus transit routes operated by Oakville Transit and Burlington Transit that are nearby the subject site.

Figure 2-2: Existing Transit Facilities



Source: Burlington Transit System Map (left); Oakville Transit System Map (right)

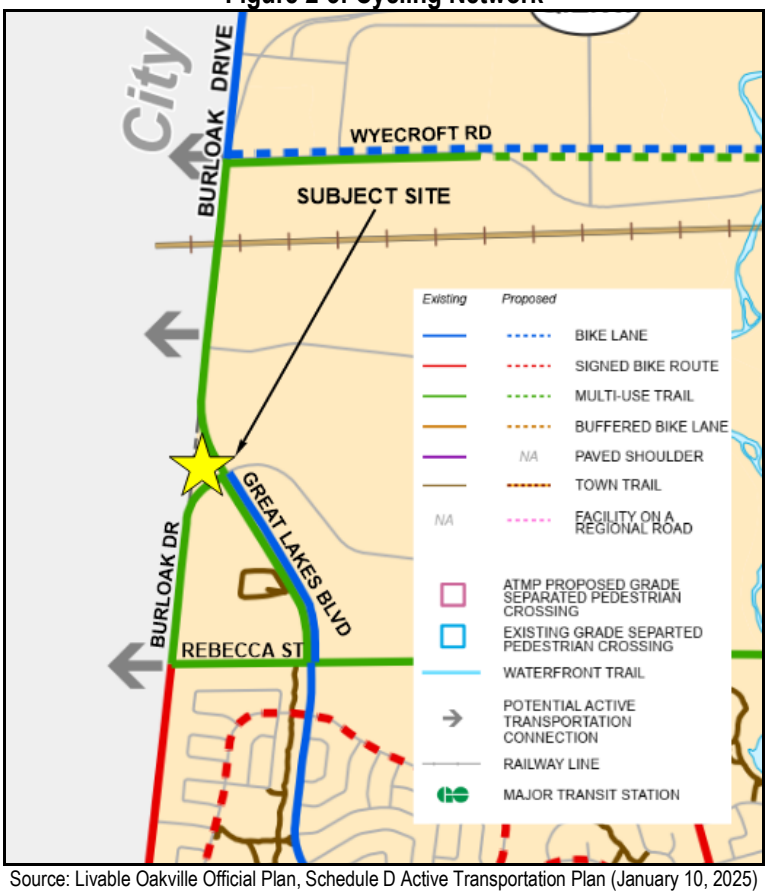
The following transit routes and facilities are available within short walking distance to the subject site.

- **Oakville Transit Bus Route 14/14A Lakeshore West** operates between Oakville GO Station to the east and Appleby GO Station to the west. South of Michigan Drive, Route 14 services Burloak Drive and Route 14A services Great Lakes Boulevard. The nearest bus stop is located along Burloak Drive south of Flora Drive along the frontage of the subject site. Route 14 operates all day, every day, with weekday peak period headways of approximately 30 minutes or better.
- **Burlington Transit Bus Route 10 New-Maple** operates between Appleby GO Station to the east and Burlington GO Station to the west. The nearest bus stop is located at the intersection of Burloak Drive and New Street / Rebecca Street and is approximately 600m (8-minute walk) from the subject site. Route 10 operates all day, every day, with 15-minute headways in the weekday AM and PM peak periods.
- **Appleby GO** is an intermodal transit station for connection to Lakeshore West GO Train service and a of bus routes provided by Burlington Transit, Oakville Transit, and GO Transit. Appleby GO located approximately 1.6km from the subject site and is a 13-minute bus ride from the bus stop at Burloak Drive and Michigan Drive.

2.3. EXISTING ACTIVE TRANSPORTATION NETWORK

Figure 2-3 illustrates the cycling network within the surrounding area to the subject site. **Figure 2-4** shows the active transportation facilities within the study area.

Figure 2-3: Cycling Network



Source: Livable Oakville Official Plan, Schedule D Active Transportation Plan (January 10, 2025)

Figure 2-4: Existing Active Transportation Facilities

Source: Google Earth

A complete active transportation network is available adjacent to the subject site. Within the surrounding area to the subject site are a number of existing pedestrian and cycling facilities. Paved multi-use trails are available along Burloak Drive, Great Lakes Boulevard, and Rebecca Street. Bike lanes are provided along Great Lakes Boulevard. Based on Google Street View dated 2025, on-street bike lanes are also available along Burloak Drive and Michigan Drive. A multi-use trail is also available along the perimeter of the subject site. Concrete pedestrian sidewalks are provided along the Burloak Drive / Michigan Drive corridor, Adele Road, Flora Drive, and the residential streets located west of the subject site. Pedestrian crosswalk pavement markings are provided at the intersection of Burloak Drive / Great Lakes Boulevard and Burloak Drive / Michigan Drive.

2.4. EXISTING TRAVEL MODE SHARE

Table 2-1 summarizes the existing travel mode share for the area surrounding the subject site for the weekday peak periods based on Transportation Tomorrow Survey (TTS) 2022 data for traffic zones 4001, 4002, 4075, 4076, and 4077 (TTS data enclosed in **Appendix C**). As TTS surveys for weekday data, only weekday AM and PM mode split data is shown.

Table 2-1: Existing Travel Mode Share

Peak Hour	Auto		Non-Auto		
	SOV	HOV	Transit	Cycle	Walk
Weekday AM	90%	3%	2%	1%	4%
	93%		7%		
Weekday PM	77%	14%	2%	2%	6%
	90%		10%		

The surrounding area to the subject site is car-dominant, attributed to the industrial park context that is heavily reliant on personal vehicles. Although a residential subdivision exists west and south of the subject site, the area is suburban and reliant on personal cars. Approximately 7% in the weekday AM peak hour and 10% in the weekday PM peak hour of the travel mode share to the surrounding area is through non-auto trips (walk + cycle + transit), which can be assumed to be similar for the subject site.

2.5. TRAFFIC DATA COLLECTION

A turning movement count (TMC) survey was undertaken by Spectrum Traffic Data for the following intersection study area during the weekday AM and PM peak periods and Saturday peak period. A summary of the traffic data collection is tabulated in **Table 2-2** below. Existing traffic data is enclosed in **Appendix C**.

Table 2-2: Summary of TMC Survey

Intersection	Date of Survey	Time of Survey	Source
Flora Drive and Burloak Drive	Thursday, June 19, 2025 Saturday, June 21, 2025	AM: 7:00-10:00 PM: 4:00-7:00	Spectrum Traffic Data
Burloak Drive / Michigan Drive and Burloak Drive / Great Lakes Boulevard			
Adele Road and Burloak Drive			

2.6. EXISTING INTERSECTION CAPACITY ANALYSIS

Figure 2-5 illustrates the traffic volumes within the intersection study area. The existing intersection capacity analysis results for the study area intersection is summarized in **Table 2-3**. The detailed Synchro and SimTraffic results are provided in **Appendix D**.

Figure 2-5: Existing Traffic Volumes

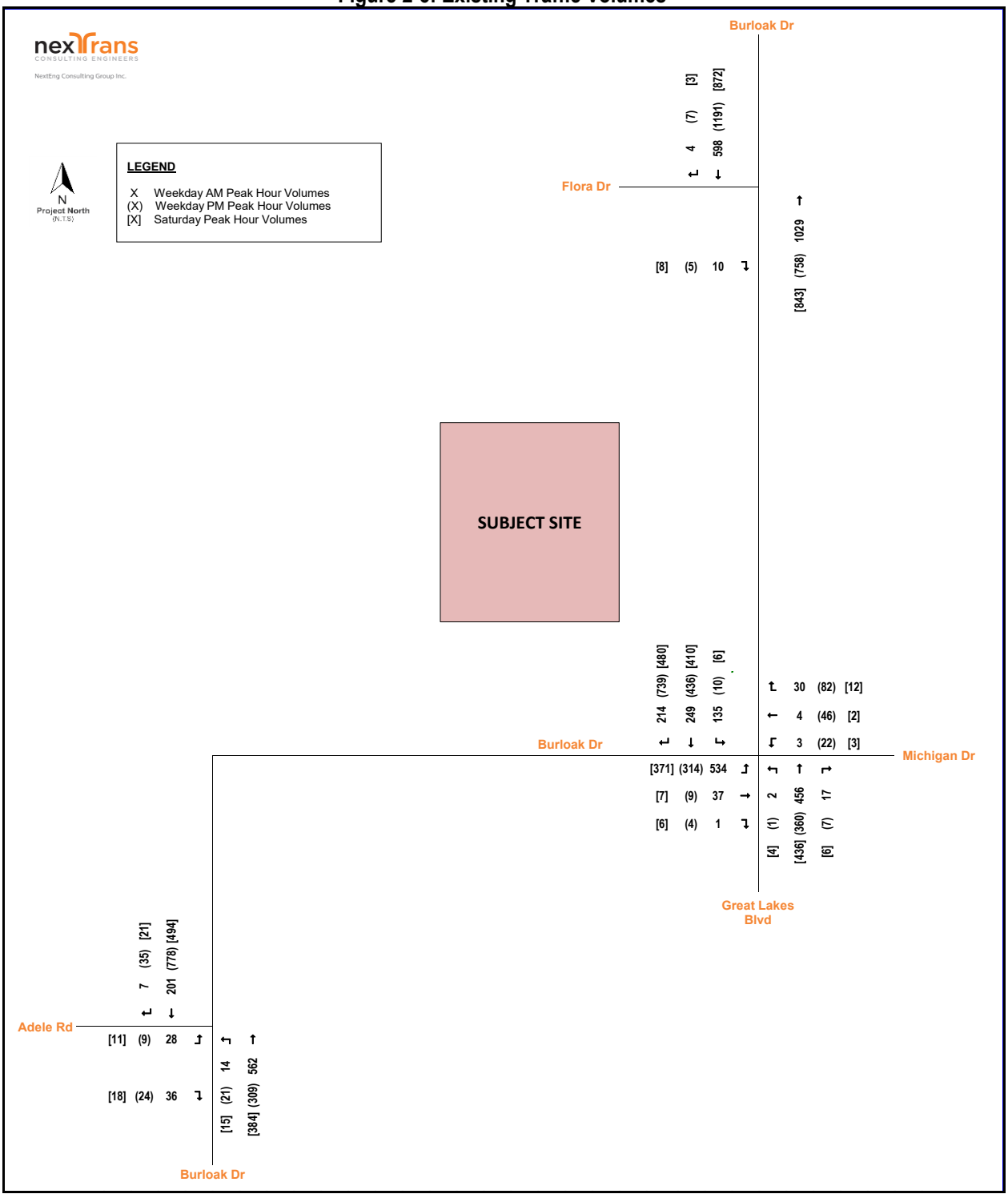


Table 2-3: Existing Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour				Weekday PM Peak Hour				Saturday Peak Hour				Estimated Turning Storage Length
		Delay (s)	95th Queue (m)	V/C	LOS	Delay (s)	95th Queue (m)	V/C	LOS	Delay (s)	95th Queue (m)	V/C	LOS	
Signalized Intersections														
3: Great Lakes Blvd & Burloak Dr & Michigan Dr	**Overall**	**41**	**-**	**0.51**	**D**	**42**	**-**	**0.47**	**D**	**40**	**-**	**0.41**	**D**	**-**
	EBL	42	70	0.62	D	36	46	0.35	D	37	53	0.40	D	-
	EBTR	9	14	0.04	A	9	6	0.01	A	9	5	0.01	A	50
	WBL	32	4	0.01	C	33	15	0.06	C	32	4	0.01	C	-
	WBTR	32	14	0.03	C	34	39	0.18	C	32	10	0.01	C	-
	NBL	32	5	0.01	C	32	3	0.01	C	32	7	0.04	C	65
	NBTR	38	68	0.54	D	36	53	0.39	D	37	60	0.46	D	-
	SBL	78	76	0.88	E	32	26	0.05	C	32	7	0.03	C	115
	SBT	39	72	0.54	D	60	122	0.89	E	51	111	0.81	D	-
	SBR	34	26	0.16	C	40	126	0.56	D	35	46	0.32	D	-
Unsignalized Intersections														
1: Burloak Dr & Adele Rd	EBLR	12	15	0.13	B	20	15	0.13	C	14	13	0.07	B	-
	NBLT	1	4	0.01	A	2	16	0.03	A	1	8	0.02	A	-
5: Burloak Dr & Flora Dr	EBR	11	8	0.02	B	14	8	0.01	B	12	8	0.01	B	-

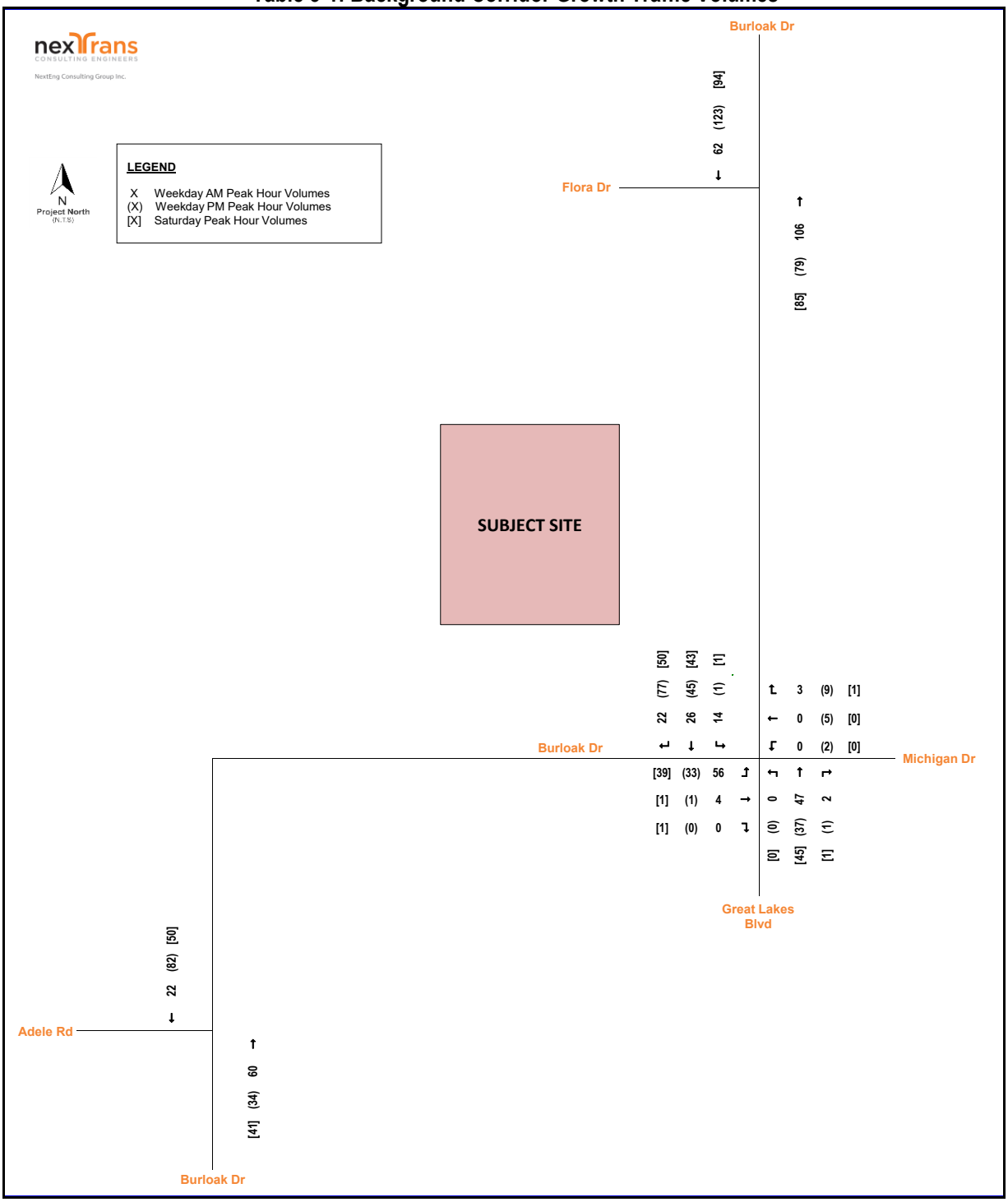
Under the existing condition for the weekday AM and PM peak hours and Saturday peak hour, all studied intersection movements operate within capacity and acceptable levels of service. However, it is noted that at the Burloak Drive / Great Lakes Boulevard / Michigan Drive intersection, the southbound left turn lane operates with a v/c ratio of 0.88 and LOS E in the weekday AM peak hour and the southbound through movement operates with a v/c ratio of 0.89 and LOS E in the weekday PM peak hour. The 95th percentile queue lengths for all studied movements can be accommodated by the existing turning lane storage lengths in all peak hours.

3.0 FUTURE BACKGROUND TRAFFIC CONDITIONS

3.1. CORRIDOR GROWTH

A conservative 2.0% per annum compounded growth rate was applied to the minor arterial roads (Burloak Drive, Great Lakes Boulevard, Michigan Drive). No growth was applied to Adele Road and Flora Drive as the foregoing are local roads and service the built out residential subdivision west of the subject site. **Table 3-1** illustrates the traffic volumes expected from background corridor growth onto the studied intersections.

Table 3-1: Background Corridor Growth Traffic Volumes



3.2. BACKGROUND DEVELOPMENTS

Table 3-2 summarizes the background developments that were identified based on a review of the Town's development applications. **Figure 3-1** illustrates the location of the included background developments relative to the subject site. **Figure 3-2** provides the background development traffic volumes within the intersection study area.

Table 3-2: Summary of Background Developments

No.	Development	Description / Statistics	Source (Date)
1	Self-Storage Development (Superior Court and Burloak Drive)	Self-storage and industrial warehouse development proposed along Burloak Drive located immediately south of Metrolinx railway corridor and north of Superior Court. Self-storage GFA of 190,747 sqft and warehouse GFA of 10,764 sqft.	Paradigm Transportation Study (November 2023)
2	3300 Superior Court	Precast concrete manufacturing building that consists of 6,909.22 sqm of GFA.	RJ Burnside Transportation Study (August 2024)

Figure 3-1: Map of Background Developments

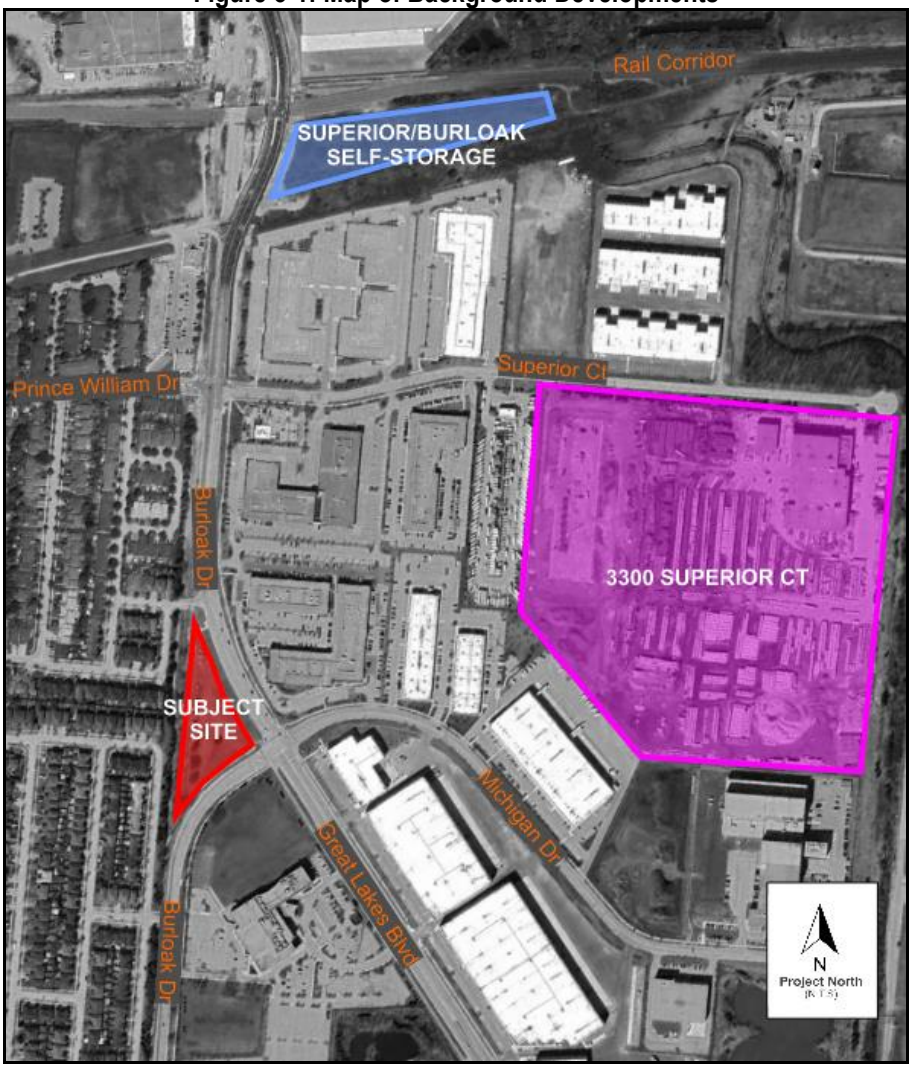
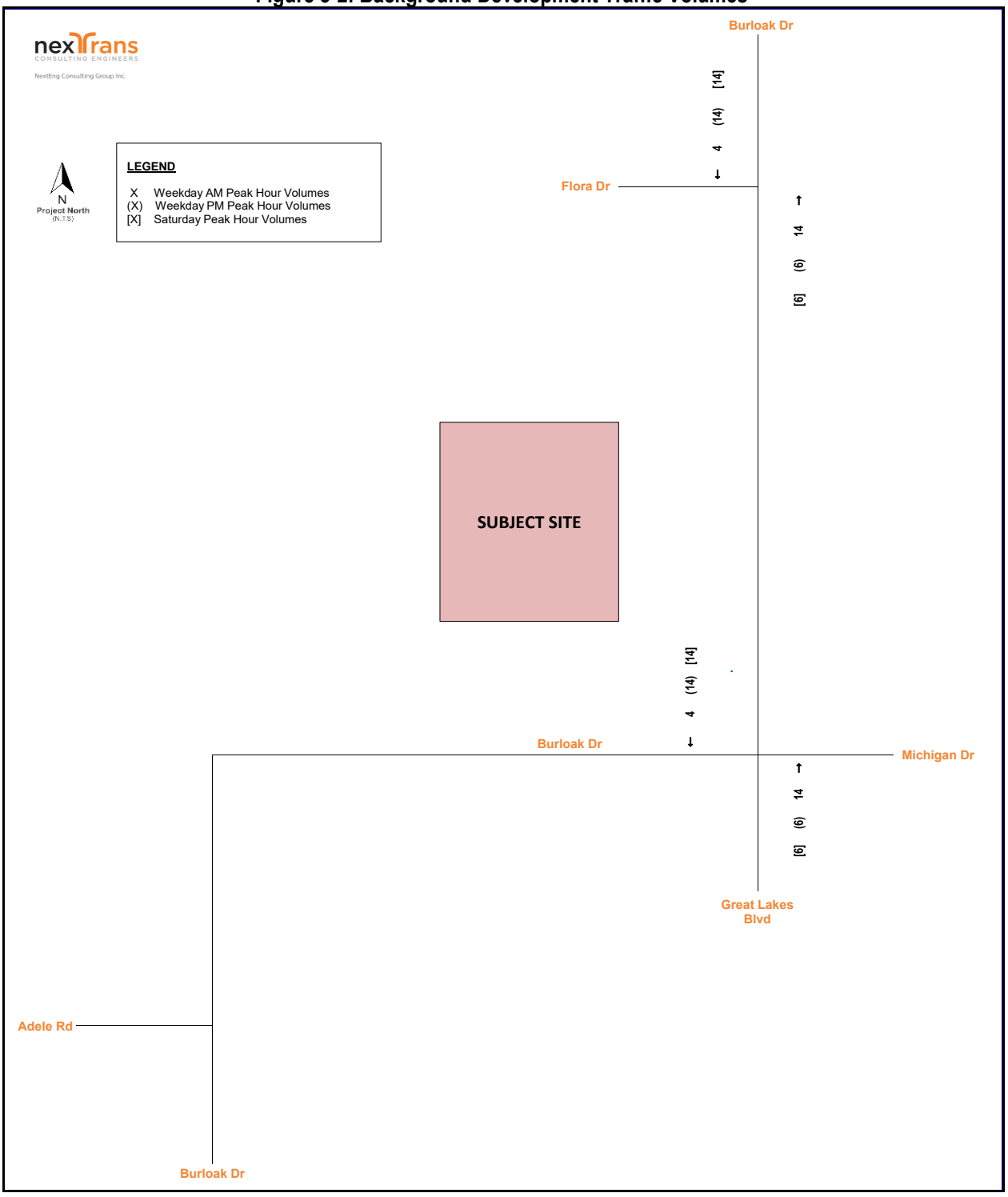


Figure 3-2: Background Development Traffic Volumes



3.3. FUTURE BACKGROUND INTERSECTION CAPACITY ANALYSIS

Figure 3-3 illustrates the future background traffic volumes for the five-year horizon of 2030. **Table 3-3** summarizes the future background intersection capacity analysis results. Detailed Synchro and SimTraffic results are enclosed in **Appendix D**.

Figure 3-3: Future Background Traffic Volumes

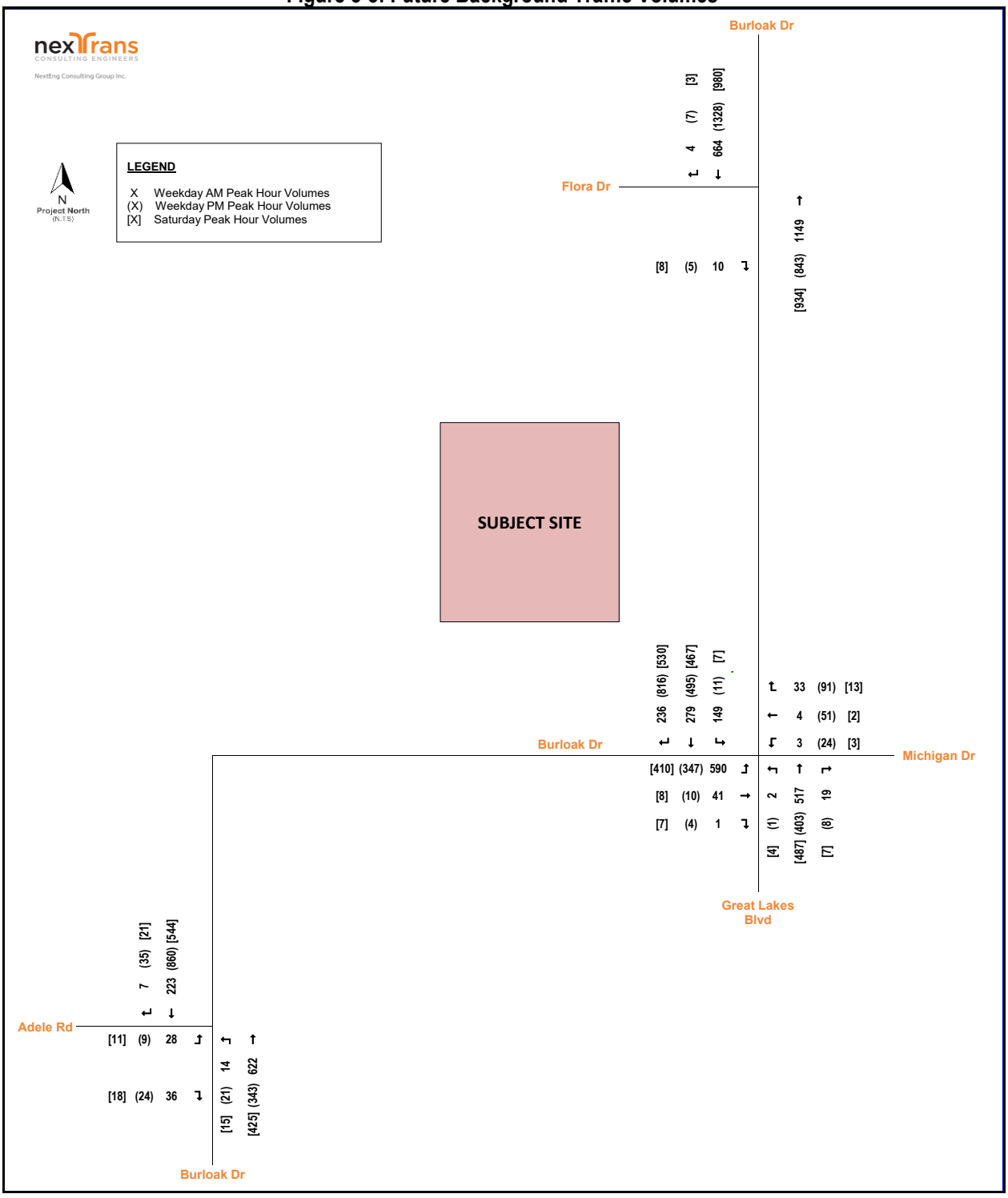


Table 3-3: Future Background Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour				Weekday PM Peak Hour				Saturday Peak Hour				Estimated Turning Storage Length
		Delay (s)	95th Queue (m)	V/C	LOS	Delay (s)	95th Queue (m)	V/C	LOS	Delay (s)	95th Queue (m)	V/C	LOS	
Signalized Intersections														
3: Great Lakes Blvd & Burloak Dr & Michigan Dr	**Overall**	**50**	**-**	**0.63**	**D**	**52**	**-**	**0.53**	**D**	**44**	**-**	**0.46**	**D**	**-**
	EBL	43	80	0.68	D	37	51	0.38	D	38	55	0.44	D	-
	EBTR	10	14	0.04	A	9	8	0.01	A	9	7	0.01	A	50
	WBL	32	4	0.01	C	33	13	0.07	C	32	3	0.01	C	-
	WBTR	32	17	0.04	C	35	35	0.21	C	32	10	0.01	C	-
	NBL	32	4	0.01	C	32	3	0.02	C	33	8	0.06	C	65
	NBTR	40	72	0.61	D	37	58	0.44	D	38	65	0.52	D	-
	SBL	169	117	1.16	F	33	49	0.06	C	32	19	0.04	C	115
	SBT	40	127	0.60	D	87	127	1.01	F	66	128	0.93	E	-
	SBR	34	45	0.18	C	50	127	0.78	D	37	65	0.43	D	-
Unsignalized Intersections														
1: Burloak Dr & Adele Rd	EBLR	13	16	0.14	B	23	17	0.14	C	15	13	0.08	C	-
	NBLT	1	8	0.01	A	2	17	0.03	A	1	10	0.02	A	-
5: Burloak Dr & Flora Dr	EBR	11	8	0.02	B	15	23	0.01	B	12	8	0.02	B	-

Under the future background condition at the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive, the southbound left movement in the weekday AM peak hour and the southbound through movement in the weekday PM peak hour are expected to operate above capacity and poor level of service. The 95th queue length of the southbound left movement is expected to slightly exceed the estimated available storage length in the AM peak hour, but the minor spillover is expected to clear in the following cycle. The southbound through movement in the Saturday peak hour is expected to operate with a v/c ratio of 0.93 and LOS E. All other studied intersection movements are expected to operate with residual capacity, acceptable levels of service, and nominal 95th percentile queue lengths during all studied peak hours.

4.0 SITE TRAFFIC

The following section discusses the calculation, distribution, and assignment of trips generated by the subject site.

4.1. SITE TRIP GENERATION

The new vehicle trip generation for proposed development was derived from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition using land use code (LUC) 822 Strip Retail Plaza (<40k), for the weekday AM and PM peak hour of adjacent street and Saturday peak hour of generator based on the average rate given a low or no coefficient of determination value.

The average pass-by trip percentage for LUC 822 was derived from ITE Trip Generation Manual 11th Edition Appendices for pass-by data and rate tables and was applied to the ITE gross trips generated to determine pass-by trips generated by the subject site. The average pass-by trip rates used were 0% for the weekday AM peak hour, 40% for the weekday PM peak hour, and 31% for the Saturday peak hour.

Non-auto trips were determined using ITE Trip Generation Manual 11th Edition. For LUC 822, the weekday PM peak hour non-auto trip generation data was included within this study. Non-auto site trips for the weekday AM peak hour and Saturday peak hour were not included within this study as non-auto trip generation data is not available within ITE Trip Generation Manual 11th Edition for the foregoing peak hours.

A summary of the site trip generation is shown in **Table 4-1**.

Table 4-1: Site Trip Generation

Land Use Code	Magnitude	Parameter		Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
				In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way
LUC 822 Strip Retail Plaza (<40k)	34,671.31 sqft GFA	Auto	Trip Rate	1.41	0.95	2.37	3.29	3.29	6.58	3.35	3.23	6.58
			ITE Gross Trips	49	33	82	114	114	228	116	112	228
			Pass-By Trips (0% AM, 40% PM, 31% Saturday)	0	0	0	46	46	92	36	35	71
			Net New Trips	49	33	82	68	68	136	80	77	157
		Non-Auto	Trip Rate	0.00	0.00	0.00	0.29	0.26	0.55	0.00	0.00	0.00
			Non-Auto Trips	0	0	0	10	9	19	0	0	0
Net Total Trips (Auto and Non-Auto)				49	33	82	78	77	156	80	77	157

The proposed development is expected to generate the following.

- 82 net total two-way (auto and non-auto) trips (49 in, 33 out) in the weekday AM peak hour, 156 net total two-way trips (78 in, 77 out) in the weekday PM peak hour, and 157 net total two-way trips (80 in, 77 out) in the Saturday peak hour.
- 82 net new two-way auto trips (49 in, 33 out) in the weekday AM peak hour, 136 net new two-way auto trips (68 in, 68 out) in the weekday PM peak hour, and 157 net new two-way auto trips (80 in, 77 out) in the Saturday peak hour.
- 0 pass-by two-way auto trips (0 in, 0 out) in the weekday AM peak hour, 92 pass-by two-way auto trips (46 in, 46 out) in the weekday PM peak hour, and 71 pass-by two-way auto trips (36 in, 35 out) in the Saturday peak hour.
- 0 two-way non-auto trips (0 in, 0 out) in the weekday AM peak hour, 19 two-way non-auto trips (10 in, 9 out) in the weekday PM peak hour, and 0 two-way non-auto trips (0 in, 0 out) in the Saturday peak hour.

4.2. TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution of the auto site traffic volumes was derived from the trip distribution of the existing turning movement count data surveyed for the intersection study area. **Table 4-2** summarizes the directional distribution based on the existing traffic volumes. From the existing trip distribution, the site traffic volumes were assigned to the intersection study area based on engineering judgement, logical routing, and access restrictions. Pass-by trips were assumed for southbound trips along Burloak Drive for the north site access and westbound trips along Burloak Drive for the south site access based on the site access restrictions. **Figure 4-1**, **Figure 4-2**, and **Figure 4-3** illustrate the ITE gross auto site traffic volumes, pass-by site traffic volumes, and net total site traffic volumes, respectively.

It is noted that given the restricted site accesses (right-in/right-out for north site access and left-in/right-in/right-out for south site access), all outbound site trips headed north via Burloak Drive were assigned to exit the subject site from the north site access and perform a southbound U-turn at the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive.

Table 4-2: Trip Distribution

Direction (To/From)	Corridor (Via)	Weekday AM Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		In	Out	In	Out	In	Out
North	Burloak Dr	34%	59%	57%	36%	49%	46%
South	Burloak Dr	33%	14%	16%	38%	22%	28%
South	Great Lakes Blvd	27%	15%	18%	22%	25%	23%
East	Michigan Dr	2%	11%	7%	1%	1%	1%
West	Adele Rd	4%	0%	2%	3%	2%	2%
West	Flora Dr	1%	1%	0%	0%	0%	0%

Figure 4-1: Gross (ITE) Site Traffic Volumes

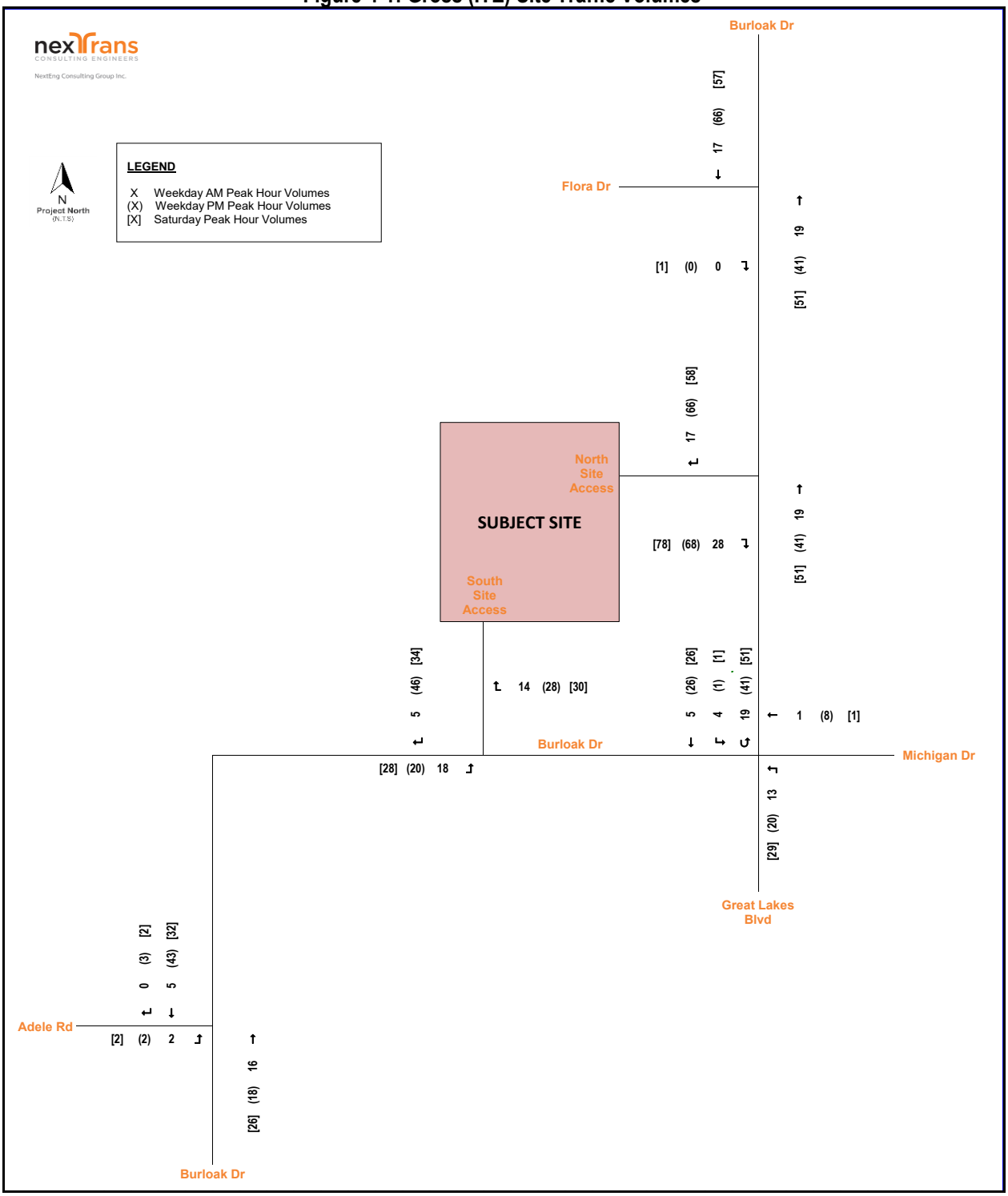


Figure 4-2: Pass-By Site Traffic Volumes

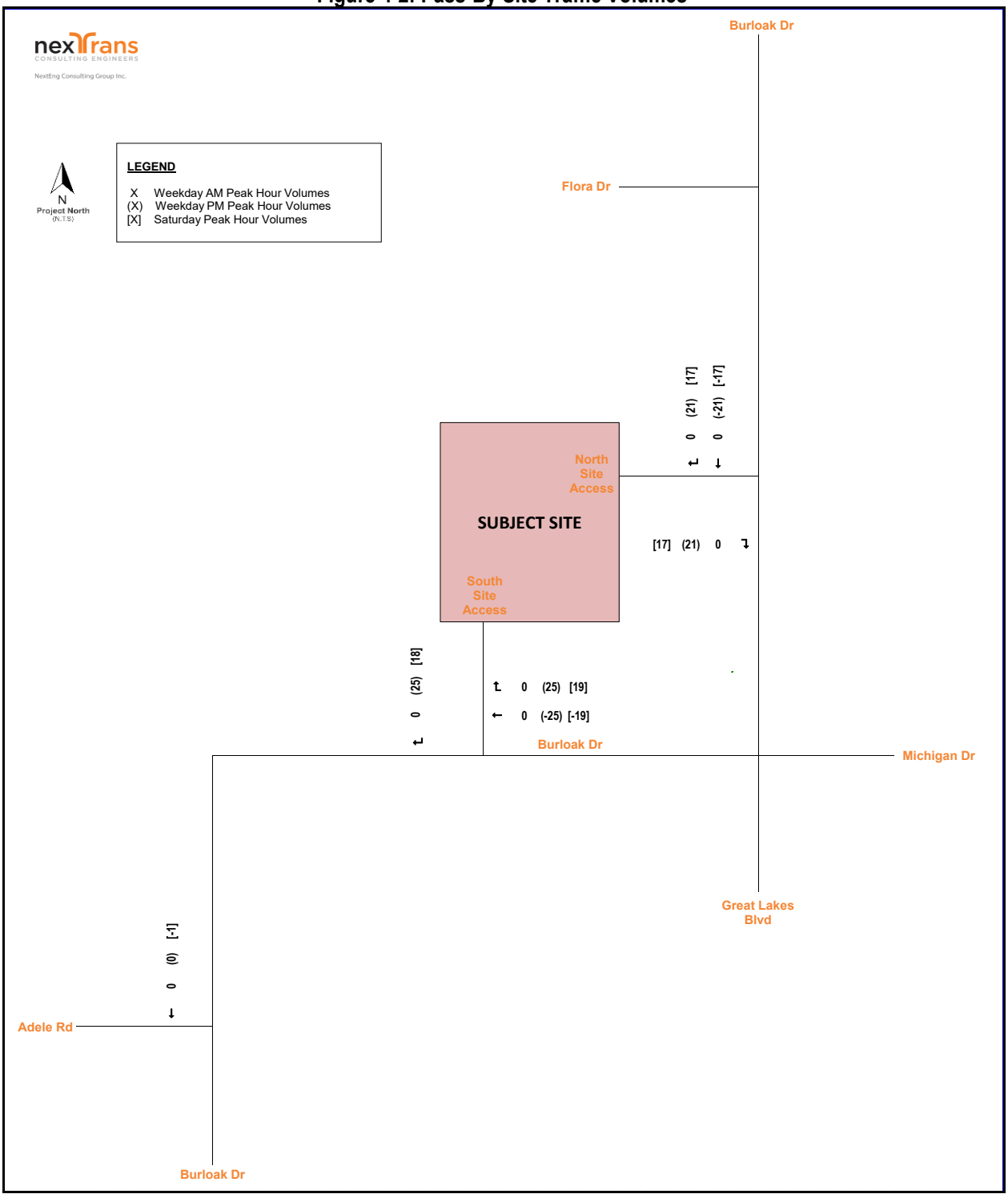
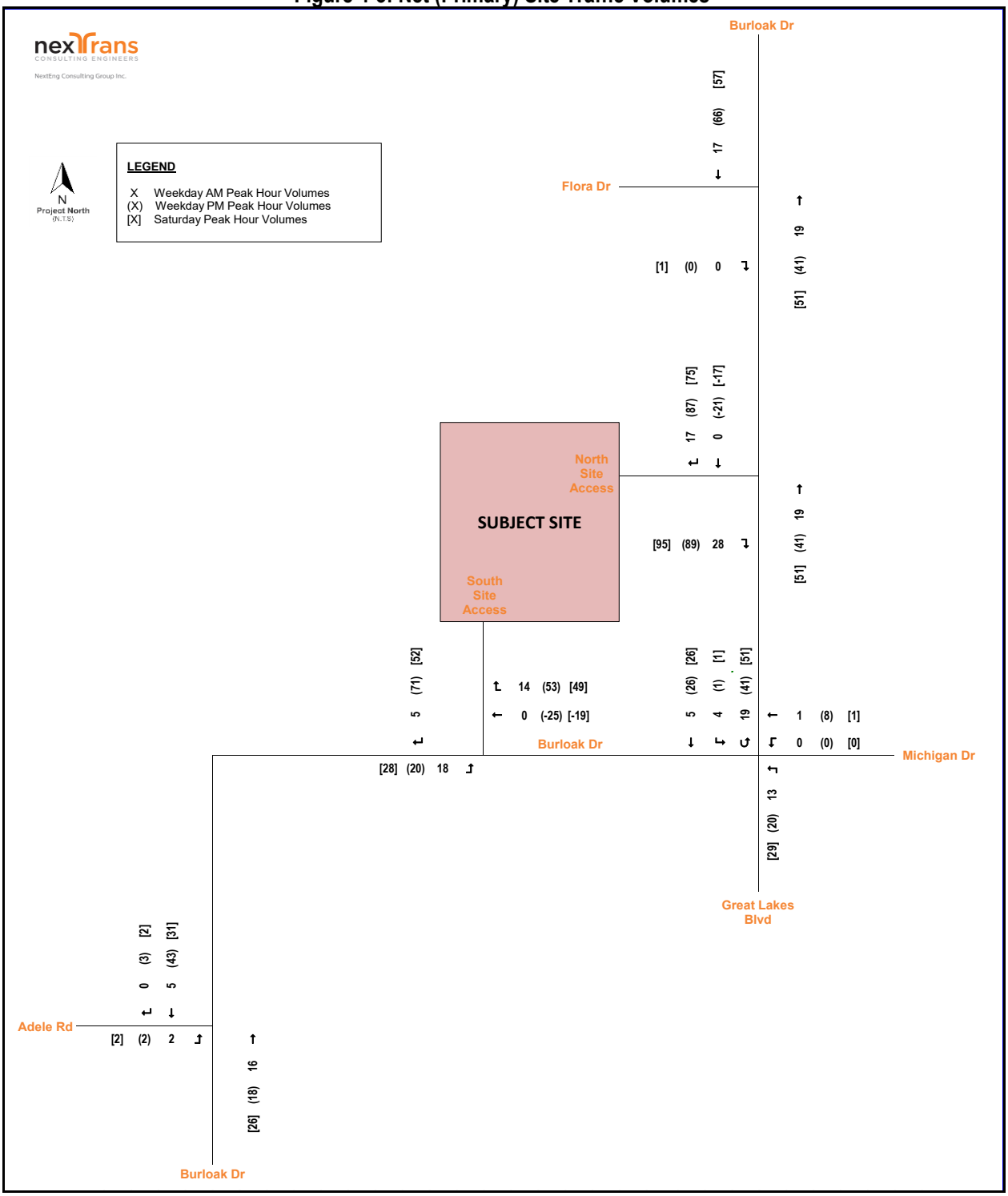


Figure 4-3: Net (Primary) Site Traffic Volumes



5.0 FUTURE TOTAL TRAFFIC CONDITIONS

The future total traffic conditions include existing traffic volumes, future background traffic volumes, and site-generated auto trips produced by the proposed development.

5.1. FUTURE TOTAL INTERSECTION CAPACITY ANALYSIS

The future total traffic volumes are illustrated in **Figure 5-1**. The results of the intersection capacity analysis under the future total conditions are summarized in **Table 5-1**. Detailed Synchro and SimTraffic results are available in **Appendix D**.

Figure 5-1: Future Total Traffic Volumes

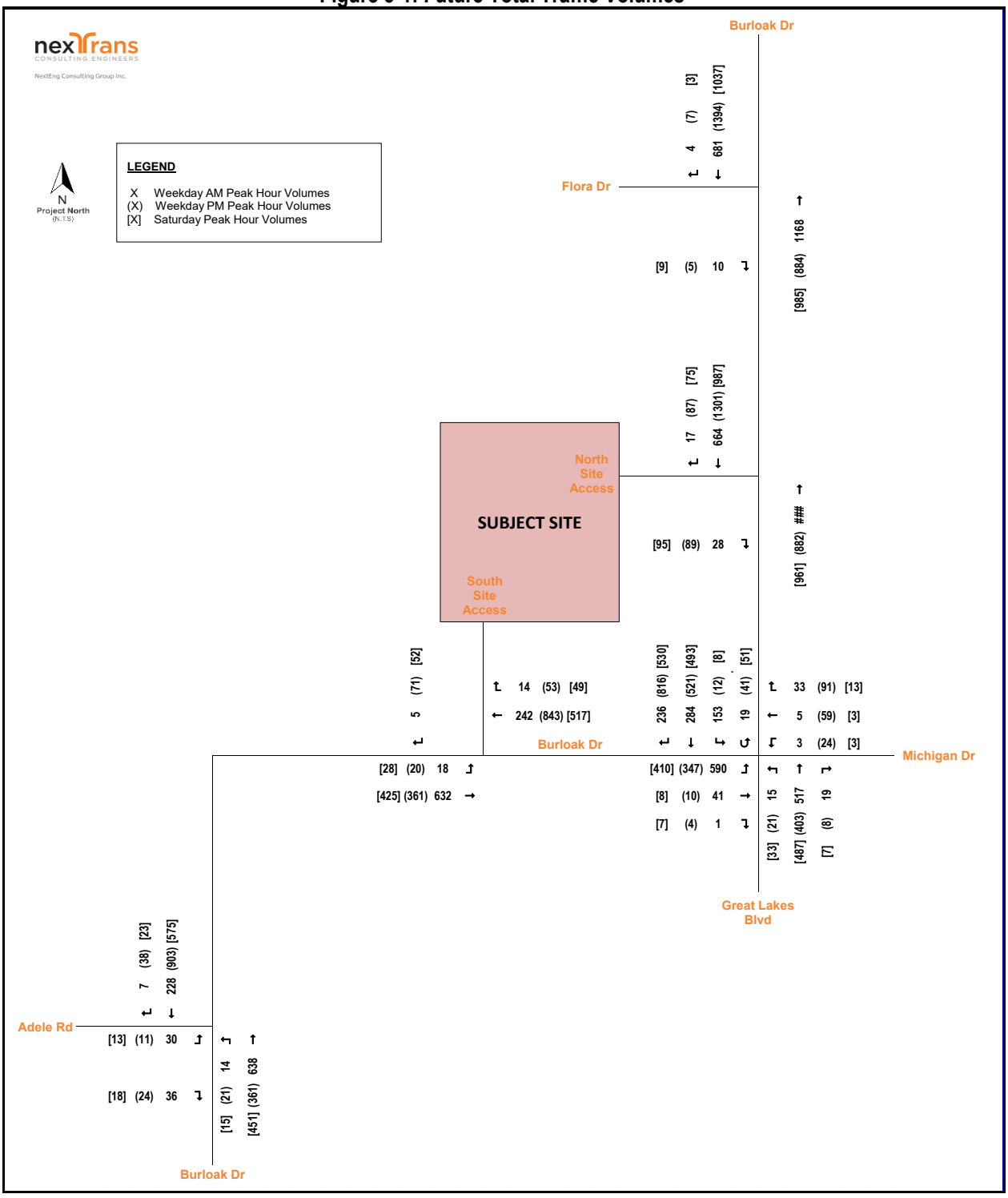


Table 5-1: Future Total Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour				Weekday PM Peak Hour				Saturday Peak Hour				Estimated Turning Storage Length
		Delay (s)	95th Queue (m)	V/C	LOS	Delay (s)	95th Queue (m)	V/C	LOS	Delay (s)	95th Queue (m)	V/C	LOS	
Signalized Intersections														
3: Great Lakes Blvd & Burloak Dr & Michigan Dr	**Overall**	**57**	**-**	**0.68**	**E**	**57**	**-**	**0.56**	**E**	**47**	**-**	**0.48**	**D**	**-**
	EBL	43	78	0.68	D	37	53	0.38	D	38	57	0.44	D	-
	EBTR	10	13	0.04	A	9	6	0.01	A	9	7	0.01	A	50
	WBL	32	5	0.01	C	33	14	0.07	C	32	4	0.01	C	-
	WBTR	32	17	0.04	C	35	43	0.24	D	32	11	0.01	C	-
	NBL	33	13	0.09	C	39	29	0.37	D	50	56	0.57	D	65
	NBTR	40	76	0.61	D	37	60	0.44	D	38	68	0.52	D	-
	SBUL	235	131	1.34	F	35	97	0.28	D	37	70	0.36	D	115
	SBT	41	153	0.61	D	102	125	1.07	F	78	130	0.98	E	-
	SBR	34	53	0.18	C	55	131	0.84	E	38	133	0.47	D	-
Unsignalized Intersections														
1: Burloak Dr & Adele Rd	EBLR	13	15	0.14	B	26	16	0.18	D	16	13	0.09	C	-
	NBLT	1	6	0.01	A	2	19	0.03	A	1	11	0.02	A	-
2: Burloak Dr & South Site Access	EBLT	1	8	0.02	A	2	15	0.03	A	2	12	0.03	A	
	SBR	10	2	0.01	A	24	14	0.29	C	14	5	0.12	B	
4: Burloak Dr & North Site Access	EBR	11	4	0.05	B	19	35	0.27	C	15	24	0.22	B	
5: Burloak Dr & Flora Dr	EBR	11	11	0.02	B	16	13	0.01	C	12	11	0.02	B	-

Under the future total condition and similar to the future background condition, at the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive, the southbound left movement in the weekday AM peak hour and the southbound through movement in the weekday PM peak hour is expected to operate above capacity with poor level of service. The 95th percentile queue length will continue to exceed the estimated turning lane storage length for the southbound left turn lane in the weekday AM peak hour. In the Saturday peak hour, the southbound through lane will continue to operate with LOS E and a v/c ratio of 0.98.

All other studied intersection movements, including movements introduced at the site accesses, are expected to operate with high residual capacity, acceptable levels of service, and acceptable 95th percentile queue lengths in the weekday AM and PM peak hours and Saturday peak hours.

6.0 MITIGATION MEASURES AND RECOMMENDATIONS

Mitigation measures were applied to the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive for the weekday AM, weekday PM, and Saturday peak hours of the future background and future total conditions, to improve traffic operations based on optimized signal split timings. The split timing optimization was undertaken for the future total condition and carried through to the future background condition. **Figure 6-1** shows the current signal timing splits and recommended optimized signal timing splits for each studied peak hour for the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive. **Table 6-1** summarizes the intersection capacity analysis results for the future background and future total conditions with optimized split timings for the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive.

Figure 6-1: Recommended Signal Timing Plan Splits

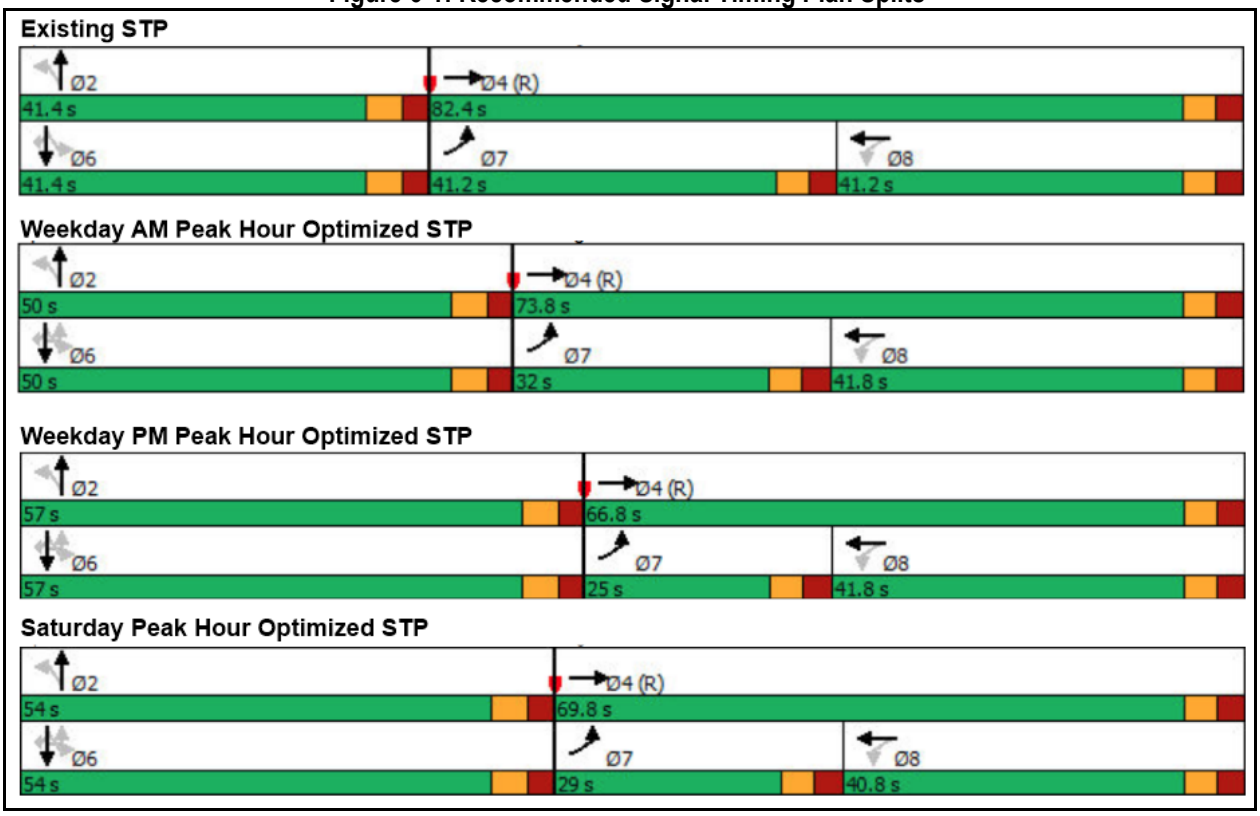


Table 6-1: Optimized Future Background and Future Total Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour				Weekday PM Peak Hour				Saturday Peak Hour				Estimated Turning Storage Length
		Delay (s)	95th Queue (m)	V/C	LOS	Delay (s)	95th Queue (m)	V/C	LOS	Delay (s)	95th Queue (m)	V/C	LOS	
3: Great Lakes Blvd & Burloak Dr & Michigan Dr	Future Background (Optimized)													
	Overall	**43**	**-**	**0.59**	**D**	**37**	**-**	**0.53**	**D**	**38**	**-**	**0.46**	**D**	**-**
	EBL	53	89	0.81	D	46	58	0.52	D	43	59	0.51	D	-
	EBTR	12	15	0.04	B	13	9	0.01	B	11	8	0.01	B	50
	WBL	32	4	0.01	C	32	17	0.06	C	32	4	0.01	C	-
	WBTR	32	16	0.03	C	34	37	0.20	C	32	9	0.01	C	-
	NBL	28	3	0.01	C	26	3	0.01	C	29	6	0.03	C	65
	NBTR	35	67	0.53	C	30	52	0.36	C	33	62	0.45	C	-
	SBL	83	91	0.91	F	27	9	0.04	C	29	8	0.03	C	115
	SBT	35	84	0.53	D	45	112	0.82	D	46	114	0.81	D	-

	SBR	30	30	0.18	C	34	122	0.56	C	32	49	0.35	C	-
	Future Total (Optimized)													
	Overall	46	-	0.63	D	37	-	0.56	D	38	-	0.48	D	-
	EBL	60	87	0.87	E	48	62	0.54	D	44	65	0.53	D	-
	EBTR	12	13	0.04	B	13	8	0.01	B	12	10	0.01	B	50
	WBL	32	4	0.01	C	32	15	0.06	C	32	5	0.01	C	-
	WBTR	32	17	0.04	C	35	41	0.24	C	32	12	0.02	C	-
	NBL	28	12	0.06	C	28	33	0.20	C	33	25	0.33	C	65
	NBTR	33	68	0.51	C	29	50	0.35	C	33	61	0.44	C	-
	SBL	97	86	0.97	F	28	41	0.20	C	31	52	0.28	C	115
	SBT	34	92	0.51	C	45	119	0.84	D	47	112	0.83	D	-
	SBR	29	34	0.18	C	34	141	0.59	C	32	66	0.35	C	-

With optimized timing splits, the traffic operations for the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive are expected to improve in all peak hours for both the future background and future total conditions, with all movements expected to operate within capacity.

For the future background and future total condition, the southbound left movement in the weekday AM peak hour will improve from overcapacity in the base scenarios to operating with residual capacity from the optimized split timings. Although still high and typical of major urban intersections, the delay time for the southbound left movement will significantly improve and 95th percentile queue lengths will be accommodated by the available storage length in the weekday AM peak hour. The southbound through movement in the weekday PM peak hour and Saturday peak hour are expected to have greater residual capacity than the base scenarios and operate with acceptable level of service of LOS D.

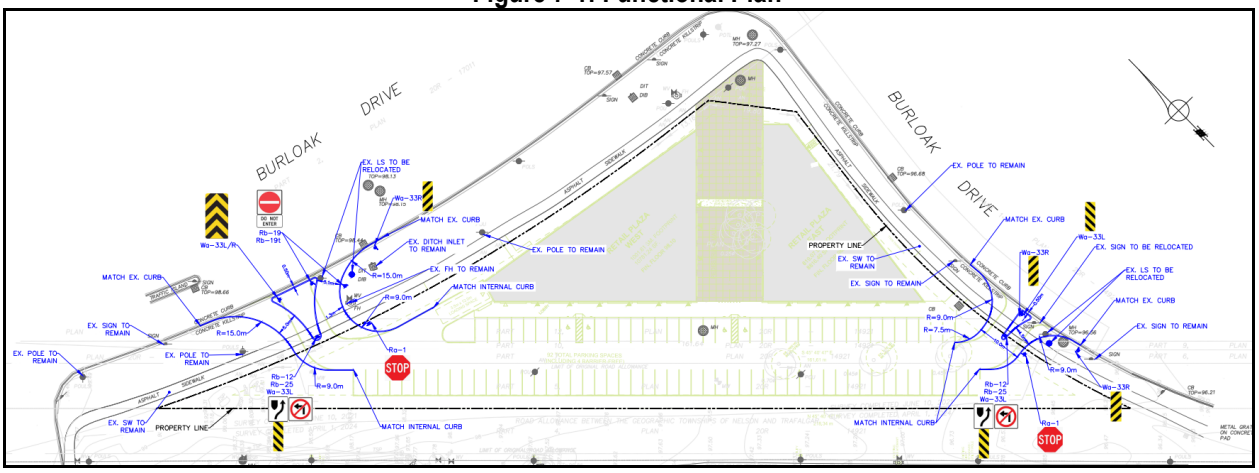
On this basis, signal timing optimization is recommended for the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive to improve traffic operations for the studied peak hour future background and future total conditions. The Town is recommended to monitor and modify the signal timing splits as necessary with the increase in general traffic growth in the area and build-out of the subject development and other nearby developments.

7.0 SITE PLAN REVIEW

7.1. ACCESS FUNCTIONAL PLAN

The north site driveway access and south site driveway access will be restricted to right-in/right-out and left-in/right-in/right-out movements, respectively. On this basis, a conceptual Functional Plan was prepared by Nextrans for the geometric design configuration of the north site driveway access and the south site driveway access. **Figure 7-1** illustrates the Functional Plan, which is enclosed in **Appendix E**.

Figure 7-1: Functional Plan



Both site accesses are restricted with traffic directional islands at the driveway entrances with accommodating posted signage. Based on Nextrans' review of the existing conditions on Burloak Drive, the extension of the existing centre raised median along Burloak Drive at the north access is not feasible as the extension would significantly reduce the storage length of southbound left turn lane. The south access is proposed with a left-in movement to provide increased access to the subject site in lieu of limiting access to only right-in/right-out movements. The accesses were confirmed to be accessible to the largest design vehicles (aerial fire truck, medium single-unit truck) from an AutoTURN vehicle swept path analysis.

7.2. VEHICULAR SITE CIRCULATION

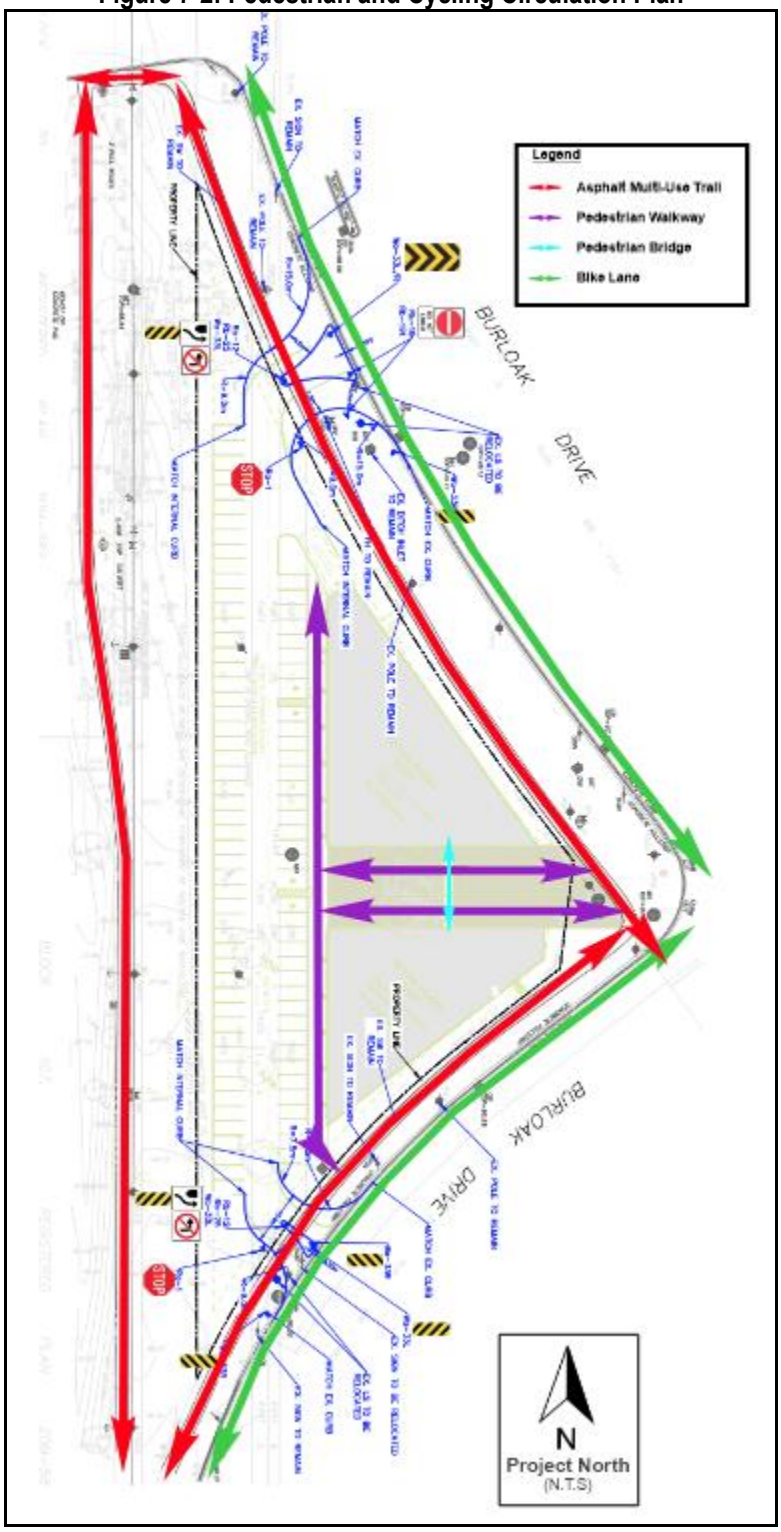
A vehicle swept path analysis using AutoTURN was prepared to determine the functionality of the subject site for vehicle access of design vehicles intended to access the subject site, including the site driveway accesses, loading spaces, drive aisles and parking spaces. The swept path analysis demonstrated that the following design vehicles can access and circulate the subject site without functional conflict. Vehicle movement diagrams are enclosed in **Appendix F**.

- NCHRP Report 659 (aerial fire truck)
- MSU TAC-2017 (medium single-unit truck)
- P TAC-2017 (large passenger car)

7.3. PEDESTRIAN AND CYCLING CIRCULATION PLAN

A Pedestrian and Cycling Circulation Plan was prepared to highlight the dedicated pedestrian and cycling routes within the subject site which will provide active transportation connectivity and accessibility and is illustrated in **Figure 7-2**.

Figure 7-2: Pedestrian and Cycling Circulation Plan



Internal to the subject site are pedestrian walkways that will connect to the adjacent existing multi-use trails and bike lanes along Burloak Drive. A wide pedestrian mall will connect to the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive. A second storey pedestrian bridge will connect both subject buildings.

7.4. LOADING SPACE REVIEW

As per the Town of Oakville Zoning By-law 2014-014, Section 5.6, there are no minimum number of loading spaces required. Notwithstanding, the zoning by-law requires that any loading space provided shall have dimensions of 3.5m by 12m. The development proposes one loading space with 3.5m by 12m in dimensions that will abut the north subject building.

7.5. ACCESS CORNER CLEARANCE

Corner clearance was reviewed, based on Chapter 8.8 within Transportation Association Canada (TAC) 2017 Geometric Design Guide for Canadian Roads (GDGCR), for the proposed north site driveway access and south site driveway access, relative to the adjacent signalized intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive. Corner clearance is the distance between the near curb of a roadway intersection and near edge of a driveway throat. Figure 8.8.2 within TAC 2017 provides suggested minimum corner clearances to accesses at major intersections. However, these suggested minimum clearances are based on a operating speed of 50km/h. Per Section 8.8.2 of TAC 2017, corner clearances may also be warranted by the estimated queueing at the intersection. On this basis, at the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive, the corner clearances were determined from the longest 95th percentile queue length for the southbound movements along Burloak Drive / Great Lakes Boulevard (for the north site access) and the eastbound movements along Burloak Drive / Michigan Drive (for the south site access) for all studied peak hours in the future total condition with recommended optimized signal timing splits. **Table 7-1** summarizes the corner clearance requirements for the foregoing driveway accesses.

Table 7-1: Corner Clearance Review

Proposed Site Access	Adjacent Intersection	Suggested Corner Clearance Required	Actual Distance	Corner Clearance Met?
North Site Access	Burloak Drive / Great Lakes Boulevard / Michigan Drive	92m	~115m	**Yes**
South Site Access		87m	~94m	**Yes**

Based on the above, the *suggested* corner clearance requirements based on TAC and the expected 95th percentile queue lengths for the noted site accesses relative to the adjacent intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive are met.

7.6. SIGHTLINE ANALYSIS

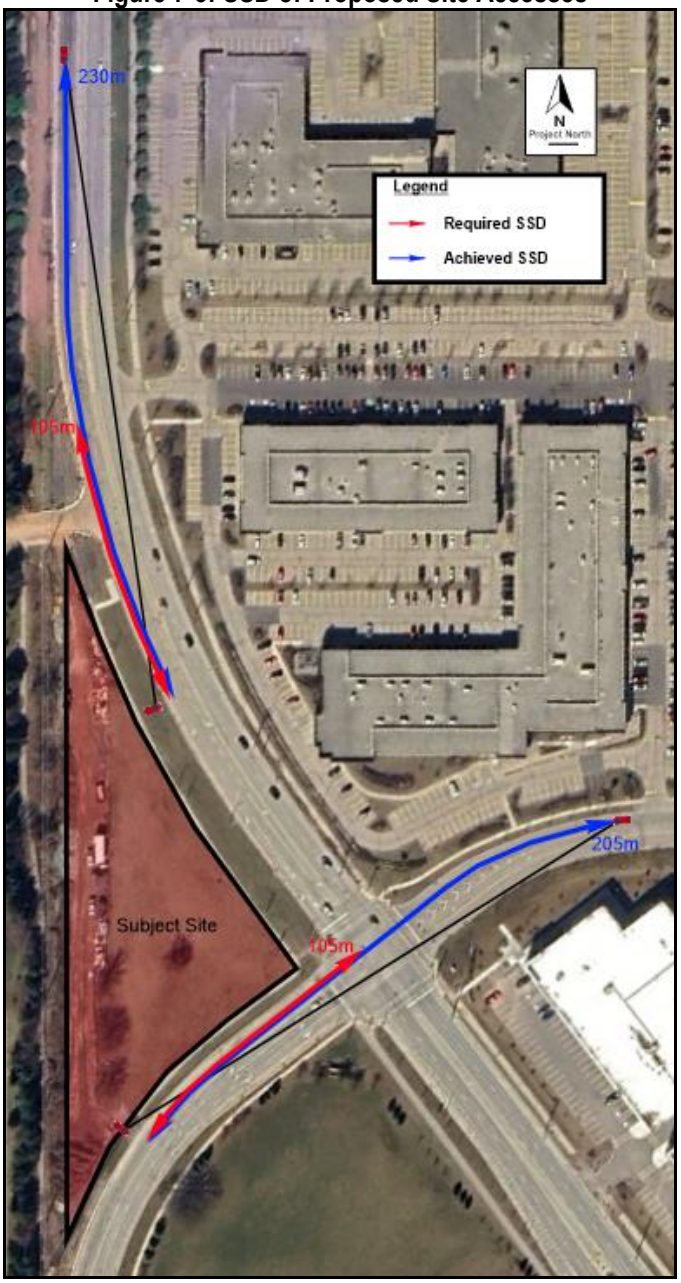
A sightline analysis for stopping sight distance was prepared based on 2017 Transportation Association Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR) for the proposed north and south site driveway accesses along Burloak Drive. Actual sight distances approaching the proposed site access were determined through a recent site visit. A summary of the sight distance assessment is provided in **Table 2**. Stopping sight distances are illustrated in **Figure 7-3**.

Sight distance requirements were considered for passenger vehicles approaching the proposed north site access and proposed south site access. For the purpose of sight distance assessment, a design speed of 70 km/h (posted speed limit of 60km/h plus 10 km/h) was considered along Burloak Drive. Burloak Drive nearby the subject site was observed to be relatively flat, with no considerable grade. As such, a level grade was assumed for calculations. Based on 2017 TAC GDGCR Table 2.5.2, the required stopping sight distance (SSD) for the north approach (headed southbound along Burloak Drive towards the north site access) and the east approach (headed westbound along Michigan Drive / Burloak Drive towards the south site access) is each 105m.

Table 2: Sight Distance Assessment Summary

Site Access	Approach	Stopping Sight Distance		
		Required	Achieved	Sufficient Distance?
North Access	North	105m	~205m	Yes
South Access	West	105m	~230m	Yes

Figure 7-3: SSD of Proposed Site Accesses



Map Source: Google Earth

Based on the foregoing, the achieved stopping sight distance exceeds the required stopping sight distance for the north approach along Burloak Drive for the north site access and the east approach along Michigan Drive / Burloak Drive for the south site access. On this basis, the achieved stopping sight distances for the site accesses are sufficient.

8.0 PARKING REVIEW

8.1. PROPOSED PARKING PROVISION

The proposed development will provide 92 vehicular parking spaces, including 4 barrier-free spaces. A bicycle parking provision of 8 spaces will be provided.

8.2. VEHICULAR PARKING REVIEW

The proposed development is subject to the parking requirements of Town of Oakville Zoning By-law 2014-014. The subject site is proposed to be rezoned from E2 (Business Employment) to E4 (Business Commercial) as part of this ZBA Application. The lot will have a minimum of three premises, a minimum of two uses, a maximum of two storeys, and will not be a hotel. On this basis, the lesser of the sum total of the requirements for each of the component uses or a rate of 1.0 space per 40 sqm net floor area (NFA) is applicable for the subject development, as per Table 5.2.1 of Section 5.2.1 of Zoning By-law 2014-014. **Table 8-1** summarizes the minimum parking requirements of Town of Oakville Zoning By-law 2014-014.

Table 8-1: Summary of Vehicular Parking Review

NFA	Town of Oakville Zoning By-law 2014-014		Provided Spaces	Variance
	Parking Rate	Parking Required		
3,221.07sqm	Lesser of the sum total of the requirements for each of the component uses; or a rate of 1.0 space per 40 sqm NFA.	81	92	**+11**

The proposed parking provision of 92 spaces exceeds the zoning by-law minimum parking requirement of 81 spaces.

8.3. BARRIER-FREE PARKING REVIEW

The proposed development is subject to the barrier-free parking space requirements within Zoning By-law 2014-014. **Table 8-2** summarizes the barrier-free parking space requirement.

Table 8-2: Summary of Barrier-Free Parking Space Review

Total Spaces Provided	Town of Oakville Zoning By-law 2014-014		Barrier-Free Spaces Provided	Variance
	Parking Rate	Barrier-Free Spaces Required		
92	26-100 sp: 4% of total spaces provided.	4	4	-

Zoning By-law 2014-014 requires a minimum of 4 barrier-free spaces, including 2 Type A spaces and 2 Type B spaces. The subject development will meet the zoning by-law minimum requirement with a provision of 4 barrier-free spaces, including 2 Type A and 2 Type B spaces.

8.4. BICYCLE PARKING REVIEW

The proposed development is subject to the bicycle parking requirements of the Zoning By-law 2014-014, Section 5.3. A summary of the minimum bicycle parking spaces required and proposed bicycle parking supply for the subject site is provided in **Table 8-3**.

Table 8-3: Summary of Bicycle Parking Review

Use	NFA	Town of Oakville Zoning By-law 2014-014		Provided Spaces	Variance
		Parking Rate	Parking Required		
Retail	3,221.07sqm	Greater of 2sp or 1.0sp/1000sqm NFA	3	8	**+5**

The bicycle parking provision of 8 spaces exceeds the zoning by-law minimum bicycle parking requirement of 3 spaces.

9.0 TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation demand management (TDM) refers to variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system.

Potential TDM measures may include but are not limited to: TDM supportive land use, bicycle and pedestrian programs and facilities, public transit improvements, and carpooling.

9.1. TDM MEASURES

Based on Nextrans' review of the proposed development, the following TDM measures and incentives are recommended for the proposed commercial retail development.

- Provide a non-auto information package for new tenants/employees for the first year of build-out. The information package will include Oakville Transit schedules, Burlington Transit schedules, GO Transit schedules, and community and cycling maps. The information package can be distributed at the time of tenant leasing agreement for tenants to distribute to employees.
- Provide direct shared pedestrian/cycling connections from the subject site to the adjacent multi-use trails along Burloak Drive.
- Provide an on-site provision of 8 bicycle parking spaces.
- Provide an on-site bicycle repair station located nearby the bicycle parking provision.

These measures will be implemented through site plan submission, site plan agreement, and prior to tenant occupancy.

10.0 CONCLUSIONS AND RECOMMENDATIONS

The recommendations of this transportation impact study are summarized as follows:

- The proposed development is expected to generate the following.
  - 82 net total two-way (auto and non-auto) trips (49 in, 33 out) in the weekday AM peak hour, 156 net total two-way trips (78 in, 77 out) in the weekday PM peak hour, and 157 net total two-way trips (80 in, 77 out) in the Saturday peak hour.
  - 82 net new two-way auto trips (49 in, 33 out) in the weekday AM peak hour, 136 net new two-way auto trips (68 in, 68 out) in the weekday PM peak hour, and 157 net new two-way auto trips (80 in, 77 out) in the Saturday peak hour.
  - 0 pass-by two-way auto trips (0 in, 0 out) in the weekday AM peak hour, 92 pass-by two-way auto trips (46 in, 46 out) in the weekday PM peak hour, and 71 pass-by two-way auto trips (36 in, 35 out) in the Saturday peak hour.
  - 0 two-way non-auto trips (0 in, 0 out) in the weekday AM peak hour, 19 two-way non-auto trips (10 in, 9 out) in the weekday PM peak hour, and 0 two-way non-auto trips (0 in, 0 out) in the Saturday peak hour.
- Based on the intersection capacity analysis, all unsignalized intersection movements are expected to operate at acceptable levels of service in the weekday AM, weekday PM, and Saturday peak hours for the existing, future background, and future total conditions.

  For the future background and future total conditions, the southbound left movement at the signalized intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive are expected to operate with high delay, queues, and overcapacity in the weekday AM peak hour, while the southbound through movement is expected to operate with high delay and near or over capacity for the weekday PM and Saturday peak hours. Notwithstanding, with signal timing optimization, the intersection movements are expected to operate within capacity with improved queues and delay.

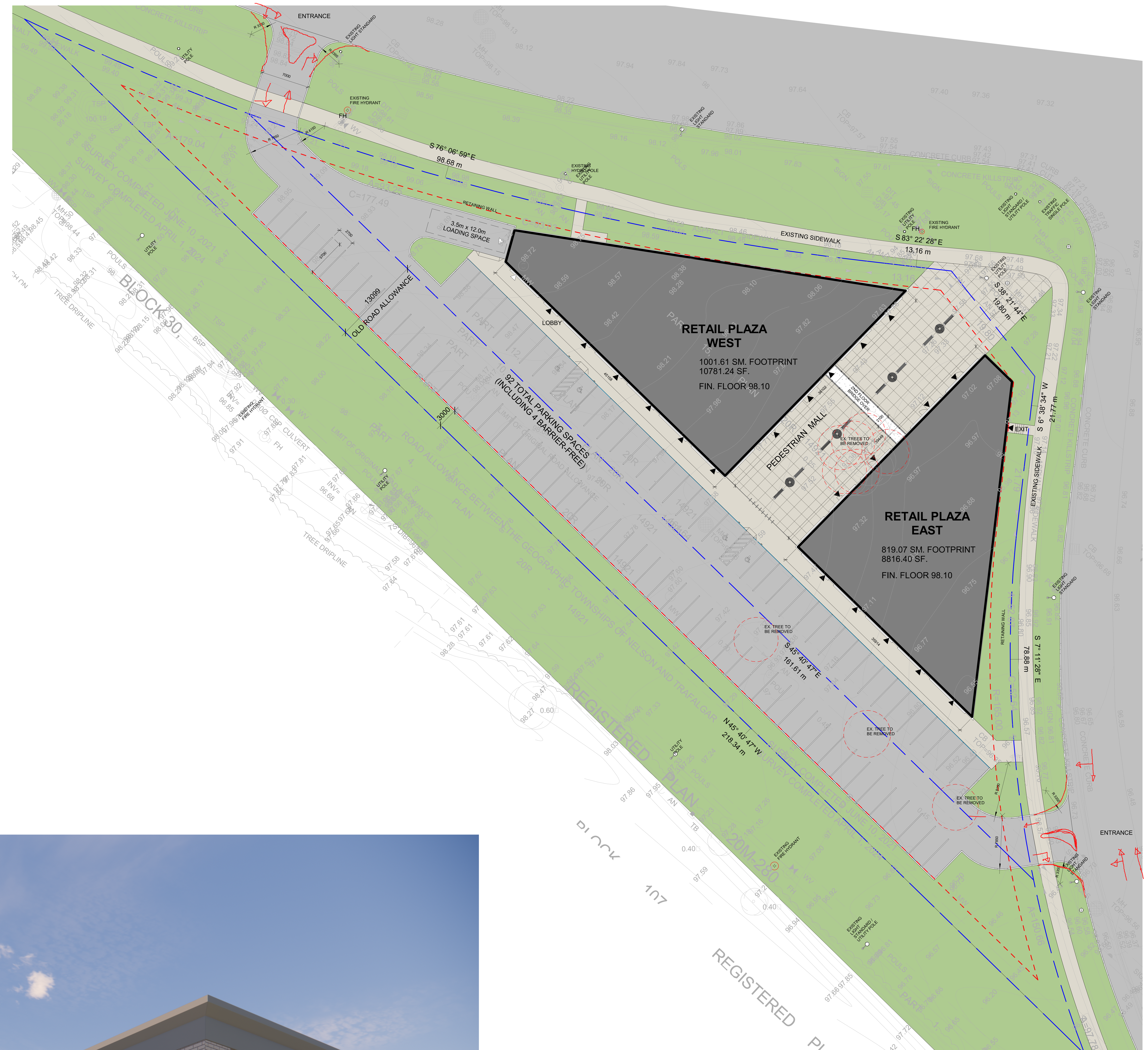
  The recommended mitigation measures have been provided for the future background and future total conditions.
- A complete active transportation network is available within the surrounding area to the subject site, including paved multi-use trails, sidewalks, and on-street bike lanes. No further external improvements within the study area are necessary.
- Based on the vehicle parking assessment through the requirements of the Town of Oakville Zoning By-law 2014-014, the provision of 92 parking spaces exceeds the requirement of 81 spaces.
- Based on the barrier-free parking assessment through the requirements of the Town of Oakville Zoning By-law 2014-014, the provision of 4 barrier-free parking spaces meets the zoning by-law requirement.
- Based on the bicycle parking assessment through the requirements of the Town of Oakville Zoning By-law 2014-014, the provision of 8 bicycle parking spaces exceeds the requirement of 3 spaces.
- Based on the loading space assessment through the requirements of the Town of Oakville Zoning By-law 2014-014, no loading space is required. However, one loading space will be provided that will service both subject buildings.
- Intended design vehicles (NCHRP Report 629 Aerial Fire Truck, MSU TAC-2017, P TAC-2017) can access the subject site without functional conflicts as demonstrated within the enclosed Vehicle Movement Diagrams based on the Functional Plan.
- The proposed development will facilitate pedestrian and cycling connectivity to the adjacent active transportation facilities along Burloak Drive as shown in the Pedestrian and Cycling Circulation Plan.
- The site driveway accesses meet the corner clearances suggested by TAC 2017 for the intersection of Burloak Drive / Great Lakes Boulevard / Michigan Drive.

- Based on the stopping sight distance assessment based on TAC 2017, the achieved stopping sight distances exceed the required stopping sight distances for both restricted site driveway accesses along Burloak Drive. On this basis, the achieved stopping sight distances for the site accesses are sufficient.
- A range of Transportation Demand Management (TDM) measures that target a reduction in single occupancy vehicle trips are recommended for the proposed development.

APPENDIX A

ARCHITECTURAL PLANS

KEY PLAN



SITE STATISTICS

LOT AREA	7,020.47 m²
BUILDING AREA (COVERAGE)	1,716.60 m²
1ST FL. NET AREA 2ND FL. NET AREA	1,584.56 m² 1,636.51 m²
TOTAL NET FLOOR AREA	**3,221.07 m²**
NUMBER OF STOREYS	2
FRONT SETBACK REAR SETBACK	3.0m (3.0m REQUIRED) 22.8m (7.5m REQUIRED)
LANDSCAPING AREA % LANDSCAPING AREA	1,628.40 m² 23.2%
USES	RETAIL, RESTAURANT, OFFICE

PARKING	REQUIRED	PROVIDED
NUMBER OF PARKING SPACES PROVIDED	1 SPACE PER 35m² NET FLOOR AREA = 92	92
NUMBER OF BARRIER FREE PARKING SPACES	4% OF PARKING SPACES = 4	4
NUMBER OF BICYCLE PARKING SPACES	2, PLUS 0.25 PER 1,000m² OF NET FLOOR AREA = 3	8
NUMBER OF LOADING SPACES	N/A	1

PARKING DIMENSIONS

STANDARD SPACE: 2.7m WIDTH x 5.7m LENGTH

BARRIER FREE TYPE A: 3.65m WIDTH x 5.7m LENGTH
BARRIER FREE TYPE B: 2.7m WIDTH x 5.7m LENGTH

A BARRIER-FREE PATH OF TRAVEL 1.5m IN WIDTH REQUIRED ABUTTING THE ENTIRE LENGTH OF THE BARRIER-FREE PARKING SPACE

LOADING SPACE: 3.5m WIDTH x 12.0m LENGTH x 4.2m HEIGHT

NET FLOOR AREA (Definition)

NET FLOOR AREA = THE TOTAL AREA OF ALL FLOORS OF A BUILDING MEASURED FROM THE INTERIOR FACES OF EXTERIOR WALL OR DEMISING WALLS, BUT DOES NOT INCLUDE THE AREAS OF:
STAIR WELLS
ELEVATORS
ESCALATORS
VENTILATING SHAFTS
ATTICS
CONCOURSES
WASHROOMS
ATTACHED ENCLOSED AND COVERED LOADING DOCKS AND RELATED
ENCLOSED CORRIDORS USED FOR LOADING PURPOSES
STORAGE ROOMS
GARBAGE CONTAINMENT ROOMS
MECHANICAL ROOMS

RZA
RICHARD ZIEGLER ARCHITECT INC.
39 POLSON STREET TORONTO, ONTARIO M5A 1A6
www.rzarchitect.com

NO.	ISSUANCE	DATE
01	ISSUED FOR PRE-CONSULTATION	2025.01.21

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT. DO NOT SCALE THE DRAWINGS. DO NOT USE THIS DRAWING FOR CONSTRUCTION UNLESS SIGNED AND SEALED BY THE ARCHITECT.

NORTH

STAMP

ONTARIO ASSOCIATION OF ARCHITECTS
RICHARD E. ZIEGLER
LICENCE
4462

BURLOAK PLAZA

Abdullah Al Eyadeh

580 Burloak Drive
Oakville Ontario

PRELIMINARY SITE PLAN

SCALE	As indicated	PROJECT NUMBER
DATE	2025-05-14 8:46:22 AM	202106
DRAWN	ID	
CHECKED	REZ	

SHEET: A100

REVISION

APPENDIX B

TIS TERMS OF REFERENCE

Outlook

RE: [EXTERNAL] NT-25-034 - TIS Terms of Reference - 580 Burloak Drive, Town of Oakville

From Syed Rizvi <syed.rizvi@oakville.ca>
Date Wed 2025-06-04 1:53 PM
To John Nhan <john@nextrans.ca>
Cc Richard Pernicky <richard@nextrans.ca>; Jason Pernicky <Jason@nextrans.ca>; Muhammad Imran <muhammad.imran@oakville.ca>

1 attachment (13 MB)
NT-25-075 - TIS Terms of Reference - 580 Burloak Drive.pdf;

Hi John,

The Transportation Impact Study (TIS) Terms of Reference have been reviewed by staff and the overall methodology is found to be acceptable.

However, as noted during the pre-consultation meeting and reiterated here, Transportation staff has significant concerns regarding the proposed access location on Burloak Drive. The access is situated along a horizontal curve, which presents geometric and operational safety concerns. Specifically, the curve may limit sight distance thereby increasing the potential for vehicular conflicts.

Given the constrained visibility envelope and the curvature-related risk factors, the proposed access location is not supported from a traffic safety and operational standpoint. It is recommended that alternative access configurations be explored along the site frontage, ideally situated along a tangent section of the roadway to optimize sight lines, enhance ingress/egress operations, and support safe and efficient traffic circulation within the site.

Please let us know if you have any questions or require further clarification.

Thanks,
Syed

Syed Rizvi, M.Sc., P. Eng
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext. 3981 | www.oakville.ca

From: Muhammad Imran <muhammad.imran@oakville.ca>
Sent: Tuesday, June 3, 2025 12:35 AM
To: 'John Nhan' <john@nextrans.ca>; Syed Rizvi <syed.rizvi@oakville.ca>
Cc: Richard Pernicky <richard@nextrans.ca>; Jason Pernicky <Jason@nextrans.ca>; Khalil Barakzai <Khalil.Barakzai@oakville.ca>
Subject: RE: [EXTERNAL] NT-25-034 - TIS Terms of Reference - 580 Burloak Drive, Town of Oakville

Hi John,

I'm copying Transportation Planning Team to review and provide comments.

Sincere Regards,

Muhammad Imran, M.Eng., P.Eng.

(905) 845- 6601 Ex. 2085

I'm sending this message now because it works for me, but please note that I do not expect a response outside of your normal working hours.

Muhammad Imran, **M.Eng, P.Eng**
Manager - Neighbourhood Traffic
Transportation and Engineering
Town of Oakville | 905-845-6601, ext. 2085 | www.oakville.ca

Vision: A vibrant and livable community for all
Please consider the environment before printing this email.
http://www.oakville.ca/privacy.html

From: John Nhan <john@nextrans.ca>
Sent: Tuesday, May 27, 2025 2:16 PM
To: Muhammad Imran <muhammad.imran@oakville.ca>
Cc: Richard Pernicky <richard@nextrans.ca>; Jason Pernicky <Jason@nextrans.ca>
Subject: [EXTERNAL] NT-25-034 - TIS Terms of Reference - 580 Burloak Drive, Town of Oakville

You don't often get email from john@nextrans.ca. Learn why this is important

Hi Muhammad,

Nextrans was retained to prepare a Transportation Impact Study in support of a Site Plan Application for a proposed mixed-use commercial plaza development at the property of 580 Burloak Drive in the Town of Oakville. The development proposes two buildings with a total net floor area of 3,221.07sqm (34,671sqft). Two full moves accesses are proposed onto Burloak Drive.

Please see the attached TIS Terms of Reference, for your review and comment.

Thanks!

Regards,

John Nhan, P.Eng.

Project Engineer

o: 905-503-2563 ext.223
e: john@nextrans.ca

w: www.nextrans.ca

NexTrans Consulting Engineers

A Division of NextEng Consulting Group Inc.

520 Industrial Parkway South, Suite 201

Aurora ON L4G 6W8

520 Industrial Parkway South, Suite 201
Aurora, Ontario L4G 6W8

Phone: 905-503-2563
www.nextrans.ca

NextEng Consulting Group Inc.

To: Muhammad Imran, Town of Oakville

From: John Nhan, Nextrans Consulting Engineers

Date: May 27, 2025

Re: **Terms of Reference – Transportation Impact Study**
Proposed Commercial Development
580 Burloak Drive, Town of Oakville
Our Project No.: NT-25-075

INTRODUCTION

We wish to confirm the following work plan for a Transportation Impact Study (TIS) in support of Site Plan Application for a proposed mixed-use commercial plaza development located at the intersection of Burloak Drive and Great Lakes Boulevard at the property of 580 Burloak Drive (herein referred to as the "subject site") in the Town of Oakville. **Figure 1** illustrates the subject site location. The site plan is enclosed in **Attachment 1**.

Figure 1: Subject Site Location

DEVELOPMENT PROPOSAL

The development proposes two (2) two-storey mixed-use commercial plaza buildings with a total net floor area of 3,221.07sqm (34,671sqft). A vehicular parking provision of 92 spaces will be provided, including four (4) accessible spaces. One (1) loading space will be provided. Two (2) site accesses will be provided, including two (2) full moves access onto Burloak Drive.

STUDY AREA & TRAFFIC DATA

The proposed intersection study area will include the analysis of the following intersections.

- Burloak Drive and Flora Drive (unsignalized)
- Burloak Drive and Adele Road (unsignalized)
- Burloak Drive / Michigan Drive and Great Lakes Boulevard / Burloak Drive (signalized)

A Turning Movement Count (TMC) survey of the studied intersections will be undertaken during one weekday during the AM and PM peak periods of 7:00am to 10:00am and 4:00pm to 7:00pm, respectively, and one Saturday during the peak period of 11:00am to 6:00pm. The peak hour traffic data captured from the foregoing peak periods will be used within the study.

TRAFFIC ASSESSMENT & STUDY HORIZON YEAR

The TIS for the proposed development will be conducted following the Region of Halton Traffic Impact Study Guidelines dated January 2015.

The study will assess the weekday AM, weekday PM, and Saturday peak hour traffic operations for the existing, future background, and future total conditions. Synchro 10 will be used for the intersection capacity analysis based on HCM 2000 methodology for signalized and unsignalized intersections. SimTraffic software will be used to assess the 95th percentile queue lengths.

Given the scale of the development, the following horizon years will be assessed within the study.

- Existing baseline year (2025)
- 5-year horizon (2030)

BACKGROUND TRAFFIC

General Corridor Growth Rate

Nextrans will consult with Town staff as necessary to determine corridor growth rates within the study area. If forecasted or historical traffic data is unavailable, a 2.0% per annum corridor growth rate will be applied, as applicable, to the study area roads.

Background Development Traffic

The following development applications have been identified to be considered as background development traffic volumes based on the Town's online development applications portal.

- Superior and Burloak Self Storage - Part 11 and 12, 20R-13957 - 1635.029/01
- 3300 Superior Court - 1634.011/01

Nextrans requests that the Town provide the relevant transportation studies of the identified development applications to include as background development traffic volumes within this study. Should the Town identify additional background developments for inclusion in this study, Nextrans also requests that the Town provide the relevant transportation studies.

TRIP GENERATION, DISTRIBUTION, & ASSIGNMENT

Trip Generation

Nextrans proposes to use the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition to determine the vehicular site traffic volumes generated from the proposed development onto the studied intersection road network.

Non-auto site-generated trips will be based on applicable non-auto trip generation data (transit, walking, cycling) from ITE Trip Generation Manual 11th Edition as available.

Trip Distribution and Assignment

The trip distribution for the subject site will be based on a review of existing traffic volume distribution patterns of the study area intersections from the surveyed TMC data given the mixed-use commercial nature of the development. Trip assignment will be completed accordingly to reflect the configuration of the proposed site accesses, turning restrictions, and logical routings.

MITIGATION MEASURES

Under future conditions, critical movements will be identified. Critical movements at signalized intersections include through movements or shared through/turning movements that operate at a v/c of 0.85 or above, exclusive movements that operate at a v/c of 0.95 or above, or movements with 95th percentile queues that exceed the storage length. Critical movements at unsignalized intersections include movements that exceed LOS D or movements with 95th percentile queues that exceed the storage length.

Remedial actions such as intersection road improvements (e.g. road widening, additional road lane) or signal timing split optimization (cycle length will remain unchanged) will be considered. If remedial measures are to be employed, a scenario will be provided demonstrating the change in intersection operations.

TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN

A review of existing nearby transportation facilities and possible initiatives and policies to promote and encourage modes of transportation in lieu of single occupant vehicle (SOV) trips will be made to influence the travel behaviour of employees and visitors to reduce SOV travel demand and create a more efficient transportation network. TDM measures that are recommended to be implemented for the subject site will be summarized.

SITE PLAN REVIEW

Vehicular Site Circulation

A vehicle swept path analysis will be undertaken using AutoTURN to confirm the on-site functionality of driveway entrances, drive aisles, parking spaces, loading spaces, etc., of the subject site for typical vehicles that are intended to access the subject site.

Pedestrian and Cycling Circulation Plan

A pedestrian and cycling circulation plan will be prepared to identify the existing active transportation facilities immediately adjacent to the subject site and the proposed pedestrian and cycling routes within the subject site.

PARKING AND LOADING REVIEW

Vehicular Parking

The study will provide a review of the proposed vehicular parking space provision and the minimum vehicular parking space requirements from the Town's Zoning By-Law 2014-014, as amended. Should there be a parking reduction from the zoning by-law minimum parking requirement, parking justification will be provided as part of the study.

Accessible Parking, Bicycle Parking, and Loading Space Review

Zoning By-law 2014-014 will be reviewed for the minimum requirements to accessible parking, bicycle parking, and loading spaces.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEXTRANS CONSULTING ENGINEERS

John Nhan, P.Eng.
Project Engineer

Enclosed: Attachment 1: Site Plan

APPENDIX C

TRAFFIC DATA

Date: Aug 6/2025
Intersection: Burloak @ Michigan Dr

8 Phase Basic Timing Sheet												
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**2 Ped**	**4 Ped**	**6 Ped**	**8 Ped**
Phases in use		x		x		x	x	x				
Direction		NB		EB		SB	EBLT	WB				
Min Green		35		10		35	10	8				
Veh Ext.		3.0		3.0		3.0	3.0	3.0				
Yellow		3.7		3.3		3.7	3.3	3.3				
Red		2.7		2.9		2.7	2.9	2.9				
Walk		10		10		10		10				
Don't Walk		21		24		21		24				
Max 1		35		35		35	35	35				
Max 2		40		40		40	40	40				
Max 3												
Veh Recall		x				x						
Ped Recall												
Notes:												

	splits				
max gr, amb, alr	41.4	41.2	41.4	41.2	41.2
wlk,fdw,amb,alr	37.4	40.2	37.4		40.2

Pattern 1
Time: 7:00
Cycle Length: 100s
Offset (%): 41%

Direction		NB		EB
Phase	***1***	***2***	***3***	***4***
%		30		70
Direction		SB	EBLT	WB
Phase	***5***	***6***	***7***	***8***
%		30	45	25

Pattern 2 FREE
Time: 9:00
Cycle Length:
Offset (%):

Direction				
Phase	***1***	***2***	***3***	***4***
%				
Direction				
Phase	***5***	***6***	***7***	***8***
%				

Pattern 3
Time:
Cycle Length:
Offset (%):

Direction				
Phase	***1***	***2***	***3***	***4***
%				
Direction				
Phase	***5***	***6***	***7***	***8***
%				

Pattern 4
Time: 16:00
Cycle Length: 100s
Offset (%): 41%

Direction		NB		EB
Phase	***1***	***2***	***3***	***4***
%		36		64
Direction		SB	EBLT	WB
Phase	***5***	***6***	***7***	***8***
%		36	32	32

Pattern 5 FREE
Time: 18:00
Cycle Length:
Offset (%):

Direction				
Phase	***1***	***2***	***3***	***4***
%				
Direction				
Phase	**5**	**6**	**7**	**8**
%				

Pattern 6
Time:
Cycle Length:
Offset (%):

Direction				
Phase	***1***	***2***	***3***	***4***
%				
Direction				
Phase	**5**	**6**	**7**	**8**
%				

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Turning Movement Count (2 . BURLOAK DR & ADELE RD)

Start Time	Southbound BURLOAK DR					Northbound BURLOAK DR					Eastbound ADELE RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-06-19 07:00:00	2	23	0	0	25	91	1	0	0	92	0	4	0	0	4	121	
2025-06-19 07:15:00	2	34	0	0	36	110	2	0	0	112	4	9	0	2	13	161	
2025-06-19 07:30:00	2	29	0	0	31	126	0	0	0	126	4	6	0	0	10	167	
2025-06-19 07:45:00	3	35	0	0	38	130	3	0	0	133	12	7	0	3	19	190	639
2025-06-19 08:00:00	0	66	0	1	66	114	3	0	0	117	11	12	0	0	23	206	724
2025-06-19 08:15:00	0	46	0	0	46	183	4	0	0	187	4	5	0	0	9	242	805
2025-06-19 08:30:00	4	54	0	0	58	135	4	0	0	139	9	4	0	1	13	210	848
2025-06-19 08:45:00	4	50	0	0	54	126	1	0	0	127	5	2	0	0	7	188	846
2025-06-19 09:00:00	3	60	0	0	63	91	6	0	0	97	9	5	0	1	14	174	814
2025-06-19 09:15:00	0	60	0	0	60	97	2	0	0	99	4	3	0	0	7	166	738
2025-06-19 09:30:00	4	47	0	0	51	82	3	0	0	85	2	1	0	1	3	139	667
2025-06-19 09:45:00	2	69	0	0	71	89	1	0	0	90	1	1	0	0	2	163	642
BREAK																	
2025-06-19 16:00:00	4	147	0	0	151	87	7	0	0	94	6	0	0	0	6	251	
2025-06-19 16:15:00	10	197	0	0	207	85	5	0	0	90	4	1	0	3	5	302	
2025-06-19 16:30:00	11	202	0	0	213	76	3	0	0	79	6	4	0	2	10	302	
2025-06-19 16:45:00	8	215	0	0	223	71	7	0	0	78	8	0	0	0	8	309	1164
2025-06-19 17:00:00	6	164	0	0	170	77	6	0	0	83	6	4	0	0	10	263	1176
2025-06-19 17:15:00	4	182	0	0	186	93	7	0	0	100	4	4	0	1	8	294	1168
2025-06-19 17:30:00	5	155	0	0	160	83	5	0	0	88	3	5	0	2	8	256	1122
2025-06-19 17:45:00	3	164	0	0	167	61	5	0	0	66	9	5	0	1	14	247	1060
2025-06-19 18:00:00	7	111	0	0	118	91	10	0	0	101	2	5	0	0	7	226	1023
2025-06-19 18:15:00	8	115	0	1	123	78	1	0	0	79	6	4	0	0	10	212	941
2025-06-19 18:30:00	5	93	0	0	98	63	5	0	0	68	4	4	0	1	8	174	859
2025-06-19 18:45:00	7	97	0	0	104	71	6	0	0	77	6	2	0	0	8	189	801
Grand Total	104	2415	0	2	2519	2310	97	0	0	2407	129	97	0	18	226	**5152**	-
Approach%	4.1%	95.9%	0%		-	96%	4%	0%		-	57.1%	42.9%	0%		-	**-**	-
Totals %	2%	46.9%	0%		48.9%	44.8%	1.9%	0%		46.7%	2.5%	1.9%	0%		4.4%	**-**	-
Heavy	2	57	0		-	48	2	0		-	3	1	0		-	**-**	-
Heavy %	1.9%	2.4%	0%		-	2.1%	2.1%	0%		-	2.3%	1%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

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Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast Clouds (21 °C)

Start Time	Southbound BURLOAK DR					Northbound BURLOAK DR					Eastbound ADELE RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-06-19 07:45:00	3	35	0	0	38	130	3	0	0	133	12	7	0	3	19	190
2025-06-19 08:00:00	0	66	0	1	66	114	3	0	0	117	11	12	0	0	23	206
2025-06-19 08:15:00	0	46	0	0	46	183	4	0	0	187	4	5	0	0	9	242
2025-06-19 08:30:00	4	54	0	0	58	135	4	0	0	139	9	4	0	1	13	210
Grand Total	7	201	0	1	208	562	14	0	0	576	36	28	0	4	64	**848**
Approach%	3.4%	96.6%	0%		-	97.6%	2.4%	0%		-	56.3%	43.8%	0%		-	**-**
Totals %	0.8%	23.7%	0%		24.5%	66.3%	1.7%	0%		67.9%	4.2%	3.3%	0%		7.5%	**-**
PHF	0.44	0.76	0		0.79	0.77	0.88	0		0.77	0.75	0.58	0		0.7	0.88
Heavy	1	17	0		18	7	1	0		8	1	0	0		1	27
Heavy %	14.3%	8.5%	0%		8.7%	1.2%	7.1%	0%		1.4%	2.8%	0%	0%		1.6%	3.2%
Lights	6	184	0		190	554	13	0		567	35	28	0		63	820
Lights %	85.7%	91.5%	0%		91.3%	98.6%	92.9%	0%		98.4%	97.2%	100%	0%		98.4%	96.7%
Single-Unit Trucks	1	7	0		8	2	0	0		2	1	0	0		1	11
Single-Unit Trucks %	14.3%	3.5%	0%		3.8%	0.4%	0%	0%		0.3%	2.8%	0%	0%		1.6%	1.3%
Buses	0	7	0		7	5	1	0		6	0	0	0		0	13
Buses %	0%	3.5%	0%		3.4%	0.9%	7.1%	0%		1%	0%	0%	0%		0%	1.5%
Articulated Trucks	0	3	0		3	0	0	0		0	0	0	0		0	3
Articulated Trucks %	0%	1.5%	0%		1.4%	0%	0%	0%		0%	0%	0%	0%		0%	0.4%
Bicycles on Road	0	0	0		0	1	0	0		1	0	0	0		0	1
Bicycles on Road %	0%	0%	0%		0%	0.2%	0%	0%		0.2%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	4	-	**-**
Pedestrians%	-	-	-	20%		-	-	-	0%		-	-	-	80%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

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SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 04:15 PM - 05:15 PM Weather: Broken Clouds (21 °C)

Start Time	Southbound BURLOAK DR					Northbound BURLOAK DR					Eastbound ADELE RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-06-19 16:15:00	10	197	0	0	207	85	5	0	0	90	4	1	0	3	5	302
2025-06-19 16:30:00	11	202	0	0	213	76	3	0	0	79	6	4	0	2	10	302
2025-06-19 16:45:00	8	215	0	0	223	71	7	0	0	78	8	0	0	0	8	309
2025-06-19 17:00:00	6	164	0	0	170	77	6	0	0	83	6	4	0	0	10	263
Grand Total	35	778	0	0	813	309	21	0	0	330	24	9	0	5	33	**1176**
Approach%	4.3%	95.7%	0%		-	93.6%	6.4%	0%		-	72.7%	27.3%	0%		-	**-**
Totals %	3%	66.2%	0%		69.1%	26.3%	1.8%	0%		28.1%	2%	0.8%	0%		2.8%	**-**
PHF	0.8	0.9	0		0.91	0.91	0.75	0		0.92	0.75	0.56	0		0.83	0.95
Heavy	0	7	0		7	10	0	0		10	0	1	0		1	18
Heavy %	0%	0.9%	0%		0.9%	3.2%	0%	0%		3%	0%	11.1%	0%		3%	1.5%
Lights	34	770	0		804	298	21	0		319	24	8	0		32	1155
Lights %	97.1%	99%	0%		98.9%	96.4%	100%	0%		96.7%	100%	88.9%	0%		97%	98.2%
Single-Unit Trucks	0	5	0		5	4	0	0		4	0	0	0		0	9
Single-Unit Trucks %	0%	0.6%	0%		0.6%	1.3%	0%	0%		1.2%	0%	0%	0%		0%	0.8%
Buses	0	2	0		2	5	0	0		5	0	1	0		1	8
Buses %	0%	0.3%	0%		0.2%	1.6%	0%	0%		1.5%	0%	11.1%	0%		3%	0.7%
Articulated Trucks	0	0	0		0	1	0	0		1	0	0	0		0	1
Articulated Trucks %	0%	0%	0%		0%	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0.1%
Bicycles on Road	1	1	0		2	1	0	0		1	0	0	0		0	3
Bicycles on Road %	2.9%	0.1%	0%		0.2%	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0.3%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	80%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	20%		**-**

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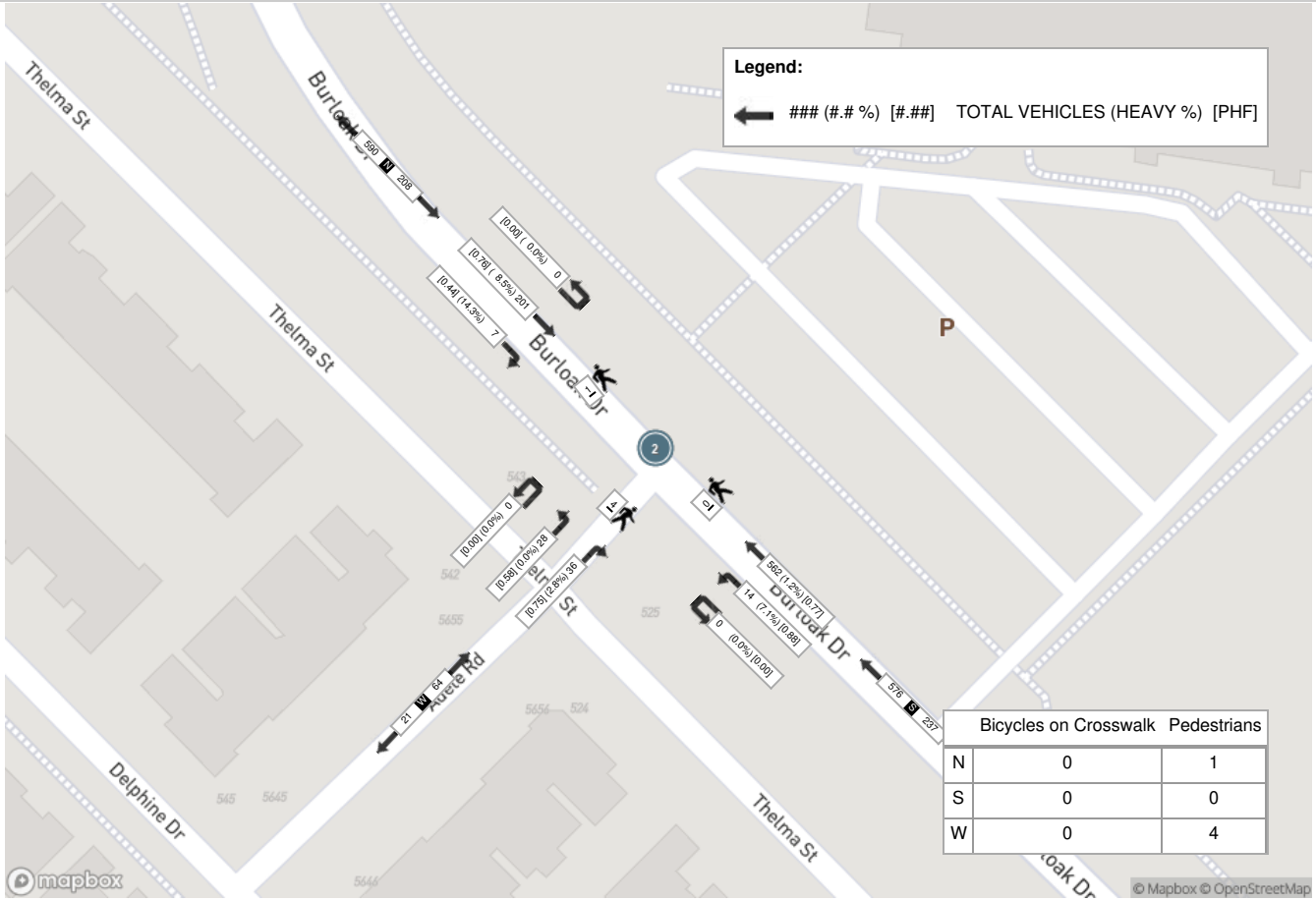
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather: Overcast Clouds (21 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	1
S	0	0
W	0	4

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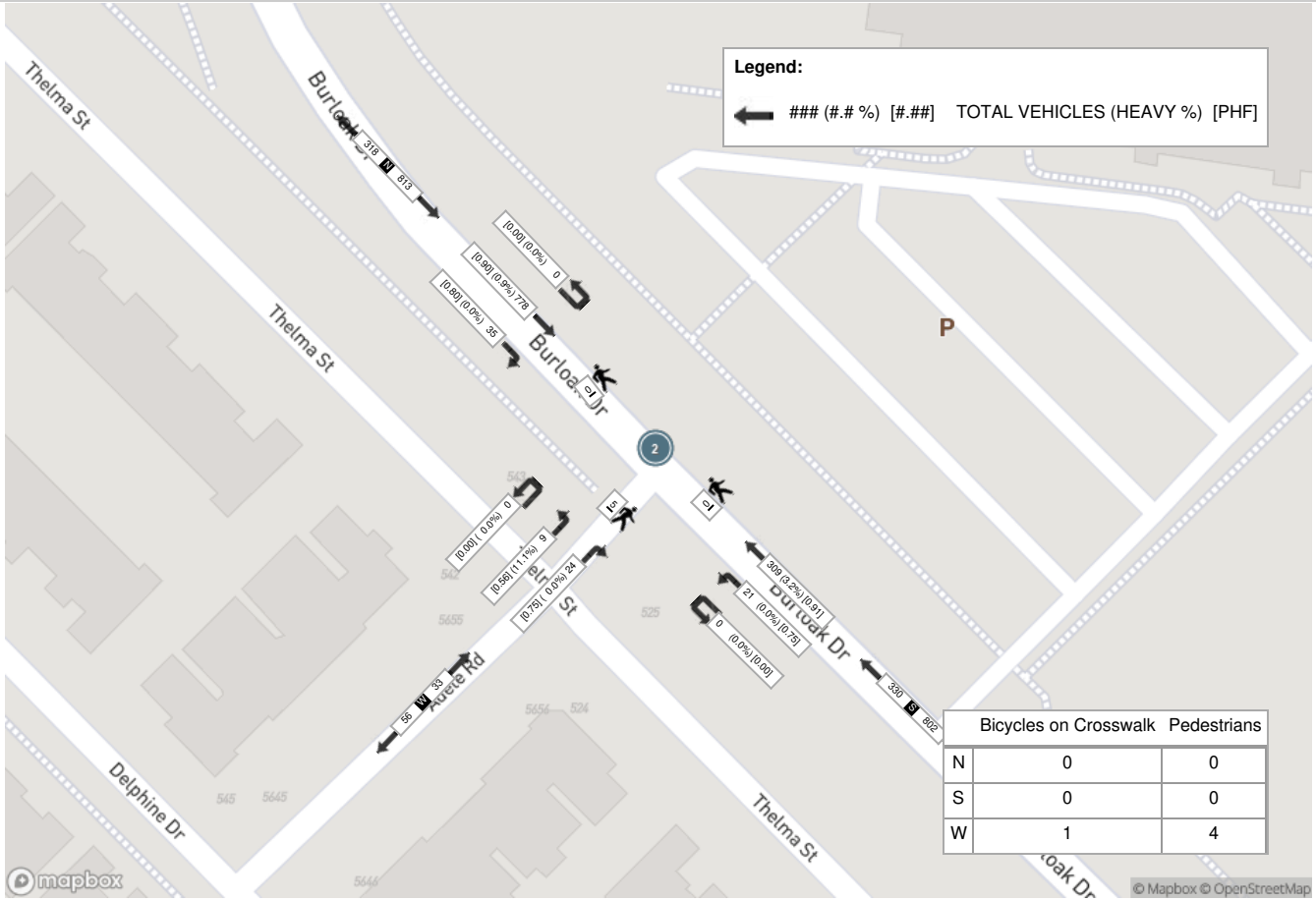
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 04:15 PM - 05:15 PM Weather: Broken Clouds (21 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
W	1	4

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Turning Movement Count (2 . BURLOAK DR & ADELE RD)

Start Time	Southbound BURLOAK DR					Northbound BURLOAK DR					Eastbound ADELE RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-06-21 11:00:00	3	89	0	0	92	93	3	0	0	96	5	4	0	0	9	197	
2025-06-21 11:15:00	1	88	0	0	89	107	3	0	0	110	4	3	0	0	7	206	
2025-06-21 11:30:00	5	90	0	0	95	81	6	0	0	87	4	9	0	1	13	195	
2025-06-21 11:45:00	5	104	0	1	109	98	4	0	0	102	2	5	0	1	7	218	816
2025-06-21 12:00:00	5	106	0	0	111	102	2	0	0	104	9	3	0	1	12	227	846
2025-06-21 12:15:00	3	112	0	0	115	88	4	0	0	92	3	4	0	0	7	214	854
2025-06-21 12:30:00	9	92	0	0	101	104	5	0	0	109	8	5	0	1	13	223	882
2025-06-21 12:45:00	2	99	0	0	101	102	3	0	0	105	5	7	0	0	12	218	882
2025-06-21 13:00:00	4	109	0	0	113	93	6	0	0	99	2	4	0	2	6	218	873
2025-06-21 13:15:00	3	106	0	0	109	79	9	0	0	88	3	5	0	1	8	205	864
2025-06-21 13:30:00	6	128	0	0	134	109	3	0	0	112	1	5	0	1	6	252	893
2025-06-21 13:45:00	3	129	0	0	132	100	2	0	0	102	7	1	0	0	8	242	917
2025-06-21 14:00:00	5	112	0	0	117	89	7	0	0	96	7	1	0	1	8	221	920
2025-06-21 14:15:00	7	125	0	0	132	86	3	0	0	89	3	4	0	0	7	228	943
2025-06-21 14:30:00	2	111	0	0	113	80	6	0	0	86	7	7	0	1	14	213	904
2025-06-21 14:45:00	1	116	0	0	117	57	6	0	0	63	4	3	0	6	7	187	849
2025-06-21 15:00:00	1	105	0	0	106	92	5	0	0	97	6	6	0	2	12	215	843
2025-06-21 15:15:00	1	105	0	0	106	80	7	0	0	87	3	3	0	2	6	199	814
2025-06-21 15:30:00	3	124	0	0	127	77	4	0	0	81	5	5	0	1	10	218	819
2025-06-21 15:45:00	5	103	0	0	108	94	0	0	1	94	0	4	0	3	4	206	838
2025-06-21 16:00:00	3	112	0	0	115	76	7	0	0	83	2	2	0	4	4	202	825
2025-06-21 16:15:00	6	104	0	0	110	82	4	0	0	86	3	3	0	2	6	202	828
2025-06-21 16:30:00	6	106	0	0	112	80	0	0	0	80	2	4	0	3	6	198	808
2025-06-21 16:45:00	8	82	0	1	90	98	4	0	0	102	6	3	0	2	9	201	803
2025-06-21 17:00:00	1	88	0	0	89	80	4	0	0	84	5	1	0	3	6	179	780
2025-06-21 17:15:00	3	99	0	0	102	69	4	0	0	73	3	4	0	1	7	182	760
2025-06-21 17:30:00	4	86	0	0	90	71	0	0	0	71	2	2	0	0	4	165	727
2025-06-21 17:45:00	3	107	0	0	110	80	4	0	0	84	1	4	0	1	5	199	725
Grand Total	108	2937	0	2	3045	2447	115	0	1	2562	112	111	0	40	223	**5830**	-
Approach%	3.5%	96.5%	0%		-	95.5%	4.5%	0%		-	50.2%	49.8%	0%		-	**-**	-
Totals %	1.9%	50.4%	0%		52.2%	42%	2%	0%		43.9%	1.9%	1.9%	0%		3.8%	**-**	-
Heavy	0	17	0		-	25	2	0		-	1	1	0		-	**-**	-
Heavy %	0%	0.6%	0%		-	1%	1.7%	0%		-	0.9%	0.9%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-

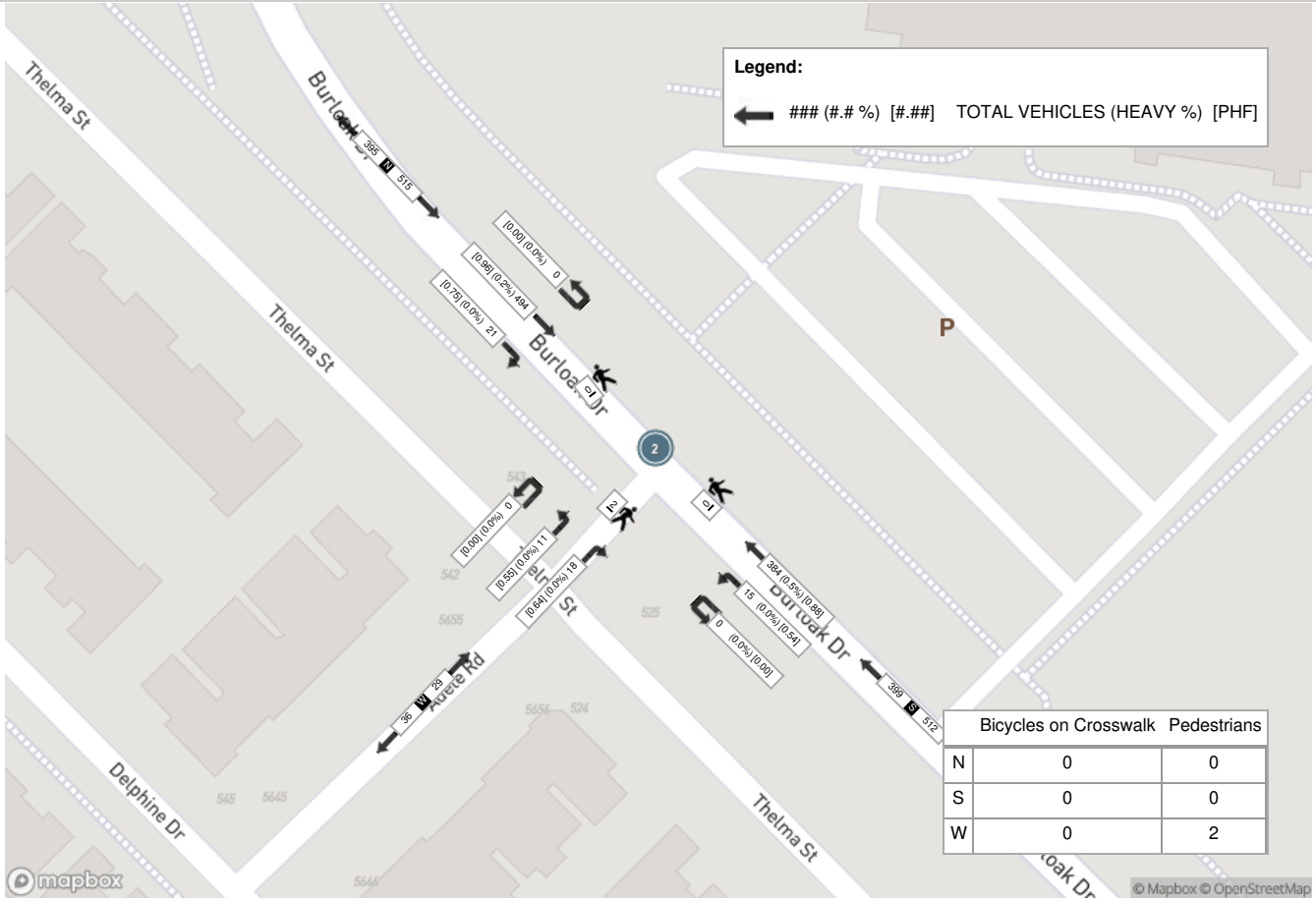
NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 01:30 PM - 02:30 PM Weather: Broken Clouds (24 °C)

Start Time	Southbound BURLOAK DR					Northbound BURLOAK DR					Eastbound ADELE RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-06-21 13:30:00	6	128	0	0	134	109	3	0	0	112	1	5	0	1	6	252
2025-06-21 13:45:00	3	129	0	0	132	100	2	0	0	102	7	1	0	0	8	242
2025-06-21 14:00:00	5	112	0	0	117	89	7	0	0	96	7	1	0	1	8	221
2025-06-21 14:15:00	7	125	0	0	132	86	3	0	0	89	3	4	0	0	7	228
Grand Total	21	494	0	0	515	384	15	0	0	399	18	11	0	2	29	**943**
Approach%	4.1%	95.9%	0%		-	96.2%	3.8%	0%		-	62.1%	37.9%	0%		-	**-**
Totals %	2.2%	52.4%	0%		54.6%	40.7%	1.6%	0%		42.3%	1.9%	1.2%	0%		3.1%	**-**
PHF	0.75	0.96	0		0.96	0.88	0.54	0		0.89	0.64	0.55	0		0.91	0.94
Heavy	0	1	0		1	2	0	0		2	0	0	0		0	3
Heavy %	0%	0.2%	0%		0.2%	0.5%	0%	0%		0.5%	0%	0%	0%		0%	0.3%
Lights	21	492	0		513	382	15	0		397	18	11	0		29	939
Lights %	100%	99.6%	0%		99.6%	99.5%	100%	0%		99.5%	100%	100%	0%		100%	99.6%
Single-Unit Trucks	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%
Buses	0	1	0		1	1	0	0		1	0	0	0		0	2
Buses %	0%	0.2%	0%		0.2%	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0.2%
Articulated Trucks	0	0	0		0	1	0	0		1	0	0	0		0	1
Articulated Trucks %	0%	0%	0%		0%	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0.1%
Bicycles on Road	0	1	0		1	0	0	0		0	0	0	0		0	1
Bicycles on Road %	0%	0.2%	0%		0.2%	0%	0%	0%		0%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	100%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 01:30 PM - 02:30 PM Weather: Broken Clouds (24 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
W	0	2

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Turning Movement Count (1 . BURLOAK DR & FLORA DR)

Start Time	Southbound BURLOAK DR					Northbound BURLOAK DR					Eastbound FLORA DR					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-06-19 07:00:00	3	75	0	0	78	144	0	0	0	144	1	0	0	0	1	223	
2025-06-19 07:15:00	0	73	0	0	73	185	0	0	0	185	1	0	0	0	1	259	
2025-06-19 07:30:00	2	108	0	0	110	195	0	0	1	195	1	0	0	0	1	306	
2025-06-19 07:45:00	3	105	0	2	108	233	0	0	1	233	2	0	0	0	2	343	1131
2025-06-19 08:00:00	1	132	0	0	133	238	0	0	0	238	4	0	0	0	4	375	1283
2025-06-19 08:15:00	2	152	0	0	154	294	0	0	2	294	3	0	0	0	3	451	1475
2025-06-19 08:30:00	1	161	0	1	162	248	0	0	0	248	2	0	0	0	2	412	1581
2025-06-19 08:45:00	0	153	0	0	153	249	0	0	0	249	1	0	0	0	1	403	1641
2025-06-19 09:00:00	1	168	0	0	169	181	0	0	0	181	1	0	0	0	1	351	1617
2025-06-19 09:15:00	2	152	0	0	154	186	0	0	0	186	0	0	0	0	0	340	1506
2025-06-19 09:30:00	2	124	0	0	126	171	0	0	0	171	1	0	0	0	1	298	1392
2025-06-19 09:45:00	2	136	0	0	138	175	0	0	0	175	2	0	0	0	2	315	1304
BREAK																	
2025-06-19 16:00:00	1	250	0	0	251	175	0	0	0	175	1	0	0	0	1	427	
2025-06-19 16:15:00	0	309	0	0	309	196	0	0	0	196	2	0	0	0	2	507	
2025-06-19 16:30:00	1	311	0	0	312	182	0	0	0	182	1	0	0	0	1	495	
2025-06-19 16:45:00	4	296	0	0	300	161	0	0	0	161	2	0	0	0	2	463	1892
2025-06-19 17:00:00	1	247	0	0	248	216	0	0	0	216	0	0	0	0	0	464	1929
2025-06-19 17:15:00	1	337	0	0	338	199	0	0	0	199	2	0	0	0	2	539	1961
2025-06-19 17:30:00	1	285	0	0	286	199	0	0	0	199	1	0	0	0	1	486	1952
2025-06-19 17:45:00	1	289	0	0	290	168	0	0	0	168	2	0	0	0	2	460	1949
2025-06-19 18:00:00	0	223	0	0	223	185	0	0	0	185	0	0	0	0	0	408	1893
2025-06-19 18:15:00	1	201	0	0	202	173	0	0	0	173	1	0	0	0	1	376	1730
2025-06-19 18:30:00	2	204	0	0	206	174	0	0	0	174	1	0	0	0	1	381	1625
2025-06-19 18:45:00	0	213	0	0	213	151	0	0	0	151	2	0	0	0	2	366	1531
Grand Total	32	4704	0	3	4736	4678	0	0	4	4678	34	0	0	0	34	**9448**	-
Approach%	0.7%	99.3%	0%		-	100%	0%	0%		-	100%	0%	0%		-	**-**	-
Totals %	0.3%	49.8%	0%		50.1%	49.5%	0%	0%		49.5%	0.4%	0%	0%		0.4%	**-**	-
Heavy	2	100	0		-	103	0	0		-	3	0	0		-	**-**	-
Heavy %	6.3%	2.1%	0%		-	2.2%	0%	0%		-	8.8%	0%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (21 °C)

Start Time	Southbound BURLOAK DR					Northbound BURLOAK DR					Eastbound FLORA DR					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-06-19 08:00:00	1	132	0	0	133	238	0	0	0	238	4	0	0	0	4	375
2025-06-19 08:15:00	2	152	0	0	154	294	0	0	2	294	3	0	0	0	3	451
2025-06-19 08:30:00	1	161	0	1	162	248	0	0	0	248	2	0	0	0	2	412
2025-06-19 08:45:00	0	153	0	0	153	249	0	0	0	249	1	0	0	0	1	403
Grand Total	4	598	0	1	602	1029	0	0	2	1029	10	0	0	0	10	**1641**
Approach%	0.7%	99.3%	0%		-	100%	0%	0%		-	100%	0%	0%		-	**-**
Totals %	0.2%	36.4%	0%		36.7%	62.7%	0%	0%		62.7%	0.6%	0%	0%		0.6%	**-**
PHF	0.5	0.93	0		0.93	0.88	0	0		0.88	0.63	0	0		0.63	0.91
Heavy	0	23	0		23	25	0	0		25	0	0	0		0	48
Heavy %	0%	3.8%	0%		3.8%	2.4%	0%	0%		2.4%	0%	0%	0%		0%	2.9%
Lights	4	575	0		579	1000	0	0		1000	9	0	0		9	1588
Lights %	100%	96.2%	0%		96.2%	97.2%	0%	0%		97.2%	90%	0%	0%		90%	96.8%
Single-Unit Trucks	0	12	0		12	11	0	0		11	0	0	0		0	23
Single-Unit Trucks %	0%	2%	0%		2%	1.1%	0%	0%		1.1%	0%	0%	0%		0%	1.4%
Buses	0	8	0		8	9	0	0		9	0	0	0		0	17
Buses %	0%	1.3%	0%		1.3%	0.9%	0%	0%		0.9%	0%	0%	0%		0%	1%
Articulated Trucks	0	3	0		3	5	0	0		5	0	0	0		0	8
Articulated Trucks %	0%	0.5%	0%		0.5%	0.5%	0%	0%		0.5%	0%	0%	0%		0%	0.5%
Bicycles on Road	0	0	0		0	4	0	0		4	1	0	0		1	5
Bicycles on Road %	0%	0%	0%		0%	0.4%	0%	0%		0.4%	10%	0%	0%		10%	0.3%
Pedestrians	-	-	-	1	-	-	-	-	2	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	33.3%		-	-	-	66.7%		-	-	-	0%		**-**

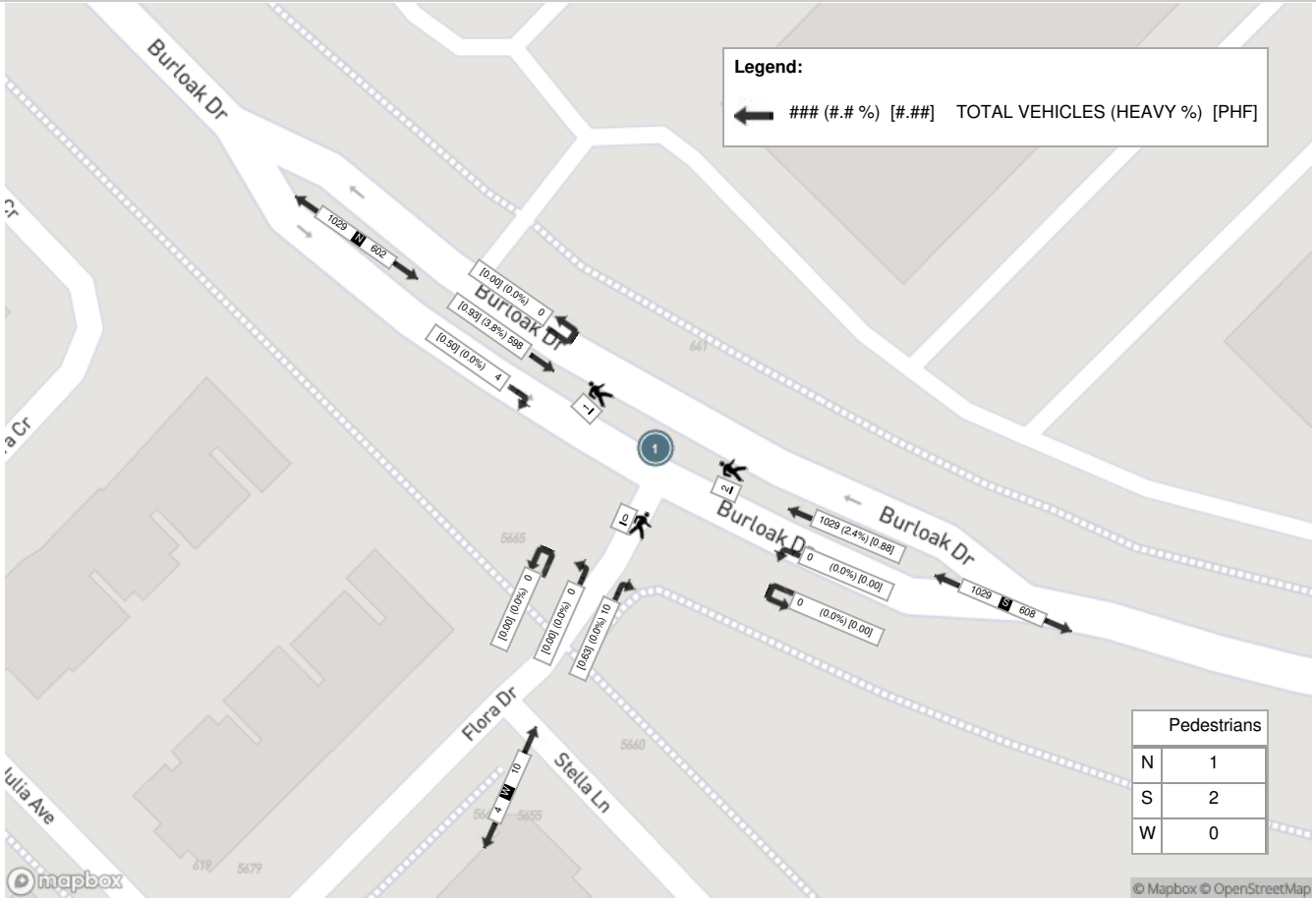
NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (21 °C)

Start Time	Southbound BURLOAK DR					Northbound BURLOAK DR					Eastbound FLORA DR					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-06-19 16:30:00	1	311	0	0	312	182	0	0	0	182	1	0	0	0	1	495
2025-06-19 16:45:00	4	296	0	0	300	161	0	0	0	161	2	0	0	0	2	463
2025-06-19 17:00:00	1	247	0	0	248	216	0	0	0	216	0	0	0	0	0	464
2025-06-19 17:15:00	1	337	0	0	338	199	0	0	0	199	2	0	0	0	2	539
Grand Total	7	1191	0	0	1198	758	0	0	0	758	5	0	0	0	5	**1961**
Approach%	0.6%	99.4%	0%		-	100%	0%	0%		-	100%	0%	0%		-	**-**
Totals %	0.4%	60.7%	0%		61.1%	38.7%	0%	0%		38.7%	0.3%	0%	0%		0.3%	**-**
PHF	0.44	0.88	0		0.89	0.88	0	0		0.88	0.63	0	0		0.63	0.91
Heavy	0	13	0		13	13	0	0		13	0	0	0		0	26
Heavy %	0%	1.1%	0%		1.1%	1.7%	0%	0%		1.7%	0%	0%	0%		0%	1.3%
Lights	6	1178	0		1184	744	0	0		744	5	0	0		5	1933
Lights %	85.7%	98.9%	0%		98.8%	98.2%	0%	0%		98.2%	100%	0%	0%		100%	98.6%
Single-Unit Trucks	0	8	0		8	5	0	0		5	0	0	0		0	13
Single-Unit Trucks %	0%	0.7%	0%		0.7%	0.7%	0%	0%		0.7%	0%	0%	0%		0%	0.7%
Buses	0	3	0		3	5	0	0		5	0	0	0		0	8
Buses %	0%	0.3%	0%		0.3%	0.7%	0%	0%		0.7%	0%	0%	0%		0%	0.4%
Articulated Trucks	0	2	0		2	3	0	0		3	0	0	0		0	5
Articulated Trucks %	0%	0.2%	0%		0.2%	0.4%	0%	0%		0.4%	0%	0%	0%		0%	0.3%
Bicycles on Road	1	0	0		1	1	0	0		1	0	0	0		0	2
Bicycles on Road %	14.3%	0%	0%		0.1%	0.1%	0%	0%		0.1%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

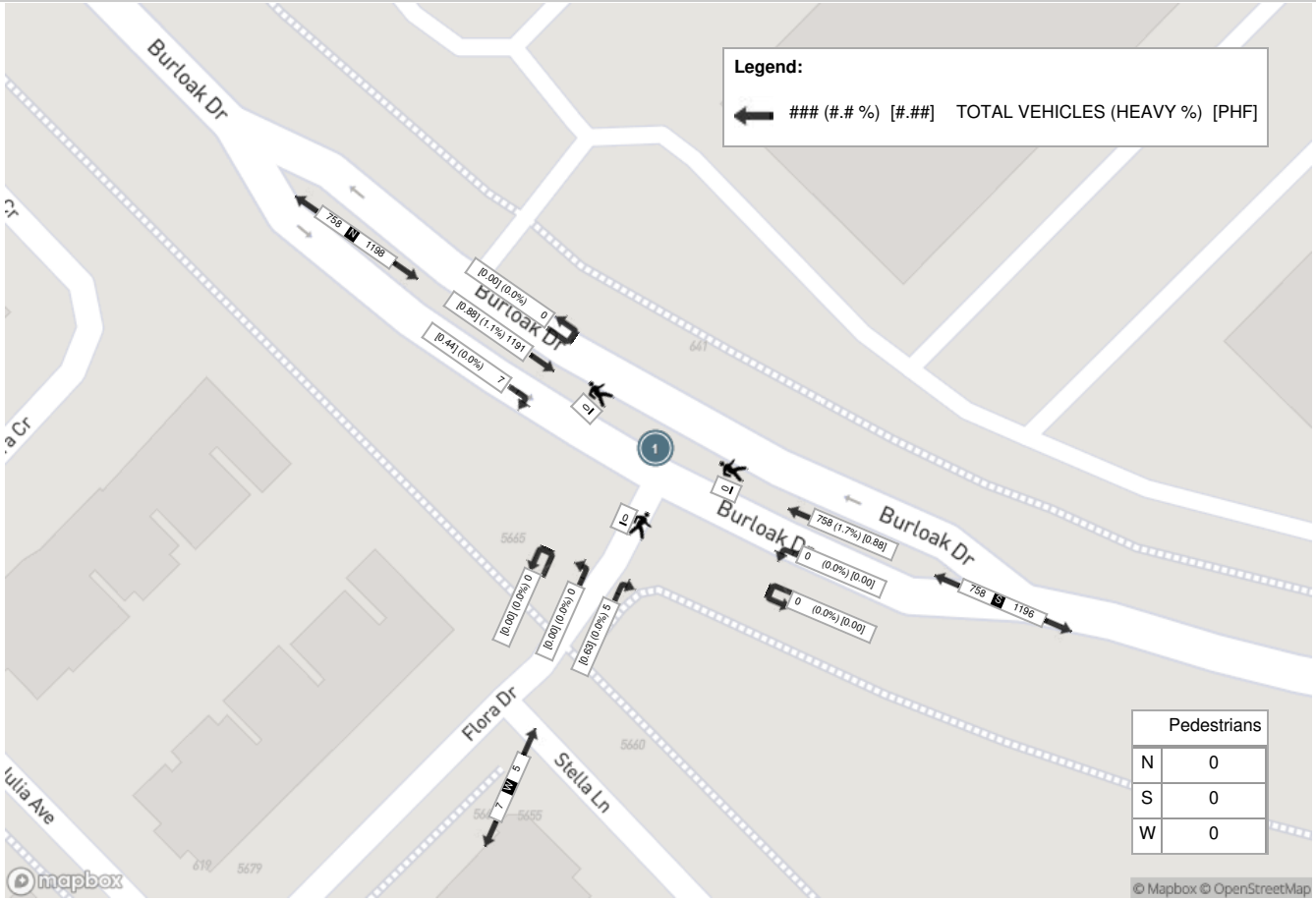
NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (21 °C)



NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (21 °C)



NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Turning Movement Count (1 . BURLOAK DR & FLORA DR)

Start Time	Southbound BURLOAK DR					Northbound BURLOAK DR					Eastbound FLORA DR					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-06-21 11:00:00	1	175	0	0	176	182	0	0	0	182	2	0	0	0	2	360	
2025-06-21 11:15:00	0	159	0	0	159	210	0	0	0	210	1	0	0	1	1	370	
2025-06-21 11:30:00	0	182	0	0	182	207	0	0	0	207	0	0	0	0	0	389	
2025-06-21 11:45:00	1	192	0	0	193	196	0	0	0	196	0	0	0	0	0	389	1508
2025-06-21 12:00:00	1	204	0	0	205	215	0	0	0	215	1	0	0	0	1	421	1569
2025-06-21 12:15:00	0	228	0	0	228	196	0	0	0	196	2	0	0	0	2	426	1625
2025-06-21 12:30:00	1	206	0	0	207	237	0	0	0	237	1	0	0	0	1	445	1681
2025-06-21 12:45:00	2	212	0	0	214	208	0	0	0	208	3	0	0	0	3	425	1717
2025-06-21 13:00:00	0	226	0	0	226	202	0	0	0	202	2	0	0	0	2	430	1726
2025-06-21 13:15:00	0	207	0	0	207	184	0	0	0	184	1	0	0	0	1	392	1692
2025-06-21 13:30:00	1	214	0	0	215	227	0	0	0	227	4	0	0	0	4	446	1693
2025-06-21 13:45:00	1	227	0	0	228	205	0	0	0	205	3	0	0	0	3	436	1704
2025-06-21 14:00:00	2	208	0	0	210	202	0	0	0	202	0	0	0	1	0	412	1686
2025-06-21 14:15:00	0	214	0	0	214	194	0	0	0	194	1	0	0	0	1	409	1703
2025-06-21 14:30:00	0	230	0	0	230	184	0	0	0	184	1	0	0	0	1	415	1672
2025-06-21 14:45:00	2	226	0	0	228	147	0	0	0	147	1	0	0	0	1	376	1612
2025-06-21 15:00:00	0	227	0	0	227	187	0	0	0	187	1	0	0	0	1	415	1615
2025-06-21 15:15:00	0	217	0	0	217	180	0	0	0	180	1	0	0	0	1	398	1604
2025-06-21 15:30:00	1	238	0	0	239	176	0	0	0	176	2	0	0	0	2	417	1606
2025-06-21 15:45:00	2	198	0	1	200	191	0	0	0	191	1	0	0	0	1	392	1622
2025-06-21 16:00:00	0	218	0	0	218	191	0	0	0	191	1	0	0	5	1	410	1617
2025-06-21 16:15:00	1	210	0	0	211	179	0	0	0	179	2	0	0	0	2	392	1611
2025-06-21 16:30:00	1	210	0	0	211	159	0	0	0	159	0	0	0	0	0	370	1564
2025-06-21 16:45:00	0	178	0	0	178	181	0	0	0	181	1	0	0	0	1	360	1532
2025-06-21 17:00:00	2	162	0	0	164	153	0	0	0	153	0	0	0	0	0	317	1439
2025-06-21 17:15:00	2	186	0	0	188	158	0	0	0	158	2	0	0	0	2	348	1395
2025-06-21 17:30:00	1	201	0	0	202	147	0	0	0	147	0	0	0	0	0	349	1374
2025-06-21 17:45:00	1	207	0	0	208	170	0	0	0	170	0	0	0	0	0	378	1392
Grand Total	23	5762	0	1	5785	5268	0	0	0	5268	34	0	0	7	34	**11087**	-
Approach%	0.4%	99.6%	0%		-	100%	0%	0%		-	100%	0%	0%		-	**-**	-
Totals %	0.2%	52%	0%		52.2%	47.5%	0%	0%		47.5%	0.3%	0%	0%		0.3%	**-**	-
Heavy	0	40	0		-	40	0	0		-	0	0	0		-	**-**	-
Heavy %	0%	0.7%	0%		-	0.8%	0%	0%		-	0%	0%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-

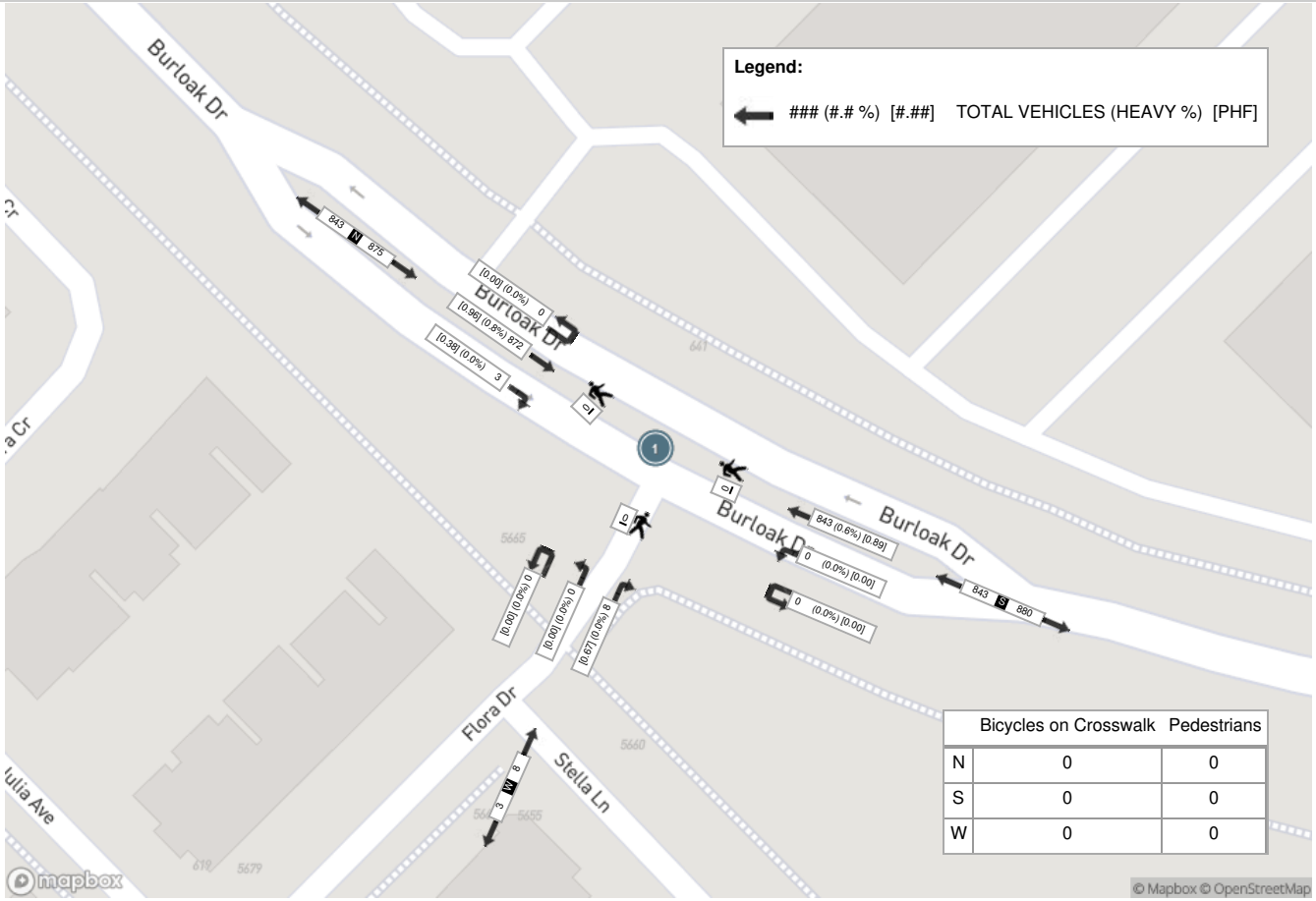
NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 12:15 PM - 01:15 PM Weather: Broken Clouds (24 °C)

Start Time	Southbound BURLOAK DR					Northbound BURLOAK DR					Eastbound FLORA DR					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
2025-06-21 12:15:00	0	228	0	0	228	196	0	0	0	196	2	0	0	0	2	426
2025-06-21 12:30:00	1	206	0	0	207	237	0	0	0	237	1	0	0	0	1	445
2025-06-21 12:45:00	2	212	0	0	214	208	0	0	0	208	3	0	0	0	3	425
2025-06-21 13:00:00	0	226	0	0	226	202	0	0	0	202	2	0	0	0	2	430
Grand Total	3	872	0	0	875	843	0	0	0	843	8	0	0	0	8	**1726**
Approach%	0.3%	99.7%	0%		-	100%	0%	0%		-	100%	0%	0%		-	**-**
Totals %	0.2%	50.5%	0%		50.7%	48.8%	0%	0%		48.8%	0.5%	0%	0%		0.5%	**-**
PHF	0.38	0.96	0		0.96	0.89	0	0		0.89	0.67	0	0		0.67	0.97
Heavy	0	7	0		7	5	0	0		5	0	0	0		0	12
Heavy %	0%	0.8%	0%		0.8%	0.6%	0%	0%		0.6%	0%	0%	0%		0%	0.7%
Lights	3	862	0		865	833	0	0		833	8	0	0		8	1706
Lights %	100%	98.9%	0%		98.9%	98.8%	0%	0%		98.8%	100%	0%	0%		100%	98.8%
Single-Unit Trucks	0	4	0		4	3	0	0		3	0	0	0		0	7
Single-Unit Trucks %	0%	0.5%	0%		0.5%	0.4%	0%	0%		0.4%	0%	0%	0%		0%	0.4%
Buses	0	2	0		2	2	0	0		2	0	0	0		0	4
Buses %	0%	0.2%	0%		0.2%	0.2%	0%	0%		0.2%	0%	0%	0%		0%	0.2%
Articulated Trucks	0	1	0		1	0	0	0		0	0	0	0		0	1
Articulated Trucks %	0%	0.1%	0%		0.1%	0%	0%	0%		0%	0%	0%	0%		0%	0.1%
Bicycles on Road	0	3	0		3	5	0	0		5	0	0	0		0	8
Bicycles on Road %	0%	0.3%	0%		0.3%	0.6%	0%	0%		0.6%	0%	0%	0%		0%	0.5%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 12:15 PM - 01:15 PM Weather: Broken Clouds (24 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
W	0	0

Spectrum

Turning Movement Count
Location Name: BURLOAK DR & MICHIGAN DR/GREAT LAKES BLVD
Date: Thu, Jun 19, 2025 Deployment Lead: Rey Fernandez

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Turning Movement Count (3 . BURLOAK DR & MICHIGAN DR/GREAT LAKES BLVD)

Start Time	Southbound BURLOAK DR						Westbound MICHIGAN DR						Northbound GREAT LAKES BLVD						Eastbound BURLOAK DR						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		
2025-06-19 07:00:00	24	22	22	0	0	68	4	0	0	0	4	4	5	43	1	0	0	49	0	3	102	0	0	105	226	
2025-06-19 07:15:00	34	27	20	0	0	81	8	2	0	0	2	10	2	69	0	1	0	72	0	4	108	0	0	112	275	
2025-06-19 07:30:00	32	58	18	0	1	108	6	0	2	0	0	8	3	62	1	0	0	66	0	11	123	0	0	134	316	
2025-06-19 07:45:00	38	44	14	0	3	96	4	0	2	0	0	6	2	92	0	0	0	94	0	5	140	0	0	145	341	1158
2025-06-19 08:00:00	62	50	29	0	3	141	12	1	0	0	1	13	3	108	1	0	0	112	0	11	111	0	0	122	388	1320
2025-06-19 08:15:00	47	69	42	0	3	158	5	0	1	0	3	6	4	118	0	0	0	122	1	8	172	0	0	181	467	1512
2025-06-19 08:30:00	53	71	29	1	2	154	4	1	1	0	1	6	3	115	1	0	0	119	0	12	125	0	0	137	416	1612
2025-06-19 08:45:00	52	59	35	0	0	146	9	2	1	0	0	12	7	115	0	0	0	122	0	6	126	0	0	132	412	1683
2025-06-19 09:00:00	62	92	30	1	0	185	8	1	2	0	1	11	3	80	1	0	0	84	0	4	96	0	0	100	380	1675
2025-06-19 09:15:00	57	72	18	0	1	147	13	1	2	0	0	16	1	74	0	0	0	75	0	3	94	0	0	97	335	1543
2025-06-19 09:30:00	50	49	19	0	0	118	7	1	1	0	1	9	1	84	0	0	1	85	0	1	78	0	0	79	291	1418
2025-06-19 09:45:00	70	61	18	0	0	149	5	1	2	0	5	8	1	84	0	0	2	85	1	4	82	0	0	87	329	1335
BREAK																										
2025-06-19 16:00:00	148	105	4	0	0	257	6	11	3	0	1	20	0	86	2	0	0	88	3	0	80	0	0	83	448	
2025-06-19 16:15:00	199	112	3	0	1	314	13	7	4	0	1	24	1	94	1	0	0	96	1	2	86	0	0	89	523	
2025-06-19 16:30:00	190	104	2	0	0	296	17	17	5	1	2	40	2	89	0	0	1	91	3	0	76	0	1	79	506	
2025-06-19 16:45:00	208	103	1	0	1	312	10	11	5	0	4	26	2	85	1	0	0	88	1	2	67	0	1	70	496	1973
2025-06-19 17:00:00	155	97	0	0	1	252	37	13	7	0	2	57	3	103	0	0	0	106	0	1	75	0	0	76	491	2016
2025-06-19 17:15:00	186	132	7	0	2	325	18	5	5	0	1	28	0	83	0	0	0	83	0	6	96	0	0	102	538	2031
2025-06-19 17:30:00	156	134	2	0	1	292	11	5	3	0	1	19	1	103	0	0	0	104	0	0	85	0	0	85	500	2025
2025-06-19 17:45:00	155	134	3	0	1	292	10	4	1	0	0	15	0	91	0	0	0	91	0	1	67	0	0	68	466	1995
2025-06-19 18:00:00	118	108	2	0	1	228	5	2	1	0	2	8	0	85	1	0	0	86	2	0	92	0	0	94	416	1920
2025-06-19 18:15:00	116	84	3	0	0	203	11	3	2	0	0	16	0	81	0	0	0	81	0	3	83	0	4	86	386	1768
2025-06-19 18:30:00	101	96	1	0	1	198	4	3	1	0	2	8	0	98	0	0	0	98	1	0	67	0	1	68	372	1640
2025-06-19 18:45:00	98	115	2	0	0	215	3	0	1	0	0	4	1	79	0	0	0	80	1	1	69	0	0	71	370	1544
Grand Total	2411	1998	324	2	22	4735	230	91	52	1	34	374	45	2121	10	1	4	2177	14	88	2300	0	7	2402	**9688**	-
Approach%	50.9%	42.2%	6.8%	0%		-	61.5%	24.3%	13.9%	0.3%		-	2.1%	97.4%	0.5%	0%		-	0.6%	3.7%	95.8%	0%		-	-	-
Totals %	24.9%	20.6%	3.3%	0%		48.9%	2.4%	0.9%	0.5%	0%		3.9%	0.5%	21.9%	0.1%	0%		22.5%	0.1%	0.9%	23.7%	0%		24.8%	-	-
Heavy	56	48	10	0		-	14	1	5	0		-	4	55	0	0		-	0	1	44	0		-	-	-
Heavy %	2.3%	2.4%	3.1%	0%		-	6.1%	1.1%	9.6%	0%		-	8.9%	2.6%	0%	0%		-	0%	1.1%	1.9%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (21 °C)

Start Time	Southbound BURLOAK DR						Westbound MICHIGAN DR						Northbound GREAT LAKES BLVD						Eastbound BURLOAK DR						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	
2025-06-19 08:00:00	62	50	29	0	3	141	12	1	0	0	1	13	3	108	1	0	0	112	0	11	111	0	0	122	388
2025-06-19 08:15:00	47	69	42	0	3	158	5	0	1	0	3	6	4	118	0	0	0	122	1	8	172	0	0	181	467
2025-06-19 08:30:00	53	71	29	1	2	154	4	1	1	0	1	6	3	115	1	0	0	119	0	12	125	0	0	137	416
2025-06-19 08:45:00	52	59	35	0	0	146	9	2	1	0	0	12	7	115	0	0	0	122	0	6	126	0	0	132	412
Grand Total	214	249	135	1	8	599	30	4	3	0	5	37	17	456	2	0	0	475	1	37	534	0	0	572	**1683**
Approach%	35.7%	41.6%	22.5%	0.2%		-	81.1%	10.8%	8.1%	0%		-	3.6%	96%	0.4%	0%		-	0.2%	6.5%	93.4%	0%		-	**-**
Totals %	12.7%	14.8%	8%	0.1%		35.6%	1.8%	0.2%	0.2%	0%		2.2%	1%	27.1%	0.1%	0%		28.2%	0.1%	2.2%	31.7%	0%		34%	**-**
PHF	0.86	0.88	0.8	0.25		0.95	0.63	0.5	0.75	0		0.71	0.61	0.97	0.5	0		0.97	0.25	0.77	0.78	0		0.79	0.9
Heavy	15	7	3	0		25	3	0	0	0		3	0	13	0	0		13	0	0	9	0		9	50
Heavy %	7%	2.8%	2.2%	0%		4.2%	10%	0%	0%	0%		8.1%	0%	2.9%	0%	0%		2.7%	0%	0%	1.7%	0%		1.6%	3%
Lights	199	240	132	1		572	27	4	3	0		34	17	441	2	0		460	1	37	524	0		562	1628
Lights %	93%	96.4%	97.8%	100%		95.5%	90%	100%	100%	0%		91.9%	100%	96.7%	100%	0%		96.8%	100%	100%	98.1%	0%		98.3%	96.7%
Single-Unit Trucks	7	2	2	0		11	3	0	0	0		3	0	6	0	0		6	0	0	2	0		2	22
Single-Unit Trucks %	3.3%	0.8%	1.5%	0%		1.8%	10%	0%	0%	0%		8.1%	0%	1.3%	0%	0%		1.3%	0%	0%	0.4%	0%		0.3%	1.3%
Buses	5	4	0	0		9	0	0	0	0		0	0	4	0	0		4	0	0	5	0		5	18
Buses %	2.3%	1.6%	0%	0%		1.5%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	0%	0%	0.9%	0%		0.9%	1.1%
Articulated Trucks	3	1	1	0		5	0	0	0	0		0	0	3	0	0		3	0	0	2	0		2	10
Articulated Trucks %	1.4%	0.4%	0.7%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.6%	0%	0%	0.4%	0%		0.3%	0.6%
Bicycles on Road	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	0	0	1	0		1	5
Bicycles on Road %	0%	0.8%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0%	0%	0.2%	0%		0.2%	0.3%
Pedestrians	-	-	-	-	7	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	53.8%		-	-	-	-	30.8%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	7.7%		-	-	-	-	7.7%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: BURLOAK DR & MICHIGAN DR/GREAT LAKES BLVD
Date: Thu, Jun 19, 2025 Deployment Lead: Rey Fernandez

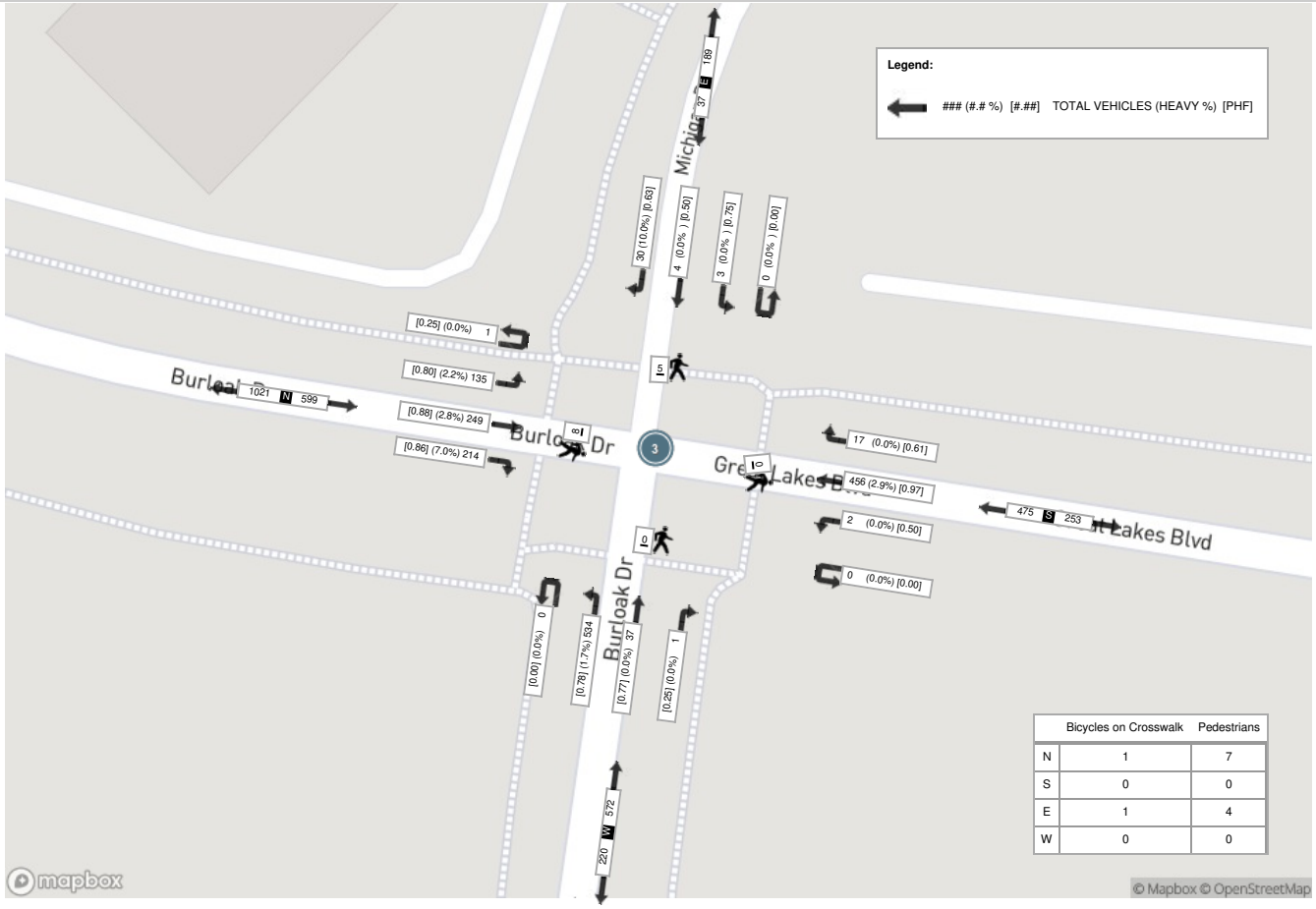
NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (21 °C)

Start Time	Southbound BURLOAK DR						Westbound MICHIGAN DR						Northbound GREAT LAKES BLVD						Eastbound BURLOAK DR						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	
2025-06-19 16:30:00	190	104	2	0	0	296	17	17	5	1	2	40	2	89	0	0	1	91	3	0	76	0	1	79	506
2025-06-19 16:45:00	208	103	1	0	1	312	10	11	5	0	4	26	2	85	1	0	0	88	1	2	67	0	1	70	496
2025-06-19 17:00:00	155	97	0	0	1	252	37	13	7	0	2	57	3	103	0	0	0	106	0	1	75	0	0	76	491
2025-06-19 17:15:00	186	132	7	0	2	325	18	5	5	0	1	28	0	83	0	0	0	83	0	6	96	0	0	102	538
Grand Total	739	436	10	0	4	1185	82	46	22	1	9	151	7	360	1	0	1	368	4	9	314	0	2	327	**2031**
Approach%	62.4%	36.8%	0.8%	0%		-	54.3%	30.5%	14.6%	0.7%		-	1.9%	97.8%	0.3%	0%		-	1.2%	2.8%	96%	0%		-	**-**
Totals %	36.4%	21.5%	0.5%	0%		58.3%	4%	2.3%	1.1%	0%		7.4%	0.3%	17.7%	0%	0%		18.1%	0.2%	0.4%	15.5%	0%		16.1%	**-**
PHF	0.89	0.83	0.36	0		0.91	0.55	0.68	0.79	0.25		0.66	0.58	0.87	0.25	0		0.87	0.33	0.38	0.82	0		0.8	0.94
Heavy	6	8	0	0		14	0	0	0	0		0	0	7	0	0		7	0	0	6	0		6	27
Heavy %	0.8%	1.8%	0%	0%		1.2%	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.9%	0%	0%	1.9%	0%		1.8%	1.3%
Lights	733	428	10	0		1171	82	45	22	1		150	7	350	1	0		358	4	7	308	0		319	1998
Lights %	99.2%	98.2%	100%	0%		98.8%	100%	97.8%	100%	100%		99.3%	100%	97.2%	100%	0%		97.3%	100%	77.8%	98.1%	0%		97.6%	98.4%
Single-Unit Trucks	5	4	0	0		9	0	0	0	0		0	0	3	0	0		3	0	0	2	0		2	14
Single-Unit Trucks %	0.7%	0.9%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	0%	0%	0.6%	0%		0.6%	0.7%
Buses	1	2	0	0		3	0	0	0	0		0	0	1	0	0		1	0	0	4	0		4	8
Buses %	0.1%	0.5%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	1.3%	0%		1.2%	0.4%
Articulated Trucks	0	2	0	0		2	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	5
Articulated Trucks %	0%	0.5%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0.2%
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	0	3	0	0		3	0	2	0	0		2	6
Bicycles on Road %	0%	0%	0%	0%		0%	0%	2.2%	0%	0%		0.7%	0%	0.8%	0%	0%		0.8%	0%	22.2%	0%	0%		0.6%	0.3%
Pedestrians	-	-	-	-	3	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Pedestrians%	-	-	-	-	18.8%		-	-	-	-	37.5%		-	-	-	-	0%		-	-	-	-	6.3%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	6.3%		-	-	-	-	18.8%		-	-	-	-	6.3%		-	-	-	-	6.3%		**-**

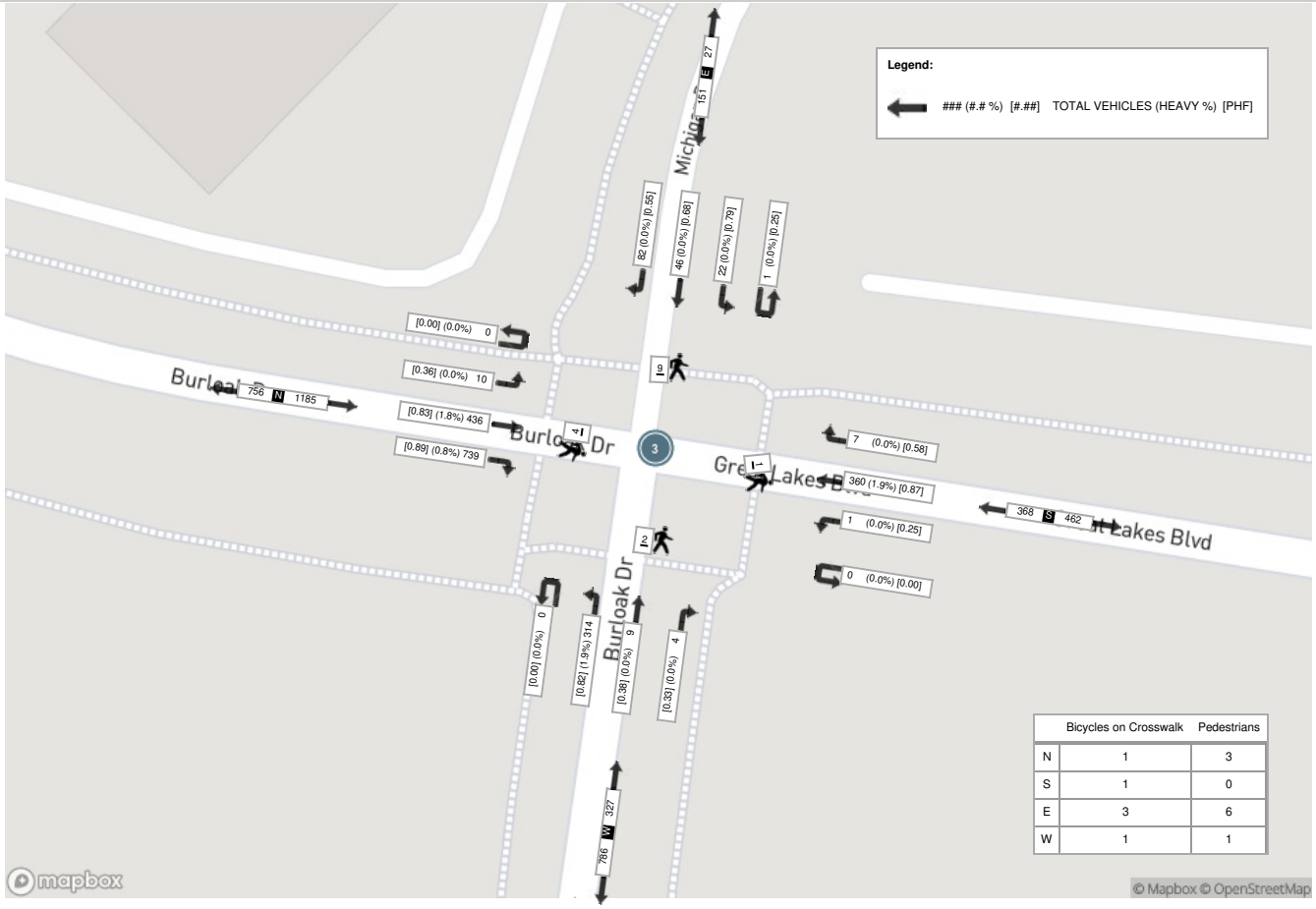
NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather: Overcast Clouds (21 °C)**



NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (21 °C)**



Spectrum

Turning Movement Count
Location Name: BURLOAK DR & MICHIGAN DR/GREAT LAKES BLVD
Date: Sat, Jun 21, 2025 Deployment Lead: Rey Fernandez

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Turning Movement Count (3 . BURLOAK DR & MICHIGAN DR/GREAT LAKES BLVD)

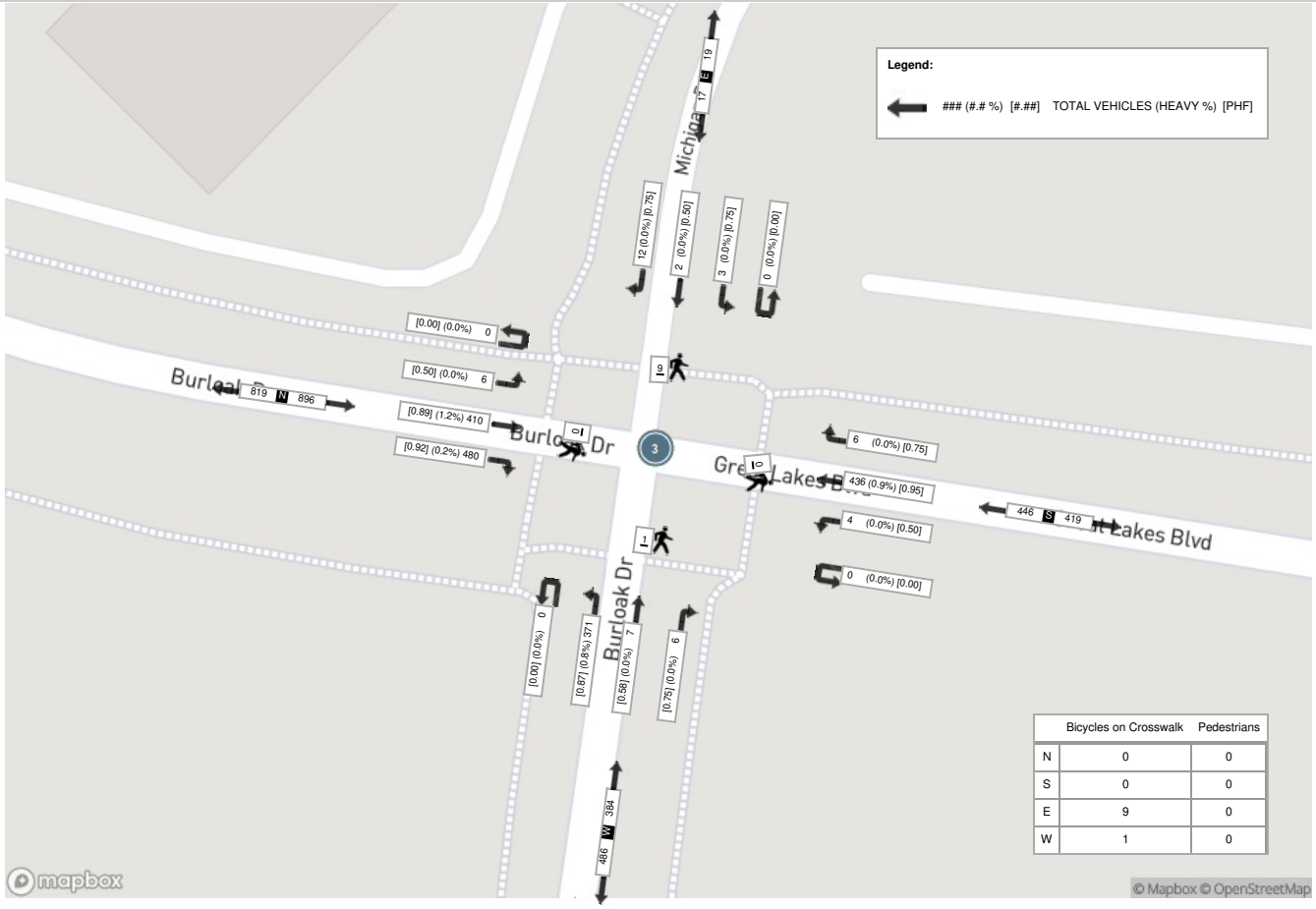
Start Time	Southbound BURLOAK DR						Westbound MICHIGAN DR						Northbound GREAT LAKES BLVD						Eastbound BURLOAK DR						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	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		
2025-06-21 11:00:00	92	77	0	1	0	170	0	0	0	0	3	0	0	78	0	0	0	78	0	0	101	0	0	101	349	
2025-06-21 11:15:00	92	76	2	0	0	170	1	0	2	0	1	3	0	105	1	0	0	106	1	0	104	0	1	105	384	
2025-06-21 11:30:00	90	82	1	0	3	173	2	2	0	0	4	4	0	115	0	0	0	115	1	0	89	0	0	90	382	
2025-06-21 11:45:00	113	71	2	0	3	186	3	1	0	0	1	4	1	90	0	0	0	91	1	0	102	0	0	103	384	1499
2025-06-21 12:00:00	103	102	1	0	0	206	1	1	0	0	6	2	0	107	0	0	0	107	0	0	108	0	0	108	423	1573
2025-06-21 12:15:00	117	124	1	0	0	242	3	0	0	0	2	3	0	104	2	0	0	106	1	0	87	0	0	88	439	1628
2025-06-21 12:30:00	95	108	0	0	0	203	2	0	1	0	1	3	1	131	0	0	1	132	1	0	104	0	2	105	443	1689
2025-06-21 12:45:00	100	108	1	0	0	209	0	1	0	0	4	1	0	99	0	0	2	99	0	0	111	0	4	111	420	1725
2025-06-21 13:00:00	112	115	0	0	0	227	1	0	0	0	0	1	1	105	1	0	0	107	2	2	95	0	0	99	434	1736
2025-06-21 13:15:00	109	104	2	0	0	215	4	0	1	0	1	5	2	105	1	0	0	108	2	0	76	0	1	78	406	1703
2025-06-21 13:30:00	128	81	3	0	0	212	4	1	1	0	2	6	2	115	2	0	0	119	1	2	107	0	0	110	447	1707
2025-06-21 13:45:00	131	110	1	0	0	242	3	1	1	0	6	5	1	111	0	0	0	112	1	3	93	0	0	97	456	1743
2025-06-21 14:00:00	117	81	3	0	0	201	1	1	1	0	7	3	0	106	2	0	0	108	1	1	92	0	1	94	406	1715
2025-06-21 14:15:00	127	98	2	0	0	227	3	0	1	0	3	4	1	101	3	0	0	105	1	1	92	0	0	94	430	1739
2025-06-21 14:30:00	109	105	2	0	0	216	1	2	0	0	6	3	0	103	1	0	4	104	2	1	81	0	1	84	407	1699
2025-06-21 14:45:00	118	116	2	0	0	236	0	2	0	0	0	2	0	84	1	0	0	85	2	0	59	0	2	61	384	1627
2025-06-21 15:00:00	102	116	3	0	0	221	0	0	3	0	5	3	0	96	0	0	3	96	2	0	91	0	3	93	413	1634
2025-06-21 15:15:00	109	112	2	0	0	223	3	0	1	0	2	4	1	93	0	0	1	94	2	1	83	0	3	86	407	1611
2025-06-21 15:30:00	123	103	0	0	1	226	2	0	1	0	1	3	2	96	1	0	0	99	2	2	78	0	1	82	410	1614
2025-06-21 15:45:00	106	101	2	0	0	209	3	1	1	0	5	5	1	95	1	0	2	97	1	0	92	0	0	93	404	1634
2025-06-21 16:00:00	112	95	1	0	0	208	3	1	0	0	1	4	1	109	0	0	0	110	1	1	78	0	5	80	402	1623
2025-06-21 16:15:00	116	92	1	1	0	210	0	0	1	0	2	1	0	94	0	0	1	94	2	0	80	0	2	82	387	1603
2025-06-21 16:30:00	107	101	0	0	0	208	1	0	0	0	3	1	1	79	0	0	3	80	1	0	79	0	1	80	369	1562
2025-06-21 16:45:00	87	89	1	1	0	178	1	0	0	0	4	1	0	74	0	0	3	74	0	0	102	0	1	102	355	1513
2025-06-21 17:00:00	87	80	1	0	0	168	1	1	0	0	4	2	1	73	1	0	4	75	1	0	79	0	0	80	325	1436
2025-06-21 17:15:00	101	80	2	0	4	183	0	0	2	0	2	2	0	86	0	0	1	86	2	0	71	0	0	73	344	1393
2025-06-21 17:30:00	87	108	0	0	0	195	0	0	1	0	6	1	0	78	0	0	4	78	2	0	69	0	0	71	345	1369
2025-06-21 17:45:00	111	107	2	0	0	220	0	1	0	0	2	1	0	84	1	0	2	85	2	1	85	0	0	88	394	1408
Grand Total	3001	2742	38	3	11	5784	43	16	18	0	84	77	16	2716	18	0	31	2750	35	15	2488	0	28	2538	**11149**	-
Approach%	51.9%	47.4%	0.7%	0.1%		-	55.8%	20.8%	23.4%	0%		-	0.6%	98.8%	0.7%	0%		-	1.4%	0.6%	98%	0%		-	**-**	-
Totals %	26.9%	24.6%	0.3%	0%		51.9%	0.4%	0.1%	0.2%	0%		0.7%	0.1%	24.4%	0.2%	0%		24.7%	0.3%	0.1%	22.3%	0%		22.8%	**-**	-
Heavy	17	27	0	0		-	0	0	0	0		-	0	25	0	0		-	0	0	23	0		-	**-**	-
Heavy %	0.6%	1%	0%	0%		-	0%	0%	0%	0%		-	0%	0.9%	0%	0%		-	0%	0%	0.9%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 01:00 PM - 02:00 PM Weather: Broken Clouds (24 °C)

Start Time	Southbound BURLOAK DR						Westbound MICHIGAN DR						Northbound GREAT LAKES BLVD						Eastbound BURLOAK DR						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	
2025-06-21 13:00:00	112	115	0	0	0	227	1	0	0	0	0	1	1	105	1	0	0	107	2	2	95	0	0	99	434
2025-06-21 13:15:00	109	104	2	0	0	215	4	0	1	0	1	5	2	105	1	0	0	108	2	0	76	0	1	78	406
2025-06-21 13:30:00	128	81	3	0	0	212	4	1	1	0	2	6	2	115	2	0	0	119	1	2	107	0	0	110	447
2025-06-21 13:45:00	131	110	1	0	0	242	3	1	1	0	6	5	1	111	0	0	0	112	1	3	93	0	0	97	456
Grand Total	480	410	6	0	0	896	12	2	3	0	9	17	6	436	4	0	0	446	6	7	371	0	1	384	**1743**
Approach%	53.6%	45.8%	0.7%	0%		-	70.6%	11.8%	17.6%	0%		-	1.3%	97.8%	0.9%	0%		-	1.6%	1.8%	96.6%	0%		-	**-**
Totals %	27.5%	23.5%	0.3%	0%		51.4%	0.7%	0.1%	0.2%	0%		1%	0.3%	25%	0.2%	0%		25.6%	0.3%	0.4%	21.3%	0%		22%	**-**
PHF	0.92	0.89	0.5	0		0.93	0.75	0.5	0.75	0		0.71	0.75	0.95	0.5	0		0.94	0.75	0.58	0.87	0		0.87	0.96
Heavy	1	5	0	0		6	0	0	0	0		0	0	4	0	0		4	0	0	3	0		3	13
Heavy %	0.2%	1.2%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	0%	0%	0.8%	0%		0.8%	0.7%
Lights	479	400	6	0		885	12	2	3	0		17	6	431	4	0		441	6	7	368	0		381	1724
Lights %	99.8%	97.6%	100%	0%		98.8%	100%	100%	100%	0%		100%	100%	98.9%	100%	0%		98.9%	100%	100%	99.2%	0%		99.2%	98.9%
Single-Unit Trucks	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	0	0	1	0		1	5
Single-Unit Trucks %	0%	0.5%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.4%	0%	0%	0.3%	0%		0.3%	0.3%
Buses	1	1	0	0		2	0	0	0	0		0	0	1	0	0		1	0	0	1	0		1	4
Buses %	0.2%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0.3%	0%		0.3%	0.2%
Articulated Trucks	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	0	0	1	0		1	4
Articulated Trucks %	0%	0.5%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0.3%	0%		0.3%	0.2%
Bicycles on Road	0	5	0	0		5	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	6
Bicycles on Road %	0%	1.2%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0.3%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	9	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	90%		-	-	-	-	0%		-	-	-	-	10%		**-**

Peak Hour: 01:00 PM - 02:00 PM **Weather: Broken Clouds (24 °C)**



Mode Split AM

Wed Aug 27 2025 09:43:10 GMT-0400 (Eastern Daylight Saving Time) - Run Time: 3529ms

Cross Tabulation Query Form - Trip - 2022

Row: Primary travel mode of trip - mode_prime
Column: 2006 GTA zone of destination - gta06_dest

RowG:
ColG:(4001 4002 4075 4076 4077)
TblG:

Filters:
2006 GTA zone of destination - gta06_dest In 4 4002 4075 4076 4077
and
Start time of trip - start_time In 600-1000
and
Trip purpose - trip_purp In 1 3 4

Trip 2022
Table:

	1
Transit excluding GO rail	105
Cycle	78
Auto driver	8101
GO rail only	64
Auto passenger	279
Paid rideshare	16
Walk	389
total	**9032**

SOV	HOV	Transit	Cycle	Walk	Total
8101	295	169	78	389	9032
90%	3%	2%	1%	4%	100%

Auto	**93%**
Non-Auto	**7%**
Total	**100%**

Mode Split PM

Wed Aug 27 2025 09:44:21 GMT-0400 (Eastern Daylight Saving Time) - Run Time: 3398ms

Cross Tabulation Query Form - Trip - 2022

Row: Primary travel mode of trip - mode_prime
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(4001 4002 4075 4076 4077)
TblG:

Filters:
2006 GTA zone of origin - gta06_orig In 4001 4002 4075 4076 4077
and
Start time of trip - start_time In 1500-1900
and
Trip purpose - trip_purp In 1 3 4

Trip 2022
Table:

	1
Transit excluding GO rail	134
Cycle	259
Auto driver	10866
GO rail only	32
Joint GO rail and local transit	89
Other	17
Auto passenger	1903
Paid rideshare	17
Walk	842
Total	**14159**

Note: Other not included in mode split calculations.

SOV	HOV	Transit	Cycle	Walk	Total
10866	1937	255	259	842	14159
77%	14%	2%	2%	6%	100%

Auto	**90%**
Non-Auto	**10%**
Total	**100%**

APPENDIX D

SYNCHRO AND SIMTRAFFIC REPORTS

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	36	14	562	201	7
Future Volume (Veh/h)	28	36	14	562	201	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	32	41	16	639	228	8
Pedestrians	4				1	
Lane Width (m)	3.5				3.5	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	588	236	240			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	588	236	240			
tC, single (s)	6.8	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	93	95	99			
cM capacity (veh/h)	437	760	1284			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	73	229	426	236
Volume Left	32	16	0	0
Volume Right	41	0	0	8
cSH	574	1284	1700	1700
Volume to Capacity	0.13	0.01	0.25	0.14
Queue Length 95th (m)	3.5	0.3	0.0	0.0
Control Delay (s)	12.2	0.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.2	0.2		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

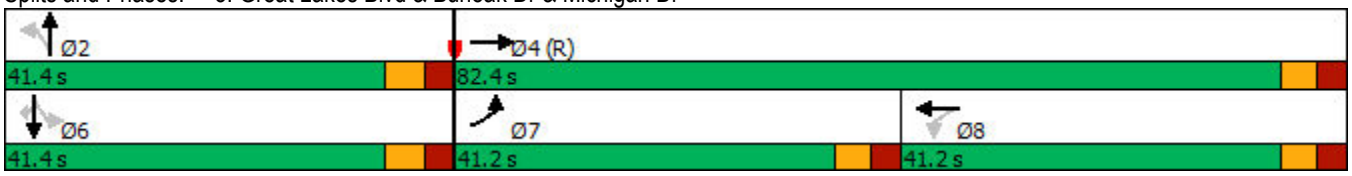
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	534	37	1	3	4	30	2	456	17	135	249	214
Future Volume (vph)	534	37	1	3	4	30	2	456	17	135	249	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0	115.0		0.0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			50.0			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99				0.98			1.00		1.00		
Frt		0.996			0.866			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3395	1871	0	1785	1466	0	1785	3448	0	1750	1824	1493
Flt Permitted	0.950			0.730			0.425			0.330		
Satd. Flow (perm)	3346	1871	0	1372	1466	0	799	3448	0	605	1824	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			33			3				238
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		111.2			382.3			446.3			124.4	
Travel Time (s)		8.0			27.5			32.1			9.0	
Confl. Peds. (#/hr)	8					8			5	5		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	0%	0%	10%	0%	3%	0%	2%	3%	7%
Adj. Flow (vph)	593	41	1	3	4	33	2	507	19	150	277	238
Shared Lane Traffic (%)												
Lane Group Flow (vph)	593	42	0	3	37	0	2	526	0	150	277	238
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane											Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	41.2	82.4		41.2	41.2		41.4	41.4		41.4	41.4	41.4
Total Split (%)	33.3%	66.6%		33.3%	33.3%		33.4%	33.4%		33.4%	33.4%	33.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
v/c Ratio	0.62	0.04		0.01	0.08		0.01	0.54		0.88	0.54	0.40
Control Delay	41.9	9.3		32.0	12.6		32.5	39.8		86.5	42.2	6.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	41.9	9.3		32.0	12.6		32.5	39.8		86.5	42.2	6.4
LOS	D	A		C	B		C	D		F	D	A
Approach Delay		39.8			14.0			39.8			39.4	
Approach LOS		D			B			D			D	
Queue Length 50th (m)	68.1	3.9		0.6	0.8		0.4	59.6		36.7	60.1	0.0
Queue Length 95th (m)	87.9	8.5		3.0	9.3		2.6	78.0		#78.6	89.2	19.7
Internal Link Dist (m)		87.2			358.3			422.3			100.4	
Turn Bay Length (m)							65.0			115.0		
Base Capacity (vph)	959	1152		387	438		225	976		171	515	592
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.62	0.04		0.01	0.08		0.01	0.54		0.88	0.54	0.40

Intersection Summary

Area Type: Other
Cycle Length: 123.8
Actuated Cycle Length: 123.8
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 39.1 Intersection LOS: D
Intersection Capacity Utilization 102.5% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	534	37	1	3	4	30	2	456	17	135	249	214
Future Volume (vph)	534	37	1	3	4	30	2	456	17	135	249	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.87		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3395	1872		1785	1467		1785	3447		1743	1824	1493
Flt Permitted	0.95	1.00		0.73	1.00		0.43	1.00		0.33	1.00	1.00
Satd. Flow (perm)	3395	1872		1371	1467		799	3447		605	1824	1493
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	593	41	1	3	4	33	2	507	19	150	277	238
RTOR Reduction (vph)	0	0	0	0	24	0	0	2	0	0	0	171
Lane Group Flow (vph)	593	42	0	3	13	0	2	524	0	150	277	67
Confl. Peds. (#/hr)	8					8			5	5		
Heavy Vehicles (%)	2%	0%	0%	0%	0%	10%	0%	3%	0%	2%	3%	7%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Effective Green, g (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	959	1152		387	414		225	974		171	515	422
v/s Ratio Prot	c0.17	c0.02			0.01			0.15			0.15	
v/s Ratio Perm				0.00			0.00			c0.25		0.05
v/c Ratio	0.62	0.04		0.01	0.03		0.01	0.54		0.88	0.54	0.16
Uniform Delay, d1	38.6	9.4		31.9	32.1		31.9	37.6		42.4	37.6	33.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	0.1		0.0	0.1		0.0	0.6		36.0	1.1	0.2
Delay (s)	41.6	9.4		32.0	32.3		31.9	38.1		78.4	38.6	33.5
Level of Service	D	A		C	C		C	D		E	D	C
Approach Delay (s)		39.5			32.3			38.1			45.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	0	1029	598	4
Future Volume (Veh/h)	0	10	0	1029	598	4
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	11	0	1131	657	4
Pedestrians				2	1	
Lane Width (m)				3.5	3.5	
Walking Speed (m/s)				1.2	1.2	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				191		
pX, platoon unblocked	0.88					
vC, conflicting volume	1226	332	661			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	990	332	661			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	218	668	937			

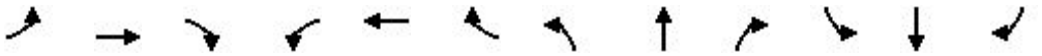
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	566	566	438	223
Volume Left	0	0	0	0	0
Volume Right	11	0	0	0	4
cSH	668	1700	1700	1700	1700
Volume to Capacity	0.02	0.33	0.33	0.26	0.13
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	10.5	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.5	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	24	21	309	778	35
Future Volume (Veh/h)	9	24	21	309	778	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	9	25	22	325	819	37
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	1049	842	861			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1049	842	861			
tC, single (s)	7.0	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	96	92	97			
cM capacity (veh/h)	202	310	786			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	34	130	217	856
Volume Left	9	22	0	0
Volume Right	25	0	0	37
cSH	272	786	1700	1700
Volume to Capacity	0.13	0.03	0.13	0.50
Queue Length 95th (m)	3.4	0.7	0.0	0.0
Control Delay (s)	20.1	1.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.1	0.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		



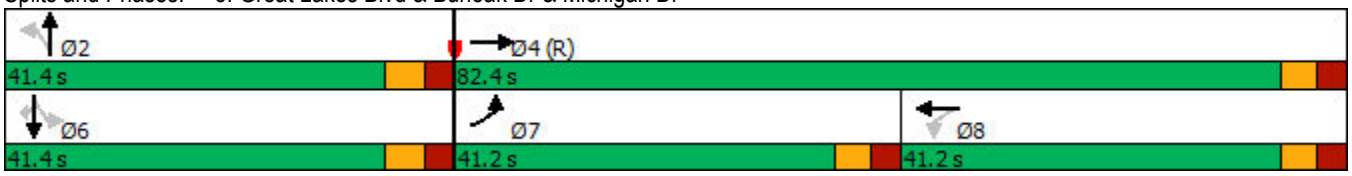
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	314	9	4	22	46	82	1	360	7	10	436	739
Future Volume (vph)	314	9	4	22	46	82	1	360	7	10	436	739
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0	115.0		0.0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			50.0			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	1.00		0.99		0.98
Frt		0.957			0.904			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3395	1791	0	1785	1681	0	1785	3488	0	1785	1842	1581
Flt Permitted	0.950			0.748			0.150			0.446		
Satd. Flow (perm)	3371	1791	0	1404	1681	0	281	3488	0	830	1842	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			72			1				755
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		111.2			382.3			446.3			124.4	
Travel Time (s)		8.0			27.5			32.1			9.0	
Confl. Peds. (#/hr)	4		1	1		4	2		9	9		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	334	10	4	23	49	87	1	383	7	11	464	786
Shared Lane Traffic (%)												
Lane Group Flow (vph)	334	14	0	23	136	0	1	390	0	11	464	786
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane											Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	41.2	82.4		41.2	41.2		41.4	41.4		41.4	41.4	41.4
Total Split (%)	33.3%	66.6%		33.3%	33.3%		33.4%	33.4%		33.4%	33.4%	33.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
v/c Ratio	0.35	0.01		0.06	0.26		0.01	0.40		0.05	0.89	0.80
Control Delay	36.6	7.6		33.0	18.1		33.0	37.2		33.2	63.5	10.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	36.6	7.6		33.0	18.1		33.0	37.2		33.2	63.5	10.9
LOS	D	A		C	B		C	D		C	E	B
Approach Delay		35.4			20.2			37.2			30.4	
Approach LOS		D			C			D			C	
Queue Length 50th (m)	35.1	1.0		4.3	12.2		0.2	42.4		2.1	114.2	5.8
Queue Length 95th (m)	48.7	3.6		11.3	29.1		1.7	57.6		6.9	#175.6	57.0
Internal Link Dist (m)		87.2			358.3			422.3			100.4	
Turn Bay Length (m)							65.0			115.0		
Base Capacity (vph)	959	1103		396	526		79	986		234	520	977
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.35	0.01		0.06	0.26		0.01	0.40		0.05	0.89	0.80

Intersection Summary

Area Type: Other
Cycle Length: 123.8
Actuated Cycle Length: 123.8
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 31.7 Intersection LOS: C
Intersection Capacity Utilization 119.3% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	314	9	4	22	46	82	1	360	7	10	436	739
Future Volume (vph)	314	9	4	22	46	82	1	360	7	10	436	739
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.96		1.00	0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3395	1792		1783	1681		1783	3489		1768	1842	1543
Flt Permitted	0.95	1.00		0.75	1.00		0.15	1.00		0.45	1.00	1.00
Satd. Flow (perm)	3395	1792		1405	1681		281	3489		831	1842	1543
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	334	10	4	23	49	87	1	383	7	11	464	786
RTOR Reduction (vph)	0	2	0	0	52	0	0	1	0	0	0	542
Lane Group Flow (vph)	334	12	0	23	84	0	1	389	0	11	464	244
Confl. Peds. (#/hr)	4		1	1		4	2		9	9		2
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	1%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Effective Green, g (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	959	1102		397	475		79	986		234	520	436
v/s Ratio Prot	c0.10	0.01			c0.05			0.11			c0.25	
v/s Ratio Perm				0.02			0.00			0.01		0.16
v/c Ratio	0.35	0.01		0.06	0.18		0.01	0.39		0.05	0.89	0.56
Uniform Delay, d1	35.3	9.2		32.4	33.5		32.0	35.8		32.3	42.6	37.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0		0.3	0.8		0.1	0.3		0.1	17.4	1.7
Delay (s)	36.3	9.2		32.7	34.3		32.0	36.1		32.4	60.0	39.5
Level of Service	D	A		C	C		C	D		C	E	D
Approach Delay (s)		35.2			34.1			36.1			47.0	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	119.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	5	0	758	1191	7
Future Volume (Veh/h)	0	5	0	758	1191	7
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	5	0	833	1309	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				191		
pX, platoon unblocked	0.92					
vC, conflicting volume	1730	658	1317			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1619	658	1317			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	88	411	532			

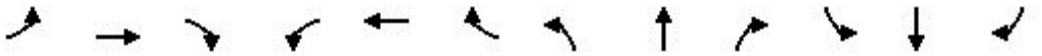
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	5	416	416	873	444
Volume Left	0	0	0	0	0
Volume Right	5	0	0	0	8
cSH	411	1700	1700	1700	1700
Volume to Capacity	0.01	0.24	0.24	0.51	0.26
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0
Control Delay (s)	13.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	13.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	18	15	384	494	21
Future Volume (Veh/h)	11	18	15	384	494	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	12	19	16	409	526	22
Pedestrians	2					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	776	539	550			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	776	539	550			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	96	98			
cM capacity (veh/h)	333	491	1028			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	31	152	273	548
Volume Left	12	16	0	0
Volume Right	19	0	0	22
cSH	415	1028	1700	1700
Volume to Capacity	0.07	0.02	0.16	0.32
Queue Length 95th (m)	1.9	0.4	0.0	0.0
Control Delay (s)	14.4	1.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.4	0.4		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		



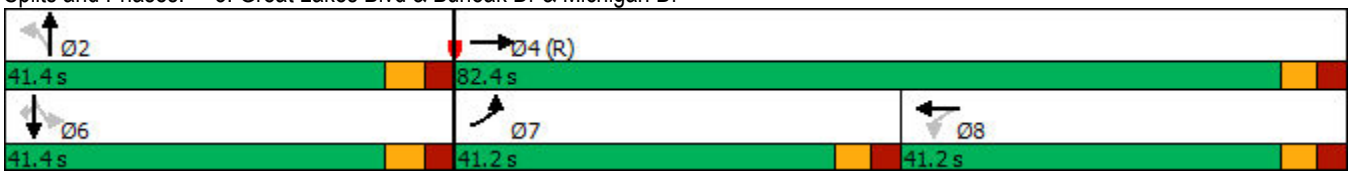
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	371	7	6	3	2	12	4	436	6	6	410	480
Future Volume (vph)	371	7	6	3	2	12	4	436	6	6	410	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0	115.0		0.0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			50.0			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00		0.99		0.98
Frt		0.931			0.870			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3429	1749	0	1785	1635	0	1785	3526	0	1785	1860	1597
Flt Permitted	0.950			0.749			0.202			0.384		
Satd. Flow (perm)	3429	1749	0	1407	1635	0	379	3526	0	715	1860	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			13			1				500
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		111.2			382.3			446.3			124.4	
Travel Time (s)		8.0			27.5			32.1			9.0	
Confl. Peds. (#/hr)							1		9	9		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	386	7	6	3	2	13	4	454	6	6	427	500
Shared Lane Traffic (%)												
Lane Group Flow (vph)	386	13	0	3	15	0	4	460	0	6	427	500
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane											Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	41.2	82.4		41.2	41.2		41.4	41.4		41.4	41.4	41.4
Total Split (%)	33.3%	66.6%		33.3%	33.3%		33.4%	33.4%		33.4%	33.4%	33.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

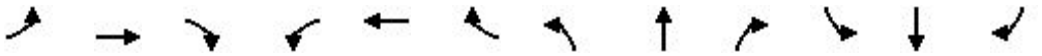
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
v/c Ratio	0.40	0.01		0.01	0.03		0.04	0.46		0.03	0.81	0.62
Control Delay	37.4	6.8		32.0	16.4		33.8	38.4		32.8	55.0	6.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	37.4	6.8		32.0	16.4		33.8	38.4		32.8	55.0	6.8
LOS	D	A		C	B		C	D		C	E	A
Approach Delay		36.4			19.0			38.3			29.1	
Approach LOS		D			B			D			C	
Queue Length 50th (m)	41.2	0.7		0.6	0.4		0.8	51.1		1.1	102.0	0.0
Queue Length 95th (m)	56.0	3.3		3.0	5.8		3.9	67.7		4.8	#152.4	28.3
Internal Link Dist (m)		87.2			358.3			422.3			100.4	
Turn Bay Length (m)							65.0			115.0		
Base Capacity (vph)	969	1078		397	471		107	997		202	525	800
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.40	0.01		0.01	0.03		0.04	0.46		0.03	0.81	0.63

Intersection Summary

Area Type: Other
Cycle Length: 123.8
Actuated Cycle Length: 123.8
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 32.9 Intersection LOS: C
Intersection Capacity Utilization 81.5% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	371	7	6	3	2	12	4	436	6	6	410	480
Future Volume (vph)	371	7	6	3	2	12	4	436	6	6	410	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.93		1.00	0.87		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3429	1749		1785	1635		1784	3526		1770	1860	1562
Flt Permitted	0.95	1.00		0.75	1.00		0.20	1.00		0.38	1.00	1.00
Satd. Flow (perm)	3429	1749		1407	1635		380	3526		716	1860	1562
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	386	7	6	3	2	12	4	454	6	6	427	500
RTOR Reduction (vph)	0	2	0	0	9	0	0	1	0	0	0	359
Lane Group Flow (vph)	386	11	0	3	6	0	4	459	0	6	427	141
Confl. Peds. (#/hr)							1		9	9		1
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Effective Green, g (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	969	1076		397	462		107	996		202	525	441
v/s Ratio Prot	c0.11	0.01			c0.00			0.13			c0.23	
v/s Ratio Perm				0.00			0.01			0.01		0.09
v/c Ratio	0.40	0.01		0.01	0.01		0.04	0.46		0.03	0.81	0.32
Uniform Delay, d1	35.9	9.2		31.9	32.0		32.2	36.6		32.1	41.4	35.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0		0.0	0.0		0.1	0.3		0.1	9.4	0.4
Delay (s)	37.1	9.2		32.0	32.0		32.3	37.0		32.2	50.7	35.4
Level of Service	D	A		C	C		C	D		C	D	D
Approach Delay (s)		36.2			32.0			36.9			42.4	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	8	0	843	872	3
Future Volume (Veh/h)	0	8	0	843	872	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	8	0	869	899	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)				191		
pX, platoon unblocked	0.90					
vC, conflicting volume	1335	451	902			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1154	451	902			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	175	561	762			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	434	434	599	303
Volume Left	0	0	0	0	0
Volume Right	8	0	0	0	3
cSH	561	1700	1700	1700	1700
Volume to Capacity	0.01	0.26	0.26	0.35	0.18
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0
Control Delay (s)	11.5	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	11.5	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	36	14	622	223	7
Future Volume (Veh/h)	28	36	14	622	223	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	32	41	16	707	253	8
Pedestrians	4				1	
Lane Width (m)	3.5				3.5	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	648	261	265			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	648	261	265			
tC, single (s)	6.8	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	92	94	99			
cM capacity (veh/h)	401	732	1256			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	73	252	471	261
Volume Left	32	16	0	0
Volume Right	41	0	0	8
cSH	538	1256	1700	1700
Volume to Capacity	0.14	0.01	0.28	0.15
Queue Length 95th (m)	3.7	0.3	0.0	0.0
Control Delay (s)	12.7	0.6	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.7	0.2		0.0
Approach LOS	B			

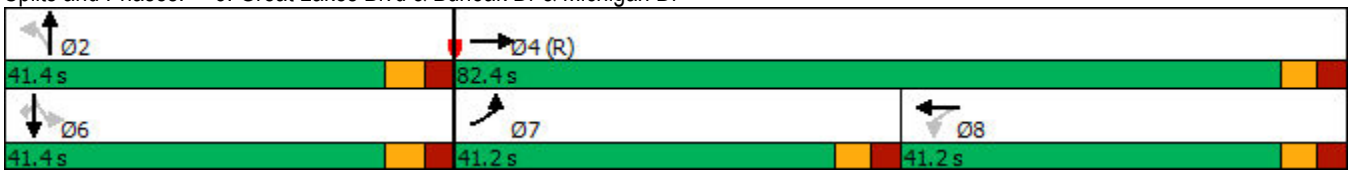
Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	590	41	1	3	4	33	2	517	19	149	279	236
Future Volume (vph)	590	41	1	3	4	33	2	517	19	149	279	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0	115.0		0.0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			50.0			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99				0.98			1.00		1.00		
Frt		0.997			0.865			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3395	1873	0	1785	1463	0	1785	3449	0	1750	1824	1493
Flt Permitted	0.950			0.726			0.375			0.277		
Satd. Flow (perm)	3348	1873	0	1364	1463	0	705	3449	0	508	1824	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			37			3				262
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		111.2			382.3			446.3			124.4	
Travel Time (s)		8.0			27.5			32.1			9.0	
Confl. Peds. (#/hr)	8					8			5	5		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	0%	0%	10%	0%	3%	0%	2%	3%	7%
Adj. Flow (vph)	656	46	1	3	4	37	2	574	21	166	310	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	656	47	0	3	41	0	2	595	0	166	310	262
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane											Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	41.2	82.4		41.2	41.2		41.4	41.4		41.4	41.4	41.4
Total Split (%)	33.3%	66.6%		33.3%	33.3%		33.4%	33.4%		33.4%	33.4%	33.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
v/c Ratio	0.68	0.04		0.01	0.09		0.01	0.61		1.16	0.60	0.43
Control Delay	43.8	9.4		32.0	12.1		32.5	41.4		165.6	44.2	6.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	43.8	9.4		32.0	12.1		32.5	41.4		165.6	44.2	6.4
LOS	D	A		C	B		C	D		F	D	A
Approach Delay		41.5			13.4			41.4			58.1	
Approach LOS		D			B			D			E	
Queue Length 50th (m)	77.1	4.4		0.6	0.7		0.4	69.3		~50.2	68.7	0.0
Queue Length 95th (m)	98.5	9.4		3.0	9.7		2.6	89.3		#96.0	100.1	20.5
Internal Link Dist (m)		87.2			358.3			422.3			100.4	
Turn Bay Length (m)							65.0			115.0		
Base Capacity (vph)	959	1153		385	440		199	977		143	515	610
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.68	0.04		0.01	0.09		0.01	0.61		1.16	0.60	0.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.8			
Actuated Cycle Length: 123.8			
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 46.7		Intersection LOS: D	
Intersection Capacity Utilization 102.5%		ICU Level of Service G	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	590	41	1	3	4	33	2	517	19	149	279	236
Future Volume (vph)	590	41	1	3	4	33	2	517	19	149	279	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3395	1873		1785	1462		1785	3447		1744	1824	1493
Flt Permitted	0.95	1.00		0.73	1.00		0.37	1.00		0.28	1.00	1.00
Satd. Flow (perm)	3395	1873		1365	1462		704	3447		509	1824	1493
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	656	46	1	3	4	37	2	574	21	166	310	262
RTOR Reduction (vph)	0	0	0	0	27	0	0	2	0	0	0	188
Lane Group Flow (vph)	656	47	0	3	14	0	2	593	0	166	310	74
Confl. Peds. (#/hr)	8					8			5	5		
Heavy Vehicles (%)	2%	0%	0%	0%	0%	10%	0%	3%	0%	2%	3%	7%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Effective Green, g (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	959	1152		385	413		199	974		143	515	422
v/s Ratio Prot	c0.19	c0.02			0.01			0.17			0.17	
v/s Ratio Perm				0.00			0.00			c0.33		0.05
v/c Ratio	0.68	0.04		0.01	0.04		0.01	0.61		1.16	0.60	0.18
Uniform Delay, d1	39.5	9.4		31.9	32.2		31.9	38.5		44.4	38.4	33.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1		0.0	0.2		0.0	1.1		125.0	2.0	0.2
Delay (s)	43.4	9.5		32.0	32.3		32.0	39.6		169.4	40.4	33.7
Level of Service	D	A		C	C		C	D		F	D	C
Approach Delay (s)		41.2			32.3			39.5			67.0	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	49.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	0	1149	664	4
Future Volume (Veh/h)	0	10	0	1149	664	4
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	11	0	1263	730	4
Pedestrians				2	1	
Lane Width (m)				3.5	3.5	
Walking Speed (m/s)				1.2	1.2	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				191		
pX, platoon unblocked	0.86					
vC, conflicting volume	1364	369	734			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1102	369	734			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	180	633	880			

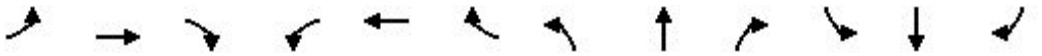
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	632	632	487	247
Volume Left	0	0	0	0	0
Volume Right	11	0	0	0	4
cSH	633	1700	1700	1700	1700
Volume to Capacity	0.02	0.37	0.37	0.29	0.15
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.8	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	24	21	343	860	35
Future Volume (Veh/h)	9	24	21	343	860	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	9	25	22	361	905	37
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	1153	928	947			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1153	928	947			
tC, single (s)	7.0	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	95	91	97			
cM capacity (veh/h)	172	272	730			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	34	142	241	942
Volume Left	9	22	0	0
Volume Right	25	0	0	37
cSH	236	730	1700	1700
Volume to Capacity	0.14	0.03	0.14	0.55
Queue Length 95th (m)	4.0	0.7	0.0	0.0
Control Delay (s)	22.8	1.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	22.8	0.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		



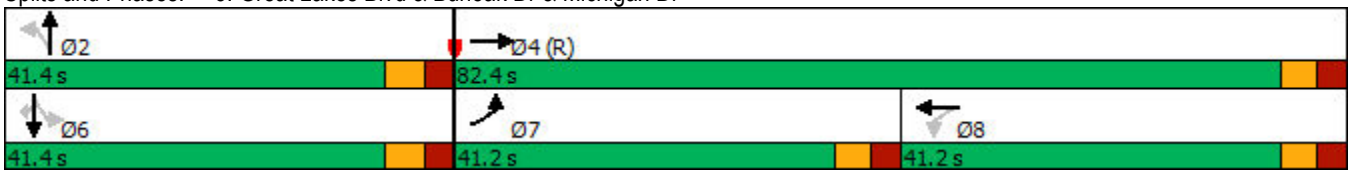
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	10	4	24	51	91	1	403	8	11	495	816
Future Volume (vph)	347	10	4	24	51	91	1	403	8	11	495	816
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0	115.0		0.0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			50.0			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	1.00		0.99		0.98
Frt		0.960			0.904			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3395	1797	0	1785	1681	0	1785	3488	0	1785	1842	1581
Flt Permitted	0.950			0.748			0.114			0.403		
Satd. Flow (perm)	3374	1797	0	1404	1681	0	214	3488	0	751	1842	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			73			2				734
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		111.2			382.3			446.3			124.4	
Travel Time (s)		8.0			27.5			32.1			9.0	
Confl. Peds. (#/hr)	4		1	1		4	2		9	9		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	369	11	4	26	54	97	1	429	9	12	527	868
Shared Lane Traffic (%)												
Lane Group Flow (vph)	369	15	0	26	151	0	1	438	0	12	527	868
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane											Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	41.2	82.4		41.2	41.2		41.4	41.4		41.4	41.4	41.4
Total Split (%)	33.3%	66.6%		33.3%	33.3%		33.4%	33.4%		33.4%	33.4%	33.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
v/c Ratio	0.38	0.01		0.07	0.29		0.02	0.44		0.06	1.01	0.90
Control Delay	37.2	7.6		33.2	19.5		33.0	38.0		33.5	87.1	20.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	37.2	7.6		33.2	19.5		33.0	38.0		33.5	87.1	20.9
LOS	D	A		C	B		C	D		C	F	C
Approach Delay		36.0			21.5			37.9			45.8	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	39.2	1.0		4.9	15.1		0.2	48.2		2.2	~138.1	34.3
Queue Length 95th (m)	53.7	3.8		12.4	33.3		1.7	64.6		7.6	#211.8	#140.4
Internal Link Dist (m)		87.2			358.3			422.3			100.4	
Turn Bay Length (m)							65.0			115.0		
Base Capacity (vph)	959	1107		396	527		60	987		212	520	962
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.38	0.01		0.07	0.29		0.02	0.44		0.06	1.01	0.90

Intersection Summary

Area Type: Other
Cycle Length: 123.8
Actuated Cycle Length: 123.8
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 41.0 Intersection LOS: D
Intersection Capacity Utilization 124.1% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	10	4	24	51	91	1	403	8	11	495	816
Future Volume (vph)	347	10	4	24	51	91	1	403	8	11	495	816
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.96		1.00	0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3395	1797		1783	1680		1783	3488		1769	1842	1543
Flt Permitted	0.95	1.00		0.75	1.00		0.11	1.00		0.40	1.00	1.00
Satd. Flow (perm)	3395	1797		1403	1680		215	3488		751	1842	1543
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	369	11	4	26	54	97	1	429	9	12	527	868
RTOR Reduction (vph)	0	2	0	0	52	0	0	1	0	0	0	526
Lane Group Flow (vph)	369	13	0	26	99	0	1	437	0	12	527	342
Confl. Peds. (#/hr)	4		1	1		4	2		9	9		2
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	1%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Effective Green, g (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	959	1106		396	474		60	986		212	520	436
v/s Ratio Prot	c0.11	0.01			c0.06			0.13			c0.29	
v/s Ratio Perm				0.02			0.00			0.02		0.22
v/c Ratio	0.38	0.01		0.07	0.21		0.02	0.44		0.06	1.01	0.78
Uniform Delay, d1	35.7	9.2		32.4	33.8		32.0	36.4		32.4	44.4	40.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0		0.3	1.0		0.1	0.3		0.1	42.9	8.9
Delay (s)	36.9	9.2		32.8	34.8		32.1	36.7		32.5	87.3	49.8
Level of Service	D	A		C	C		C	D		C	F	D
Approach Delay (s)		35.8			34.5			36.7			63.7	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	52.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	124.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	5	0	843	1328	7
Future Volume (Veh/h)	0	5	0	843	1328	7
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	5	0	926	1459	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				191		
pX, platoon unblocked	0.91					
vC, conflicting volume	1926	734	1467			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1815	734	1467			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	64	367	466			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	5	463	463	973	494
Volume Left	0	0	0	0	0
Volume Right	5	0	0	0	8
cSH	367	1700	1700	1700	1700
Volume to Capacity	0.01	0.27	0.27	0.57	0.29
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0
Control Delay (s)	14.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	14.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	18	15	425	544	21
Future Volume (Veh/h)	11	18	15	425	544	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	12	19	16	452	579	22
Pedestrians	2					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	850	592	603			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	850	592	603			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	96	98			
cM capacity (veh/h)	298	454	983			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	31	167	301	601
Volume Left	12	16	0	0
Volume Right	19	0	0	22
cSH	377	983	1700	1700
Volume to Capacity	0.08	0.02	0.18	0.35
Queue Length 95th (m)	2.1	0.4	0.0	0.0
Control Delay (s)	15.4	1.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.4	0.3		0.0
Approach LOS	C			

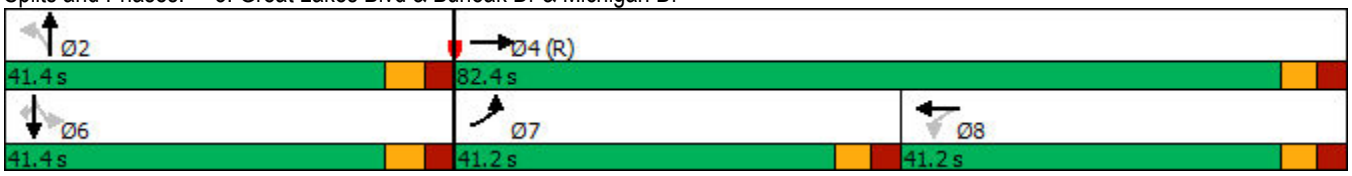
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

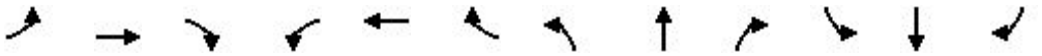
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	410	8	7	3	2	13	4	487	7	7	467	530
Future Volume (vph)	410	8	7	3	2	13	4	487	7	7	467	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0	115.0		0.0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			50.0			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00		0.99		0.98
Frt		0.930			0.869			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3429	1747	0	1785	1633	0	1785	3526	0	1785	1860	1597
Flt Permitted	0.950			0.748			0.119			0.339		
Satd. Flow (perm)	3429	1747	0	1405	1633	0	223	3526	0	632	1860	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			14			1				507
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		111.2			382.3			446.3			124.4	
Travel Time (s)		8.0			27.5			32.1			9.0	
Confl. Peds. (#/hr)							1		9	9		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	427	8	7	3	2	14	4	507	7	7	486	552
Shared Lane Traffic (%)												
Lane Group Flow (vph)	427	15	0	3	16	0	4	514	0	7	486	552
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane											Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	41.2	82.4		41.2	41.2		41.4	41.4		41.4	41.4	41.4
Total Split (%)	33.3%	66.6%		33.3%	33.3%		33.4%	33.4%		33.4%	33.4%	33.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
v/c Ratio	0.44	0.01		0.01	0.03		0.06	0.52		0.04	0.93	0.69
Control Delay	38.1	6.6		32.0	15.9		35.8	39.4		33.3	68.3	9.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	38.1	6.6		32.0	15.9		35.8	39.4		33.3	68.3	9.7
LOS	D	A		C	B		D	D		C	E	A
Approach Delay		37.1			18.5			39.4			37.1	
Approach LOS		D			B			D			D	
Queue Length 50th (m)	46.2	0.8		0.6	0.4		0.8	58.1		1.3	121.1	8.5
Queue Length 95th (m)	62.0	3.5		3.0	6.0		4.0	76.2		5.2	#187.0	46.1
Internal Link Dist (m)		87.2			358.3			422.3			100.4	
Turn Bay Length (m)							65.0			115.0		
Base Capacity (vph)	969	1077		397	471		63	997		178	525	805
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.44	0.01		0.01	0.03		0.06	0.52		0.04	0.93	0.69

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.8			
Actuated Cycle Length: 123.8			
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 37.5		Intersection LOS: D	
Intersection Capacity Utilization 84.6%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	410	8	7	3	2	13	4	487	7	7	467	530
Future Volume (vph)	410	8	7	3	2	13	4	487	7	7	467	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.93		1.00	0.87		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3429	1747		1785	1632		1784	3526		1772	1860	1562
Flt Permitted	0.95	1.00		0.75	1.00		0.12	1.00		0.34	1.00	1.00
Satd. Flow (perm)	3429	1747		1405	1632		223	3526		633	1860	1562
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	427	8	7	3	2	14	4	507	7	7	486	552
RTOR Reduction (vph)	0	3	0	0	10	0	0	1	0	0	0	364
Lane Group Flow (vph)	427	12	0	3	6	0	4	513	0	7	486	188
Confl. Peds. (#/hr)							1		9	9		1
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Effective Green, g (s)	35.0	76.2		35.0	35.0		35.0	35.0		35.0	35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28		0.28	0.28	0.28
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	969	1075		397	461		63	996		178	525	441
v/s Ratio Prot	c0.12	0.01			c0.00			0.15			c0.26	
v/s Ratio Perm				0.00			0.02			0.01		0.12
v/c Ratio	0.44	0.01		0.01	0.01		0.06	0.52		0.04	0.93	0.43
Uniform Delay, d1	36.4	9.2		31.9	32.0		32.4	37.3		32.2	43.1	36.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	0.0		0.0	0.1		0.4	0.5		0.1	22.3	0.7
Delay (s)	37.8	9.2		32.0	32.0		32.9	37.7		32.3	65.5	36.9
Level of Service	D	A		C	C		C	D		C	E	D
Approach Delay (s)		36.9			32.0			37.7			50.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	8	0	934	980	3
Future Volume (Veh/h)	0	8	0	934	980	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	8	0	963	1010	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)				191		
pX, platoon unblocked	0.89					
vC, conflicting volume	1493	506	1013			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1300	506	1013			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	138	517	692			

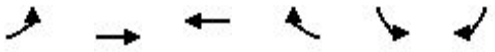
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	482	482	673	340
Volume Left	0	0	0	0	0
Volume Right	8	0	0	0	3
cSH	517	1700	1700	1700	1700
Volume to Capacity	0.02	0.28	0.28	0.40	0.20
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	12.1	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.1	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	36	14	638	228	7
Future Volume (Veh/h)	30	36	14	638	228	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	34	41	16	725	259	8
Pedestrians	4				1	
Lane Width (m)	3.5				3.5	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	662	267	271			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	662	267	271			
tC, single (s)	6.8	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	91	94	99			
cM capacity (veh/h)	392	726	1250			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	75	258	483	267
Volume Left	34	16	0	0
Volume Right	41	0	0	8
cSH	524	1250	1700	1700
Volume to Capacity	0.14	0.01	0.28	0.16
Queue Length 95th (m)	4.0	0.3	0.0	0.0
Control Delay (s)	13.0	0.6	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.0	0.2		0.0
Approach LOS	B			

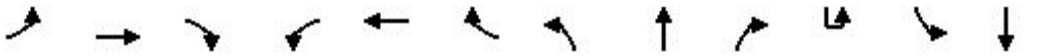
Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	632	242	14	0	5
Future Volume (Veh/h)	18	632	242	14	0	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	687	263	15	0	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			111			
pX, platoon unblocked						
vC, conflicting volume	278				654	270
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	278				654	270
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	99
cM capacity (veh/h)	1296				398	733

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	249	458	278	5
Volume Left	20	0	0	0
Volume Right	0	0	15	5
cSH	1296	1700	1700	733
Volume to Capacity	0.02	0.27	0.16	0.01
Queue Length 95th (m)	0.4	0.0	0.0	0.2
Control Delay (s)	0.8	0.0	0.0	9.9
Lane LOS	A			A
Approach Delay (s)	0.3		0.0	9.9
Approach LOS				A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	590	41	1	3	5	33	15	517	19	19	153	284
Future Volume (vph)	590	41	1	3	5	33	15	517	19	19	153	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0		115.0	
Storage Lanes	2		0	1		0	1		0		1	
Taper Length (m)	7.5			7.5			50.0				7.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99				0.98			1.00			1.00	
Frt		0.997			0.871			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	3395	1873	0	1785	1480	0	1785	3449	0	0	1750	1824
Flt Permitted	0.950			0.726			0.365				0.277	
Satd. Flow (perm)	3348	1873	0	1364	1480	0	686	3449	0	0	508	1824
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		1			37			3				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		111.2			382.3			446.3				124.4
Travel Time (s)		8.0			27.5			32.1				9.0
Confl. Peds. (#/hr)	8					8			5		5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	0%	0%	10%	0%	3%	0%	2%	2%	3%
Adj. Flow (vph)	656	46	1	3	6	37	17	574	21	21	170	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	656	47	0	3	43	0	17	595	0	0	191	316
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	R NA	Left	Left
Median Width(m)		7.0			7.0			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	15	25	
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	41.2	82.4		41.2	41.2		41.4	41.4		41.4	41.4	41.4
Total Split (%)	33.3%	66.6%		33.3%	33.3%		33.4%	33.4%		33.4%	33.4%	33.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

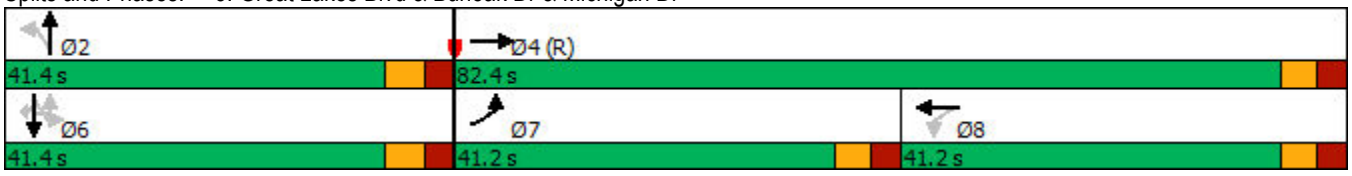
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	236
Future Volume (vph)	236
Ideal Flow (vphpl)	1900
Storage Length (m)	0.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1493
Flt Permitted	
Satd. Flow (perm)	1493
Right Turn on Red	Yes
Satd. Flow (RTOR)	262
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	7%
Adj. Flow (vph)	262
Shared Lane Traffic (%)	
Lane Group Flow (vph)	262
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	15
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	35.0
Minimum Split (s)	41.4
Total Split (s)	41.4
Total Split (%)	33.4%
Yellow Time (s)	3.7
All-Red Time (s)	2.7
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.4
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Act Effct Green (s)	35.0	76.2		35.0	35.0		35.0	35.0			35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28			0.28	0.28
v/c Ratio	0.68	0.04		0.01	0.10		0.09	0.61			1.34	0.61
Control Delay	43.8	9.4		32.0	12.8		34.4	41.4			227.0	44.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	43.8	9.4		32.0	12.8		34.4	41.4			227.0	44.6
LOS	D	A		C	B		C	D			F	D
Approach Delay		41.5			14.0			41.2				76.9
Approach LOS		D			B			D				E
Queue Length 50th (m)	77.1	4.4		0.6	1.1		3.2	69.3			~63.5	70.4
Queue Length 95th (m)	98.5	9.4		3.0	10.3		9.7	89.3			#112.5	102.6
Internal Link Dist (m)		87.2			358.3			422.3				100.4
Turn Bay Length (m)							65.0				115.0	
Base Capacity (vph)	959	1153		385	444		193	977			143	515
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.68	0.04		0.01	0.10		0.09	0.61			1.34	0.61

Intersection Summary

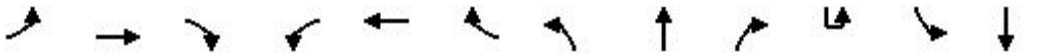
Area Type: Other
Cycle Length: 123.8
Actuated Cycle Length: 123.8
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.34
Intersection Signal Delay: 53.6 Intersection LOS: D
Intersection Capacity Utilization 102.5% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Lane Group	SBR
Act Effct Green (s)	35.0
Actuated g/C Ratio	0.28
v/c Ratio	0.43
Control Delay	6.4
Queue Delay	0.0
Total Delay	6.4
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	20.5
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	610
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.43

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	590	41	1	3	5	33	15	517	19	19	153	284
Future Volume (vph)	590	41	1	3	5	33	15	517	19	19	153	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.87		1.00	0.99			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	3395	1873		1785	1480		1785	3447			1744	1824
Flt Permitted	0.95	1.00		0.73	1.00		0.37	1.00			0.28	1.00
Satd. Flow (perm)	3395	1873		1365	1480		687	3447			509	1824
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.90	0.90
Adj. Flow (vph)	656	46	1	3	6	37	17	574	21	21	170	316
RTOR Reduction (vph)	0	0	0	0	27	0	0	2	0	0	0	0
Lane Group Flow (vph)	656	47	0	3	16	0	17	593	0	0	191	316
Confl. Peds. (#/hr)	8					8			5		5	
Heavy Vehicles (%)	2%	0%	0%	0%	0%	10%	0%	3%	0%	2%	2%	3%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Actuated Green, G (s)	35.0	76.2		35.0	35.0		35.0	35.0			35.0	35.0
Effective Green, g (s)	35.0	76.2		35.0	35.0		35.0	35.0			35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28			0.28	0.28
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	959	1152		385	418		194	974			143	515
v/s Ratio Prot	c0.19	c0.02			0.01			0.17				0.17
v/s Ratio Perm				0.00			0.02				c0.38	
v/c Ratio	0.68	0.04		0.01	0.04		0.09	0.61			1.34	0.61
Uniform Delay, d1	39.5	9.4		31.9	32.2		32.7	38.5			44.4	38.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	4.0	0.1		0.0	0.2		0.2	1.1			190.7	2.2
Delay (s)	43.4	9.5		32.0	32.4		32.9	39.6			235.1	40.7
Level of Service	D	A		C	C		C	D			F	D
Approach Delay (s)		41.2			32.4			39.4				86.6
Approach LOS		D			C			D				F

Intersection Summary			
HCM 2000 Control Delay	56.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	236
Future Volume (vph)	236
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.4
Lane Util. Factor	1.00
Frpb, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1493
Flt Permitted	1.00
Satd. Flow (perm)	1493
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	262
RTOR Reduction (vph)	188
Lane Group Flow (vph)	74
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	7%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	35.0
Effective Green, g (s)	35.0
Actuated g/C Ratio	0.28
Clearance Time (s)	6.4
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	422
v/s Ratio Prot	
v/s Ratio Perm	0.05
v/c Ratio	0.18
Uniform Delay, d1	33.5
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	33.7
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	28	0	1159	664	17
Future Volume (Veh/h)	0	28	0	1159	664	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	30	0	1260	722	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (m)				124		
pX, platoon unblocked	0.86					
vC, conflicting volume	1361	370	740			
vC1, stage 1 conf vol	731					
vC2, stage 2 conf vol	630					
vCu, unblocked vol	1089	370	740			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	100			
cM capacity (veh/h)	393	633	876			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	30	630	630	481	259
Volume Left	0	0	0	0	0
Volume Right	30	0	0	0	18
cSH	633	1700	1700	1700	1700
Volume to Capacity	0.05	0.37	0.37	0.28	0.15
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0
Control Delay (s)	11.0	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	11.0	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	0	1168	681	4
Future Volume (Veh/h)	0	10	0	1168	681	4
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	11	0	1284	748	4
Pedestrians				2	1	
Lane Width (m)				3.5	3.5	
Walking Speed (m/s)				1.2	1.2	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				191		
pX, platoon unblocked	0.86					
vC, conflicting volume	1393	378	752			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1135	378	752			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	171	624	867			

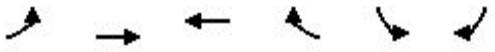
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	642	642	499	253
Volume Left	0	0	0	0	0
Volume Right	11	0	0	0	4
cSH	624	1700	1700	1700	1700
Volume to Capacity	0.02	0.38	0.38	0.29	0.15
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	10.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	24	21	361	903	38
Future Volume (Veh/h)	11	24	21	361	903	38
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	12	25	22	380	951	40
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	1210	976	996			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1210	976	996			
tC, single (s)	7.0	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	92	90	97			
cM capacity (veh/h)	157	253	700			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	37	149	253	991
Volume Left	12	22	0	0
Volume Right	25	0	0	40
cSH	211	700	1700	1700
Volume to Capacity	0.18	0.03	0.15	0.58
Queue Length 95th (m)	5.0	0.8	0.0	0.0
Control Delay (s)	25.6	1.8	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	25.6	0.7		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	361	843	53	0	71
Future Volume (Veh/h)	20	361	843	53	0	71
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	392	916	58	0	77
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			111			
pX, platoon unblocked						
vC, conflicting volume	974				1185	945
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	974				1185	945
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	71
cM capacity (veh/h)	716				179	267

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	153	261	974	77
Volume Left	22	0	0	0
Volume Right	0	0	58	77
cSH	716	1700	1700	267
Volume to Capacity	0.03	0.15	0.57	0.29
Queue Length 95th (m)	0.8	0.0	0.0	9.3
Control Delay (s)	1.8	0.0	0.0	23.9
Lane LOS	A			C
Approach Delay (s)	0.6		0.0	23.9
Approach LOS				C

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	347	10	4	24	59	91	21	403	8	41	12	521
Future Volume (vph)	347	10	4	24	59	91	21	403	8	41	12	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0		115.0	
Storage Lanes	2		0	1		0	1		0		1	
Taper Length (m)	7.5			7.5			50.0				7.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99			1.00			0.99	
Frt		0.960			0.909			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	3395	1797	0	1785	1691	0	1785	3488	0	0	1758	1842
Flt Permitted	0.950			0.748			0.114				0.403	
Satd. Flow (perm)	3375	1797	0	1404	1691	0	214	3488	0	0	739	1842
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		4			62			2				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		111.2			382.3			446.3				124.4
Travel Time (s)		8.0			27.5			32.1				9.0
Confl. Peds. (#/hr)	4		1	1		4	2		9		9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	2%	0%	2%
Adj. Flow (vph)	369	11	4	26	63	97	22	429	9	45	13	554
Shared Lane Traffic (%)												
Lane Group Flow (vph)	369	15	0	26	160	0	22	438	0	0	58	554
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	R NA	Left	Left
Median Width(m)		7.0			7.0			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	15	25	
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	41.2	82.4		41.2	41.2		41.4	41.4		41.4	41.4	41.4
Total Split (%)	33.3%	66.6%		33.3%	33.3%		33.4%	33.4%		33.4%	33.4%	33.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

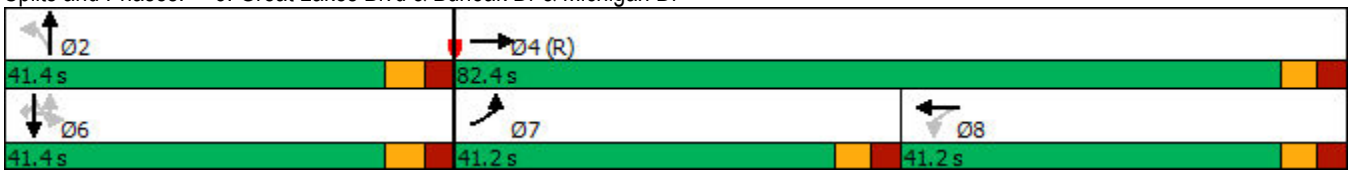
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	816
Future Volume (vph)	816
Ideal Flow (vphpl)	1900
Storage Length (m)	0.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1581
Flt Permitted	
Satd. Flow (perm)	1543
Right Turn on Red	Yes
Satd. Flow (RTOR)	699
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	2
Peak Hour Factor	0.94
Heavy Vehicles (%)	1%
Adj. Flow (vph)	868
Shared Lane Traffic (%)	
Lane Group Flow (vph)	868
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	15
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	35.0
Minimum Split (s)	41.4
Total Split (s)	41.4
Total Split (%)	33.4%
Yellow Time (s)	3.7
All-Red Time (s)	2.7
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.4
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Act Effct Green (s)	35.0	76.2		35.0	35.0		35.0	35.0			35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28			0.28	0.28
v/c Ratio	0.38	0.01		0.07	0.31		0.37	0.44			0.28	1.07
Control Delay	37.2	7.6		33.2	22.8		55.7	38.0			39.1	100.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	37.2	7.6		33.2	22.8		55.7	38.0			39.1	100.7
LOS	D	A		C	C		E	D			D	F
Approach Delay		36.0			24.2			38.8				54.1
Approach LOS		D			C			D				D
Queue Length 50th (m)	39.2	1.0		4.9	19.2		4.5	48.2			11.6	~156.4
Queue Length 95th (m)	53.7	3.8		12.4	38.4		14.7	64.6			24.6	#227.2
Internal Link Dist (m)		87.2			358.3			422.3				100.4
Turn Bay Length (m)							65.0				115.0	
Base Capacity (vph)	959	1107		396	522		60	987			208	520
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.38	0.01		0.07	0.31		0.37	0.44			0.28	1.07

Intersection Summary

Area Type: Other
Cycle Length: 123.8
Actuated Cycle Length: 123.8
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 46.3 Intersection LOS: D
Intersection Capacity Utilization 124.1% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Lane Group	SBR
Act Effct Green (s)	35.0
Actuated g/C Ratio	0.28
v/c Ratio	0.93
Control Delay	25.4
Queue Delay	0.0
Total Delay	25.4
LOS	C
Approach Delay	
Approach LOS	
Queue Length 50th (m)	50.0
Queue Length 95th (m)	#154.2
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	937
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.93

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	347	10	4	24	59	91	21	403	8	41	12	521
Future Volume (vph)	347	10	4	24	59	91	21	403	8	41	12	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			0.99	1.00
Frt	1.00	0.96		1.00	0.91		1.00	1.00			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	3395	1797		1783	1691		1785	3488			1742	1842
Flt Permitted	0.95	1.00		0.75	1.00		0.11	1.00			0.40	1.00
Satd. Flow (perm)	3395	1797		1403	1691		215	3488			740	1842
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.94	0.94
Adj. Flow (vph)	369	11	4	26	63	97	22	429	9	45	13	554
RTOR Reduction (vph)	0	2	0	0	44	0	0	1	0	0	0	0
Lane Group Flow (vph)	369	13	0	26	116	0	22	437	0	0	58	554
Confl. Peds. (#/hr)	4		1	1		4	2		9		9	
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	2%	0%	2%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Actuated Green, G (s)	35.0	76.2		35.0	35.0		35.0	35.0			35.0	35.0
Effective Green, g (s)	35.0	76.2		35.0	35.0		35.0	35.0			35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28			0.28	0.28
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	959	1106		396	478		60	986			209	520
v/s Ratio Prot	c0.11	0.01			c0.07			0.13				c0.30
v/s Ratio Perm				0.02			0.10				0.08	
v/c Ratio	0.38	0.01		0.07	0.24		0.37	0.44			0.28	1.07
Uniform Delay, d1	35.7	9.2		32.4	34.2		35.5	36.4			34.6	44.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	1.2	0.0		0.3	1.2		3.8	0.3			0.7	58.0
Delay (s)	36.9	9.2		32.8	35.4		39.3	36.7			35.3	102.4
Level of Service	D	A		C	D		D	D			D	F
Approach Delay (s)		35.8			35.0			36.8				72.2
Approach LOS		D			D			D				E

Intersection Summary			
HCM 2000 Control Delay	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	124.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	816
Future Volume (vph)	816
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.98
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1543
Flt Permitted	1.00
Satd. Flow (perm)	1543
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	868
RTOR Reduction (vph)	501
Lane Group Flow (vph)	367
Confl. Peds. (#/hr)	2
Heavy Vehicles (%)	1%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	35.0
Effective Green, g (s)	35.0
Actuated g/C Ratio	0.28
Clearance Time (s)	6.4
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	436
v/s Ratio Prot	
v/s Ratio Perm	0.24
v/c Ratio	0.84
Uniform Delay, d1	41.8
Progression Factor	1.00
Incremental Delay, d2	13.6
Delay (s)	55.4
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	89	0	882	1301	87
Future Volume (Veh/h)	0	89	0	882	1301	87
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	97	0	959	1414	95
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (m)				124		
pX, platoon unblocked	0.90					
vC, conflicting volume	1941	754	1509			
vC1, stage 1 conf vol	1462					
vC2, stage 2 conf vol	480					
vCu, unblocked vol	1827	754	1509			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	73	100			
cM capacity (veh/h)	175	356	449			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	97	480	480	943	566
Volume Left	0	0	0	0	0
Volume Right	97	0	0	0	95
cSH	356	1700	1700	1700	1700
Volume to Capacity	0.27	0.28	0.28	0.55	0.33
Queue Length 95th (m)	8.7	0.0	0.0	0.0	0.0
Control Delay (s)	18.9	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	18.9	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	5	0	884	1394	7
Future Volume (Veh/h)	0	5	0	884	1394	7
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	5	0	971	1532	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				191		
pX, platoon unblocked	0.91					
vC, conflicting volume	2022	770	1540			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1921	770	1540			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	55	348	437			

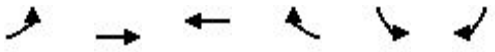
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	5	486	486	1021	519
Volume Left	0	0	0	0	0
Volume Right	5	0	0	0	8
cSH	348	1700	1700	1700	1700
Volume to Capacity	0.01	0.29	0.29	0.60	0.31
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0
Control Delay (s)	15.5	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	15.5	0.0		0.0	
Approach LOS	C				

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	48.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	18	15	451	575	23
Future Volume (Veh/h)	13	18	15	451	575	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	14	19	16	480	612	24
Pedestrians	2					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	898	626	638			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	898	626	638			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	96	98			
cM capacity (veh/h)	278	431	954			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	33	176	320	636
Volume Left	14	16	0	0
Volume Right	19	0	0	24
cSH	349	954	1700	1700
Volume to Capacity	0.09	0.02	0.19	0.37
Queue Length 95th (m)	2.5	0.4	0.0	0.0
Control Delay (s)	16.4	1.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.4	0.3		0.0
Approach LOS	C			

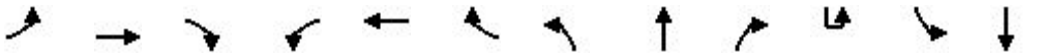
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	425	517	49	0	52
Future Volume (Veh/h)	28	425	517	49	0	52
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	462	562	53	0	57
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			111			
pX, platoon unblocked						
vC, conflicting volume	615				880	588
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	615				880	588
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	88
cM capacity (veh/h)	974				282	457

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	184	308	615	57
Volume Left	30	0	0	0
Volume Right	0	0	53	57
cSH	974	1700	1700	457
Volume to Capacity	0.03	0.18	0.36	0.12
Queue Length 95th (m)	0.8	0.0	0.0	3.4
Control Delay (s)	1.7	0.0	0.0	14.0
Lane LOS	A			B
Approach Delay (s)	0.6		0.0	14.0
Approach LOS				B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	410	8	7	3	3	13	33	487	7	51	8	493
Future Volume (vph)	410	8	7	3	3	13	33	487	7	51	8	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0		115.0	
Storage Lanes	2		0	1		0	1		0		1	
Taper Length (m)	7.5			7.5			50.0				7.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00			0.99	
Frt		0.930			0.876			0.998				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	3429	1747	0	1785	1646	0	1785	3526	0	0	1754	1860
Flt Permitted	0.950			0.748			0.114				0.339	
Satd. Flow (perm)	3429	1747	0	1405	1646	0	214	3526	0	0	621	1860
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		7			14			1				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		111.2			382.3			446.3				124.4
Travel Time (s)		8.0			27.5			32.1				9.0
Confl. Peds. (#/hr)							1		9		9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	2%	0%	1%
Adj. Flow (vph)	427	8	7	3	3	14	34	507	7	55	8	514
Shared Lane Traffic (%)												
Lane Group Flow (vph)	427	15	0	3	17	0	34	514	0	0	63	514
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	Left
Median Width(m)		7.0			7.0			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	15	25	
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	41.2	82.4		41.2	41.2		41.4	41.4		41.4	41.4	41.4
Total Split (%)	33.3%	66.6%		33.3%	33.3%		33.4%	33.4%		33.4%	33.4%	33.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

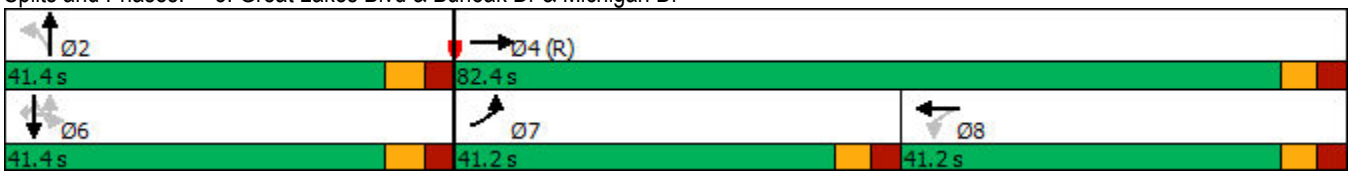
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	530
Future Volume (vph)	530
Ideal Flow (vphpl)	1900
Storage Length (m)	0.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1597
Flt Permitted	
Satd. Flow (perm)	1562
Right Turn on Red	Yes
Satd. Flow (RTOR)	479
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	1
Peak Hour Factor	0.96
Heavy Vehicles (%)	0%
Adj. Flow (vph)	552
Shared Lane Traffic (%)	
Lane Group Flow (vph)	552
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	15
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	35.0
Minimum Split (s)	41.4
Total Split (s)	41.4
Total Split (%)	33.4%
Yellow Time (s)	3.7
All-Red Time (s)	2.7
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.4
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Act Effct Green (s)	35.0	76.2		35.0	35.0		35.0	35.0			35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28			0.28	0.28
v/c Ratio	0.44	0.01		0.01	0.04		0.57	0.52			0.36	0.98
Control Delay	38.1	6.6		32.0	16.8		76.1	39.4			42.7	78.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	38.1	6.6		32.0	16.8		76.1	39.4			42.7	78.8
LOS	D	A		C	B		E	D			D	E
Approach Delay		37.1			19.1			41.7				43.9
Approach LOS		D			B			D				D
Queue Length 50th (m)	46.2	0.8		0.6	0.6		7.5	58.1			12.9	130.7
Queue Length 95th (m)	62.0	3.5		3.0	6.6		#24.9	76.2			27.4	#203.0
Internal Link Dist (m)		87.2			358.3			422.3				100.4
Turn Bay Length (m)							65.0				115.0	
Base Capacity (vph)	969	1077		397	475		60	997			175	525
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.44	0.01		0.01	0.04		0.57	0.52			0.36	0.98

Intersection Summary

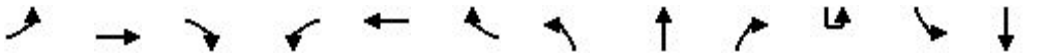
Area Type: Other
Cycle Length: 123.8
Actuated Cycle Length: 123.8
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 41.7 Intersection LOS: D
Intersection Capacity Utilization 84.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Lane Group	SBR
Act Effct Green (s)	35.0
Actuated g/C Ratio	0.28
v/c Ratio	0.70
Control Delay	11.5
Queue Delay	0.0
Total Delay	11.5
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (m)	14.1
Queue Length 95th (m)	55.9
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	785
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.70

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	410	8	7	3	3	13	33	487	7	51	8	493
Future Volume (vph)	410	8	7	3	3	13	33	487	7	51	8	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			0.99	1.00
Frt	1.00	0.93		1.00	0.88		1.00	1.00			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	3429	1747		1785	1647		1784	3526			1741	1860
Flt Permitted	0.95	1.00		0.75	1.00		0.11	1.00			0.34	1.00
Satd. Flow (perm)	3429	1747		1405	1647		215	3526			622	1860
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96
Adj. Flow (vph)	427	8	7	3	3	14	34	507	7	55	8	514
RTOR Reduction (vph)	0	3	0	0	10	0	0	1	0	0	0	0
Lane Group Flow (vph)	427	12	0	3	7	0	34	513	0	0	63	514
Confl. Peds. (#/hr)							1		9		9	
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	2%	0%	1%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Actuated Green, G (s)	35.0	76.2		35.0	35.0		35.0	35.0			35.0	35.0
Effective Green, g (s)	35.0	76.2		35.0	35.0		35.0	35.0			35.0	35.0
Actuated g/C Ratio	0.28	0.62		0.28	0.28		0.28	0.28			0.28	0.28
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	969	1075		397	465		60	996			175	525
v/s Ratio Prot	c0.12	0.01			c0.00			0.15				c0.28
v/s Ratio Perm				0.00			0.16				0.10	
v/c Ratio	0.44	0.01		0.01	0.01		0.57	0.52			0.36	0.98
Uniform Delay, d1	36.4	9.2		31.9	32.0		37.9	37.3			35.5	44.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	1.5	0.0		0.0	0.1		11.7	0.5			1.3	33.5
Delay (s)	37.8	9.2		32.0	32.0		49.6	37.7			36.7	77.5
Level of Service	D	A		C	C		D	D			D	E
Approach Delay (s)		36.9			32.0			38.5				55.7
Approach LOS		D			C			D				E

Intersection Summary			
HCM 2000 Control Delay	47.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	530
Future Volume (vph)	530
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.98
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1562
Flt Permitted	1.00
Satd. Flow (perm)	1562
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	552
RTOR Reduction (vph)	344
Lane Group Flow (vph)	208
Confl. Peds. (#/hr)	1
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	35.0
Effective Green, g (s)	35.0
Actuated g/C Ratio	0.28
Clearance Time (s)	6.4
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	441
v/s Ratio Prot	
v/s Ratio Perm	0.13
v/c Ratio	0.47
Uniform Delay, d1	36.8
Progression Factor	1.00
Incremental Delay, d2	0.8
Delay (s)	37.6
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	95	0	961	987	75
Future Volume (Veh/h)	0	95	0	961	987	75
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	103	0	1045	1073	82
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (m)				124		
pX, platoon unblocked	0.88					
vC, conflicting volume	1636	578	1155			
vC1, stage 1 conf vol	1114					
vC2, stage 2 conf vol	522					
vCu, unblocked vol	1453	578	1155			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	78	100			
cM capacity (veh/h)	264	464	612			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	103	522	522	715	440
Volume Left	0	0	0	0	0
Volume Right	103	0	0	0	82
cSH	464	1700	1700	1700	1700
Volume to Capacity	0.22	0.31	0.31	0.42	0.26
Queue Length 95th (m)	6.7	0.0	0.0	0.0	0.0
Control Delay (s)	14.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	14.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	9	0	985	1037	3
Future Volume (Veh/h)	0	9	0	985	1037	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	9	0	1015	1069	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)				191		
pX, platoon unblocked	0.89					
vC, conflicting volume	1578	536	1072			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1396	536	1072			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	119	494	658			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	9	508	508	713	359
Volume Left	0	0	0	0	0
Volume Right	9	0	0	0	3
cSH	494	1700	1700	1700	1700
Volume to Capacity	0.02	0.30	0.30	0.42	0.21
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	12.4	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.4	0.0		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	38.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	36	14	622	223	7
Future Volume (Veh/h)	28	36	14	622	223	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	32	41	16	707	253	8
Pedestrians	4				1	
Lane Width (m)	3.5				3.5	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	648	261	265			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	648	261	265			
tC, single (s)	6.8	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	92	94	99			
cM capacity (veh/h)	401	732	1256			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	73	252	471	261
Volume Left	32	16	0	0
Volume Right	41	0	0	8
cSH	538	1256	1700	1700
Volume to Capacity	0.14	0.01	0.28	0.15
Queue Length 95th (m)	3.7	0.3	0.0	0.0
Control Delay (s)	12.7	0.6	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.7	0.2		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

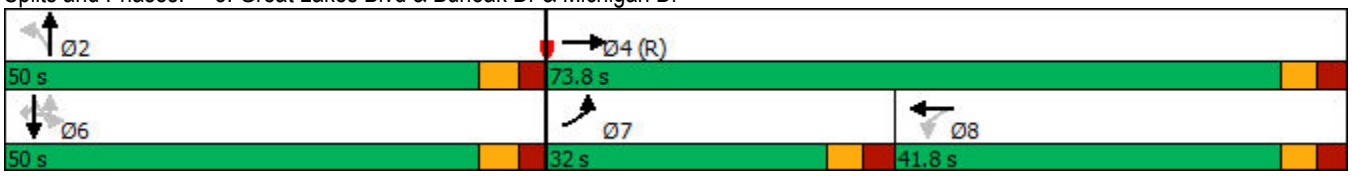
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	590	41	1	3	4	33	2	517	19	149	279	236
Future Volume (vph)	590	41	1	3	4	33	2	517	19	149	279	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0	115.0		0.0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			50.0			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99				0.98			1.00		1.00		
Frt		0.997			0.865			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3395	1873	0	1785	1463	0	1785	3449	0	1750	1824	1493
Flt Permitted	0.950			0.726			0.414			0.307		
Satd. Flow (perm)	3348	1873	0	1364	1463	0	778	3449	0	563	1824	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			37			3				262
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		111.2			382.3			446.3			124.4	
Travel Time (s)		8.0			27.5			32.1			9.0	
Confl. Peds. (#/hr)	8					8			5	5		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	0%	0%	10%	0%	3%	0%	2%	3%	7%
Adj. Flow (vph)	656	46	1	3	4	37	2	574	21	166	310	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	656	47	0	3	41	0	2	595	0	166	310	262
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane											Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	32.0	73.8		41.8	41.8		50.0	50.0		50.0	50.0	50.0
Total Split (%)	25.8%	59.6%		33.8%	33.8%		40.4%	40.4%		40.4%	40.4%	40.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

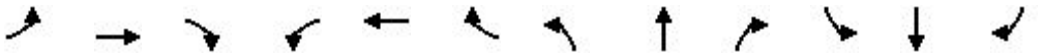
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	29.4	71.2		35.6	35.6		40.0	40.0		40.0	40.0	40.0
Actuated g/C Ratio	0.24	0.58		0.29	0.29		0.32	0.32		0.32	0.32	0.32
v/c Ratio	0.81	0.04		0.01	0.09		0.01	0.53		0.91	0.53	0.40
Control Delay	54.5	12.6		31.7	11.9		26.5	35.6		88.3	37.3	5.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	54.5	12.6		31.7	11.9		26.5	35.6		88.3	37.3	5.2
LOS	D	B		C	B		C	D		F	D	A
Approach Delay		51.7			13.2			35.6			37.4	
Approach LOS		D			B			D			D	
Queue Length 50th (m)	84.8	5.2		0.6	0.7		0.3	62.8		39.3	62.4	0.0
Queue Length 95th (m)	#121.1	11.3		3.0	9.7		2.4	80.0		#81.4	89.7	18.3
Internal Link Dist (m)		87.2			358.3			422.3			100.4	
Turn Bay Length (m)							65.0			115.0		
Base Capacity (vph)	806	1078		392	447		273	1216		198	642	695
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.81	0.04		0.01	0.09		0.01	0.49		0.84	0.48	0.38

Intersection Summary

Area Type: Other
Cycle Length: 123.8
Actuated Cycle Length: 123.8
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 41.2 Intersection LOS: D
Intersection Capacity Utilization 102.5% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	590	41	1	3	4	33	2	517	19	149	279	236
Future Volume (vph)	590	41	1	3	4	33	2	517	19	149	279	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.86		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3395	1873		1785	1462		1785	3447		1744	1824	1493
Flt Permitted	0.95	1.00		0.73	1.00		0.41	1.00		0.31	1.00	1.00
Satd. Flow (perm)	3395	1873		1365	1462		778	3447		564	1824	1493
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	656	46	1	3	4	37	2	574	21	166	310	262
RTOR Reduction (vph)	0	0	0	0	26	0	0	2	0	0	0	177
Lane Group Flow (vph)	656	47	0	3	15	0	2	593	0	166	310	85
Confl. Peds. (#/hr)	8					8			5	5		
Heavy Vehicles (%)	2%	0%	0%	0%	0%	10%	0%	3%	0%	2%	3%	7%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	29.4	71.2		35.6	35.6		40.0	40.0		40.0	40.0	40.0
Effective Green, g (s)	29.4	71.2		35.6	35.6		40.0	40.0		40.0	40.0	40.0
Actuated g/C Ratio	0.24	0.58		0.29	0.29		0.32	0.32		0.32	0.32	0.32
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	806	1077		392	420		251	1113		182	589	482
v/s Ratio Prot	c0.19	c0.02			0.01			0.17			0.17	
v/s Ratio Perm				0.00			0.00			c0.29		0.06
v/c Ratio	0.81	0.04		0.01	0.03		0.01	0.53		0.91	0.53	0.18
Uniform Delay, d1	44.6	11.5		31.5	31.7		28.4	34.3		40.2	34.2	30.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.8	0.1		0.0	0.2		0.0	0.5		42.4	0.9	0.2
Delay (s)	53.4	11.5		31.5	31.9		28.4	34.8		82.6	35.0	30.2
Level of Service	D	B		C	C		C	C		F	D	C
Approach Delay (s)		50.6			31.9			34.7			44.0	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	0	1149	664	4
Future Volume (Veh/h)	0	10	0	1149	664	4
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	11	0	1263	730	4
Pedestrians				2	1	
Lane Width (m)				3.5	3.5	
Walking Speed (m/s)				1.2	1.2	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				191		
pX, platoon unblocked	0.87					
vC, conflicting volume	1364	369	734			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1120	369	734			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	177	633	880			

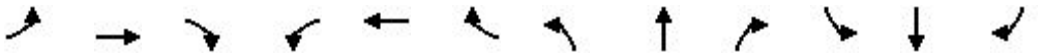
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	632	632	487	247
Volume Left	0	0	0	0	0
Volume Right	11	0	0	0	4
cSH	633	1700	1700	1700	1700
Volume to Capacity	0.02	0.37	0.37	0.29	0.15
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.8	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	24	21	343	860	35
Future Volume (Veh/h)	9	24	21	343	860	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	9	25	22	361	905	37
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	1153	928	947			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1153	928	947			
tC, single (s)	7.0	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	95	91	97			
cM capacity (veh/h)	172	272	730			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	34	142	241	942
Volume Left	9	22	0	0
Volume Right	25	0	0	37
cSH	236	730	1700	1700
Volume to Capacity	0.14	0.03	0.14	0.55
Queue Length 95th (m)	4.0	0.7	0.0	0.0
Control Delay (s)	22.8	1.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	22.8	0.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

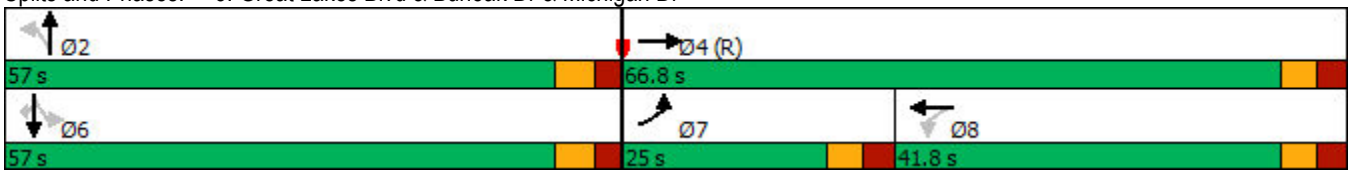


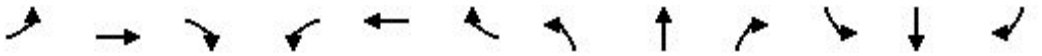
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	10	4	24	51	91	1	403	8	11	495	816
Future Volume (vph)	347	10	4	24	51	91	1	403	8	11	495	816
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0	115.0		0.0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			50.0			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	1.00		0.99		0.98
Frt		0.960			0.904			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3395	1797	0	1785	1681	0	1785	3488	0	1785	1842	1581
Flt Permitted	0.950			0.748			0.178			0.436		
Satd. Flow (perm)	3375	1797	0	1404	1681	0	334	3488	0	812	1842	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			73			2				868
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		111.2			382.3			446.3			124.4	
Travel Time (s)		8.0			27.5			32.1			9.0	
Confl. Peds. (#/hr)	4		1	1		4	2		9	9		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	369	11	4	26	54	97	1	429	9	12	527	868
Shared Lane Traffic (%)												
Lane Group Flow (vph)	369	15	0	26	151	0	1	438	0	12	527	868
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane											Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	25.0	66.8		41.8	41.8		57.0	57.0		57.0	57.0	57.0
Total Split (%)	20.2%	54.0%		33.8%	33.8%		46.0%	46.0%		46.0%	46.0%	46.0%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	26.0	67.8		35.6	35.6		43.4	43.4		43.4	43.4	43.4
Actuated g/C Ratio	0.21	0.55		0.29	0.29		0.35	0.35		0.35	0.35	0.35
v/c Ratio	0.52	0.02		0.06	0.28		0.01	0.36		0.04	0.82	0.79
Control Delay	47.9	12.7		32.8	19.2		23.0	29.8		24.0	47.1	7.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	47.9	12.7		32.8	19.2		23.0	29.8		24.0	47.1	7.6
LOS	D	B		C	B		C	C		C	D	A
Approach Delay		46.5			21.2			29.8			22.5	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	43.9	1.3		4.9	14.9		0.2	42.9		2.0	120.9	0.0
Queue Length 95th (m)	64.1	5.2		12.3	33.1		1.4	52.5		6.1	152.9	31.2
Internal Link Dist (m)		87.2			358.3			422.3			100.4	
Turn Bay Length (m)							65.0			115.0		
Base Capacity (vph)	712	985		403	535		136	1426		331	752	1143
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.52	0.02		0.06	0.28		0.01	0.31		0.04	0.70	0.76

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.8			
Actuated Cycle Length: 123.8			
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 27.6		Intersection LOS: C	
Intersection Capacity Utilization 124.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	10	4	24	51	91	1	403	8	11	495	816
Future Volume (vph)	347	10	4	24	51	91	1	403	8	11	495	816
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.96		1.00	0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3395	1797		1783	1680		1783	3488		1769	1842	1543
Flt Permitted	0.95	1.00		0.75	1.00		0.18	1.00		0.44	1.00	1.00
Satd. Flow (perm)	3395	1797		1403	1680		335	3488		811	1842	1543
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	369	11	4	26	54	97	1	429	9	12	527	868
RTOR Reduction (vph)	0	2	0	0	52	0	0	1	0	0	0	564
Lane Group Flow (vph)	369	13	0	26	99	0	1	437	0	12	527	304
Confl. Peds. (#/hr)	4		1	1		4	2		9	9		2
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	1%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	26.0	67.8		35.6	35.6		43.4	43.4		43.4	43.4	43.4
Effective Green, g (s)	26.0	67.8		35.6	35.6		43.4	43.4		43.4	43.4	43.4
Actuated g/C Ratio	0.21	0.55		0.29	0.29		0.35	0.35		0.35	0.35	0.35
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	713	984		403	483		117	1222		284	645	540
v/s Ratio Prot	c0.11	0.01			c0.06			0.13			c0.29	
v/s Ratio Perm				0.02			0.00			0.01		0.20
v/c Ratio	0.52	0.01		0.06	0.20		0.01	0.36		0.04	0.82	0.56
Uniform Delay, d1	43.3	12.8		32.0	33.4		26.2	29.8		26.5	36.6	32.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.7	0.0		0.3	1.0		0.0	0.2		0.1	7.9	1.4
Delay (s)	46.0	12.8		32.3	34.3		26.2	30.0		26.6	44.5	33.9
Level of Service	D	B		C	C		C	C		C	D	C
Approach Delay (s)		44.7			34.0			30.0			37.8	
Approach LOS		D			C			C			D	

Intersection Summary					
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.53				
Actuated Cycle Length (s)	123.8	Sum of lost time (s)		18.8	
Intersection Capacity Utilization	124.1%	ICU Level of Service		H	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	5	0	843	1328	7
Future Volume (Veh/h)	0	5	0	843	1328	7
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	5	0	926	1459	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				191		
pX, platoon unblocked	0.92					
vC, conflicting volume	1926	734	1467			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1829	734	1467			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	64	367	466			

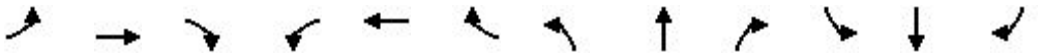
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	5	463	463	973	494
Volume Left	0	0	0	0	0
Volume Right	5	0	0	0	8
cSH	367	1700	1700	1700	1700
Volume to Capacity	0.01	0.27	0.27	0.57	0.29
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0
Control Delay (s)	14.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	14.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	18	15	425	544	21
Future Volume (Veh/h)	11	18	15	425	544	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	12	19	16	452	579	22
Pedestrians	2					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	850	592	603			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	850	592	603			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	96	98			
cM capacity (veh/h)	298	454	983			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	31	167	301	601
Volume Left	12	16	0	0
Volume Right	19	0	0	22
cSH	377	983	1700	1700
Volume to Capacity	0.08	0.02	0.18	0.35
Queue Length 95th (m)	2.1	0.4	0.0	0.0
Control Delay (s)	15.4	1.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.4	0.3		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

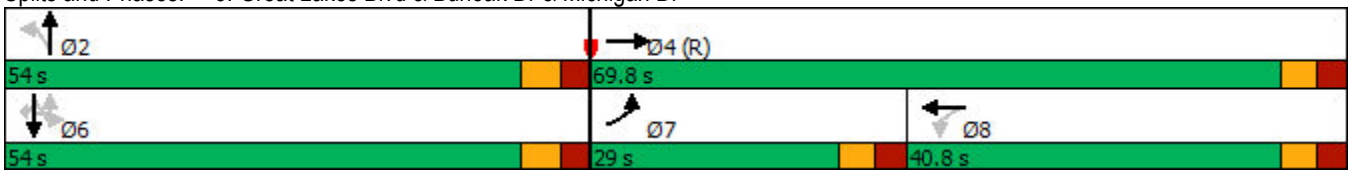


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	410	8	7	3	2	13	4	487	7	7	467	530
Future Volume (vph)	410	8	7	3	2	13	4	487	7	7	467	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0	115.0		0.0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			50.0			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00		0.99		0.98
Frt		0.930			0.869			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3429	1747	0	1785	1633	0	1785	3526	0	1785	1860	1597
Flt Permitted	0.950			0.748			0.190			0.366		
Satd. Flow (perm)	3429	1747	0	1405	1633	0	357	3526	0	682	1860	1562
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			14			1				552
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		111.2			382.3			446.3			124.4	
Travel Time (s)		8.0			27.5			32.1			9.0	
Confl. Peds. (#/hr)							1		9	9		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	427	8	7	3	2	14	4	507	7	7	486	552
Shared Lane Traffic (%)												
Lane Group Flow (vph)	427	15	0	3	16	0	4	514	0	7	486	552
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane											Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	29.0	69.8		40.8	40.8		54.0	54.0		54.0	54.0	54.0
Total Split (%)	23.4%	56.4%		33.0%	33.0%		43.6%	43.6%		43.6%	43.6%	43.6%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	30.2	71.0		34.6	34.6		40.2	40.2		40.2	40.2	40.2
Actuated g/C Ratio	0.24	0.57		0.28	0.28		0.32	0.32		0.32	0.32	0.32
v/c Ratio	0.51	0.01		0.01	0.03		0.03	0.45		0.03	0.80	0.63
Control Delay	44.2	9.9		32.3	16.1		26.2	33.7		25.9	48.8	5.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	44.2	9.9		32.3	16.1		26.2	33.7		25.9	48.8	5.7
LOS	D	A		C	B		C	C		C	D	A
Approach Delay		43.1			18.6			33.6			25.9	
Approach LOS		D			B			C			C	
Queue Length 50th (m)	48.6	0.8		0.6	0.4		0.7	54.9		1.2	114.3	0.0
Queue Length 95th (m)	71.1	4.6		3.0	6.0		3.3	64.6		4.4	143.1	23.7
Internal Link Dist (m)		87.2			358.3			422.3			100.4	
Turn Bay Length (m)							65.0			115.0		
Base Capacity (vph)	835	1004		392	466		137	1356		262	715	940
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.51	0.01		0.01	0.03		0.03	0.38		0.03	0.68	0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.8			
Actuated Cycle Length: 123.8			
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 31.5		Intersection LOS: C	
Intersection Capacity Utilization 84.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	410	8	7	3	2	13	4	487	7	7	467	530
Future Volume (vph)	410	8	7	3	2	13	4	487	7	7	467	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.93		1.00	0.87		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3429	1747		1785	1632		1784	3526		1771	1860	1562
Flt Permitted	0.95	1.00		0.75	1.00		0.19	1.00		0.37	1.00	1.00
Satd. Flow (perm)	3429	1747		1405	1632		356	3526		682	1860	1562
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	427	8	7	3	2	14	4	507	7	7	486	552
RTOR Reduction (vph)	0	3	0	0	10	0	0	1	0	0	0	373
Lane Group Flow (vph)	427	12	0	3	6	0	4	513	0	7	486	179
Confl. Peds. (#/hr)							1		9	9		1
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	30.2	71.0		34.6	34.6		40.2	40.2		40.2	40.2	40.2
Effective Green, g (s)	30.2	71.0		34.6	34.6		40.2	40.2		40.2	40.2	40.2
Actuated g/C Ratio	0.24	0.57		0.28	0.28		0.32	0.32		0.32	0.32	0.32
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	836	1001		392	456		115	1144		221	603	507
v/s Ratio Prot	c0.12	0.01			c0.00			0.15			c0.26	
v/s Ratio Perm				0.00			0.01			0.01		0.11
v/c Ratio	0.51	0.01		0.01	0.01		0.03	0.45		0.03	0.81	0.35
Uniform Delay, d1	40.4	11.3		32.2	32.3		28.5	33.0		28.5	38.2	31.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.2	0.0		0.0	0.1		0.1	0.3		0.1	7.7	0.4
Delay (s)	42.6	11.4		32.2	32.3		28.7	33.3		28.6	46.0	32.3
Level of Service	D	B		C	C		C	C		C	D	C
Approach Delay (s)		41.6			32.3			33.3			38.6	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	8	0	934	980	3
Future Volume (Veh/h)	0	8	0	934	980	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	8	0	963	1010	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)				191		
pX, platoon unblocked	0.89					
vC, conflicting volume	1493	506	1013			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1314	506	1013			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	136	517	692			

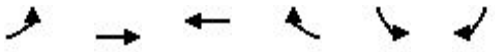
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	482	482	673	340
Volume Left	0	0	0	0	0
Volume Right	8	0	0	0	3
cSH	517	1700	1700	1700	1700
Volume to Capacity	0.02	0.28	0.28	0.40	0.20
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	12.1	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.1	0.0		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	37.2%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	36	14	638	228	7
Future Volume (Veh/h)	30	36	14	638	228	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	34	41	16	725	259	8
Pedestrians	4				1	
Lane Width (m)	3.5				3.5	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	0				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	662	267	271			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	662	267	271			
tC, single (s)	6.8	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	91	94	99			
cM capacity (veh/h)	392	726	1250			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	75	258	483	267
Volume Left	34	16	0	0
Volume Right	41	0	0	8
cSH	524	1250	1700	1700
Volume to Capacity	0.14	0.01	0.28	0.16
Queue Length 95th (m)	4.0	0.3	0.0	0.0
Control Delay (s)	13.0	0.6	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.0	0.2		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	632	242	14	0	5
Future Volume (Veh/h)	18	632	242	14	0	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	687	263	15	0	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			111			
pX, platoon unblocked						
vC, conflicting volume	278				654	270
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	278				654	270
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	99
cM capacity (veh/h)	1296				398	733

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	249	458	278	5
Volume Left	20	0	0	0
Volume Right	0	0	15	5
cSH	1296	1700	1700	733
Volume to Capacity	0.02	0.27	0.16	0.01
Queue Length 95th (m)	0.4	0.0	0.0	0.2
Control Delay (s)	0.8	0.0	0.0	9.9
Lane LOS	A			A
Approach Delay (s)	0.3		0.0	9.9
Approach LOS				A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	590	41	1	3	5	33	15	517	19	19	153	284
Future Volume (vph)	590	41	1	3	5	33	15	517	19	19	153	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0		115.0	
Storage Lanes	2		0	1		0	1		0		1	
Taper Length (m)	7.5			7.5			50.0				7.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99				0.98			1.00			1.00	
Frt		0.997			0.871			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	3395	1873	0	1785	1480	0	1785	3449	0	0	1750	1824
Flt Permitted	0.950			0.726			0.419				0.317	
Satd. Flow (perm)	3348	1873	0	1364	1480	0	787	3449	0	0	582	1824
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		1			37			3				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		111.2			382.3			446.3				124.4
Travel Time (s)		8.0			27.5			32.1				9.0
Confl. Peds. (#/hr)	8					8			5		5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	0%	0%	10%	0%	3%	0%	2%	2%	3%
Adj. Flow (vph)	656	46	1	3	6	37	17	574	21	21	170	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	656	47	0	3	43	0	17	595	0	0	191	316
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	R NA	Left	Left
Median Width(m)		7.0			7.0			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	15	25	
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	32.0	73.8		41.8	41.8		50.0	50.0		50.0	50.0	50.0
Total Split (%)	25.8%	59.6%		33.8%	33.8%		40.4%	40.4%		40.4%	40.4%	40.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

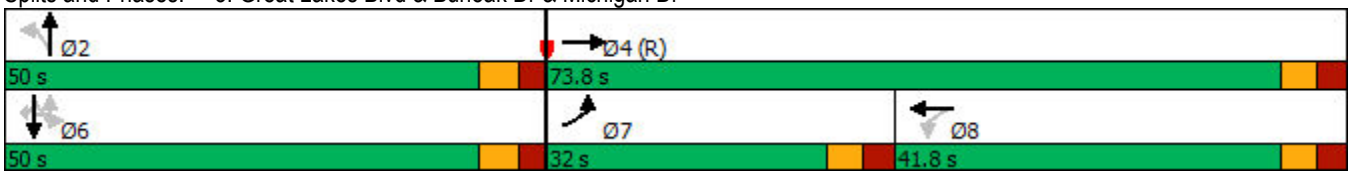
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	236
Future Volume (vph)	236
Ideal Flow (vphpl)	1900
Storage Length (m)	0.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1493
Flt Permitted	
Satd. Flow (perm)	1493
Right Turn on Red	Yes
Satd. Flow (RTOR)	262
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	7%
Adj. Flow (vph)	262
Shared Lane Traffic (%)	
Lane Group Flow (vph)	262
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	15
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	35.0
Minimum Split (s)	41.4
Total Split (s)	50.0
Total Split (%)	40.4%
Yellow Time (s)	3.7
All-Red Time (s)	2.7
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.4
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Act Effct Green (s)	27.5	69.3		35.6	35.6		41.9	41.9			41.9	41.9
Actuated g/C Ratio	0.22	0.56		0.29	0.29		0.34	0.34			0.34	0.34
v/c Ratio	0.87	0.04		0.01	0.10		0.06	0.51			0.97	0.51
Control Delay	60.3	13.1		31.7	12.6		27.6	34.0			99.0	35.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	60.3	13.1		31.7	12.6		27.6	34.0			99.0	35.8
LOS	E	B		C	B		C	C			F	D
Approach Delay		57.1			13.9			33.9				41.0
Approach LOS		E			B			C				D
Queue Length 50th (m)	85.7	5.3		0.6	1.1		2.9	62.1			46.9	63.1
Queue Length 95th (m)	#121.1	11.3		3.0	10.2		8.6	80.0			#96.2	92.0
Internal Link Dist (m)		87.2			358.3			422.3				100.4
Turn Bay Length (m)							65.0				115.0	
Base Capacity (vph)	754	1049		392	451		277	1216			204	642
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.87	0.04		0.01	0.10		0.06	0.49			0.94	0.49

Intersection Summary

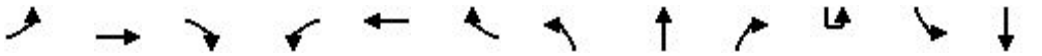
Area Type: Other
Cycle Length: 123.8
Actuated Cycle Length: 123.8
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 43.7 Intersection LOS: D
Intersection Capacity Utilization 102.5% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Lane Group	SBR
Act Effct Green (s)	41.9
Actuated g/C Ratio	0.34
v/c Ratio	0.39
Control Delay	5.1
Queue Delay	0.0
Total Delay	5.1
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	18.3
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	695
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.38

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	590	41	1	3	5	33	15	517	19	19	153	284
Future Volume (vph)	590	41	1	3	5	33	15	517	19	19	153	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.87		1.00	0.99			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	3395	1873		1785	1480		1785	3447			1744	1824
Flt Permitted	0.95	1.00		0.73	1.00		0.42	1.00			0.32	1.00
Satd. Flow (perm)	3395	1873		1365	1480		787	3447			581	1824
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.90	0.90
Adj. Flow (vph)	656	46	1	3	6	37	17	574	21	21	170	316
RTOR Reduction (vph)	0	0	0	0	26	0	0	2	0	0	0	0
Lane Group Flow (vph)	656	47	0	3	17	0	17	593	0	0	191	316
Confl. Peds. (#/hr)	8					8			5		5	
Heavy Vehicles (%)	2%	0%	0%	0%	0%	10%	0%	3%	0%	2%	2%	3%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Actuated Green, G (s)	27.5	69.3		35.6	35.6		41.9	41.9			41.9	41.9
Effective Green, g (s)	27.5	69.3		35.6	35.6		41.9	41.9			41.9	41.9
Actuated g/C Ratio	0.22	0.56		0.29	0.29		0.34	0.34			0.34	0.34
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	754	1048		392	425		266	1166			196	617
v/s Ratio Prot	c0.19	c0.02			0.01			0.17				0.17
v/s Ratio Perm				0.00			0.02				c0.33	
v/c Ratio	0.87	0.04		0.01	0.04		0.06	0.51			0.97	0.51
Uniform Delay, d1	46.4	12.3		31.5	31.8		27.7	32.7			40.4	32.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	13.1	0.1		0.0	0.2		0.1	0.4			56.4	0.7
Delay (s)	59.5	12.4		31.5	31.9		27.8	33.1			96.9	33.5
Level of Service	E	B		C	C		C	C			F	C
Approach Delay (s)		56.3			31.9			32.9				47.7
Approach LOS		E			C			C				D

Intersection Summary			
HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	236
Future Volume (vph)	236
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.4
Lane Util. Factor	1.00
Frpb, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1493
Flt Permitted	1.00
Satd. Flow (perm)	1493
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	262
RTOR Reduction (vph)	173
Lane Group Flow (vph)	89
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	7%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	41.9
Effective Green, g (s)	41.9
Actuated g/C Ratio	0.34
Clearance Time (s)	6.4
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	505
v/s Ratio Prot	
v/s Ratio Perm	0.06
v/c Ratio	0.18
Uniform Delay, d1	28.8
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	29.0
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	28	0	1159	664	17
Future Volume (Veh/h)	0	28	0	1159	664	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	30	0	1260	722	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (m)				124		
pX, platoon unblocked	0.87					
vC, conflicting volume	1361	370	740			
vC1, stage 1 conf vol	731					
vC2, stage 2 conf vol	630					
vCu, unblocked vol	1115	370	740			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	100			
cM capacity (veh/h)	389	633	876			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	30	630	630	481	259
Volume Left	0	0	0	0	0
Volume Right	30	0	0	0	18
cSH	633	1700	1700	1700	1700
Volume to Capacity	0.05	0.37	0.37	0.28	0.15
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0
Control Delay (s)	11.0	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	11.0	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	0	1168	681	4
Future Volume (Veh/h)	0	10	0	1168	681	4
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	11	0	1284	748	4
Pedestrians				2	1	
Lane Width (m)				3.5	3.5	
Walking Speed (m/s)				1.2	1.2	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				191		
pX, platoon unblocked	0.87					
vC, conflicting volume	1393	378	752			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1160	378	752			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	167	624	867			

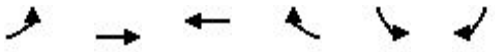
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	642	642	499	253
Volume Left	0	0	0	0	0
Volume Right	11	0	0	0	4
cSH	624	1700	1700	1700	1700
Volume to Capacity	0.02	0.38	0.38	0.29	0.15
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	10.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	24	21	361	903	38
Future Volume (Veh/h)	11	24	21	361	903	38
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	12	25	22	380	951	40
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	1210	976	996			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1210	976	996			
tC, single (s)	7.0	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	92	90	97			
cM capacity (veh/h)	157	253	700			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	37	149	253	991
Volume Left	12	22	0	0
Volume Right	25	0	0	40
cSH	211	700	1700	1700
Volume to Capacity	0.18	0.03	0.15	0.58
Queue Length 95th (m)	5.0	0.8	0.0	0.0
Control Delay (s)	25.6	1.8	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	25.6	0.7		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	361	843	53	0	71
Future Volume (Veh/h)	20	361	843	53	0	71
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	392	916	58	0	77
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			111			
pX, platoon unblocked						
vC, conflicting volume	974				1185	945
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	974				1185	945
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	71
cM capacity (veh/h)	716				179	267

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	153	261	974	77
Volume Left	22	0	0	0
Volume Right	0	0	58	77
cSH	716	1700	1700	267
Volume to Capacity	0.03	0.15	0.57	0.29
Queue Length 95th (m)	0.8	0.0	0.0	9.3
Control Delay (s)	1.8	0.0	0.0	23.9
Lane LOS	A			C
Approach Delay (s)	0.6		0.0	23.9
Approach LOS				C

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	347	10	4	24	59	91	21	403	8	41	12	521
Future Volume (vph)	347	10	4	24	59	91	21	403	8	41	12	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0		115.0	
Storage Lanes	2		0	1		0	1		0		1	
Taper Length (m)	7.5			7.5			50.0				7.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	1.00			0.99	
Frt		0.960			0.909			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	3395	1797	0	1785	1691	0	1785	3488	0	0	1758	1842
Flt Permitted	0.950			0.748			0.162				0.439	
Satd. Flow (perm)	3375	1797	0	1404	1691	0	304	3488	0	0	805	1842
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		4			63			2				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		111.2			382.3			446.3				124.4
Travel Time (s)		8.0			27.5			32.1				9.0
Confl. Peds. (#/hr)	4		1	1		4	2		9		9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	2%	0%	2%
Adj. Flow (vph)	369	11	4	26	63	97	22	429	9	45	13	554
Shared Lane Traffic (%)												
Lane Group Flow (vph)	369	15	0	26	160	0	22	438	0	0	58	554
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	R NA	Left	Left
Median Width(m)		7.0			7.0			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	15	25	
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	25.0	66.8		41.8	41.8		57.0	57.0		57.0	57.0	57.0
Total Split (%)	20.2%	54.0%		33.8%	33.8%		46.0%	46.0%		46.0%	46.0%	46.0%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

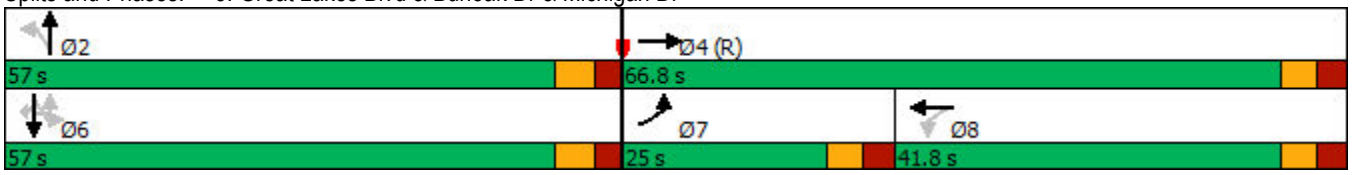
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	816
Future Volume (vph)	816
Ideal Flow (vphpl)	1900
Storage Length (m)	0.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1581
Flt Permitted	
Satd. Flow (perm)	1543
Right Turn on Red	Yes
Satd. Flow (RTOR)	848
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	2
Peak Hour Factor	0.94
Heavy Vehicles (%)	1%
Adj. Flow (vph)	868
Shared Lane Traffic (%)	
Lane Group Flow (vph)	868
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	15
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	35.0
Minimum Split (s)	41.4
Total Split (s)	57.0
Total Split (%)	46.0%
Yellow Time (s)	3.7
All-Red Time (s)	2.7
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.4
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Act Effct Green (s)	24.8	66.6		35.6	35.6		44.6	44.6			44.6	44.6
Actuated g/C Ratio	0.20	0.54		0.29	0.29		0.36	0.36			0.36	0.36
v/c Ratio	0.54	0.02		0.06	0.30		0.20	0.35			0.20	0.83
Control Delay	49.5	13.1		32.8	22.2		30.1	28.9			27.2	47.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	49.5	13.1		32.8	22.2		30.1	28.9			27.2	47.6
LOS	D	B		C	C		C	C			C	D
Approach Delay		48.0			23.7			28.9				23.7
Approach LOS		D			C			C				C
Queue Length 50th (m)	44.8	1.3		4.9	18.8		3.8	41.6			9.9	126.0
Queue Length 95th (m)	64.1	5.2		12.3	37.9		10.7	52.5			19.6	163.7
Internal Link Dist (m)		87.2			358.3			422.3				100.4
Turn Bay Length (m)							65.0				115.0	
Base Capacity (vph)	678	967		403	531		124	1426			329	752
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.54	0.02		0.06	0.30		0.18	0.31			0.18	0.74

Intersection Summary

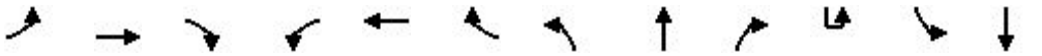
Area Type: Other
Cycle Length: 123.8
Actuated Cycle Length: 123.8
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 28.4 Intersection LOS: C
Intersection Capacity Utilization 124.1% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Lane Group	SBR
Act Effct Green (s)	44.6
Actuated g/C Ratio	0.36
v/c Ratio	0.79
Control Delay	8.2
Queue Delay	0.0
Total Delay	8.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	3.2
Queue Length 95th (m)	40.8
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	1132
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.77

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	347	10	4	24	59	91	21	403	8	41	12	521
Future Volume (vph)	347	10	4	24	59	91	21	403	8	41	12	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			0.99	1.00
Frt	1.00	0.96		1.00	0.91		1.00	1.00			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	3395	1797		1783	1691		1783	3488			1742	1842
Flt Permitted	0.95	1.00		0.75	1.00		0.16	1.00			0.44	1.00
Satd. Flow (perm)	3395	1797		1403	1691		303	3488			806	1842
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.94	0.94
Adj. Flow (vph)	369	11	4	26	63	97	22	429	9	45	13	554
RTOR Reduction (vph)	0	2	0	0	45	0	0	1	0	0	0	0
Lane Group Flow (vph)	369	13	0	26	115	0	22	437	0	0	58	554
Confl. Peds. (#/hr)	4		1	1		4	2		9		9	
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	2%	0%	2%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Actuated Green, G (s)	24.8	66.6		35.6	35.6		44.6	44.6			44.6	44.6
Effective Green, g (s)	24.8	66.6		35.6	35.6		44.6	44.6			44.6	44.6
Actuated g/C Ratio	0.20	0.54		0.29	0.29		0.36	0.36			0.36	0.36
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	680	966		403	486		109	1256			290	663
v/s Ratio Prot	c0.11	0.01			c0.07			0.13				c0.30
v/s Ratio Perm				0.02			0.07				0.07	
v/c Ratio	0.54	0.01		0.06	0.24		0.20	0.35			0.20	0.84
Uniform Delay, d1	44.4	13.3		32.0	33.7		27.3	29.0			27.3	36.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	3.1	0.0		0.3	1.1		0.9	0.2			0.3	9.0
Delay (s)	47.5	13.3		32.3	34.9		28.2	29.1			27.6	45.2
Level of Service	D	B		C	C		C	C			C	D
Approach Delay (s)		46.2			34.5			29.1				37.8
Approach LOS		D			C			C				D

Intersection Summary			
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	124.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	816
Future Volume (vph)	816
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.98
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1543
Flt Permitted	1.00
Satd. Flow (perm)	1543
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	868
RTOR Reduction (vph)	543
Lane Group Flow (vph)	325
Confl. Peds. (#/hr)	2
Heavy Vehicles (%)	1%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	44.6
Effective Green, g (s)	44.6
Actuated g/C Ratio	0.36
Clearance Time (s)	6.4
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	555
v/s Ratio Prot	
v/s Ratio Perm	0.21
v/c Ratio	0.59
Uniform Delay, d1	32.1
Progression Factor	1.00
Incremental Delay, d2	1.6
Delay (s)	33.7
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	89	0	882	1301	87
Future Volume (Veh/h)	0	89	0	882	1301	87
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	97	0	959	1414	95
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (m)				124		
pX, platoon unblocked	0.91					
vC, conflicting volume	1941	754	1509			
vC1, stage 1 conf vol	1462					
vC2, stage 2 conf vol	480					
vCu, unblocked vol	1841	754	1509			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	73	100			
cM capacity (veh/h)	175	356	449			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	97	480	480	943	566
Volume Left	0	0	0	0	0
Volume Right	97	0	0	0	95
cSH	356	1700	1700	1700	1700
Volume to Capacity	0.27	0.28	0.28	0.55	0.33
Queue Length 95th (m)	8.7	0.0	0.0	0.0	0.0
Control Delay (s)	18.9	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	18.9	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	5	0	884	1394	7
Future Volume (Veh/h)	0	5	0	884	1394	7
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	5	0	971	1532	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				191		
pX, platoon unblocked	0.92					
vC, conflicting volume	2022	770	1540			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1934	770	1540			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	54	348	437			

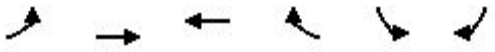
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	5	486	486	1021	519
Volume Left	0	0	0	0	0
Volume Right	5	0	0	0	8
cSH	348	1700	1700	1700	1700
Volume to Capacity	0.01	0.29	0.29	0.60	0.31
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0
Control Delay (s)	15.5	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	15.5	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	18	15	451	575	23
Future Volume (Veh/h)	13	18	15	451	575	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	14	19	16	480	612	24
Pedestrians	2					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					263	
pX, platoon unblocked						
vC, conflicting volume	898	626	638			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	898	626	638			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	96	98			
cM capacity (veh/h)	278	431	954			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	33	176	320	636
Volume Left	14	16	0	0
Volume Right	19	0	0	24
cSH	349	954	1700	1700
Volume to Capacity	0.09	0.02	0.19	0.37
Queue Length 95th (m)	2.5	0.4	0.0	0.0
Control Delay (s)	16.4	1.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.4	0.3		0.0
Approach LOS	C			

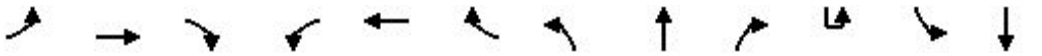
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	425	517	49	0	52
Future Volume (Veh/h)	28	425	517	49	0	52
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	462	562	53	0	57
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			111			
pX, platoon unblocked						
vC, conflicting volume	615				880	588
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	615				880	588
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	88
cM capacity (veh/h)	974				282	457

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	184	308	615	57
Volume Left	30	0	0	0
Volume Right	0	0	53	57
cSH	974	1700	1700	457
Volume to Capacity	0.03	0.18	0.36	0.12
Queue Length 95th (m)	0.8	0.0	0.0	3.4
Control Delay (s)	1.7	0.0	0.0	14.0
Lane LOS	A			B
Approach Delay (s)	0.6		0.0	14.0
Approach LOS				B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		



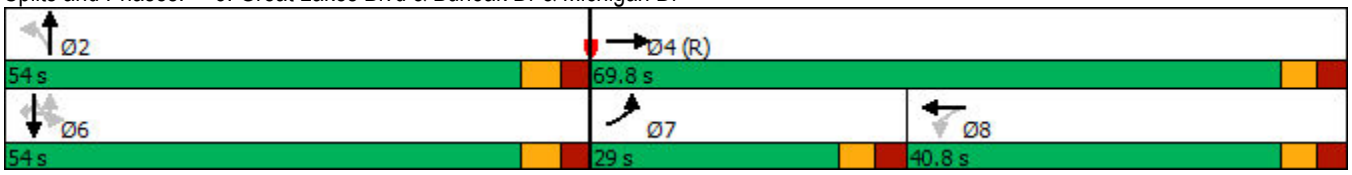
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	410	8	7	3	3	13	33	487	7	51	8	493
Future Volume (vph)	410	8	7	3	3	13	33	487	7	51	8	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	65.0		0.0		115.0	
Storage Lanes	2		0	1		0	1		0		1	
Taper Length (m)	7.5			7.5			50.0				7.5	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00			0.99	
Frt		0.930			0.876			0.998				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	3429	1747	0	1785	1646	0	1785	3526	0	0	1754	1860
Flt Permitted	0.950			0.748			0.168				0.370	
Satd. Flow (perm)	3429	1747	0	1405	1646	0	315	3526	0	0	678	1860
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		7			14			1				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		111.2			382.3			446.3				124.4
Travel Time (s)		8.0			27.5			32.1				9.0
Confl. Peds. (#/hr)							1		9		9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	2%	0%	1%
Adj. Flow (vph)	427	8	7	3	3	14	34	507	7	55	8	514
Shared Lane Traffic (%)												
Lane Group Flow (vph)	427	15	0	3	17	0	34	514	0	0	63	514
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	Left
Median Width(m)		7.0			7.0			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	15	25	
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	8.0		35.0	35.0		35.0	35.0	35.0
Minimum Split (s)	16.2	40.2		40.2	40.2		41.4	41.4		41.4	41.4	41.4
Total Split (s)	29.0	69.8		40.8	40.8		54.0	54.0		54.0	54.0	54.0
Total Split (%)	23.4%	56.4%		33.0%	33.0%		43.6%	43.6%		43.6%	43.6%	43.6%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.9	2.9		2.9	2.9		2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	Max	C-Max		Max	Max		None	None		None	None	None

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	530
Future Volume (vph)	530
Ideal Flow (vphpl)	1900
Storage Length (m)	0.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1597
Flt Permitted	
Satd. Flow (perm)	1562
Right Turn on Red	Yes
Satd. Flow (RTOR)	552
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	1
Peak Hour Factor	0.96
Heavy Vehicles (%)	0%
Adj. Flow (vph)	552
Shared Lane Traffic (%)	
Lane Group Flow (vph)	552
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	15
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	35.0
Minimum Split (s)	41.4
Total Split (s)	54.0
Total Split (%)	43.6%
Yellow Time (s)	3.7
All-Red Time (s)	2.7
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.4
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Act Effct Green (s)	29.2	70.0		34.6	34.6		41.2	41.2			41.2	41.2
Actuated g/C Ratio	0.24	0.57		0.28	0.28		0.33	0.33			0.33	0.33
v/c Ratio	0.53	0.02		0.01	0.04		0.32	0.44			0.28	0.83
Control Delay	45.3	10.1		32.3	16.9		38.5	32.8			32.4	50.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	45.3	10.1		32.3	16.9		38.5	32.8			32.4	50.0
LOS	D	B		C	B		D	C			C	D
Approach Delay		44.1			19.2			33.2				27.3
Approach LOS		D			B			C				C
Queue Length 50th (m)	49.6	0.9		0.6	0.6		6.5	53.6			11.8	120.6
Queue Length 95th (m)	71.1	4.6		3.0	6.6		15.9	64.6			22.7	153.8
Internal Link Dist (m)		87.2			358.3			422.3				100.4
Turn Bay Length (m)							65.0				115.0	
Base Capacity (vph)	807	990		392	470		121	1356			260	715
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.53	0.02		0.01	0.04		0.28	0.38			0.24	0.72

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.8			
Actuated Cycle Length: 123.8			
Offset: 11.4 (9%), Referenced to phase 4:EBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 32.2		Intersection LOS: C	
Intersection Capacity Utilization 84.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr



Lane Group	SBR
Act Effct Green (s)	41.2
Actuated g/C Ratio	0.33
v/c Ratio	0.62
Control Delay	5.5
Queue Delay	0.0
Total Delay	5.5
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	23.7
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	940
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.59

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	410	8	7	3	3	13	33	487	7	51	8	493
Future Volume (vph)	410	8	7	3	3	13	33	487	7	51	8	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			0.99	1.00
Frt	1.00	0.93		1.00	0.88		1.00	1.00			1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	3429	1747		1785	1647		1784	3526			1741	1860
Flt Permitted	0.95	1.00		0.75	1.00		0.17	1.00			0.37	1.00
Satd. Flow (perm)	3429	1747		1405	1647		315	3526			678	1860
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.96	0.96
Adj. Flow (vph)	427	8	7	3	3	14	34	507	7	55	8	514
RTOR Reduction (vph)	0	3	0	0	10	0	0	1	0	0	0	0
Lane Group Flow (vph)	427	12	0	3	7	0	34	513	0	0	63	514
Confl. Peds. (#/hr)							1		9		9	
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	1%	0%	2%	0%	1%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	Perm	NA
Protected Phases	7	4			8			2				6
Permitted Phases				8			2			6	6	
Actuated Green, G (s)	29.2	70.0		34.6	34.6		41.2	41.2			41.2	41.2
Effective Green, g (s)	29.2	70.0		34.6	34.6		41.2	41.2			41.2	41.2
Actuated g/C Ratio	0.24	0.57		0.28	0.28		0.33	0.33			0.33	0.33
Clearance Time (s)	6.2	6.2		6.2	6.2		6.4	6.4			6.4	6.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	808	987		392	460		104	1173			225	618
v/s Ratio Prot	c0.12	0.01			c0.00			0.15				c0.28
v/s Ratio Perm				0.00			0.11				0.09	
v/c Ratio	0.53	0.01		0.01	0.02		0.33	0.44			0.28	0.83
Uniform Delay, d1	41.3	11.8		32.2	32.3		30.9	32.3			30.4	38.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	2.5	0.0		0.0	0.1		1.8	0.3			0.7	9.3
Delay (s)	43.8	11.8		32.2	32.3		32.8	32.5			31.1	47.4
Level of Service	D	B		C	C		C	C			C	D
Approach Delay (s)		42.7			32.3			32.5				38.8
Approach LOS		D			C			C				D

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	18.8
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	530
Future Volume (vph)	530
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.4
Lane Util. Factor	1.00
Frpb, ped/bikes	0.98
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1562
Flt Permitted	1.00
Satd. Flow (perm)	1562
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	552
RTOR Reduction (vph)	368
Lane Group Flow (vph)	184
Confl. Peds. (#/hr)	1
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	41.2
Effective Green, g (s)	41.2
Actuated g/C Ratio	0.33
Clearance Time (s)	6.4
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	519
v/s Ratio Prot	
v/s Ratio Perm	0.12
v/c Ratio	0.35
Uniform Delay, d1	31.2
Progression Factor	1.00
Incremental Delay, d2	0.4
Delay (s)	31.7
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	95	0	961	987	75
Future Volume (Veh/h)	0	95	0	961	987	75
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	103	0	1045	1073	82
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (m)				124		
pX, platoon unblocked	0.89					
vC, conflicting volume	1636	578	1155			
vC1, stage 1 conf vol	1114					
vC2, stage 2 conf vol	522					
vCu, unblocked vol	1468	578	1155			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	78	100			
cM capacity (veh/h)	263	464	612			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	103	522	522	715	440
Volume Left	0	0	0	0	0
Volume Right	103	0	0	0	82
cSH	464	1700	1700	1700	1700
Volume to Capacity	0.22	0.31	0.31	0.42	0.26
Queue Length 95th (m)	6.7	0.0	0.0	0.0	0.0
Control Delay (s)	14.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	14.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	9	0	985	1037	3
Future Volume (Veh/h)	0	9	0	985	1037	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	9	0	1015	1069	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)				191		
pX, platoon unblocked	0.90					
vC, conflicting volume	1578	536	1072			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1412	536	1072			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	118	494	658			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	9	508	508	713	359
Volume Left	0	0	0	0	0
Volume Right	9	0	0	0	3
cSH	494	1700	1700	1700	1700
Volume to Capacity	0.02	0.30	0.30	0.42	0.21
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	12.4	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.4	0.0		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	38.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:20	7:20	7:20	7:20	7:20	7:20
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1824	1812	1806	1797	1790	1807
Vehs Exited	1818	1817	1813	1823	1785	1811
Starting Vehs	54	66	73	74	52	62
Ending Vehs	60	61	66	48	57	57
Travel Distance (km)	1596	1591	1582	1574	1557	1580
Travel Time (hr)	52.8	55.1	51.7	51.1	51.4	52.4
Total Delay (hr)	19.2	21.6	18.5	18.0	18.5	19.2
Total Stops	1356	1389	1339	1338	1347	1352
Fuel Used (l)	138.3	141.3	136.4	136.0	134.5	137.3

Interval #0 Information Seeding

Start Time	7:20
End Time	7:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1824	1812	1806	1797	1790	1807
Vehs Exited	1818	1817	1813	1823	1785	1811
Starting Vehs	54	66	73	74	52	62
Ending Vehs	60	61	66	48	57	57
Travel Distance (km)	1596	1591	1582	1574	1557	1580
Travel Time (hr)	52.8	55.1	51.7	51.1	51.4	52.4
Total Delay (hr)	19.2	21.6	18.5	18.0	18.5	19.2
Total Stops	1356	1389	1339	1338	1347	1352
Fuel Used (l)	138.3	141.3	136.4	136.0	134.5	137.3

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	18.1	10.5
Average Queue (m)	8.7	0.5
95th Queue (m)	15.1	4.3
Link Distance (m)	128.4	246.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (m)	76.2	71.5	17.1	7.2	16.4	8.6	74.6	72.3	82.5	86.3	33.2
Average Queue (m)	50.4	47.7	4.9	0.6	5.4	0.6	48.2	44.0	41.7	46.4	15.8
95th Queue (m)	69.8	66.0	13.9	4.0	14.3	4.5	67.6	66.1	75.5	72.3	26.3
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)	0								0	0	
Queuing Penalty (veh)	0								0	1	
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							1		0	0	
Queuing Penalty (veh)							0		1	0	

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	NB	NB	SB	SB
Directions Served	R	T	T	T	TR
Maximum Queue (m)	8.9	6.6	6.3	5.0	3.6
Average Queue (m)	2.2	0.3	0.4	0.2	0.1
95th Queue (m)	8.2	3.4	4.2	2.6	1.8
Link Distance (m)	135.4	50.5	50.5	260.9	260.9
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 2

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2092	2156	2140	2026	2125	2106
Vehs Exited	2086	2147	2127	2035	2111	2101
Starting Vehs	62	64	54	75	52	60
Ending Vehs	68	73	67	66	66	68
Travel Distance (km)	1879	1939	1905	1826	1901	1890
Travel Time (hr)	63.4	67.0	64.2	59.7	71.0	65.1
Total Delay (hr)	23.4	25.7	23.8	20.7	30.6	24.9
Total Stops	1830	1907	1867	1654	2380	1927
Fuel Used (l)	162.9	170.2	165.8	156.0	172.3	165.4

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2092	2156	2140	2026	2125	2106
Vehs Exited	2086	2147	2127	2035	2111	2101
Starting Vehs	62	64	54	75	52	60
Ending Vehs	68	73	67	66	66	68
Travel Distance (km)	1879	1939	1905	1826	1901	1890
Travel Time (hr)	63.4	67.0	64.2	59.7	71.0	65.1
Total Delay (hr)	23.4	25.7	23.8	20.7	30.6	24.9
Total Stops	1830	1907	1867	1654	2380	1927
Fuel Used (l)	162.9	170.2	165.8	156.0	172.3	165.4

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	17.3	24.7
Average Queue (m)	6.3	4.9
95th Queue (m)	14.6	16.0
Link Distance (m)	128.4	246.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (m)	53.6	52.3	7.3	19.5	47.5	4.6	56.7	53.5	51.3	114.6	111.6
Average Queue (m)	29.8	26.3	1.1	4.8	20.2	0.4	36.5	30.1	4.4	83.3	83.9
95th Queue (m)	46.4	44.5	6.0	14.8	39.4	2.9	53.2	50.2	25.7	121.9	126.4
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)									0	5	5
Queuing Penalty (veh)									0	28	31
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)									0	5	
Queuing Penalty (veh)									0	0	

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (m)	10.3	43.3	56.8
Average Queue (m)	2.1	3.2	8.4
95th Queue (m)	8.1	26.5	44.5
Link Distance (m)	135.4	260.9	260.9
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 60

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	12:50	12:50	12:50	12:50	12:50	12:50
End Time	2:00	2:00	2:00	2:00	2:00	2:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1817	1874	1826	1838	1827	1836
Vehs Exited	1809	1869	1842	1848	1830	1839
Starting Vehs	53	56	76	73	54	60
Ending Vehs	61	61	60	63	51	61
Travel Distance (km)	1619	1674	1632	1638	1628	1638
Travel Time (hr)	52.2	51.3	50.4	50.2	49.5	50.7
Total Delay (hr)	18.2	16.1	16.0	15.6	15.2	16.2
Total Stops	1390	1324	1347	1301	1281	1327
Fuel Used (l)	137.8	140.2	136.4	137.3	135.5	137.4

Interval #0 Information Seeding

Start Time	12:50
End Time	1:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	1:00
End Time	2:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1817	1874	1826	1838	1827	1836
Vehs Exited	1809	1869	1842	1848	1830	1839
Starting Vehs	53	56	76	73	54	60
Ending Vehs	61	61	60	63	51	61
Travel Distance (km)	1619	1674	1632	1638	1628	1638
Travel Time (hr)	52.2	51.3	50.4	50.2	49.5	50.7
Total Delay (hr)	18.2	16.1	16.0	15.6	15.2	16.2
Total Stops	1390	1324	1347	1301	1281	1327
Fuel Used (l)	137.8	140.2	136.4	137.3	135.5	137.4

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	14.1	10.4
Average Queue (m)	5.9	1.8
95th Queue (m)	13.3	7.9
Link Distance (m)	128.4	246.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (m)	58.5	57.0	8.9	7.2	11.6	10.3	68.4	63.4	9.6	110.2	56.7
Average Queue (m)	34.7	31.8	1.0	0.6	2.9	1.4	42.5	35.7	1.6	77.3	28.1
95th Queue (m)	53.0	49.2	5.4	4.3	9.8	6.9	60.4	58.3	7.2	111.2	45.9
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)										1	
Queuing Penalty (veh)										6	
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							0			1	
Queuing Penalty (veh)							0			0	

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	NB
Directions Served	R	T
Maximum Queue (m)	10.2	2.2
Average Queue (m)	2.2	0.1
95th Queue (m)	8.5	1.6
Link Distance (m)	135.4	50.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 6

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:20	7:20	7:20	7:20	7:20	7:20
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1913	2021	1945	1977	1969	1965
Vehs Exited	1923	1994	1952	1965	1885	1943
Starting Vehs	82	71	73	60	66	70
Ending Vehs	72	98	66	72	150	92
Travel Distance (km)	1695	1756	1697	1729	1677	1711
Travel Time (hr)	58.1	69.8	63.0	59.5	85.9	67.3
Total Delay (hr)	22.2	32.9	27.3	23.2	50.6	31.2
Total Stops	1498	1723	1529	1526	2093	1672
Fuel Used (l)	147.7	163.9	153.4	152.3	173.0	158.1

Interval #0 Information Seeding

Start Time	7:20
End Time	7:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1913	2021	1945	1977	1969	1965
Vehs Exited	1923	1994	1952	1965	1885	1943
Starting Vehs	82	71	73	60	66	70
Ending Vehs	72	98	66	72	150	92
Travel Distance (km)	1695	1756	1697	1729	1677	1711
Travel Time (hr)	58.1	69.8	63.0	59.5	85.9	67.3
Total Delay (hr)	22.2	32.9	27.3	23.2	50.6	31.2
Total Stops	1498	1723	1529	1526	2093	1672
Fuel Used (l)	147.7	163.9	153.4	152.3	173.0	158.1

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	21.3	16.8	3.0
Average Queue (m)	8.7	1.3	0.1
95th Queue (m)	16.1	7.8	2.1
Link Distance (m)	128.4	246.0	137.3
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (m)	86.4	84.8	22.0	7.0	20.6	7.3	78.9	73.7	99.8	110.5	58.2
Average Queue (m)	55.1	52.1	4.4	0.5	6.4	0.6	50.2	46.1	70.1	70.1	20.0
95th Queue (m)	79.6	77.1	14.1	4.0	16.9	4.0	71.9	67.4	117.2	126.7	45.2
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)	0	0							6	15	0
Queuing Penalty (veh)	0	0							0	51	0
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							2		6	15	
Queuing Penalty (veh)							0		15	23	

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	NB	NB	SB	SB
Directions Served	R	T	T	T	TR
Maximum Queue (m)	9.0	5.4	15.9	80.1	80.3
Average Queue (m)	2.2	0.4	0.6	22.2	16.7
95th Queue (m)	8.1	3.6	6.0	120.4	108.6
Link Distance (m)	135.4	50.5	50.5	260.9	260.9
Upstream Blk Time (%)				2	1
Queuing Penalty (veh)				0	0
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 90

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2369	2362	2418	2381	2315	2368
Vehs Exited	2314	2308	2339	2388	2272	2325
Starting Vehs	73	88	73	80	92	79
Ending Vehs	128	142	152	73	135	124
Travel Distance (km)	2102	2075	2115	2143	2060	2099
Travel Time (hr)	96.3	129.3	134.6	97.9	127.5	117.1
Total Delay (hr)	51.5	85.2	89.8	52.3	83.9	72.6
Total Stops	3562	4057	4159	3370	4588	3947
Fuel Used (l)	207.5	238.6	243.6	210.1	234.8	226.9

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2369	2362	2418	2381	2315	2368
Vehs Exited	2314	2308	2339	2388	2272	2325
Starting Vehs	73	88	73	80	92	79
Ending Vehs	128	142	152	73	135	124
Travel Distance (km)	2102	2075	2115	2143	2060	2099
Travel Time (hr)	96.3	129.3	134.6	97.9	127.5	117.1
Total Delay (hr)	51.5	85.2	89.8	52.3	83.9	72.6
Total Stops	3562	4057	4159	3370	4588	3947
Fuel Used (l)	207.5	238.6	243.6	210.1	234.8	226.9

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	20.2	27.1	1.2
Average Queue (m)	7.5	4.8	0.0
95th Queue (m)	17.0	17.3	0.8
Link Distance (m)	128.4	246.0	137.3
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (m)	55.2	51.0	11.6	17.7	45.6	7.2	63.3	58.8	89.7	114.5	114.6
Average Queue (m)	33.9	31.1	1.7	4.2	19.0	0.3	41.5	34.9	9.3	106.2	106.5
95th Queue (m)	50.6	46.8	7.7	12.6	35.2	3.0	58.1	55.2	48.8	126.7	126.9
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)									0	35	18
Queuing Penalty (veh)									0	229	117
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							0		0	35	
Queuing Penalty (veh)							0		0	4	

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (m)	19.1	242.8	252.7
Average Queue (m)	6.1	146.2	153.3
95th Queue (m)	22.9	311.5	317.7
Link Distance (m)	135.4	260.9	260.9
Upstream Blk Time (%)		17	19
Queuing Penalty (veh)		0	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 349

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	12:50	12:50	12:50	12:50	12:50	12:50
End Time	2:00	2:00	2:00	2:00	2:00	2:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2012	2119	2040	2080	2013	2054
Vehs Exited	2034	2122	2044	2082	1998	2057
Starting Vehs	76	85	83	84	57	76
Ending Vehs	54	82	79	82	72	70
Travel Distance (km)	1816	1888	1818	1855	1784	1832
Travel Time (hr)	58.1	67.4	59.3	61.4	62.0	61.6
Total Delay (hr)	19.9	27.6	21.0	22.2	24.5	23.0
Total Stops	1543	1877	1578	1637	1739	1673
Fuel Used (l)	153.6	167.9	155.7	160.1	155.2	158.5

Interval #0 Information Seeding

Start Time	12:50
End Time	1:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	1:00
End Time	2:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2012	2119	2040	2080	2013	2054
Vehs Exited	2034	2122	2044	2082	1998	2057
Starting Vehs	76	85	83	84	57	76
Ending Vehs	54	82	79	82	72	70
Travel Distance (km)	1816	1888	1818	1855	1784	1832
Travel Time (hr)	58.1	67.4	59.3	61.4	62.0	61.6
Total Delay (hr)	19.9	27.6	21.0	22.2	24.5	23.0
Total Stops	1543	1877	1578	1637	1739	1673
Fuel Used (l)	153.6	167.9	155.7	160.1	155.2	158.5

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	13.0	17.2
Average Queue (m)	5.9	2.3
95th Queue (m)	13.3	10.1
Link Distance (m)	128.4	246.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (m)	57.0	53.4	9.7	5.4	11.8	10.4	71.1	61.4	31.6	115.0	84.6
Average Queue (m)	37.5	35.6	1.2	0.4	2.9	1.9	46.5	40.7	3.4	94.7	37.2
95th Queue (m)	54.5	53.1	6.6	3.4	10.0	7.5	65.3	62.1	19.2	127.7	65.4
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)									0	15	0
Queuing Penalty (veh)									0	76	0
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							1		0	15	
Queuing Penalty (veh)							0		0	1	

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (m)	10.3	54.1	42.7
Average Queue (m)	1.8	7.6	3.4
95th Queue (m)	7.7	40.9	31.0
Link Distance (m)	135.4	260.9	260.9
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 78

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:20	7:20	7:20	7:20	7:20	7:20
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2001	2063	2043	2029	1854	1998
Vehs Exited	1941	2047	1966	1974	1814	1948
Starting Vehs	60	72	70	70	66	67
Ending Vehs	120	88	147	125	106	115
Travel Distance (km)	1683	1784	1714	1716	1566	1693
Travel Time (hr)	115.3	64.6	112.7	100.0	100.9	98.7
Total Delay (hr)	79.8	26.8	76.6	64.0	67.7	63.0
Total Stops	2263	1632	2219	2260	1750	2025
Fuel Used (l)	200.3	160.0	199.5	189.7	180.1	185.9

Interval #0 Information Seeding

Start Time	7:20
End Time	7:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2001	2063	2043	2029	1854	1998
Vehs Exited	1941	2047	1966	1974	1814	1948
Starting Vehs	60	72	70	70	66	67
Ending Vehs	120	88	147	125	106	115
Travel Distance (km)	1683	1784	1714	1716	1566	1693
Travel Time (hr)	115.3	64.6	112.7	100.0	100.9	98.7
Total Delay (hr)	79.8	26.8	76.6	64.0	67.7	63.0
Total Stops	2263	1632	2219	2260	1750	2025
Fuel Used (l)	200.3	160.0	199.5	189.7	180.1	185.9

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	15.6	11.7	1.3
Average Queue (m)	8.2	1.0	0.0
95th Queue (m)	14.7	6.4	0.9
Link Distance (m)	128.4	246.0	137.3
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Burloak Dr & South Site Access

Movement	EB	EB
Directions Served	LT	T
Maximum Queue (m)	15.5	3.3
Average Queue (m)	1.6	0.1
95th Queue (m)	8.2	2.3
Link Distance (m)	137.3	137.3
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	UL	T	R
Maximum Queue (m)	83.5	82.7	15.7	7.2	23.2	16.2	88.1	81.3	108.3	125.6	83.7
Average Queue (m)	53.8	51.3	4.1	0.8	6.5	4.5	53.4	50.0	85.7	88.8	22.2
95th Queue (m)	78.0	76.1	12.8	4.8	16.8	12.9	76.2	73.6	130.6	152.5	52.7
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)	0	0							16	41	1
Queuing Penalty (veh)	1	0							0	143	2
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							3		16	41	
Queuing Penalty (veh)							0		44	71	

Intersection: 4: Burloak Dr & North Site Access

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (m)	11.2	61.0	62.7
Average Queue (m)	0.4	28.6	10.9
95th Queue (m)	4.1	73.1	46.6
Link Distance (m)	176.6	50.5	50.5
Upstream Blk Time (%)		35	6
Queuing Penalty (veh)		122	20
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	NB	NB	SB	SB
Directions Served	R	T	T	T	TR
Maximum Queue (m)	15.2	18.1	16.8	231.7	226.9
Average Queue (m)	3.3	0.7	0.6	105.8	97.6
95th Queue (m)	11.3	8.6	8.7	300.2	295.1
Link Distance (m)	135.4	50.5	50.5	260.9	260.9
Upstream Blk Time (%)		0	0	25	20
Queuing Penalty (veh)		0	0	0	0
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 402

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2548	2577	2573	2599	2584	2578
Vehs Exited	2503	2531	2530	2567	2517	2530
Starting Vehs	114	109	78	108	71	96
Ending Vehs	159	155	121	140	138	142
Travel Distance (km)	2180	2201	2190	2225	2208	2201
Travel Time (hr)	143.5	151.2	102.6	133.3	140.5	134.2
Total Delay (hr)	96.9	104.1	55.8	85.7	93.2	87.1
Total Stops	4639	4560	3934	4153	4051	4268
Fuel Used (l)	260.4	266.5	221.8	251.5	256.0	251.2

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2548	2577	2573	2599	2584	2578
Vehs Exited	2503	2531	2530	2567	2517	2530
Starting Vehs	114	109	78	108	71	96
Ending Vehs	159	155	121	140	138	142
Travel Distance (km)	2180	2201	2190	2225	2208	2201
Travel Time (hr)	143.5	151.2	102.6	133.3	140.5	134.2
Total Delay (hr)	96.9	104.1	55.8	85.7	93.2	87.1
Total Stops	4639	4560	3934	4153	4051	4268
Fuel Used (l)	260.4	266.5	221.8	251.5	256.0	251.2

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	16.9	28.0
Average Queue (m)	7.5	6.5
95th Queue (m)	15.7	19.5
Link Distance (m)	128.4	246.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Burloak Dr & South Site Access

Movement	EB	SB
Directions Served	LT	R
Maximum Queue (m)	21.9	21.2
Average Queue (m)	4.5	3.7
95th Queue (m)	15.0	14.5
Link Distance (m)	137.3	198.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	UL	T	R
Maximum Queue (m)	58.0	56.0	9.1	16.8	51.2	34.3	64.0	57.6	108.3	115.7	125.8
Average Queue (m)	35.2	32.7	1.1	6.0	23.1	12.4	40.1	34.3	34.0	107.5	119.4
95th Queue (m)	52.9	50.9	5.8	14.4	43.2	28.6	59.5	56.0	97.3	124.9	131.1
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)									0	33	34
Queuing Penalty (veh)									0	231	238
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							0		0	33	
Queuing Penalty (veh)							0		0	18	

Intersection: 4: Burloak Dr & North Site Access

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (m)	42.1	67.2	64.6
Average Queue (m)	13.7	46.1	52.0
95th Queue (m)	34.8	76.2	72.7
Link Distance (m)	176.6	50.5	50.5
Upstream Blk Time (%)		22	34
Queuing Penalty (veh)		156	236
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (m)	14.1	266.3	268.2
Average Queue (m)	4.4	171.2	181.9
95th Queue (m)	12.9	328.8	328.7
Link Distance (m)	135.4	260.9	260.9
Upstream Blk Time (%)		22	25
Queuing Penalty (veh)		0	0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 879

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	12:50	12:50	12:50	12:50	12:50	12:50
End Time	2:00	2:00	2:00	2:00	2:00	2:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2229	2338	2335	2290	2345	2309
Vehs Exited	2238	2286	2325	2255	2313	2283
Starting Vehs	85	70	82	84	66	78
Ending Vehs	76	122	92	119	98	98
Travel Distance (km)	1928	1987	2006	1953	1994	1974
Travel Time (hr)	65.4	73.8	69.2	76.1	91.3	75.2
Total Delay (hr)	24.3	31.6	26.6	34.6	48.8	33.2
Total Stops	1885	2102	1887	2211	2829	2183
Fuel Used (l)	170.8	181.5	177.1	181.7	197.9	181.8

Interval #0 Information Seeding

Start Time	12:50
End Time	1:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	1:00
End Time	2:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2229	2338	2335	2290	2345	2309
Vehs Exited	2238	2286	2325	2255	2313	2283
Starting Vehs	85	70	82	84	66	78
Ending Vehs	76	122	92	119	98	98
Travel Distance (km)	1928	1987	2006	1953	1994	1974
Travel Time (hr)	65.4	73.8	69.2	76.1	91.3	75.2
Total Delay (hr)	24.3	31.6	26.6	34.6	48.8	33.2
Total Stops	1885	2102	1887	2211	2829	2183
Fuel Used (l)	170.8	181.5	177.1	181.7	197.9	181.8

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	11.6	14.3
Average Queue (m)	5.7	2.5
95th Queue (m)	12.9	10.6
Link Distance (m)	128.4	246.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Burloak Dr & South Site Access

Movement	EB	SB
Directions Served	LT	R
Maximum Queue (m)	14.7	9.1
Average Queue (m)	4.0	0.7
95th Queue (m)	12.3	5.2
Link Distance (m)	137.3	198.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	UL	T	R
Maximum Queue (m)	60.4	60.0	10.5	10.1	15.3	57.7	84.3	73.8	105.4	115.6	124.4
Average Queue (m)	38.6	36.5	1.4	0.6	3.1	25.9	45.4	41.0	25.8	99.9	65.9
95th Queue (m)	57.1	56.3	6.8	4.3	10.9	55.7	68.1	64.8	70.3	129.8	132.6
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)									0	24	8
Queuing Penalty (veh)									0	127	44
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)						3	1		0	24	
Queuing Penalty (veh)						7	0		0	14	

Intersection: 4: Burloak Dr & North Site Access

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (m)	36.6	57.2	60.0
Average Queue (m)	7.5	24.9	15.8
95th Queue (m)	24.0	64.2	53.8
Link Distance (m)	176.6	50.5	50.5
Upstream Blk Time (%)		14	5
Queuing Penalty (veh)		72	27
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	NB	SB	SB
Directions Served	R	T	T	TR
Maximum Queue (m)	11.6	2.4	78.4	76.9
Average Queue (m)	2.9	0.1	20.0	13.6
95th Queue (m)	10.6	1.7	78.9	65.1
Link Distance (m)	135.4	50.5	260.9	260.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 292

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:20	7:20	7:20	7:20	7:20	7:20
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2060	2020	2007	1997	1979	2015
Vehs Exited	2068	2030	2028	1995	1977	2020
Starting Vehs	67	67	67	67	49	63
Ending Vehs	59	57	46	69	51	55
Travel Distance (km)	1809	1773	1751	1733	1727	1759
Travel Time (hr)	62.3	64.3	57.2	59.3	57.1	60.0
Total Delay (hr)	24.1	26.8	20.4	22.9	20.5	23.0
Total Stops	1585	1572	1506	1501	1489	1532
Fuel Used (l)	158.0	159.8	150.9	151.4	148.7	153.8

Interval #0 Information Seeding

Start Time	7:20
End Time	7:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2060	2020	2007	1997	1979	2015
Vehs Exited	2068	2030	2028	1995	1977	2020
Starting Vehs	67	67	67	67	49	63
Ending Vehs	59	57	46	69	51	55
Travel Distance (km)	1809	1773	1751	1733	1727	1759
Travel Time (hr)	62.3	64.3	57.2	59.3	57.1	60.0
Total Delay (hr)	24.1	26.8	20.4	22.9	20.5	23.0
Total Stops	1585	1572	1506	1501	1489	1532
Fuel Used (l)	158.0	159.8	150.9	151.4	148.7	153.8

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	19.4	13.8
Average Queue (m)	9.2	0.9
95th Queue (m)	15.5	6.5
Link Distance (m)	128.4	246.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	UL	T	R
Maximum Queue (m)	94.5	91.5	19.5	5.3	21.2	5.5	74.8	69.1	88.6	93.0	37.4
Average Queue (m)	63.5	60.9	5.0	0.5	6.4	0.4	48.1	43.3	50.0	48.5	17.7
95th Queue (m)	89.3	86.8	14.6	3.8	16.1	3.4	67.3	64.6	90.5	83.8	30.0
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)	1	0							0	0	
Queuing Penalty (veh)	2	1							0	1	
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							1		0	0	
Queuing Penalty (veh)							0		0	0	

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	NB	NB	SB	SB
Directions Served	R	T	T	T	TR
Maximum Queue (m)	9.0	9.2	13.1	7.0	3.6
Average Queue (m)	2.0	0.4	0.8	0.3	0.2
95th Queue (m)	7.9	4.7	6.7	3.4	2.3
Link Distance (m)	135.4	50.5	50.5	260.9	260.9
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 4

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2283	2262	2339	2373	2311	2316
Vehs Exited	2272	2260	2341	2359	2304	2307
Starting Vehs	67	67	75	72	65	68
Ending Vehs	78	69	73	86	72	76
Travel Distance (km)	2059	2042	2116	2131	2089	2087
Travel Time (hr)	64.3	63.8	66.7	66.5	65.1	65.3
Total Delay (hr)	20.5	20.3	21.8	21.2	20.7	20.9
Total Stops	1625	1615	1716	1680	1661	1660
Fuel Used (l)	173.8	171.2	179.4	178.5	174.8	175.6

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2283	2262	2339	2373	2311	2316
Vehs Exited	2272	2260	2341	2359	2304	2307
Starting Vehs	67	67	75	72	65	68
Ending Vehs	78	69	73	86	72	76
Travel Distance (km)	2059	2042	2116	2131	2089	2087
Travel Time (hr)	64.3	63.8	66.7	66.5	65.1	65.3
Total Delay (hr)	20.5	20.3	21.8	21.2	20.7	20.9
Total Stops	1625	1615	1716	1680	1661	1660
Fuel Used (l)	173.8	171.2	179.4	178.5	174.8	175.6

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	15.6	28.0	2.4
Average Queue (m)	6.6	5.2	0.1
95th Queue (m)	14.6	18.0	1.2
Link Distance (m)	128.4	246.0	137.3
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (m)	66.6	62.7	12.9	21.6	43.8	5.5	61.3	50.8	12.9	109.0	110.9
Average Queue (m)	38.4	34.9	2.2	6.2	19.8	0.3	33.4	25.7	2.5	72.7	78.9
95th Queue (m)	58.1	55.1	8.7	16.6	37.2	2.7	51.7	45.5	9.4	112.1	121.9
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)										1	2
Queuing Penalty (veh)										5	12
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							0			1	
Queuing Penalty (veh)							0			0	

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	SB
Directions Served	R	TR
Maximum Queue (m)	9.0	12.1
Average Queue (m)	1.2	0.4
95th Queue (m)	5.9	5.2
Link Distance (m)	135.4	260.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 17

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	12:50	12:50	12:50	12:50	12:50	12:50
End Time	2:00	2:00	2:00	2:00	2:00	2:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2046	2108	1986	1977	1989	2024
Vehs Exited	2064	2107	2001	1997	2004	2034
Starting Vehs	58	56	67	64	67	63
Ending Vehs	40	57	52	44	52	45
Travel Distance (km)	1834	1888	1776	1770	1770	1808
Travel Time (hr)	56.6	57.8	53.2	53.2	53.5	54.9
Total Delay (hr)	18.0	17.9	15.7	16.0	16.3	16.8
Total Stops	1445	1462	1336	1362	1361	1393
Fuel Used (l)	153.4	158.0	146.7	147.5	147.1	150.5

Interval #0 Information Seeding

Start Time	12:50
End Time	1:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	1:00
End Time	2:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2046	2108	1986	1977	1989	2024
Vehs Exited	2064	2107	2001	1997	2004	2034
Starting Vehs	58	56	67	64	67	63
Ending Vehs	40	57	52	44	52	45
Travel Distance (km)	1834	1888	1776	1770	1770	1808
Travel Time (hr)	56.6	57.8	53.2	53.2	53.5	54.9
Total Delay (hr)	18.0	17.9	15.7	16.0	16.3	16.8
Total Stops	1445	1462	1336	1362	1361	1393
Fuel Used (l)	153.4	158.0	146.7	147.5	147.1	150.5

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	10.5	16.9
Average Queue (m)	5.6	2.1
95th Queue (m)	12.6	9.7
Link Distance (m)	128.4	246.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	UL	T	R
Maximum Queue (m)	63.3	61.4	12.2	7.2	10.2	9.2	66.6	64.4	10.5	113.0	57.2
Average Queue (m)	41.3	39.4	1.6	0.6	2.6	1.3	42.8	37.3	2.0	75.3	29.8
95th Queue (m)	58.9	57.7	7.6	4.2	9.1	6.3	61.5	59.9	8.2	114.1	49.2
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)										1	
Queuing Penalty (veh)										6	
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							0			1	
Queuing Penalty (veh)							0			0	

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB
Directions Served	R
Maximum Queue (m)	8.8
Average Queue (m)	1.6
95th Queue (m)	7.0
Link Distance (m)	135.4
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 6

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:20	7:20	7:20	7:20	7:20	7:20
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2002	2036	2055	2110	2047	2052
Vehs Exited	2036	2062	2056	2121	2041	2062
Starting Vehs	85	82	64	69	63	74
Ending Vehs	51	56	63	58	69	57
Travel Distance (km)	1758	1772	1774	1834	1776	1783
Travel Time (hr)	59.2	59.1	58.6	64.8	62.0	60.8
Total Delay (hr)	22.1	21.8	21.1	26.2	24.6	23.2
Total Stops	1535	1542	1544	1717	1614	1590
Fuel Used (l)	153.6	154.5	154.6	163.5	157.5	156.8

Interval #0 Information Seeding

Start Time	7:20
End Time	7:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2002	2036	2055	2110	2047	2052
Vehs Exited	2036	2062	2056	2121	2041	2062
Starting Vehs	85	82	64	69	63	74
Ending Vehs	51	56	63	58	69	57
Travel Distance (km)	1758	1772	1774	1834	1776	1783
Travel Time (hr)	59.2	59.1	58.6	64.8	62.0	60.8
Total Delay (hr)	22.1	21.8	21.1	26.2	24.6	23.2
Total Stops	1535	1542	1544	1717	1614	1590
Fuel Used (l)	153.6	154.5	154.6	163.5	157.5	156.8

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	18.2	13.2	1.7
Average Queue (m)	9.0	1.1	0.1
95th Queue (m)	15.6	6.4	1.4
Link Distance (m)	128.4	246.0	137.3
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Burloak Dr & South Site Access

Movement	EB	EB	SB
Directions Served	LT	T	R
Maximum Queue (m)	16.6	8.3	1.9
Average Queue (m)	2.2	0.4	0.1
95th Queue (m)	10.0	4.1	1.4
Link Distance (m)	137.3	137.3	198.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	UL	T	R
Maximum Queue (m)	92.0	87.2	17.8	3.6	24.5	16.8	74.6	77.9	90.0	101.4	50.9
Average Queue (m)	61.7	59.3	4.1	0.4	6.3	3.8	47.0	43.5	48.6	53.2	17.1
95th Queue (m)	86.8	83.6	13.2	3.6	17.2	12.1	67.7	67.8	86.3	91.8	33.8
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)	1	1							0	1	0
Queuing Penalty (veh)	2	1							0	5	0
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							1		0	1	
Queuing Penalty (veh)							0		0	3	

Intersection: 4: Burloak Dr & North Site Access

Movement	EB	NB	SB	SB
Directions Served	R	T	T	TR
Maximum Queue (m)	2.4	5.6	22.3	10.9
Average Queue (m)	0.1	0.2	2.0	0.5
95th Queue (m)	2.3	3.9	17.3	8.0
Link Distance (m)	176.6	108.5	50.5	50.5
Upstream Blk Time (%)			0	0
Queuing Penalty (veh)			1	0
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	NB	NB	SB	SB
Directions Served	R	T	T	T	TR
Maximum Queue (m)	9.0	9.8	16.7	10.1	3.6
Average Queue (m)	2.3	0.4	0.7	0.6	0.1
95th Queue (m)	8.5	4.0	7.2	7.8	1.8
Link Distance (m)	135.4	50.5	50.5	260.9	260.9
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 13

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:20	4:20	4:20	4:20	4:20	4:20
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2595	2701	2573	2631	2642	2628
Vehs Exited	2618	2694	2570	2584	2633	2620
Starting Vehs	98	76	82	88	85	83
Ending Vehs	75	83	85	135	94	91
Travel Distance (km)	2275	2344	2225	2259	2296	2280
Travel Time (hr)	75.8	79.0	72.6	82.8	76.2	77.3
Total Delay (hr)	27.1	28.7	24.9	34.5	27.0	28.4
Total Stops	2050	2093	1914	2614	2086	2151
Fuel Used (l)	200.0	206.3	193.0	205.2	201.3	201.2

Interval #0 Information Seeding

Start Time	4:20
End Time	4:30
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2595	2701	2573	2631	2642	2628
Vehs Exited	2618	2694	2570	2584	2633	2620
Starting Vehs	98	76	82	88	85	83
Ending Vehs	75	83	85	135	94	91
Travel Distance (km)	2275	2344	2225	2259	2296	2280
Travel Time (hr)	75.8	79.0	72.6	82.8	76.2	77.3
Total Delay (hr)	27.1	28.7	24.9	34.5	27.0	28.4
Total Stops	2050	2093	1914	2614	2086	2151
Fuel Used (l)	200.0	206.3	193.0	205.2	201.3	201.2

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (m)	18.4	24.6	30.2
Average Queue (m)	7.8	5.7	1.0
95th Queue (m)	15.8	18.0	21.3
Link Distance (m)	128.4	246.0	137.3
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Burloak Dr & South Site Access

Movement	EB	SB
Directions Served	LT	R
Maximum Queue (m)	24.6	21.6
Average Queue (m)	4.8	3.9
95th Queue (m)	15.8	14.6
Link Distance (m)	137.3	198.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	UL	T	R
Maximum Queue (m)	70.2	66.4	11.7	20.4	47.2	34.1	54.7	52.1	88.7	111.8	125.2
Average Queue (m)	40.8	38.1	1.8	5.5	22.6	13.6	33.5	26.1	12.6	86.1	88.5
95th Queue (m)	61.5	57.9	8.1	15.4	40.9	32.8	49.7	46.2	40.7	119.2	140.7
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)									0	1	7
Queuing Penalty (veh)									0	9	48
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							0		0	1	
Queuing Penalty (veh)							0		0	1	

Intersection: 4: Burloak Dr & North Site Access

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (m)	27.9	52.2	56.8
Average Queue (m)	9.4	4.8	16.8
95th Queue (m)	24.5	26.2	53.3
Link Distance (m)	176.6	50.5	50.5
Upstream Blk Time (%)		0	4
Queuing Penalty (veh)		2	26
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Burloak Dr & Flora Dr

Movement	EB	NB	SB	SB
Directions Served	R	T	T	TR
Maximum Queue (m)	9.8	2.3	60.3	71.8
Average Queue (m)	1.4	0.1	6.9	12.3
95th Queue (m)	6.8	1.6	52.4	63.3
Link Distance (m)	135.4	50.5	260.9	260.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 87

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	12:50	12:50	12:50	12:50	12:50	12:50
End Time	2:00	2:00	2:00	2:00	2:00	2:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2244	2331	2370	2329	2277	2311
Vehs Exited	2253	2322	2369	2316	2262	2306
Starting Vehs	78	60	65	57	54	63
Ending Vehs	69	69	66	70	69	70
Travel Distance (km)	1940	2005	2038	1999	1940	1984
Travel Time (hr)	60.3	62.8	63.2	62.8	59.7	61.8
Total Delay (hr)	19.0	20.2	20.0	20.4	18.4	19.6
Total Stops	1628	1758	1722	1697	1597	1682
Fuel Used (l)	166.2	171.7	173.7	171.2	164.9	169.5

Interval #0 Information Seeding

Start Time	12:50
End Time	1:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	1:00
End Time	2:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2244	2331	2370	2329	2277	2311
Vehs Exited	2253	2322	2369	2316	2262	2306
Starting Vehs	78	60	65	57	54	63
Ending Vehs	69	69	66	70	69	70
Travel Distance (km)	1940	2005	2038	1999	1940	1984
Travel Time (hr)	60.3	62.8	63.2	62.8	59.7	61.8
Total Delay (hr)	19.0	20.2	20.0	20.4	18.4	19.6
Total Stops	1628	1758	1722	1697	1597	1682
Fuel Used (l)	166.2	171.7	173.7	171.2	164.9	169.5

Intersection: 1: Burloak Dr & Adele Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	14.2	20.3
Average Queue (m)	6.3	3.0
95th Queue (m)	13.6	12.4
Link Distance (m)	128.4	246.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Burloak Dr & South Site Access

Movement	EB	EB	SB
Directions Served	LT	T	R
Maximum Queue (m)	18.3	4.4	11.3
Average Queue (m)	4.2	0.1	1.0
95th Queue (m)	13.5	3.1	6.3
Link Distance (m)	137.3	137.3	198.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Great Lakes Blvd & Burloak Dr & Michigan Dr

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	L	TR	L	T	TR	UL	T	R
Maximum Queue (m)	70.6	65.4	15.3	7.2	12.9	29.2	67.0	67.4	76.3	112.6	101.6
Average Queue (m)	43.9	41.1	2.4	0.8	4.0	10.7	42.0	37.0	17.3	77.2	33.9
95th Queue (m)	65.0	61.8	9.8	4.9	11.6	24.8	60.8	59.9	51.6	112.4	66.0
Link Distance (m)	90.2	90.2	90.2	368.0	368.0		434.4	434.4		108.5	108.5
Upstream Blk Time (%)	0								0	1	0
Queuing Penalty (veh)	0								0	5	2
Storage Bay Dist (m)						65.0			115.0		
Storage Blk Time (%)							0		0	1	
Queuing Penalty (veh)							0		0	1	

Intersection: 4: Burloak Dr & North Site Access

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (m)	19.9	26.7	4.4
Average Queue (m)	5.3	1.8	0.4
95th Queue (m)	16.4	13.0	4.8
Link Distance (m)	176.6	50.5	50.5
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Burloak Dr & Flora Dr

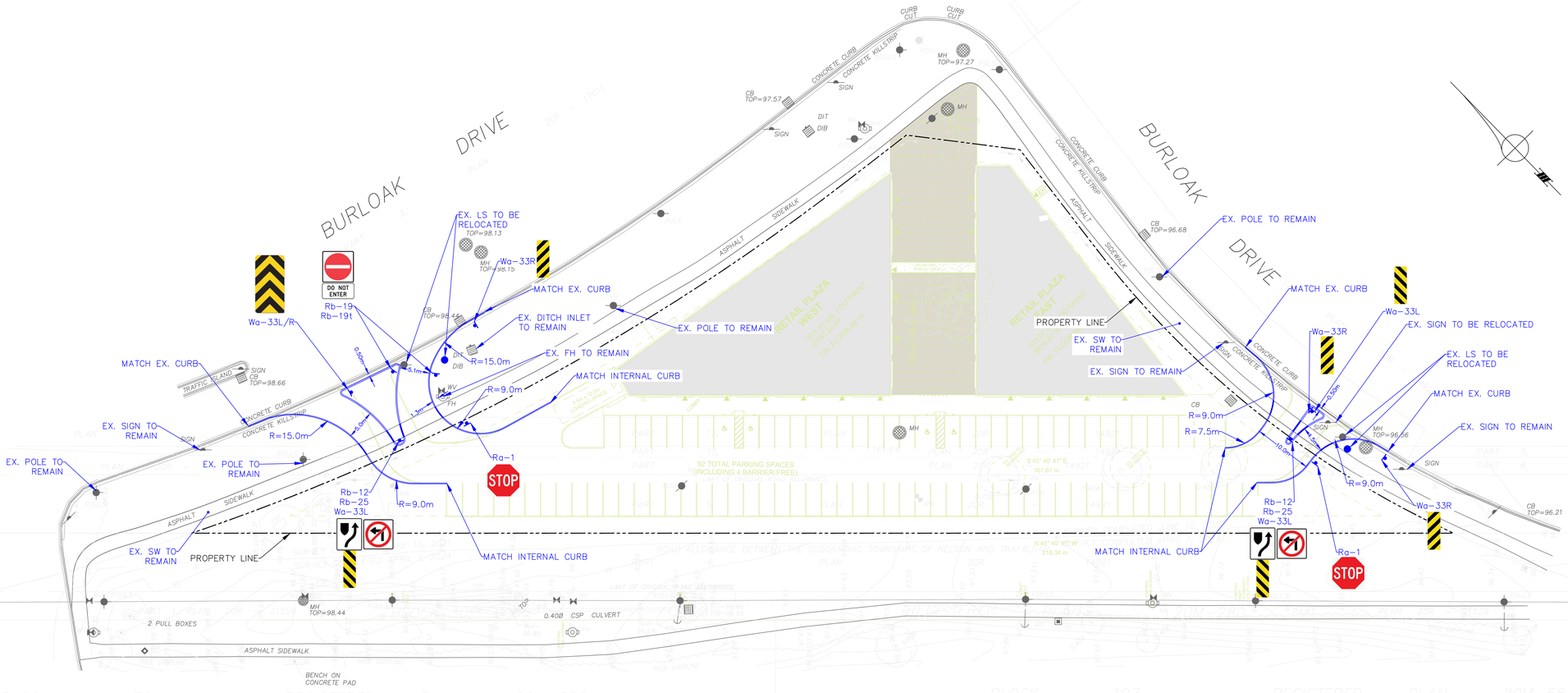
Movement	EB	NB
Directions Served	R	T
Maximum Queue (m)	11.7	3.3
Average Queue (m)	2.2	0.1
95th Queue (m)	8.7	2.3
Link Distance (m)	135.4	50.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 7

APPENDIX E

FUNCTIONAL PLAN



NOTES:

1. THIS PLAN IS ONLY FOR DISCUSSION PURPOSE.
2. ALL EXISTING PAVEMENT MARKING LINES, EDGE OF PAVEMENT, STREET LINE, LANE WIDTH, EXISTING UTILITIES ARE TO BE CONFIRMED IN DETAILED STAGE AND PROVIDED BY UPDATED LEGAL TOPO GRAPHIC SURVEY.

KEY PLAN

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

LEGEND

- PROPERTY LINE
- PROPOSED SITE DEVELOPMENT
- EXISTING CONDITIONS
- PROPOSED CONDITIONS

BENCHMARK

2				
1	SUBMISSION FOR REVIEW	AUG 14 2025	WL	RP
	Revision	Date	By	Appr'd

CONSULTANT

nexTrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

OAKVILLE

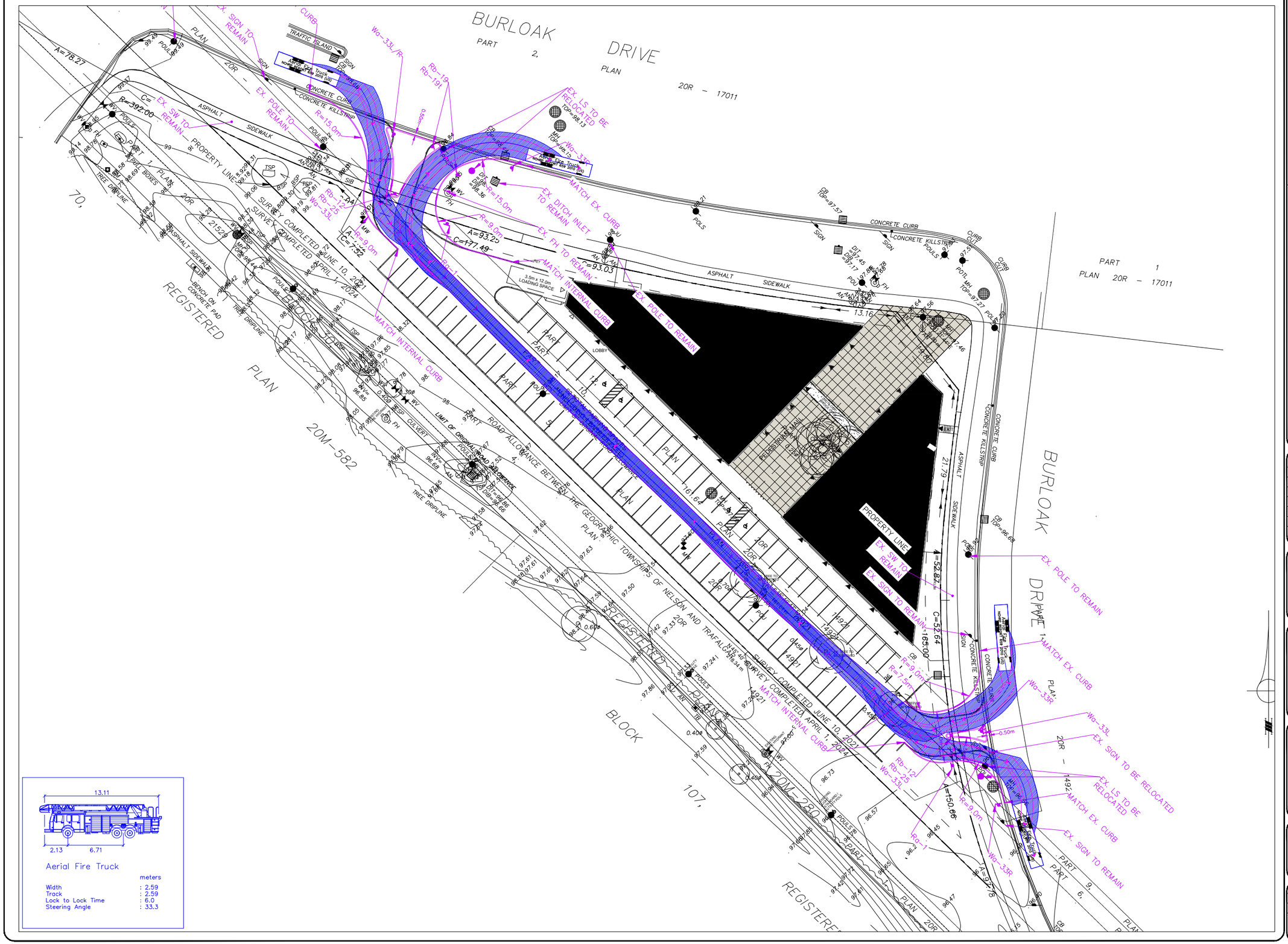
580 BURLOAK DRIVE

FUNCTIONAL PLAN

Surveyed by:	Checked by: R.P.	Project No. NT–25–075
Drawn by: W.L.	Approved by: R.P.	
Designed by: W.L.	Date: AUG 13, 2025	Drawing No.
Scale: 1:400		Sheet No.

APPENDIX F

VEHICLE MOVEMENT DIAGRAMS



13.11

2.13 6.71

Aerial Fire Truck

	meters
Width	: 2.59
Track	: 2.59
Lock to Lock Time	: 6.0
Steering Angle	: 33.3

KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

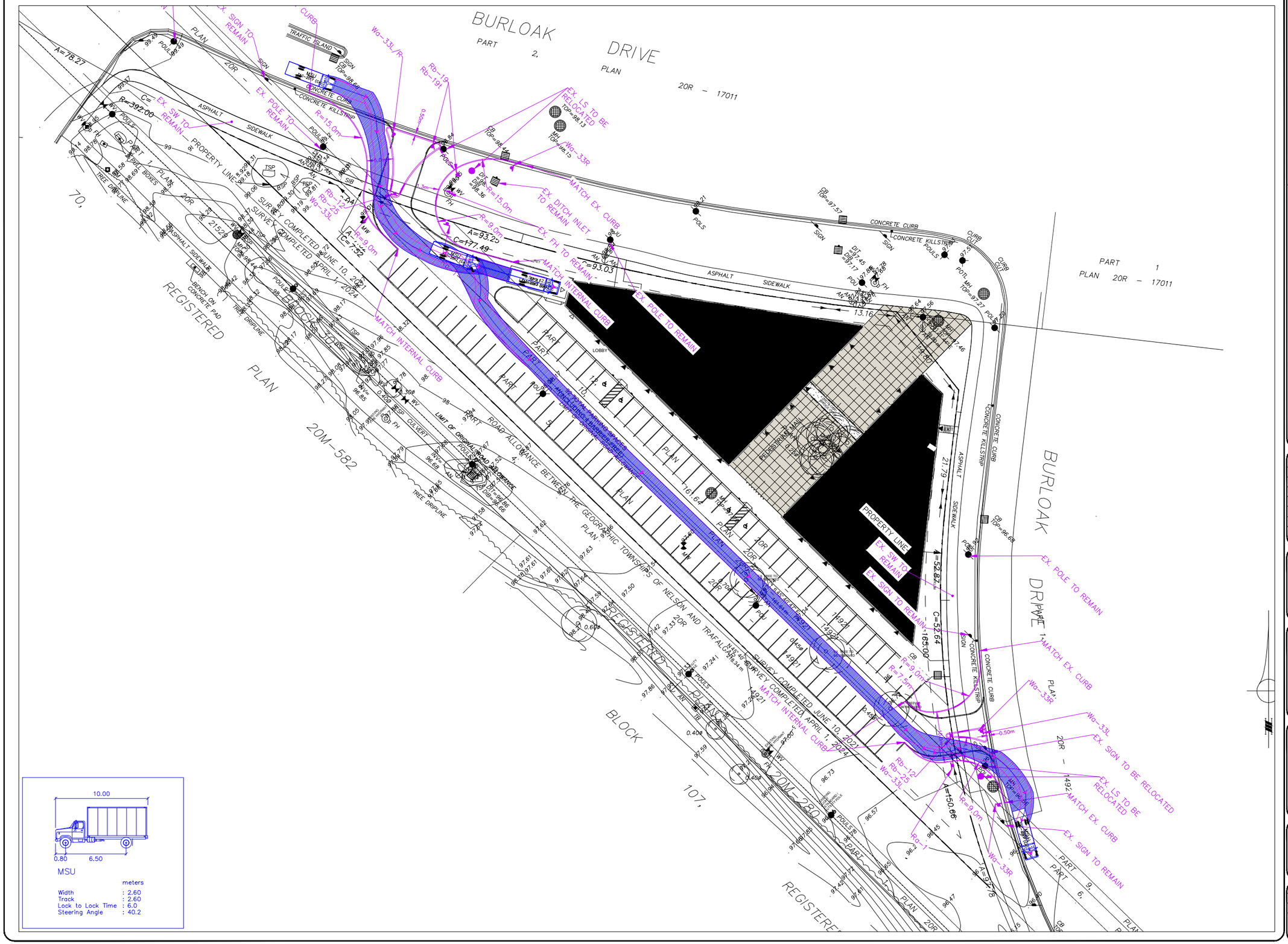
STAMP

.\X-ref\Nextrans-CAD-2.jpg

PROJECT NAME:
Commercial Development
580 Burloak Drive
Town of Oakville

DRAWING TITLE:
AutoTURN Analysis
NCHRP Report 659
Aerial Fire Truck

DESIGN BY: J.N.	DATE: December 7, 2025
CHECKED BY: R.P.	PROJECT NO. NT-25-075
DRAWN BY: J.N.	
SCALE: NTS	DRAWING NO. AT-01



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

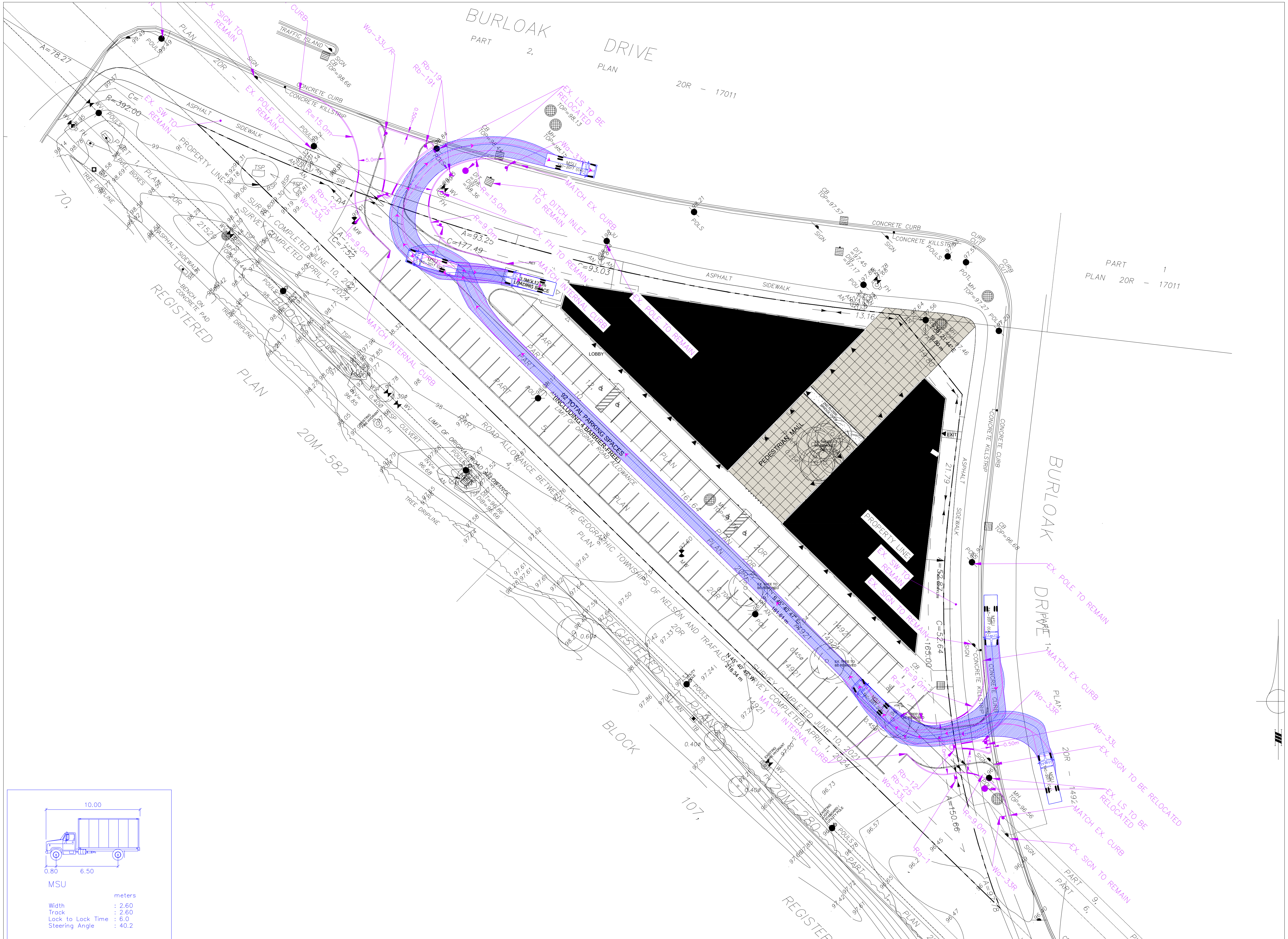
STAMP

.\X-ref\Nextrans-CAD-2.jpg

PROJECT NAME:
Commercial Development
580 Burloak Drive
Town of Oakville

DRAWING TITLE:
AutoTURN Analysis
MSU TAC-2017
GARBAGE FRONT-END

DESIGN BY: J.N.	DATE: December 7, 2025
CHECKED BY: R.P.	PROJECT NO. NT-25-075
DRAWN BY: J.N.	
SCALE: NTS	DRAWING NO. AT-02



KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

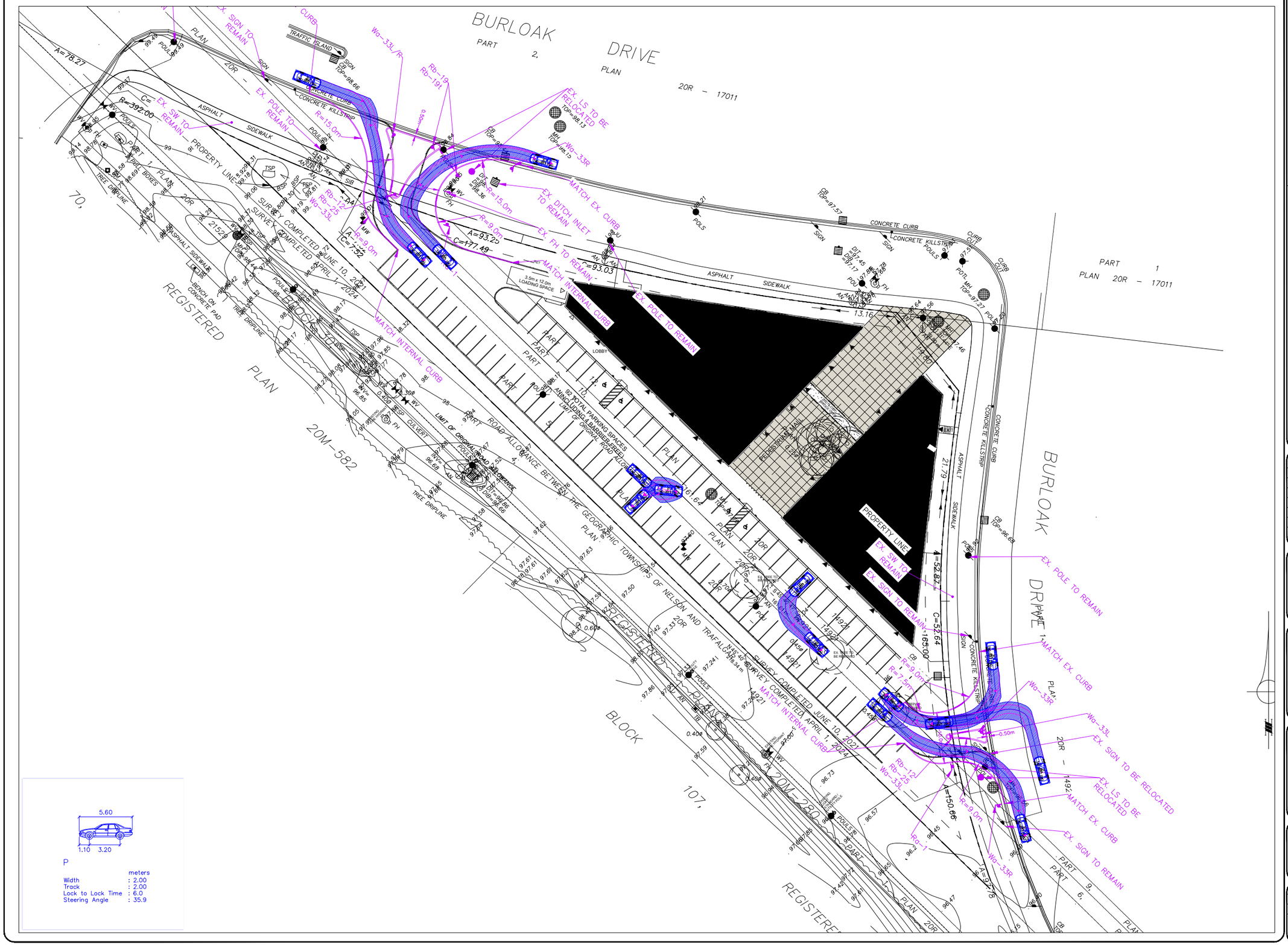
STAMP

.\X-ref\Nextrans-CAD-2.jpg

PROJECT NAME:
Commercial Development
580 Burloak Drive
Town of Oakville

DRAWING TITLE:
AutoTURN Analysis
MSU TAC-2017
Loading

DESIGN BY: J.N.	DATE: December 7, 2025
CHECKED BY: R.P.	PROJECT NO. NT-25-075
DRAWN BY: J.N.	
SCALE: NTS	DRAWING NO. AT-03



	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

STAMP

.\X-ref\Nextrans-CAD-2.jpg

PROJECT NAME:

Commercial Development
580 Burloak Drive
Town of Oakville

DRAWING TITLE:

AutoTURN Analysis
P TAC-2017

DESIGN BY: J.N.	DATE: December 7, 2025
CHECKED BY: R.P.	PROJECT NO. NT-25-075
DRAWN BY: J.N.	
SCALE: NTS	DRAWING NO. AT-04