Traffic Impact Study

Proposed Industrial Subdivision

Scugog Line 6, Port Perry

Durham Region

ASURZA ENGINEERS

July 20, 2022

Project No: 2210-21

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Project Nº 2210-21

July 20, 2022

Ms. Nicola Alston,
Township of Scugog
181 Perry Street
Port Perry, ON
L9L 1A7

Dear Ms. Alston,

Reference: Proposed Industrial Subdivision
Port Hope, ON
Traffic Impact Study
Project Nº 2210-21

Asurza Engineers Ltd. is pleased to submit the enclosed Traffic Report for the proposed industrial subdivision. The study and report were prepared on behalf of the proponent as part of the documentation required by the Township of Scugog.

Should you have any questions regarding this report, please do not hesitate to contact the undersigned.



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Senior Transportation/Traffic Engineer
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Executive Summary

Asurza Engineers Ltd. was retained to undertake a traffic impact study to review, assess, and determine any traffic impacts that the proposed industrial development may generate on the adjacent road intersections.

The subject site is located next to Scugog Line 6, east of Hwy 7 in Port Perry. The site is an undeveloped lot surrounded by other industrial areas.

Traffic turning volumes were provided by the Ontario Ministry of Transportation (MTO), and additional field counts were also performed to supplement this data.

Intersection traffic operations for the existing condition (2022) were reviewed. During typical peak hours, results show that the intersection's movements are currently operating at an acceptable Level of Service (LOS) that ranges from "A" to "D", except for the westbound movement for the Hwy 7/12/Scugog Line 6 intersection with an LOS "E" for the afternoon peak hour.

The proposed development is planned to be completed by the horizon year 2024; therefore, background volumes for the build-out year, five years after build-out, and ten years after build-out were reviewed.

Results for background volumes, under the existing geometric and traffic control conditions, and without the proposed development in place, show that the capacity and level of service for some movements become critical. The westbound movement at the Hwy 7/12/Scugog Line 6 intersection shows LOS "F" for the year 2024; the eastbound movement also becomes LOS "F" by the year 2034. The LOS "F" for the eastbound movement at the Highway 7A/Scugog Line 6 intersection is also noticed for the horizon year

2034. High delays are indicative of insufficient gaps in the approaching traffic flow to allow vehicles from the side street to execute their turning movements.

Trips to be generated by the proposed development were estimated based on the "Trip Generation Manual" published by the Institute of Transportation Engineers. According to the ITE trip rates, it is estimated that the completed proposed development will generate a total of 247 trips during the morning and afternoon peak hour, and 40 trips during the Saturday peak hour.

The new trips generated by the proposed development were added to the background volumes, resulting in the total volumes used to review the traffic operations at the impacted intersections.

In general, traffic operation results with the added new trips are very similar to those for the background volumes, as both the background and total volumes show the same critical conditions. The resulting factors indicate that traffic volumes on Hwy 7/12 are so high that vehicles on the side road are having problems to find a proper gap to merge, and the same concept applies for Hwy 7A; therefore, the critical conditions of the mentioned movements will happen regardless of the new trips generated by the proposed development.

Traffic operation results with the added new trips are very similar than those for the background volumes. In general, the effects of the new trips are so minor that the resulting factors are basically the same with or without the trips generated by the proposed development.

Traffic operations at the access next to Scugog Line 6 were also evaluated and no issues were found. Results show LOS "A" or "B" for all movements.

As part of the study, the review of auxiliary lanes was undertaken. Based on our analysis, it has been determined that under the existing conditions a westbound left turn lane on Reach St. at N. Port Road is currently warranted.

On Scugog Line 6 at the proposed access, a right turn taper will be required.

The municipal authorities are also advised to consider the installation of traffic signals at the Hwy 7/Scugog Line 6 intersection. The high number of traffic volumes on Highway 7 makes it too difficult for the vehicles on the side road to find proper gaps to merge into the main road.

Additional recommended actions are described in the “Conclusions and Recommendations” heading of this report.

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1 Introduction

1.1 Overview

Asurza Engineers Ltd. was retained by The Applicant or Developer to undertake a traffic impact study for the proposed industrial subdivision to be located adjacent to Scugog Line 6 in Port Perry, Township of Scugog, Ontario. The report was prepared for the Township's review and approval to permit the proposed development.

1.2 Objectives

The purpose of this study is to determine any traffic impact the proposed development may generate on the adjacent roadways and adjacent intersections, as well as to identify the required improvements to maintain acceptable operational levels on the roadways within the study area.

The general scope of this study includes the following key elements:

- Establish a baseline traffic condition for the study area.
- Estimate the traffic growth for future planning horizons.
- Estimate the additional traffic the proposed development will generate.
- Estimate the total future traffic and identify impacts within the study area.
- Identify any operational and/or geometric issues within the study area.
- Provide recommendations to address any deficiencies, if identified.

To achieve these objectives, the traffic study makes use of accepted methodologies and procedures including informational reports, publications

from recognized institutions and agencies, recommended best practice manuals and municipal guidelines when available. These documents will be noted within the report in the associated topic of discussion.

2 Existing Conditions

2.1 Study Area

The Town of Port Perry (population of 9,453 residents according to the 2016 census), is located in the Township of Scugog, approximately 84 kilometres northeast of Toronto and immediately north of Oshawa.

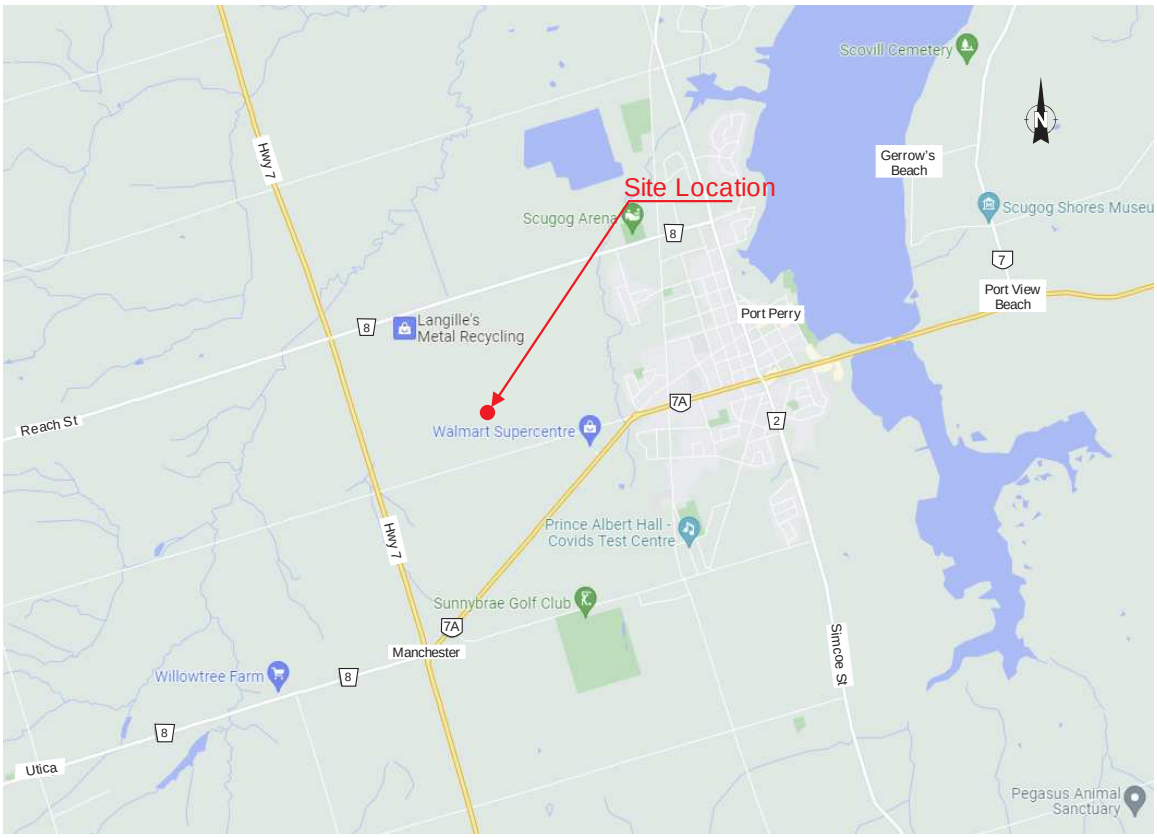


Exhibit 1: *Site Location.*

2.2 The Site

The subject site is located next to Scugog Line 6, East of Hwy 7. The site is an undeveloped lot surrounded by other industrial areas.



Exhibit 2: *The Site.*

The subject site is intended for industrial development to include approximately 719,272 sq. ft of gross floor area, which is approximately 20% of the total buildable area for the site.

The site is planned with two accesses, one next to Scugog Line 6 and the other to connect with N. Port Rd. (See Draft Site in Appendix A).

The proposed development is planned to be built in a single phase; the build-out is intended for the year 2024.

2.3 Roadway Network

The following roads are part of the study area:

Scugog Line 6 is a two-lane east-west roadway (one lane per direction) with bike lanes at both sides of the road. Scugog Line 6 within the study limits shows a semi-urban cross-section with concrete curbs and gutters with catch basins for road drainage. No sidewalks are present in the area. Scugog Line 6 is surrounded by a mix of industrial and agricultural areas. The road within the study area has a posted speed of 60 km/h with a speed reduction to 50 km/h for the last 0.9 km toward the intersection with Highway 7A.

North Port Rd. is a two-lane north-south local road that provides access to an industrial area. Currently, N. Port Rd is a dead-end road that connects with Reach St. at the north end forming a T-intersection. No posted speed was identified on this roadway; therefore, according to the Ontario Highway Traffic Act, the road is limited to 50 km/h unless posted otherwise.

Reach St. is a two-lane east-west roadway (one lane per direction). Within the study limits, Reach St. shows a rural cross-section with shoulders, ditches, and culverts for road drainage. No sidewalks are present in the area. Scattered commercial/industrial areas are noticed within the area. The road has a posted speed of 80 km/h.

Highway 7/12 is a north-south arterial roadway (one lane per direction). The roadway shows a rural cross-section within the study area with partially paved shoulders, ditches and culverts for road drainage. Within the study area, Highway 7/12 is surrounded by agricultural lands with scattered commercial and residential areas. Scugog Line 6 and Highway 7/12 intersect each other to form a four-leg intersection with stop signs on Scugog Line 6. The speed of Highway 7/12 within the study area is 80 km/h.

Highway 7A is an arterial two-lane (one lane per direction). The road is on a skew at about 45°; for purposes of this study, it is set as a north-south roadway. Highway 7A bends at Queen Street to change direction as an east-

west road. Highway 7A south of Queen Street is a mix of rural and semi-urban sections; the east-west section shows an urban cross-section. Scugog Line 6 intersects Hwy 7A to form a T-intersection with a stop sign on Scugog Line 6. The north-south section of Highway 7A has a posted speed of 80 km/h with speed reduction to 50 km/h in proximity to Queen St. The east-west section of Highway 7A has a posted speed of 50 km/h.

Queen Street is a two-lane (one lane per direction) urban collector road which also skewed at 45° angle; for purposes of this study, it is set as a north-south roadway. Queen Street, Highway 7A and the commercial plaza entrance form a four-leg intersection controlled by traffic signals. Queen Street has a posted speed of 50 km/h.

Walsh Drive is a two-lane (one lane per direction) local urban roadway that intersects Queen Street. No posted speed was identified on this roadway; therefore, according to the Ontario Highway Traffic Act, the road is limited to 50 km/h unless posted otherwise.

2.4 Traffic Data

Traffic turning movement counts for the study intersections were provided by the Ministry of Transportation Ontario (MTO); traffic count reports are from 2017 and 2018 for weekdays only and supplemented with field counts performed by our company. Traffic counts for Saturday were performed by Horizon Data Services Ltd. (See **Appendix B**).

The signal timing plan for the Hwy 7A/Queen St intersection was provided by the Regional Municipality of Durham.

2.5 Existing Traffic Volumes

Since the traffic data provided by MTO and the collected field traffic data are outside of the summer months, a seasonal factor of 1.1 was used to represent volumes for the summer months. Traffic data from previous years were projected using the 1.7% growth factor.

The existing lane configuration and traffic volumes for the adjacent roads and intersections are noted in the following exhibits:

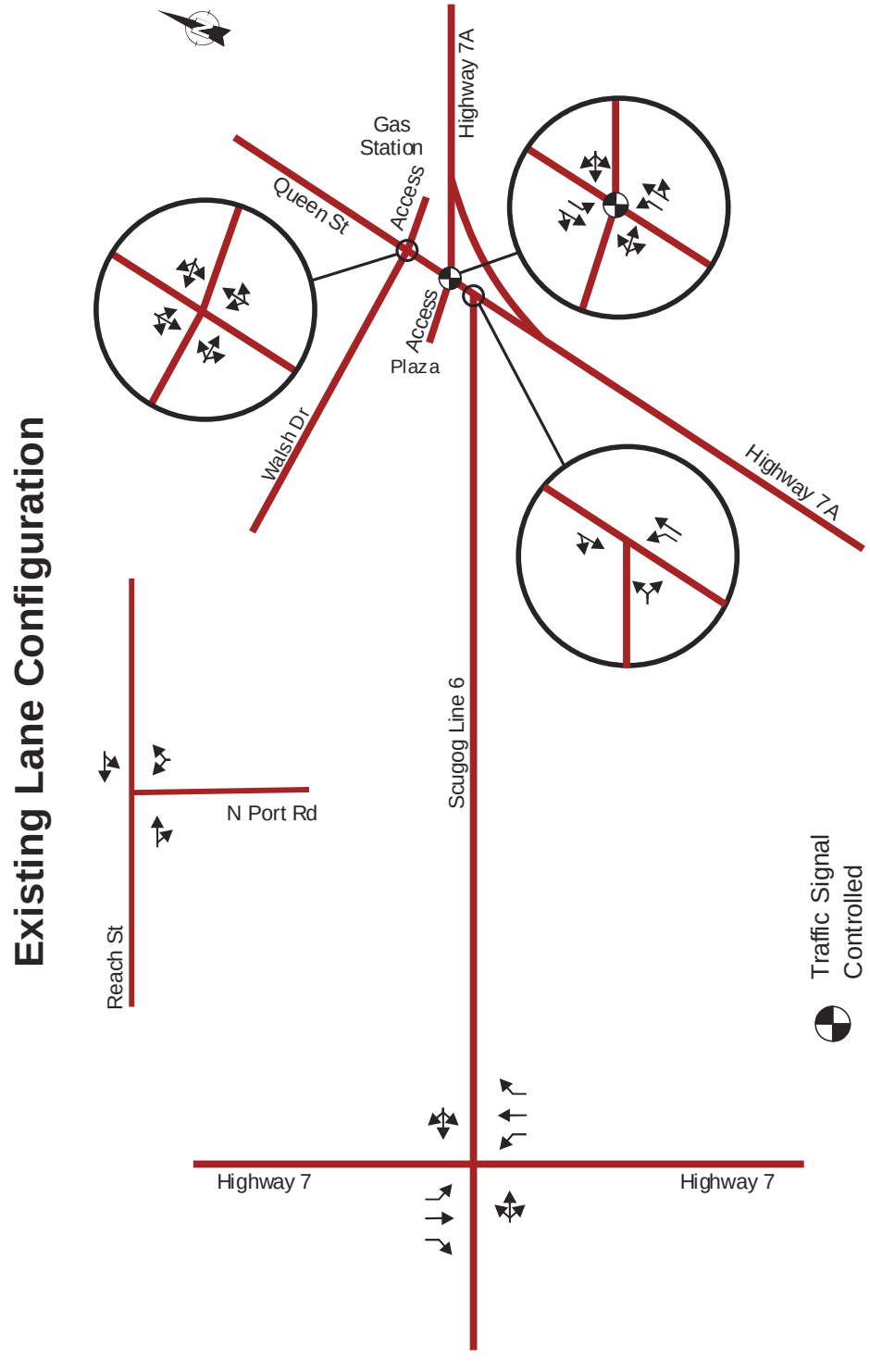


Exhibit 3: *Existing Lane Configuration.*

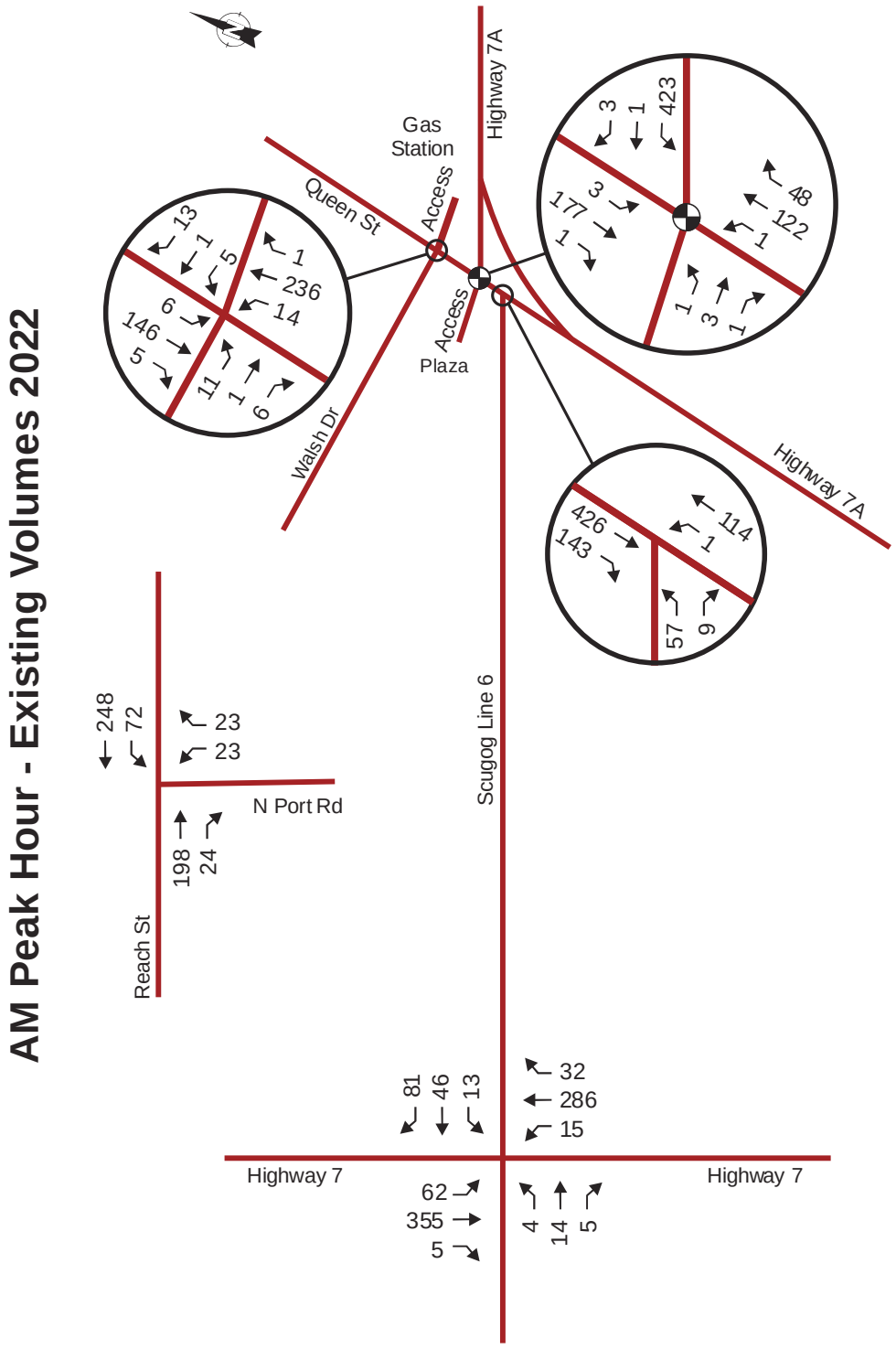


***Exhibit 4:** AM Peak Hour - Existing Traffic Volumes 2022.*

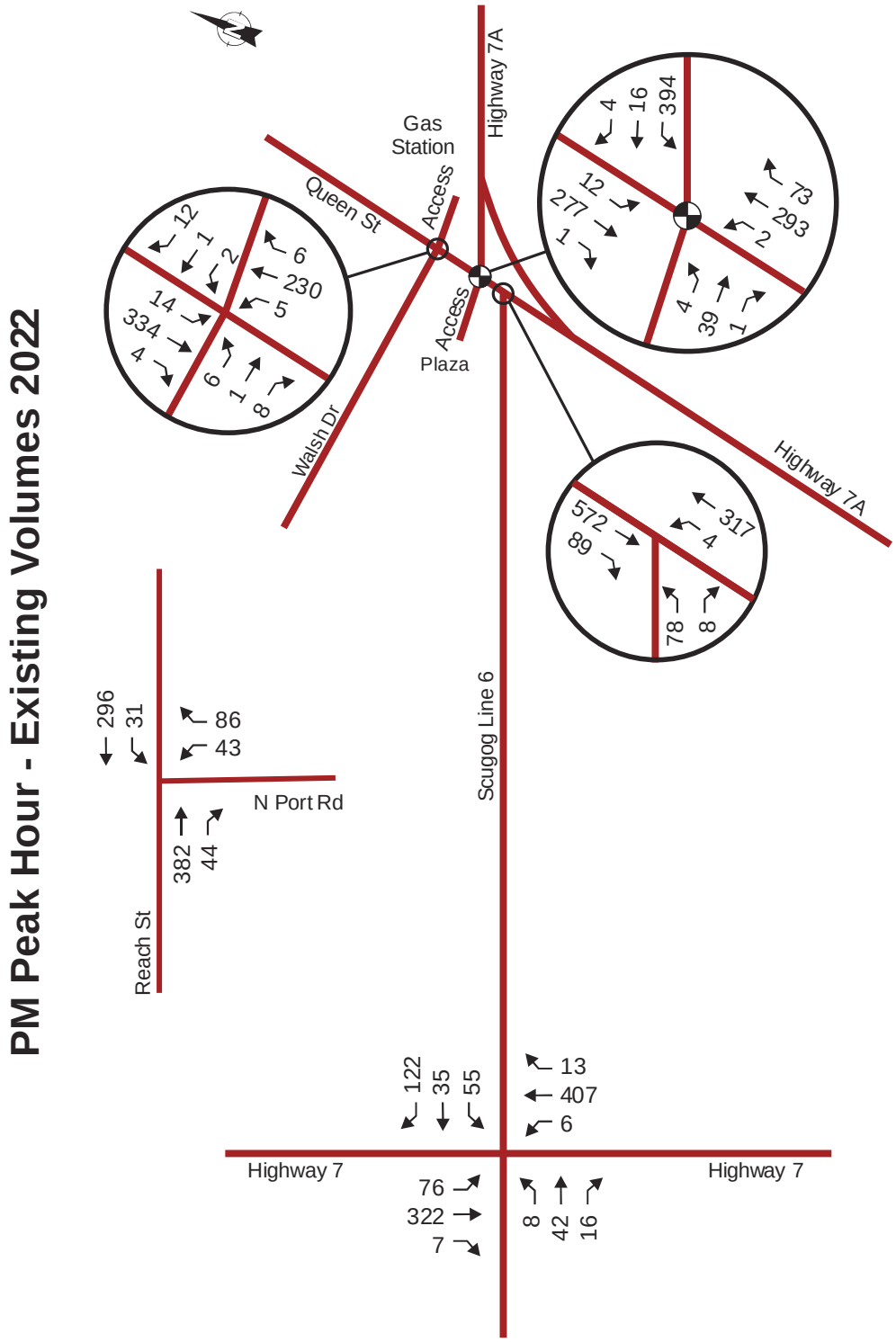


***Exhibit 5:** PM Peak Hour - Existing Traffic Volumes 2022.*

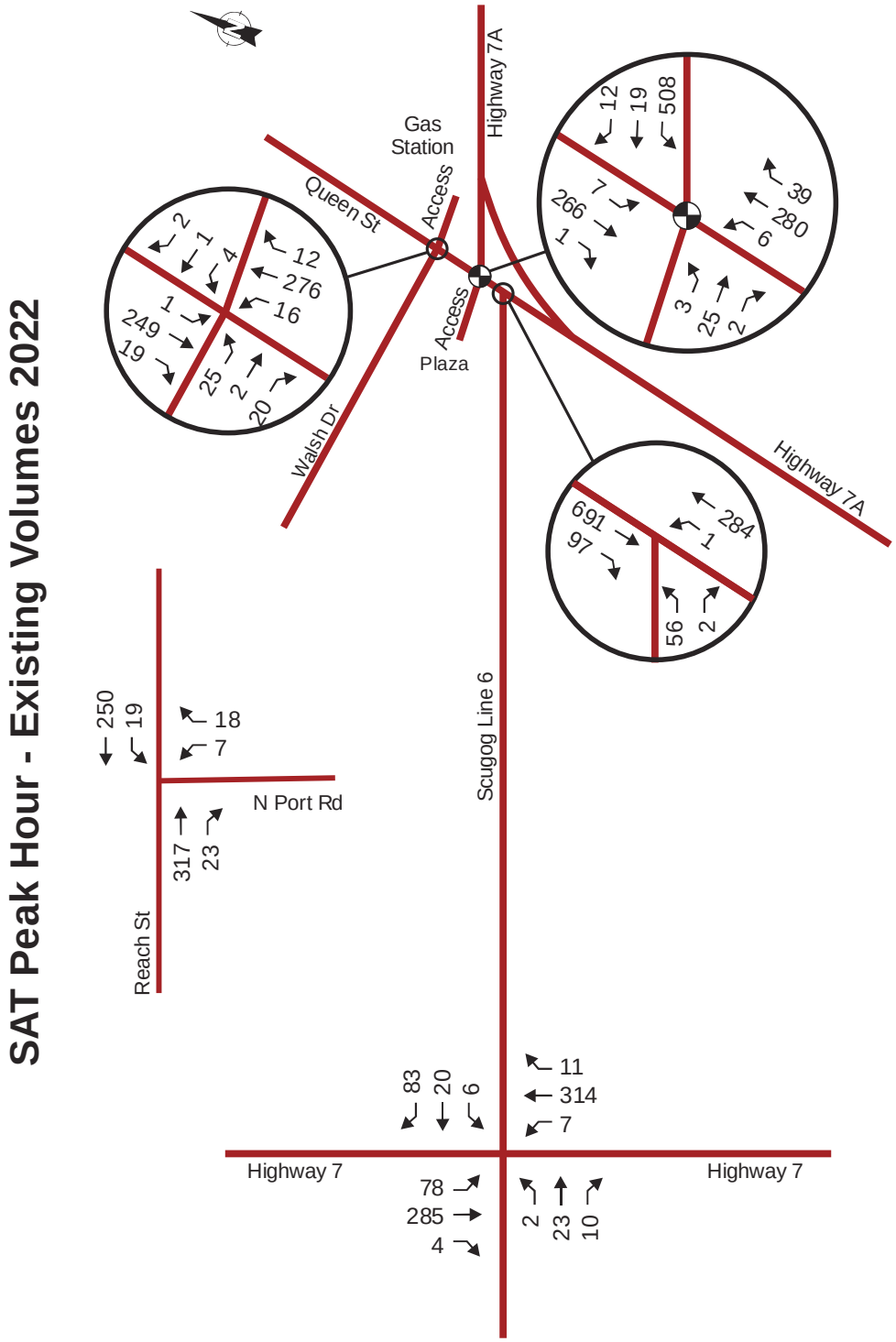


***Exhibit 6:** SAT Peak Hour - Existing Traffic Volumes 2022.*

2.6 Existing Traffic Operations

Intersection level of service (LOS) is a recognized method of qualifying the efficiency of traffic flow at intersections. The assigned LOS is determined on the delay caused by the control system experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles desiring to make a particular movement, compared to the estimated capacity for that movement.

For stop-controlled intersections, the method assesses the available and critical gaps in the traffic stream, which make it possible for the side road traffic to enter the main street flow. High delays are indicative of insufficient gaps in the approaching traffic flow to allow vehicles from the side street to execute their turning movements.

Table 1 shows the level of service criteria for signalized and stop-controlled intersections. The level of service ranges from the letter 'A' to 'F' where 'A' represents the ideal traffic condition and 'F' represents the extreme congested traffic condition.

LOS	Signalized Intersection Control Delay (sec/veh)	Stop Controlled Intersection Control Delay (sec/veh)
A	0 - 10	0 - 10
B	> 10 - 20	> 10 - 15
C	> 20 - 35	> 15 - 25
D	> 35 - 55	> 25 - 35
E	> 55 - 80	> 35 - 50
F	> 80	> 50

Table 1: *Level of Service Definition.*

The existing operations for the subject intersections were evaluated using the existing traffic volumes as illustrated in ***Exhibit 4***, ***Exhibit 5*** and ***Exhibit 6*** for the AM, PM and SAT peak hours, respectively.

		Capacity Analysis - Existing Year 2022											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 7/ Scugog Line 6	EB-LTR	0.10	20.8	2.6	C	0.30	26.6	9.7	D	0.12	17.6	3.1	C
	WB-LTR	0.38	19.6	13.9	C	0.75	44.2	44.3	E	0.24	14.6	7.4	B
	NB-L	0.01	8.1	0.3	A	0.01	8.6	0.2	A	0.01	8.6	0.2	A
	NB-T	0.18	0.0	0.0	A	0.26	0.0	0.0	A	0.20	0.0	0.0	A
	NB-R	0.02	0.0	0.0	A	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB-L	0.06	8.2	1.4	A	0.08	8.8	2.0	A	0.07	8.3	1.9	A
	SB-T	0.23	0.0	0.0	A	0.21	0.0	0.0	A	0.18	0.0	0.0	A
	SB-R	0.00	0.0	0.0	A	0.00	0.0	0.0	A	0.00	0.0	0.0	A
Hwy 7A/ Scugog Line 6	EB-LR	0.17	15.2	4.8	C	0.36	26.4	12.4	D	0.29	27.7	8.9	D
	NB-L	0.00	8.8	0.0	A	0.01	9.2	0.1	A	0.00	9.8	0.0	A
	NB-T	0.07	0.0	0.0	A	0.20	0.0	0.0	A	0.18	0.0	0.0	A
	SB-TR	0.36	0.0	0.0	A	0.42	0.0	0.0	A	0.50	0.0	0.0	A
Hwy 7A/ Queen St	EB-LTR	0.01	10.8	2.1	B	0.06	12.2	9.1	B	0.04	9.4	6.3	A
	WB-LTR	0.86	37.6	94.9	D	0.86	37.4	91.3	D	0.88	35.5	134.4	D
	NB-L	0.00	16.0	1.1	B	0.00	16.5	1.6	B	0.02	22.0	4.1	C
	NB-TR	0.24	14.6	32.1	B	0.50	20.0	76.7	B	0.51	26.9	80.1	C
	SB-L	0.01	15.7	2.0	B	0.04	16.8	5.1	B	0.03	22.1	4.3	C
	SB-TR	0.23	16.8	36.5	B	0.37	18.8	58.4	B	0.42	25.7	67.0	C
	Overall	0.86	27.6	-	C	0.86	25.8	-	C	0.88	30.1	-	C
Queen St/ Walsh Dr	EB-LTR	0.03	11.4	0.8	B	0.03	12.5	0.8	B	0.10	12.8	2.6	B
	WB-LTR	0.03	10.5	0.7	B	0.02	10.3	0.6	B	0.02	12.8	0.4	B
	NB-LTR	0.01	0.5	0.3	A	0.00	0.2	0.1	A	0.01	0.5	0.3	A
	SB-L	0.00	7.8	0.1	A	0.01	7.7	0.3	A	0.00	7.9	0.0	A
	SB-TR	0.10	0.0	0.0	A	0.22	0.0	0.0	A	0.17	0.0	0.0	A
Reach St/ N Port Rd	EB-TR	0.14	0.0	0.0	A	0.27	0.0	0.0	A	0.22	0.0	0.0	A
	WB-LT	0.06	2.2	1.5	A	0.03	1.2	0.8	A	0.02	0.7	0.4	A
	NB-LR	0.10	13.0	2.6	B	0.30	15.9	9.8	C	0.05	11.7	1.2	B

Table 2: *Existing AM, PM and SAT Intersection Capacity – Year 2022.*

During typical peak hours, results show that the intersections movements are currently operating at acceptable Level of Service (LOS) that range from “A” to “D”, except for the westbound movement for the Hwy 7/12/Scugog Line 6 intersection that shows a LOS “E” for the afternoon peak hour.

3 Background Traffic Volumes

3.1 Annual Growth Rate

In order to establish base conditions for comparison and evaluation of future scenarios, it is necessary to review results of traffic operations over time.

The annual growth rate was estimated based on historical Annual Average Daily Traffic for Highway 7A as published by MTO. According to the last 10 years of historical data from 2007 to 2016, an average growth rate of 1.7% was estimated.

3.2 Background Traffic Volumes

Background traffic volumes were estimated by applying the growth rate to the existing traffic volumes. The growth rate is annually compounded.

The horizon year 2024, the horizon year 2029 and horizon year 2034 background volumes were projected to coincide with build-out year, five years after build-out, and ten years after build-out.

The projected background traffic volumes are shown in the following exhibits:

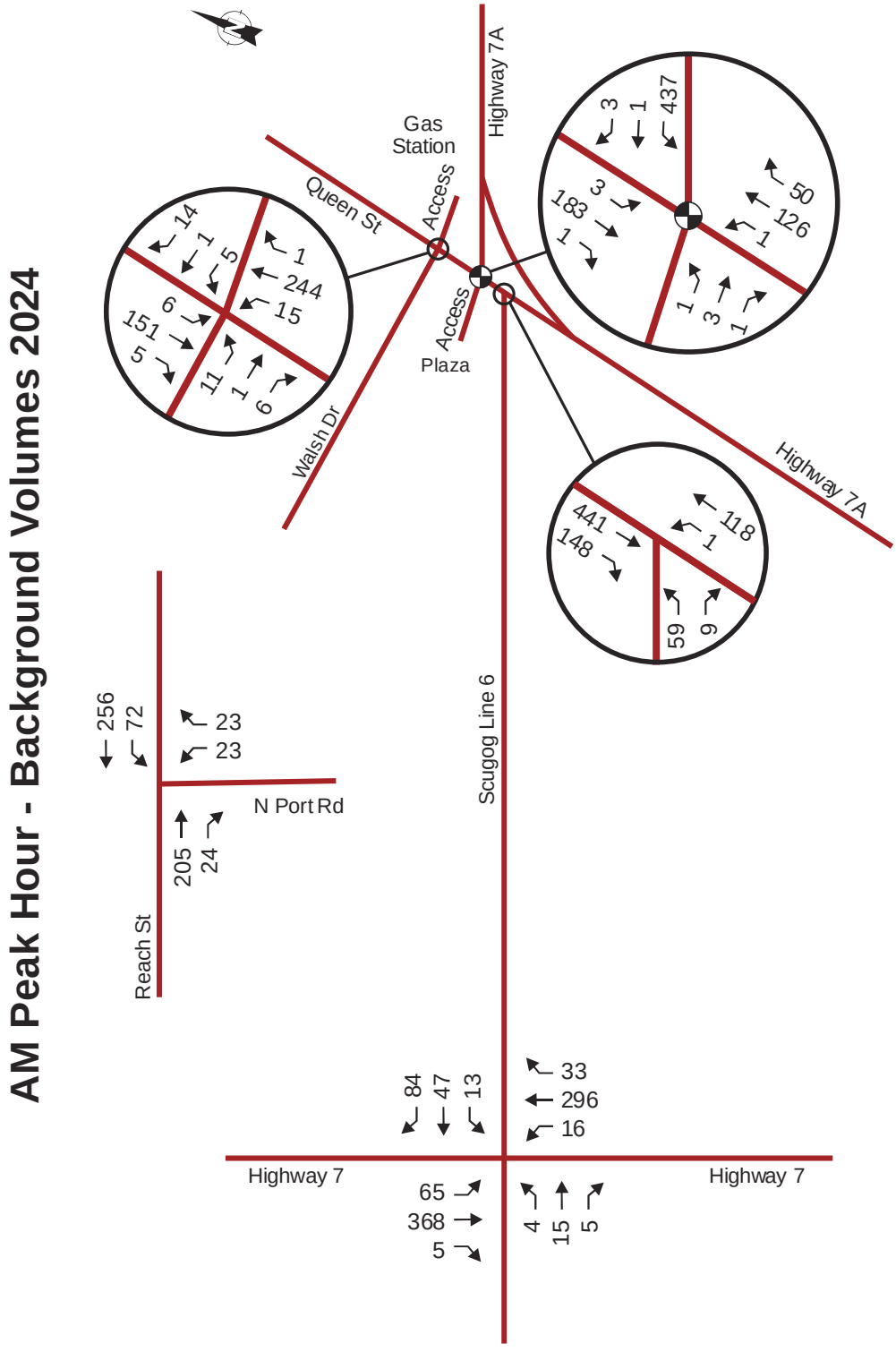


***Exhibit 7:** AM Peak Hour - Background Traffic Volumes 2024.*

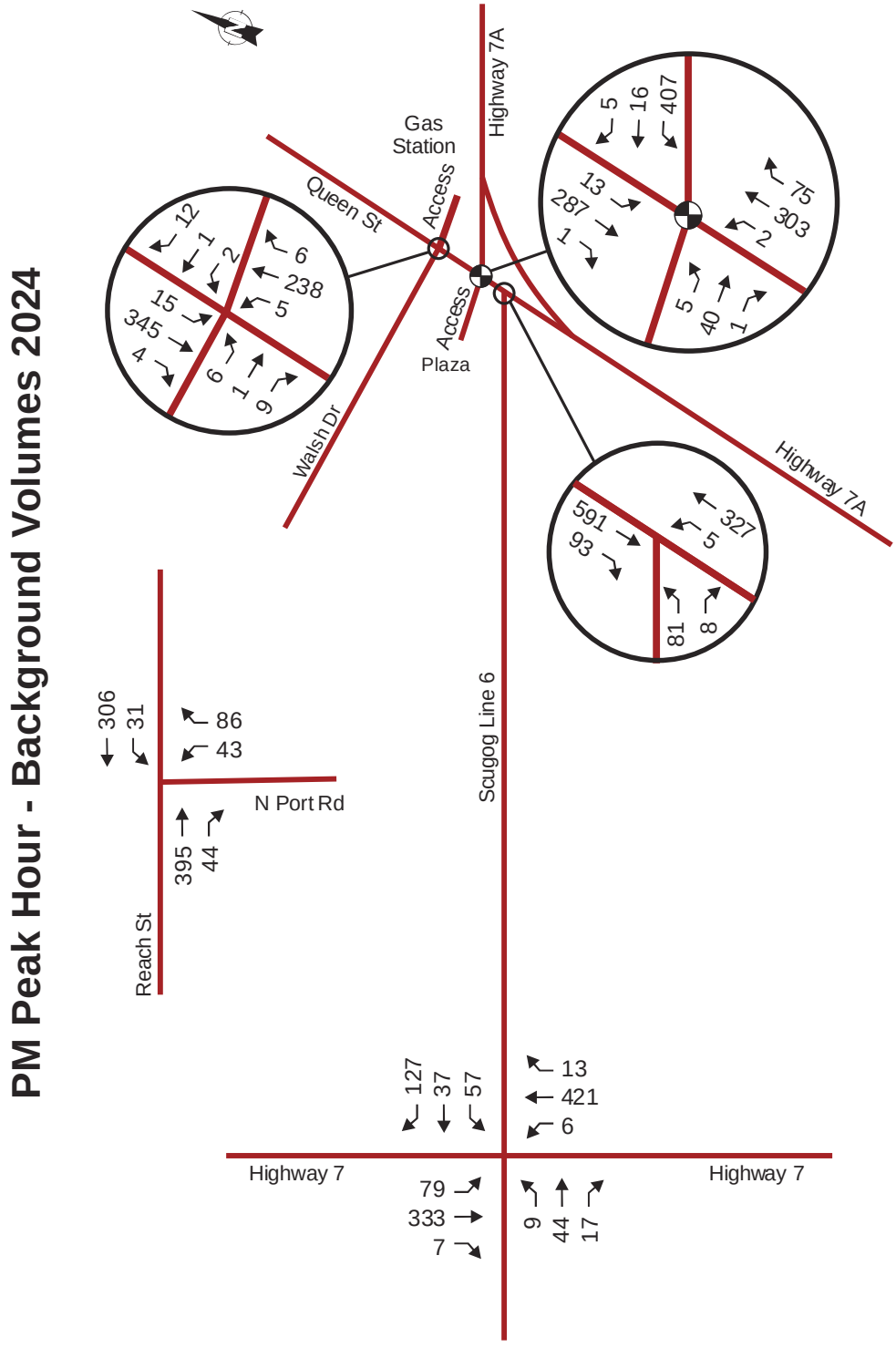


***Exhibit 8:** PM Peak Hour - Background Traffic Volumes 2024.*

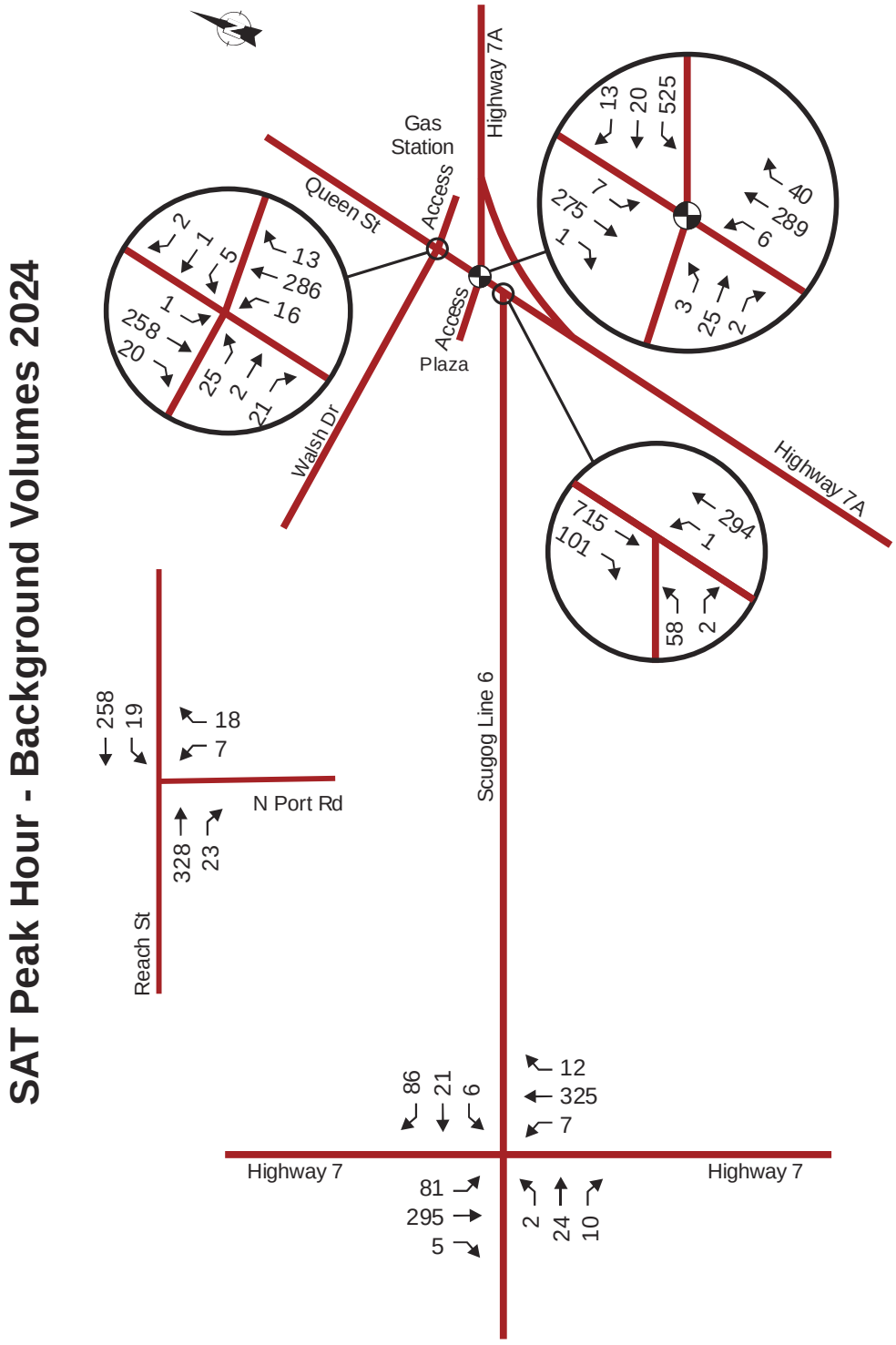


Exhibit 9: *SAT Peak Hour - Background Traffic Volumes 2024.*

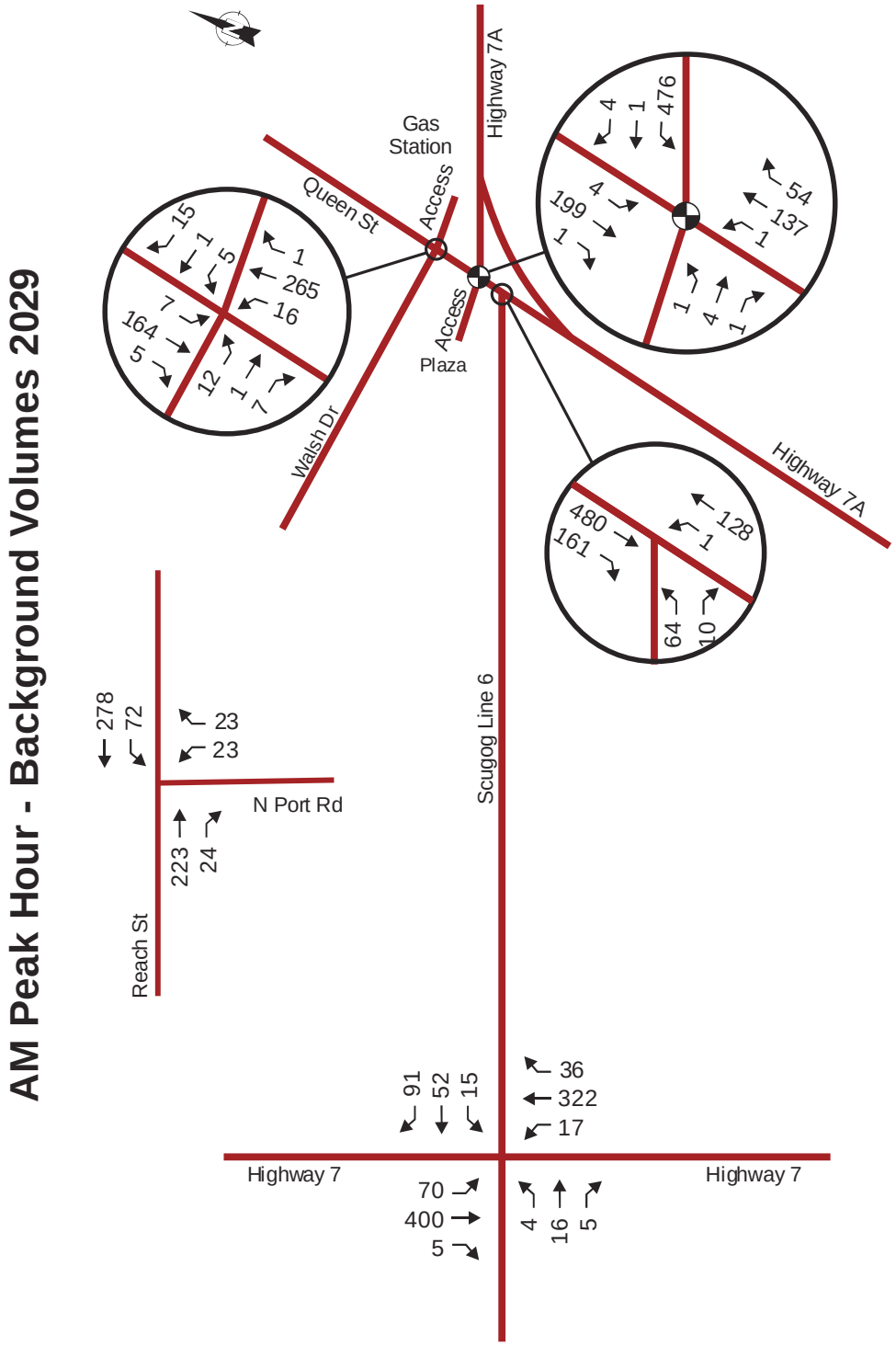


***Exhibit 10:** AM Peak Hour - Background Traffic Volumes 2029.*

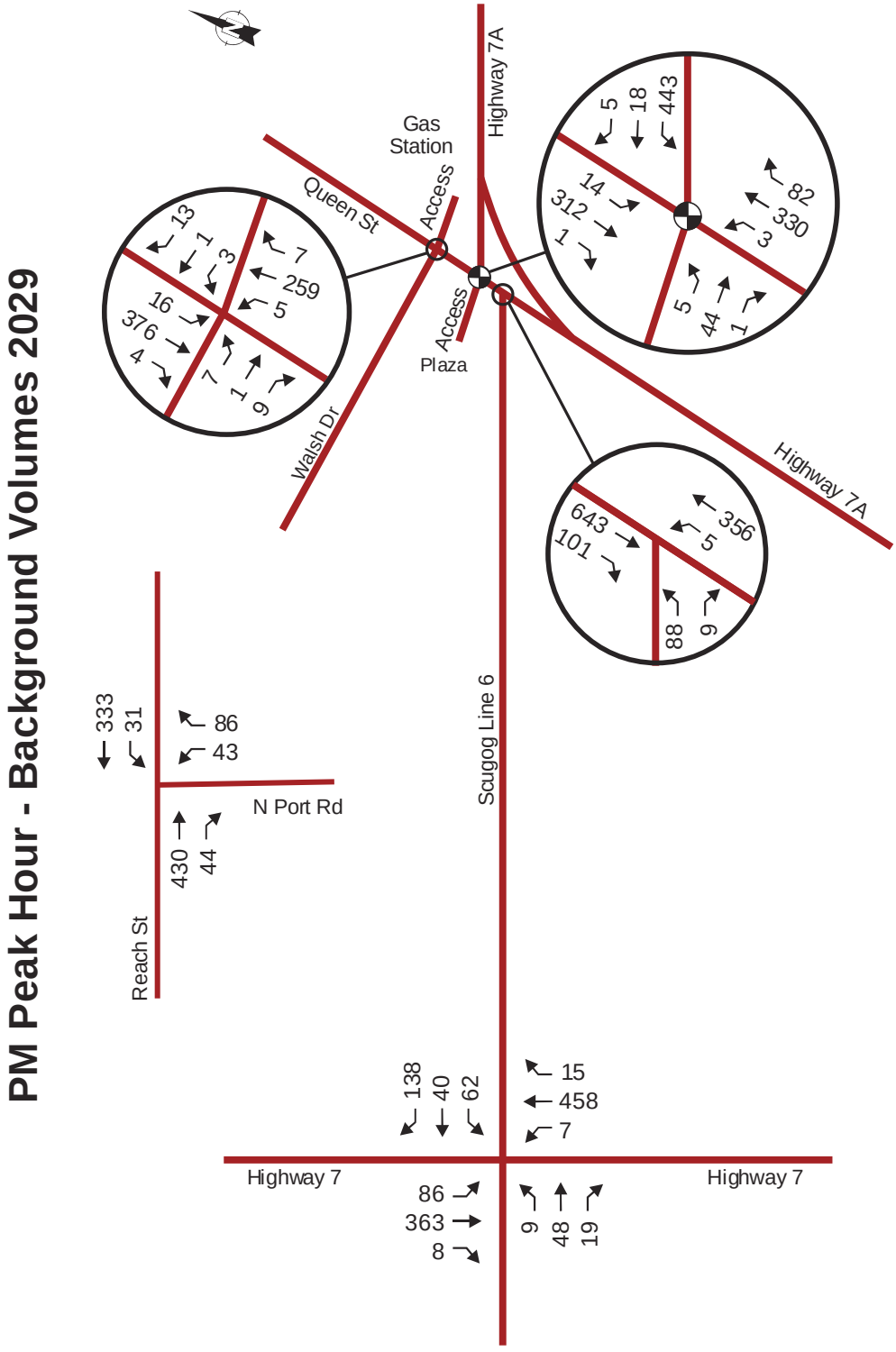


***Exhibit 11:** PM Peak Hour - Background Traffic Volumes 2029.*

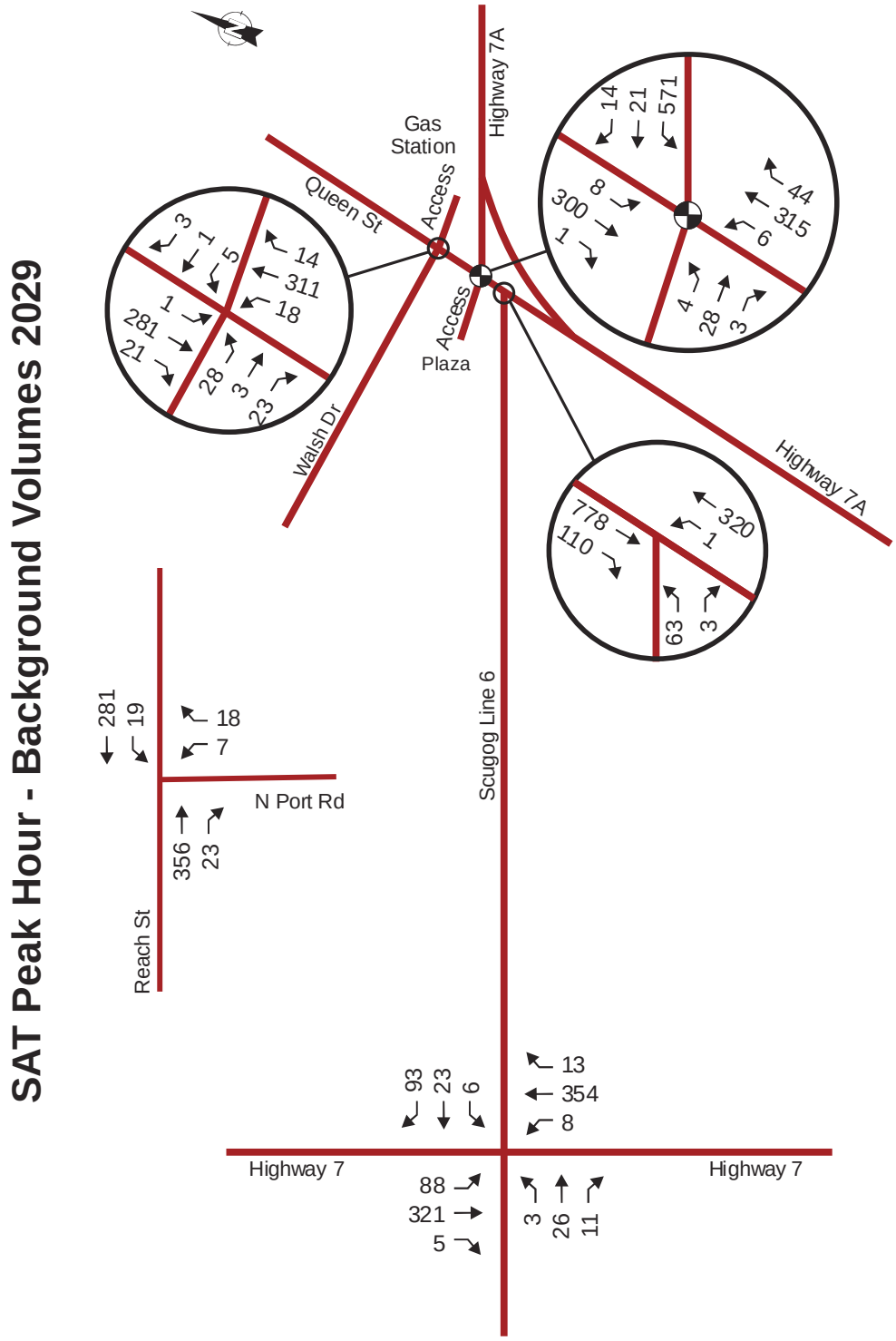


***Exhibit 12:** SAT Peak Hour - Background Traffic Volumes 2029.*

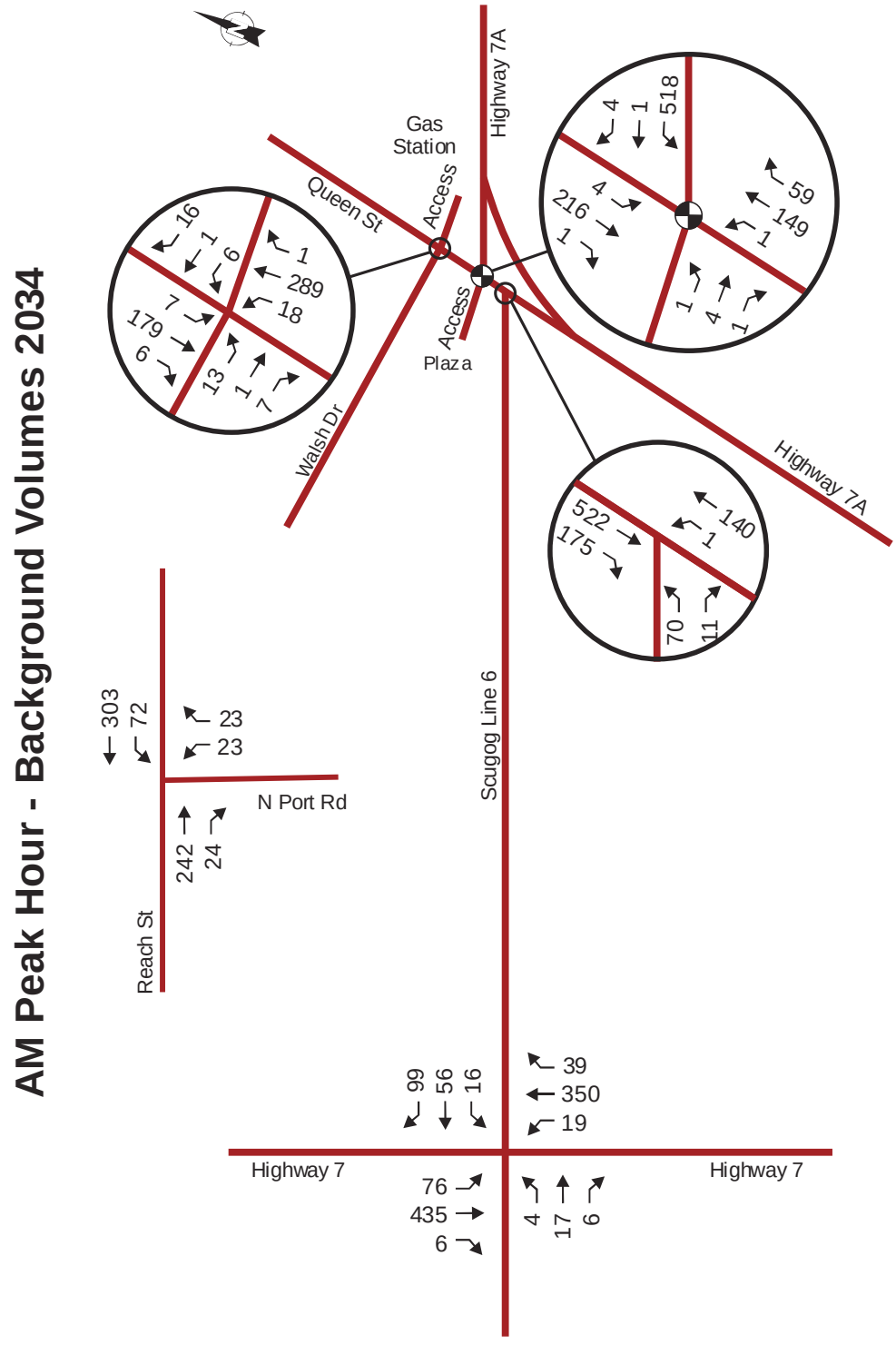


***Exhibit 13:** AM Peak Hour - Background Traffic Volumes 2034.*

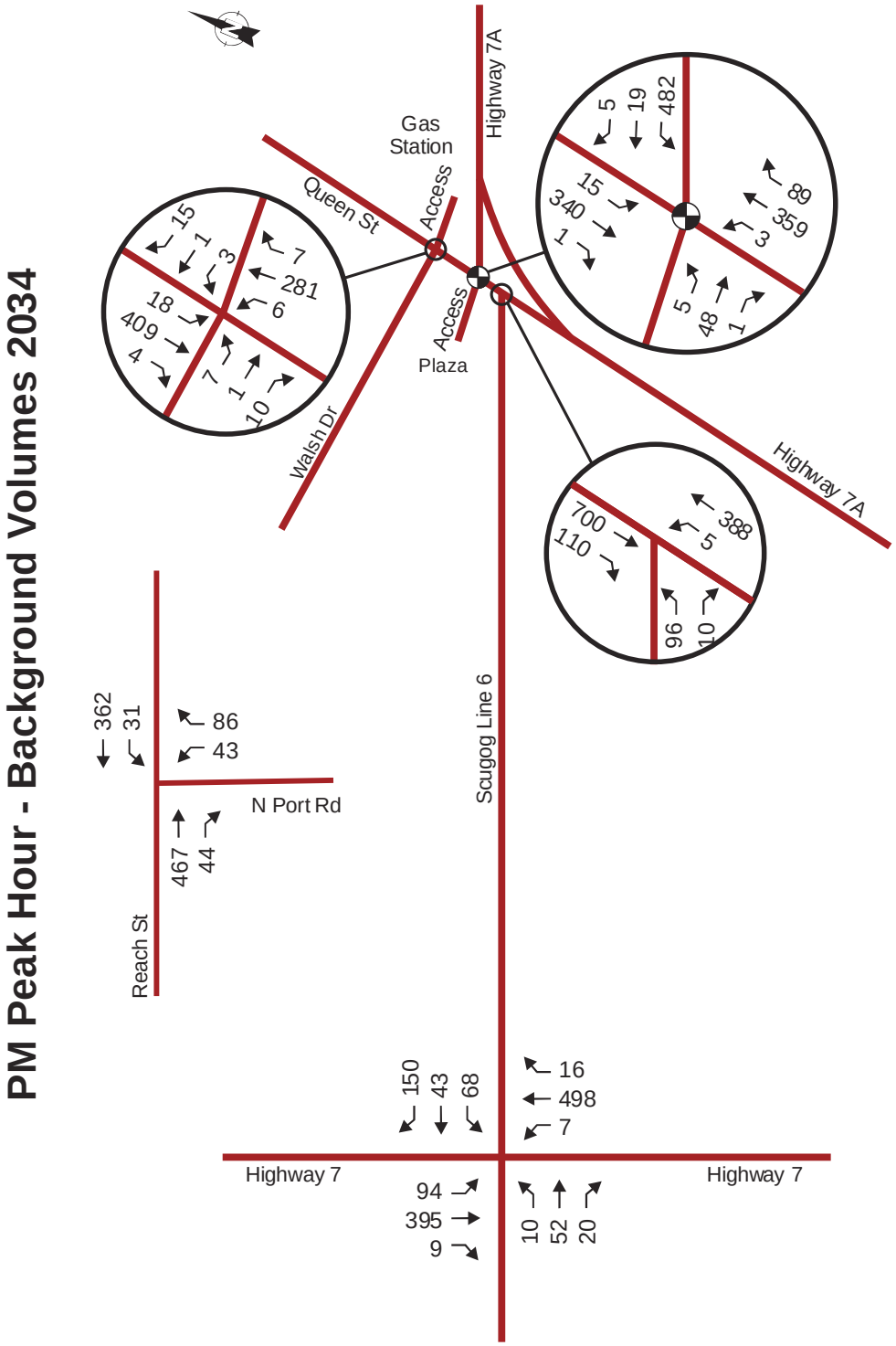


***Exhibit 14:** PM Peak Hour - Background Traffic Volumes 2034.*

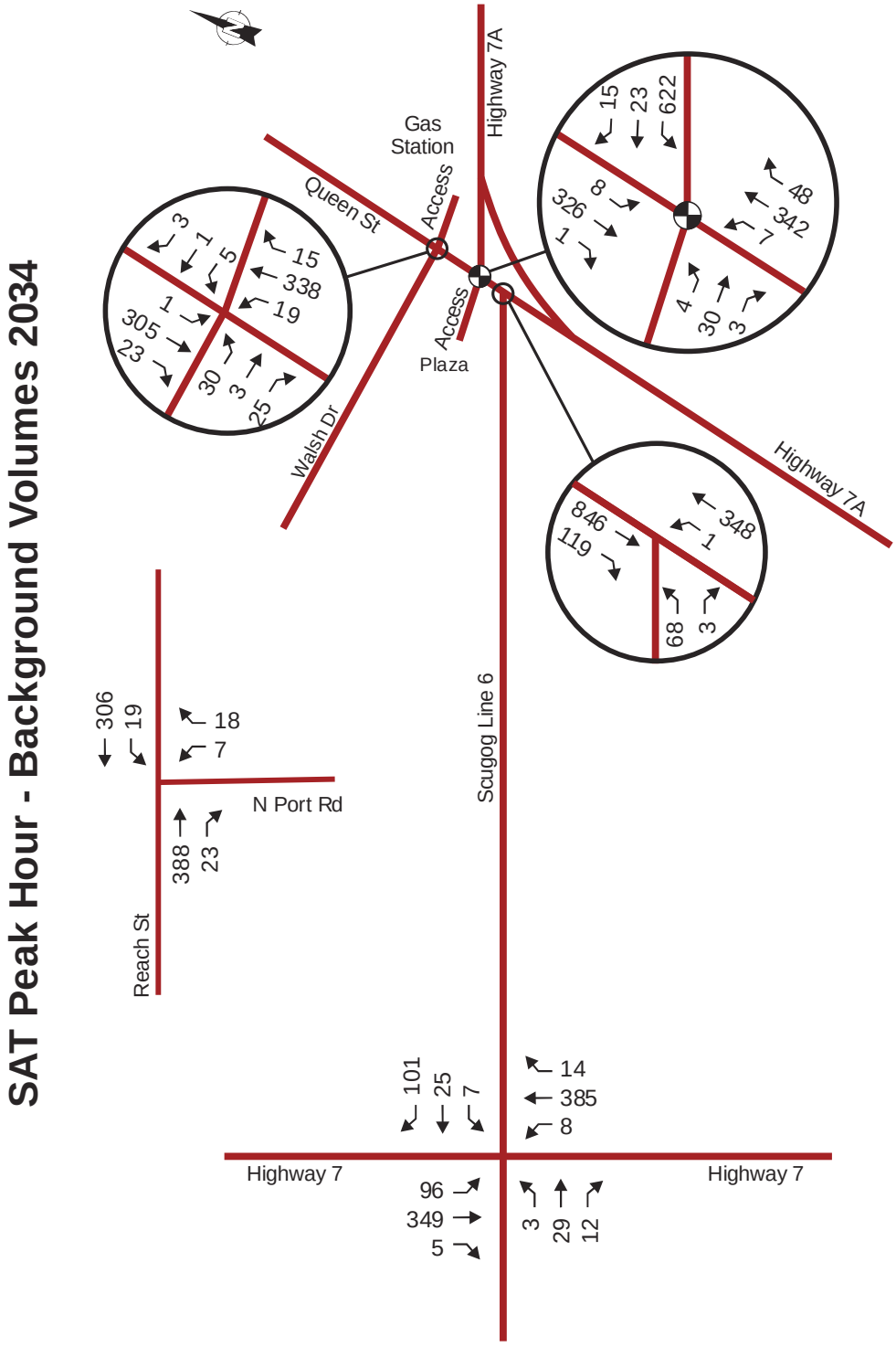


***Exhibit 15:** SAT Peak Hour - Background Traffic Volumes 2034.*

		Capacity Analysis - Background Year 2024											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 7/ Scugog Line 6	EB-LTR	0.11	21.9	2.9	C	0.34	29.5	11.5	D	0.13	18.4	3.4	C
	WB-LTR	0.41	20.7	15.3	C	0.82	55.9	53.7	F	0.26	15.2	8.0	C
	NB-L	0.02	8.2	0.4	A	0.01	8.6	0.2	A	0.01	8.6	0.2	A
	NB-T	0.19	0.0	0.0	A	0.27	0.0	0.0	A	0.21	0.0	0.0	A
	NB-R	0.02	0.0	0.0	A	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB-L	0.06	8.3	1.5	A	0.08	8.8	2.2	A	0.08	8.4	2.0	A
	SB-T	0.24	0.0	0.0	A	0.21	0.0	0.0	A	0.19	0.0	0.0	A
	SB-R	0.00	0.0	0.0	A	0.00	0.0	0.0	A	0.00	0.0	0.0	A
Hwy 7A/ Scugog Line 6	EB-LR	0.18	15.7	5.1	C	0.39	28.9	14.1	D	0.31	30.2	10.2	D
	NB-L	0.00	8.9	0.0	A	0.01	9.4	0.2	A	0.00	10.0	0.0	A
	NB-T	0.08	0.0	0.0	A	0.21	0.0	0.0	A	0.19	0.0	0.0	A
	SB-TR	0.38	0.0	0.0	A	0.44	0.0	0.0	A	0.52	0.0	0.0	A
Hwy 7A/ Queen St	EB-LTR	0.01	10.6	2.1	B	0.07	12.0	9.3	B	0.04	9.2	6.3	A
	WB-LTR	0.87	37.9	104.8	D	0.87	38.9	101.1	D	0.90	37.4	153.4	D
	NB-L	0.00	16.0	1.1	B	0.00	16.5	1.6	B	0.02	22.2	4.1	C
	NB-TR	0.25	15.1	33.2	B	0.52	20.8	80.3	C	0.54	27.8	83.1	C
	SB-L	0.01	16.0	2.0	B	0.04	17.0	5.3	B	0.03	22.3	4.3	C
	SB-TR	0.25	17.3	37.8	B	0.39	19.4	60.3	B	0.45	26.5	69.4	C
	Overall	0.87	28.0	-	C	0.87	26.8	-	C	0.90	31.4	-	C
Queen St/ Walsh Dr	EB-LTR	0.03	11.6	0.8	B	0.04	12.6	0.9	B	0.10	13.0	2.7	B
	WB-LTR	0.03	10.5	0.8	B	0.02	10.4	0.6	B	0.02	13.3	0.5	B
	NB-LTR	0.01	0.5	0.3	A	0.00	0.2	0.1	A	0.01	0.5	0.3	A
	SB-L	0.01	7.8	0.1	A	0.01	7.8	0.3	A	0.00	7.9	0.0	A
	SB-TR	0.10	0.0	0.0	A	0.22	0.0	0.0	A	0.18	0.0	0.0	A
Reach St/ N Port Rd	EB-TR	0.15	0.0	0.0	A	0.28	0.0	0.0	A	0.22	0.0	0.0	A
	WB-LT	0.06	2.2	1.5	A	0.03	1.1	0.8	A	0.02	0.7	0.4	A
	NB-LR	0.10	13.2	2.7	B	0.31	16.4	10.2	C	0.05	11.9	1.2	B

Table 3: *Background AM, PM and SAT Intersection Capacity – Year 2024.*

		Capacity Analysis - Background Year 2029											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 7/ Scugog Line 6	EB-LTR	0.13	24.9	3.5	C	0.43	37.4	15.7	E	0.16	20.9	4.5	C
	WB-LTR	0.50	25.3	20.9	D	1.04	111.8	83.6	F	0.30	16.6	9.9	C
	NB-L	0.02	8.3	0.4	A	0.01	8.7	0.2	A	0.01	8.7	0.2	A
	NB-T	0.21	0.0	0.0	A	0.29	0.0	0.0	A	0.23	0.0	0.0	A
	NB-R	0.02	0.0	0.0	A	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB-L	0.07	8.4	1.7	A	0.09	9.0	2.5	A	0.09	8.5	2.2	A
	SB-T	0.26	0.0	0.0	A	0.23	0.0	0.0	A	0.21	0.0	0.0	A
	SB-R	0.00	0.0	0.0	A	0.01	0.0	0.0	A	0.00	0.0	0.0	A
Hwy 7A/ Scugog Line 6	EB-LR	0.21	17.1	6.3	C	0.50	37.9	19.8	E	0.41	39.0	14.4	E
	NB-L	0.00	9.1	0.0	A	0.01	9.7	0.2	A	0.00	10.5	0.0	B
	NB-T	0.08	0.0	0.0	A	0.23	0.0	0.0	A	0.20	0.0	0.0	A
	SB-TR	0.41	0.0	0.0	A	0.48	0.0	0.0	A	0.57	0.0	0.0	A
Hwy 7A/ Queen St	EB-LTR	0.01	10.5	2.4	B	0.07	11.6	10.1	B	0.04	8.9	6.9	A
	WB-LTR	0.90	41.3	127.2	D	0.91	43.4	124.6	D	0.94	43.5	175.9	D
	NB-L	0.00	16.0	1.1	B	0.01	16.7	2.0	B	0.03	22.3	4.1	C
	NB-TR	0.29	16.2	36.1	B	0.60	23.3	89.2	C	0.61	30.9	91.9	C
	SB-L	0.01	16.2	2.3	B	0.05	17.6	5.6	B	0.04	22.8	4.7	C
	SB-TR	0.28	18.3	41.0	B	0.45	21.0	66.1	C	0.52	28.2	76.3	C
	Overall	0.90	30.3	-	C	0.91	29.6	-	C	0.94	35.5	-	D
Queen St/ Walsh Dr	EB-LTR	0.04	11.9	1.0	B	0.04	13.5	1.0	B	0.13	13.9	3.4	B
	WB-LTR	0.04	10.7	0.9	B	0.03	10.9	0.7	B	0.02	13.6	0.6	B
	NB-LTR	0.01	0.5	0.3	A	0.00	0.2	0.1	A	0.02	0.6	0.4	A
	SB-L	0.01	7.8	0.1	A	0.01	7.8	0.3	A	0.00	8.0	0.0	A
	SB-TR	0.11	0.0	0.0	A	0.24	0.0	0.0	A	0.19	0.0	0.0	A
Reach St/ N Port Rd	EB-TR	0.16	0.0	0.0	A	0.30	0.0	0.0	A	0.24	0.0	0.0	A
	WB-LT	0.06	2.1	1.5	A	0.04	1.1	0.9	A	0.02	0.7	0.4	A
	NB-LR	0.11	13.7	2.8	B	0.33	0.9	11.3	C	0.05	0.4	1.3	B

Table 4: *Background AM, PM and SAT Intersection Capacity – Year 2029.*

		Capacity Analysis - Background Year 2034											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 7/ Scugog Line 6	EB-LTR	0.16	28.6	4.4	D	0.57	54.1	23.0	F	0.20	23.8	5.7	C
	WB-LTR	0.60	32.4	28.6	D	1.36	233.0	126.3	F	0.36	19.0	12.7	C
	NB-L	0.02	8.4	0.5	A	0.01	8.8	0.2	A	0.01	8.8	0.2	A
	NB-T	0.22	0.0	0.0	A	0.32	0.0	0.0	A	0.25	0.0	0.0	A
	NB-R	0.02	0.0	0.0	A	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB-L	0.07	8.5	1.9	A	0.11	9.2	2.8	A	0.10	8.7	2.5	A
	SB-T	0.28	0.0	0.0	A	0.25	0.0	0.0	A	0.22	0.0	0.0	A
	SB-R	0.00	0.0	0.0	A	0.01	0.0	0.0	A	0.00	0.0	0.0	A
Hwy 7A/ Scugog Line 6	EB-LR	0.26	19.1	7.9	C	0.65	56.4	29.5	F	0.53	55.4	20.7	F
	NB-L	0.00	9.3	0.0	A	0.01	10.1	0.2	B	0.00	11.0	0.0	B
	NB-T	0.09	0.0	0.0	A	0.25	0.0	0.0	A	0.22	0.0	0.0	A
	SB-TR	0.45	0.0	0.0	A	0.52	0.0	0.0	A	0.62	0.0	0.0	A
Hwy 7A/ Queen St	EB-LTR	0.01	10.5	2.4	B	0.07	11.4	10.6	B	0.04	8.9	7.3	A
	WB-LTR	0.94	46.3	144.9	D	0.95	50.2	141.4	D	1.00	55.4	200.7	E
	NB-L	0.00	16.0	1.1	B	0.01	17.0	2.0	B	0.03	22.6	4.3	C
	NB-TR	0.33	17.3	39.6	B	0.68	26.4	99.5	C	0.71	34.7	101.8	C
	SB-L	0.01	16.2	2.3	B	0.07	18.3	5.9	B	0.05	23.1	4.8	C
	SB-TR	0.32	19.4	43.8	B	0.51	22.8	73.0	C	0.59	31.0	83.4	C
	Overall	0.94	33.5	-	C	0.94	33.6	-	C	1.00	42.6	-	D
Queen St/ Walsh Dr	EB-LTR	0.05	12.5	1.1	B	0.05	14.2	1.2	B	0.15	14.8	4.0	B
	WB-LTR	0.04	11.1	1.0	B	0.03	11.1	0.8	B	0.03	14.5	0.6	B
	NB-LTR	0.01	0.6	0.3	A	0.01	0.2	0.1	A	0.02	0.6	0.4	A
	SB-L	0.01	7.9	0.1	A	0.02	7.9	0.4	A	0.00	8.0	0.0	A
	SB-TR	0.12	0.0	0.0	A	0.26	0.0	0.0	A	0.21	0.0	0.0	A
Reach St/ N Port Rd	EB-TR	0.17	0.0	0.0	A	0.33	0.0	0.0	A	0.26	0.0	0.0	A
	WB-LT	0.06	2.1	1.6	A	0.04	1.1	0.9	A	0.02	0.7	0.4	A
	NB-LR	0.11	14.2	3.0	B	0.36	19.2	12.5	C	0.06	12.8	1.4	B

Table 5: *Background AM, PM and SAT Intersection Capacity – Year 2034.*

Over time, under the existing geometric and traffic control conditions, and without the proposed development in place, the capacity and level of service for some movements become critical. The westbound movement at the Hwy 7/12/Scugog Line 6 intersections shows a LOS “F” for the year 2024; the eastbound also becomes LOS “F” by the year 2034. The same LOS “F” for the eastbound movement at the Highway 7A/Scugog Line intersection is also estimated to occur in the year 2034. High delays are indicative of insufficient gaps in the approaching traffic flow to allow vehicles from the side street to execute their turning movements.

4 Proposed Development Traffic Forecasting

4.1 Traffic Impact Study Methodology

The traffic impact analysis was completed in accordance with the methodologies published by the Transportation Research Board (TRB) and the Transportation Impact Analysis for Site Developments published by the Institute of Transportation Engineers (ITE).

4.2 Site Trip Generation

Estimation of trips generated by the proposed development were derived from the Trip Generation Manual, 11th Edition, published by the Institute of Transportation Engineers (ITE). The land uses which most closely describe the proposed development are the following is Industrial Park. According to the ITE Trip Generation Manual, an Industrial Park contains several individual industrial or related facilities. It is characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. Many industrial parks contain highly diversified facilities.

The trip rates and the estimated number of trips generated by the proposed development are shown in the following table:

TRIP GENERATION RATES BY LAND USE											
ITE	ITE	Unit of	AM Peak Hr. of Adj. Street			PM Peak Hr. of Adj. Street			SAT Peak Hr. of Generator		
Code	Land Use	Measure	Rate	In	Out	Rate	In	Out	Rate	In	Out
130	Industrial Park	GFA	0.34	81%	19%	0.34	22%	78%	Local trip rates		

ESTIMATED NUMBER OF TRIPS BY LAND USE											
ITE	ITE	Total	AM Peak Hr. of Adj. Street			PM Peak Hr. of Adj. Street			SAT Peak Hr. of Generator		
Code	Land Use	Units	Trips	In	Out	Trips	In	Out	Trips	In	Out
130	Industrial Park	725.5	247	200	47	247	54	192	40	16	25

Table 6: *Estimated Trips Generated by the Proposed Development.*

Based on the ITE trip generation rates, it is estimated 247 new trips during the morning and afternoon peak hour. For the Saturday peak hour, counts performed at Easy St. were used as a template to estimate that 40 new trips are generated at those times.

4.3 Trip Distribution/Assignment

Easy St. has basically the same land use as per the proposed site and access from Scugog Line 6; therefore, Easy St. was used as a template to obtain the distribution of new trips generated by the proposed industrial development. The proportion of trucks was also estimated from Easy St. and applied to the new generated trips.

The following exhibits show the trip distribution proportions and the generated trip volumes over the road network in question:

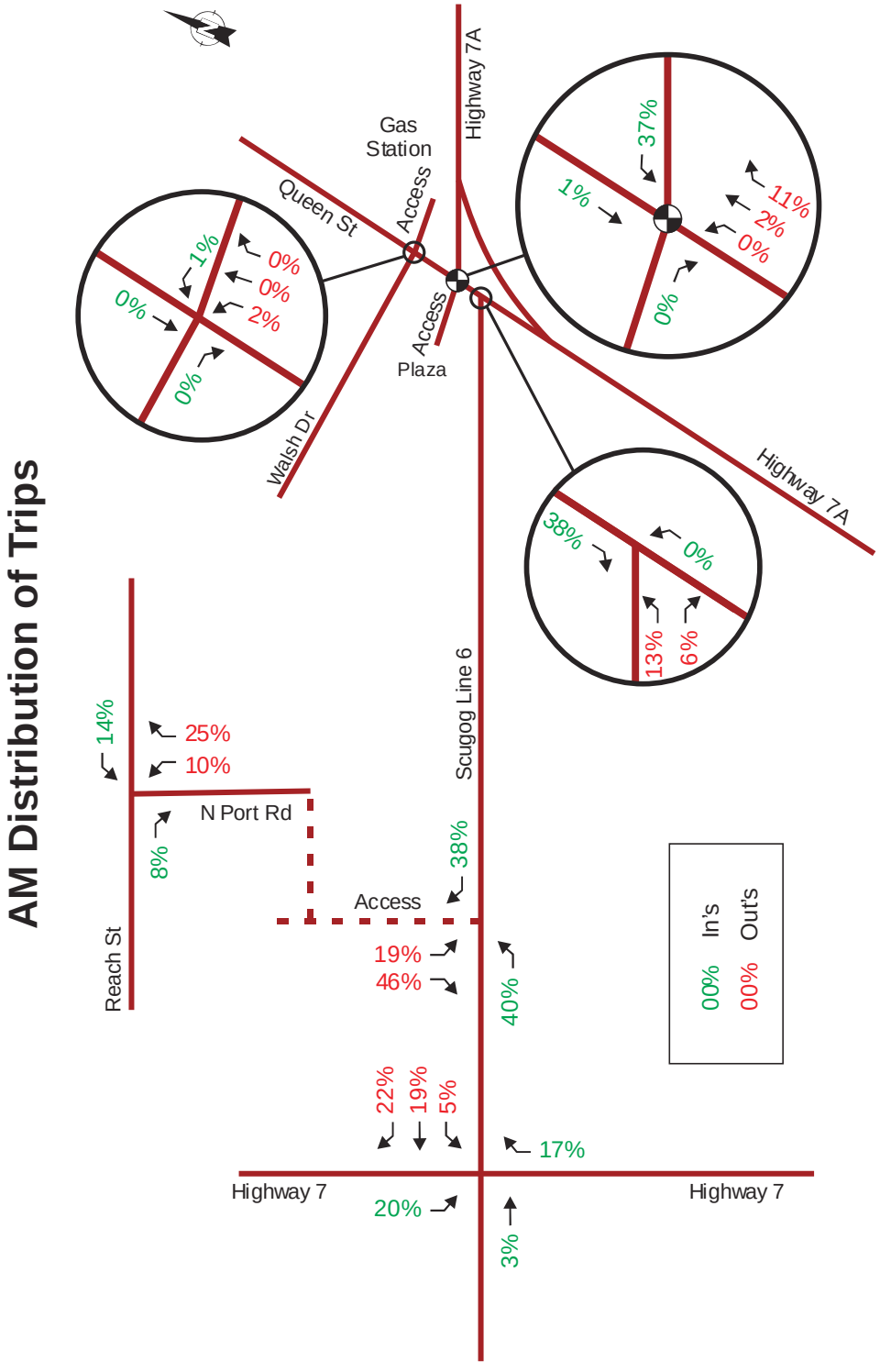


Exhibit 16: *AM Peak Hour – Distribution of trips.*

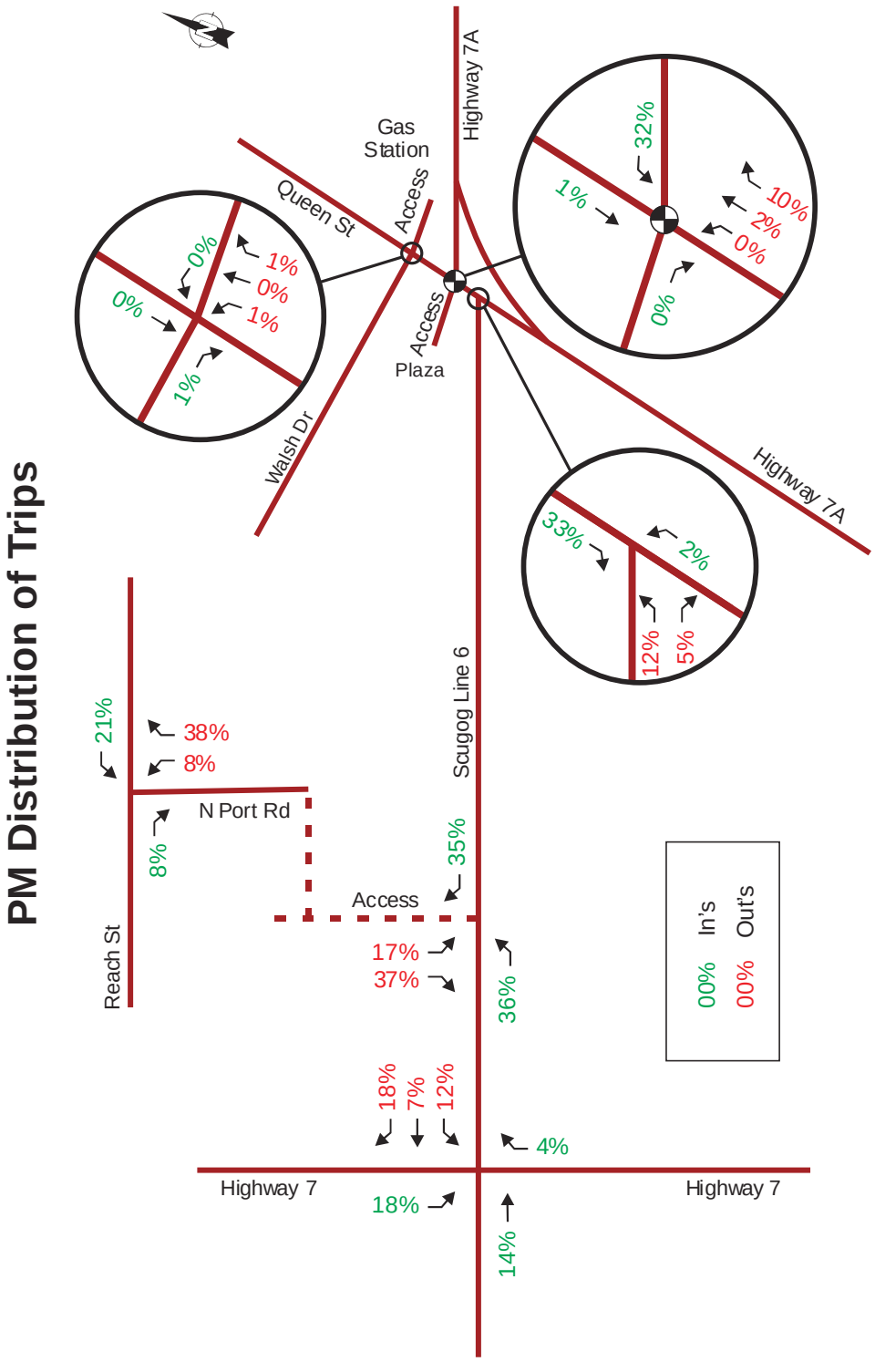


***Exhibit 17:** PM Peak Hour – Distribution of trips.*

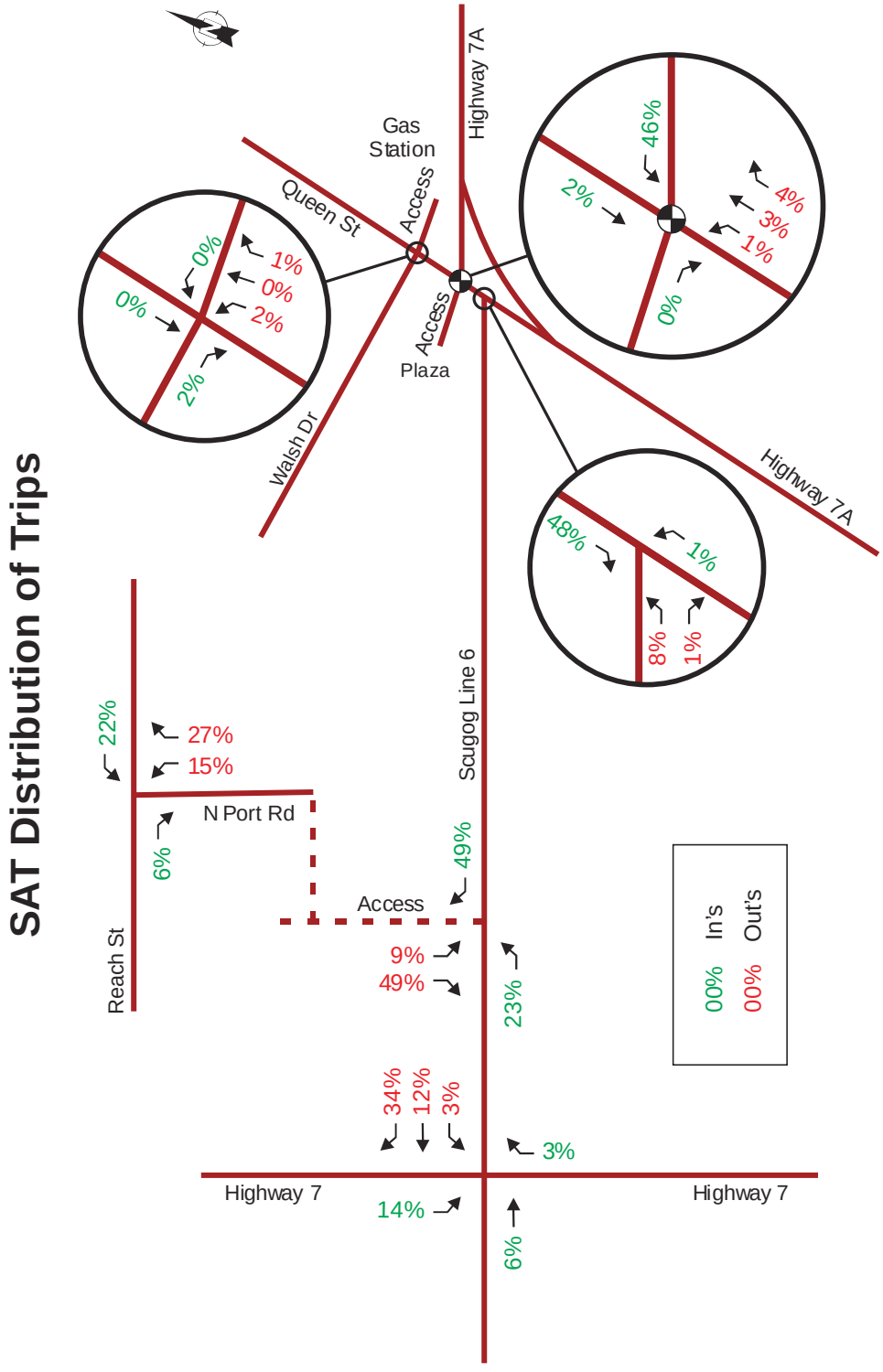


***Exhibit 18:** SAT Peak Hour – Distribution of trips.*

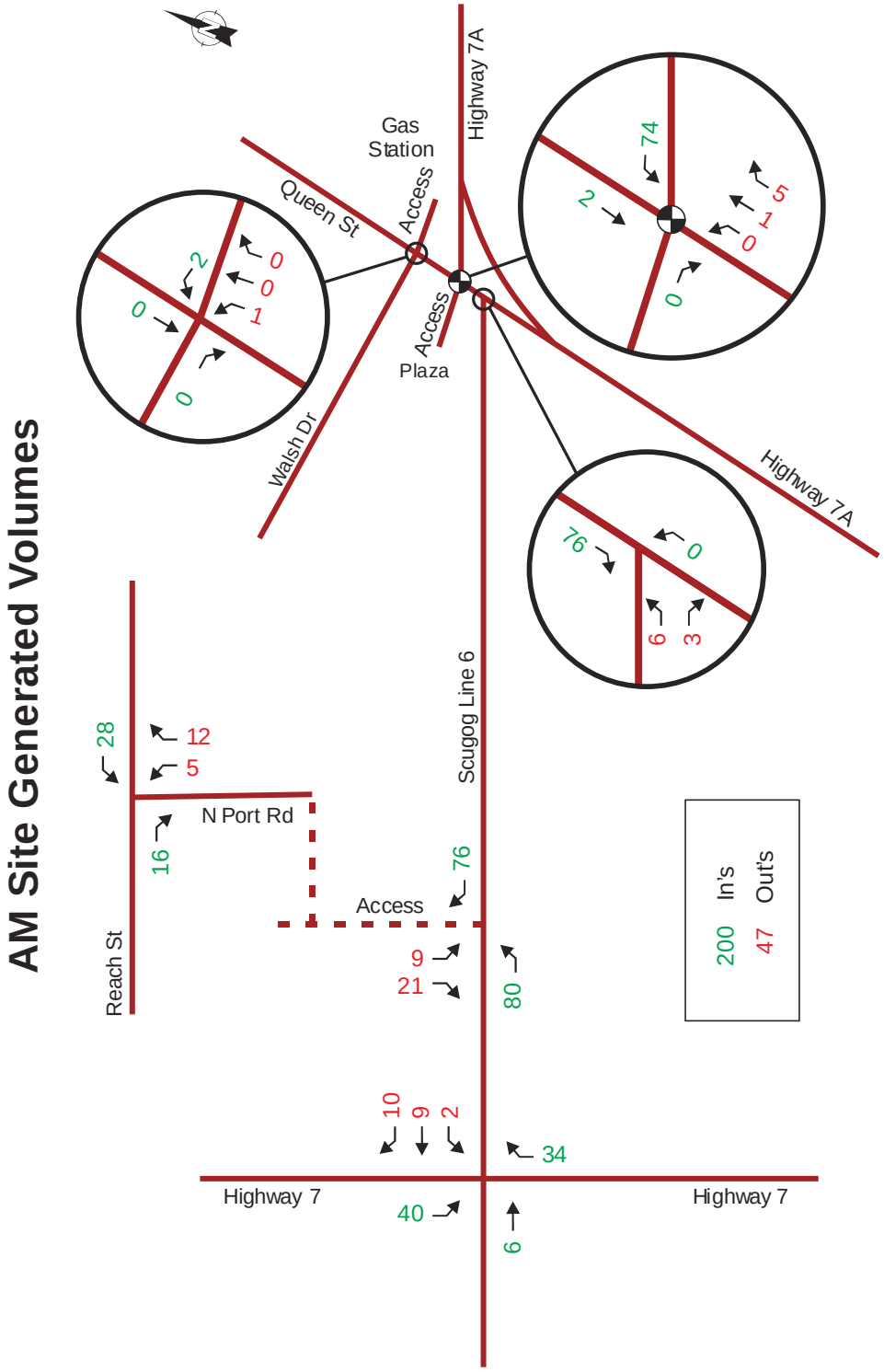


***Exhibit 19:** AM Peak Hour – Site Generated Volumes.*

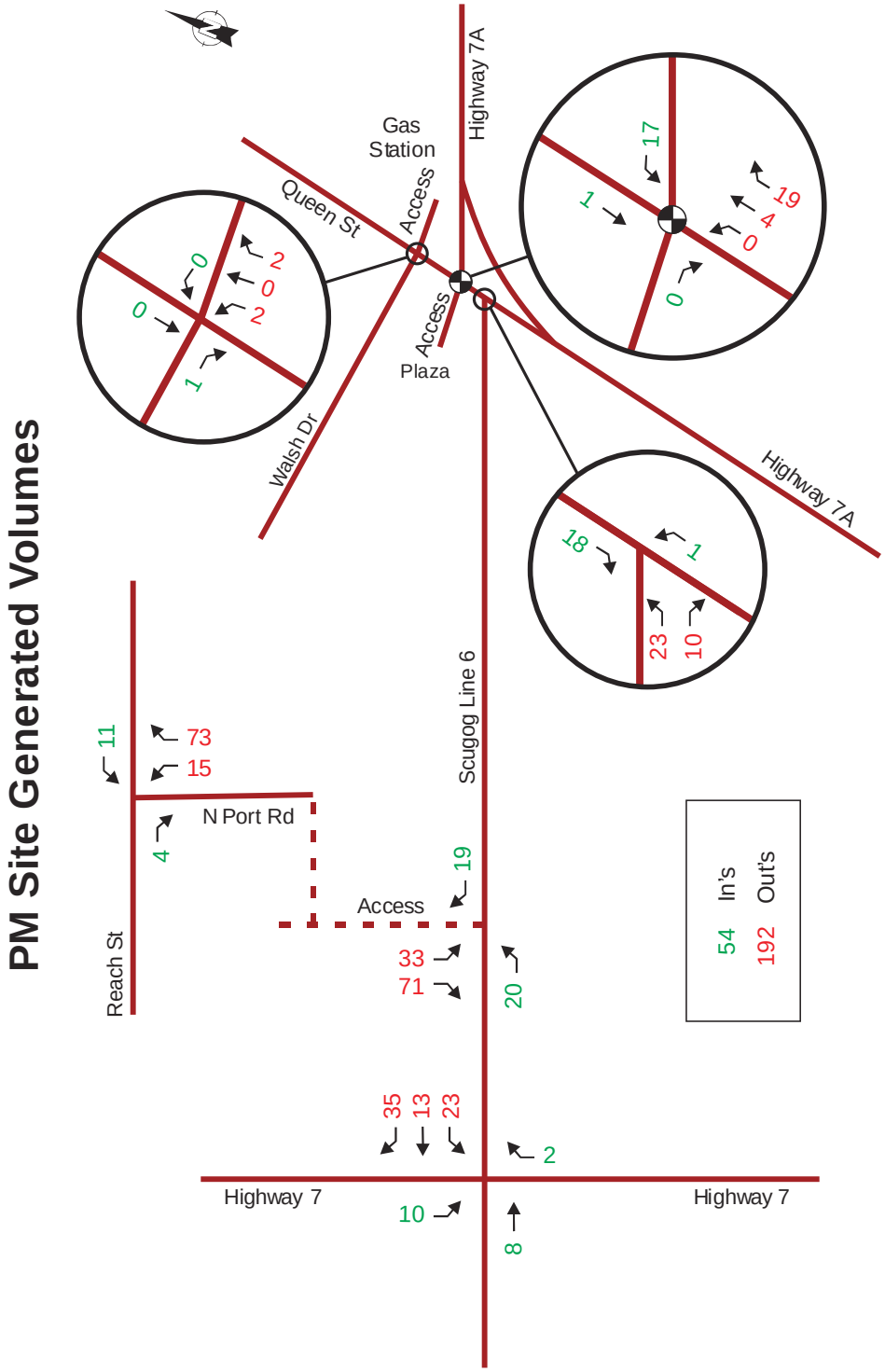


Exhibit 20: *PM Peak Hour – Site Generated Volumes.*

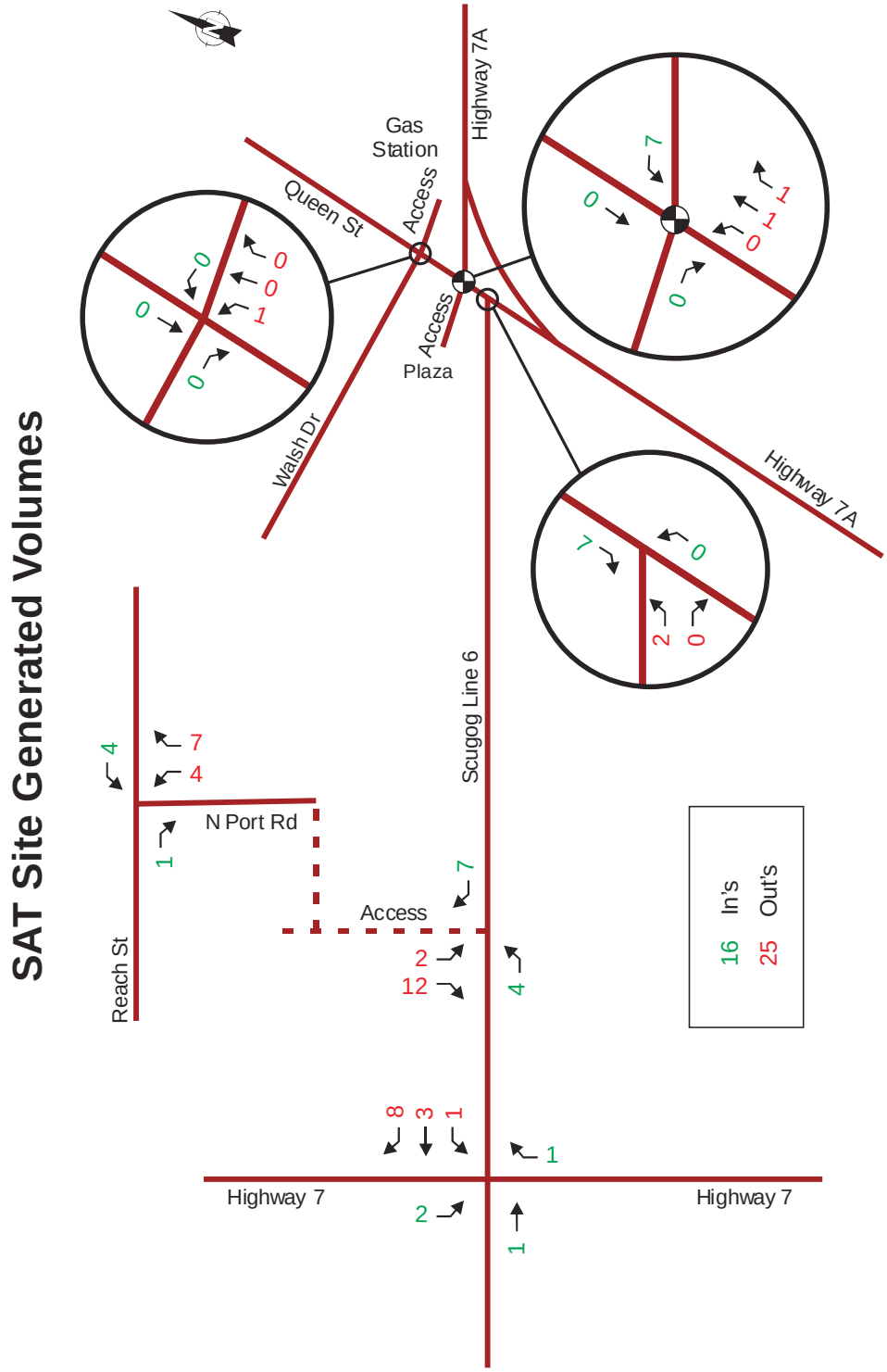


***Exhibit 21:** SAT Peak Hour – Site Generated Volumes.*

5 Future Traffic Operations

5.1 Future Traffic Volumes

Future total traffic volumes for the horizon years are obtained by adding the background traffic volumes plus the traffic volumes generated by the site. The background traffic volumes and the total traffic volumes are the base for comparisons to assess any impact for the future years.

5.2 Scenarios

The analysis will review the intersections operations for the horizon years 2024, 2029 and 2034 that represents the build-out year of the development, the five years after build-out, and the ten years after build-out, respectively. The scenarios to evaluate are the following:

- Horizon Year 2024 – Build-out
- Horizon Year 2029 – Five Years After Build-out
- Horizon Year 2034 – Ten Years After Build-out

5.3 Total Traffic Volumes for the Horizon Years

Future total traffic volumes were obtained by adding the background traffic volumes and the traffic volumes generated by the proposed site.

Total traffic volumes for the horizon years 2024, 2029 and 2034 for the different peak hours are shown in the exhibits below:

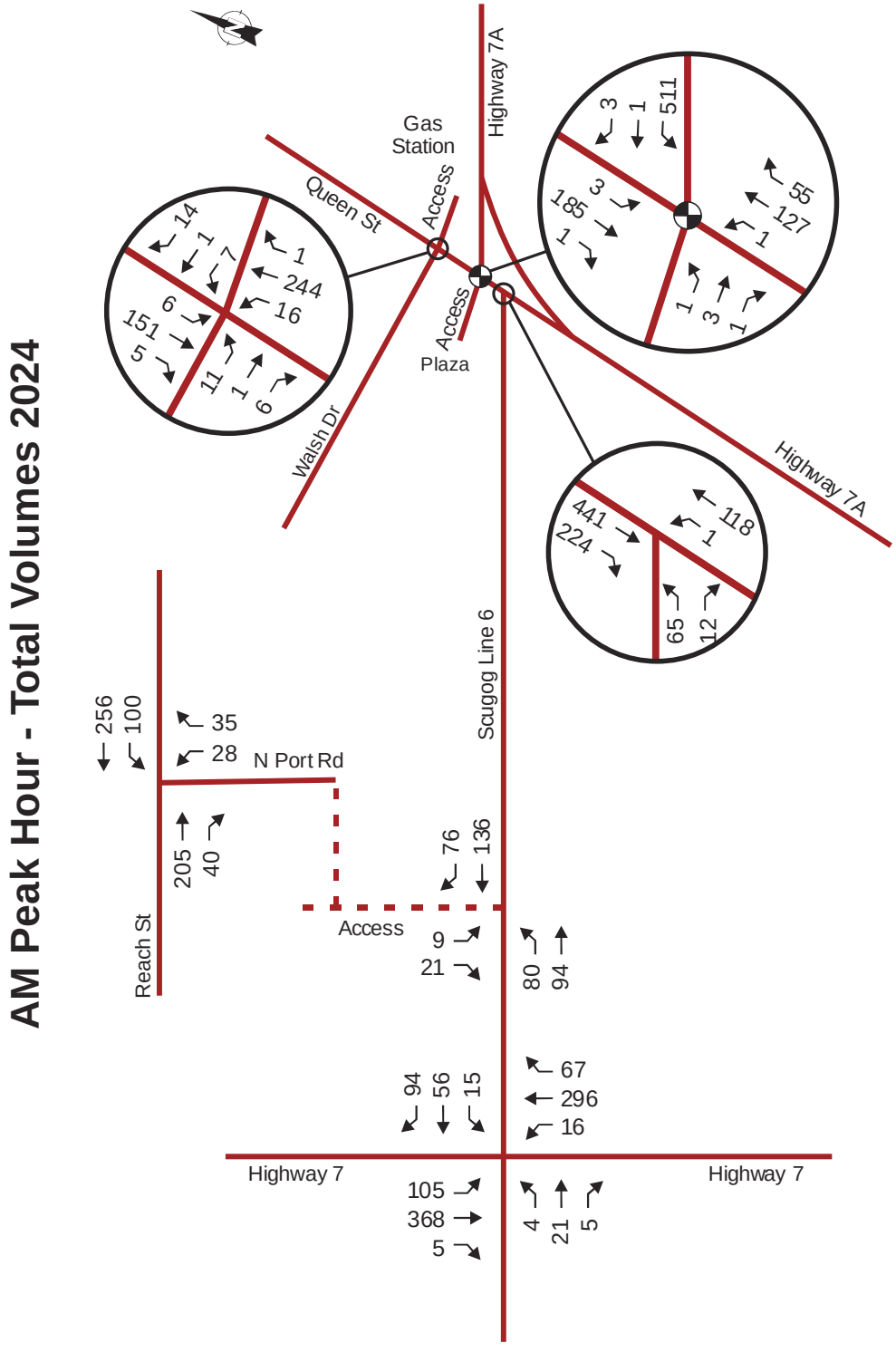


***Exhibit 22:** AM Peak Hour - Total Traffic Volumes 2024.*

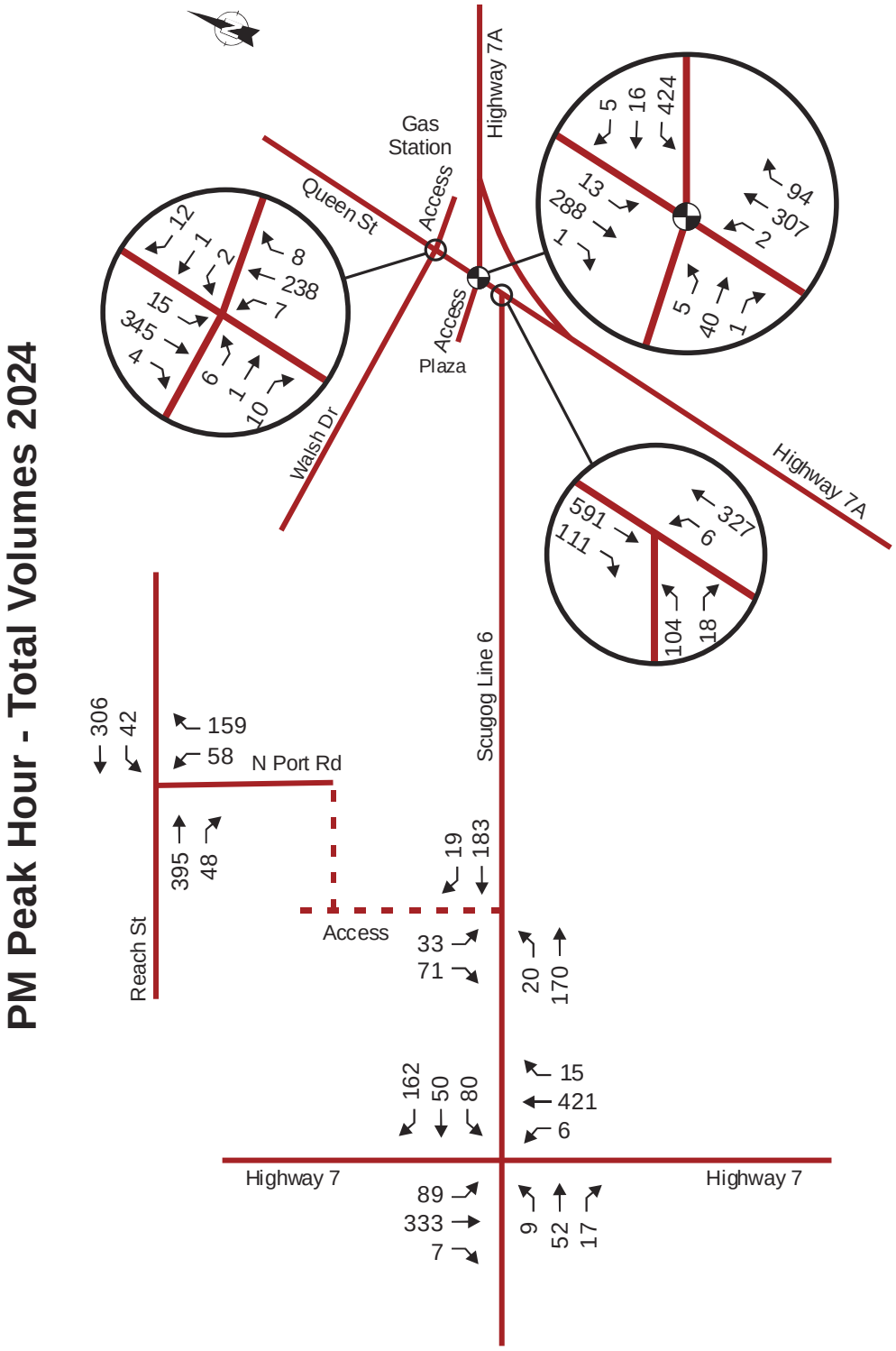


***Exhibit 23:** PM Peak Hour - Total Traffic Volumes 2024.*

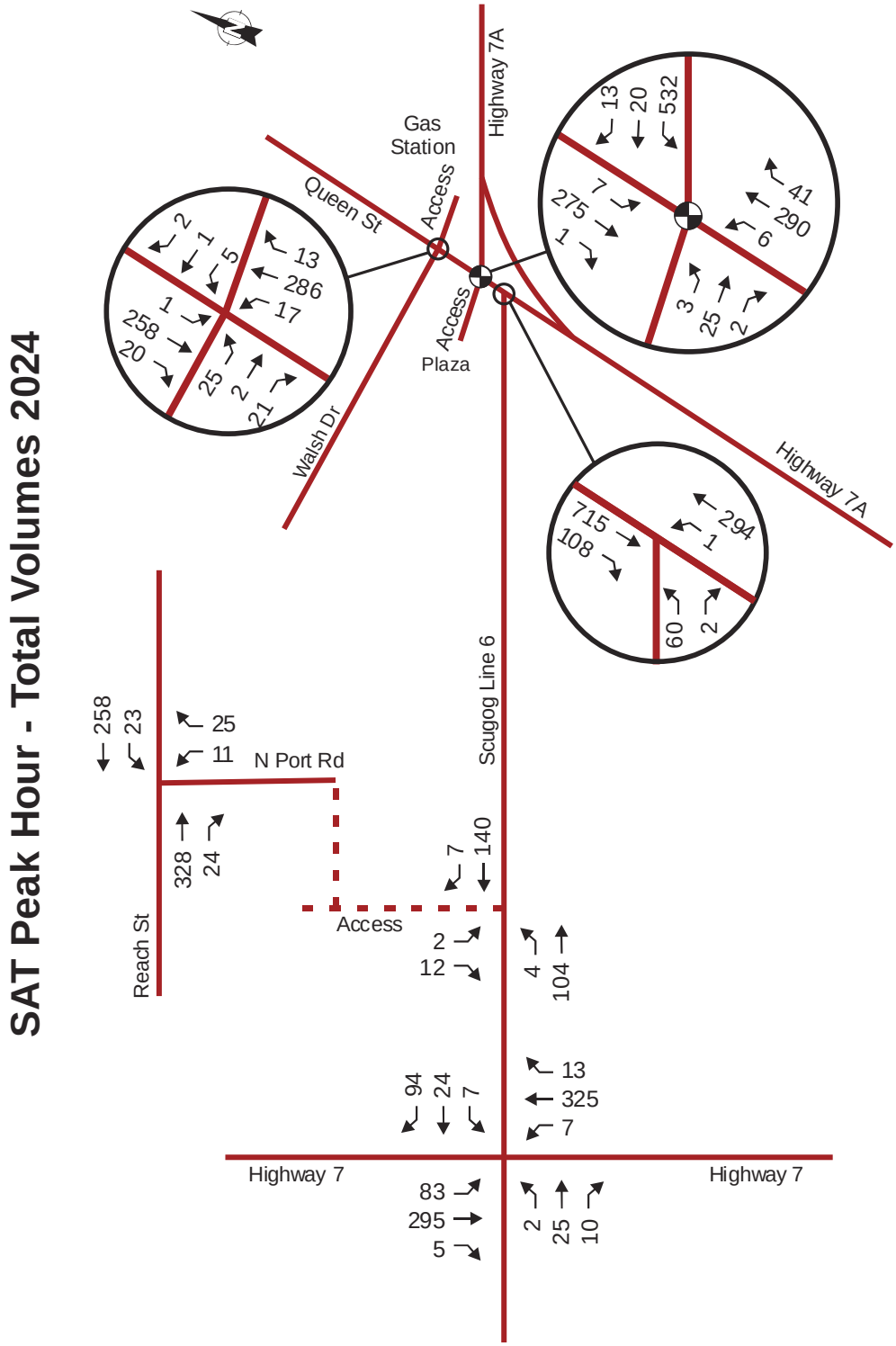


***Exhibit 24:** SAT Peak Hour - Total Traffic Volumes 2024.*

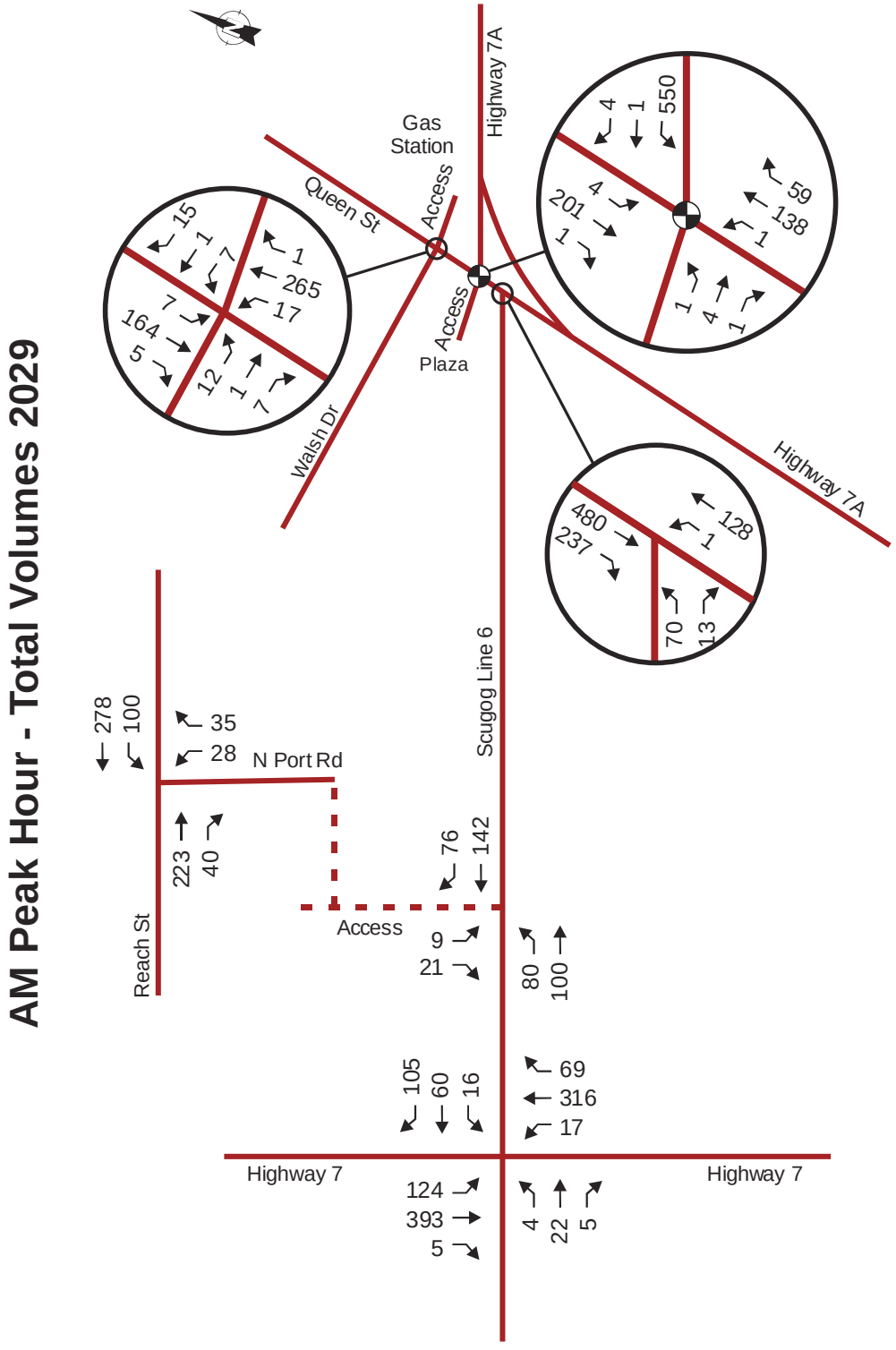


***Exhibit 25:** AM Peak Hour - Total Traffic Volumes 2029.*

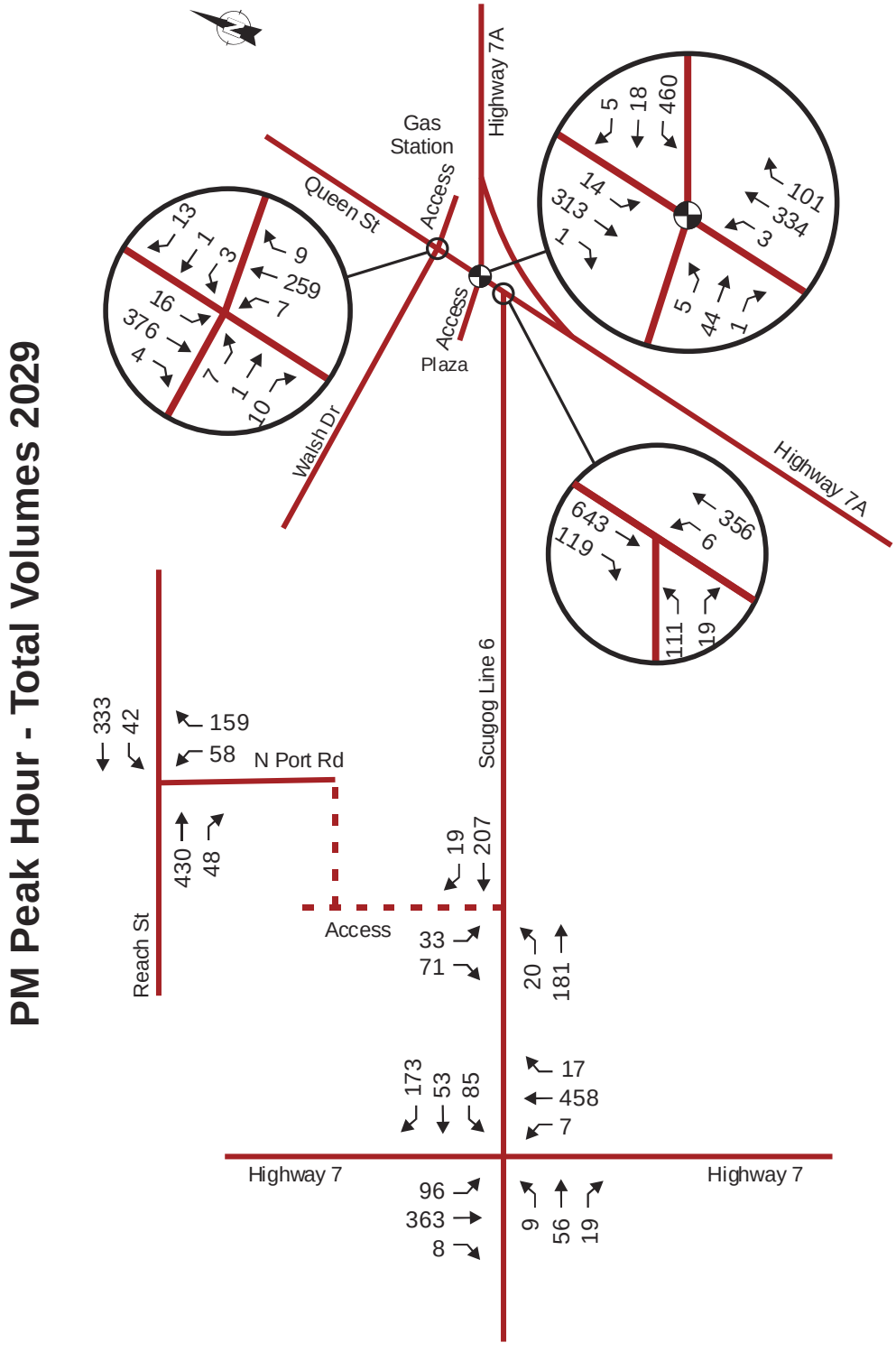


***Exhibit 26:** PM Peak Hour - Total Traffic Volumes 2029.*

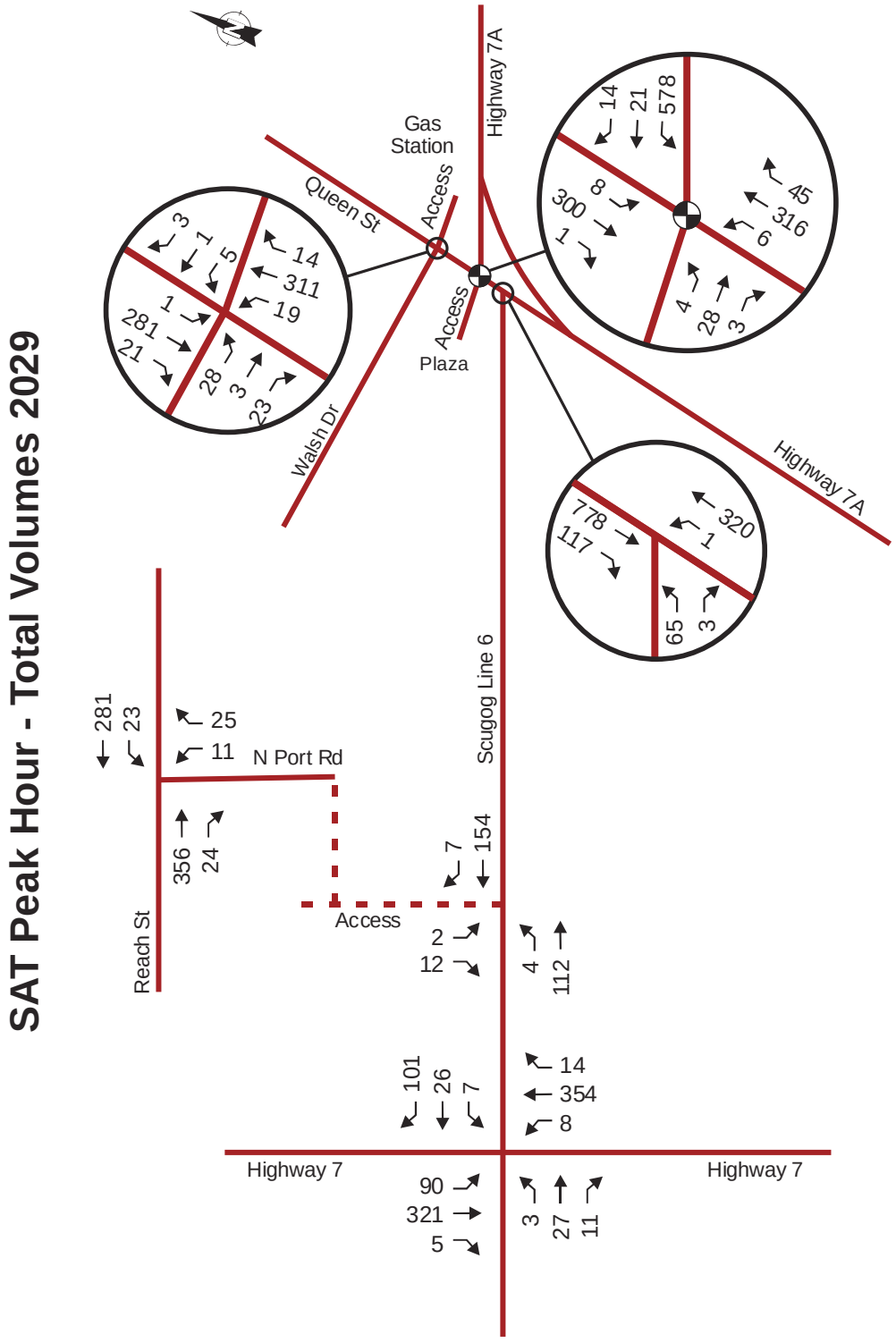


Exhibit 27: *SAT Peak Hour - Total Traffic Volumes 2029.*

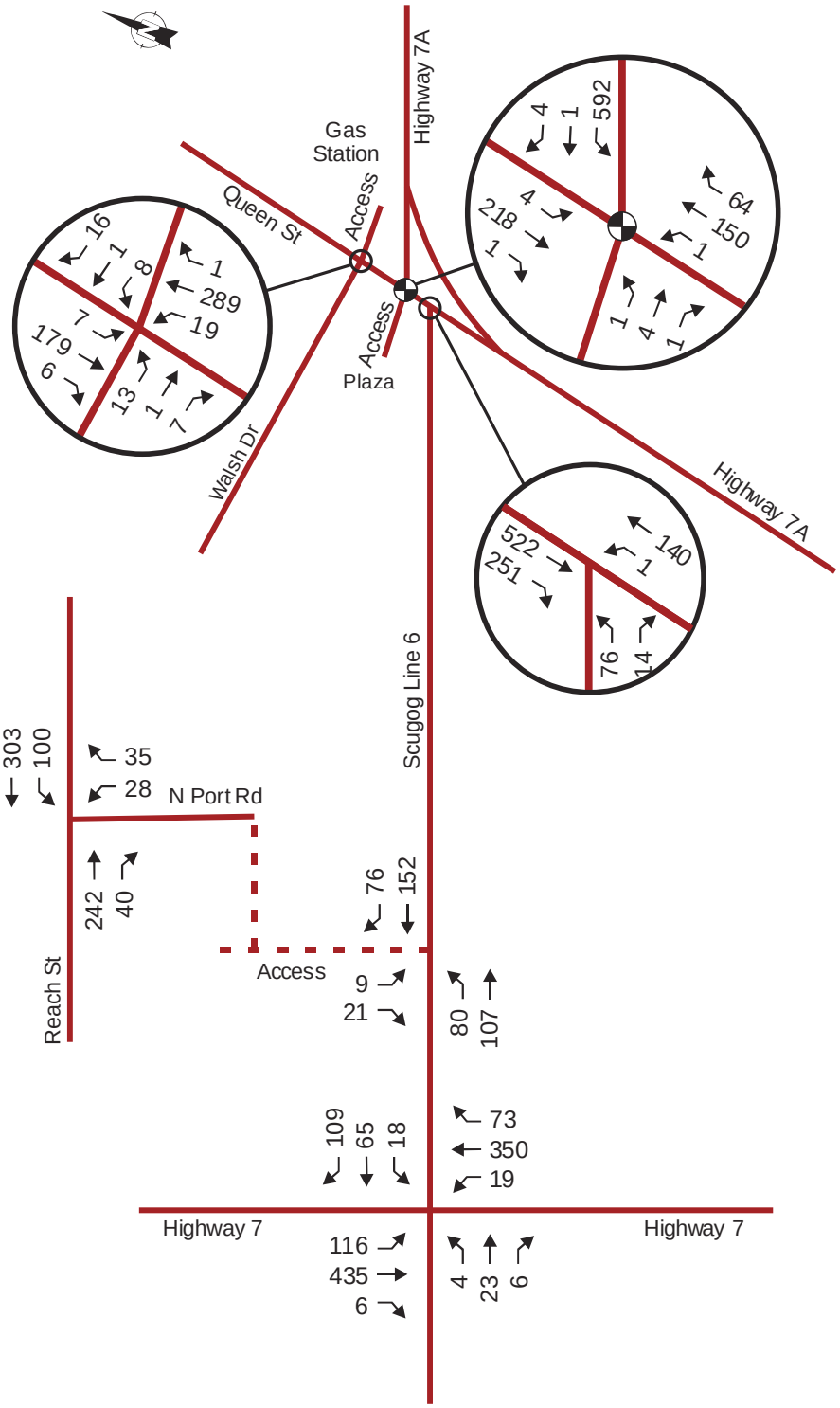


***Exhibit 28:** AM Peak Hour - Total Traffic Volumes 2034.*

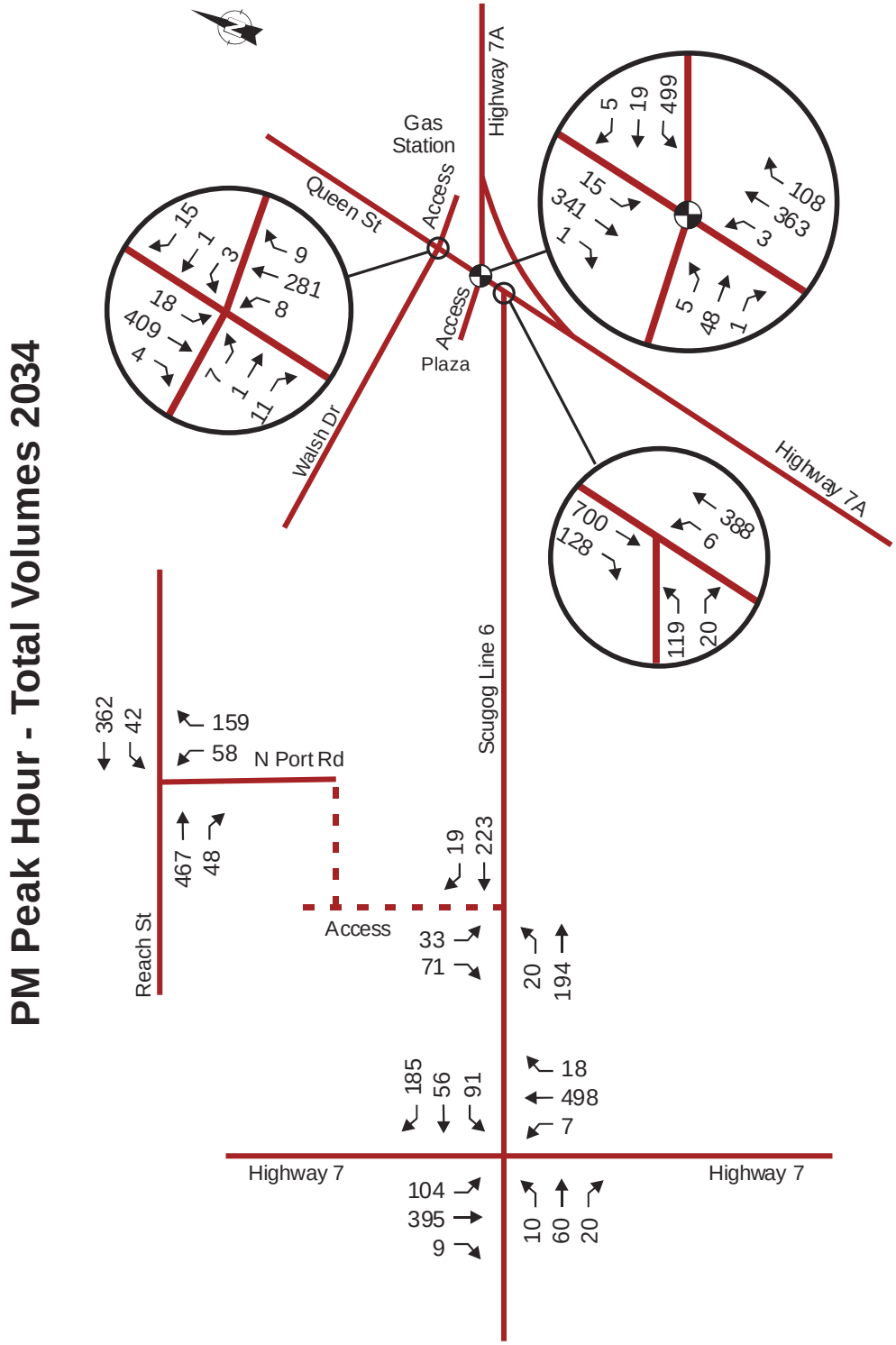


***Exhibit 29:** PM Peak Hour - Total Traffic Volumes 2034.*

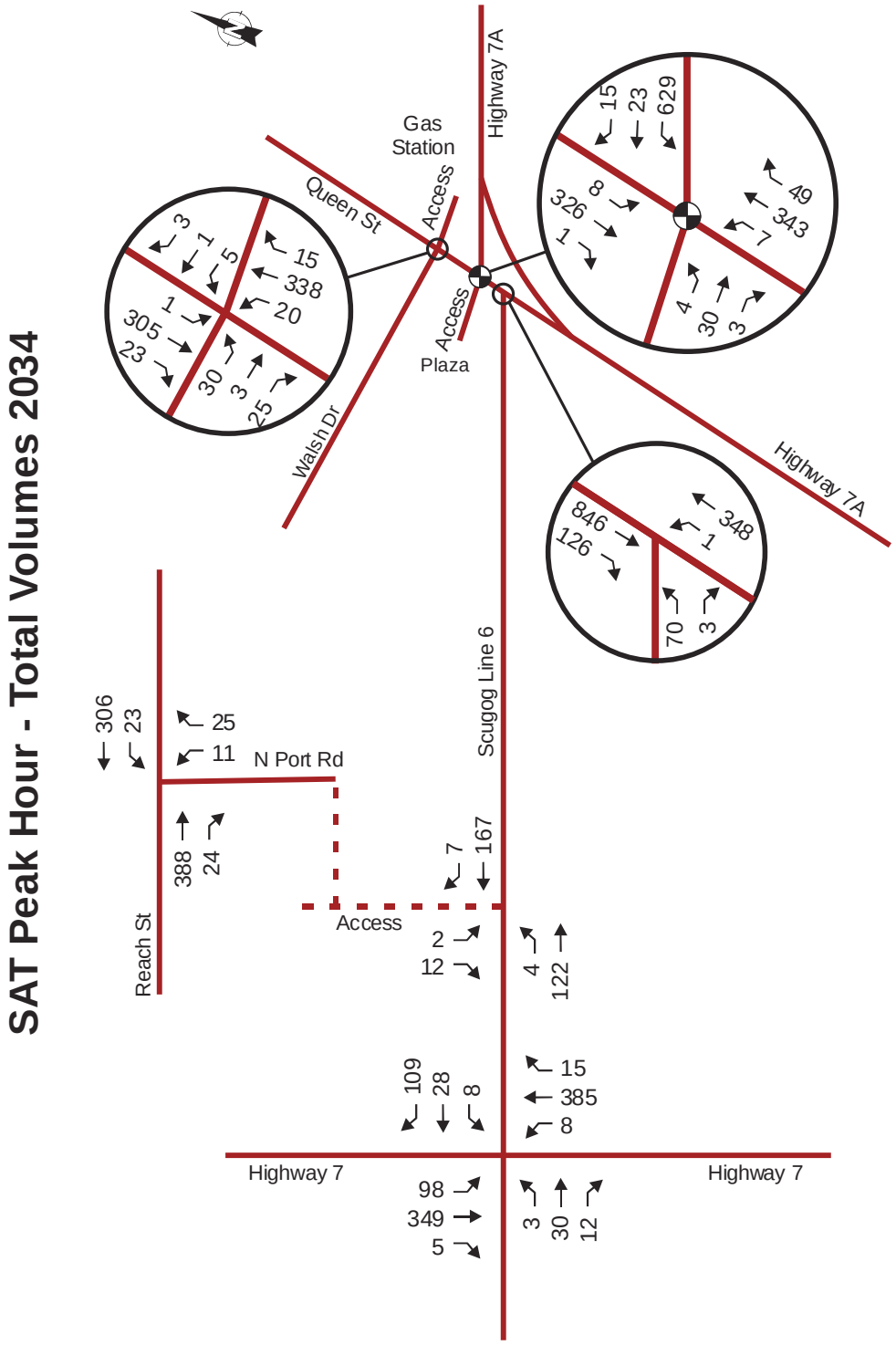


Exhibit 30: *SAT Peak Hour - Total Traffic Volumes 2034.*

5.4 Traffic Operations for the Horizon Years – Total Volumes

Traffic operation results including the new trips generated by the proposed development are shown on ***Table 8*** for the horizon year 2024, on ***Table 9*** for the horizon year 2029, and on ***Table 10*** for the horizon year 2034.

Over time, under the existing road geometry and traffic control conditions including the added trips generated by the proposed development, the capacity and level of service remain critical for some movements, especially for the eastbound and westbound movement at the Hwy 7/12/Scugog line 6 intersection, and for the westbound movement at the Hwy 7A/ Scugog line 6 intersection.

In general, traffic operation results with the added new trips are very similar than those for the background volumes where the background volumes already show the same critical conditions. The resulting factors can be translated to indicate that traffic volumes on Hwy 7/12 are so high that vehicles on the side road are having problems to find a proper gap to merge; the same concept applies for Hwy 7A; therefore, the critical conditions of the mentioned movements will happen regardless of the new trips generated by the proposed development.

		Capacity Analysis - Total Volumes Year 2024											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 7/ Scugog Line 6	EB-LTR	0.17	27.4	4.7	D	0.42	35.7	15.4	E	0.13	18.7	3.6	C
	WB-LTR	0.54	27.6	23.8	D	1.18	154.2	114.0	F	0.29	15.8	9.4	C
	NB-L	0.02	8.2	0.4	A	0.01	8.6	0.2	A	0.01	8.6	0.2	A
	NB-T	0.19	0.0	0.0	A	0.27	0.0	0.0	A	0.21	0.0	0.0	A
	NB-R	0.04	0.0	0.0	A	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB-L	0.10	8.5	2.7	A	0.09	8.9	2.5	A	0.08	8.4	2.0	A
	SB-T	0.24	0.0	0.0	A	0.21	0.0	0.0	A	0.19	0.0	0.0	A
	SB-R	0.00	0.0	0.0	A	0.00	0.0	0.0	A	0.00	0.0	0.0	A
Hwy 7/ Scugog Line 6 (Signalized)	EB-LTR	0.12	23.3	9.9	C	0.20	20.1	18.8	C	0.16	22.7	11.3	C
	WB-LTR	0.60	24.4	30.4	C	0.78	34.2	62.0	C	0.45	14.8	18.5	B
	NB-L	0.02	3.5	2.5	A	0.01	6.8	2.3	A	0.01	2.6	1.1	A
	NB-T	0.27	4.3	26.4	A	0.41	8.7	65.0	A	0.25	3.4	21.1	A
	NB-R	0.06	1.2	3.4	A	0.02	4.3	2.8	A	0.02	1.5	1.2	A
	SB-L	0.15	4.0	10.7	A	0.19	8.0	16.0	A	0.12	3.1	6.6	A
	SB-T	0.32	4.7	33.9	A	0.31	7.7	48.0	A	0.23	3.3	19.0	A
	SB-R	0.00	1.2	0.6	A	0.01	3.1	1.5	A	0.00	0.8	0.5	A
	Overall	0.60	7.9	-	A	0.78	15.0	-	B	0.45	5.7	-	A
Hwy 7A/ Scugog Line 6	EB-LR	0.22	17.0	6.5	C	0.54	35.3	22.8	E	0.33	30.8	10.7	D
	NB-L	0.00	9.3	0.0	A	0.01	9.5	0.2	A	0.00	10.0	0.0	B
	NB-T	0.08	0.0	0.0	A	0.21	0.0	0.0	A	0.19	0.0	0.0	A
	SB-TR	0.44	0.0	0.0	A	0.45	0.0	0.0	A	0.53	0.0	0.0	A
Hwy 7A/ Queen St	EB-LTR	0.01	10.4	2.1	B	0.06	11.8	9.3	B	0.04	9.2	6.3	A
	WB-LTR	0.93	45.0	140.6	D	0.89	39.7	114.8	D	0.90	38.0	156.4	D
	NB-L	0.00	16.0	1.1	B	0.00	16.5	1.6	B	0.02	22.2	4.1	C
	NB-TR	0.29	16.1	34.0	B	0.57	24.7	85.5	C	0.55	28.1	83.6	C
	SB-L	0.01	16.3	2.0	B	0.05	17.6	5.4	B	0.03	22.4	4.3	C
	SB-TR	0.27	18.7	38.2	B	0.40	19.9	60.7	B	0.45	26.6	69.4	C
	Overall	0.93	33.3	-	C	0.89	27.9	-	C	0.90	31.8	-	C
Queen St/ Walsh Dr	EB-LTR	0.03	11.6	0.8	B	0.04	12.5	0.9	B	0.10	13.0	2.7	B
	WB-LTR	0.04	10.7	0.9	B	0.02	10.4	0.6	B	0.02	13.3	0.5	B
	NB-LTR	0.01	0.6	0.3	A	0.01	0.3	0.2	A	0.01	0.6	0.4	A
	SB-L	0.01	7.8	0.1	A	0.01	7.8	0.3	A	0.00	7.9	0.0	A
	SB-TR	0.10	0.0	0.0	A	0.22	0.0	0.0	A	0.18	0.0	0.0	A
Reach St/ N Port Rd	EB-TR	0.16	0.0	0.0	A	0.28	0.0	0.0	A	0.23	0.0	0.0	A
	WB-LT	0.08	2.9	2.2	A	0.05	1.5	1.1	A	0.02	0.9	0.5	A
	NB-LR	0.15	14.0	4.0	B	0.50	20.2	21.9	C	0.07	12.2	1.8	B

Table 7: *Total AM, PM, and SAT Intersection Capacity – Year 2024.*

		Capacity Analysis - Total Volumes Year 2029											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 7/ Scugog Line 6	EB-LTR	0.21	33.2	6.0	D	0.54	48.1	21.4	E	0.17	21.3	4.7	C
	WB-LTR	0.66	37.6	34.1	E	1.49	282.2	159.4	F	0.34	17.5	11.5	C
	NB-L	0.02	8.2	0.4	A	0.01	8.7	0.2	A	0.01	8.7	0.2	A
	NB-T	0.20	0.0	0.0	A	0.29	0.0	0.0	A	0.23	0.0	0.0	A
	NB-R	0.04	0.0	0.0	A	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB-L	0.12	8.7	3.3	A	0.11	9.1	2.8	A	0.09	8.5	2.3	A
	SB-T	0.25	0.0	0.0	A	0.23	0.0	0.0	A	0.21	0.0	0.0	A
	SB-R	0.00	0.0	0.0	A	0.01	0.0	0.0	A	0.00	0.0	0.0	A
Hwy 7/ Scugog Line 6 (Signalized)	EB-LTR	0.12	23.0	10.2	C	0.21	19.5	19.8	B	0.17	22.6	12.1	C
	WB-LTR	0.63	25.3	33.4	C	0.79	34.9	66.9	C	0.47	14.7	19.2	B
	NB-L	0.03	3.8	2.7	A	0.02	7.6	2.5	A	0.02	2.8	1.3	A
	NB-T	0.29	4.7	30.3	A	0.45	10.0	77.5	A	0.27	3.6	23.5	A
	NB-R	0.07	1.4	3.8	A	0.02	4.9	3.3	A	0.02	1.6	1.3	A
	SB-L	0.19	4.5	13.5	A	0.23	9.3	18.8	A	0.14	3.3	7.3	A
	SB-T	0.35	5.1	39.0	A	0.35	8.7	56.9	A	0.25	3.4	20.9	A
	SB-R	0.00	1.4	0.6	A	0.01	3.6	1.8	A	0.00	0.8	0.5	A
	Overall	0.63	8.3	-	A	0.79	15.8	-	B	0.47	5.8	-	A
Hwy 7A/ Scugog Line 6	EB-LR	0.25	18.4	7.8	C	0.66	50.2	32.2	F	0.42	40.1	15.1	E
	NB-L	0.00	9.4	0.0	A	0.01	9.8	0.2	A	0.00	10.5	0.0	B
	NB-T	0.08	0.0	0.0	A	0.23	0.0	0.0	A	0.20	0.0	0.0	A
	SB-TR	0.46	0.0	0.0	A	0.49	0.0	0.0	A	0.57	0.0	0.0	A
Hwy 7A/ Queen St	EB-LTR	0.01	10.5	2.4	B	0.07	11.4	10.1	B	0.04	8.9	6.9	A
	WB-LTR	0.97	52.0	158.2	D	0.93	45.4	131.4	D	0.95	44.7	179.0	D
	NB-L	0.00	16.0	1.1	B	0.01	16.7	2.0	B	0.03	22.3	4.1	C
	NB-TR	0.32	17.1	37.1	B	0.64	24.8	95.3	C	0.63	31.2	92.5	C
	SB-L	0.01	16.2	2.3	B	0.06	17.9	5.7	B	0.04	22.8	4.7	C
	SB-TR	0.35	19.5	41.3	B	0.46	21.5	66.4	C	0.52	28.8	76.3	C
	Overall	0.97	37.7	-	D	0.93	31.1	-	C	0.95	36.2	-	D
Queen St/ Walsh Dr	EB-LTR	0.04	11.9	1.0	B	0.04	13.4	1.1	B	0.13	13.9	3.4	B
	WB-LTR	0.04	10.9	1.0	B	0.03	10.9	0.7	B	0.02	13.6	0.6	B
	NB-LTR	0.01	0.6	0.3	A	0.01	0.3	0.2	A	0.02	0.6	0.4	A
	SB-L	0.01	7.8	0.1	A	0.01	7.8	0.3	A	0.00	8.0	0.0	A
	SB-TR	0.11	0.0	0.0	A	0.24	0.0	0.0	A	0.19	0.0	0.0	A
Reach St/ N Port Rd	EB-TR	0.17	0.0	0.0	A	0.31	0.0	0.0	A	0.24	0.0	0.0	A
	WB-LT	0.09	2.8	2.2	A	0.05	1.5	1.2	A	0.02	0.8	0.5	A
	NB-LR	0.15	14.5	4.3	B	0.54	22.5	24.7	C	0.08	12.6	2.0	B

Table 8: *Total AM, PM, and SAT Intersection Capacity – Year 2029.*

		Capacity Analysis - Total Volumes Year 2034											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Hwy 7/ Scugog Line 6	EB-LTR	0.25	38.1	7.3	E	0.71	78.3	32.1	F	0.21	24.3	6.0	C
	WB-LTR	0.78	53.7	46.7	F	1.94	481.9	212.0	F	0.40	20.1	14.9	C
	NB-L	0.02	8.4	0.5	A	0.01	8.8	0.2	A	0.01	8.8	0.2	A
	NB-T	0.22	0.0	0.0	A	0.32	0.0	0.0	A	0.25	0.0	0.0	A
	NB-R	0.05	0.0	0.0	A	0.01	0.0	0.0	A	0.01	0.0	0.0	A
	SB-L	0.12	8.8	3.2	A	0.12	9.3	3.2	A	0.10	8.7	2.6	A
	SB-T	0.28	0.0	0.0	A	0.25	0.0	0.0	A	0.22	0.0	0.0	A
	SB-R	0.00	0.0	0.0	A	0.01	0.0	0.0	A	0.00	0.0	0.0	A
Hwy 7/ Scugog Line 6 (Signalized)	EB-LTR	0.13	21.8	10.6	C	0.21	19.4	21.0	B	0.19	22.8	13.0	C
	WB-LTR	0.66	27.6	37.1	C	0.81	36.7	73.3	D	0.49	14.8	20.2	B
	NB-L	0.03	4.2	3.2	A	0.02	7.9	2.5	A	0.02	2.8	1.3	A
	NB-T	0.32	5.2	36.2	A	0.50	11.1	87.3	B	0.30	3.7	26.7	A
	NB-R	0.07	1.7	4.5	A	0.03	5.2	3.6	A	0.02	1.7	1.5	A
	SB-L	0.19	4.9	13.6	A	0.27	10.4	21.3	B	0.16	3.5	8.2	A
	SB-T	0.39	5.8	47.6	A	0.38	9.5	62.9	A	0.27	3.6	23.7	A
	SB-R	0.01	1.8	1.0	A	0.01	4.0	2.0	A	0.00	1.0	0.5	A
	Overall	0.66	9.1	-	A	0.81	16.8	-	B	0.49	5.9	-	A
Hwy 7A/ Scugog Line 6	EB-LR	0.30	20.8	9.8	C	0.84	84.4	47.3	F	0.55	57.5	21.8	F
	NB-L	0.00	9.7	0.0	A	0.01	10.2	0.2	B	0.00	11.1	0.0	B
	NB-T	0.09	0.0	0.0	A	0.25	0.0	0.0	A	0.22	0.0	0.0	A
	SB-TR	0.49	0.0	0.0	A	0.53	0.0	0.0	A	0.62	0.0	0.0	A
Hwy 7A/ Queen St	EB-LTR	0.01	10.5	2.4	B	0.07	11.3	10.6	B	0.04	8.9	7.3	A
	WB-LTR	1.02	65.6	175.0	E	0.97	54.4	148.5	D	1.01	57.2	204.1	E
	NB-L	0.00	16.0	1.1	B	0.01	17.0	2.0	B	0.03	22.6	4.3	C
	NB-TR	0.36	17.7	40.3	B	0.72	28.4	116.0	C	0.72	35.2	103.7	D
	SB-L	0.01	16.2	2.3	B	0.08	18.6	6.0	B	0.05	23.2	4.8	C
	SB-TR	0.34	20.1	44.7	C	0.52	23.2	73.1	C	0.59	31.2	83.4	C
	Overall	1.02	45.7	-	D	0.97	36.0	-	D	1.01	43.7	-	D
Queen St/ Walsh Dr	EB-LTR	0.05	12.5	1.1	B	0.05	14.1	1.2	B	0.15	14.9	4.1	B
	WB-LTR	0.05	11.3	1.1	B	0.03	11.1	0.8	B	0.03	14.5	0.6	B
	NB-LTR	0.02	0.6	0.4	A	0.01	0.3	0.2	A	0.02	0.6	0.4	A
	SB-L	0.01	7.9	0.1	A	0.02	7.9	0.4	A	0.00	8.0	0.0	A
	SB-TR	0.12	0.0	0.0	A	0.26	0.0	0.0	A	0.21	0.0	0.0	A
Reach St/ N Port Rd	EB-TR	0.18	0.0	0.0	A	0.33	0.0	0.0	A	0.26	0.0	0.0	A
	WB-LT	0.09	2.7	2.3	A	0.05	1.5	1.2	A	0.02	0.8	0.5	A
	NB-LR	0.16	15.2	4.5	C	0.58	25.5	28.1	D	0.08	13.2	2.1	B

Table 9: *Total AM, PM, and SAT Intersection Capacity – Year 2034.*

As general information, the Township of Scugog is envisioning a future road network connection between Reach St. and Scugog Line 6. This connection might be as noted in the figure bellow:



Exhibit 31: *Future Planned Road Connection Within the Area.*

The road connections within the area is to be evaluated at planning level. For purposes of this traffic report, the study includes the connection of the subject site with North Porth Rd and an access off Scugog Line 6.

6 Traffic Operations at Entrance

The worst-case scenario to evaluate the site entrance at Scugog Line 6 is the horizon year 2034 total volumes (including the trips generated by the proposed development). As noted in the operational results (***Table 11***), all movements are operating well during the morning, afternoon and Saturday peak hours.

		Capacity Analysis - Total Volumes Year 2034											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
Scugog Line 6/ Entrance	EB-LT	0.04	3.5	0.9	A	0.01	0.5	0.2	A	0.00	0.1	0.0	A
	WB-TR	0.12	0.0	0.0	A	0.12	0.0	0.0	A	0.10	0.0	0.0	A
	SB-LR	0.04	10.7	1.1	B	0.14	11.1	3.8	B	0.03	9.8	0.7	A

Table 10: *Entrance Traffic Operations, Total Volumes – Horizon Year 2034.*

6.1 Sight Distance at Entrance

In general, driveways provide physical transition between the site and the abutting roadway. Driveways should be located and designed to minimize impacts on traffic while providing a safe entry and exit from the served development. In order to provide a safe entry and exit, adequate sight distance must be provided. Sight distance is the distance needed by a driver on a roadway, or a driver exiting a driveway or street, to verify that the road is clear and avoid conflicts with other vehicles. Sight lines must be kept free of objects which might interfere with the ability of the driver to see incoming vehicles.

Sight distance was reviewed based on the design speed of the roadway. When the road vertical or horizontal curve do not constrain the design speed, the following general practice has been used:

- For low posted speeds of 60 km/h or less, increase of 10 km/h.
- For high posted speeds of 70 km/h or greater, increase of 20 km/h.

The regulatory posted speed for Scugog Line 6 within the site area is 60 km/h; therefore, the design speed is set to 70 km/h. Reviewing the Geometric Design Guide for Canadian Roads (TAC Manual), it was identified that the minimum required sight distance for 70 km/h design speed is 150 m.

According to the TAC Manual, the sight distance considers the design speed of the road as well as an object of 1.3 m above the pavement and to the other end, a height of 1.05 m above the pavement to represent the height of the driver's eye. The measured sight distance from the proposed entrance substantially exceeds the required 150 m; therefore, no issues were identified for sight lines.

6.2 Auxiliary Lanes Review at Entrance

The need for auxiliary lanes (right turn taper and left turn lane) on Scugog Line 6 at the entrance locations were reviewed.

Total volumes for the horizon year 2034 for the morning, afternoon and Saturday peak hours were used in the evaluation for left turn lane and right turn tapers; these volumes are the worst-case scenario.

The MTO Design Supplement for the TAC Manual was consulted to evaluate the need for a left turn lane. The methodology is based on the advancing volume, opposed volume and percentage of left turns from the advancing volumes. Results show that a left turn lane is not warranted on Scugog Line 6 at the entrance location (See Appendix K for details).

According to the TAC Manual, right turn tapers are suggested when the volume of right turning vehicles is such that it creates a hazard and reduces capacity at an intersection, or when volume approaches the channelization criteria; the channelization criteria indicates that a right turn taper should be considered when right turning volume approaches 60 veh/h for the peak

hour. The criteria requires at least 60 veh/h of right turns to warrant a right turn taper. The estimated right turn volumes during the morning peak hour exceeds the 60 vehicles; therefore, a right turn taper is required.

The same procedure for auxiliary lanes review was performed at Reach St.; it was determined that for existing conditions, an eastbound left turn lane on Reach St. at N. Port Rd is currently warranted.

6.3 Access to Block 1

Block 1 (see Site Plan in Appendix A) will require direct access to Scugog Line 6. Trips from/to Block 1 is expected to be minimal which are not expected to compromise traffic operations within the area. A driveway for Block 1 can exist provided is not located within the proposed westbound right turn taper.

7 Conclusions/Recommendations

7.1 Conclusions

As discussed throughout the report, an industrial development is proposed next to Scugog Line 6 in Port Perry. For purposes of the traffic study, the following intersections were reviewed:

- Scugog Line 6/Hwy 7
- Scugog Line 6/Hwy 7A
- Hwy 7A/Queen St.
- Queen St./Walsh Dr.
- Reach St./ N. Port Rd.

According to the traffic operational review for existing conditions, it was noticed that the westbound movement at the intersection Scugog Line 6/ Hwy 7 intersection is performing at LOS “E” for the afternoon peak hour. By the year 2024, the same movement will become “F”.

As the regular traffic volumes increases over time (background volumes), the eastbound movement starts to show some degradation with LOS “E” for the year 2029. By the same year, the eastbound movement for the Hwy 7A/Scugog Line 6 also shows LOS “E”.

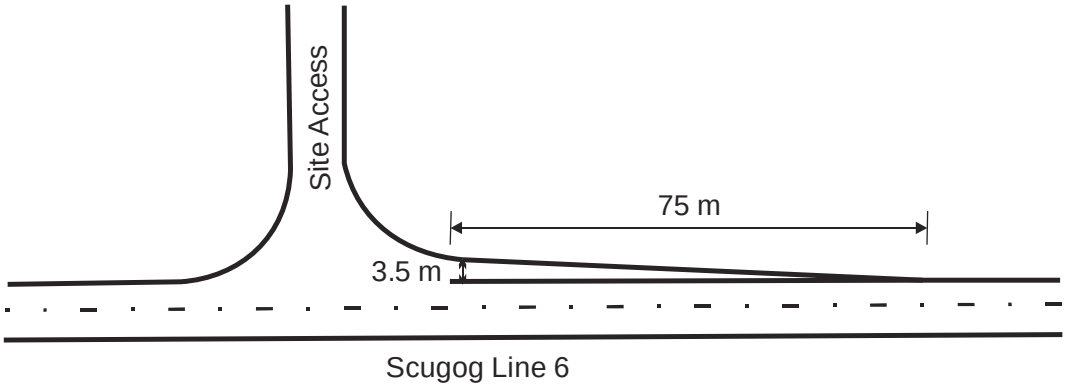
By the horizon year 2029, the Scugog Line 6/Hwy 7 intersection shows LOS “F” for the eastbound and westbound movement. The eastbound movement at the Hwy 7A/Scugog Line 6 intersection also becomes critical with LOS “F”.

When including the new trips generated by the proposed development, the same critical movements over time were noticed. In general, the new trips generated by the proposed development will generate such minor impacts on the adjacent intersections that the traffic operations results are basically the same with or without the new trips.

7.2 Recommendations

Based on the analysis and results, the following actions are recommended:

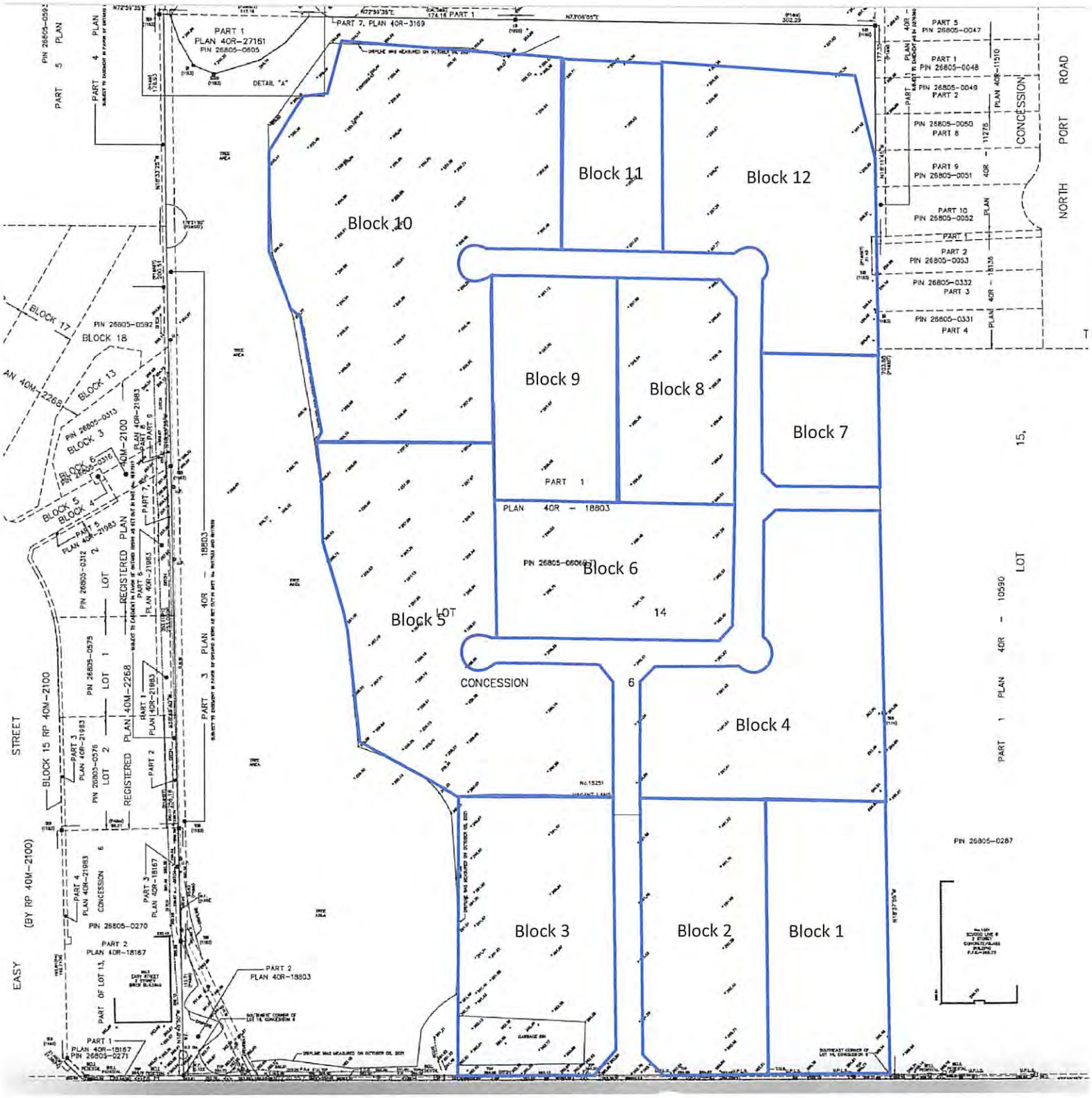
1. Within the next two years, it is recommended that the municipal authorities consider the installation of traffic signals for the Hwy 7/Scugog Line 6 intersection.
2. The Scugog Line 6 eastbound turning movements at Hwy 7A, especially the left turns, show some safety issues. Due to the singular intersection configuration, we have noticed that some vehicles use the “Beer Store” plaza to better position the vehicles at the signalized intersection and then make the desired movement. It is advised the municipal authorities to perform a full geometry review of the intersection.
3. Under the existing conditions, it is recommended that the municipal authorities consider the addition of a westbound left turn lane on Reach St. at N. Port Rd. Based on our analysis this auxiliary lane is currently warranted.
4. The developer is to provide a westbound right turn taper on Scugog Line 6 at the access location. The taper length to be 75 m.



5. A stop sign is recommended for the site access (minor road) at the intersection with Scugog Line 6.

Appendix A

Draft Site Plan


Block 10
Block 11
Block 12
Block 9
Block 8
Block 7
Block 6
Block 5
Block 4
Block 3
Block 2
Block 1
CONCESSION
NORTH PORT ROAD
STREET
EASY
PART 1
PLAN 40R-27161
PIN 26805-0605
PART 7, PLAN 40R-3169
PART 1
PLAN 40R - 18803
PART 2
PLAN 40R-18803
PART 1
PLAN 40R-18167
PIN 26805-0271
PART 2
PLAN 40R-18167
PIN 26805-0270
BLOCK 15 RP 40M-2100
BLOCK 17
BLOCK 18
BLOCK 13
BLOCK 3
BLOCK 6
BLOCK 5
BLOCK 4
AN 40M-2268
40M-2100
REGISTERED PLAN 40M-2268
REGISTERED PLAN 40M-2100
LOT 1
LOT 2
LOT 6
PART OF LOT 13, CONCESSION 6
PART 1 PLAN 40R-27161
PART 7, PLAN 40R-3169
PART 5 PLAN 40R-21983
PART 4 PLAN 40R-21983
PART 3 PLAN 40R-21983
PART 2 PLAN 40R-21983
PART 1 PLAN 40R-21983
PART 3 PLAN 40R-18167
PART 1 PLAN 40R-18803
PART 3 PLAN 40R-18803
PART 1 PLAN 40R-11510
PART 1 PLAN 40R-11275
PART 1 PLAN 40R-18135
PART 1 PLAN 40R-10590
PART 5 PIN 26805-0047
PART 1 PIN 26805-0048
PART 2 PIN 26805-0049
PART 8 PIN 26805-0050
PART 9 PIN 26805-0051
PART 10 PIN 26805-0052
PART 1 PIN 26805-0053
PART 2 PIN 26805-0053
PART 3 PIN 26805-0332
PART 4 PIN 26805-0331
PIN 26805-0592
PIN 26805-0313
PIN 26805-0316
PIN 26805-0312
PIN 26805-0575
PIN 26805-0576
PIN 26805-0606
PIN 26805-0287
DETAIL "A"
No.15251
14
15
6

Appendix B

Traffic Data and Signal Timing Sheets

Ministry of Transportation
Ministère des Transports

Version: 1.0 Feb 1, 2016

Intersection Layout Sheet

Contract # 9015-E-0009
Work Order # 053

Date: Sep 5 / 2018 Day: Wed / Hrs: 7-9 + 11-14 + 15-18

Location: HWY 7 @ Scugog TWP-6Th Line Rd Ramps: 1

Reg/Mun: CR Town/City: Port Perry Area:

File Name: 0143500460 Device: Gretch / Jamar Unit # 121 Interval 1: (AM) / NN / PM

Observer: Renat Shalixo Weather: Clear / Clear Road Condition: Dry / Dry

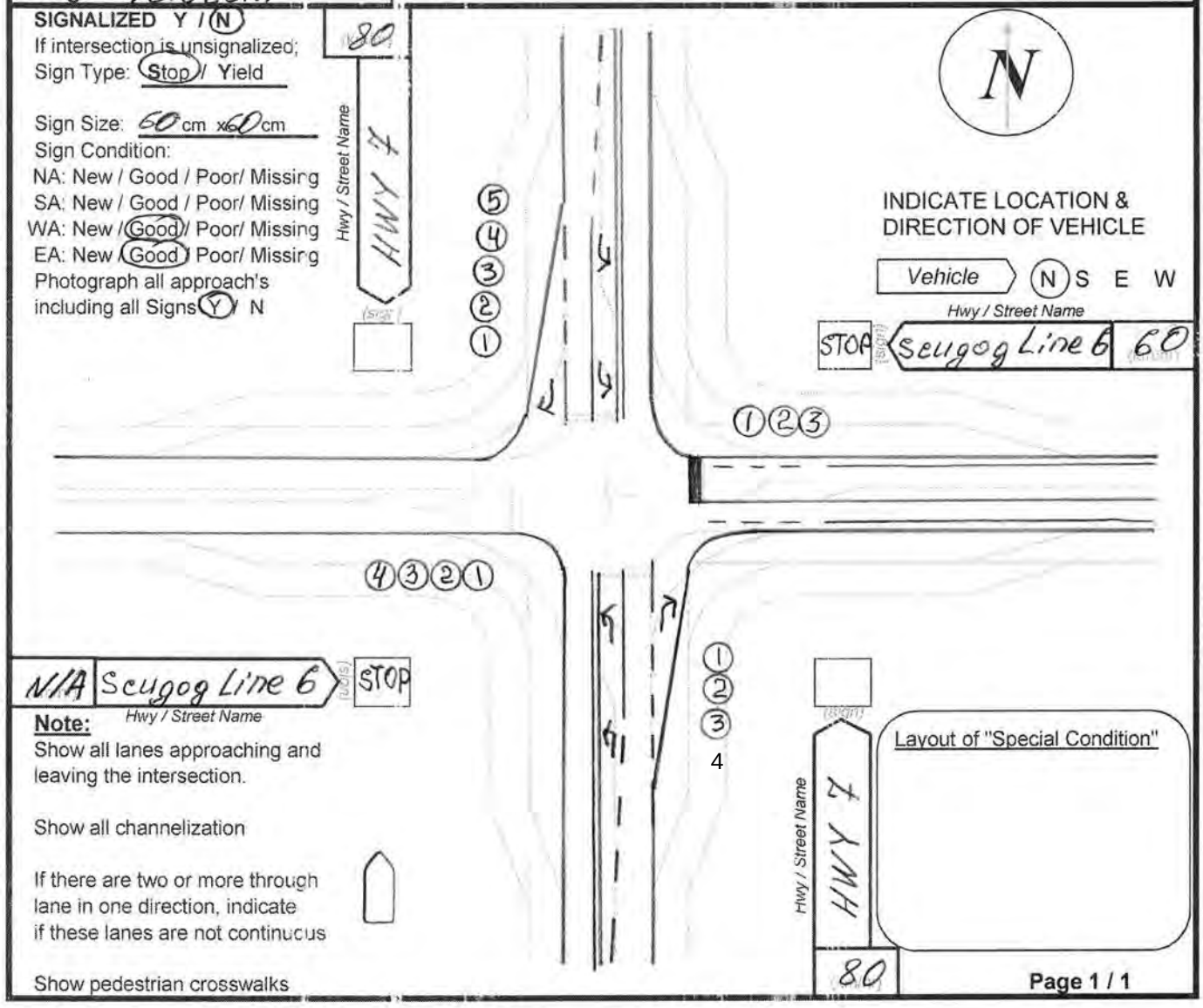
LHRS & O/S: 14350 4.60

Comments:

GPS: G-Star IV
Datum: WGS 84 (Y) / N
Lat: 44.090824
Long: -78.988111

SIGNALIZED Y / (N)
If intersection is unsignalized;
Sign Type: (Stop) / Yield

Sign Size: 60 cm x 60 cm
Sign Condition:
NA: New / Good / Poor/ Missing
SA: New / Good / Poor/ Missing
WA: New / (Good) / Poor/ Missing
EA: New / (Good) / Poor/ Missing
Photograph all approach's including all Signs (Y) / N



Note:
Show all lanes approaching and leaving the intersection.

Show all channelization

If there are two or more through lane in one direction, indicate if these lanes are not continuous

Show pedestrian crosswalks

Ontario

Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement Total Count and Peak Summary Report

Description: HWY 7 @ SCUGOG LINE 6

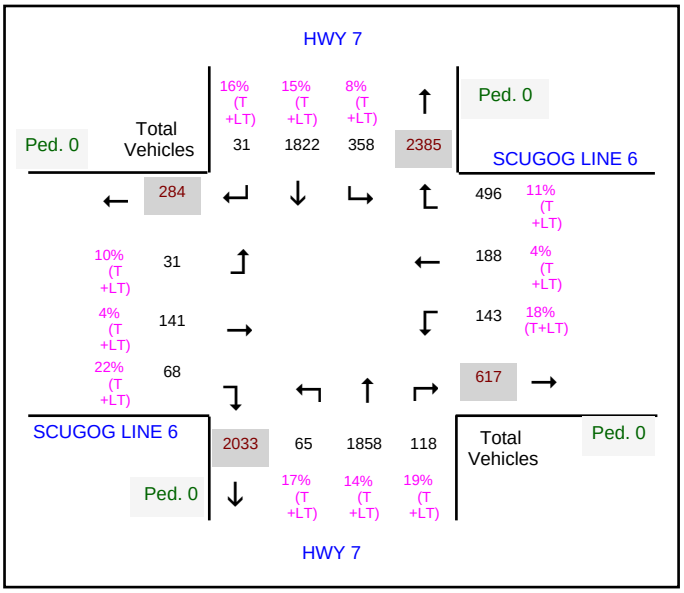
Region: CENTRAL | **Survey Type:** TM – Intersection | **Hwy:** 7

Start Date: 05-Sep-2018 (Wed) | **I/C Side:** | **LHRS:** 14350

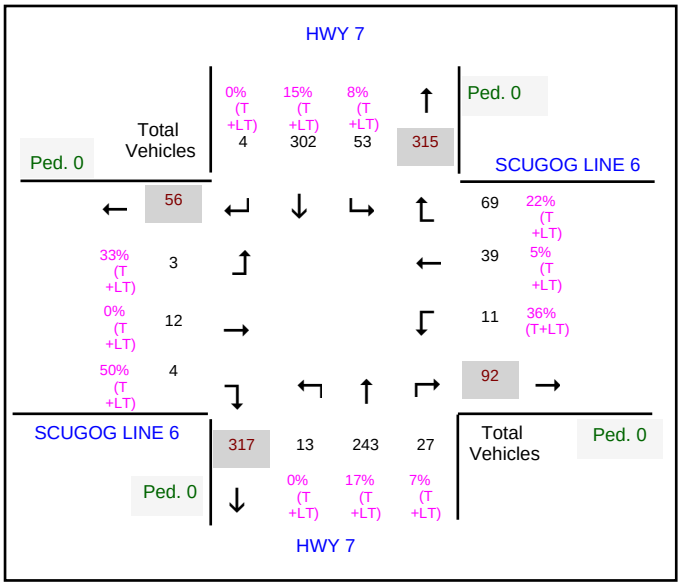
End Date: 05-Sep-2018 (Wed) | **Int. Type:** Four Leg | **Offset:** 4.600

Schedule Summary: TUES-THURS, 07:00-10:00, 12:00-14:00, 15:00-18:00

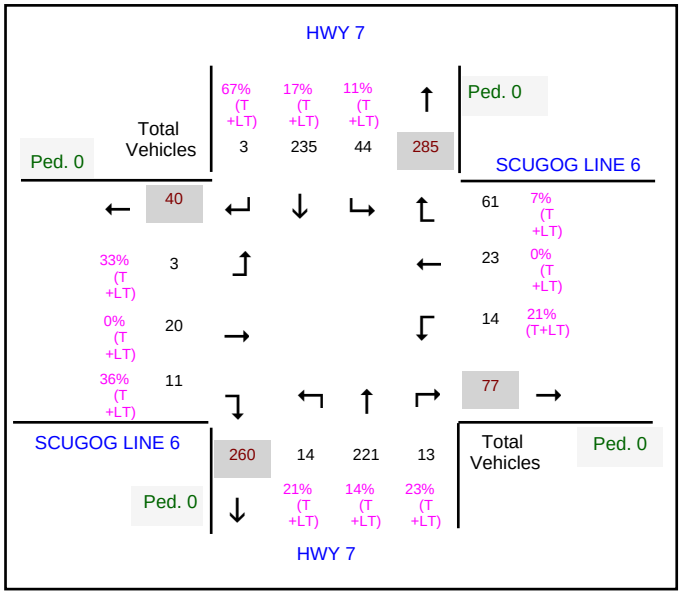
Total Count — Number of hours: 8



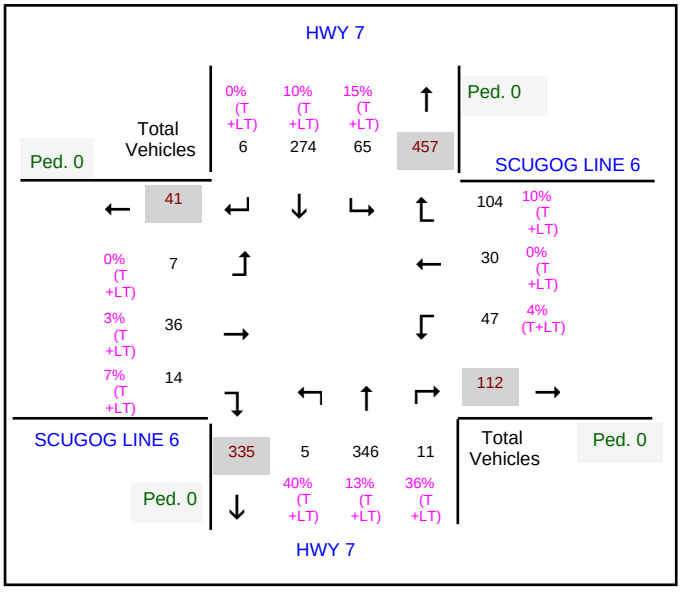
AM Peak Hour Report — Start Time: 07:15



Midday Peak Hour Report — Start Time: 13:00



PM Peak Hour Report — Start Time: 16:00



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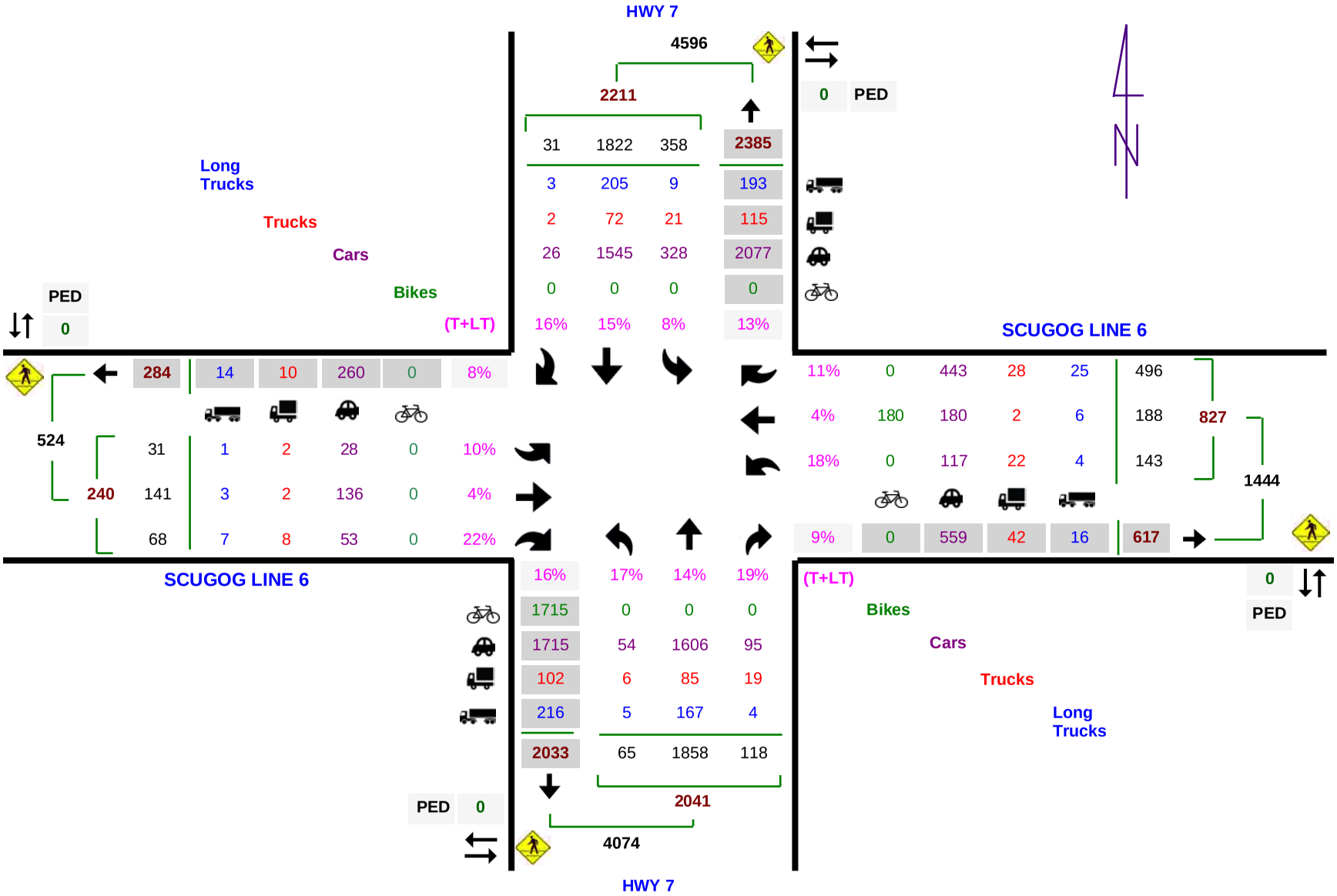
Ontario

Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement Count Total Report

Description: HWY 7 @ SCUGOG LINE 6
Region: CENTRAL | **Survey Type:** TM – Intersection | **Hwy:** 7
Start Date: 05-Sep-2018 (Wed) | **I/C Side:** | **LHRS:** 14350
End Date: 05-Sep-2018 (Wed) | **Int. Type:** Four Leg | **Offset:** 4.600
Schedule Summary: TUES-THURS, 07:00-10:00, 12:00-14:00, 15:00-18:00



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Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement 15 Minute Report

Description: HWY 7 @ SCUGOG LINE 6
Region: CENTRAL **Survey Type:** TM – Intersection **Hwy:** 7
Start Date: 05-Sep-2018 (Wed) **I/C Side:** **LHRS:** 14350
End Date: 05-Sep-2018 (Wed) **Int. Type:** Four Leg **Offset:** 4.600
Schedule Summary: TUES-THURS, 07:00-10:00, 12:00-14:00, 15:00-18:00

	Major Road Approaches																					Minor Road Approaches																					
	North HWY 7										South HWY 7										East SCUGOG LINE 6										West SCUGOG LINE 6										
Start Time	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Heavy Trucks			Ped	Total Veh.
	←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		
Period 1																																											
07:00	4	58	0	0	2	1	0	11	0	0	3	37	12	0	4	0	0	8	0	0	1	8	17	4	0	0	0	0	2	0	1	3	1	0	0	0	0	0	0	0	177
07:15	17	64	0	1	4	0	0	9	0	0	4	49	8	0	4	0	0	5	0	0	2	13	18	1	1	5	0	0	3	0	0	2	2	0	0	1	0	0	0	0	213
07:30	11	65	1	0	3	0	1	6	0	0	3	44	1	0	1	0	0	8	0	0	1	5	13	0	0	1	0	0	3	0	2	2	0	1	0	0	0	0	0	0	172
07:45	9	72	3	0	4	0	0	8	0	0	4	57	10	0	2	0	0	8	0	0	3	13	11	1	0	1	1	0	0	0	0	5	0	0	0	0	0	0	0	0	212
08:00	12	57	0	2	2	0	0	8	0	0	2	52	6	0	5	1	0	8	1	0	1	6	12	0	0	1	1	1	1	0	0	3	0	0	0	0	0	0	1	0	183
08:15	7	75	1	0	3	0	0	10	1	0	2	42	6	0	2	1	0	5	0	0	2	5	14	1	0	0	0	0	1	0	1	3	2	0	0	0	0	0	1	0	185
08:30	8	48	2	0	4	0	1	9	0	0	2	53	2	0	1	1	1	6	0	0	2	9	7	0	0	0	0	0	1	0	0	3	1	0	0	1	0	2	1	0	165
08:45	12	47	0	1	1	0	0	10	0	0	5	59	8	0	3	0	0	10	0	0	4	3	9	1	0	1	1	1	2	0	3	5	3	0	0	0	0	0	0	0	189
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Period 2																																										
12:00	10	45	0	1	2	0	0	11	0	0	0	53	2	1	1	2	0	5	0	0	2	7	16	2	0	1	1	0	0	0	1	3	3	0	0	0	0	0	0	0	169
12:15	9	44	0	0	6	0	0	9	0	0	1	31	1	1	5	1	0	6	0	0	2	10	10	1	0	0	0	0	0	0	2	4	1	0	0	0	0	0	0	0	144
12:30	11	40	1	0	4	0	0	7	0	0	1	60	5	0	5	0	0	6	0	0	3	2	10	1	0	2	0	0	0	0	1	6	2	0	0	2	0	0	0	0	169
12:45	9	28	1	1	3	1	0	11	0	0	0	56	2	1	3	1	0	10	0	0	1	2	15	1	0	2	0	0	0	0	0	6	1	0	0	0	0	0	0	0	155
13:00	8	41	0	2	3	0	0	10	0	0	2	39	2	0	1	1	0	3	1	0	3	5	19	0	0	1	0	0	1	0	0	4	1	0	0	0	0	0	0	0	147
13:15	9	44	0	1	0	0	1	10	0	0	4	60	4	0	3	0	1	5	0	0	1	4	13	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	164
13:30	13	62	0	0	4	0	0	3	0	0	3	45	1	0	4	1	1	5	0	0	5	8	13	1	0	0	0	0	1	0	0	6	3	0	0	1	0	0	1	0	181
13:45	9	47	1	1	4	0	0	7	2	0	2	45	3	1	5	0	0	6	0	0	2	6	12	0	0	1	0	0	0	0	2	10	1	0	0	1	1	0	1	0	170
Period 3																																										
15:00	15	54	2	1	3	0	0	13	0	0	3	57	1	0	1	1	1	5	0	0	8	7	12	0	1	2	0	0	1	0	1	3	3	0	0	0	0	0	1	0	196
15:15	14	48	0	2	0	0	0	8	0	0	1	72	1	0	5	0	0	6	0	0	2	6	9	1	0	2	0	1	0	0	1	8	3	0	1	0	0	0	0	0	191
15:30	21	59	1	0	0	0	0	11	0	0	3	54	3	1	2	0	0	5	1	0	5	9	21	1	0	1	0	0	0	0	1	3	3	0	0	0	0	0	0	0	205
15:45	15	65	0	0	2	0	0	6	0	0	1	67	2	0	4	3	0	8	0	0	3	4	14	0	0	1	0	1	2	0	0	9	2	0	0	1	0	0	0	0	210
16:00	17	54	2	2	2	0	0	6	0	0	1	74	4	0	4	3	0	6	0	0	23	11	33	1	0	2	0	0	2	0	1	9	4	0	0	0	0	1	1	0	263

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Ontario

Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement 15 Minute Report

Description: HWY 7 @ SCUGOG LINE 6
Region: CENTRAL **Survey Type:** TM – Intersection **Hwy:** 7
Start Date: 05-Sep-2018 (Wed) **I/C Side:** **LHRS:** 14350
End Date: 05-Sep-2018 (Wed) **Int. Type:** Four Leg **Offset:** 4.600
Schedule Summary: TUES-THURS, 07:00-10:00, 12:00-14:00, 15:00-18:00

	Major Road Approaches																					Minor Road Approaches																					
	North HWY 7										South HWY 7										East SCUGOG LINE 6										West SCUGOG LINE 6											
Start Time	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Heavy Trucks			Ped	Total Veh.
	←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		
16:15	9	70	1	3	5	0	1	7	0	0	0	77	1	0	2	0	1	7	0	0	5	8	15	1	0	0	0	0	0	0	4	9	1	0	0	0	0	0	0	0	**227**
16:30	14	60	1	1	0	0	1	4	0	0	1	67	1	0	5	1	0	8	0	0	10	5	30	0	0	1	0	0	3	0	1	8	5	0	0	0	0	0	0	0	**227**
16:45	15	63	2	1	2	0	1	1	0	0	1	82	1	1	5	0	0	9	0	0	7	6	16	0	0	1	0	0	1	0	1	9	3	0	0	0	0	0	0	0	**228**
17:00	10	64	3	0	3	0	2	2	0	0	2	84	3	0	2	0	0	3	1	0	7	5	30	2	0	0	0	2	0	0	1	3	3	1	0	1	0	0	0	0	**234**
17:15	13	64	2	1	2	0	1	3	0	0	0	74	2	0	0	0	0	4	0	0	9	2	17	0	0	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0	**198**
17:30	16	57	0	0	3	0	0	3	0	0	0	58	2	0	3	2	0	1	0	0	1	6	14	0	0	1	0	0	1	0	1	2	2	0	1	0	0	0	0	0	**174**
17:45	11	50	2	0	1	0	0	2	0	0	3	58	1	0	3	0	0	1	0	0	2	5	23	0	0	0	0	0	0	0	1	7	1	0	0	0	0	0	0	0	**171**

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Ontario

Ministry of Transportation

TVIS II - Traffic Volume Information System

Traffic Signal Warrant

Description: HWY 7 @ SCUGOG LINE 6
Region: CENTRAL **Survey Type:** TM – Intersection **Hwy:** 7
Start Date: **I/C Side:** **LHRS:** 14350
End Date: **Intersection Type:** Four Leg **Offset:** 4.600
Schedule Summary: Tuesday, Wednesday, Thursday AM07:00-10:00, Midday 12:00-14:00, PM 15:00-18:00
This schedule is used by Central region for data collected in Summer.

Intersection Configuration:

MAJOR ROADS

Approach	Name	Channel	Right	Pattern
N	HWY 7			CTR
S	HWY 7			CTR

☐ 2 or more approach Lanes

MINOR ROADS

Approach	Name	Channel	Right	Pattern
E	SCUGOG LINE 6			UNCL
	Ramps			
W	SCUGOG LINE 6			UNCL
	Ramps			

☐ 2 or more approach Lanes

Intersection Type: Four Leg
Traffic Control: Stop Sign
Flow Condition: Free Flow

Justification 1 - Minimum Vehicle Volume:

Calculated using raw data

1A: All approach lanes:
1B: Minor road approaches:

	Major Road Approaches						Minor Road Approaches						1A		1B	
	North Approach			South Approach			East Approach			West Approach			Min. Req.	%	Min. Req.	%
													480	100	120	100
													384	80	96	80
Time	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱	Total	%	Total	%
07:00	43	306	5	14	227	31	14	40	74	4	12	4	774	100	148	100
08:00	43	274	4	12	246	26	13	25	49	4	16	10	722	100	117	100
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
12:00	41	210	3	5	241	14	14	21	56	4	19	9	637	100	123	100
13:00	44	235	3	14	221	13	14	23	61	3	20	11	662	100	132	100
15:00	68	269	3	10	286	12	20	29	65	3	24	13	802	100	154	100
16:00	65	274	6	5	346	11	47	30	104	7	36	14	945	100	238	100
17:00	54	254	7	5	291	11	21	20	87	6	14	7	777	100	155	100
TotalsTM	358	1822	31	65	1858	118	143	188	496	31	141	68	5319	700	1067	680
Approach			2211			2041			827			240	Section %	88	Section %	85

Justification 1 Minimum Compliance: 85 %

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Ministry of Transportation

TVIS II - Traffic Volume Information System

Traffic Signal Warrant

Description: HWY 7 @ SCUGOG LINE 6

Region: CENTRAL **Survey Type:** TM – Intersection **Hwy:** 7

Start Date: **I/C Side:** **LHRS:** 14350

End Date: **Intersection Type:** Four Leg **Offset:** 4.600

Schedule Summary: Tuesday, Wednesday, Thursday AM07:00-10:00, Midday 12:00-14:00, PM 15:00-18:00
This schedule is used by Central region for data collected in Summer.

Justification 2 - Delay to Cross Traffic:

Calculated using raw data

2A: Major road appraoches:

2B: Minor road approaches:

	Major Road Approaches						Minor Road Approaches						
	North Approach			South Approach			East Approach			West Approach			
Time													*
07:00	43	306	5	14	227	31	14	40	74	4	12	4	0
08:00	43	274	4	12	246	26	13	25	49	4	16	10	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	41	210	3	5	241	14	14	21	56	4	19	9	0
13:00	44	235	3	14	221	13	14	23	61	3	20	11	0
15:00	68	269	3	10	286	12	20	29	65	3	24	13	0
16:00	65	274	6	5	346	11	47	30	104	7	36	14	0
17:00	54	254	7	5	291	11	21	20	87	6	14	7	0
Totals: TM	358	1822	31	65	1858	118	143	188	496	31	141	68	0
Approach			2211			2041			827			240	

2A		2B	
Min. Req.	%	Min. Req.	%
480	100	50	100
384	80	40	80
Total	%	Total	%
626	100	58	100
605	100	42	80
0	0	0	0
514	100	39	78
530	100	40	80
648	100	52	100
707	100	90	100
622	100	47	80
4252	700	368	618
Section %	88	Section %	77

* Pedestrians crossing major road

Justification 2 Minimum Compliance: 77 %

Justification 3 - Volume / Delay Combination:

Calculated using raw data

	Minimum Compliance (%)
Justification 1 - Minimum Vehicle Volume:	85 %
Justification 2 - Delay to Cross Traffic:	77 %
Justification 3 Minimum Compliance:	77 %

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Ministry of Transportation

TVIS II - Traffic Volume Information System

Traffic Signal Warrant

Description: HWY 7 @ SCUGOG LINE 6

Region: CENTRAL **Survey Type:** TM – Intersection **Hwy:** 7

Start Date: **I/C Side:** **LHRS:** 14350

End Date: **Intersection Type:** Four Leg **Offset:** 4.600

Schedule Summary: Tuesday, Wednesday, Thursday AM07:00-10:00, Midday 12:00-14:00, PM 15:00-18:00
This schedule is used by Central region for data collected in Summer.

Justification 5 - Collision Experience

	Warrant Threshold *	%
	5	100
Preceding Months	**Number of Collisions ****	**%**
1 - 12	0	0
13 - 24	0	0
25 - 36	0	0
Totals	0	0

Justification 5 Compliance: 0 %

* Per twelve-month period.

** Include only collisions that are susceptible to correction

Calculation Options - Use raw data

Factors for major road approaches

North Approach		South Approach	
Factor	1.0	Factor	1.0

Factors for minor road approaches

East Approach		West Approach	
Factor	1.0	Factor	1.0

Factor for pedestrian crossing major road 1.0

CONCLUSION: TRAFFIC SIGNALS ARE **NOT WARRANTED**

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Ontario

INTERSECTION LAYOUT SHEET

Date: 2017-02-28 Day: Tuesday Request #: 142 Observer(s): Video

Gretch Code (LHRS O/S): 0149460539 Ramp #: _____

Hwy #: _____ Location: Queen St & Walsh Dr.

Reg/Mun: Durham Town/City: Scugog

Comments: _____

Segment 1 - AM or PM (Please Circle ONE) Weather: Cloudy

DATASETS
For office use only:

Edit File: _____

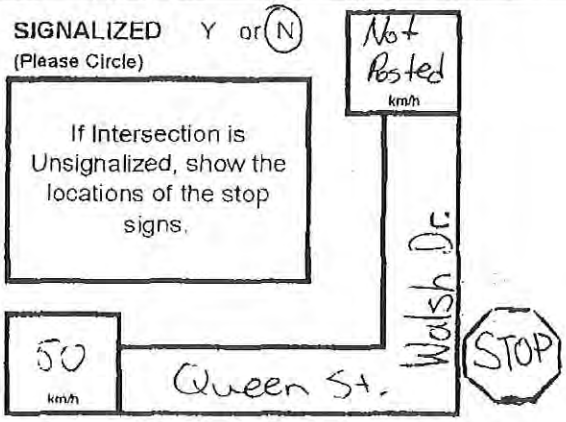
AM Peak: _____

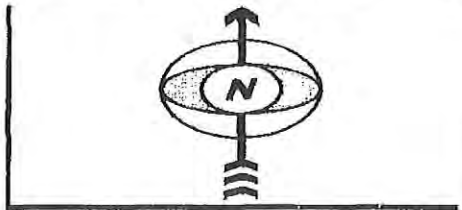
PM Peak: _____

Processed by: _____

SIGNALIZED Y or (N)
(Please Circle)

If Intersection is Unsignalized, show the locations of the stop signs.

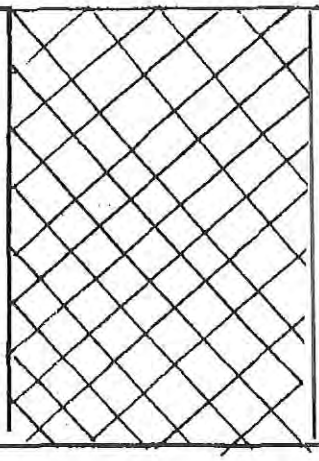


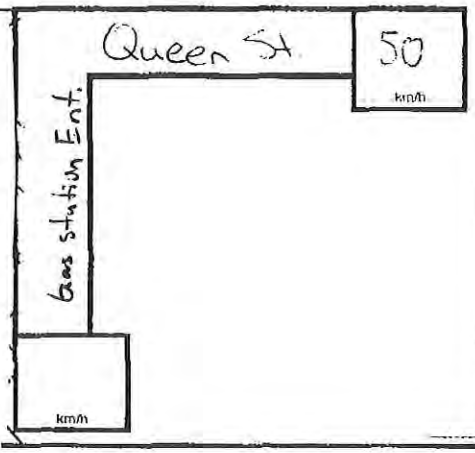


INDICATE LOCATION & DIRECTION OF STUDY VEHICLE

VEHICLE N S E W

1) Show all lanes approaching and leaving the intersection.
2) Show all channelizations.
3) If there are two or more through lanes in one direction, indicate if these lanes are not continuous.
4) Show predestrian crosswalks and sidewalks along crossing roads.
5) Show bicycle lanes.
6) Show ramp # if applicable.



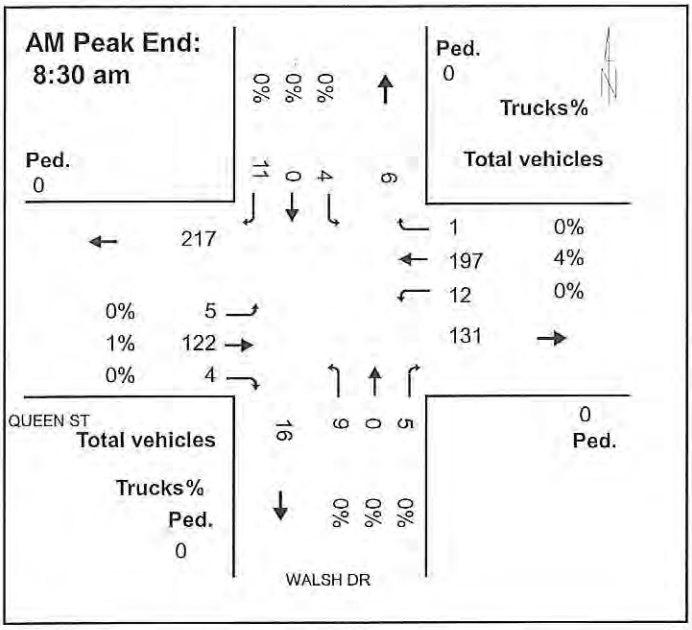


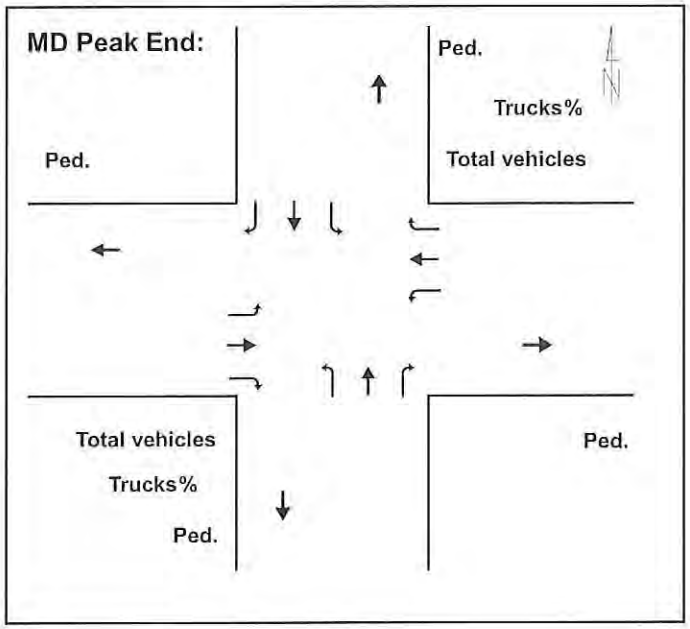
Ontario

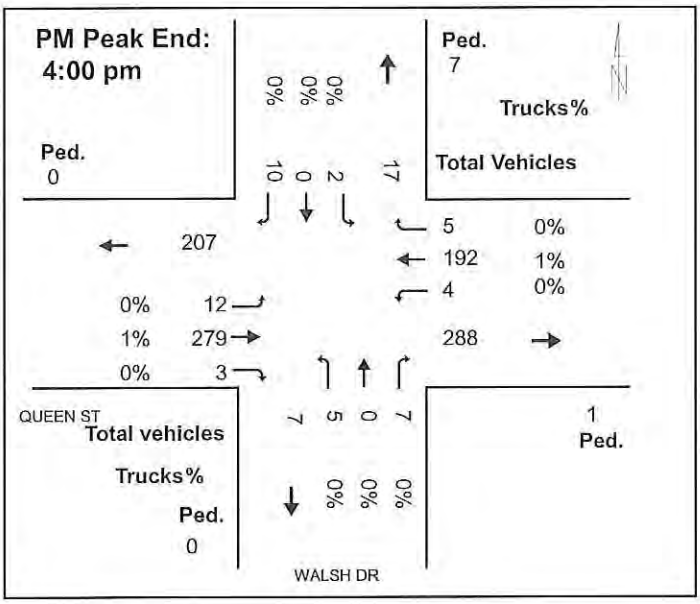
QUEEN ST @ WALSH DR

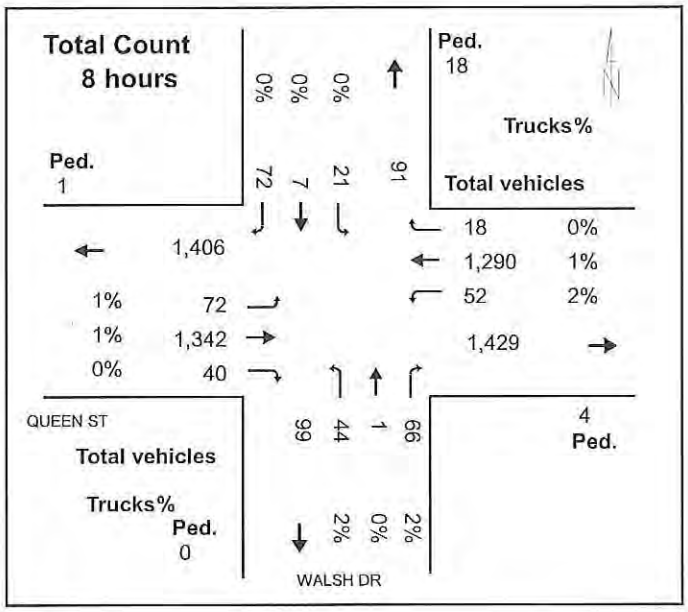
Central

Intersection ID:149460539 | Count Day: Tuesday | Count Date: 28-Feb-2017









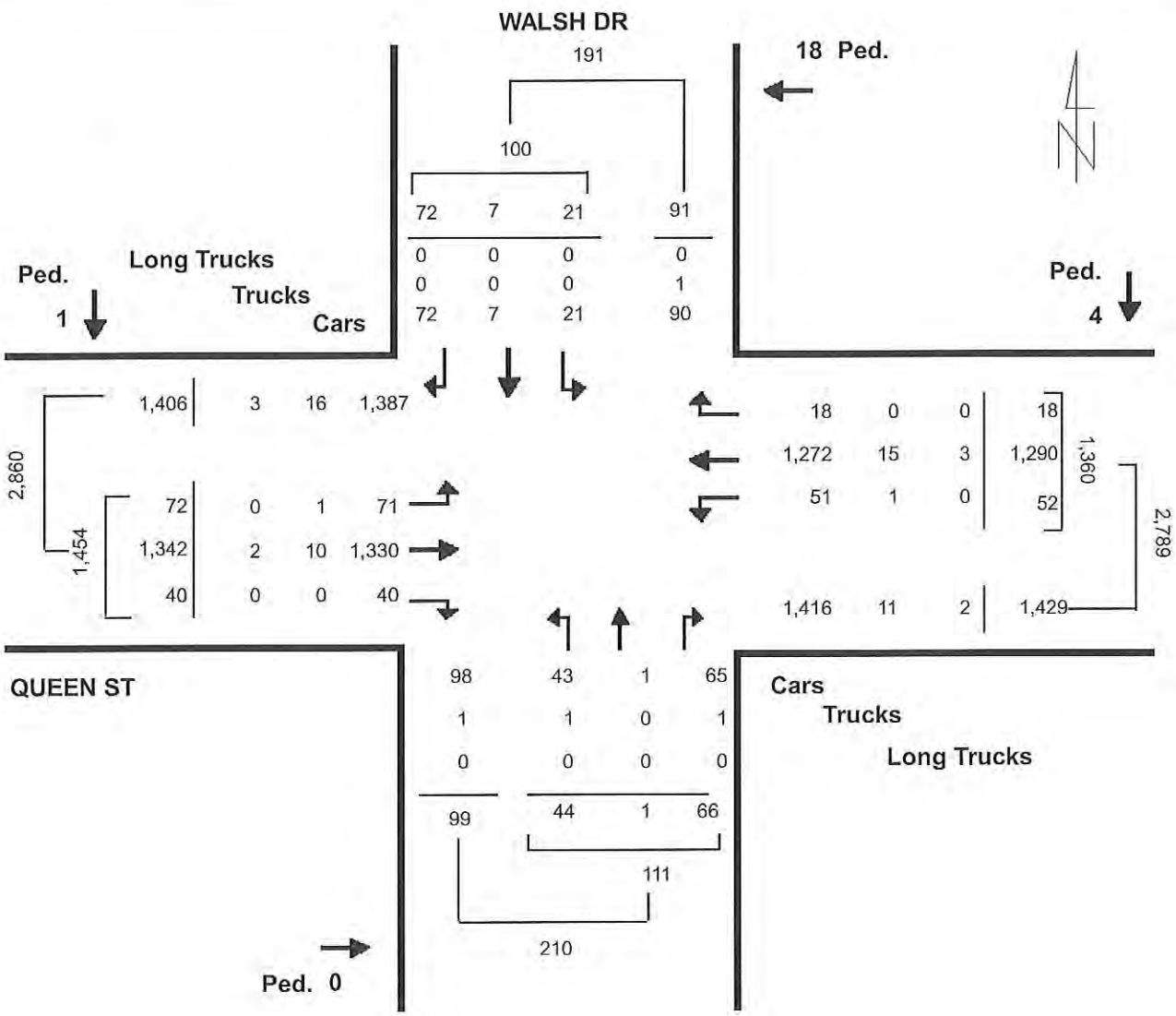
Traffic Engineering Software

COUNT TOTAL

QUEEN ST @ WALSH DR

Central

Intersection ID:149460539 **Date: 28-Feb-2017**



15 MIN REPORT

Intersection ID:149460539 **QUEEN ST @ WALSH DR** **Municipality: Central** **Date: 28-Feb-2017**

	NORTH APPROACH										EAST APPROACH										SOUTH APPROACH										WEST APPROACH										
Time	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Period1																																									
6:15	0	0	3	0	0	0	0	0	0	0	2	23	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	33
6:30	0	0	2	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	41
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7:45	2	0	4	0	0	0	0	0	0	0	1	63	0	0	2	0	0	1	0	0	3	0	1	0	0	0	0	0	0	0	0	30	2	0	0	0	0	0	0	0	109
8:00	1	0	3	0	0	0	0	0	0	0	4	43	0	0	1	0	0	0	0	0	4	0	1	0	0	0	0	0	0	0	1	32	0	0	1	0	0	0	0	0	91
8:15	1	0	2	0	0	0	0	0	0	0	3	51	0	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	1	28	1	0	0	0	0	0	0	0	91
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9:15	1	0	1	0	0	0	0	0	0	1	3	38	0	0	0	0	0	0	0	1	2	0	2	0	0	0	0	0	0	0	1	26	2	0	0	0	0	0	0	1	79
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Period2																																									
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16:00	0	0	3	0	0	0	0	0	0	1	1	45	3	0	0	0	0	0	0	1	2	0	2	0	0	0	0	0	0	0	2	80	0	0	1	0	0	0	0	0	141
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16:30	1	0	0	0	0	0	0	0	0	0	2	34	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	1	78	3	0	0	0	0	0	0	0	122
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17:00	0	0	6	0	0	0	0	0	0	0	1	44	2	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	4	71	1	0	0	0	0	0	0	0	133
17:15	2	0	2	0	0	0	0	0	0	1	0	51	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	2	72	0	0	0	0	0	0	0	0	133
17:30	3	0	0	0	0	0	0	0	0	0	1	30	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	12	62	3	0	0	0	0	0	0	0	115
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18:00	0	0	1	0	0	0	0	0	0	2	3	31	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0	5	53	2	0	1	0	0	0	0	0	103
18:15	1	0	2	0	0	0	0	0	0	3	1	32	1	0	0	0	0	0	0	0	2	0	5	0	0	0	0	0	0	0	5	51	4	0	0	0	0	0	0	0	107
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19:00	1	0	1	0	0	0	0	0	0	1	1	18	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	2	36	1	0	0	0	0	0	0	0	64

Ministry of Transportation - Traffic Signal Warrants

Municipality: Central
Intersection: QUEEN ST @ WALSH DR
Major Road: QUEEN ST
Direction: East-West
Minor Road: WALSH DR

Warrant 1 - Minimum Vehicular Volume

A - All Approaches

	Min. Req.	Min. Req.	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00	Total
Volume	720	576	194	349	351	329	519	498	460	325	3025
Warrant %	100	80	27	48	49	46	72	69	64	45	420

Controlling Sectional % **52%**

B - Minor Street Both Approaches

	Min. Req.	Min. Req.	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00	Total
Volume	170	136	25	33	23	22	24	32	26	26	211
Warrant %	100	80	15	19	14	13	14	19	15	15	124

Controlling Sectional % **16%**

WARRANT 1 HAS BEEN SATISFIED **16%**

Warrant 2 - Delay To Cross Traffic

A - Major Street Both Approaches

	Min. Req.	Min. Req.	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00	Total
Volume	720	576	169	316	328	307	495	466	434	299	2814
Warrant %	100	80	23	44	46	43	69	65	60	42	392

Controlling Sectional % **49%**

B - Traffic Crossing Major Street

	Min. Req.	Min. Req.	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00	Total
Volume	75	60	8	15	9	13	8	9	7	8	77
Warrant %	100	80	11	20	12	17	11	12	9	11	103

Controlling Sectional % **13%**

WARRANT 2 HAS BEEN SATISFIED **13%**

Warrant 3 - Accident Experience

A Reportable accident within a 12 month period averaged over 36 consecutive months susceptible to correction by a traffic signal was **0**

Based on the minimum warrant value of 5 this section has been satisfied **0%**

B Adequate trial of less restrictive remedies requirement was satisfied **100%**

C Either Warrant #1 or #2 being satisfied by at least 80% was satisfied **0%**

WARRANT 3 HAS BEEN SATISFIED **0%**

Warrant 4 - Combination Warrant

Warrant 1 satisfied 80% or more **0%**

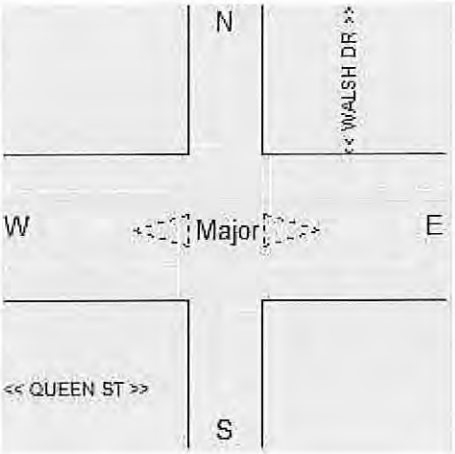
Warrant 2 satisfied 80% or more **0%**

Warrant 3 satisfied 80% or more **0%**

WARRANT 4 HAS BEEN SATISFIED **0%**

CONCLUSION: TRAFFIC SIGNALS ARE NOT WARRANTED

Traffic Signal Warrant Parameter Summary



Configuration	Cross
Flow Condition	Restricted
No. of Lanes on Major	1
No. of Collisions	0
Count Date	Feb 28, 2017

Approach >>	North	East	South	West
AADT Factor Used	n/a	n/a	n/a	n/a
AADT Factor Kind	n/a	n/a	n/a	n/a
Traffic Pattern	n/a	n/a	n/a	n/a
Default Pattern?	n/a	n/a	n/a	n/a
Right Turn Channel?	No	No	No	No
Major / Minor	Minor	Major	Minor	Major

Bicycle Count Form

Location: QUEEN ST & WALSH DR
Site ID: 0149460539
Count Date: 02/28/2017

Time	APPROACH			
	North	East	South	West
06:00 to 06:15				
06:15 to 06:30				
06:30 to 06:45				
06:45 to 07:00				
07:00 to 07:15				
07:15 to 07:30				
07:30 to 07:45				
07:45 to 08:00				
08:00 to 08:15				
08:15 to 08:30				
08:30 to 08:45				
08:45 to 09:00				
09:00 to 09:15				
09:15 to 09:30				
09:30 to 09:45				
09:45 to 10:00				
10:00 to 10:15				
10:15 to 10:30				
10:30 to 10:45				
10:45 to 11:00				
11:00 to 11:15				
11:15 to 11:30				
11:30 to 11:45				
11:45 to 12:00				
12:00 to 12:15				
12:15 to 12:30				
12:30 to 12:45				
12:45 to 13:00				
13:00 to 13:15				
13:15 to 13:30				
13:30 to 13:45				
13:45 to 14:00				
14:00 to 14:15				
14:15 to 14:30				
14:30 to 14:45				
14:45 to 15:00				
15:00 to 15:15				
15:15 to 15:30				
15:30 to 15:45				
15:45 to 16:00				
16:00 to 16:15				
16:15 to 16:30				
16:30 to 16:45				
16:45 to 17:00				
17:00 to 17:15				
17:15 to 17:30				
17:30 to 17:45				
17:45 to 18:00				
18:00 to 18:15				
18:15 to 18:30				
18:30 to 18:45				
18:45 to 19:00				
19:00 to 19:15				
19:15 to 19:30				
19:30 to 19:45				
19:45 to 20:00				

Ontario

INTERSECTION LAYOUT SHEET

Date: 2017-02-28 Day: Tuesday Request #: 143 Observer(s): Video

Gretch Code (LHRS O/S): 0149460540 Ramp #:

Hwy #: Location: Hwy 7a & Queen St. - Plaza Driveway

Reg/Mun: Durham Town/City: Scugog

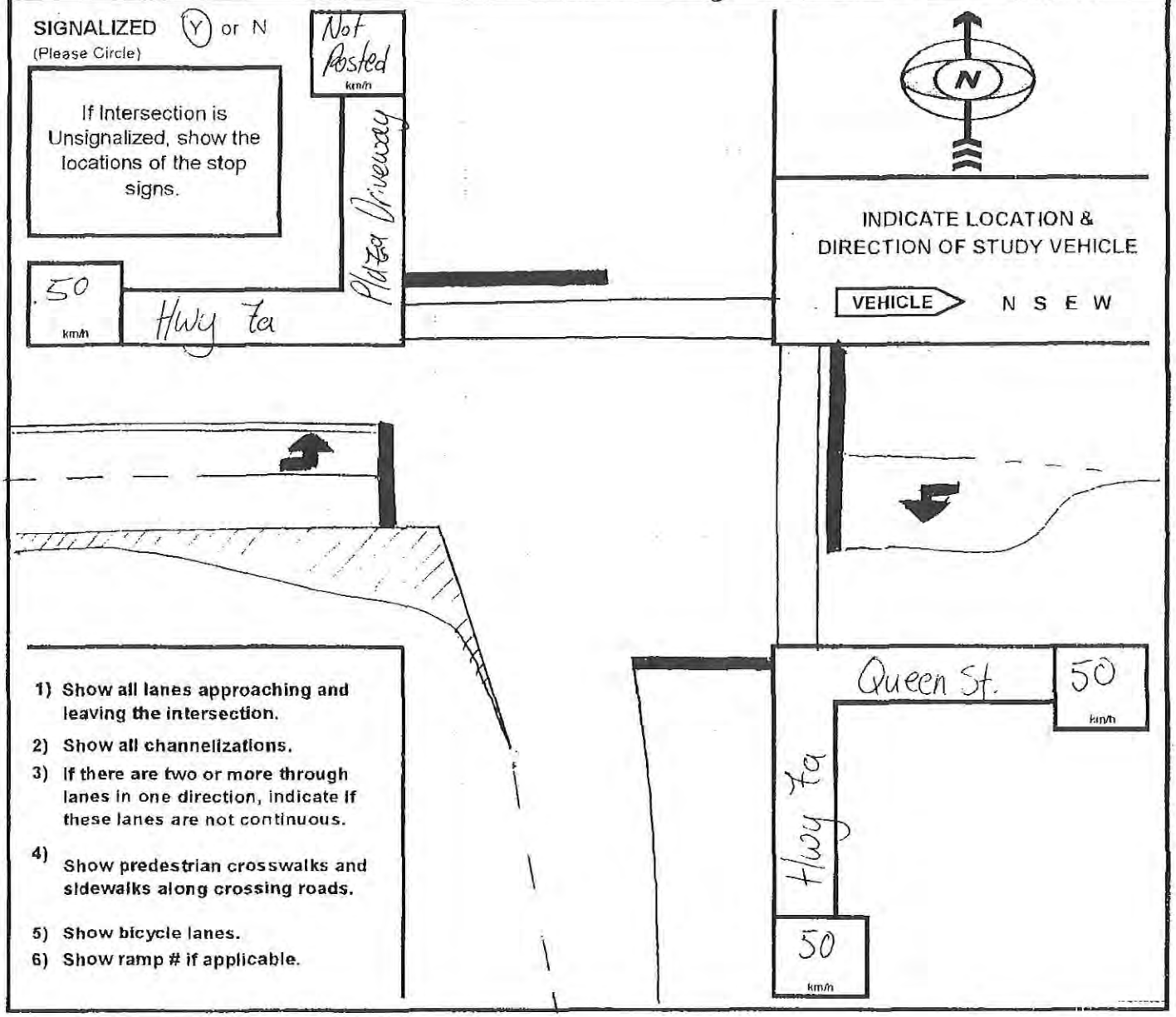
Comments:

Segment 1 - AM or PM (Please Circle **ONE**) Weather: Cloudy

DATASETS
For office use only:
Edit File:
AM Peak
PM Peak
Processed by:

SIGNALIZED (Y) or N
(Please Circle)

If Intersection is Unsignalized, show the locations of the stop signs.



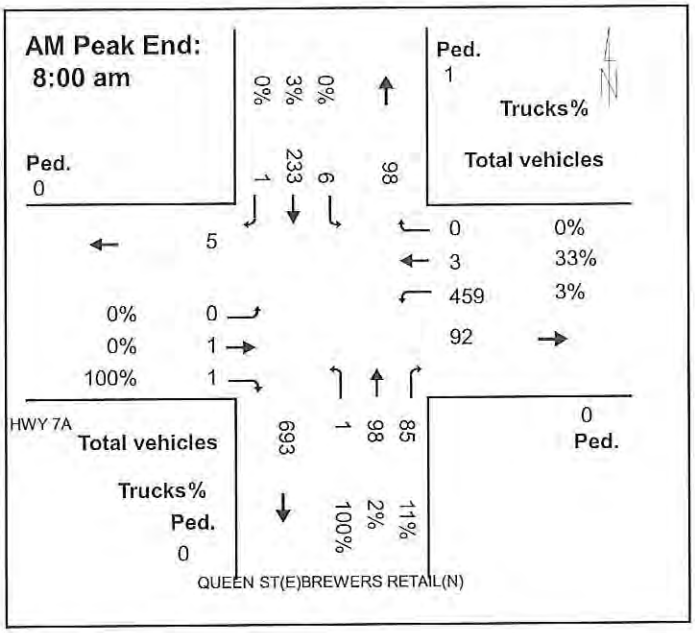
1) Show all lanes approaching and leaving the intersection.
2) Show all channelizations.
3) If there are two or more through lanes in one direction, indicate if these lanes are not continuous.
4) Show predestrian crosswalks and sidewalks along crossing roads.
5) Show bicycle lanes.
6) Show ramp # if applicable.

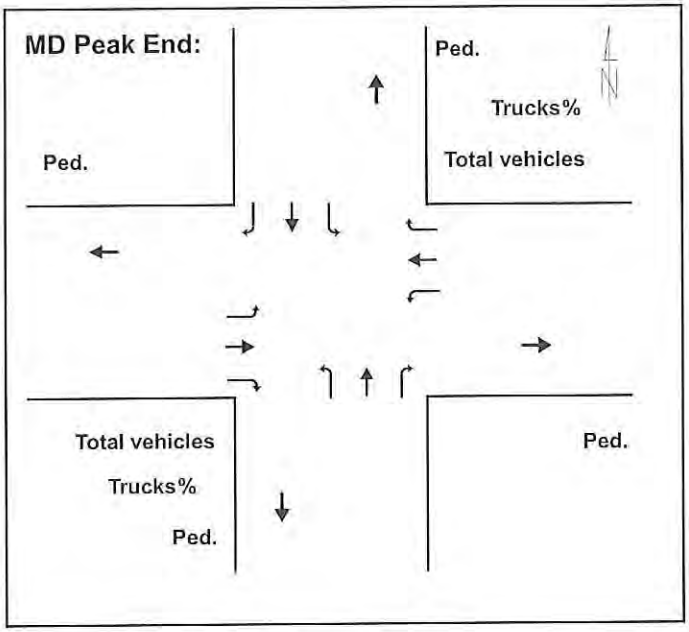
Ontario

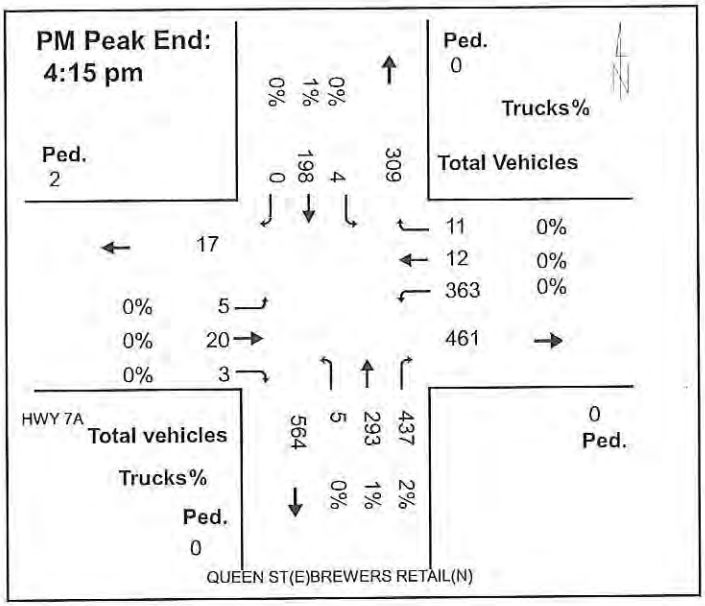
HWY 7A @ QUEEN ST(E)BREWERS RETAIL(N)

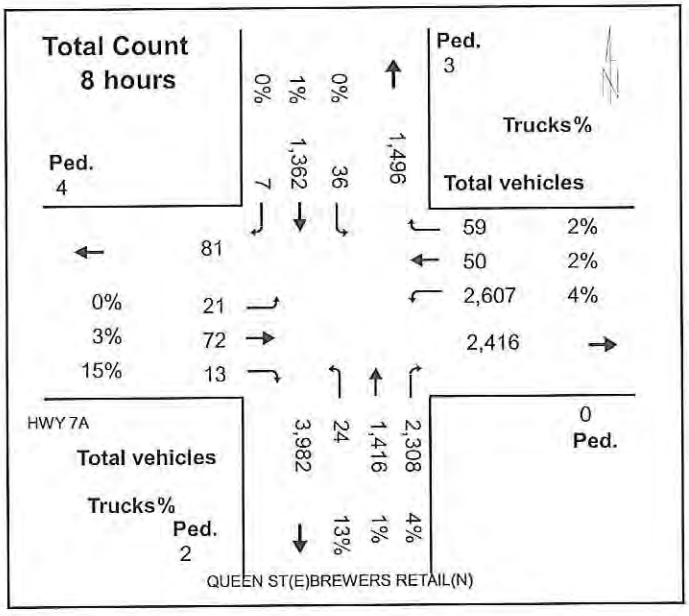
Central

Intersection ID:149460540 | Count Day: Tuesday | Count Date: 28-Feb-2017









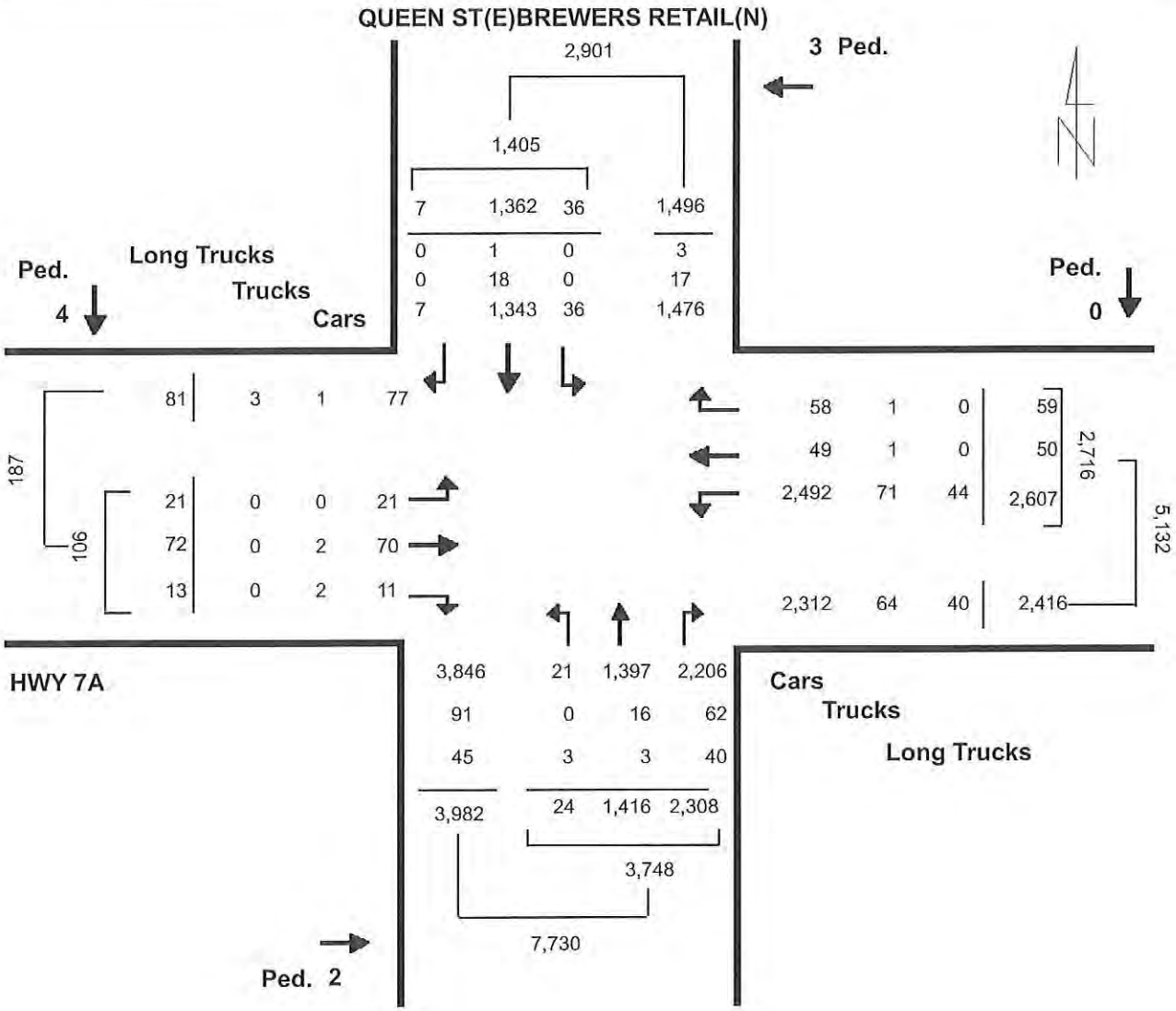
Traffic
Engineering
Software

COUNT TOTAL

HWY 7A @ QUEEN ST(E)BREWERS RETAIL(N)

Central

Intersection ID:149460540 **Date: 28-Feb-2017**



15 MIN REPORT

Intersection ID:149460540 **HWY 7A @ QUEEN ST(E)BREWERS RETAIL(N)** **Municipality: Central** **Date: 28-Feb-2017**

	NORTH APPROACH										EAST APPROACH										SOUTH APPROACH										WEST APPROACH										
Time	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Period1																																									
6:15	0	29	2	0	1	0	0	0	0	0	95	0	1	2	0	0	0	0	0	0	0	4	3	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	140
6:30	1	29	2	0	1	0	0	0	0	0	99	0	2	3	0	0	1	0	0	0	0	6	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	155
6:45	2	41	0	0	0	0	0	0	0	0	88	0	0	1	0	1	0	0	0	0	0	6	15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	156
7:00	1	59	1	0	0	0	0	0	0	0	106	0	1	3	0	0	4	0	0	0	0	10	18	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	207
7:15	1	59	0	0	2	0	0	0	0	0	106	1	0	0	0	0	0	0	0	0	0	7	12	0	0	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	193
7:30	0	50	0	0	2	0	0	0	0	0	130	0	0	5	0	0	2	0	0	0	0	20	20	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	231
7:45	3	66	1	0	2	0	0	0	0	0	91	1	0	5	1	0	2	0	0	0	0	36	24	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	233
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8:15	0	44	0	0	0	0	0	0	0	0	44	0	1	1	0	0	1	0	0	0	0	21	23	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	139
8:30	3	38	0	0	2	0	0	0	0	0	61	0	2	1	0	0	3	0	0	0	0	38	34	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	186
8:45	0	46	0	0	3	0	0	0	0	0	68	1	1	7	0	0	4	0	0	0	0	33	36	0	5	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	208
9:00	0	47	0	0	0	0	0	0	0	0	64	2	1	6	0	0	3	0	0	0	0	36	42	0	1	4	0	0	2	0	0	1	0	0	0	0	0	0	0	0	209
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Period2																																									
15:15	0	43	1	0	1	0	0	0	0	0	76	3	4	0	0	0	1	0	0	0	1	61	77	0	0	3	0	0	2	0	3	1	0	0	0	0	0	0	0	1	278
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15:45	1	55	0	0	0	0	0	1	0	0	92	3	4	5	0	0	0	0	0	0	3	73	103	0	1	0	0	0	1	0	1	4	1	0	0	0	0	0	0	2	350
16:00	1	50	0	0	0	0	0	0	0	0	97	3	1	3	0	0	3	0	0	0	1	74	99	0	0	0	0	0	3	0	1	5	0	0	0	0	0	0	0	0	341
16:15	0	40	0	0	0	0	0	0	0	0	82	3	4	2	0	0	1	0	0	0	1	76	124	0	0	1	0	0	1	0	2	9	0	0	0	0	0	0	0	0	346
16:30	0	39	0	0	1	0	0	0	0	0	74	2	2	2	0	0	2	0	0	0	0	77	101	0	0	3	0	0	1	0	1	8	1	0	0	0	0	0	0	0	314
16:45	2	42	0	0	0	0	0	0	0	0	81	1	2	1	0	0	3	0	0	0	1	70	124	0	0	1	0	0	3	0	0	2	1	0	0	0	0	0	0	0	334
17:00	1	47	0	0	0	0	0	0	0	2	66	4	2	1	0	0	0	0	0	0	1	79	105	0	0	3	0	0	1	2	3	4	2	0	1	0	0	0	0	0	324
17:15	2	47	0	0	0	0	0	0	0	0	80	5	2	1	0	0	1	0	0	0	1	68	118	0	0	3	0	0	2	0	1	5	0	0	0	0	0	0	0	0	336
17:30	0	33	0	0	0	0	0	0	0	0	65	2	6	0	0	0	0	0	0	0	1	78	128	0	0	2	0	0	3	0	2	7	1	0	0	0	0	0	0	0	328
17:45	1	34	0	0	0	0	0	0	0	0	68	3	1	1	0	0	1	0	0	0	1	63	120	0	1	1	0	0	1	0	3	6	2	0	0	0	0	0	0	0	307
18:00	4	28	0	0	0	0	0	0	0	0	79	5	5	1	0	0	0	0	0	0	1	51	138	0	1	1	0	0	1	0	2	4	1	0	0	0	0	0	0	0	322
18:15	2	35	0	0	0	0	0	0	0	0	65	3	0	2	0	0	2	0	0	0	1	64	115	0	0	3	0	0	0	0	1	2	0	0	0	1	0	0	0	1	297
18:30	0	30	0	0	1	0	0	0	0	0	60	0	2	0	0	0	0	0	0	0	0	41	106	0	0	2	0	0	3	0	0	5	0	0	0	0	0	0	0	0	250
18:45	1	17	0	0	0	0	0	0	0	0	74	3	1	2	0	0	0	0	0	0	1	45	82	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	230
19:00	2	18	0	0	0	0	0	0	0	0	40	0	2	0	0	0	1	0	0	0	0	36	77	0	0	2	0	0	1	0	0	2	0	0	0	0	0	0	0	0	181

Bicycle Count Form

Location: HWY 7A & QUEEN ST - PLAZA DRIVEWAY
Site ID: 0149460540
Count Date: 02/28/2017

Time			APPROACH			
			North	East	South	West
06:00	to	06:15				
06:15	to	06:30				
06:30	to	06:45				
06:45	to	07:00				
07:00	to	07:15				
07:15	to	07:30				
07:30	to	07:45				
07:45	to	08:00				
08:00	to	08:15				
08:15	to	08:30				
08:30	to	08:45				
08:45	to	09:00				
09:00	to	09:15				
09:15	to	09:30				
09:30	to	09:45				
09:45	to	10:00				
10:00	to	10:15				
10:15	to	10:30				
10:30	to	10:45				
10:45	to	11:00				
11:00	to	11:15				
11:15	to	11:30				
11:30	to	11:45				
11:45	to	12:00				
12:00	to	12:15				
12:15	to	12:30				
12:30	to	12:45				
12:45	to	13:00				
13:00	to	13:15				
13:15	to	13:30				
13:30	to	13:45				
13:45	to	14:00				
14:00	to	14:15				
14:15	to	14:30				
14:30	to	14:45				
14:45	to	15:00				
15:00	to	15:15				
15:15	to	15:30				
15:30	to	15:45				
15:45	to	16:00				
16:00	to	16:15				
16:15	to	16:30				
16:30	to	16:45				
16:45	to	17:00				
17:00	to	17:15				
17:15	to	17:30				
17:30	to	17:45				
17:45	to	18:00				
18:00	to	18:15				
18:15	to	18:30				
18:30	to	18:45				
18:45	to	19:00				
19:00	to	19:15				
19:15	to	19:30				
19:30	to	19:45				
19:45	to	20:00				

Turning Movement Count (Morning)

Source: MTO Counts

Intersection Location: Hwy 7 / Scugog Line 6
City: Port Perry
N/S Street: Hwy 7
E/W Street: Scugog Line 6

Period Time: 7:15 am to 8:15 pm
Date: Sep 5, 2018
Controled: Stop on Minor Road
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
7:00 - 7:15																								
7:15 - 7:30	0	0	2	0	2	1	4	0	49	9	8	0	2	1	13	1	18	8	17	1	64	13	0	0
7:30 - 7:45	2	1	2	0	0	0	3	0	44	9	1	0	1	0	5	0	13	4	11	1	65	9	1	0
7:45 - 8:00	0	0	5	0	0	0	4	0	57	10	10	0	3	2	13	0	11	1	9	0	72	12	3	0
8:00 - 8:15	0	0	3	0	0	1	2	0	52	13	6	2	1	1	6	1	12	2	12	2	57	10	0	0
8:15 - 8:30																								
8:30 - 8:45																								
8:45 - 9:00																								
9:00 - 9:15																								
9:15 - 9:30																								
9:30 - 9:45																								
9:45 - 10:00																								
Peak Hour Volume (Veh/h)	2	1	12	0	2	2	13	0	202	41	25	2	7	4	37	2	54	15	49	4	258	44	4	0
Percentage Cars & Trucks	66.7%	33.3%	100.0%	0.0%	50.0%	50.0%	100.0%	0.0%	83.1%	16.9%	92.6%	7.4%	63.6%	36.4%	94.9%	5.1%	78.3%	21.7%	92.5%	7.5%	85.4%	14.6%	100.0%	0.0%

Total Vehicles	3	12	4	13	243	27	11	39	69	53	302	4

Turning Movement Count (Morning)

Source: AE Counts

Intersection Location: Scugog Line 6 / Easy Rd.
City: Port Perry
N/S Street: Easy St.
E/W Street: Scugog Line 6

Period Time: 7:15 am to 8:15 am
Date: Dec 7, 2021
Controled: Stop on Minor Road
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
7:00 - 7:15																								
7:15 - 7:30	2	2	18	0	0	0	0	0	0	0	0	0	0	0	31	0	4	2	4	3	0	0	3	9
7:30 - 7:45	1	0	13	1	0	0	0	0	0	0	0	0	0	0	17	0	7	0	0	0	0	0	1	0
7:45 - 8:00	13	2	13	0	0	0	0	0	0	0	0	0	0	0	28	0	7	1	1	3	0	0	0	1
8:00 - 8:15	5	0	17	1	0	0	0	0	0	0	0	0	0	0	16	0	6	0	7	1	0	0	9	1
8:15 - 8:30																								
8:30 - 8:45																								
8:45 - 9:00																								
9:00 - 9:15																								
9:15 - 9:30																								
9:30 - 9:45																								
9:45 - 10:00																								
Peak Hour Volume (Veh/h)	21	4	61	2	0	0	0	0	0	0	0	0	0	0	92	0	24	3	12	7	0	0	13	11
Percentage Cars & Trucks	84.0%	16.0%	96.8%	3.2%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	100.0%	0.0%	88.9%	11.1%	63.2%	36.8%	#DIV/0!	#DIV/0!	54.2%	45.8%

Total Vehicles	25	63	0	0	0	0	0	92	27	19	0	24

Turning Movement Count (Morning)

Source: AE Counts

Intersection Location: Hwy 7A / Scugog Line 6
City: Port Perry
N/S Street: Hwy 7A
E/W Street: Scugog Line 6

Period Time: 7:15 am to 8:15 am
Date: Dec 7, 2021
Controled: Stop on Minor Road
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
7:00 - 7:15																								
7:15 - 7:30	11	3	0	0	0	0	0	0	19	1	0	0	0	0	0	0	0	0	0	0	96	3	40	0
7:30 - 7:45	9	1	0	0	0	0	0	0	17	4	0	0	0	0	0	0	0	0	0	0	84	5	28	0
7:45 - 8:00	7	2	0	0	4	0	0	0	34	2	0	0	0	0	0	0	0	0	0	0	105	3	36	1
8:00 - 8:15	17	1	0	0	4	0	1	0	23	2	0	0	0	0	0	0	0	0	0	0	79	6	23	0
8:15 - 8:30																								
8:30 - 8:45																								
8:45 - 9:00																								
9:00 - 9:15																								
9:15 - 9:30																								
9:30 - 9:45																								
9:45 - 10:00																								
Peak Hour Volume (Veh/h)	44	7	0	0	8	0	1	0	93	9	0	0	0	0	0	0	0	0	0	0	364	17	127	1
Percentage Cars & Trucks	86.3%	13.7%	#DIV/0!	#DIV/0!	100.0%	0.0%	100.0%	0.0%	91.2%	8.8%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	95.5%	4.5%	99.2%	0.8%

Total Vehicles	51	0	8	1	102	0	0	0	0	0	381	128

Turning Movement Count (Morning)

Source: AE Counts

Intersection Location: Hwy 7A / Queen St / Driveway
City: Port Perry
N/S Street: Queen St
E/W Street: Hwy 7A / Driveway

Period Time: 7:15 am to 8:15 am
Date: Dec 7, 2021
Controled: Traffic Signals
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
7:00 - 7:15																								
7:15 - 7:30	0	0	0	0	0	0	0	0	22	1	15	0	101	2	0	0	1	0	0	0	39	1	0	0
7:30 - 7:45	0	0	0	0	0	0	0	0	18	4	10	0	86	4	0	0	1	0	2	0	30	1	0	0
7:45 - 8:00	0	0	2	0	0	0	0	0	35	1	6	1	104	3	0	0	1	0	1	0	52	0	0	0
8:00 - 8:15	0	0	1	0	0	0	0	0	26	2	10	1	73	5	0	0	0	0	0	0	35	0	0	0
8:15 - 8:30																								
8:30 - 8:45																								
8:45 - 9:00																								
9:00 - 9:15																								
9:15 - 9:30																								
9:30 - 9:45																								
9:45 - 10:00																								
Peak Hour Volume (Veh/h)	0	0	3	0	0	0	0	0	101	8	41	2	364	14	0	0	3	0	3	0	156	2	0	0
Percentage Cars & Trucks	#DIV/0!	#DIV/0!	100.0%	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	92.7%	7.3%	95.3%	4.7%	96.3%	3.7%	#DIV/0!	#DIV/0!	100.0%	0.0%	100.0%	0.0%	98.7%	1.3%	#DIV/0!	#DIV/0!

Total Vehicles	0	3	0	0	109	43	378	0	3	3	158	0

Turning Movement Count (Morning)

Source: MTO Data

Intersection Location: Queen St / Walsh Dr. / Driveway
City: Port Perry
N/S Street: Queen St
E/W Street: Hwy 7A / Driveway

Period Time: 7:30 am to 8:30 am
Date: Feb 28, 2017
Controled: Stop on Minor Road
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
7:00 - 7:15																								
7:15 - 7:30																								
7:30 - 7:45	3	0	0	0	1	0	1	0	63	3	0	0	2	0	0	0	4	0	0	0	30	0	2	0
7:45 - 8:00	4	0	0	0	1	0	4	0	43	1	0	0	1	0	0	0	3	0	1	0	32	1	0	0
8:00 - 8:15	1	0	0	0	2	0	3	0	51	1	0	0	1	0	0	0	2	0	1	0	28	0	1	0
8:15 - 8:30	1	0	0	0	1	0	4	0	33	2	1	0	0	0	0	0	2	0	3	0	31	0	1	0
8:30 - 8:45																								
8:45 - 9:00																								
9:00 - 9:15																								
9:15 - 9:30																								
9:30 - 9:45																								
9:45 - 10:00																								
Peak Hour Volume (Veh/h)	9	0	0	0	5	0	12	0	190	7	1	0	4	0	0	0	11	0	5	0	121	1	4	0
Percentage Cars & Trucks	100.0%	0.0%	#DIV/0!	#DIV/0!	100.0%	0.0%	100.0%	0.0%	96.4%	3.6%	100.0%	0.0%	100.0%	0.0%	#DIV/0!	#DIV/0!	100.0%	0.0%	100.0%	0.0%	99.2%	0.8%	100.0%	0.0%

Total Vehicles	9	0	5	12	197	1	4	0	11	5	122	4

Turning Movement Count (Morning)

Source: AE Counts

Intersection Location: Reach St / N Port Rd
City: Port Perry
N/S Street: N Port Rd
E/W Street: Reach St

Period Time: 7:30 am to 8:30 am
Date: Feb 10, 2022
Controled: Stop on Minor Road
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
7:00 - 7:15																								
7:15 - 7:30																								
7:30 - 7:45	0	0	27	0	5	0	0	3	0	0	1	0	15	1	23	0	0	0	0	0	0	0	0	0
7:45 - 8:00	0	0	51	2	5	0	6	1	0	0	4	3	16	1	73	2	0	0	0	0	0	0	0	0
8:00 - 8:15	0	0	42	3	5	0	4	0	0	0	5	1	14	0	68	6	0	0	0	0	0	0	0	0
8:15 - 8:30	0	0	54	1	7	0	5	2	0	0	7	0	17	1	51	2	0	0	0	0	0	0	0	0
8:30 - 8:45																								
8:45 - 9:00																								
9:00 - 9:15																								
9:15 - 9:30																								
9:30 - 9:45																								
9:45 - 10:00																								
Peak Hour Volume (Veh/h)	0	0	174	6	22	0	15	6	0	0	17	4	62	3	215	10	0	0	0	0	0	0	0	0
Percentage Cars & Trucks	#DIV/0!	#DIV/0!	96.7%	3.3%	100.0%	0.0%	71.4%	28.6%	#DIV/0!	#DIV/0!	81.0%	19.0%	95.4%	4.6%	95.6%	4.4%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Total Vehicles	0	180	22	21	0	21	65	225	0	0	0	0

Turning Movement Count (Afternoon)

Source: MTO Counts

Intersection Location: Hwy 7 / Scugog Line 6
City: Port Perry
N/S Street: Hwy 7
E/W Street: Scugog Line 6

Period Time: 4:00 pm to 5:00 pm
Date: Sep 5, 2018
Controled: Stop on Minor Road
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
3:00 - 3:15																								
3:15 - 3:30																								
3:30 - 3:45																								
3:45 - 4:00																								
4:00 - 4:15	1	0	9	1	4	1	1	0	74	10	4	3	23	1	11	0	33	4	17	2	54	8	2	0
4:15 - 4:30	4	0	9	0	1	0	0	1	77	9	1	0	5	1	8	0	15	0	9	4	70	12	1	0
4:30 - 4:45	1	0	8	0	5	0	1	0	67	13	1	1	10	0	5	0	30	4	14	2	60	4	1	0
4:45 - 5:00	1	0	9	0	3	0	1	1	82	14	1	0	7	0	6	0	16	2	15	2	63	3	2	0
5:00 - 5:15																								
5:15 - 5:30																								
5:30 - 5:45																								
5:45 - 6:00																								
Peak Hour Volume (Veh/h)	7	0	35	1	13	1	3	2	300	46	7	4	45	2	30	0	94	10	55	10	247	27	6	0
Percentage Cars & Trucks	100.0%	0.0%	97.2%	2.8%	92.9%	7.1%	60.0%	40.0%	86.7%	13.3%	63.6%	36.4%	95.7%	4.3%	100.0%	0.0%	90.4%	9.6%	84.6%	15.4%	90.1%	9.9%	100.0%	0.0%

Total Vehicles	7	36	14	5	346	11	47	30	104	65	274	6

Turning Movement Count (Afternoon)

Source: AE Counts

Intersection Location: Scugog Line 6 / Easy Rd.
City: Port Perry
N/S Street: Easy Rd.
E/W Street: Scugog Line 6

Period Time: 4:00 pm to 5:00 pm
Date: Dec 7, 2021
Controled: Stop on Minor Road
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
3:00 - 3:15																								
3:15 - 3:30																								
3:30 - 3:45																								
3:45 - 4:00																								
4:00 - 4:15	1	0	27	0	0	0	0	0	0	0	0	0	0	0	47	2	4	1	11	0	0	0	11	3
4:15 - 4:30	4	3	26	0	0	0	0	0	0	0	0	0	0	0	28	2	2	3	6	1	0	0	6	0
4:30 - 4:45	3	1	25	1	0	0	0	0	0	0	0	0	0	0	37	1	2	1	11	1	0	0	6	0
4:45 - 5:00	1	4	31	0	0	0	0	0	0	0	0	0	0	0	20	0	5	4	9	0	0	0	6	0
5:00 - 5:15																								
5:15 - 5:30																								
5:30 - 5:45																								
5:45 - 6:00																								
Peak Hour Volume (Veh/h)	9	8	109	1	0	0	0	0	0	0	0	0	0	0	132	5	13	9	37	2	0	0	29	3
Percentage Cars & Trucks	52.9%	47.1%	99.1%	0.9%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	96.4%	3.6%	59.1%	40.9%	94.9%	5.1%	#DIV/0!	#DIV/0!	90.6%	9.4%

Total Vehicles	17	110	0	0	0	0	0	137	22	39	0	32

Turning Movement Count (Afternoon)

Source: AE Counts

Intersection Location: Hwy 7A / Scugog Line 6
City: Port Perry
N/S Street: Hwy 7A
E/W Street: Scugog Line 6

Period Time: 4:00 pm to 5:00 pm
Date: Dec 7, 2021
Controled: Stop on Minor Road
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
3:00 - 3:15																								
3:15 - 3:30																								
3:30 - 3:45																								
3:45 - 4:00																								
4:00 - 4:15	19	0	0	0	3	0	2	0	70	1	0	0	0	0	0	0	0	0	0	0	138	7	24	4
4:15 - 4:30	16	1	0	0	0	0	1	0	59	0	0	0	0	0	0	0	0	0	0	0	122	4	14	2
4:30 - 4:45	18	1	0	0	2	1	0	0	69	1	0	0	0	0	0	0	0	0	0	0	120	3	18	2
4:45 - 5:00	15	0	0	0	1	0	1	0	82	1	0	0	0	0	0	0	0	0	0	0	114	3	11	5
5:00 - 5:15																								
5:15 - 5:30																								
5:30 - 5:45																								
5:45 - 6:00																								
Peak Hour Volume (Veh/h)	68	2	0	0	6	1	4	0	280	3	0	0	0	0	0	0	0	0	0	0	494	17	67	13
Percentage Cars & Trucks	97.1%	2.9%	#DIV/0!	#DIV/0!	85.7%	14.3%	100.0%	0.0%	98.9%	1.1%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	96.7%	3.3%	83.8%	16.3%

Total Vehicles	70	0	7	4	283	0	0	0	0	0	511	80

Turning Movement Count (Afternoon)

Source: AE Counts

Intersection Location: Hwy 7A / Queen St / Driveway
City: Port Perry
N/S Street: Queen St
E/W Street: Hwy 7A / Driveway

Period Time: 4:00 pm to 5:00 pm
Date: Dec 7, 2021
Controled: Traffic Signals
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
3:00 - 3:15																								
3:15 - 3:30																								
3:30 - 3:45																								
3:45 - 4:00																								
4:00 - 4:15	3	0	13	0	1	0	0	0	59	1	16	0	83	6	4	0	1	0	2	0	78	3	0	0
4:15 - 4:30	1	0	5	0	0	0	1	0	65	0	13	0	92	4	6	0	1	0	1	0	46	3	0	0
4:30 - 4:45	0	0	7	0	0	0	1	0	64	1	17	1	75	4	2	0	1	0	0	0	68	1	0	0
4:45 - 5:00	0	0	10	0	0	0	0	0	71	1	18	0	83	5	1	1	1	0	8	0	48	1	0	0
5:00 - 5:15																								
5:15 - 5:30																								
5:30 - 5:45																								
5:45 - 6:00																								
Peak Hour Volume (Veh/h)	4	0	35	0	1	0	2	0	259	3	64	1	333	19	13	1	4	0	11	0	240	8	0	0
Percentage Cars & Trucks	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	98.9%	1.1%	98.5%	1.5%	94.6%	5.4%	92.9%	7.1%	100.0%	0.0%	100.0%	0.0%	96.8%	3.2%	#DIV/0!	#DIV/0!

Total Vehicles	4	35	1	2	262	65	352	14	4	11	248	0

Turning Movement Count (Afternoon)

Source: MTO Data

Intersection Location: Queen St / Walsh Dr. / Driveway
City: Port Perry
N/S Street: Queen St
E/W Street: Hwy 7A / Driveway

Period Time: 3:00 pm to 4:00 pm
Date: Feb 28, 2017
Controled: Stop on Minor Road
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
3:00 - 3:15	1	0	0	0	1	0	1	0	43	0	0	0	0	0	0	0	0	0	1	0	71	0	0	0
3:15 - 3:30	1	0	0	0	1	0	1	0	48	1	2	0	1	0	0	0	5	0	4	0	60	2	0	0
3:30 - 3:45	1	0	0	0	3	0	1	0	54	1	0	0	1	0	0	0	2	0	5	0	65	0	3	0
3:45 - 4:00	2	0	0	0	2	0	1	0	45	0	3	0	0	0	0	0	3	0	2	0	80	1	0	0
4:00 - 4:15																								
4:15 - 4:30																								
4:30 - 4:45																								
4:45 - 5:00																								
5:00 - 5:15																								
5:15 - 5:30																								
5:30 - 5:45																								
5:45 - 6:00																								
Peak Hour Volume (Veh/h)	5	0	0	0	7	0	4	0	190	2	5	0	2	0	0	0	10	0	12	0	276	3	3	0
Percentage Cars & Trucks	100.0%	0.0%	#DIV/0!	#DIV/0!	100.0%	0.0%	100.0%	0.0%	99.0%	1.0%	100.0%	0.0%	100.0%	0.0%	#DIV/0!	#DIV/0!	100.0%	0.0%	100.0%	0.0%	98.9%	1.1%	100.0%	0.0%

Total Vehicles	5	0	7	4	192	5	2	0	10	12	279	3

Turning Movement Count (Afternoon)

Source: AE Counts

Intersection Location: Reach St / N Port Rd
City: Port Perry
N/S Street: N Port Rd
E/W Street: Reach St

Period Time: 4:00 pm to 5:00 pm
Date: Feb 10, 2022
Controled: Stop on Minor Road
Project: 2210-21

Movement / Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
3:00 - 3:15																								
3:15 - 3:30																								
3:30 - 3:45																								
3:45 - 4:00																								
4:00 - 4:15	0	0	82	1	8	1	9	2	0	0	22	0	7	3	76	3	0	0	0	0	0	0	0	0
4:15 - 4:30	0	0	98	0	8	2	9	1	0	0	20	0	4	2	63	1	0	0	0	0	0	0	0	0
4:30 - 4:45	0	0	73	3	8	2	10	2	0	0	21	1	4	1	70	1	0	0	0	0	0	0	0	0
4:45 - 5:00	0	0	86	4	8	3	6	0	0	0	14	0	7	0	55	0	0	0	0	0	0	0	0	0
5:00 - 5:15																								
5:15 - 5:30																								
5:30 - 5:45																								
5:45 - 6:00																								
Peak Hour Volume (Veh/h)	0	0	339	8	32	8	34	5	0	0	77	1	22	6	264	5	0	0	0	0	0	0	0	0
Percentage Cars & Trucks	#DIV/0!	#DIV/0!	97.7%	2.3%	80.0%	20.0%	87.2%	12.8%	#DIV/0!	#DIV/0!	98.7%	1.3%	78.6%	21.4%	98.1%	1.9%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Total Vehicles	0	347	40	39	0	78	28	269	0	0	0	0

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Thornhill, ON L3T 4T5

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File Name : Scugog Line 6 at Hwy 7
Site Code : 00000000
Start Date : 11/20/2021

Groups Printed- Cars - Trucks - Heavys - Cyclists

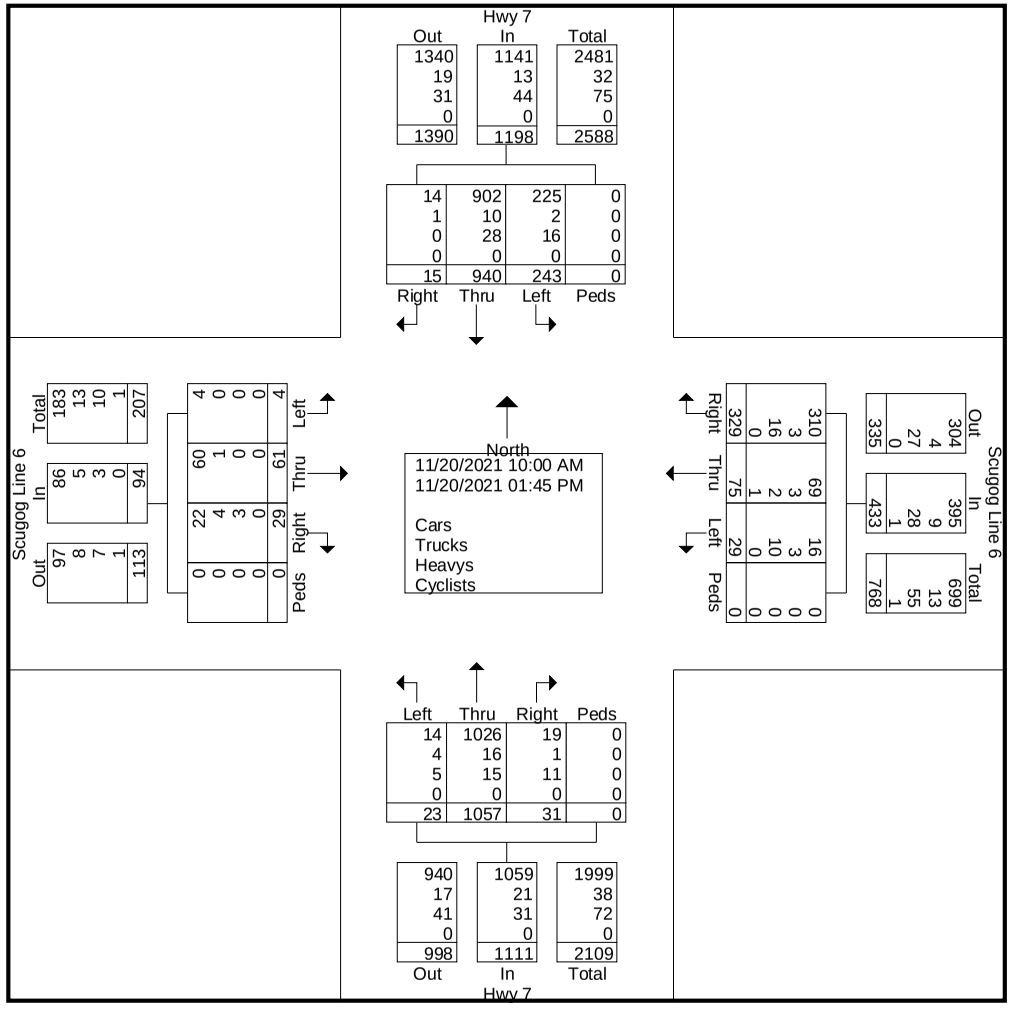
	Hwy 7 Southbound					Scugog Line 6 Westbound					Hwy 7 Northbound					Scugog Line 6 Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:00 AM	0	50	8	0	58	22	4	2	0	28	1	62	0	0	63	1	2	0	0	3	152
10:15 AM	1	57	21	0	79	29	4	0	0	33	0	71	1	0	72	2	4	0	0	6	190
10:30 AM	0	55	18	0	73	30	4	3	0	37	2	75	1	0	78	0	2	0	0	2	190
10:45 AM	0	75	22	0	97	16	5	0	0	21	2	68	2	0	72	1	2	0	0	3	193
Total	1	237	69	0	307	97	17	5	0	119	5	276	4	0	285	4	10	0	0	14	725
11:00 AM	0	53	17	0	70	22	9	1	0	32	1	68	0	0	69	1	2	0	0	3	174
11:15 AM	1	53	11	0	65	20	4	1	0	25	2	69	2	0	73	2	5	0	0	7	170
11:30 AM	1	45	5	0	51	17	3	6	0	26	3	59	2	0	64	4	7	0	0	11	152
11:45 AM	2	58	18	0	78	16	9	3	0	28	2	58	0	0	60	0	2	2	0	4	170
Total	4	209	51	0	264	75	25	11	0	111	8	254	4	0	266	7	16	2	0	25	666
12:00 PM	2	53	15	0	70	21	4	4	0	29	1	68	2	0	71	2	1	0	0	3	173
12:15 PM	2	59	18	0	79	20	3	1	0	24	1	73	2	0	76	2	5	1	0	8	187
12:30 PM	1	73	9	0	83	20	3	2	0	25	4	61	1	0	66	2	6	1	0	9	183
12:45 PM	1	62	23	0	86	18	5	0	0	23	3	69	1	0	73	3	7	0	0	10	192
Total	6	247	65	0	318	79	15	7	0	101	9	271	6	0	286	9	19	2	0	30	735
01:00 PM	0	61	20	0	81	16	7	2	0	25	2	78	2	0	82	2	3	0	0	5	193
01:15 PM	0	48	13	0	61	17	4	1	0	22	3	54	3	0	60	4	1	0	0	5	148
01:30 PM	3	59	11	0	73	22	4	2	0	28	1	62	2	0	65	3	5	0	0	8	174
01:45 PM	1	79	14	0	94	23	3	1	0	27	3	62	2	0	67	0	7	0	0	7	195
Total	4	247	58	0	309	78	18	6	0	102	9	256	9	0	274	9	16	0	0	25	710
Grand Total	15	940	243	0	1198	329	75	29	0	433	31	1057	23	0	1111	29	61	4	0	94	2836
Apprch %	1.3	78.5	20.3	0		76	17.3	6.7	0		2.8	95.1	2.1	0		30.9	64.9	4.3	0		
Total %	0.5	33.1	8.6	0	42.2	11.6	2.6	1	0	15.3	1.1	37.3	0.8	0	39.2	1	2.2	0.1	0	3.3	
Cars	14	902	225	0	1141	310	69	16	0	395	19	1026	14	0	1059	22	60	4	0	86	2681
% Cars	93.3	96	92.6	0	95.2	94.2	92	55.2	0	91.2	61.3	97.1	60.9	0	95.3	75.9	98.4	100	0	91.5	94.5
Trucks	1	10	2	0	13	3	3	3	0	9	1	16	4	0	21	4	1	0	0	5	48
% Trucks	6.7	1.1	0.8	0	1.1	0.9	4	10.3	0	2.1	3.2	1.5	17.4	0	1.9	13.8	1.6	0	0	5.3	1.7
Heavys	0	28	16	0	44	16	2	10	0	28	11	15	5	0	31	3	0	0	0	3	106
% Heavys	0	3	6.6	0	3.7	4.9	2.7	34.5	0	6.5	35.5	1.4	21.7	0	2.8	10.3	0	0	0	3.2	3.7
Cyclists	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Cyclists	0	0	0	0	0	0	1.3	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0

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File Name : Scugog Line 6 at Hwy 7
Site Code : 00000000
Start Date : 11/20/2021
Page No : 2



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Thornhill, ON L3T 4T5

"we always count...never estimated"

File Name : Scugog Line 6 at Hwy 7
Site Code : 00000000
Start Date : 11/20/2021

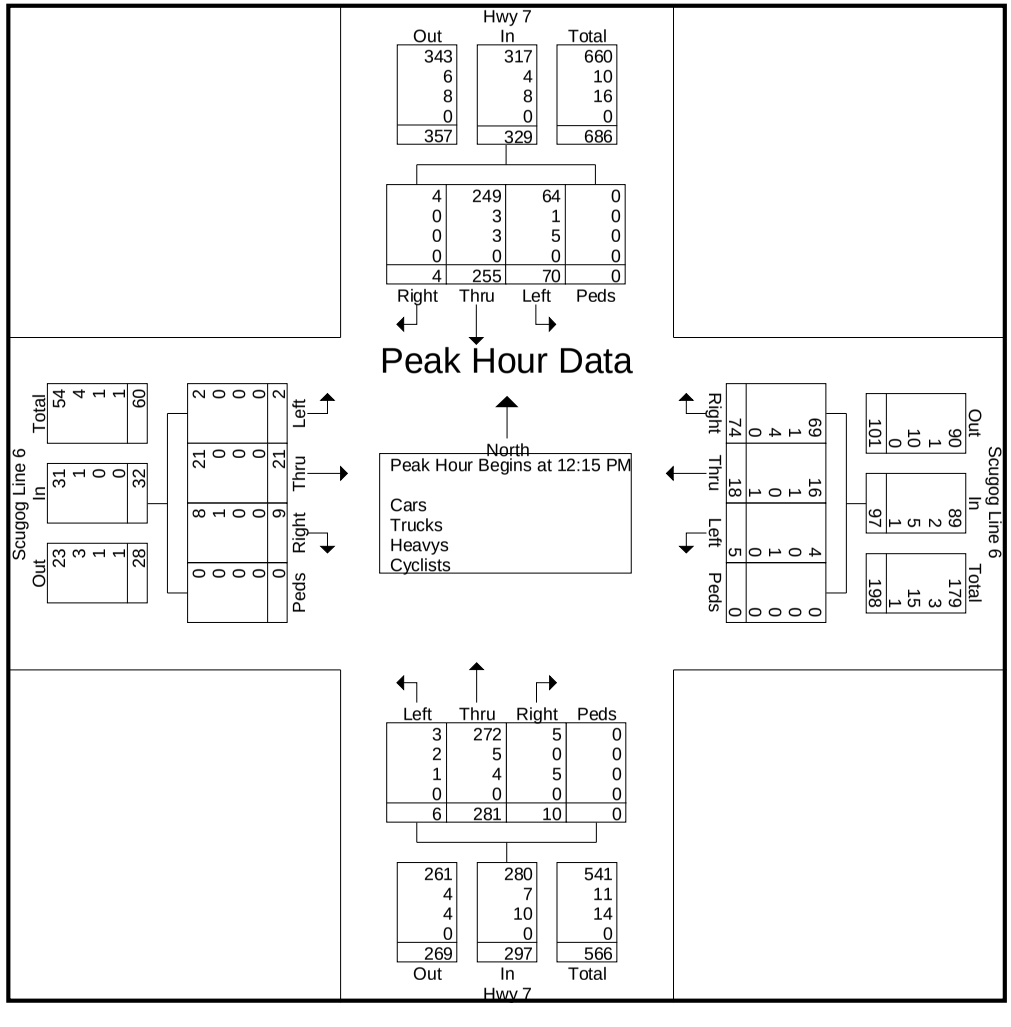
	Hwy 7 Southbound					Scugog Line 6 Westbound					Hwy 7 Northbound					Scugog Line 6 Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15 PM																					
12:15 PM	**2**	59	18	0	79	**20**	3	1	0	24	1	73	**2**	0	76	2	5	**1**	0	8	187
12:30 PM	1	**73**	9	0	83	20	3	**2**	0	**25**	**4**	61	1	0	66	2	6	1	0	9	183
12:45 PM	1	62	**23**	0	**86**	18	5	0	0	23	3	69	1	0	73	**3**	**7**	0	0	**10**	192
01:00 PM	0	61	20	0	81	16	**7**	2	0	25	2	**78**	2	0	**82**	2	3	0	0	5	**193**
Total Volume	4	255	70	0	329	74	18	5	0	97	10	281	6	0	297	9	21	2	0	32	755
% App. Total	1.2	77.5	21.3	0		76.3	18.6	5.2	0		3.4	94.6	2	0		28.1	65.6	6.2	0		
PHF	.500	.873	.761	.000	.956	.925	.643	.625	.000	.970	.625	.901	.750	.000	.905	.750	.750	.500	.000	.800	.978
Cars	4	249	64	0	317	69	16	4	0	89	5	272	3	0	280	8	21	2	0	31	717
% Cars	100	97.6	91.4	0	96.4	93.2	88.9	80.0	0	91.8	50.0	96.8	50.0	0	94.3	88.9	100	100	0	96.9	95.0
Trucks	0	3	1	0	4	1	1	0	0	2	0	5	2	0	7	1	0	0	0	1	14
% Trucks	0	1.2	1.4	0	1.2	1.4	5.6	0	0	2.1	0	1.8	33.3	0	2.4	11.1	0	0	0	3.1	1.9
Heavys	0	3	5	0	8	4	0	1	0	5	5	4	1	0	10	0	0	0	0	0	23
% Heavys	0	1.2	7.1	0	2.4	5.4	0	20.0	0	5.2	50.0	1.4	16.7	0	3.4	0	0	0	0	0	3.0
Cyclists	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Cyclists	0	0	0	0	0	0	5.6	0	0	1.0	0	0	0	0	0	0	0	0	0	0	0.1

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File Name : Scugog Line 6 at Hwy 7
Site Code : 00000000
Start Date : 11/20/2021
Page No : 4

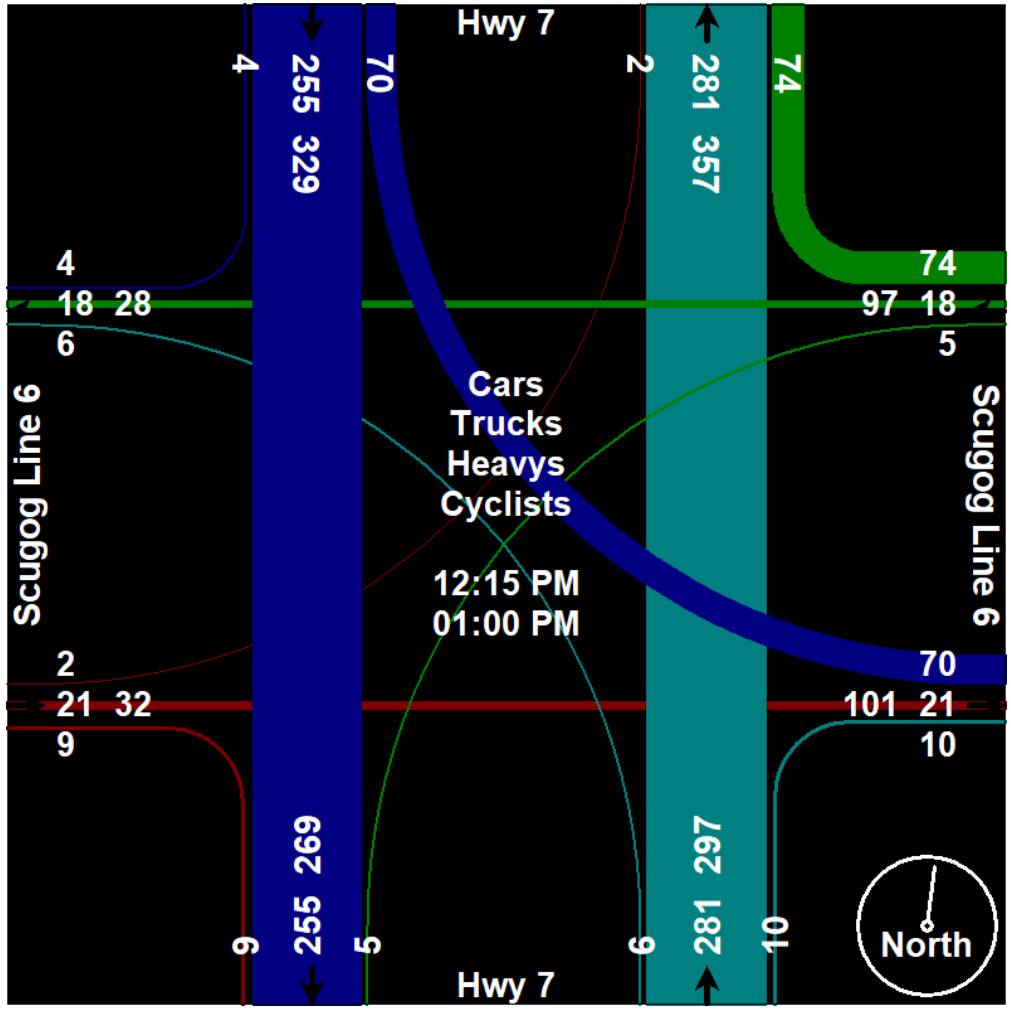


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File Name : Scugog Line 6 at Hwy 7
Site Code : 00000000
Start Date : 11/20/2021



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Thornhill, ON L3T 4T5

"we always count...never estimated"

File Name : Scugog Line 6 at Hwy 7A
Site Code : 00000000
Start Date : 11/20/2021

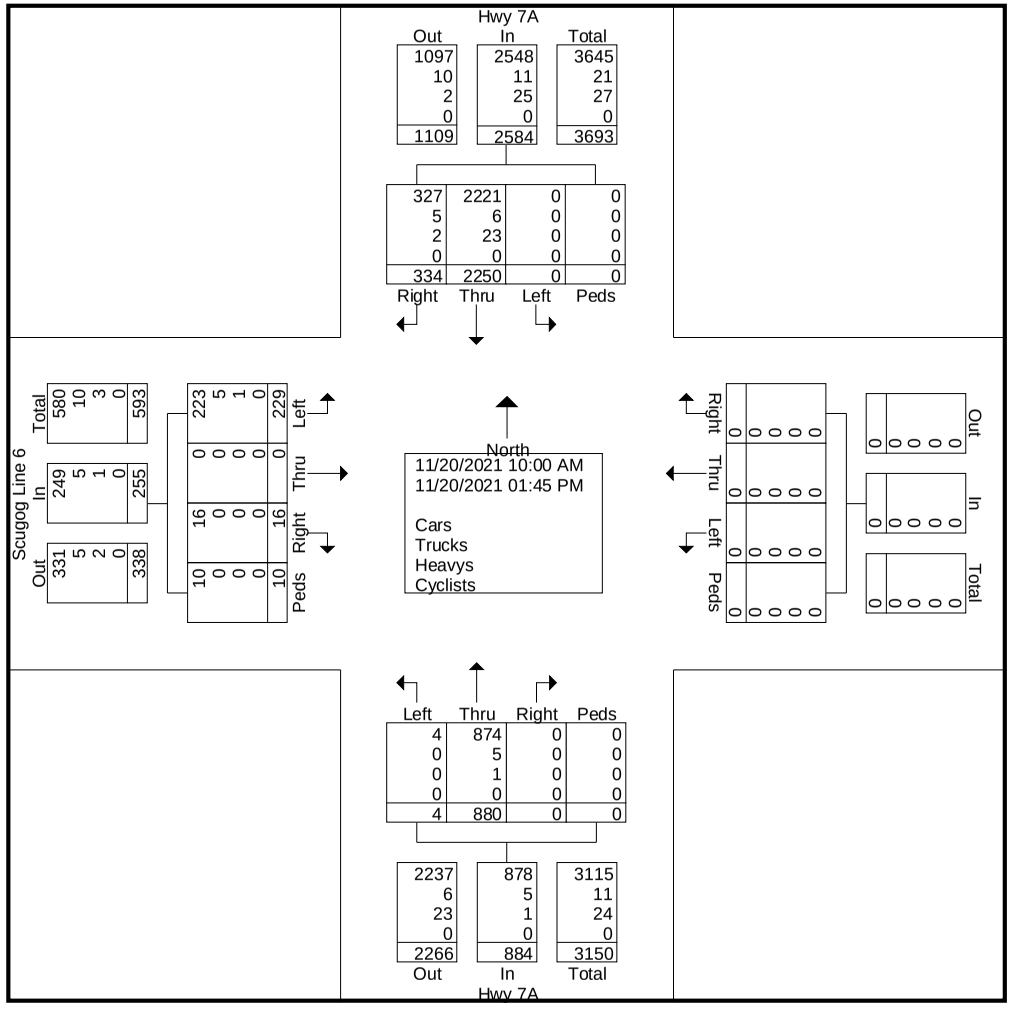
Groups Printed- Cars - Trucks - Heavys - Cyclists

	Hwy 7A Southbound					Westbound					Hwy 7A Northbound					Scugog Line 6 Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:00 AM	29	99	0	0	128	0	0	0	0	0	0	39	0	0	39	1	0	13	0	14	181
10:15 AM	29	131	0	0	160	0	0	0	0	0	0	45	0	0	45	2	0	16	0	18	223
10:30 AM	34	132	0	0	166	0	0	0	0	0	0	57	1	0	58	1	0	16	0	17	241
10:45 AM	16	145	0	0	161	0	0	0	0	0	0	54	0	0	54	1	0	20	0	21	236
Total	108	507	0	0	615	0	0	0	0	0	0	195	1	0	196	5	0	65	0	70	881
11:00 AM	24	133	0	0	157	0	0	0	0	0	0	40	1	0	41	1	0	18	0	19	217
11:15 AM	22	134	0	0	156	0	0	0	0	0	0	54	0	0	54	1	0	12	0	13	223
11:30 AM	15	146	0	0	161	0	0	0	0	0	0	46	0	0	46	1	0	7	0	8	215
11:45 AM	13	145	0	0	158	0	0	0	0	0	0	56	0	0	56	1	0	6	1	8	222
Total	74	558	0	0	632	0	0	0	0	0	0	196	1	0	197	4	0	43	1	48	877
12:00 PM	17	132	0	0	149	0	0	0	0	0	0	65	0	0	65	2	0	20	4	26	240
12:15 PM	19	126	0	0	145	0	0	0	0	0	0	53	0	0	53	1	0	18	0	19	217
12:30 PM	14	141	0	0	155	0	0	0	0	0	0	54	2	0	56	0	0	16	1	17	228
12:45 PM	15	168	0	0	183	0	0	0	0	0	0	63	0	0	63	2	0	17	0	19	265
Total	65	567	0	0	632	0	0	0	0	0	0	235	2	0	237	5	0	71	5	81	950
01:00 PM	18	153	0	0	171	0	0	0	0	0	0	54	0	0	54	1	0	15	2	18	243
01:15 PM	19	159	0	0	178	0	0	0	0	0	0	61	0	0	61	0	0	9	2	11	250
01:30 PM	20	152	0	0	172	0	0	0	0	0	0	74	0	0	74	0	0	9	0	9	255
01:45 PM	30	154	0	0	184	0	0	0	0	0	0	65	0	0	65	1	0	17	0	18	267
Total	87	618	0	0	705	0	0	0	0	0	0	254	0	0	254	2	0	50	4	56	1015
Grand Total	334	2250	0	0	2584	0	0	0	0	0	0	880	4	0	884	16	0	229	10	255	3723
Apprch %	12.9	87.1	0	0		0	0	0	0		0	99.5	0.5	0		6.3	0	89.8	3.9		
Total %	9	60.4	0	0	69.4	0	0	0	0	0	0	23.6	0.1	0	23.7	0.4	0	6.2	0.3	6.8	
Cars	327	2221	0	0	2548	0	0	0	0	0	0	874	4	0	878	16	0	223	10	249	3675
% Cars	97.9	98.7	0	0	98.6	0	0	0	0	0	0	99.3	100	0	99.3	100	0	97.4	100	97.6	98.7
Trucks	5	6	0	0	11	0	0	0	0	0	0	5	0	0	5	0	0	5	0	5	21
% Trucks	1.5	0.3	0	0	0.4	0	0	0	0	0	0	0.6	0	0	0.6	0	0	2.2	0	2	0.6
Heavys	2	23	0	0	25	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	27
% Heavys	0.6	1	0	0	1	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0.4	0	0.4	0.7
Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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File Name : Scugog Line 6 at Hwy 7A
Site Code : 00000000
Start Date : 11/20/2021
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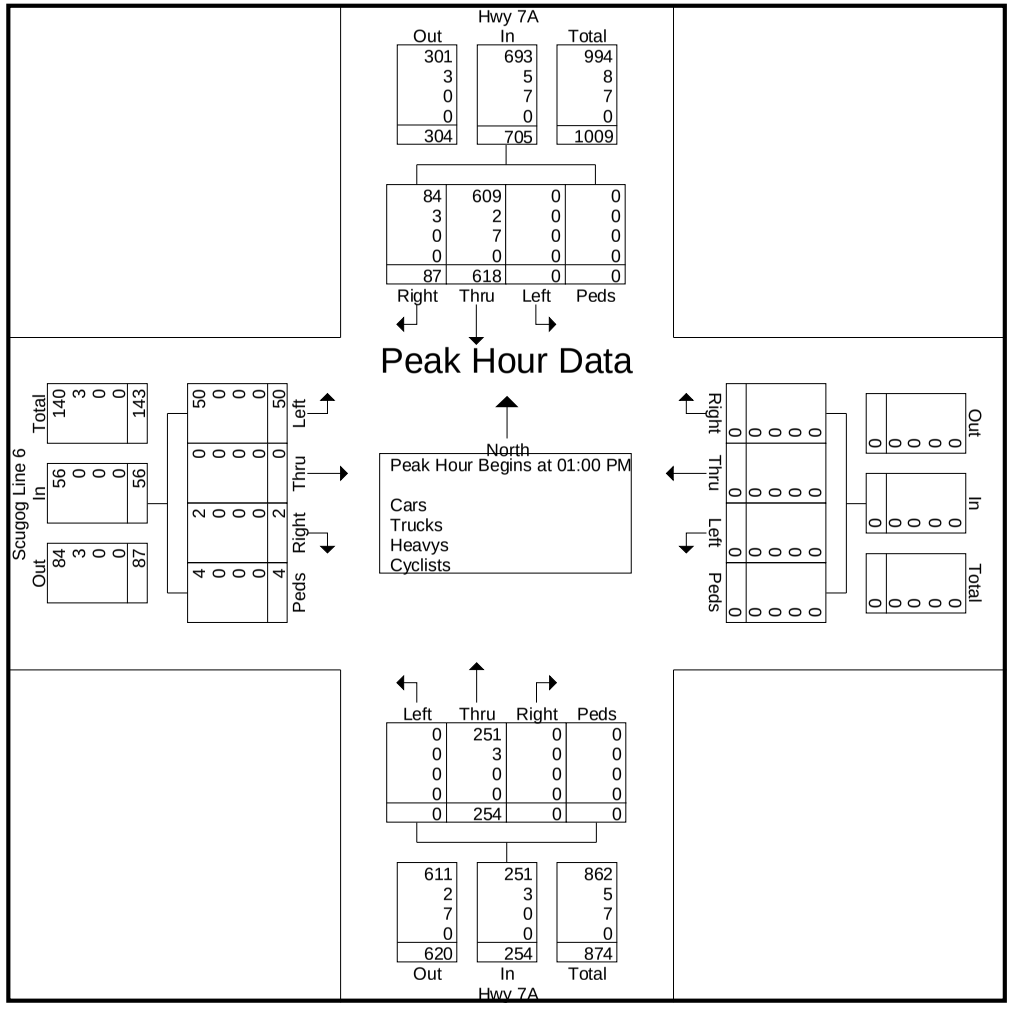
File Name : Scugog Line 6 at Hwy 7A
Site Code : 00000000
Start Date : 11/20/2021

	Hwy 7A Southbound					Westbound					Hwy 7A Northbound					Scugog Line 6 Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	18	153	0	0	171	0	0	0	0	0	0	54	0	0	54	**1**	0	15	**2**	**18**	243
01:15 PM	19	**159**	0	0	178	0	0	0	0	0	0	61	0	0	61	0	0	9	2	11	250
01:30 PM	20	152	0	0	172	0	0	0	0	0	0	**74**	0	0	**74**	0	0	9	0	9	255
01:45 PM	**30**	154	0	0	**184**	0	0	0	0	0	0	65	0	0	65	1	0	**17**	0	18	**267**
Total Volume	87	618	0	0	705	0	0	0	0	0	0	254	0	0	254	2	0	50	4	56	1015
% App. Total	12.3	87.7	0	0		0	0	0	0		0	100	0	0		3.6	0	89.3	7.1		
PHF	.725	.972	.000	.000	.958	.000	.000	.000	.000	.000	.000	.858	.000	.000	.858	.500	.000	.735	.500	.778	.950
Cars	84	609	0	0	693	0	0	0	0	0	0	251	0	0	251	2	0	50	4	56	1000
% Cars	96.6	98.5	0	0	98.3	0	0	0	0	0	0	98.8	0	0	98.8	100	0	100	100	100	98.5
Trucks	3	2	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8
% Trucks	3.4	0.3	0	0	0.7	0	0	0	0	0	0	1.2	0	0	1.2	0	0	0	0	0	0.8
Heavys	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
% Heavys	0	1.1	0	0	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7
Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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File Name : Scugog Line 6 at Hwy 7A
Site Code : 00000000
Start Date : 11/20/2021
Page No : 4

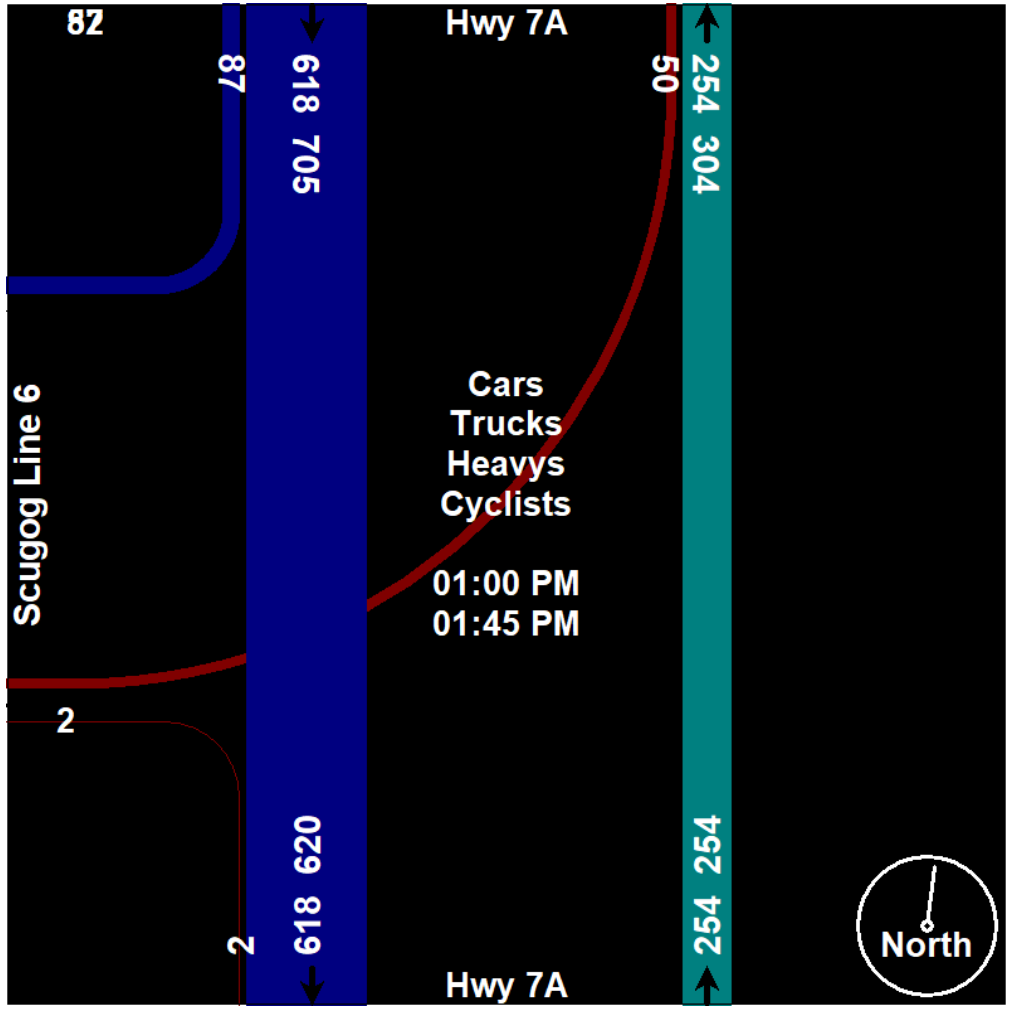


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File Name : Scugog Line 6 at Hwy 7A
Site Code : 00000000
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File Name : Scugog Line 6 at Easy St
Site Code : 00000000
Start Date : 11/20/2021

Groups Printed- Cars - Trucks - Heavys - Cyclists

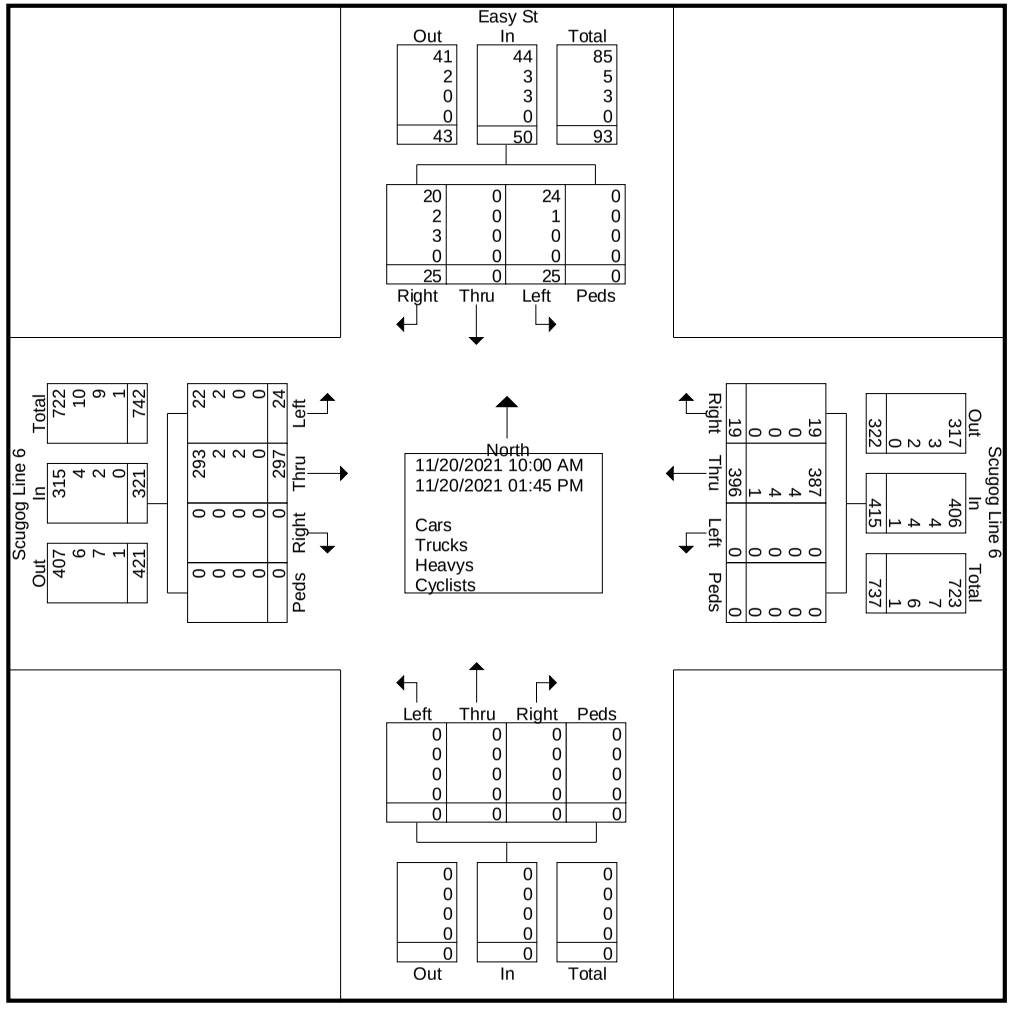
	Easy St Southbound					Scugog Line 6 Westbound					Northbound					Scugog Line 6 Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:00 AM	1	0	3	0	4	2	28	0	0	30	0	0	0	0	0	0	12	0	0	12	46
10:15 AM	2	0	1	0	3	1	29	0	0	30	0	0	0	0	0	0	21	1	0	22	55
10:30 AM	0	0	0	0	0	0	39	0	0	39	0	0	0	0	0	0	23	1	0	24	63
10:45 AM	3	0	1	0	4	2	16	0	0	18	0	0	0	0	0	0	24	0	0	24	46
Total	6	0	5	0	11	5	112	0	0	117	0	0	0	0	0	0	80	2	0	82	210
11:00 AM	2	0	2	0	4	2	32	0	0	34	0	0	0	0	0	0	18	0	0	18	56
11:15 AM	2	0	1	0	3	2	22	0	0	24	0	0	0	0	0	0	14	4	0	18	45
11:30 AM	6	0	1	0	7	1	20	0	0	21	0	0	0	0	0	0	15	3	0	18	46
11:45 AM	1	0	0	0	1	1	22	0	0	23	0	0	0	0	0	0	18	3	0	21	45
Total	11	0	4	0	15	6	96	0	0	102	0	0	0	0	0	0	65	10	0	75	192
12:00 PM	1	0	6	0	7	3	26	0	0	29	0	0	0	0	0	0	18	1	0	19	55
12:15 PM	3	0	0	0	3	2	20	0	0	22	0	0	0	0	0	0	19	0	0	19	44
12:30 PM	2	0	1	0	3	0	21	0	0	21	0	0	0	0	0	0	19	3	0	22	46
12:45 PM	0	0	2	0	2	0	24	0	0	24	0	0	0	0	0	0	26	4	0	30	56
Total	6	0	9	0	15	5	91	0	0	96	0	0	0	0	0	0	82	8	0	90	201
01:00 PM	1	0	2	0	3	0	24	0	0	24	0	0	0	0	0	0	22	0	0	22	49
01:15 PM	0	0	1	0	1	2	19	0	0	21	0	0	0	0	0	0	12	3	0	15	37
01:30 PM	1	0	1	0	2	0	26	0	0	26	0	0	0	0	0	0	15	1	0	16	44
01:45 PM	0	0	3	0	3	1	28	0	0	29	0	0	0	0	0	0	21	0	0	21	53
Total	2	0	7	0	9	3	97	0	0	100	0	0	0	0	0	0	70	4	0	74	183
Grand Total	25	0	25	0	50	19	396	0	0	415	0	0	0	0	0	0	297	24	0	321	786
Apprch %	50	0	50	0		4.6	95.4	0	0		0	0	0	0		0	92.5	7.5	0		
Total %	3.2	0	3.2	0	6.4	2.4	50.4	0	0	52.8	0	0	0	0	0	0	37.8	3.1	0	40.8	
Cars	20	0	24	0	44	19	387	0	0	406	0	0	0	0	0	0	293	22	0	315	765
% Cars	80	0	96	0	88	100	97.7	0	0	97.8	0	0	0	0	0	0	98.7	91.7	0	98.1	97.3
Trucks	2	0	1	0	3	0	4	0	0	4	0	0	0	0	0	0	2	2	0	4	11
% Trucks	8	0	4	0	6	0	1	0	0	1	0	0	0	0	0	0	0.7	8.3	0	1.2	1.4
Heavys	3	0	0	0	3	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	9
% Heavys	12	0	0	0	6	0	1	0	0	1	0	0	0	0	0	0	0.7	0	0	0.6	1.1
Cyclists	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Cyclists	0	0	0	0	0	0	0.3	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0.1

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File Name : Scugog Line 6 at Easy St
Site Code : 00000000
Start Date : 11/20/2021
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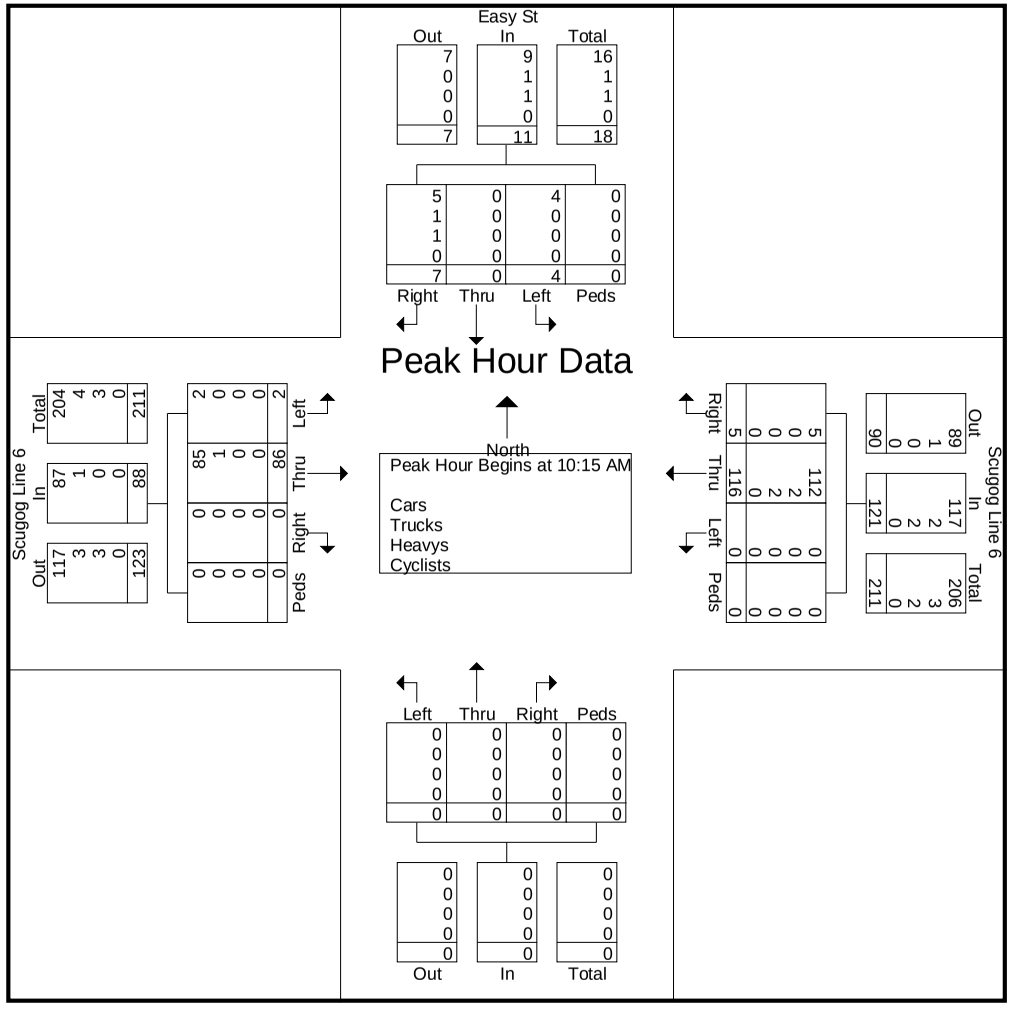
File Name : Scugog Line 6 at Easy St
Site Code : 00000000
Start Date : 11/20/2021

	Easy St Southbound					Scugog Line 6 Westbound					Northbound					Scugog Line 6 Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 10:15 AM																					
10:15 AM	2	0	1	0	3	1	29	0	0	30	0	0	0	0	0	0	21	**1**	0	22	55
10:30 AM	0	0	0	0	0	0	**39**	0	0	**39**	0	0	0	0	0	0	23	1	0	**24**	**63**
10:45 AM	**3**	0	1	0	**4**	**2**	16	0	0	18	0	0	0	0	0	0	**24**	0	0	24	46
11:00 AM	2	0	**2**	0	4	2	32	0	0	34	0	0	0	0	0	0	18	0	0	18	56
Total Volume	7	0	4	0	11	5	116	0	0	121	0	0	0	0	0	0	86	2	0	88	220
% App. Total	63.6	0	36.4	0		4.1	95.9	0	0		0	0	0	0		0	97.7	2.3	0		
PHF	.583	.000	.500	.000	.688	.625	.744	.000	.000	.776	.000	.000	.000	.000	.000	.000	.896	.500	.000	.917	.873
Cars	5	0	4	0	9	5	112	0	0	117	0	0	0	0	0	0	85	2	0	87	213
% Cars	71.4	0	100	0	81.8	100	96.6	0	0	96.7	0	0	0	0	0	0	98.8	100	0	98.9	96.8
Trucks	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4
% Trucks	14.3	0	0	0	9.1	0	1.7	0	0	1.7	0	0	0	0	0	0	1.2	0	0	1.1	1.8
Heavys	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
% Heavys	14.3	0	0	0	9.1	0	1.7	0	0	1.7	0	0	0	0	0	0	0	0	0	0	1.4
Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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File Name : Scugog Line 6 at Easy St
Site Code : 00000000
Start Date : 11/20/2021
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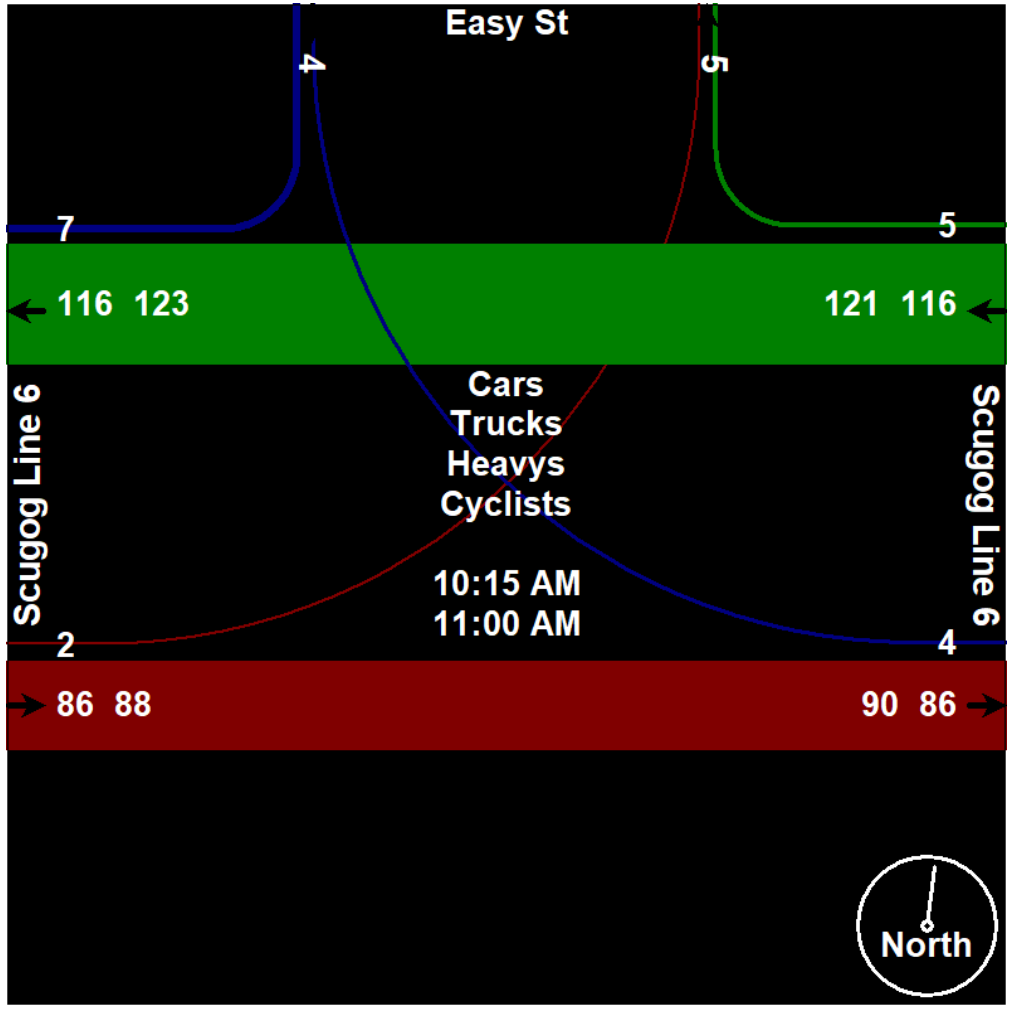


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File Name : Scugog Line 6 at Easy St
Site Code : 00000000
Start Date : 11/20/2021



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File Name : Queen St at Hwy 7A
Site Code : 00000000
Start Date : 11/20/2021

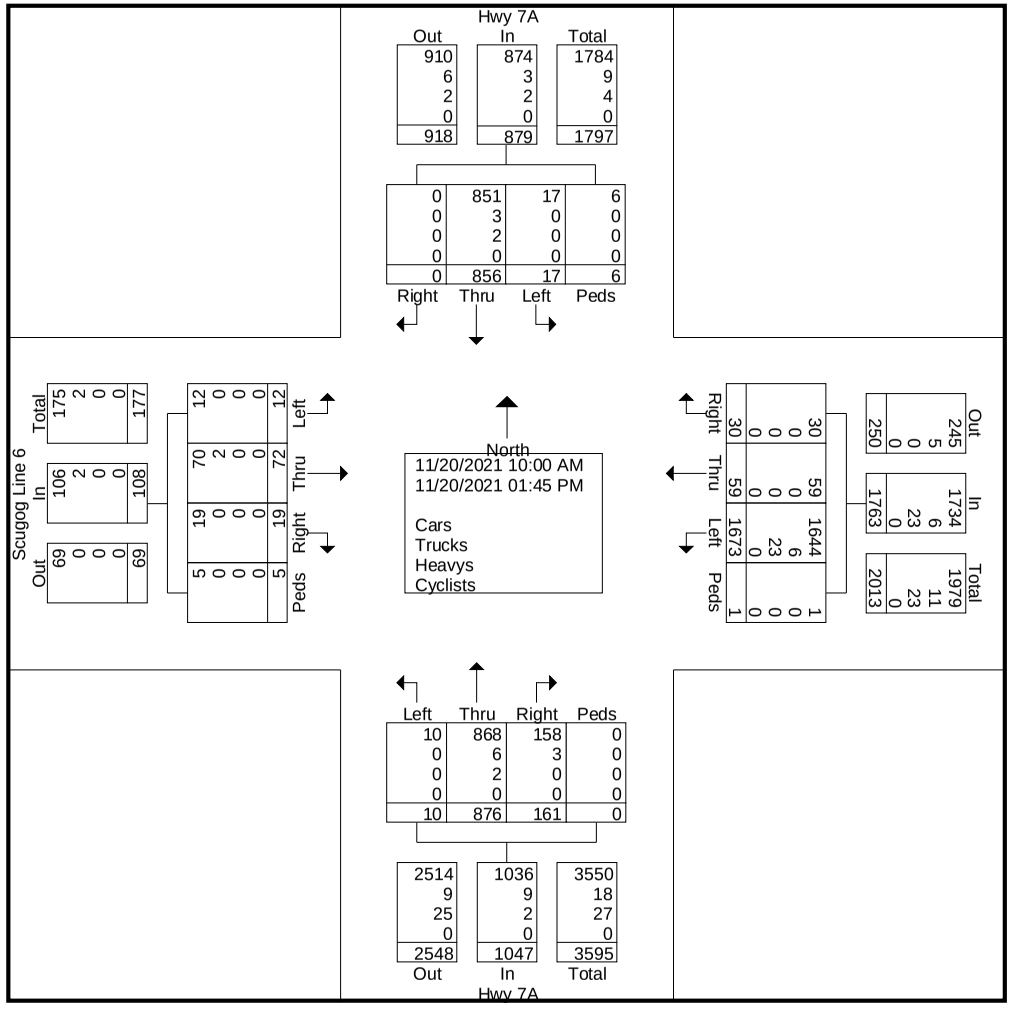
Groups Printed- Cars - Trucks - Heavys - Cyclists

	Hwy 7A Southbound					Westbound					Hwy 7A Northbound					Scugog Line 6 Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:00 AM	0	39	1	0	40	1	6	83	0	90	12	37	1	0	50	2	4	1	0	7	187
10:15 AM	0	52	1	0	53	3	2	105	0	110	9	42	0	0	51	5	2	0	0	7	221
10:30 AM	0	64	0	0	64	0	2	100	0	102	16	54	2	0	72	1	4	0	0	5	243
10:45 AM	0	52	0	0	52	1	3	106	0	110	18	55	0	0	73	0	3	1	0	4	239
Total	0	207	2	0	209	5	13	394	0	412	55	188	3	0	246	8	13	2	0	23	890
11:00 AM	0	45	3	0	48	1	3	110	0	114	13	43	0	0	56	1	2	0	0	3	221
11:15 AM	0	56	1	0	57	1	2	97	0	100	4	62	0	0	66	2	3	1	0	6	229
11:30 AM	0	51	0	0	51	6	3	107	0	116	4	46	1	0	51	3	1	3	0	7	225
11:45 AM	0	62	2	0	64	1	4	94	0	99	4	53	1	0	58	0	3	2	0	5	226
Total	0	214	6	0	220	9	12	408	0	429	25	204	2	0	231	6	9	6	0	21	901
12:00 PM	0	49	1	4	54	2	3	98	0	103	12	63	0	0	75	1	9	1	4	15	247
12:15 PM	0	44	2	0	46	0	5	96	0	101	13	57	0	0	70	1	6	0	0	7	224
12:30 PM	0	53	0	0	53	1	5	97	0	103	9	53	0	0	62	1	9	0	1	11	229
12:45 PM	0	51	0	0	51	2	4	126	0	132	12	61	0	0	73	0	4	0	0	4	260
Total	0	197	3	4	204	5	17	417	0	439	46	234	0	0	280	3	28	1	5	37	960
01:00 PM	0	61	2	0	63	4	6	108	0	118	11	54	2	0	67	0	8	0	0	8	256
01:15 PM	0	59	2	1	62	3	5	112	1	121	4	62	1	0	67	1	8	0	0	9	259
01:30 PM	0	62	1	1	64	2	3	109	0	114	9	69	2	0	80	0	3	1	0	4	262
01:45 PM	0	56	1	0	57	2	3	125	0	130	11	65	0	0	76	1	3	2	0	6	269
Total	0	238	6	2	246	11	17	454	1	483	35	250	5	0	290	2	22	3	0	27	1046
Grand Total	0	856	17	6	879	30	59	1673	1	1763	161	876	10	0	1047	19	72	12	5	108	3797
Apprch %	0	97.4	1.9	0.7		1.7	3.3	94.9	0.1		15.4	83.7	1	0		17.6	66.7	11.1	4.6		
Total %	0	22.5	0.4	0.2	23.1	0.8	1.6	44.1	0	46.4	4.2	23.1	0.3	0	27.6	0.5	1.9	0.3	0.1	2.8	
Cars	0	851	17	6	874	30	59	1644	1	1734	158	868	10	0	1036	19	70	12	5	106	3750
% Cars	0	99.4	100	100	99.4	100	100	98.3	100	98.4	98.1	99.1	100	0	98.9	100	97.2	100	100	98.1	98.8
Trucks	0	3	0	0	3	0	0	6	0	6	3	6	0	0	9	0	2	0	0	2	20
% Trucks	0	0.4	0	0	0.3	0	0	0.4	0	0.3	1.9	0.7	0	0	0.9	0	2.8	0	0	1.9	0.5
Heavys	0	2	0	0	2	0	0	23	0	23	0	2	0	0	2	0	0	0	0	0	27
% Heavys	0	0.2	0	0	0.2	0	0	1.4	0	1.3	0	0.2	0	0	0.2	0	0	0	0	0	0.7
Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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File Name : Queen St at Hwy 7A
Site Code : 00000000
Start Date : 11/20/2021
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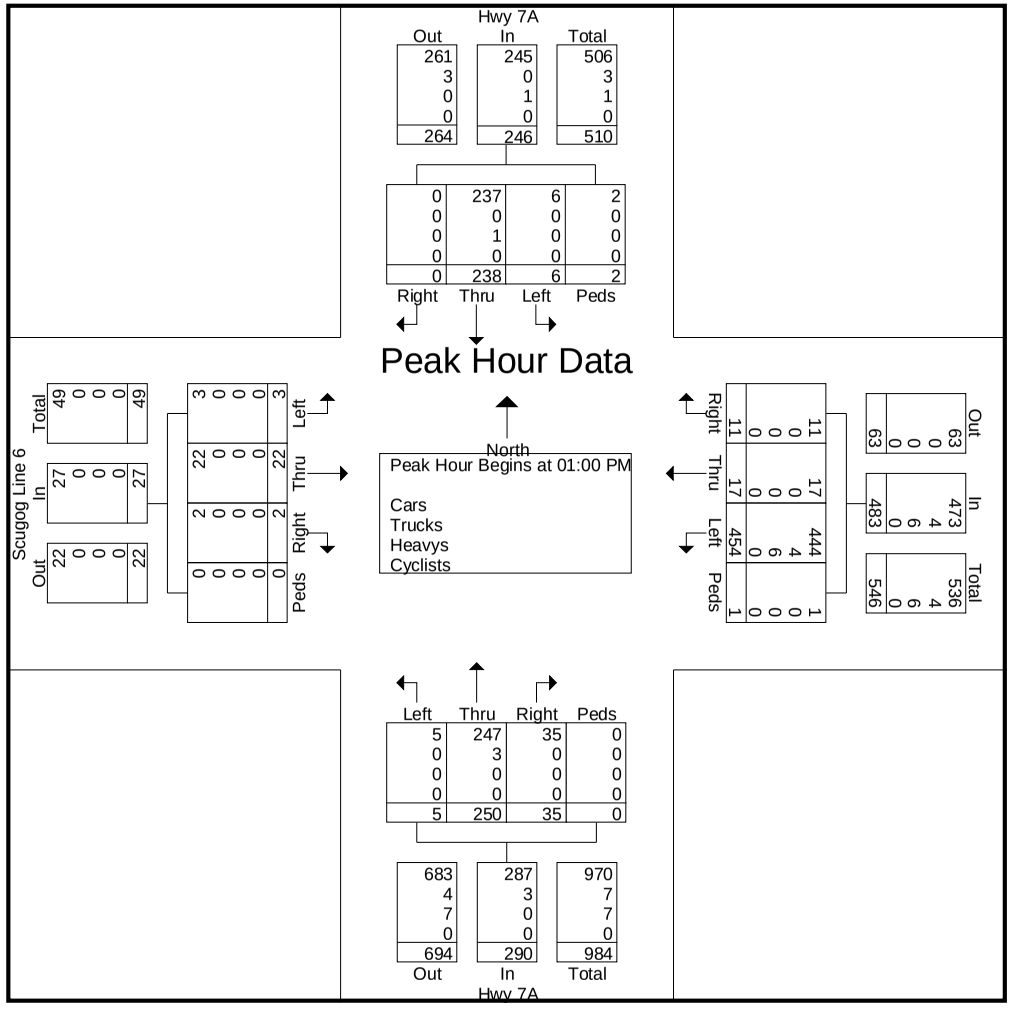
File Name : Queen St at Hwy 7A
Site Code : 00000000
Start Date : 11/20/2021

	Hwy 7A Southbound					Westbound					Hwy 7A Northbound					Scugog Line 6 Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	0	61	**2**	0	63	**4**	**6**	108	0	118	**11**	54	**2**	0	67	0	**8**	0	0	8	256
01:15 PM	0	59	2	**1**	62	3	5	112	**1**	121	4	62	1	0	67	**1**	8	0	0	**9**	259
01:30 PM	0	**62**	1	1	**64**	2	3	109	0	114	9	**69**	2	0	**80**	0	3	1	0	4	262
01:45 PM	0	56	1	0	57	2	3	**125**	0	**130**	11	65	0	0	76	1	3	**2**	0	6	**269**
Total Volume	0	238	6	2	246	11	17	454	1	483	35	250	5	0	290	2	22	3	0	27	1046
% App. Total	0	96.7	2.4	0.8		2.3	3.5	94	0.2		12.1	86.2	1.7	0		7.4	81.5	11.1	0		
PHF	.000	.960	.750	.500	.961	.688	.708	.908	.250	.929	.795	.906	.625	.000	.906	.500	.688	.375	.000	.750	.972
Cars	0	237	6	2	245	11	17	444	1	473	35	247	5	0	287	2	22	3	0	27	1032
% Cars	0	99.6	100	100	99.6	100	100	97.8	100	97.9	100	98.8	100	0	99.0	100	100	100	0	100	98.7
Trucks	0	0	0	0	0	0	0	4	0	4	0	3	0	0	3	0	0	0	0	0	7
% Trucks	0	0	0	0	0	0	0	0.9	0	0.8	0	1.2	0	0	1.0	0	0	0	0	0	0.7
Heavys	0	1	0	0	1	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	7
% Heavys	0	0.4	0	0	0.4	0	0	1.3	0	1.2	0	0	0	0	0	0	0	0	0	0	0.7
Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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File Name : Queen St at Hwy 7A
Site Code : 00000000
Start Date : 11/20/2021
Page No : 4

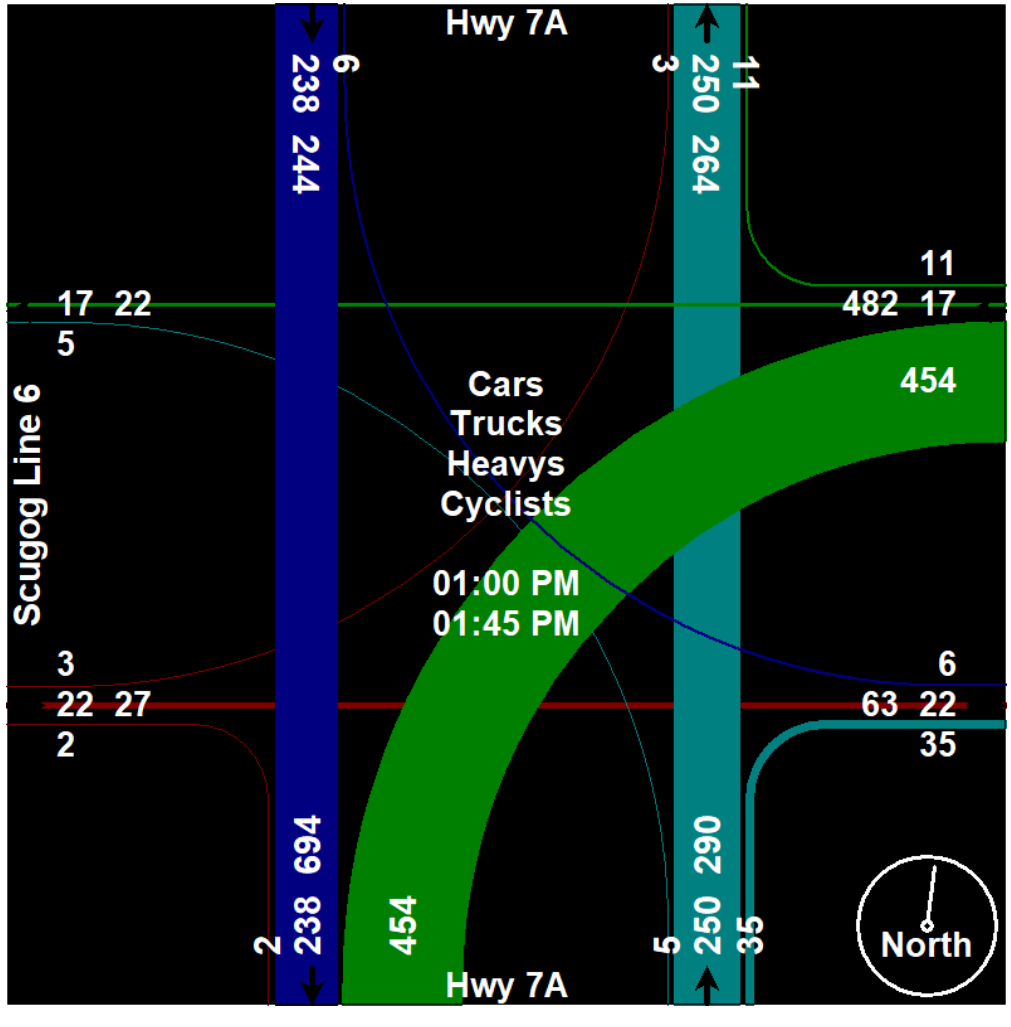


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File Name : Queen St at Walsh St
Site Code : 00000000
Start Date : 11/20/2021

Groups Printed- Cars - Trucks - Heavys - Cyclists

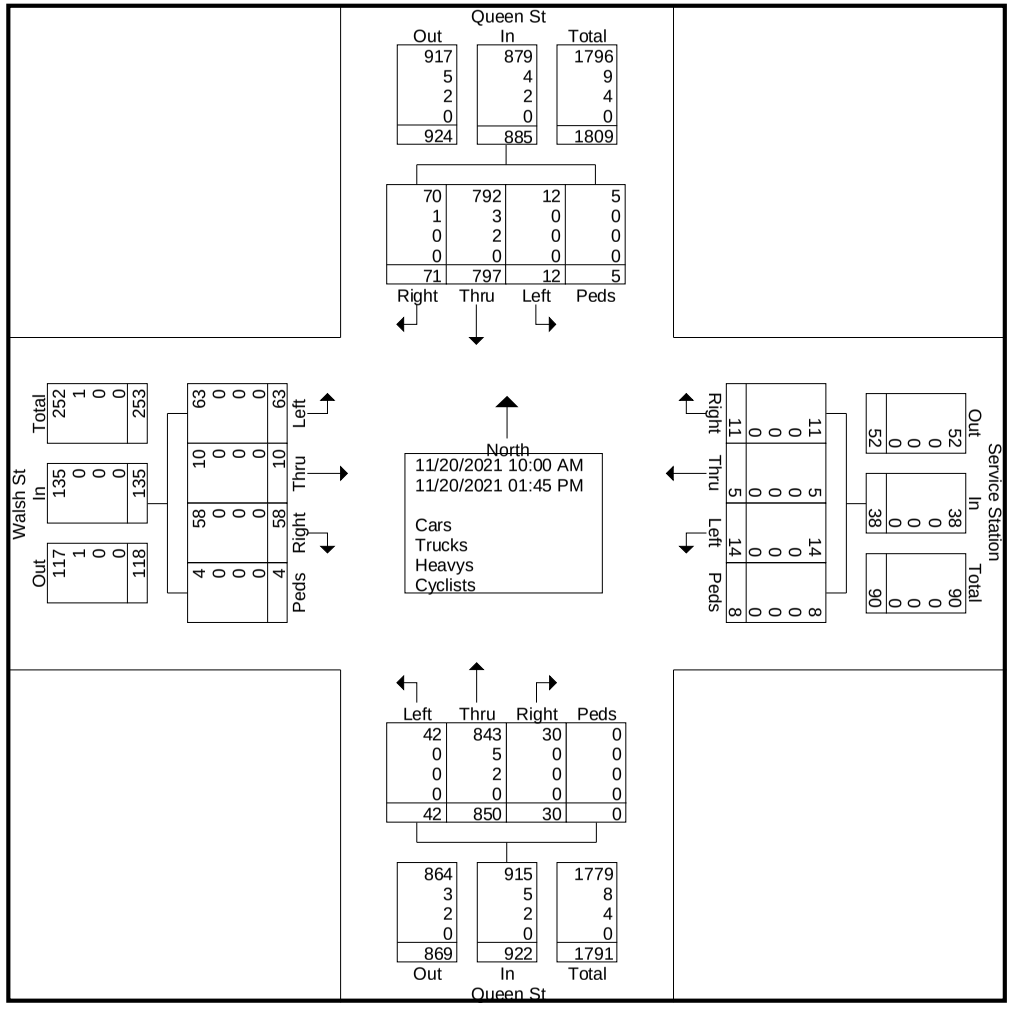
	Queen St Southbound					Service Station Westbound					Queen St Northbound					Walsh St Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:00 AM	2	33	1	0	36	1	0	1	0	2	2	35	1	0	38	1	1	2	1	5	81
10:15 AM	6	50	2	0	58	1	0	0	0	1	3	52	3	0	58	8	1	2	0	11	128
10:30 AM	4	53	2	1	60	1	2	4	0	7	4	38	0	0	42	4	1	8	0	13	122
10:45 AM	5	46	1	1	53	1	0	1	0	2	1	59	0	0	60	3	0	2	0	5	120
Total	17	182	6	2	207	4	2	6	0	12	10	184	4	0	198	16	3	14	1	34	451
11:00 AM	4	47	0	0	51	1	0	1	0	2	3	40	0	0	43	3	0	3	0	6	102
11:15 AM	4	54	1	0	59	0	0	1	0	1	2	52	4	0	58	2	1	6	0	9	127
11:30 AM	3	44	1	0	48	0	1	1	0	2	2	54	3	0	59	3	0	2	0	5	114
11:45 AM	9	58	1	1	69	0	1	1	1	3	1	48	4	0	53	3	3	6	1	13	138
Total	20	203	3	1	227	1	2	4	1	8	8	194	11	0	213	11	4	17	1	33	481
12:00 PM	3	51	1	0	55	1	0	0	0	1	1	66	5	0	72	2	0	2	0	4	132
12:15 PM	5	41	1	0	47	2	0	0	0	2	0	47	2	0	49	5	1	1	0	7	105
12:30 PM	4	46	1	0	51	0	0	0	1	1	0	55	1	0	56	2	0	1	1	4	112
12:45 PM	5	51	0	0	56	1	1	0	1	3	0	57	5	0	62	4	0	6	0	10	131
Total	17	189	3	0	209	4	1	0	2	7	1	225	13	0	239	13	1	10	1	25	480
01:00 PM	3	58	0	1	62	1	0	1	0	2	2	61	2	0	65	5	0	5	1	11	140
01:15 PM	6	55	0	0	61	0	0	1	2	3	2	55	5	0	62	3	1	5	0	9	135
01:30 PM	4	63	0	1	68	0	0	2	3	5	3	68	2	0	73	4	1	6	0	11	157
01:45 PM	4	47	0	0	51	1	0	0	0	1	4	63	5	0	72	6	0	6	0	12	136
Total	17	223	0	2	242	2	0	4	5	11	11	247	14	0	272	18	2	22	1	43	568
Grand Total	71	797	12	5	885	11	5	14	8	38	30	850	42	0	922	58	10	63	4	135	1980
Apprch %	8	90.1	1.4	0.6		28.9	13.2	36.8	21.1		3.3	92.2	4.6	0		43	7.4	46.7	3		
Total %	3.6	40.3	0.6	0.3	44.7	0.6	0.3	0.7	0.4	1.9	1.5	42.9	2.1	0	46.6	2.9	0.5	3.2	0.2	6.8	
Cars	70	792	12	5	879	11	5	14	8	38	30	843	42	0	915	58	10	63	4	135	1967
% Cars	98.6	99.4	100	100	99.3	100	100	100	100	100	100	99.2	100	0	99.2	100	100	100	100	100	99.3
Trucks	1	3	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	9
% Trucks	1.4	0.4	0	0	0.5	0	0	0	0	0	0	0.6	0	0	0.5	0	0	0	0	0	0.5
Heavys	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
% Heavys	0	0.3	0	0	0.2	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.2
Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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File Name : Queen St at Walsh St
Site Code : 00000000
Start Date : 11/20/2021

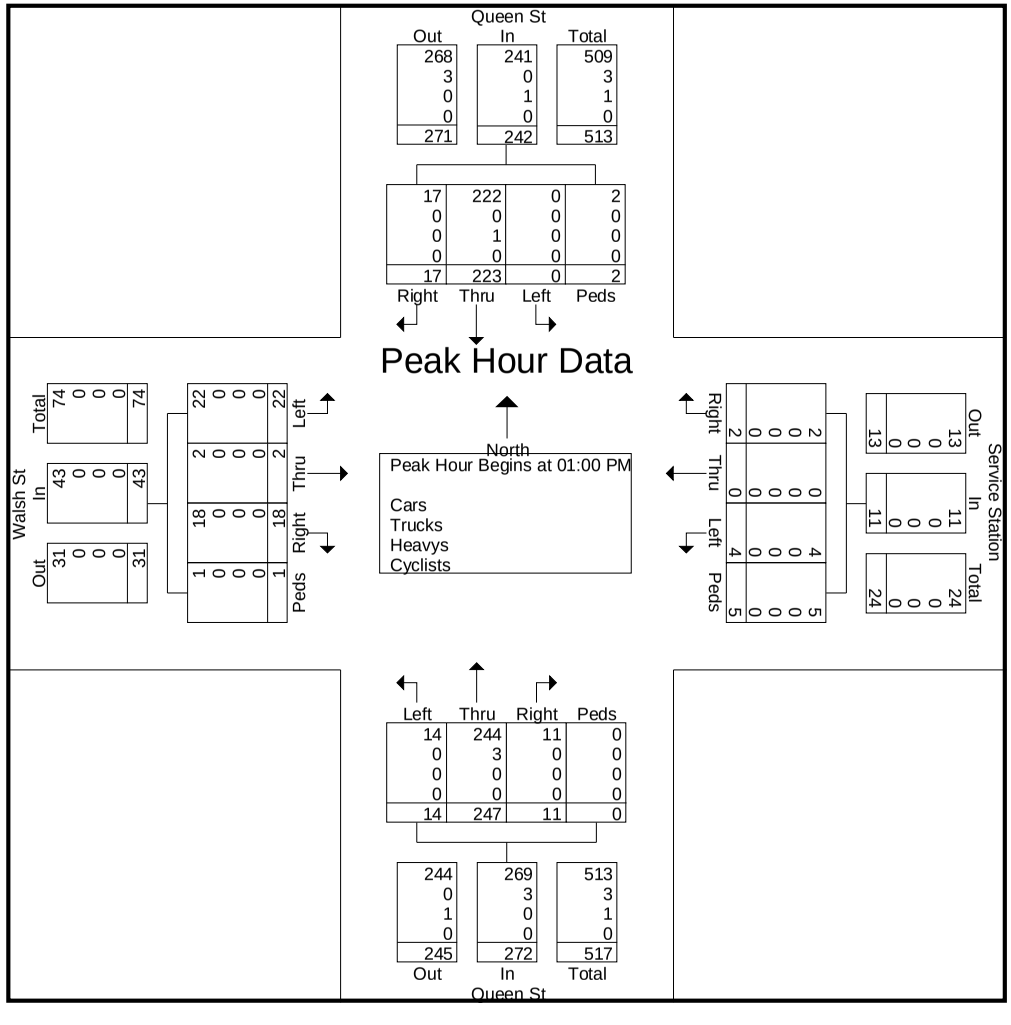
	Queen St Southbound					Service Station Westbound					Queen St Northbound					Walsh St Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	3	58	0	**1**	62	**1**	0	1	0	2	2	61	2	0	65	5	0	5	**1**	11	140
01:15 PM	**6**	55	0	0	61	0	0	1	2	3	2	55	**5**	0	62	3	**1**	5	0	9	135
01:30 PM	4	**63**	0	1	**68**	0	0	**2**	**3**	**5**	3	**68**	2	0	**73**	4	1	**6**	0	11	**157**
01:45 PM	4	47	0	0	51	1	0	0	0	1	**4**	63	5	0	72	**6**	0	6	0	**12**	136
Total Volume	17	223	0	2	242	2	0	4	5	11	11	247	14	0	272	18	2	22	1	43	568
% App. Total	7	92.1	0	0.8		18.2	0	36.4	45.5		4	90.8	5.1	0		41.9	4.7	51.2	2.3		
PHF	.708	.885	.000	.500	.890	.500	.000	.500	.417	.550	.688	.908	.700	.000	.932	.750	.500	.917	.250	.896	.904
Cars	17	222	0	2	241	2	0	4	5	11	11	244	14	0	269	18	2	22	1	43	564
% Cars	100	99.6	0	100	99.6	100	0	100	100	100	100	98.8	100	0	98.9	100	100	100	100	100	99.3
Trucks	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
% Trucks	0	0	0	0	0	0	0	0	0	0	0	1.2	0	0	1.1	0	0	0	0	0	0.5
Heavys	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Heavys	0	0.4	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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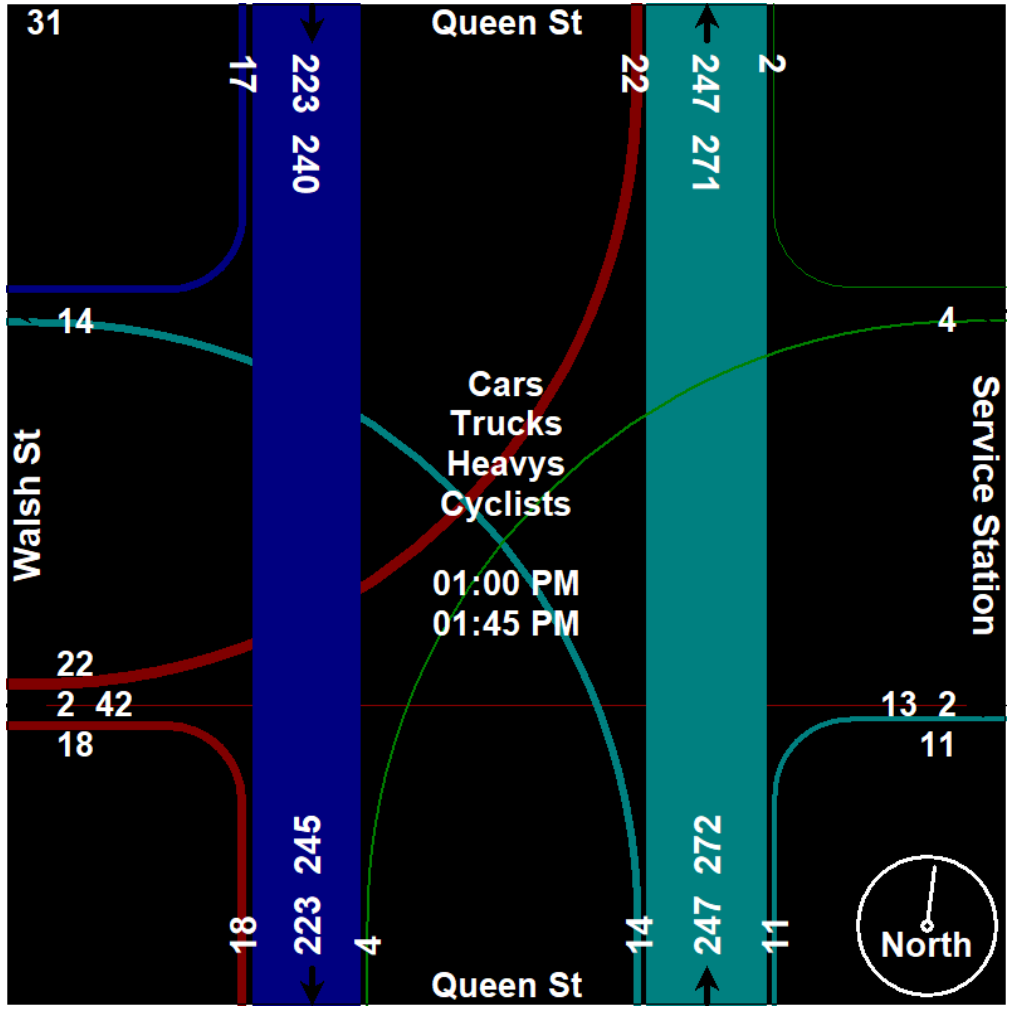


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Site Code : 00000000
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INTERSECTION SIGNAL TIMING REPORT

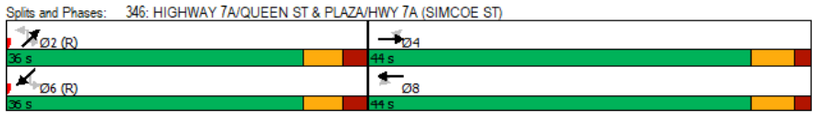
Location	Hwy. 7A and Queen St.				
Date	2022-JAN-11	**C&E No.**	34761493	**Prepared by**	C. Cybulska
Prepared for	Asurza Engineers Ltd.				

AM Peak 6:00-9:00

Phase Number	2	4	6	8
Movement	NETL	EBTL	SWTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	36	44	36	44
Maximum Split (%)	45.0%	55.0%	45.0%	55.0%
Minimum Split (s)	29	23.1	29	23.1
Yellow Time (s)	4	4.3	4	4.3
All-Red Time (s)	2.6	1.8	2.6	1.8
Minimum Initial (s)	20	8	20	8
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	14	12	14	12
Flash Dont Walk (s)	5	5	5	5

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 25.6 (32%), Referenced to phase 2:NETL and 6:SWTL, Start of Green	

Splits and Phases: 346: HIGHWAY 7A/QUEEN ST & PLAZA/HWY 7A (SIMCOE ST)

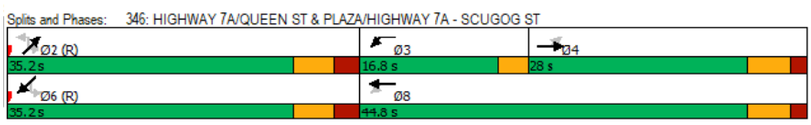


PM Peak 15:00-22:00

Phase Number	2	3	4	6	8
Movement	NETL	WBL	EBTL	SWTL	WBTL
Lead/Lag		Lead	Lag		
Lead-Lag Optimize		Yes	Yes		
Recall Mode	C-Max	None	None	C-Max	None
Maximum Split (s)	35.2	16.8	28	35.2	44.8
Maximum Split (%)	44.0%	21.0%	35.0%	44.0%	56.0%
Minimum Split (s)	29	9	23.1	29	23.1
Yellow Time (s)	4	3	4.3	4	4.3
All-Red Time (s)	2.6	0	1.8	2.6	1.8
Minimum Initial (s)	20	5	8	20	8
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	14		12	14	12
Flash Dont Walk (s)	5		5	5	5

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Coordinated
Natural Cycle	65
Offset: 59.2 (74%), Referenced to phase 2:NETL and 6:SWTL, Start of Green	

Splits and Phases: 346: HIGHWAY 7A/QUEEN ST & PLAZA/HIGHWAY 7A - SCUGOG ST

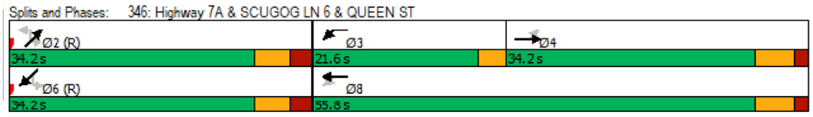


Weekend Peak 08:00-22:00

Phase Number	2	3	4	6	8
Movement	NETL	WBL	EBTL	SWTL	WBTL
Lead/Lag		Lead	Lag		
Lead-Lag Optimize		Yes	Yes		
Recall Mode	C-Max	None	None	C-Max	None
Maximum Split (s)	34.2	21.6	34.2	34.2	55.8
Maximum Split (%)	38.0%	24.0%	38.0%	38.0%	62.0%
Minimum Split (s)	29	9	23.1	29	23.1
Yellow Time (s)	4	3	4.3	4	4.3
All-Red Time (s)	2.6	0	1.8	2.6	1.8
Minimum Initial (s)	20	5	8	20	8
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	14		12	14	12
Flash Dont Walk (s)	5		5	5	5

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65
Offset: 54.9 (61%), Referenced to phase 2:NETL and 6:SWTL, Start of Green	

Splits and Phases: 346: Highway 7A & SCUGOG LN 6 & QUEEN ST



**Please note a concerted effort has been made to ensure the accuracy and completeness of the data provided, however, inadvertent errors or omissions can still occur. Please bring any errors or omissions to the Region's attention.*

Appendix C

Traffic Volume Projections

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

	Hwy 7 / Scugog Line 6			Eastbound			Northbound			Westbound			Southbound			Volume Type
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
MTO Data	September	2018	AM	3	12	4	13	243	27	11	39	69	53	302	4	Registered Volumes
MTO Data	September	2018	PM	7	36	14	5	346	11	47	30	104	65	274	6	
Nielsen	November	2021	SAT	2	21	9	6	281	10	5	18	74	70	255	4	
	Seasonal Factor 1.1															
		2018	AM	3	13	4	14	267	30	12	43	76	58	332	4	Seasonal Projected
		2018	PM	8	40	15	6	381	12	52	33	114	72	301	7	
		2021	SAT	2	23	10	7	309	11	6	20	81	77	281	4	
	Annual Growth Rate 1.70%															
		2022	AM	4	14	5	15	286	32	13	46	81	62	355	5	Existing Volumes (Projected)
		2022	PM	8	42	16	6	407	13	55	35	122	76	322	7	
		2022	SAT	2	23	10	7	314	11	6	20	83	78	285	4	
		2024	AM	4	15	5	16	296	33	13	47	84	65	368	5	Background Volumes (Projected)
		2024	PM	9	44	17	6	421	13	57	37	127	79	333	7	
		2024	SAT	2	24	10	7	325	12	6	21	86	81	295	5	
		2029	AM	4	16	5	17	322	36	15	52	91	70	400	5	Background Volumes (Projected)
		2029	PM	9	48	19	7	458	15	62	40	138	86	363	8	
		2029	SAT	3	26	11	8	354	13	6	23	93	88	321	5	
		2034	AM	4	17	6	19	350	39	16	56	99	76	435	6	Background Volumes (Projected)
		2034	PM	10	52	20	7	498	16	68	43	150	94	395	9	
		2034	SAT	3	29	12	8	385	14	7	25	101	96	349	5	
	Total Site Trips															
			AM	0	6	0	0	0	34	2	9	10	40	0	0	Total Site Generated Trips
			PM	0	8	0	0	0	2	23	13	35	10	0	0	
			SAT	0	1	0	0	0	1	1	3	8	2	0	0	
	Total Traffic Volumes															
		2024	AM	4	21	5	16	296	67	15	56	94	105	368	5	Total Traffic Volumes
		2024	PM	9	52	17	6	421	15	80	50	162	89	333	7	
		2024	SAT	2	25	10	7	325	13	7	24	94	83	295	5	
		2029	AM	4	22	5	17	322	70	17	61	101	110	400	5	Total Traffic Volumes
		2029	PM	9	56	19	7	458	17	85	53	173	96	363	8	
		2029	SAT	3	27	11	8	354	14	7	26	101	90	321	5	
		2034	AM	4	23	6	19	350	73	18	65	109	116	435	6	Total Traffic Volumes
		2034	PM	10	60	20	7	498	18	91	56	185	104	395	9	
		2034	SAT	3	30	12	8	385	15	8	28	109	98	349	5	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

	Hwy 7A / Scugog Line 6			Eastbound			Northbound			Westbound			Southbound			Volume Type
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
AE Counts	December	2021	AM	51	0	8	1	102	0	0	0	0	0	381	128	Registered Volumes
AE Counts	December	2021	PM	70	0	7	4	283	0	0	0	0	0	511	80	
Nielsen	November	2021	SAT	50	0	2	1	254	0	0	0	0	0	618	87	
	Seasonal Factor 1.1															
		2021	AM	56	0	9	1	112	0	0	0	0	0	419	141	Seasonal Projected
		2021	PM	77	0	8	4	311	0	0	0	0	0	562	88	
		2021	SAT	55	0	2	1	279	0	0	0	0	0	680	96	
	Annual Growth Rate 1.70%															
		2022	AM	57	0	9	1	114	0	0	0	0	0	426	143	Existing Volumes (Projected)
		2022	PM	78	0	8	4	317	0	0	0	0	0	572	89	
		2022	SAT	56	0	2	1	284	0	0	0	0	0	691	97	
		2024	AM	59	0	9	1	118	0	0	0	0	0	441	148	Background Volumes (Projected)
		2024	PM	81	0	8	5	327	0	0	0	0	0	591	93	
		2024	SAT	58	0	2	1	294	0	0	0	0	0	715	101	
		2029	AM	64	0	10	1	128	0	0	0	0	0	480	161	Background Volumes (Projected)
		2029	PM	88	0	9	5	356	0	0	0	0	0	643	101	
		2029	SAT	63	0	3	1	320	0	0	0	0	0	778	110	
		2034	AM	70	0	11	1	140	0	0	0	0	0	522	175	Background Volumes (Projected)
		2034	PM	96	0	10	5	388	0	0	0	0	0	700	110	
		2034	SAT	68	0	3	1	348	0	0	0	0	0	846	119	
	Total Site Trips															
			AM	6	0	3	0	0	0	0	0	0	0	0	76	Total Site Generated Trips
			PM	23	0	10	1	0	0	0	0	0	0	0	18	
			SAT	2	0	0	0	0	0	0	0	0	0	0	7	
	Total Traffic Volumes															
		2024	AM	65	0	12	1	118	0	0	0	0	0	441	224	Total Traffic Volumes
		2024	PM	104	0	18	6	327	0	0	0	0	0	591	111	
		2024	SAT	60	0	2	1	294	0	0	0	0	0	715	108	
		2029	AM	70	0	13	1	128	0	0	0	0	0	480	237	Total Traffic Volumes
		2029	PM	111	0	19	6	356	0	0	0	0	0	643	119	
		2029	SAT	65	0	3	1	320	0	0	0	0	0	778	117	
		2034	AM	76	0	14	1	140	0	0	0	0	0	522	251	Total Traffic Volumes
		2034	PM	119	0	20	6	388	0	0	0	0	0	700	128	
		2034	SAT	70	0	3	1	348	0	0	0	0	0	846	126	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

	Hwy 7A / Queen St / Driveway Plaza			Eastbound			Northbound			Westbound			Southbound			Volume Type
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
AE Counts	December	2021	AM	1	3	1	1	109	43	378	1	3	3	158	1	Registered Volumes
AE Counts	December	2021	PM	4	35	1	2	262	65	352	14	4	11	248	1	
Nielsen	November	2021	SAT	3	22	2	5	250	35	454	17	11	6	238	1	
Seasonal Factor 1.1																
		2021	AM	1	3	1	1	120	47	416	1	3	3	174	1	Seasonal Projected
		2021	PM	4	39	1	2	288	72	387	15	4	12	273	1	
		2021	SAT	3	24	2	6	275	39	499	19	12	7	262	1	
Annual Growth Rate 1.70%																
		2022	AM	1	3	1	1	122	48	423	1	3	3	177	1	Existing Volumes (Projected)
		2022	PM	4	39	1	2	293	73	394	16	4	12	277	1	
		2022	SAT	3	25	2	6	280	39	508	19	12	7	266	1	
		2024	AM	1	3	1	1	126	50	437	1	3	3	183	1	Background Volumes (Projected)
		2024	PM	5	40	1	2	303	75	407	16	5	13	287	1	
		2024	SAT	3	25	2	6	289	40	525	20	13	7	275	1	
		2029	AM	1	4	1	1	137	54	476	1	4	4	199	1	Background Volumes (Projected)
		2029	PM	5	44	1	3	330	82	443	18	5	14	312	1	
		2029	SAT	4	28	3	6	315	44	571	21	14	8	300	1	
		2034	AM	1	4	1	1	149	59	518	1	4	4	216	1	Background Volumes (Projected)
		2034	PM	5	48	1	3	359	89	482	19	5	15	340	1	
		2034	SAT	4	30	3	7	342	48	622	23	15	8	326	1	
Total Site Trips																
			AM	0	0	0	0	1	5	74	0	0	0	2	0	Total Site Generated Trips
			PM	0	0	0	0	4	19	17	0	0	0	1	0	
			SAT	0	0	0	0	1	1	7	0	0	0	0	0	
Total Traffic Volumes																
		2024	AM	1	3	1	1	127	55	511	1	3	3	185	1	Total Traffic Volumes
		2024	PM	5	40	1	2	307	94	424	16	5	13	288	1	
		2024	SAT	3	25	2	6	290	41	532	20	13	7	275	1	
		2029	AM	1	4	1	1	138	59	550	1	4	4	201	1	Total Traffic Volumes
		2029	PM	5	44	1	3	334	101	460	18	5	14	313	1	
		2029	SAT	4	28	3	6	316	45	578	21	14	8	300	1	
		2034	AM	1	4	1	1	150	64	592	1	4	4	218	1	Total Traffic Volumes
		2034	PM	5	48	1	3	363	108	499	19	5	15	341	1	
		2034	SAT	4	30	3	7	343	49	629	23	15	8	326	1	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

	Queen St / Walsh Dr / Gas Driveway			Eastbound			Northbound			Westbound			Southbound			Volume Type
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
MTO Data	February	2017	AM	9	1	5	12	197	1	4	1	11	5	122	4	Registered Volumes
MTO Data	February	2017	PM	5	1	7	4	192	5	2	1	10	12	279	3	
Nielsen	November	2021	SAT	22	2	18	14	247	11	4	1	2	1	223	17	
Seasonal Factor 1.1																
		2017	AM	10	1	6	13	217	1	4	1	12	6	134	4	Seasonal Projected
		2017	PM	6	1	8	4	211	6	2	1	11	13	307	3	
		2021	SAT	24	2	20	15	272	12	4	1	2	1	245	19	
Annual Growth Rate 1.70%																
		2022	AM	11	1	6	14	236	1	5	1	13	6	146	5	Existing Volumes (Projected)
		2022	PM	6	1	8	5	230	6	2	1	12	14	334	4	
		2022	SAT	25	2	20	16	276	12	4	1	2	1	249	19	
		2024	AM	11	1	6	15	244	1	5	1	14	6	151	5	Background Volumes (Projected)
		2024	PM	6	1	9	5	238	6	2	1	12	15	345	4	
		2024	SAT	25	2	21	16	286	13	5	1	2	1	258	20	
		2029	AM	12	1	7	16	265	1	5	1	15	7	164	5	Background Volumes (Projected)
		2029	PM	7	1	9	5	259	7	3	1	13	16	376	4	
		2029	SAT	28	3	23	18	311	14	5	1	3	1	281	21	
		2034	AM	13	1	7	18	289	1	6	1	16	7	179	6	Background Volumes (Projected)
		2034	PM	7	1	10	6	281	7	3	1	15	18	409	4	
		2034	SAT	30	3	25	19	338	15	5	1	3	1	305	23	
Total Site Trips																
			AM	0	0	0	1	0	0	2	0	0	0	0	0	Total Site Generated Trips
			PM	0	0	1	2	0	2	0	0	0	0	0	0	
			SAT	0	0	0	1	0	0	0	0	0	0	0	0	
Total Traffic Volumes																
		2024	AM	11	1	6	16	244	1	7	1	14	6	151	5	Total Traffic Volumes
		2024	PM	6	1	10	7	238	8	2	1	12	15	345	4	
		2024	SAT	25	2	21	17	286	13	5	1	2	1	258	20	
		2029	AM	12	1	7	17	265	1	7	1	15	7	164	5	Total Traffic Volumes
		2029	PM	7	1	10	7	259	9	3	1	13	16	376	4	
		2029	SAT	28	3	23	19	311	14	5	1	3	1	281	21	
		2034	AM	13	1	7	19	289	1	8	1	16	7	179	6	Total Traffic Volumes
		2034	PM	7	1	11	8	281	9	3	1	15	18	409	4	
		2034	SAT	30	3	25	20	338	15	5	1	3	1	305	23	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

	Reach St / N Port Rd			Eastbound			Northbound			Westbound			Southbound			Volume Type
				LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
AE Counts	February	2022	AM	0	180	22	21	0	21	65	225	0	0	0	0	Registered Volumes
AE Counts	February	2022	PM	0	347	40	39	0	78	28	269	0	0	0	0	
AE Counts	February	2022	SAT	0	288	21	6	0	16	17	227	0	0	0	0	
	Seasonal Factor 1.1															
		2022	AM	0	198	24	23	0	23	72	248	0	0	0	0	Seasonal Projected
		2022	PM	0	382	44	43	0	86	31	296	0	0	0	0	
		2022	SAT	0	317	23	7	0	18	19	250	0	0	0	0	
	Annual Growth Rate 1.70%															
		2022	AM	0	198	24	23	0	23	72	248	0	0	0	0	Existing Volumes (Projected)
		2022	PM	0	382	44	43	0	86	31	296	0	0	0	0	
		2022	SAT	0	317	23	7	0	18	19	250	0	0	0	0	
		2024	AM	0	205	24	23	0	23	72	256	0	0	0	0	Background Volumes (Projected)
		2024	PM	0	395	44	43	0	86	31	306	0	0	0	0	
		2024	SAT	0	328	23	7	0	18	19	258	0	0	0	0	
		2029	AM	0	223	24	23	0	23	72	278	0	0	0	0	Background Volumes (Projected)
		2029	PM	0	430	44	43	0	86	31	333	0	0	0	0	
		2029	SAT	0	356	23	7	0	18	19	281	0	0	0	0	
		2034	AM	0	242	24	23	0	23	72	303	0	0	0	0	Background Volumes (Projected)
		2034	PM	0	467	44	43	0	86	31	362	0	0	0	0	
		2034	SAT	0	388	23	7	0	18	19	306	0	0	0	0	
	Total Site Trips															
			AM	0	0	16	5	0	12	28	0	0	0	0	0	Total Site Generated Trips
			PM	0	0	4	15	0	73	11	0	0	0	0	0	
			SAT	0	0	1	4	0	7	4	0	0	0	0	0	
	Total Traffic Volumes															
		2024	AM	0	205	40	28	0	35	100	256	0	0	0	0	Total Traffic Volumes
		2024	PM	0	395	48	58	0	159	42	306	0	0	0	0	
		2024	SAT	0	328	24	11	0	25	23	258	0	0	0	0	
		2029	AM	0	223	40	28	0	35	100	278	0	0	0	0	Total Traffic Volumes
		2029	PM	0	430	48	58	0	159	42	333	0	0	0	0	
		2029	SAT	0	356	24	11	0	25	23	281	0	0	0	0	
		2034	AM	0	242	40	28	0	35	100	303	0	0	0	0	Total Traffic Volumes
		2034	PM	0	467	48	58	0	159	42	362	0	0	0	0	
		2034	SAT	0	388	24	11	0	25	23	306	0	0	0	0	

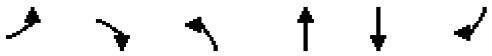
Appendix D

Synchro Reports – Existing Conditions 2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	14	5	13	46	81	15	286	32	62	355	5
Future Volume (Veh/h)	4	14	5	13	46	81	15	286	32	62	355	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	15	5	14	50	88	16	311	35	67	386	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)												
pX, platoon unblocked												
vC, conflicting volume	976	898	386	876	868	311	391			346		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	976	898	386	876	868	311	391			346		
tC, single (s)	7.4	6.5	6.7	7.5	6.5	6.4	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.8	4.0	3.8	3.8	4.0	3.5	2.2			2.3		
p0 queue free %	97	94	99	93	81	87	99			94		
cM capacity (veh/h)	143	260	568	211	267	685	1168			1180		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	24	152	16	311	35	67	386	5
Volume Left	4	14	16	0	0	67	0	0
Volume Right	5	88	0	0	35	0	0	5
cSH	254	398	1168	1700	1700	1180	1700	1700
Volume to Capacity	0.09	0.38	0.01	0.18	0.02	0.06	0.23	0.00
Queue Length 95th (m)	2.4	13.8	0.3	0.0	0.0	1.4	0.0	0.0
Control Delay (s)	20.6	19.5	8.1	0.0	0.0	8.2	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	20.6	19.5	0.4			1.2		
Approach LOS	C	C						

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	41.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	57	9	1	114	426	143
Future Volume (Veh/h)	57	9	1	114	426	143
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)	62	10	1	124	463	155
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.94	0.94	0.94			
vC, conflicting volume	666	540	618			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	612	478	561			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	85	98	100			
cM capacity (veh/h)	410	551	949			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	72	1	124	618
Volume Left	62	1	0	0
Volume Right	10	0	0	155
cSH	425	949	1700	1700
Volume to Capacity	0.17	0.00	0.07	0.36
Queue Length 95th (m)	4.8	0.0	0.0	0.0
Control Delay (s)	15.2	8.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.2	0.1		0.0
Approach LOS	C			

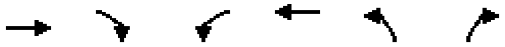
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1	6	5	1	13	14	236	1	6	146	5
Future Volume (Veh/h)	11	1	6	5	1	13	14	236	1	6	146	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	1	7	5	1	14	15	257	1	7	159	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)								40				
pX, platoon unblocked	0.95	0.95		0.95	0.95	0.95				0.95		
vC, conflicting volume	478	464	162	468	466	258	164			258		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	429	414	162	419	416	199	164			199		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	99	100	98	99			99		
cM capacity (veh/h)	496	496	883	509	495	804	1414			1311		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	20	20	273	7	164
Volume Left	12	5	15	7	0
Volume Right	7	14	1	0	5
cSH	586	684	1414	1311	1700
Volume to Capacity	0.03	0.03	0.01	0.01	0.10
Queue Length 95th (m)	0.8	0.7	0.3	0.1	0.0
Control Delay (s)	11.4	10.4	0.5	7.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	11.4	10.4	0.5	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	33.9%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	198	24	72	248	23	23
Future Volume (Veh/h)	198	24	72	248	23	23
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)	215	26	78	270	25	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			241		654	228
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			241		654	228
tC, single (s)			4.1		6.7	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.5
p0 queue free %			94		93	97
cM capacity (veh/h)			1308		368	771

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	241	348	50
Volume Left	0	78	25
Volume Right	26	0	25
cSH	1700	1308	499
Volume to Capacity	0.14	0.06	0.10
Queue Length 95th (m)	0.0	1.5	2.6
Control Delay (s)	0.0	2.2	13.0
Lane LOS		A	B
Approach Delay (s)	0.0	2.2	13.0
Approach LOS			B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

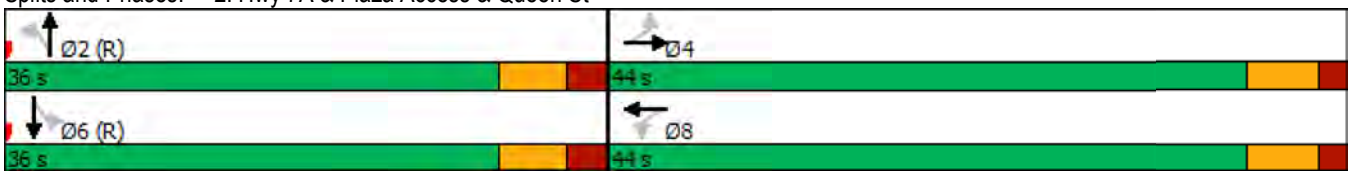


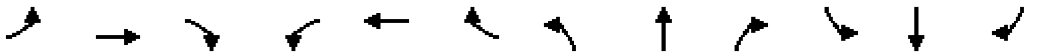
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	3	1	423	1	3	1	122	48	3	177	1
Future Volume (vph)	1	3	1	423	1	3	1	122	48	3	177	1
Satd. Flow (prot)	0	1814	0	0	1759	0	1789	1729	0	1789	1882	0
Flt Permitted		0.948			0.725		0.636			0.641		
Satd. Flow (perm)	0	1737	0	0	1338	0	1198	1729	0	1207	1882	0
Satd. Flow (RTOR)		1			1			28				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	2%	7%	5%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	464	0	1	185	0	3	193	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	29.1	29.1		29.1	29.1		31.6	31.6		31.6	31.6	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Yellow Time (s)	4.3	4.3		4.3	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		32.3			32.3		35.0	35.0		35.0	35.0	
Actuated g/C Ratio		0.40			0.40		0.44	0.44		0.44	0.44	
v/c Ratio		0.01			0.86		0.00	0.24		0.01	0.23	
Control Delay		10.8			37.7		16.0	14.6		15.7	16.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		10.8			37.7		16.0	14.6		15.7	16.8	
LOS		B			D		B	B		B	B	
Approach Delay		10.8			37.7			14.6			16.8	
Approach LOS		B			D			B			B	
Queue Length 50th (m)		0.4			62.5		0.1	15.4		0.3	19.2	
Queue Length 95th (m)		2.1			94.9		1.1	32.1		2.0	36.5	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		823			634		524	772		528	823	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.01			0.73		0.00	0.24		0.01	0.23	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 27.7 Intersection LOS: C
Intersection Capacity Utilization 57.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St

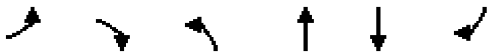




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	42	16	55	35	122	6	407	13	76	322	7
Future Volume (Veh/h)	8	42	16	55	35	122	6	407	13	76	322	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	46	17	60	38	133	7	442	14	83	350	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)												
pX, platoon unblocked												
vC, conflicting volume	1124	986	350	1012	980	442	358			456		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1124	986	350	1012	980	442	358			456		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.3	4.5			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.4	2.6			2.3		
p0 queue free %	92	80	98	64	83	78	99			92		
cM capacity (veh/h)	116	226	682	166	228	599	1018			1040		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	72	231	7	442	14	83	350	8
Volume Left	9	60	7	0	0	83	0	0
Volume Right	17	133	0	0	14	0	0	8
cSH	235	308	1018	1700	1700	1040	1700	1700
Volume to Capacity	0.31	0.75	0.01	0.26	0.01	0.08	0.21	0.00
Queue Length 95th (m)	9.9	44.7	0.2	0.0	0.0	2.1	0.0	0.0
Control Delay (s)	27.0	44.7	8.6	0.0	0.0	8.8	0.0	0.0
Lane LOS	D	E	A			A		
Approach Delay (s)	27.0	44.7	0.1			1.6		
Approach LOS	D	E						

Intersection Summary				
Average Delay	10.8			
Intersection Capacity Utilization	54.7%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	78	8	4	317	572	89
Future Volume (Veh/h)	78	8	4	317	572	89
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)	85	9	4	345	622	97
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.89	0.89	0.89			
vC, conflicting volume	1024	670	719			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	965	569	623			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	66	98	100			
cM capacity (veh/h)	250	445	853			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	94	4	345	719
Volume Left	85	4	0	0
Volume Right	9	0	0	97
cSH	261	853	1700	1700
Volume to Capacity	0.36	0.00	0.20	0.42
Queue Length 95th (m)	12.4	0.1	0.0	0.0
Control Delay (s)	26.4	9.2	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	26.4	0.1		0.0
Approach LOS	D			

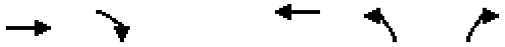
Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	8	2	1	12	5	230	6	14	334	4
Future Volume (Veh/h)	6	1	8	2	1	12	5	230	6	14	334	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	1	9	2	1	13	5	250	7	15	363	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.87	0.87		0.87	0.87	0.87				0.87		
vC, conflicting volume	672	662	365	666	660	254	367			257		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	547	536	365	540	534	66	367			70		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	99	100	99	100			99		
cM capacity (veh/h)	378	386	680	383	387	867	1192			1331		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	17	16	262	15	367
Volume Left	7	2	5	15	0
Volume Right	9	13	7	0	4
cSH	495	702	1192	1331	1700
Volume to Capacity	0.03	0.02	0.00	0.01	0.22
Queue Length 95th (m)	0.8	0.6	0.1	0.3	0.0
Control Delay (s)	12.5	10.2	0.2	7.7	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	12.5	10.2	0.2	0.3	
Approach LOS	B	B			

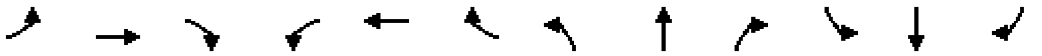
Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	27.8%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	382	44	31	296	43	86
Future Volume (Veh/h)	382	44	31	296	43	86
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)	415	48	34	322	47	93
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			463		829	439
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			463		829	439
tC, single (s)			4.3		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.4		3.6	3.3
p0 queue free %			97		85	85
cM capacity (veh/h)			1005		315	618

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	463	356	140
Volume Left	0	34	47
Volume Right	48	0	93
cSH	1700	1005	467
Volume to Capacity	0.27	0.03	0.30
Queue Length 95th (m)	0.0	0.8	9.8
Control Delay (s)	0.0	1.2	16.0
Lane LOS		A	C
Approach Delay (s)	0.0	1.2	16.0
Approach LOS			C

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

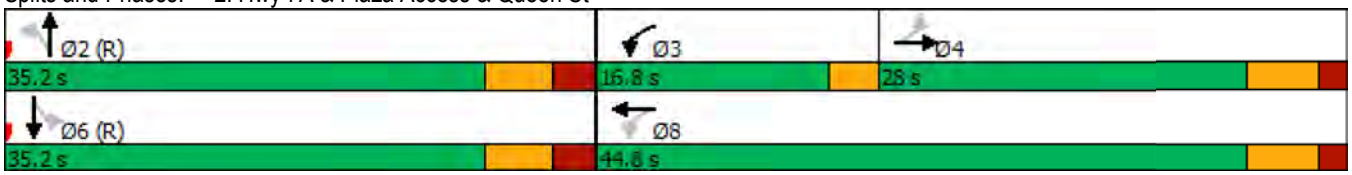


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	39	1	394	16	4	2	293	73	12	277	1
Future Volume (vph)	4	39	1	394	16	4	2	293	73	12	277	1
Satd. Flow (prot)	0	1870	0	0	1745	0	1789	1827	0	1789	1865	0
Flt Permitted		0.967			0.702		0.533			0.433		
Satd. Flow (perm)	0	1816	0	0	1283	0	1004	1827	0	816	1865	0
Satd. Flow (RTOR)		1			1			17				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	5%	7%	2%	2%	2%	2%	2%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	449	0	2	397	0	13	302	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	28.0	28.0		16.8	44.8		35.2	35.2		35.2	35.2	
Total Split (%)	35.0%	35.0%		21.0%	56.0%		44.0%	44.0%		44.0%	44.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		32.7			32.7		34.6	34.6		34.6	34.6	
Actuated g/C Ratio		0.41			0.41		0.43	0.43		0.43	0.43	
v/c Ratio		0.06			0.86		0.00	0.50		0.04	0.37	
Control Delay		12.2			37.5		16.5	20.0		16.8	18.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		12.2			37.5		16.5	20.0		16.8	18.8	
LOS		B			D		B	B		B	B	
Approach Delay		12.2			37.5			20.0			18.7	
Approach LOS		B			D			B			B	
Queue Length 50th (m)		4.1			60.1		0.2	43.4		1.2	32.5	
Queue Length 95th (m)		9.1			91.3		1.6	76.7		5.1	58.4	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		742			621		434	800		353	807	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.06			0.72		0.00	0.50		0.04	0.37	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 60.0% ICU Level of Service B
Analysis Period (min) 15

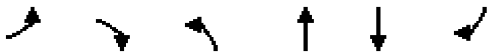
Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	23	10	6	20	83	7	314	11	78	285	4
Future Volume (Veh/h)	2	23	10	6	20	83	7	314	11	78	285	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	25	11	7	22	90	8	341	12	85	310	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	938	849	310	860	841	341	314			353		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	938	849	310	860	841	341	314			353		
tC, single (s)	7.1	6.5	6.3	7.3	6.6	6.3	4.6			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.7	4.1	3.4	2.7			2.3		
p0 queue free %	99	91	98	97	92	87	99			93		
cM capacity (veh/h)	187	274	710	221	268	690	1019			1168		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	38	119	8	341	12	85	310	4
Volume Left	2	7	8	0	0	85	0	0
Volume Right	11	90	0	0	12	0	0	4
cSH	324	487	1019	1700	1700	1168	1700	1700
Volume to Capacity	0.12	0.24	0.01	0.20	0.01	0.07	0.18	0.00
Queue Length 95th (m)	3.1	7.5	0.2	0.0	0.0	1.9	0.0	0.0
Control Delay (s)	17.6	14.8	8.6	0.0	0.0	8.3	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	17.6	14.8	0.2			1.8		
Approach LOS	C	B						

Intersection Summary				
Average Delay	3.5			
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)	56	2	1	284	691	97
Future Volume (Veh/h)	56	2	1	284	691	97
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)	61	2	1	309	751	105
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.88	0.88	0.88			
vC, conflicting volume	1114	804	856			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1064	712	771			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	72	99	100			
cM capacity (veh/h)	218	382	745			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	63	1	309	856
Volume Left	61	1	0	0
Volume Right	2	0	0	105
cSH	221	745	1700	1700
Volume to Capacity	0.29	0.00	0.18	0.50
Queue Length 95th (m)	8.9	0.0	0.0	0.0
Control Delay (s)	27.7	9.8	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	27.7	0.0		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	2	20	4	1	2	16	276	12	1	249	19
Future Volume (Veh/h)	25	2	20	4	1	2	16	276	12	1	249	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	2	22	4	1	2	17	300	13	1	271	21
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.86	0.86		0.86	0.86	0.86				0.86		
vC, conflicting volume	626	630	282	636	634	306	292			313		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	482	487	282	494	491	109	292			116		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	97	99	100	100	99			100		
cM capacity (veh/h)	418	407	757	399	404	811	1270			1263		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	51	7	330	1	292
Volume Left	27	4	17	1	0
Volume Right	22	2	13	0	21
cSH	517	468	1270	1263	1700
Volume to Capacity	0.10	0.01	0.01	0.00	0.17
Queue Length 95th (m)	2.6	0.4	0.3	0.0	0.0
Control Delay (s)	12.7	12.8	0.5	7.9	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	12.7	12.8	0.5	0.0	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	38.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	317	23	19	250	7	18
Future Volume (Veh/h)	317	23	19	250	7	18
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)	345	25	21	272	8	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			370		672	358
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			370		672	358
tC, single (s)			4.1		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.4
p0 queue free %			98		98	97
cM capacity (veh/h)			1189		392	678

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	370	293	28
Volume Left	0	21	8
Volume Right	25	0	20
cSH	1700	1189	561
Volume to Capacity	0.22	0.02	0.05
Queue Length 95th (m)	0.0	0.4	1.2
Control Delay (s)	0.0	0.7	11.8
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	11.8
Approach LOS			B

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		38.8%	ICU Level of Service
Analysis Period (min)		15	

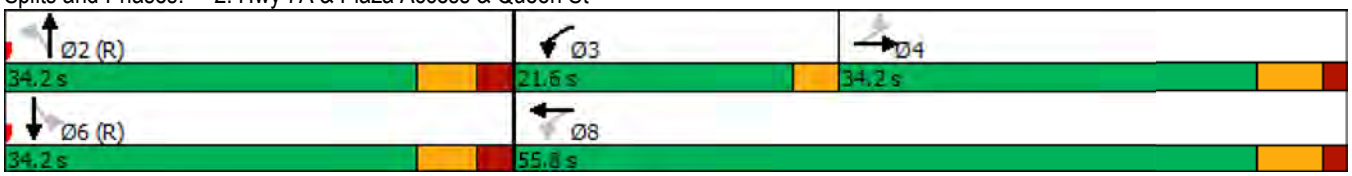
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	25	2	508	19	12	6	280	39	7	266	1
Future Volume (vph)	3	25	2	508	19	12	6	280	39	7	266	1
Satd. Flow (prot)	0	1859	0	0	1793	0	1789	1850	0	1789	1882	0
Flt Permitted		0.964			0.715		0.504			0.434		
Satd. Flow (perm)	0	1801	0	0	1343	0	949	1850	0	817	1882	0
Satd. Flow (RTOR)		2			2			8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	586	0	7	346	0	8	290	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	34.2	34.2		21.6	55.8		34.2	34.2		34.2	34.2	
Total Split (%)	38.0%	38.0%		24.0%	62.0%		38.0%	38.0%		38.0%	38.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		44.6			44.6		32.7	32.7		32.7	32.7	
Actuated g/C Ratio		0.50			0.50		0.36	0.36		0.36	0.36	
v/c Ratio		0.04			0.88		0.02	0.51		0.03	0.42	
Control Delay		9.4			35.6		22.0	26.9		22.1	25.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		9.4			35.6		22.0	26.9		22.1	25.7	
LOS		A			D		C	C		C	C	
Approach Delay		9.4			35.6			26.8			25.6	
Approach LOS		A			D			C			C	
Queue Length 50th (m)		2.5			83.5		0.8	49.2		1.0	40.6	
Queue Length 95th (m)		6.3			#134.4		4.1	80.1		4.3	67.0	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		893			742		344	676		296	683	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.04			0.79		0.02	0.51		0.03	0.42	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 30.1 Intersection LOS: C
Intersection Capacity Utilization 64.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

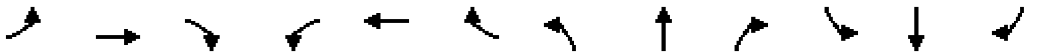
Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St



Appendix E

Synchro Reports – Background Volumes

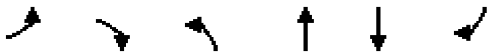
Horizon Year 2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	15	5	13	47	84	16	296	33	65	368	5
Future Volume (Veh/h)	4	15	5	13	47	84	16	296	33	65	368	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	16	5	14	51	91	17	322	36	71	400	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)												
pX, platoon unblocked												
vC, conflicting volume	1014	934	400	911	903	322	405			358		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1014	934	400	911	903	322	405			358		
tC, single (s)	7.4	6.5	6.7	7.5	6.5	6.4	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.8	4.0	3.8	3.8	4.0	3.5	2.2			2.3		
p0 queue free %	97	93	99	93	80	87	99			94		
cM capacity (veh/h)	131	246	558	198	254	675	1154			1168		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	25	156	17	322	36	71	400	5
Volume Left	4	14	17	0	0	71	0	0
Volume Right	5	91	0	0	36	0	0	5
cSH	239	383	1154	1700	1700	1168	1700	1700
Volume to Capacity	0.10	0.41	0.01	0.19	0.02	0.06	0.24	0.00
Queue Length 95th (m)	2.7	15.2	0.4	0.0	0.0	1.5	0.0	0.0
Control Delay (s)	21.8	20.7	8.2	0.0	0.0	8.3	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	21.8	20.7	0.4			1.2		
Approach LOS	C	C						

Intersection Summary				
Average Delay	4.4			
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)	59	9	1	118	441	148
Future Volume (Veh/h)	59	9	1	118	441	148
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)	64	10	1	128	479	161
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.94	0.94	0.94			
vC, conflicting volume	690	560	640			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	633	494	580			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	84	98	100			
cM capacity (veh/h)	397	538	929			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	74	1	128	640
Volume Left	64	1	0	0
Volume Right	10	0	0	161
cSH	412	929	1700	1700
Volume to Capacity	0.18	0.00	0.08	0.38
Queue Length 95th (m)	5.1	0.0	0.0	0.0
Control Delay (s)	15.7	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.7	0.1		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1	6	5	1	14	15	244	1	6	151	5
Future Volume (Veh/h)	11	1	6	5	1	14	15	244	1	6	151	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	1	7	5	1	15	16	265	1	7	164	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)								40				
pX, platoon unblocked	0.95	0.95		0.95	0.95	0.95				0.95		
vC, conflicting volume	494	478	166	483	480	266	169			266		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	442	426	166	431	428	202	169			203		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	99	100	98	99			99		
cM capacity (veh/h)	484	487	878	497	485	798	1409			1302		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	20	21	282	7	169
Volume Left	12	5	16	7	0
Volume Right	7	15	1	0	5
cSH	574	679	1409	1302	1700
Volume to Capacity	0.03	0.03	0.01	0.01	0.10
Queue Length 95th (m)	0.9	0.8	0.3	0.1	0.0
Control Delay (s)	11.5	10.5	0.5	7.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	11.5	10.5	0.5	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	35.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	205	24	72	256	23	23
Future Volume (Veh/h)	205	24	72	256	23	23
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)	223	26	78	278	25	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			249		670	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			249		670	236
tC, single (s)			4.1		6.7	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.5
p0 queue free %			94		93	97
cM capacity (veh/h)			1299		360	763

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	249	356	50
Volume Left	0	78	25
Volume Right	26	0	25
cSH	1700	1299	489
Volume to Capacity	0.15	0.06	0.10
Queue Length 95th (m)	0.0	1.5	2.7
Control Delay (s)	0.0	2.2	13.2
Lane LOS		A	B
Approach Delay (s)	0.0	2.2	13.2
Approach LOS			B

Intersection Summary			
Average Delay		2.2	
Intersection Capacity Utilization		43.0%	ICU Level of Service
Analysis Period (min)		15	

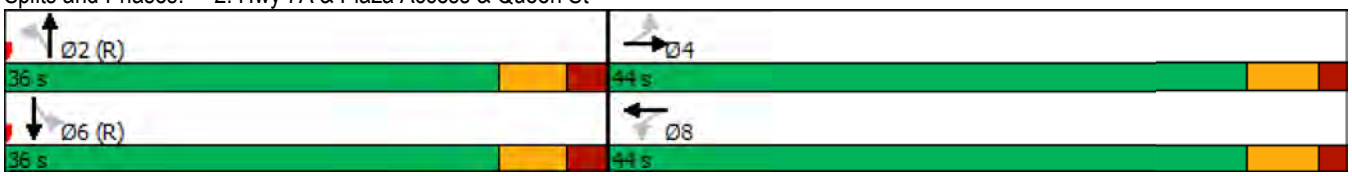


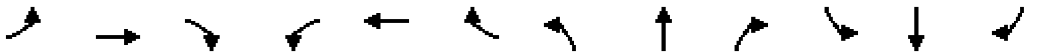
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	3	1	437	1	3	1	126	50	3	183	1
Future Volume (vph)	1	3	1	437	1	3	1	126	50	3	183	1
Satd. Flow (prot)	0	1814	0	0	1759	0	1789	1729	0	1789	1882	0
Flt Permitted		0.948			0.725		0.632			0.637		
Satd. Flow (perm)	0	1737	0	0	1338	0	1190	1729	0	1200	1882	0
Satd. Flow (RTOR)		1			1			28				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	2%	7%	5%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	479	0	1	191	0	3	200	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	29.1	29.1		29.1	29.1		31.6	31.6		31.6	31.6	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Yellow Time (s)	4.3	4.3		4.3	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		33.0			33.0		34.3	34.3		34.3	34.3	
Actuated g/C Ratio		0.41			0.41		0.43	0.43		0.43	0.43	
v/c Ratio		0.01			0.87		0.00	0.25		0.01	0.25	
Control Delay		10.6			38.0		16.0	15.1		16.0	17.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		10.6			38.0		16.0	15.1		16.0	17.3	
LOS		B			D		B	B		B	B	
Approach Delay		10.6			38.0			15.1			17.3	
Approach LOS		B			D			B			B	
Queue Length 50th (m)		0.4			63.9		0.1	16.4		0.3	20.4	
Queue Length 95th (m)		2.1			#104.8		1.1	33.2		2.0	37.8	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		823			634		509	756		514	806	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.01			0.76		0.00	0.25		0.01	0.25	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 28.0 Intersection LOS: C
Intersection Capacity Utilization 58.4% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St

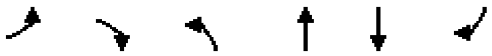




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	44	17	57	37	127	6	421	13	79	333	7
Future Volume (Veh/h)	9	44	17	57	37	127	6	421	13	79	333	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	48	18	62	40	138	7	458	14	86	362	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)												
pX, platoon unblocked												
vC, conflicting volume	1164	1020	362	1048	1014	458	370			472		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1164	1020	362	1048	1014	458	370			472		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.3	4.5			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.4	2.6			2.3		
p0 queue free %	90	78	97	60	82	76	99			92		
cM capacity (veh/h)	105	214	672	153	217	587	1007			1025		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	76	240	7	458	14	86	362	8
Volume Left	10	62	7	0	0	86	0	0
Volume Right	18	138	0	0	14	0	0	8
cSH	220	291	1007	1700	1700	1025	1700	1700
Volume to Capacity	0.35	0.82	0.01	0.27	0.01	0.08	0.21	0.00
Queue Length 95th (m)	11.6	53.8	0.2	0.0	0.0	2.2	0.0	0.0
Control Delay (s)	29.8	56.2	8.6	0.0	0.0	8.8	0.0	0.0
Lane LOS	D	F	A			A		
Approach Delay (s)	29.8	56.2	0.1			1.7		
Approach LOS	D	F						

Intersection Summary				
Average Delay	13.2			
Intersection Capacity Utilization	56.1%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	81	8	5	327	591	93
Future Volume (Veh/h)	81	8	5	327	591	93
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)	88	9	5	355	642	101
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.88	0.88	0.88			
vC, conflicting volume	1058	692	743			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1000	587	644			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	63	98	99			
cM capacity (veh/h)	236	431	832			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	97	5	355	743
Volume Left	88	5	0	0
Volume Right	9	0	0	101
cSH	246	832	1700	1700
Volume to Capacity	0.39	0.01	0.21	0.44
Queue Length 95th (m)	14.1	0.1	0.0	0.0
Control Delay (s)	28.8	9.4	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	28.8	0.1		0.0
Approach LOS	D			

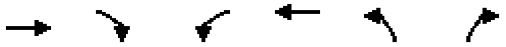
Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	9	2	1	12	5	238	6	15	345	4
Future Volume (Veh/h)	6	1	9	2	1	12	5	238	6	15	345	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	1	10	2	1	13	5	259	7	16	375	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.86	0.86		0.86	0.86	0.86				0.86		
vC, conflicting volume	695	685	377	690	684	262	379			266		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	565	553	377	559	551	62	379			66		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	99	100	98	100			99		
cM capacity (veh/h)	364	373	670	367	374	863	1179			1322		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	18	16	271	16	379
Volume Left	7	2	5	16	0
Volume Right	10	13	7	0	4
cSH	489	690	1179	1322	1700
Volume to Capacity	0.04	0.02	0.00	0.01	0.22
Queue Length 95th (m)	0.9	0.6	0.1	0.3	0.0
Control Delay (s)	12.6	10.3	0.2	7.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	12.6	10.3	0.2	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	28.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	395	44	31	306	43	86
Future Volume (Veh/h)	395	44	31	306	43	86
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)	429	48	34	333	47	93
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			477		854	453
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			477		854	453
tC, single (s)			4.3		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.4		3.6	3.3
p0 queue free %			97		85	85
cM capacity (veh/h)			993		304	607

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	477	367	140
Volume Left	0	34	47
Volume Right	48	0	93
cSH	1700	993	455
Volume to Capacity	0.28	0.03	0.31
Queue Length 95th (m)	0.0	0.8	10.2
Control Delay (s)	0.0	1.1	16.4
Lane LOS		A	C
Approach Delay (s)	0.0	1.1	16.4
Approach LOS			C

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

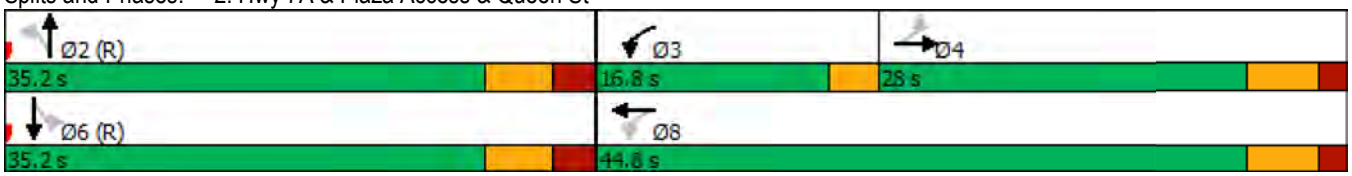


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	40	1	407	16	5	2	303	75	13	287	1
Future Volume (vph)	5	40	1	407	16	5	2	303	75	13	287	1
Satd. Flow (prot)	0	1868	0	0	1745	0	1789	1827	0	1789	1865	0
Flt Permitted		0.958			0.700		0.519			0.414		
Satd. Flow (perm)	0	1799	0	0	1279	0	978	1827	0	780	1865	0
Satd. Flow (RTOR)		1			1			17				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	5%	7%	2%	2%	2%	2%	2%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	464	0	2	411	0	14	313	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	28.0	28.0		16.8	44.8		35.2	35.2		35.2	35.2	
Total Split (%)	35.0%	35.0%		21.0%	56.0%		44.0%	44.0%		44.0%	44.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		33.2			33.2		34.1	34.1		34.1	34.1	
Actuated g/C Ratio		0.42			0.42		0.43	0.43		0.43	0.43	
v/c Ratio		0.07			0.87		0.00	0.52		0.04	0.39	
Control Delay		12.0			39.1		16.5	20.8		17.0	19.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		12.0			39.1		16.5	20.8		17.0	19.4	
LOS		B			D		B	C		B	B	
Approach Delay		12.0			39.1			20.8			19.3	
Approach LOS		B			D			C			B	
Queue Length 50th (m)		4.2			62.1		0.2	46.4		1.3	34.5	
Queue Length 95th (m)		9.3			#101.1		1.6	80.3		5.3	60.3	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		747			619		416	787		331	794	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.07			0.75		0.00	0.52		0.04	0.39	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 26.8 Intersection LOS: C
Intersection Capacity Utilization 61.4% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

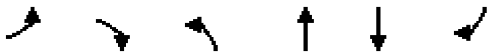
Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	24	10	6	21	86	7	325	12	81	295	5
Future Volume (Veh/h)	2	24	10	6	21	86	7	325	12	81	295	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	26	11	7	23	93	8	353	13	88	321	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)												
pX, platoon unblocked												
vC, conflicting volume	970	879	321	890	871	353	326			366		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	970	879	321	890	871	353	326			366		
tC, single (s)	7.1	6.5	6.3	7.3	6.6	6.3	4.6			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.7	4.1	3.4	2.7			2.3		
p0 queue free %	99	90	98	97	91	86	99			92		
cM capacity (veh/h)	175	262	699	209	256	680	1007			1155		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	39	123	8	353	13	88	321	5
Volume Left	2	7	8	0	0	88	0	0
Volume Right	11	93	0	0	13	0	0	5
cSH	309	473	1007	1700	1700	1155	1700	1700
Volume to Capacity	0.13	0.26	0.01	0.21	0.01	0.08	0.19	0.00
Queue Length 95th (m)	3.4	8.1	0.2	0.0	0.0	2.0	0.0	0.0
Control Delay (s)	18.3	15.3	8.6	0.0	0.0	8.4	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	18.3	15.3	0.2			1.8		
Approach LOS	C	C						

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	40.1%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	2	1	294	715	101
Future Volume (Veh/h)	58	2	1	294	715	101
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)	63	2	1	320	777	110
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.88	0.88	0.88			
vC, conflicting volume	1154	832	887			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1106	738	801			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	99	100			
cM capacity (veh/h)	204	366	721			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	65	1	320	887
Volume Left	63	1	0	0
Volume Right	2	0	0	110
cSH	207	721	1700	1700
Volume to Capacity	0.31	0.00	0.19	0.52
Queue Length 95th (m)	10.1	0.0	0.0	0.0
Control Delay (s)	30.2	10.0	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	30.2	0.0		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	2	21	5	1	2	16	286	13	1	258	20
Future Volume (Veh/h)	25	2	21	5	1	2	16	286	13	1	258	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	2	23	5	1	2	17	311	14	1	280	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.85	0.85		0.85	0.85	0.85				0.85		
vC, conflicting volume	648	652	291	658	656	318	302			325		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	497	503	291	510	507	110	302			118		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	99	97	99	100	100	99			100		
cM capacity (veh/h)	405	395	748	385	392	802	1259			1250		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	52	8	342	1	302
Volume Left	27	5	17	1	0
Volume Right	23	2	14	0	22
cSH	507	444	1259	1250	1700
Volume to Capacity	0.10	0.02	0.01	0.00	0.18
Queue Length 95th (m)	2.7	0.4	0.3	0.0	0.0
Control Delay (s)	12.9	13.3	0.5	7.9	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	12.9	13.3	0.5	0.0	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	39.0%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	328	23	19	258	7	18
Future Volume (Veh/h)	328	23	19	258	7	18
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)	357	25	21	280	8	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			382		692	370
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			382		692	370
tC, single (s)			4.1		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.4
p0 queue free %			98		98	97
cM capacity (veh/h)			1176		381	667

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	382	301	28
Volume Left	0	21	8
Volume Right	25	0	20
cSH	1700	1176	550
Volume to Capacity	0.22	0.02	0.05
Queue Length 95th (m)	0.0	0.4	1.3
Control Delay (s)	0.0	0.7	11.9
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	11.9
Approach LOS			B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

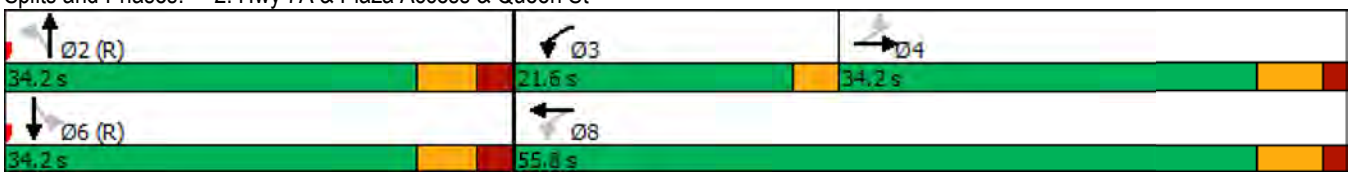


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	25	2	525	20	13	6	289	40	7	275	1
Future Volume (vph)	3	25	2	525	20	13	6	289	40	7	275	1
Satd. Flow (prot)	0	1859	0	0	1793	0	1789	1850	0	1789	1882	0
Flt Permitted		0.963			0.715		0.487			0.415		
Satd. Flow (perm)	0	1799	0	0	1343	0	917	1850	0	782	1882	0
Satd. Flow (RTOR)		2			2			8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	607	0	7	357	0	8	300	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	34.2	34.2		21.6	55.8		34.2	34.2		34.2	34.2	
Total Split (%)	38.0%	38.0%		24.0%	62.0%		38.0%	38.0%		38.0%	38.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		45.3			45.3		32.0	32.0		32.0	32.0	
Actuated g/C Ratio		0.50			0.50		0.36	0.36		0.36	0.36	
v/c Ratio		0.04			0.90		0.02	0.54		0.03	0.45	
Control Delay		9.2			37.4		22.2	27.8		22.3	26.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		9.2			37.4		22.2	27.8		22.3	26.5	
LOS		A			D		C	C		C	C	
Approach Delay		9.2			37.4			27.7			26.4	
Approach LOS		A			D			C			C	
Queue Length 50th (m)		2.4			86.7		0.9	52.0		1.0	43.0	
Queue Length 95th (m)		6.3			#153.4		4.1	83.1		4.3	69.4	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		906			742		326	662		277	669	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.04			0.82		0.02	0.54		0.03	0.45	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 31.4 Intersection LOS: C
Intersection Capacity Utilization 65.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St



Appendix F

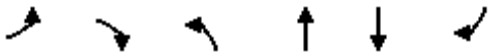
Synchro Reports – Background Volumes

Horizon Year 2029

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	16	5	15	52	91	17	322	36	70	400	5
Future Volume (Veh/h)	4	16	5	15	52	91	17	322	36	70	400	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	17	5	16	57	99	18	350	39	76	435	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)												
pX, platoon unblocked												
vC, conflicting volume	1100	1012	435	986	978	350	440			389		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1100	1012	435	986	978	350	440			389		
tC, single (s)	7.4	6.5	6.7	7.5	6.5	6.4	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.8	4.0	3.8	3.8	4.0	3.5	2.2			2.3		
p0 queue free %	96	92	99	91	75	85	98			93		
cM capacity (veh/h)	106	220	531	172	227	650	1120			1138		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	26	172	18	350	39	76	435	5
Volume Left	4	16	18	0	0	76	0	0
Volume Right	5	99	0	0	39	0	0	5
cSH	209	347	1120	1700	1700	1138	1700	1700
Volume to Capacity	0.12	0.50	0.02	0.21	0.02	0.07	0.26	0.00
Queue Length 95th (m)	3.3	20.8	0.4	0.0	0.0	1.7	0.0	0.0
Control Delay (s)	24.7	25.2	8.3	0.0	0.0	8.4	0.0	0.0
Lane LOS	C	D	A			A		
Approach Delay (s)	24.7	25.2	0.4			1.2		
Approach LOS	C	D						

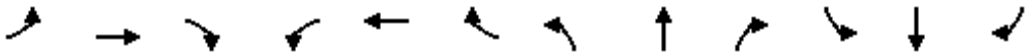
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	45.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	10	1	128	480	161
Future Volume (Veh/h)	64	10	1	128	480	161
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)	70	11	1	139	522	175
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	750	610	697			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	690	538	632			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	81	98	100			
cM capacity (veh/h)	363	503	880			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	81	1	139	697
Volume Left	70	1	0	0
Volume Right	11	0	0	175
cSH	378	880	1700	1700
Volume to Capacity	0.21	0.00	0.08	0.41
Queue Length 95th (m)	6.3	0.0	0.0	0.0
Control Delay (s)	17.1	9.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.1	0.1		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1	7	5	1	15	16	265	1	7	164	5
Future Volume (Veh/h)	12	1	7	5	1	15	16	265	1	7	164	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	1	8	5	1	16	17	288	1	8	178	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)								40				
pX, platoon unblocked	0.94	0.94		0.94	0.94	0.94				0.94		
vC, conflicting volume	536	520	180	525	522	288	183			289		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	475	458	180	464	461	213	183			214		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	99	100	98	99			99		
cM capacity (veh/h)	453	461	862	467	460	779	1392			1277		

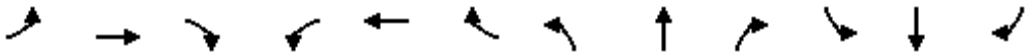
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	22	22	306	8	183
Volume Left	13	5	17	8	0
Volume Right	8	16	1	0	5
cSH	548	658	1392	1277	1700
Volume to Capacity	0.04	0.03	0.01	0.01	0.11
Queue Length 95th (m)	1.0	0.8	0.3	0.1	0.0
Control Delay (s)	11.8	10.7	0.5	7.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	11.8	10.7	0.5	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	37.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	223	24	72	278	23	23
Future Volume (Veh/h)	223	24	72	278	23	23
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)	242	26	78	302	25	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			268		713	255
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			268		713	255
tC, single (s)			4.1		6.7	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.5
p0 queue free %			94		93	97
cM capacity (veh/h)			1278		339	744

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	268	380	50
Volume Left	0	78	25
Volume Right	26	0	25
cSH	1700	1278	466
Volume to Capacity	0.16	0.06	0.11
Queue Length 95th (m)	0.0	1.5	2.8
Control Delay (s)	0.0	2.1	13.7
Lane LOS		A	B
Approach Delay (s)	0.0	2.1	13.7
Approach LOS			B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

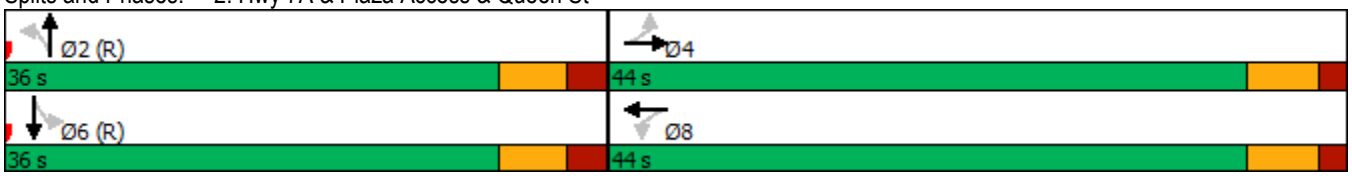


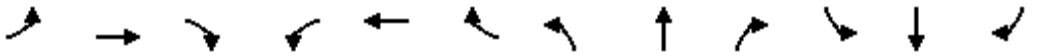
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	4	1	476	1	4	1	137	54	4	199	1
Future Volume (vph)	1	4	1	476	1	4	1	137	54	4	199	1
Satd. Flow (prot)	0	1825	0	0	1759	0	1789	1727	0	1789	1882	0
Flt Permitted		0.954			0.725		0.622			0.628		
Satd. Flow (perm)	0	1755	0	0	1338	0	1172	1727	0	1183	1882	0
Satd. Flow (RTOR)		1			1			28				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	2%	7%	5%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	522	0	1	208	0	4	217	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	29.1	29.1		29.1	29.1		31.6	31.6		31.6	31.6	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Yellow Time (s)	4.3	4.3		4.3	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		34.6			34.6		32.7	32.7		32.7	32.7	
Actuated g/C Ratio		0.43			0.43		0.41	0.41		0.41	0.41	
v/c Ratio		0.01			0.90		0.00	0.29		0.01	0.28	
Control Delay		10.5			41.3		16.0	16.2		16.2	18.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		10.5			41.3		16.0	16.2		16.2	18.3	
LOS		B			D		B	B		B	B	
Approach Delay		10.5			41.3			16.2			18.3	
Approach LOS		B			D			B			B	
Queue Length 50th (m)		0.4			69.1		0.1	19.4		0.4	23.7	
Queue Length 95th (m)		2.4			#127.2		1.1	36.1		2.3	41.0	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		831			634		478	721		482	768	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.01			0.82		0.00	0.29		0.01	0.28	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 30.3 Intersection LOS: C
Intersection Capacity Utilization 60.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St

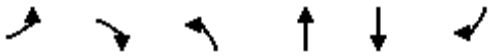




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	48	19	62	40	138	7	458	15	86	363	8
Future Volume (Veh/h)	9	48	19	62	40	138	7	458	15	86	363	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	52	21	67	43	150	8	498	16	93	395	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1266	1111	395	1142	1104	498	404			514		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1266	1111	395	1142	1104	498	404			514		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.3	4.5			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.4	2.6			2.3		
p0 queue free %	88	72	97	46	77	73	99			91		
cM capacity (veh/h)	81	187	643	124	190	557	976			988		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	83	260	8	498	16	93	395	9
Volume Left	10	67	8	0	0	93	0	0
Volume Right	21	150	0	0	16	0	0	9
cSH	191	250	976	1700	1700	988	1700	1700
Volume to Capacity	0.43	1.04	0.01	0.29	0.01	0.09	0.23	0.01
Queue Length 95th (m)	15.8	82.8	0.2	0.0	0.0	2.5	0.0	0.0
Control Delay (s)	37.5	110.3	8.7	0.0	0.0	9.0	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s)	37.5	110.3	0.1			1.7		
Approach LOS	E	F						

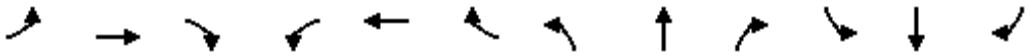
Intersection Summary				
Average Delay	24.0			
Intersection Capacity Utilization	59.5%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	9	5	356	643	101
Future Volume (Veh/h)	88	9	5	356	643	101
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)	96	10	5	387	699	110
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.87	0.87	0.87			
vC, conflicting volume	1151	754	809			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1097	640	703			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	52	97	99			
cM capacity (veh/h)	202	394	776			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	106	5	387	809
Volume Left	96	5	0	0
Volume Right	10	0	0	110
cSH	212	776	1700	1700
Volume to Capacity	0.50	0.01	0.23	0.48
Queue Length 95th (m)	19.9	0.2	0.0	0.0
Control Delay (s)	37.9	9.7	0.0	0.0
Lane LOS	E	A		
Approach Delay (s)	37.9	0.1		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	9	3	1	13	5	259	7	16	376	4
Future Volume (Veh/h)	7	1	9	3	1	13	5	259	7	16	376	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	1	10	3	1	14	5	282	8	17	409	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.83	0.83		0.83	0.83	0.83				0.83		
vC, conflicting volume	756	745	411	750	743	286	413			290		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	607	594	411	600	592	44	413			49		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	98	99	100	98	100			99		
cM capacity (veh/h)	330	342	641	334	343	856	1146			1299		

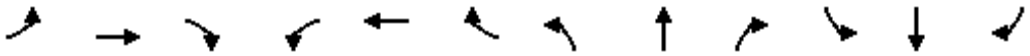
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	19	18	295	17	413
Volume Left	8	3	5	17	0
Volume Right	10	14	8	0	4
cSH	444	637	1146	1299	1700
Volume to Capacity	0.04	0.03	0.00	0.01	0.24
Queue Length 95th (m)	1.1	0.7	0.1	0.3	0.0
Control Delay (s)	13.5	10.8	0.2	7.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	13.5	10.8	0.2	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	30.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	430	44	31	333	43	86
Future Volume (Veh/h)	430	44	31	333	43	86
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)	467	48	34	362	47	93
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			515		921	491
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			515		921	491
tC, single (s)			4.3		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.4		3.6	3.3
p0 queue free %			96		83	84
cM capacity (veh/h)			960		277	578

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	515	396	140
Volume Left	0	34	47
Volume Right	48	0	93
cSH	1700	960	423
Volume to Capacity	0.30	0.04	0.33
Queue Length 95th (m)	0.0	0.9	11.3
Control Delay (s)	0.0	1.1	17.7
Lane LOS		A	C
Approach Delay (s)	0.0	1.1	17.7
Approach LOS			C

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

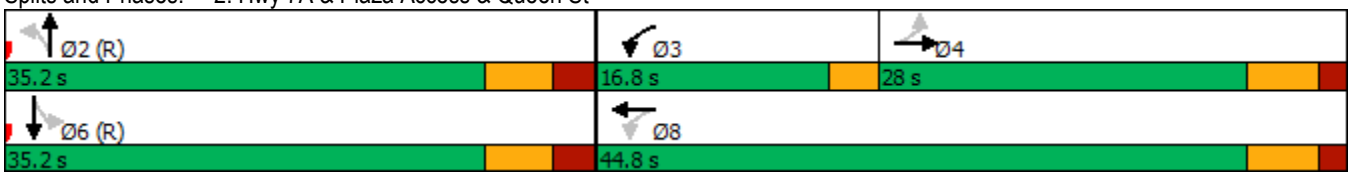


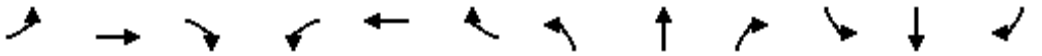
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	44	1	443	18	5	3	330	82	14	312	1
Future Volume (vph)	5	44	1	443	18	5	3	330	82	14	312	1
Satd. Flow (prot)	0	1868	0	0	1745	0	1789	1827	0	1789	1865	0
Flt Permitted		0.960			0.697		0.479			0.361		
Satd. Flow (perm)	0	1803	0	0	1273	0	902	1827	0	680	1865	0
Satd. Flow (RTOR)		1			1			17				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	5%	7%	2%	2%	2%	2%	2%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	507	0	3	448	0	15	340	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	28.0	28.0		16.8	44.8		35.2	35.2		35.2	35.2	
Total Split (%)	35.0%	35.0%		21.0%	56.0%		44.0%	44.0%		44.0%	44.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		34.9			34.9		32.4	32.4		32.4	32.4	
Actuated g/C Ratio		0.44			0.44		0.40	0.40		0.40	0.40	
v/c Ratio		0.07			0.91		0.01	0.60		0.05	0.45	
Control Delay		11.6			43.5		16.7	23.3		17.6	21.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		11.6			43.5		16.7	23.3		17.6	21.0	
LOS		B			D		B	C		B	C	
Approach Delay		11.6			43.5			23.3			20.9	
Approach LOS		B			D			C			C	
Queue Length 50th (m)		4.4			67.6		0.3	55.0		1.5	40.3	
Queue Length 95th (m)		10.1			#124.6		2.0	89.2		5.6	66.1	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		787			616		365	750		275	755	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.07			0.82		0.01	0.60		0.05	0.45	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 29.7 Intersection LOS: C
Intersection Capacity Utilization 65.4% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St

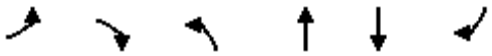




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	26	11	6	23	93	8	354	13	88	321	5
Future Volume (Veh/h)	3	26	11	6	23	93	8	354	13	88	321	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	28	12	7	25	101	9	385	14	96	349	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)												
pX, platoon unblocked												
vC, conflicting volume	1058	958	349	970	949	385	354			399		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1058	958	349	970	949	385	354			399		
tC, single (s)	7.1	6.5	6.3	7.3	6.6	6.3	4.6			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.7	4.1	3.4	2.7			2.3		
p0 queue free %	98	88	98	96	89	85	99			91		
cM capacity (veh/h)	146	233	674	179	228	652	982			1123		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	43	133	9	385	14	96	349	5
Volume Left	3	7	9	0	0	96	0	0
Volume Right	12	101	0	0	14	0	0	5
cSH	271	438	982	1700	1700	1123	1700	1700
Volume to Capacity	0.16	0.30	0.01	0.23	0.01	0.09	0.21	0.00
Queue Length 95th (m)	4.4	10.0	0.2	0.0	0.0	2.2	0.0	0.0
Control Delay (s)	20.7	16.8	8.7	0.0	0.0	8.5	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	20.7	16.8	0.2			1.8		
Approach LOS	C	C						

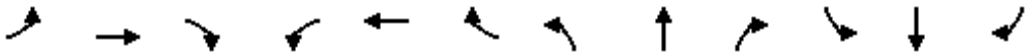
Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	42.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	63	3	1	320	778	110
Future Volume (Veh/h)	63	3	1	320	778	110
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)	68	3	1	348	846	120
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	1256	906	966			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1216	809	879			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	60	99	100			
cM capacity (veh/h)	172	327	661			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	71	1	348	966
Volume Left	68	1	0	0
Volume Right	3	0	0	120
cSH	175	661	1700	1700
Volume to Capacity	0.41	0.00	0.20	0.57
Queue Length 95th (m)	14.2	0.0	0.0	0.0
Control Delay (s)	38.9	10.5	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	38.9	0.0		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	3	23	5	1	3	18	311	14	1	281	21
Future Volume (Veh/h)	28	3	23	5	1	3	18	311	14	1	281	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	3	25	5	1	3	20	338	15	1	305	23
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.83	0.83		0.83	0.83	0.83				0.83		
vC, conflicting volume	708	712	316	719	716	346	328			353		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	541	546	316	555	551	103	328			112		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	99	97	99	100	100	98			100		
cM capacity (veh/h)	366	362	724	346	359	787	1232			1221		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	58	9	373	1	328
Volume Left	30	5	20	1	0
Volume Right	25	3	15	0	23
cSH	465	428	1232	1221	1700
Volume to Capacity	0.12	0.02	0.02	0.00	0.19
Queue Length 95th (m)	3.3	0.5	0.4	0.0	0.0
Control Delay (s)	13.8	13.6	0.6	8.0	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	13.8	13.6	0.6	0.0	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	42.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	356	23	19	281	7	18
Future Volume (Veh/h)	356	23	19	281	7	18
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)	387	25	21	305	8	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			412		746	400
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			412		746	400
tC, single (s)			4.1		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.4
p0 queue free %			98		98	97
cM capacity (veh/h)			1147		353	642

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	412	326	28
Volume Left	0	21	8
Volume Right	25	0	20
cSH	1700	1147	520
Volume to Capacity	0.24	0.02	0.05
Queue Length 95th (m)	0.0	0.4	1.3
Control Delay (s)	0.0	0.7	12.3
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	12.3
Approach LOS			B

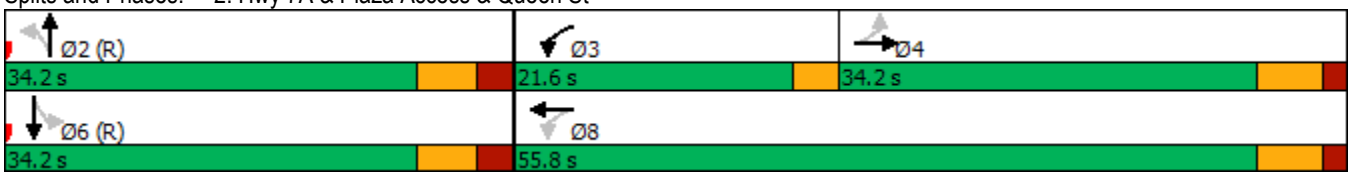
Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	28	3	571	21	14	6	315	44	8	300	1
Future Volume (vph)	4	28	3	571	21	14	6	315	44	8	300	1
Satd. Flow (prot)	0	1853	0	0	1793	0	1789	1850	0	1789	1883	0
Flt Permitted		0.952			0.711		0.439			0.356		
Satd. Flow (perm)	0	1773	0	0	1335	0	827	1850	0	671	1883	0
Satd. Flow (RTOR)		3			2			8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	659	0	7	390	0	9	327	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	34.2	34.2		21.6	55.8		34.2	34.2		34.2	34.2	
Total Split (%)	38.0%	38.0%		24.0%	62.0%		38.0%	38.0%		38.0%	38.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		47.1			47.1		30.2	30.2		30.2	30.2	
Actuated g/C Ratio		0.52			0.52		0.34	0.34		0.34	0.34	
v/c Ratio		0.04			0.94		0.03	0.62		0.04	0.52	
Control Delay		8.9			43.5		22.3	30.9		22.8	28.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.9			43.5		22.3	30.9		22.8	28.7	
LOS		A			D		C	C		C	C	
Approach Delay		8.9			43.5			30.7			28.5	
Approach LOS		A			D			C			C	
Queue Length 50th (m)		2.6			97.7		0.9	59.8		1.1	49.1	
Queue Length 95th (m)		6.9			#175.9		4.1	91.9		4.7	76.3	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		929			738		277	625		225	631	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.04			0.89		0.03	0.62		0.04	0.52	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 35.6 Intersection LOS: D
Intersection Capacity Utilization 70.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

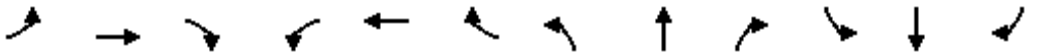
Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St



Appendix G

Synchro Reports – Background Volumes

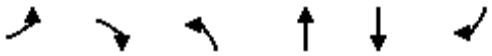
Horizon Year 2034



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	17	6	16	56	99	19	350	39	76	435	6
Future Volume (Veh/h)	4	17	6	16	56	99	19	350	39	76	435	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	18	7	17	61	108	21	380	42	83	473	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1200	1103	473	1077	1068	380	480			422		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1200	1103	473	1077	1068	380	480			422		
tC, single (s)	7.4	6.5	6.7	7.5	6.5	6.4	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.8	4.0	3.8	3.8	4.0	3.5	2.2			2.3		
p0 queue free %	95	91	99	88	69	83	98			92		
cM capacity (veh/h)	83	192	504	144	199	625	1082			1106		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	29	186	21	380	42	83	473	7
Volume Left	4	17	21	0	0	83	0	0
Volume Right	7	108	0	0	42	0	0	7
cSH	186	311	1082	1700	1700	1106	1700	1700
Volume to Capacity	0.16	0.60	0.02	0.22	0.02	0.08	0.28	0.00
Queue Length 95th (m)	4.3	28.6	0.5	0.0	0.0	1.9	0.0	0.0
Control Delay (s)	27.9	32.4	8.4	0.0	0.0	8.5	0.0	0.0
Lane LOS	D	D	A			A		
Approach Delay (s)	27.9	32.4	0.4			1.3		
Approach LOS	D	D						

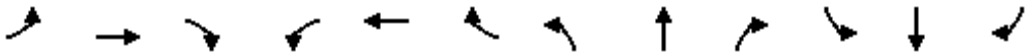
Intersection Summary				
Average Delay	6.3			
Intersection Capacity Utilization	48.1%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	11	1	140	522	175
Future Volume (Veh/h)	70	11	1	140	522	175
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)	76	12	1	152	567	190
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.91	0.91	0.91			
vC, conflicting volume	816	662	757			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	752	584	688			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	77	97	100			
cM capacity (veh/h)	330	468	829			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	88	1	152	757
Volume Left	76	1	0	0
Volume Right	12	0	0	190
cSH	344	829	1700	1700
Volume to Capacity	0.26	0.00	0.09	0.45
Queue Length 95th (m)	7.9	0.0	0.0	0.0
Control Delay (s)	19.0	9.3	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	19.0	0.1		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	1	7	6	1	16	18	289	1	7	179	6
Future Volume (Veh/h)	13	1	7	6	1	16	18	289	1	7	179	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	1	8	7	1	17	20	314	1	8	195	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.93	0.93		0.93	0.93	0.93				0.93		
vC, conflicting volume	586	570	198	574	572	314	202			315		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	518	499	198	504	503	225	202			226		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	98	100	98	99			99		
cM capacity (veh/h)	418	431	843	433	429	757	1370			1249		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	23	25	335	8	202
Volume Left	14	7	20	8	0
Volume Right	8	17	1	0	7
cSH	508	610	1370	1249	1700
Volume to Capacity	0.05	0.04	0.01	0.01	0.12
Queue Length 95th (m)	1.1	1.0	0.4	0.2	0.0
Control Delay (s)	12.4	11.2	0.6	7.9	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	12.4	11.2	0.6	0.3	
Approach LOS	B	B			

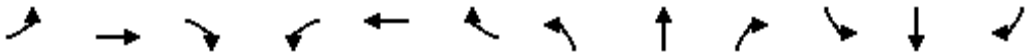
Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	39.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	242	24	72	303	23	23
Future Volume (Veh/h)	242	24	72	303	23	23
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)	263	26	78	329	25	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			289		761	276
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			289		761	276
tC, single (s)			4.1		6.7	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.5
p0 queue free %			94		92	97
cM capacity (veh/h)			1256		316	724

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	289	407	50
Volume Left	0	78	25
Volume Right	26	0	25
cSH	1700	1256	440
Volume to Capacity	0.17	0.06	0.11
Queue Length 95th (m)	0.0	1.6	3.0
Control Delay (s)	0.0	2.0	14.2
Lane LOS		A	B
Approach Delay (s)	0.0	2.0	14.2
Approach LOS			B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

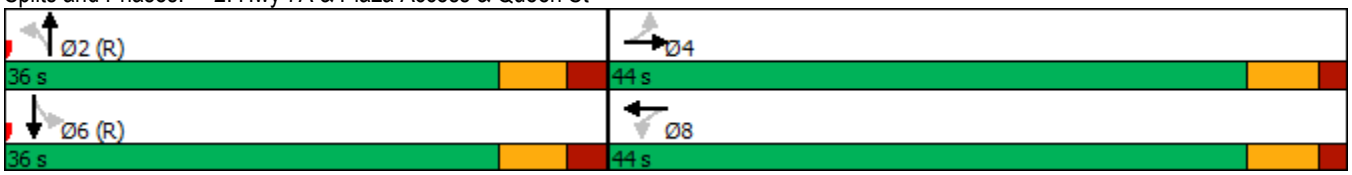


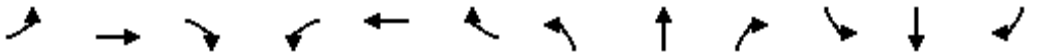
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	4	1	518	1	4	1	149	59	4	216	1
Future Volume (vph)	1	4	1	518	1	4	1	149	59	4	216	1
Satd. Flow (prot)	0	1825	0	0	1759	0	1789	1729	0	1789	1882	0
Flt Permitted		0.952			0.724		0.596			0.609		
Satd. Flow (perm)	0	1752	0	0	1336	0	1123	1729	0	1147	1882	0
Satd. Flow (RTOR)		1			1			28				
Adj. Flow (vph)	1	4	1	563	1	4	1	162	64	4	235	1
Lane Group Flow (vph)	0	6	0	0	568	0	1	226	0	4	236	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	29.1	29.1		29.1	29.1		31.6	31.6		31.6	31.6	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Yellow Time (s)	4.3	4.3		4.3	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		36.3			36.3		31.0	31.0		31.0	31.0	
Actuated g/C Ratio		0.45			0.45		0.39	0.39		0.39	0.39	
v/c Ratio		0.01			0.94		0.00	0.33		0.01	0.32	
Control Delay		10.5			46.3		16.0	17.3		16.2	19.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		10.5			46.3		16.0	17.3		16.2	19.4	
LOS		B			D		B	B		B	B	
Approach Delay		10.5			46.3			17.2			19.4	
Approach LOS		B			D			B			B	
Queue Length 50th (m)		0.4			78.1		0.1	21.9		0.4	26.4	
Queue Length 95th (m)		2.4			#144.9		1.1	39.6		2.3	44.3	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		830			633		435	687		444	729	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.01			0.90		0.00	0.33		0.01	0.32	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 33.5 Intersection LOS: C
Intersection Capacity Utilization 62.9% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St

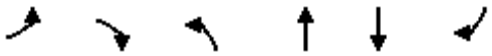




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	52	20	68	43	150	7	498	16	94	395	9
Future Volume (Veh/h)	10	52	20	68	43	150	7	498	16	94	395	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	57	22	74	47	163	8	541	17	102	429	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1376	1207	429	1240	1200	541	439			558		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1376	1207	429	1240	1200	541	439			558		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.3	4.5			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.4	2.6			2.3		
p0 queue free %	82	65	96	23	71	69	99			89		
cM capacity (veh/h)	60	162	615	97	164	526	946			951		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	90	284	8	541	17	102	429	10
Volume Left	11	74	8	0	0	102	0	0
Volume Right	22	163	0	0	17	0	0	10
cSH	158	208	946	1700	1700	951	1700	1700
Volume to Capacity	0.57	1.36	0.01	0.32	0.01	0.11	0.25	0.01
Queue Length 95th (m)	23.4	127.0	0.2	0.0	0.0	2.8	0.0	0.0
Control Delay (s)	54.6	235.3	8.8	0.0	0.0	9.2	0.0	0.0
Lane LOS	F	F	A			A		
Approach Delay (s)	54.6	235.3	0.1			1.7		
Approach LOS	F	F						

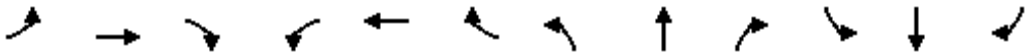
Intersection Summary				
Average Delay	49.1			
Intersection Capacity Utilization	63.3%	ICU Level of Service		B
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	96	10	5	388	700	110
Future Volume (Veh/h)	96	10	5	388	700	110
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)	104	11	5	422	761	120
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.85	0.85	0.85			
vC, conflicting volume	1253	821	881			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1208	698	769			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	39	97	99			
cM capacity (veh/h)	169	356	716			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	115	5	422	881
Volume Left	104	5	0	0
Volume Right	11	0	0	120
cSH	178	716	1700	1700
Volume to Capacity	0.65	0.01	0.25	0.52
Queue Length 95th (m)	29.3	0.2	0.0	0.0
Control Delay (s)	56.0	10.1	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	56.0	0.1		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	10	3	1	15	6	281	7	18	409	4
Future Volume (Veh/h)	7	1	10	3	1	15	6	281	7	18	409	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	1	11	3	1	16	7	305	8	20	445	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.80	0.80		0.80	0.80	0.80				0.80		
vC, conflicting volume	826	814	447	820	812	309	449			313		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	663	647	447	654	645	19	449			24		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	98	99	100	98	99			98		
cM capacity (veh/h)	290	307	612	294	308	852	1111			1279		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	20	20	320	20	449
Volume Left	8	3	7	20	0
Volume Right	11	16	8	0	4
cSH	410	621	1111	1279	1700
Volume to Capacity	0.05	0.03	0.01	0.02	0.26
Queue Length 95th (m)	1.2	0.8	0.2	0.4	0.0
Control Delay (s)	14.2	11.0	0.2	7.9	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	14.2	11.0	0.2	0.3	
Approach LOS	B	B			

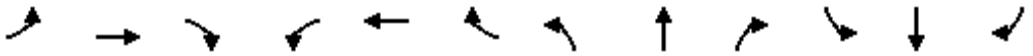
Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	31.8%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	467	44	31	362	43	86
Future Volume (Veh/h)	467	44	31	362	43	86
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)	508	48	34	393	47	93
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			556		993	532
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			556		993	532
tC, single (s)			4.3		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.4		3.6	3.3
p0 queue free %			96		81	83
cM capacity (veh/h)			926		250	547

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	556	427	140
Volume Left	0	34	47
Volume Right	48	0	93
cSH	1700	926	391
Volume to Capacity	0.33	0.04	0.36
Queue Length 95th (m)	0.0	0.9	12.6
Control Delay (s)	0.0	1.1	19.2
Lane LOS		A	C
Approach Delay (s)	0.0	1.1	19.2
Approach LOS			C

Intersection Summary			
Average Delay		2.8	
Intersection Capacity Utilization		59.0%	ICU Level of Service B
Analysis Period (min)		15	

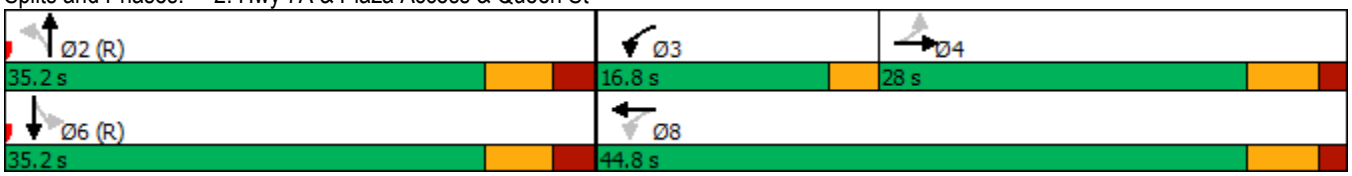


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	48	1	482	19	5	3	359	89	15	340	1
Future Volume (vph)	5	48	1	482	19	5	3	359	89	15	340	1
Satd. Flow (prot)	0	1872	0	0	1745	0	1789	1827	0	1789	1865	0
Flt Permitted		0.961			0.694		0.434			0.305		
Satd. Flow (perm)	0	1806	0	0	1268	0	817	1827	0	574	1865	0
Satd. Flow (RTOR)		1			1			17				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	5%	7%	2%	2%	2%	2%	2%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	550	0	3	487	0	16	371	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	28.0	28.0		16.8	44.8		35.2	35.2		35.2	35.2	
Total Split (%)	35.0%	35.0%		21.0%	56.0%		44.0%	44.0%		44.0%	44.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		36.3			36.3		31.0	31.0		31.0	31.0	
Actuated g/C Ratio		0.45			0.45		0.39	0.39		0.39	0.39	
v/c Ratio		0.07			0.95		0.01	0.68		0.07	0.51	
Control Delay		11.4			50.4		17.0	26.5		18.3	22.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		11.4			50.4		17.0	26.5		18.3	22.8	
LOS		B			D		B	C		B	C	
Approach Delay		11.4			50.4			26.4			22.6	
Approach LOS		B			D			C			C	
Queue Length 50th (m)		4.6			75.0		0.3	63.6		1.7	46.1	
Queue Length 95th (m)		10.6			#141.4		2.0	99.5		5.9	73.0	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		820			613		316	718		222	722	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.07			0.90		0.01	0.68		0.07	0.51	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 33.7 Intersection LOS: C
Intersection Capacity Utilization 69.6% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

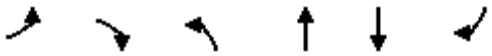
Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	29	12	7	25	101	8	385	14	96	349	5
Future Volume (Veh/h)	3	29	12	7	25	101	8	385	14	96	349	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	32	13	8	27	110	9	418	15	104	379	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)												
pX, platoon unblocked												
vC, conflicting volume	1146	1038	379	1052	1028	418	384			433		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1146	1038	379	1052	1028	418	384			433		
tC, single (s)	7.1	6.5	6.3	7.3	6.6	6.3	4.6			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.7	4.1	3.4	2.7			2.3		
p0 queue free %	98	85	98	95	87	82	99			90		
cM capacity (veh/h)	120	207	648	151	202	624	955			1090		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	48	145	9	418	15	104	379	5
Volume Left	3	8	9	0	0	104	0	0
Volume Right	13	110	0	0	15	0	0	5
cSH	240	400	955	1700	1700	1090	1700	1700
Volume to Capacity	0.20	0.36	0.01	0.25	0.01	0.10	0.22	0.00
Queue Length 95th (m)	5.7	12.8	0.2	0.0	0.0	2.5	0.0	0.0
Control Delay (s)	23.7	19.0	8.8	0.0	0.0	8.6	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	23.7	19.0	0.2			1.8		
Approach LOS	C	C						

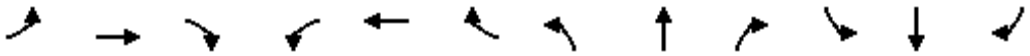
Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	45.3%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	68	3	1	348	846	119
Future Volume (Veh/h)	68	3	1	348	846	119
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)	74	3	1	378	920	129
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.84	0.84	0.84			
vC, conflicting volume	1364	984	1049			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1339	887	963			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	48	99	100			
cM capacity (veh/h)	141	288	601			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	77	1	378	1049
Volume Left	74	1	0	0
Volume Right	3	0	0	129
cSH	144	601	1700	1700
Volume to Capacity	0.53	0.00	0.22	0.62
Queue Length 95th (m)	20.7	0.0	0.0	0.0
Control Delay (s)	55.4	11.0	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	55.4	0.0		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	3	25	5	1	3	19	338	15	1	305	23
Future Volume (Veh/h)	30	3	25	5	1	3	19	338	15	1	305	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	3	27	5	1	3	21	367	16	1	332	25
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.80	0.80		0.80	0.80	0.80				0.80		
vC, conflicting volume	767	772	344	780	776	375	357			383		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	586	591	344	601	597	97	357			106		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	99	96	98	100	100	98			100		
cM capacity (veh/h)	332	330	698	311	328	769	1202			1190		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	63	9	404	1	357
Volume Left	33	5	21	1	0
Volume Right	27	3	16	0	25
cSH	428	391	1202	1190	1700
Volume to Capacity	0.15	0.02	0.02	0.00	0.21
Queue Length 95th (m)	4.0	0.6	0.4	0.0	0.0
Control Delay (s)	14.9	14.4	0.6	8.0	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	14.9	14.4	0.6	0.0	
Approach LOS	B	B			

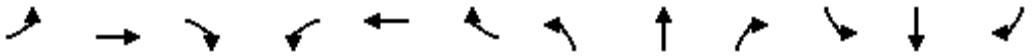
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	45.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	388	23	19	306	7	18
Future Volume (Veh/h)	388	23	19	306	7	18
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)	422	25	21	333	8	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			447		810	434
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			447		810	434
tC, single (s)			4.1		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.4
p0 queue free %			98		98	97
cM capacity (veh/h)			1113		324	613

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	447	354	28
Volume Left	0	21	8
Volume Right	25	0	20
cSH	1700	1113	488
Volume to Capacity	0.26	0.02	0.06
Queue Length 95th (m)	0.0	0.5	1.4
Control Delay (s)	0.0	0.7	12.8
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	12.8
Approach LOS			B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

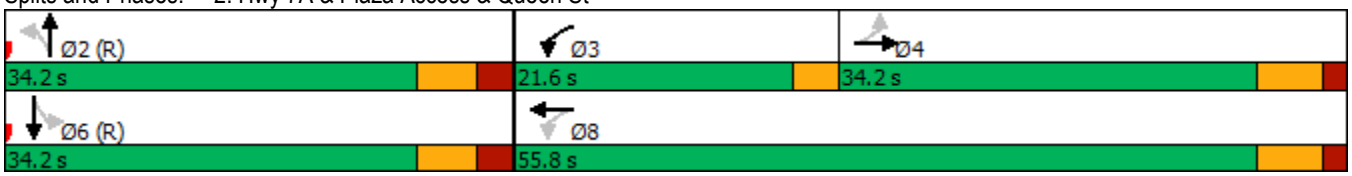


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	30	3	622	23	15	7	342	48	8	326	1
Future Volume (vph)	4	30	3	622	23	15	7	342	48	8	326	1
Satd. Flow (prot)	0	1855	0	0	1793	0	1789	1850	0	1789	1883	0
Flt Permitted		0.952			0.709		0.388			0.296		
Satd. Flow (perm)	0	1775	0	0	1331	0	731	1850	0	557	1883	0
Satd. Flow (RTOR)		3			2			8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	717	0	8	424	0	9	355	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	34.2	34.2		21.6	55.8		34.2	34.2		34.2	34.2	
Total Split (%)	38.0%	38.0%		24.0%	62.0%		38.0%	38.0%		38.0%	38.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		48.5			48.5		28.8	28.8		28.8	28.8	
Actuated g/C Ratio		0.54			0.54		0.32	0.32		0.32	0.32	
v/c Ratio		0.04			1.00		0.03	0.71		0.05	0.59	
Control Delay		8.9			55.7		22.6	34.8		23.1	31.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.9			55.7		22.6	34.8		23.1	31.0	
LOS		A			E		C	C		C	C	
Approach Delay		8.9			55.7			34.6			30.8	
Approach LOS		A			E			C			C	
Queue Length 50th (m)		2.9			116.8		1.0	66.7		1.1	54.1	
Queue Length 95th (m)		7.3			#200.7		4.3	#101.8		4.8	83.4	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		957			735		234	597		178	602	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.04			0.98		0.03	0.71		0.05	0.59	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 42.8 Intersection LOS: D
Intersection Capacity Utilization 74.7% 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.

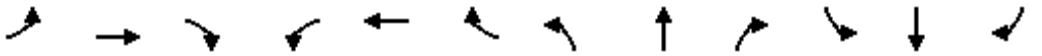
Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St



Appendix H

Synchro Reports – Total Volumes

Horizon Year 2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	21	5	15	56	94	16	296	67	105	368	5
Future Volume (Veh/h)	4	21	5	15	56	94	16	296	67	105	368	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	23	5	16	61	102	17	322	73	114	400	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)												
pX, platoon unblocked												
vC, conflicting volume	1116	1057	400	1000	989	322	405			395		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1116	1057	400	1000	989	322	405			395		
tC, single (s)	7.4	6.5	6.7	7.5	6.5	6.4	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.8	4.0	3.8	3.8	4.0	3.5	2.2			2.3		
p0 queue free %	96	88	99	90	72	85	99			90		
cM capacity (veh/h)	98	199	558	159	216	675	1154			1132		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	32	179	17	322	73	114	400	5
Volume Left	4	16	17	0	0	114	0	0
Volume Right	5	102	0	0	73	0	0	5
cSH	194	335	1154	1700	1700	1132	1700	1700
Volume to Capacity	0.17	0.53	0.01	0.19	0.04	0.10	0.24	0.00
Queue Length 95th (m)	4.6	23.6	0.4	0.0	0.0	2.6	0.0	0.0
Control Delay (s)	27.2	27.4	8.2	0.0	0.0	8.5	0.0	0.0
Lane LOS	D	D	A			A		
Approach Delay (s)	27.2	27.4	0.3			1.9		
Approach LOS	D	D						

Intersection Summary				
Average Delay	6.0			
Intersection Capacity Utilization	44.3%	ICU Level of Service	A	
Analysis Period (min)	15			

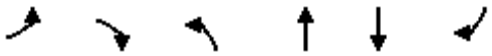
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	21	5	15	56	94	16	296	67	105	368	5
Future Volume (vph)	4	21	5	15	56	94	16	296	67	105	368	5
Satd. Flow (prot)	0	1649	0	0	1504	0	1789	1642	1526	1690	1671	1601
Flt Permitted		0.975			0.975		0.511			0.562		
Satd. Flow (perm)	0	1617	0	0	1472	0	962	1642	1526	1000	1671	1601
Satd. Flow (RTOR)		5			81				73			12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	33%	2%	50%	36%	5%	22%	2%	17%	7%	8%	15%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	179	0	17	322	73	114	400	5
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	20.0	20.0		20.0	20.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	Max
Act Effct Green (s)		11.8			11.8		55.8	55.8	55.8	55.8	55.8	55.8
Actuated g/C Ratio		0.16			0.16		0.74	0.74	0.74	0.74	0.74	0.74
v/c Ratio		0.12			0.60		0.02	0.27	0.06	0.15	0.32	0.00
Control Delay		23.3			24.4		3.5	4.3	1.2	4.0	4.7	1.2
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		23.3			24.4		3.5	4.3	1.2	4.0	4.7	1.2
LOS		C			C		A	A	A	A	A	A
Approach Delay		23.3			24.4			3.7			4.5	
Approach LOS		C			C			A			A	
Queue Length 50th (m)		3.3			12.7		0.5	10.8	0.0	3.5	14.1	0.0
Queue Length 95th (m)		9.9			30.4		2.5	26.4	3.4	10.7	33.9	0.6
Internal Link Dist (m)		260.5			838.4			501.4			504.8	
Turn Bay Length (m)							79.0		20.0	74.0		20.0
Base Capacity (vph)		668			653		709	1210	1144	737	1232	1184
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		0.05			0.27		0.02	0.27	0.06	0.15	0.32	0.00

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 75.6

Natural Cycle: 45	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 7.9	Intersection LOS: A
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Hwy 7 & Scugog Line 6

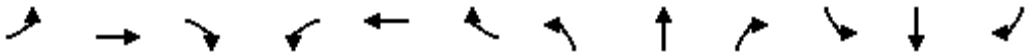




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	65	12	1	118	441	244
Future Volume (Veh/h)	65	12	1	118	441	244
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	13	1	128	479	265
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	742	612	744			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	683	543	686			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	81	97	100			
cM capacity (veh/h)	368	501	843			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	84	1	128	744
Volume Left	71	1	0	0
Volume Right	13	0	0	265
cSH	384	843	1700	1700
Volume to Capacity	0.22	0.00	0.08	0.44
Queue Length 95th (m)	6.5	0.0	0.0	0.0
Control Delay (s)	17.0	9.3	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.0	0.1		0.0
Approach LOS	C			

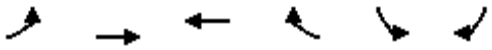
Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1	6	7	1	14	16	244	1	6	151	5
Future Volume (Veh/h)	11	1	6	7	1	14	16	244	1	6	151	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	1	7	8	1	15	17	265	1	7	164	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)								40				
pX, platoon unblocked	0.95	0.95		0.95	0.95	0.95				0.95		
vC, conflicting volume	496	480	166	485	482	266	169			266		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	438	422	166	427	424	195	169			196		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	98	100	98	99			99		
cM capacity (veh/h)	484	486	878	497	485	801	1409			1303		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	20	24	283	7	169
Volume Left	12	8	17	7	0
Volume Right	7	15	1	0	5
cSH	574	651	1409	1303	1700
Volume to Capacity	0.03	0.04	0.01	0.01	0.10
Queue Length 95th (m)	0.9	0.9	0.3	0.1	0.0
Control Delay (s)	11.5	10.7	0.6	7.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	11.5	10.7	0.6	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	35.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	94	136	76	9	21
Future Volume (Veh/h)	80	94	136	76	9	21
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)	87	102	148	83	10	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	231				466	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	231				466	190
tC, single (s)	4.3				6.8	6.7
tC, 2 stage (s)						
tF (s)	2.3				3.8	3.7
p0 queue free %	93				98	97
cM capacity (veh/h)	1259				462	752

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	189	231	33
Volume Left	87	0	10
Volume Right	0	83	23
cSH	1259	1700	632
Volume to Capacity	0.07	0.14	0.05
Queue Length 95th (m)	1.8	0.0	1.3
Control Delay (s)	4.0	0.0	11.0
Lane LOS	A		B
Approach Delay (s)	4.0	0.0	11.0
Approach LOS			B

Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization		34.5%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	205	40	100	256	28	35
Future Volume (Veh/h)	205	40	100	256	28	35
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)	223	43	109	278	30	38
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			266		740	244
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			266		740	244
tC, single (s)			4.1		6.7	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.5
p0 queue free %			91		91	95
cM capacity (veh/h)			1281		318	754

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	266	387	68
Volume Left	0	109	30
Volume Right	43	0	38
cSH	1700	1281	470
Volume to Capacity	0.16	0.09	0.14
Queue Length 95th (m)	0.0	2.2	4.0
Control Delay (s)	0.0	2.9	14.0
Lane LOS		A	B
Approach Delay (s)	0.0	2.9	14.0
Approach LOS			B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

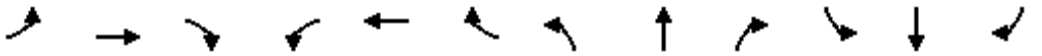
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	21	5	15	56	94	16	296	67	105	368	5
Future Volume (vph)	4	21	5	15	56	94	16	296	67	105	368	5
Satd. Flow (prot)	0	1649	0	0	1504	0	1789	1642	1526	1690	1671	1601
Flt Permitted		0.975			0.975		0.511			0.562		
Satd. Flow (perm)	0	1617	0	0	1472	0	962	1642	1526	1000	1671	1601
Satd. Flow (RTOR)		5			81				73			12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	33%	2%	50%	36%	5%	22%	2%	17%	7%	8%	15%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	179	0	17	322	73	114	400	5
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	20.0	20.0		20.0	20.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	Max
Act Effct Green (s)		11.8			11.8		55.8	55.8	55.8	55.8	55.8	55.8
Actuated g/C Ratio		0.16			0.16		0.74	0.74	0.74	0.74	0.74	0.74
v/c Ratio		0.12			0.60		0.02	0.27	0.06	0.15	0.32	0.00
Control Delay		23.3			24.4		3.5	4.3	1.2	4.0	4.7	1.2
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		23.3			24.4		3.5	4.3	1.2	4.0	4.7	1.2
LOS		C			C		A	A	A	A	A	A
Approach Delay		23.3			24.4			3.7			4.5	
Approach LOS		C			C			A			A	
Queue Length 50th (m)		3.3			12.7		0.5	10.8	0.0	3.5	14.1	0.0
Queue Length 95th (m)		9.9			30.4		2.5	26.4	3.4	10.7	33.9	0.6
Internal Link Dist (m)		260.5			838.4			501.4			504.8	
Turn Bay Length (m)							79.0		20.0	74.0		20.0
Base Capacity (vph)		668			653		709	1210	1144	737	1232	1184
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		0.05			0.27		0.02	0.27	0.06	0.15	0.32	0.00

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 75.6

Natural Cycle: 45	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 7.9	Intersection LOS: A
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Hwy 7 & Scugog Line 6





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	52	17	80	50	162	6	421	15	89	333	7
Future Volume (Veh/h)	9	52	17	80	50	162	6	421	15	89	333	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	57	18	87	54	176	7	458	16	97	362	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)												
pX, platoon unblocked												
vC, conflicting volume	1231	1044	362	1074	1036	458	370			474		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1231	1044	362	1074	1036	458	370			474		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.3	4.5			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.4	2.6			2.3		
p0 queue free %	87	72	97	37	74	70	99			91		
cM capacity (veh/h)	80	205	672	138	208	587	1007			1023		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	85	317	7	458	16	97	362	8
Volume Left	10	87	7	0	0	97	0	0
Volume Right	18	176	0	0	16	0	0	8
cSH	198	267	1007	1700	1700	1023	1700	1700
Volume to Capacity	0.43	1.19	0.01	0.27	0.01	0.09	0.21	0.00
Queue Length 95th (m)	15.7	114.4	0.2	0.0	0.0	2.5	0.0	0.0
Control Delay (s)	36.3	155.6	8.6	0.0	0.0	8.9	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s)	36.3	155.6	0.1			1.8		
Approach LOS	E	F						

Intersection Summary				
Average Delay	39.5			
Intersection Capacity Utilization	60.8%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	52	17	80	50	162	6	421	15	89	333	7
Future Volume (vph)	9	52	17	80	50	162	6	421	15	89	333	7
Satd. Flow (prot)	0	1788	0	0	1638	0	1304	1700	1201	1587	1746	1601
Flt Permitted		0.960			0.899		0.517			0.451		
Satd. Flow (perm)	0	1726	0	0	1493	0	709	1700	1201	753	1746	1601
Satd. Flow (RTOR)		16			76				12			12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	7%	4%	2%	10%	40%	13%	36%	15%	10%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	317	0	7	458	16	97	362	8
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	20.0	20.0		20.0	20.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	Max
Act Effct Green (s)		18.4			18.4		52.0	52.0	52.0	52.0	52.0	52.0
Actuated g/C Ratio		0.23			0.23		0.66	0.66	0.66	0.66	0.66	0.66
v/c Ratio		0.20			0.78		0.01	0.41	0.02	0.19	0.31	0.01
Control Delay		20.1			34.2		6.8	8.7	4.3	8.0	7.7	3.1
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		20.1			34.2		6.8	8.7	4.3	8.0	7.7	3.1
LOS		C			C		A	A	A	A	A	A
Approach Delay		20.1			34.2			8.5			7.7	
Approach LOS		C			C			A			A	
Queue Length 50th (m)		8.4			34.3		0.3	27.8	0.2	4.9	20.3	0.0
Queue Length 95th (m)		18.8			62.0		2.3	65.0	2.8	16.0	48.0	1.5
Internal Link Dist (m)		260.5			835.6			501.4			504.8	
Turn Bay Length (m)							79.0		20.0	74.0		20.0
Base Capacity (vph)		694			637		469	1127	800	499	1157	1065
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		0.12			0.50		0.01	0.41	0.02	0.19	0.31	0.01

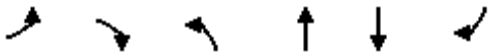
Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 78.5

Natural Cycle: 45	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Hwy 7 & Scugog Line 6

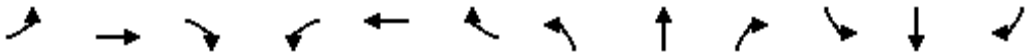




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	104	18	6	327	591	111
Future Volume (Veh/h)	104	18	6	327	591	111
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	20	7	355	642	121
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.88	0.88	0.88			
vC, conflicting volume	1072	702	763			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1014	596	664			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	51	95	99			
cM capacity (veh/h)	230	425	816			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	133	7	355	763
Volume Left	113	7	0	0
Volume Right	20	0	0	121
cSH	247	816	1700	1700
Volume to Capacity	0.54	0.01	0.21	0.45
Queue Length 95th (m)	22.9	0.2	0.0	0.0
Control Delay (s)	35.3	9.5	0.0	0.0
Lane LOS	E	A		
Approach Delay (s)	35.3	0.2		0.0
Approach LOS	E			

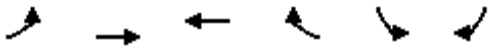
Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	10	2	1	12	7	238	8	15	345	4
Future Volume (Veh/h)	6	1	10	2	1	12	7	238	8	15	345	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	1	11	2	1	13	8	259	9	16	375	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.85	0.85		0.85	0.85	0.85				0.85		
vC, conflicting volume	702	693	377	698	690	264	379			268		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	560	550	377	555	547	44	379			49		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	98	99	100	99	99			99		
cM capacity (veh/h)	361	369	670	363	371	872	1179			1323		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	19	16	276	16	379
Volume Left	7	2	8	16	0
Volume Right	11	13	9	0	4
cSH	493	692	1179	1323	1700
Volume to Capacity	0.04	0.02	0.01	0.01	0.22
Queue Length 95th (m)	0.9	0.6	0.2	0.3	0.0
Control Delay (s)	12.6	10.3	0.3	7.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	12.6	10.3	0.3	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	28.7%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	170	183	19	33	71
Future Volume (Veh/h)	20	170	183	19	33	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	185	199	21	36	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)						
pX, platoon unblocked						
vC, conflicting volume	220				438	210
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	220				438	210
tC, single (s)	4.6				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.6				3.5	3.4
p0 queue free %	98				94	91
cM capacity (veh/h)	1123				559	813

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	207	220	113
Volume Left	22	0	36
Volume Right	0	21	77
cSH	1123	1700	710
Volume to Capacity	0.02	0.13	0.16
Queue Length 95th (m)	0.5	0.0	4.4
Control Delay (s)	1.0	0.0	11.0
Lane LOS	A		B
Approach Delay (s)	1.0	0.0	11.0
Approach LOS			B

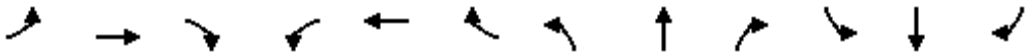
Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	395	48	42	306	58	159
Future Volume (Veh/h)	395	48	42	306	58	159
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)	429	52	46	333	63	173
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			481		880	455
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			481		880	455
tC, single (s)			4.3		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.4		3.6	3.3
p0 queue free %			95		78	71
cM capacity (veh/h)			990		290	605

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	481	379	236
Volume Left	0	46	63
Volume Right	52	0	173
cSH	1700	990	469
Volume to Capacity	0.28	0.05	0.50
Queue Length 95th (m)	0.0	1.2	21.9
Control Delay (s)	0.0	1.5	20.2
Lane LOS		A	C
Approach Delay (s)	0.0	1.5	20.2
Approach LOS			C

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

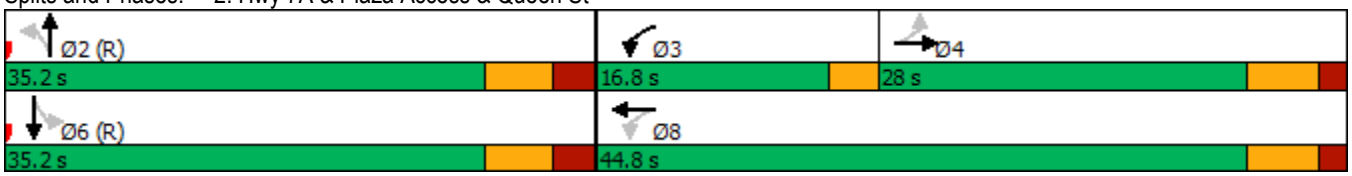


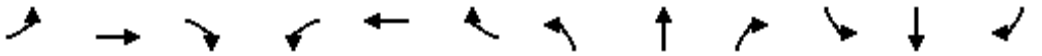
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	40	1	424	16	5	2	307	94	13	288	1
Future Volume (vph)	5	40	1	424	16	5	2	307	94	13	288	1
Satd. Flow (prot)	0	1868	0	0	1743	0	1789	1818	0	1789	1865	0
Flt Permitted		0.957			0.700		0.514			0.382		
Satd. Flow (perm)	0	1797	0	0	1279	0	968	1818	0	719	1865	0
Satd. Flow (RTOR)		1			1			21				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	5%	7%	2%	2%	2%	2%	2%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	483	0	2	436	0	14	314	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	28.0	28.0		16.8	44.8		35.2	35.2		35.2	35.2	
Total Split (%)	35.0%	35.0%		21.0%	56.0%		44.0%	44.0%		44.0%	44.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		34.0			34.0		33.3	33.3		33.3	33.3	
Actuated g/C Ratio		0.42			0.42		0.42	0.42		0.42	0.42	
v/c Ratio		0.06			0.89		0.00	0.57		0.05	0.40	
Control Delay		11.8			40.6		16.5	22.0		17.3	19.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		11.8			40.6		16.5	22.0		17.3	19.9	
LOS		B			D		B	C		B	B	
Approach Delay		11.8			40.6			22.0			19.8	
Approach LOS		B			D			C			B	
Queue Length 50th (m)		4.1			64.4		0.2	50.9		1.3	35.5	
Queue Length 95th (m)		9.3			#114.8		1.6	85.5		5.4	60.7	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		763			619		403	769		299	777	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.06			0.78		0.00	0.57		0.05	0.40	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 28.0 Intersection LOS: C
Intersection Capacity Utilization 63.8% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	25	10	7	24	94	7	325	13	83	295	5
Future Volume (Veh/h)	2	25	10	7	24	94	7	325	13	83	295	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	27	11	8	26	102	8	353	14	90	321	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)												
pX, platoon unblocked												
vC, conflicting volume	985	884	321	894	875	353	326			367		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	985	884	321	894	875	353	326			367		
tC, single (s)	7.1	6.5	6.3	7.3	6.6	6.3	4.6			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.7	4.1	3.4	2.7			2.3		
p0 queue free %	99	90	98	96	90	85	99			92		
cM capacity (veh/h)	167	260	699	206	254	680	1007			1154		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	40	136	8	353	14	90	321	5
Volume Left	2	8	8	0	0	90	0	0
Volume Right	11	102	0	0	14	0	0	5
cSH	304	467	1007	1700	1700	1154	1700	1700
Volume to Capacity	0.13	0.29	0.01	0.21	0.01	0.08	0.19	0.00
Queue Length 95th (m)	3.5	9.5	0.2	0.0	0.0	2.0	0.0	0.0
Control Delay (s)	18.6	15.8	8.6	0.0	0.0	8.4	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	18.6	15.8	0.2			1.8		
Approach LOS	C	C						

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	41.3%	ICU Level of Service		A
Analysis Period (min)	15			

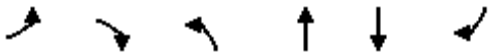
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	25	10	7	24	94	7	325	13	83	295	5
Future Volume (vph)	2	25	10	7	24	94	7	325	13	83	295	5
Satd. Flow (prot)	0	1767	0	0	1587	0	1217	1865	1089	1674	1883	1601
Flt Permitted		0.987			0.984		0.566			0.545		
Satd. Flow (perm)	0	1748	0	0	1566	0	725	1865	1089	961	1883	1601
Satd. Flow (RTOR)		11			102				13			12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	11%	20%	11%	7%	50%	3%	50%	9%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	136	0	8	353	14	90	321	5
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	20.0	20.0		20.0	20.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	Max
Act Effct Green (s)		10.4			10.4		57.3	57.3	57.3	57.3	57.3	57.3
Actuated g/C Ratio		0.14			0.14		0.76	0.76	0.76	0.76	0.76	0.76
v/c Ratio		0.16			0.45		0.01	0.25	0.02	0.12	0.23	0.00
Control Delay		22.7			14.8		2.6	3.4	1.5	3.1	3.3	0.8
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		22.7			14.8		2.6	3.4	1.5	3.1	3.3	0.8
LOS		C			B		A	A	A	A	A	A
Approach Delay		22.7			14.8			3.3			3.2	
Approach LOS		C			B			A			A	
Queue Length 50th (m)		3.7			4.4		0.2	11.5	0.0	2.6	10.2	0.0
Queue Length 95th (m)		11.3			18.5		1.1	21.1	1.2	6.6	19.0	0.5
Internal Link Dist (m)		260.5			840.2			501.4			504.8	
Turn Bay Length (m)							79.0		20.0	74.0		20.0
Base Capacity (vph)		726			705		548	1411	827	727	1425	1214
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		0.06			0.19		0.01	0.25	0.02	0.12	0.23	0.00

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 75.7

Natural Cycle: 45	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 5.7	Intersection LOS: A
Intersection Capacity Utilization 53.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Hwy 7 & Scugog Line 6

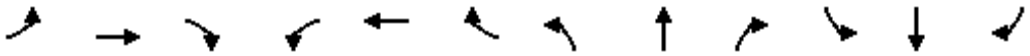




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	2	1	294	715	108
Future Volume (Veh/h)	60	2	1	294	715	108
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	2	1	320	777	117
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.88	0.88	0.88			
vC, conflicting volume	1158	836	894			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1109	742	809			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	99	100			
cM capacity (veh/h)	203	364	716			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	67	1	320	894
Volume Left	65	1	0	0
Volume Right	2	0	0	117
cSH	206	716	1700	1700
Volume to Capacity	0.33	0.00	0.19	0.53
Queue Length 95th (m)	10.6	0.0	0.0	0.0
Control Delay (s)	30.7	10.0	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	30.7	0.0		0.0
Approach LOS	D			

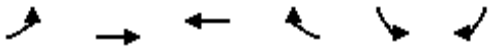
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	2	21	5	1	2	17	286	13	1	258	20
Future Volume (Veh/h)	25	2	21	5	1	2	17	286	13	1	258	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	2	23	5	1	2	18	311	14	1	280	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.85	0.85		0.85	0.85	0.85				0.85		
vC, conflicting volume	650	654	291	660	658	318	302			325		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	497	502	291	510	507	106	302			114		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	99	97	99	100	100	99			100		
cM capacity (veh/h)	403	394	748	384	391	804	1259			1251		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	52	8	343	1	302
Volume Left	27	5	18	1	0
Volume Right	23	2	14	0	22
cSH	506	443	1259	1251	1700
Volume to Capacity	0.10	0.02	0.01	0.00	0.18
Queue Length 95th (m)	2.7	0.4	0.3	0.0	0.0
Control Delay (s)	12.9	13.3	0.5	7.9	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	12.9	13.3	0.5	0.0	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	39.8%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	104	140	7	2	12
Future Volume (Veh/h)	4	104	140	7	2	12
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)	4	113	152	8	2	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	160				277	156
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	160				277	156
tC, single (s)	4.1				6.4	6.5
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.6
p0 queue free %	100				100	98
cM capacity (veh/h)	1419				711	824

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	117	160	15
Volume Left	4	0	2
Volume Right	0	8	13
cSH	1419	1700	806
Volume to Capacity	0.00	0.09	0.02
Queue Length 95th (m)	0.1	0.0	0.4
Control Delay (s)	0.3	0.0	9.5
Lane LOS	A		A
Approach Delay (s)	0.3	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		18.7%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	328	24	23	258	11	25
Future Volume (Veh/h)	328	24	23	258	11	25
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)	357	26	25	280	12	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			383		700	370
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			383		700	370
tC, single (s)			4.1		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.4
p0 queue free %			98		97	96
cM capacity (veh/h)			1175		376	667

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	383	305	39
Volume Left	0	25	12
Volume Right	26	0	27
cSH	1700	1175	538
Volume to Capacity	0.23	0.02	0.07
Queue Length 95th (m)	0.0	0.5	1.8
Control Delay (s)	0.0	0.9	12.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.9	12.2
Approach LOS			B

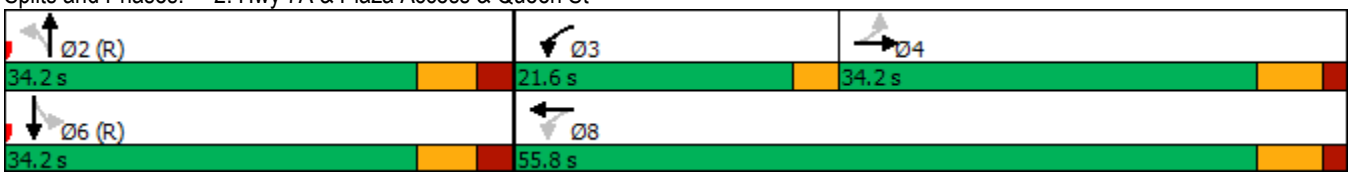
Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	25	2	532	20	13	6	290	41	7	275	1
Future Volume (vph)	3	25	2	532	20	13	6	290	41	7	275	1
Satd. Flow (prot)	0	1859	0	0	1793	0	1789	1848	0	1789	1882	0
Flt Permitted		0.963			0.715		0.486			0.410		
Satd. Flow (perm)	0	1799	0	0	1343	0	915	1848	0	772	1882	0
Satd. Flow (RTOR)		2			2			8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	614	0	7	360	0	8	300	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	34.2	34.2		21.6	55.8		34.2	34.2		34.2	34.2	
Total Split (%)	38.0%	38.0%		24.0%	62.0%		38.0%	38.0%		38.0%	38.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		45.5			45.5		31.8	31.8		31.8	31.8	
Actuated g/C Ratio		0.51			0.51		0.35	0.35		0.35	0.35	
v/c Ratio		0.04			0.90		0.02	0.55		0.03	0.45	
Control Delay		9.2			38.1		22.2	28.1		22.4	26.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		9.2			38.1		22.2	28.1		22.4	26.6	
LOS		A			D		C	C		C	C	
Approach Delay		9.2			38.1			28.0			26.5	
Approach LOS		A			D			C			C	
Queue Length 50th (m)		2.4			88.1		0.9	52.8		1.0	43.2	
Queue Length 95th (m)		6.3			#156.4		4.1	83.6		4.3	69.4	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		910			742		322	657		272	664	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.04			0.83		0.02	0.55		0.03	0.45	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 31.9 Intersection LOS: C
Intersection Capacity Utilization 66.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

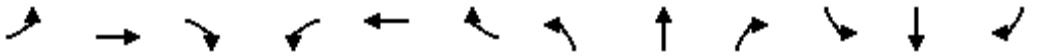
Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St



Appendix I

Synchro Reports – Total Volumes

Horizon Year 2029



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	22	5	16	60	105	17	316	69	124	393	5
Future Volume (Veh/h)	4	22	5	16	60	105	17	316	69	124	393	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	24	5	17	65	114	18	343	75	135	427	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)												
pX, platoon unblocked												
vC, conflicting volume	1222	1151	427	1093	1081	343	432			418		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1222	1151	427	1093	1081	343	432			418		
tC, single (s)	7.4	6.5	6.7	7.5	6.5	6.4	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.8	4.0	3.8	3.8	4.0	3.5	2.2			2.3		
p0 queue free %	95	86	99	87	65	83	98			88		
cM capacity (veh/h)	74	171	537	131	186	656	1128			1110		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	33	196	18	343	75	135	427	5
Volume Left	4	17	18	0	0	135	0	0
Volume Right	5	114	0	0	75	0	0	5
cSH	162	300	1128	1700	1700	1110	1700	1700
Volume to Capacity	0.20	0.65	0.02	0.20	0.04	0.12	0.25	0.00
Queue Length 95th (m)	5.8	33.6	0.4	0.0	0.0	3.3	0.0	0.0
Control Delay (s)	32.9	37.0	8.2	0.0	0.0	8.7	0.0	0.0
Lane LOS	D	E	A			A		
Approach Delay (s)	32.9	37.0	0.3			2.1		
Approach LOS	D	E						

Intersection Summary				
Average Delay	7.8			
Intersection Capacity Utilization	46.8%	ICU Level of Service		A
Analysis Period (min)	15			

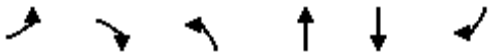
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	22	5	16	60	105	17	316	69	124	393	5
Future Volume (vph)	4	22	5	16	60	105	17	316	69	124	393	5
Satd. Flow (prot)	0	1656	0	0	1499	0	1789	1642	1526	1690	1671	1601
Flt Permitted		0.975			0.976		0.492			0.547		
Satd. Flow (perm)	0	1624	0	0	1469	0	927	1642	1526	973	1671	1601
Satd. Flow (RTOR)		5			85				71			12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	33%	2%	50%	36%	5%	22%	2%	17%	7%	8%	15%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	196	0	18	343	75	135	427	5
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	20.0	20.0		20.0	20.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	Max
Act Effct Green (s)		12.4			12.4		55.2	55.2	55.2	55.2	55.2	55.2
Actuated g/C Ratio		0.16			0.16		0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio		0.12			0.63		0.03	0.29	0.07	0.19	0.35	0.00
Control Delay		23.0			25.3		3.8	4.7	1.4	4.5	5.1	1.4
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		23.0			25.3		3.8	4.7	1.4	4.5	5.1	1.4
LOS		C			C		A	A	A	A	A	A
Approach Delay		23.0			25.3			4.1			4.9	
Approach LOS		C			C			A			A	
Queue Length 50th (m)		3.4			14.3		0.5	12.3	0.2	4.5	16.3	0.0
Queue Length 95th (m)		10.2			33.4		2.7	30.3	3.8	13.5	39.0	0.6
Internal Link Dist (m)		260.5			838.4			501.4			504.8	
Turn Bay Length (m)							79.0		20.0	74.0		20.0
Base Capacity (vph)		670			654		677	1199	1133	710	1220	1172
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		0.05			0.30		0.03	0.29	0.07	0.19	0.35	0.00

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 75.6

Natural Cycle: 45	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 8.3	Intersection LOS: A
Intersection Capacity Utilization 60.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Hwy 7 & Scugog Line 6

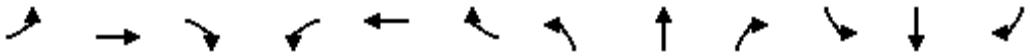




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	13	1	128	480	237
Future Volume (Veh/h)	70	13	1	128	480	237
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	14	1	139	522	258
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.92	0.92	0.92			
vC, conflicting volume	792	651	780			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	730	577	717			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	78	97	100			
cM capacity (veh/h)	342	475	813			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	90	1	139	780
Volume Left	76	1	0	0
Volume Right	14	0	0	258
cSH	357	813	1700	1700
Volume to Capacity	0.25	0.00	0.08	0.46
Queue Length 95th (m)	7.7	0.0	0.0	0.0
Control Delay (s)	18.4	9.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.4	0.1		0.0
Approach LOS	C			

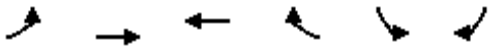
Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1	7	7	1	15	17	265	1	7	164	5
Future Volume (Veh/h)	12	1	7	7	1	15	17	265	1	7	164	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	1	8	8	1	16	18	288	1	8	178	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)								40				
pX, platoon unblocked	0.94	0.94		0.94	0.94	0.94				0.94		
vC, conflicting volume	538	522	180	527	524	288	183			289		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	471	454	180	460	456	205	183			206		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	98	100	98	99			99		
cM capacity (veh/h)	453	460	862	466	459	782	1392			1278		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	22	25	307	8	183
Volume Left	13	8	18	8	0
Volume Right	8	16	1	0	5
cSH	548	628	1392	1278	1700
Volume to Capacity	0.04	0.04	0.01	0.01	0.11
Queue Length 95th (m)	1.0	1.0	0.3	0.1	0.0
Control Delay (s)	11.8	11.0	0.6	7.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	11.8	11.0	0.6	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	37.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	100	142	76	9	21
Future Volume (Veh/h)	80	100	142	76	9	21
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)	87	109	154	83	10	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	237				478	196
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	237				478	196
tC, single (s)	4.3				6.8	6.7
tC, 2 stage (s)						
tF (s)	2.3				3.8	3.7
p0 queue free %	93				98	97
cM capacity (veh/h)	1252				454	746

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	196	237	33
Volume Left	87	0	10
Volume Right	0	83	23
cSH	1252	1700	624
Volume to Capacity	0.07	0.14	0.05
Queue Length 95th (m)	1.8	0.0	1.3
Control Delay (s)	3.9	0.0	11.1
Lane LOS	A		B
Approach Delay (s)	3.9	0.0	11.1
Approach LOS			B

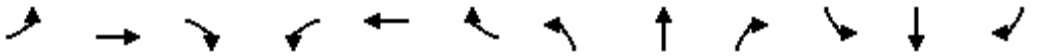
Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	223	40	100	278	28	35
Future Volume (Veh/h)	223	40	100	278	28	35
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)	242	43	109	302	30	38
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			285		784	264
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			285		784	264
tC, single (s)			4.1		6.7	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.5
p0 queue free %			91		90	95
cM capacity (veh/h)			1260		299	736

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	285	411	68
Volume Left	0	109	30
Volume Right	43	0	38
cSH	1700	1260	447
Volume to Capacity	0.17	0.09	0.15
Queue Length 95th (m)	0.0	2.2	4.2
Control Delay (s)	0.0	2.8	14.5
Lane LOS		A	B
Approach Delay (s)	0.0	2.8	14.5
Approach LOS			B

Intersection Summary			
Average Delay		2.8	
Intersection Capacity Utilization		48.0%	ICU Level of Service
Analysis Period (min)		15	

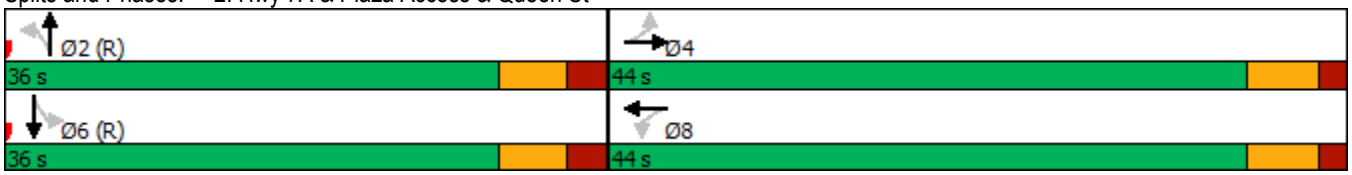


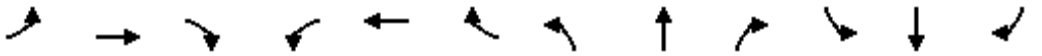
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	4	1	550	1	4	1	138	59	4	201	1
Future Volume (vph)	1	4	1	550	1	4	1	138	59	4	201	1
Satd. Flow (prot)	0	1825	0	0	1759	0	1789	1724	0	1789	1882	0
Flt Permitted		0.951			0.724		0.615			0.621		
Satd. Flow (perm)	0	1750	0	0	1336	0	1158	1724	0	1170	1882	0
Satd. Flow (RTOR)		1			1			30				
Adj. Flow (vph)	1	4	1	598	1	4	1	150	64	4	218	1
Lane Group Flow (vph)	0	6	0	0	603	0	1	214	0	4	219	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	29.1	29.1		29.1	29.1		31.6	31.6		31.6	31.6	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Yellow Time (s)	4.3	4.3		4.3	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		37.3			37.3		30.0	30.0		30.0	30.0	
Actuated g/C Ratio		0.47			0.47		0.38	0.38		0.38	0.38	
v/c Ratio		0.01			0.97		0.00	0.32		0.01	0.31	
Control Delay		10.5			52.1		16.0	17.1		16.2	19.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		10.5			52.1		16.0	17.1		16.2	19.5	
LOS		B			D		B	B		B	B	
Approach Delay		10.5			52.1			17.1			19.4	
Approach LOS		B			D			B			B	
Queue Length 50th (m)		0.4			86.9		0.1	20.2		0.4	24.3	
Queue Length 95th (m)		2.4			#158.2		1.1	37.1		2.3	41.3	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		829			633		434	665		438	706	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.01			0.95		0.00	0.32		0.01	0.31	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 37.7 Intersection LOS: D
Intersection Capacity Utilization 64.7% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	56	19	85	53	173	7	458	17	96	363	8
Future Volume (Veh/h)	9	56	19	85	53	173	7	458	17	96	363	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	61	21	92	58	188	8	498	18	104	395	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1334	1135	395	1168	1126	498	404			516		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1334	1135	395	1168	1126	498	404			516		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.3	4.5			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.4	2.6			2.3		
p0 queue free %	83	66	97	17	68	66	99			89		
cM capacity (veh/h)	60	179	643	110	182	557	976			987		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	92	338	8	498	18	104	395	9
Volume Left	10	92	8	0	0	104	0	0
Volume Right	21	188	0	0	18	0	0	9
cSH	170	227	976	1700	1700	987	1700	1700
Volume to Capacity	0.54	1.49	0.01	0.29	0.01	0.11	0.23	0.01
Queue Length 95th (m)	21.8	159.6	0.2	0.0	0.0	2.8	0.0	0.0
Control Delay (s)	48.6	283.0	8.7	0.0	0.0	9.1	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s)	48.6	283.0	0.1			1.9		
Approach LOS	E	F						

Intersection Summary				
Average Delay	69.2			
Intersection Capacity Utilization	64.2%	ICU Level of Service	C	
Analysis Period (min)	15			

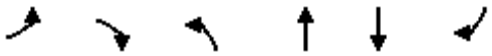
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	56	19	85	53	173	7	458	17	96	363	8
Future Volume (vph)	9	56	19	85	53	173	7	458	17	96	363	8
Satd. Flow (prot)	0	1784	0	0	1639	0	1304	1700	1201	1587	1746	1601
Flt Permitted		0.963			0.898		0.490			0.419		
Satd. Flow (perm)	0	1727	0	0	1491	0	672	1700	1201	700	1746	1601
Satd. Flow (RTOR)		18			76				12			12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	7%	4%	2%	10%	40%	13%	36%	15%	10%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	0	0	338	0	8	498	18	104	395	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	20.0	20.0		20.0	20.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	Max
Act Effct Green (s)		19.9			19.9		51.9	51.9	51.9	51.9	51.9	51.9
Actuated g/C Ratio		0.25			0.25		0.65	0.65	0.65	0.65	0.65	0.65
v/c Ratio		0.21			0.79		0.02	0.45	0.02	0.23	0.35	0.01
Control Delay		19.5			34.9		7.6	10.0	4.9	9.3	8.7	3.6
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		19.5			34.9		7.6	10.0	4.9	9.3	8.7	3.6
LOS		B			C		A	A	A	A	A	A
Approach Delay		19.5			34.9			9.7			8.7	
Approach LOS		B			C			A			A	
Queue Length 50th (m)		9.0			38.2		0.4	33.4	0.3	5.8	24.2	0.0
Queue Length 95th (m)		19.8			66.9		2.5	77.5	3.3	18.8	56.9	1.8
Internal Link Dist (m)		260.5			835.6			501.4			504.8	
Turn Bay Length (m)							79.0		20.0	74.0		20.0
Base Capacity (vph)		686			629		436	1105	784	455	1135	1045
Starvation Cap Reductn		0			0		0	0	0	0	0	0
Spillback Cap Reductn		0			0		0	0	0	0	0	0
Storage Cap Reductn		0			0		0	0	0	0	0	0
Reduced v/c Ratio		0.13			0.54		0.02	0.45	0.02	0.23	0.35	0.01

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 79.8

Natural Cycle: 45
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 15.8 Intersection LOS: B
Intersection Capacity Utilization 75.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Hwy 7 & Scugog Line 6

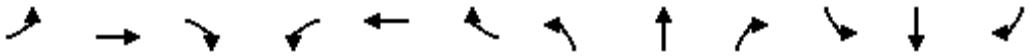




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	111	19	6	356	643	119
Future Volume (Veh/h)	111	19	6	356	643	119
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	121	21	7	387	699	129
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	1164	764	828			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1112	648	723			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	39	95	99			
cM capacity (veh/h)	197	389	760			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	142	7	387	828
Volume Left	121	7	0	0
Volume Right	21	0	0	129
cSH	212	760	1700	1700
Volume to Capacity	0.67	0.01	0.23	0.49
Queue Length 95th (m)	32.5	0.2	0.0	0.0
Control Delay (s)	50.6	9.8	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	50.6	0.2		0.0
Approach LOS	F			

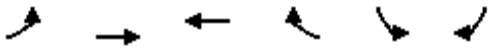
Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	10	3	1	13	7	259	9	16	376	4
Future Volume (Veh/h)	7	1	10	3	1	13	7	259	9	16	376	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	1	11	3	1	14	8	282	10	17	409	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.82	0.82		0.82	0.82	0.82				0.82		
vC, conflicting volume	762	753	411	758	750	287	413			292		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	601	589	411	595	586	21	413			27		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	98	99	100	98	99			99		
cM capacity (veh/h)	327	338	641	330	340	866	1146			1301		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	20	18	300	17	413
Volume Left	8	3	8	17	0
Volume Right	11	14	10	0	4
cSH	448	638	1146	1301	1700
Volume to Capacity	0.04	0.03	0.01	0.01	0.24
Queue Length 95th (m)	1.1	0.7	0.2	0.3	0.0
Control Delay (s)	13.4	10.8	0.3	7.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	13.4	10.8	0.3	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	30.0%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	181	207	19	33	71
Future Volume (Veh/h)	20	181	207	19	33	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	197	225	21	36	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)						
pX, platoon unblocked						
vC, conflicting volume	246				476	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	246				476	236
tC, single (s)	4.6				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.6				3.5	3.4
p0 queue free %	98				93	90
cM capacity (veh/h)	1097				531	787

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	219	246	113
Volume Left	22	0	36
Volume Right	0	21	77
cSH	1097	1700	682
Volume to Capacity	0.02	0.14	0.17
Queue Length 95th (m)	0.5	0.0	4.7
Control Delay (s)	1.0	0.0	11.3
Lane LOS	A		B
Approach Delay (s)	1.0	0.0	11.3
Approach LOS			B

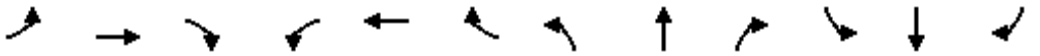
Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	430	48	42	333	58	159
Future Volume (Veh/h)	430	48	42	333	58	159
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)	467	52	46	362	63	173
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			519		947	493
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			519		947	493
tC, single (s)			4.3		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.4		3.6	3.3
p0 queue free %			95		76	70
cM capacity (veh/h)			957		264	576

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	519	408	236
Volume Left	0	46	63
Volume Right	52	0	173
cSH	1700	957	438
Volume to Capacity	0.31	0.05	0.54
Queue Length 95th (m)	0.0	1.2	24.7
Control Delay (s)	0.0	1.5	22.5
Lane LOS		A	C
Approach Delay (s)	0.0	1.5	22.5
Approach LOS			C

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

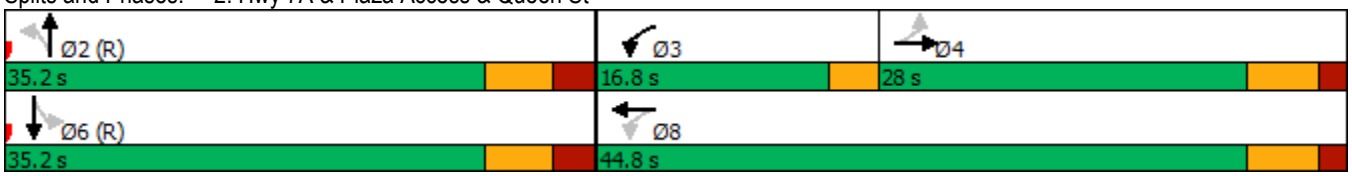


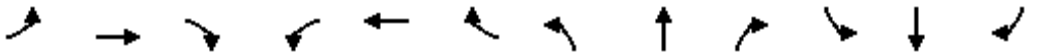
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	44	1	460	18	5	3	334	101	14	313	1
Future Volume (vph)	5	44	1	460	18	5	3	334	101	14	313	1
Satd. Flow (prot)	0	1868	0	0	1745	0	1789	1818	0	1789	1865	0
Flt Permitted		0.959			0.697		0.474			0.327		
Satd. Flow (perm)	0	1801	0	0	1273	0	893	1818	0	616	1865	0
Satd. Flow (RTOR)		1			1			21				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	5%	7%	2%	2%	2%	2%	2%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	525	0	3	473	0	15	341	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	28.0	28.0		16.8	44.8		35.2	35.2		35.2	35.2	
Total Split (%)	35.0%	35.0%		21.0%	56.0%		44.0%	44.0%		44.0%	44.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		35.6			35.6		31.7	31.7		31.7	31.7	
Actuated g/C Ratio		0.44			0.44		0.40	0.40		0.40	0.40	
v/c Ratio		0.07			0.93		0.01	0.64		0.06	0.46	
Control Delay		11.4			45.5		16.7	24.8		17.9	21.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		11.4			45.5		16.7	24.8		17.9	21.5	
LOS		B			D		B	C		B	C	
Approach Delay		11.4			45.5			24.7			21.4	
Approach LOS		B			D			C			C	
Queue Length 50th (m)		4.3			69.9		0.3	60.0		1.5	41.3	
Queue Length 95th (m)		10.1			#131.4		2.0	95.3		5.7	66.4	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		800			616		354	734		244	739	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.07			0.85		0.01	0.64		0.06	0.46	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 31.1 Intersection LOS: C
Intersection Capacity Utilization 67.7% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	27	11	7	26	101	8	354	14	90	321	5
Future Volume (Veh/h)	3	27	11	7	26	101	8	354	14	90	321	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	29	12	8	28	110	9	385	15	98	349	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)												
pX, platoon unblocked												
vC, conflicting volume	1072	963	349	974	953	385	354			400		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1072	963	349	974	953	385	354			400		
tC, single (s)	7.1	6.5	6.3	7.3	6.6	6.3	4.6			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.7	4.1	3.4	2.7			2.3		
p0 queue free %	98	87	98	95	88	83	99			91		
cM capacity (veh/h)	138	231	674	176	226	652	982			1122		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	44	146	9	385	15	98	349	5
Volume Left	3	8	9	0	0	98	0	0
Volume Right	12	110	0	0	15	0	0	5
cSH	267	432	982	1700	1700	1122	1700	1700
Volume to Capacity	0.16	0.34	0.01	0.23	0.01	0.09	0.21	0.00
Queue Length 95th (m)	4.6	11.6	0.2	0.0	0.0	2.3	0.0	0.0
Control Delay (s)	21.1	17.5	8.7	0.0	0.0	8.5	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	21.1	17.5	0.2			1.8		
Approach LOS	C	C						

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	43.3%	ICU Level of Service		A
Analysis Period (min)	15			

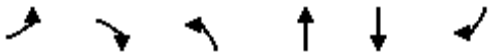
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	27	11	7	26	101	8	354	14	90	321	5
Future Volume (vph)	3	27	11	7	26	101	8	354	14	90	321	5
Satd. Flow (prot)	0	1766	0	0	1586	0	1217	1865	1089	1674	1883	1601
Flt Permitted		0.986			0.985		0.548			0.524		
Satd. Flow (perm)	0	1746	0	0	1566	0	702	1865	1089	924	1883	1601
Satd. Flow (RTOR)		12			110				13			12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	11%	20%	11%	7%	50%	3%	50%	9%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	44	0	0	146	0	9	385	15	98	349	5
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	20.0	20.0		20.0	20.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	Max
Act Effct Green (s)		10.4			10.4		56.6	56.6	56.6	56.6	56.6	56.6
Actuated g/C Ratio		0.14			0.14		0.75	0.75	0.75	0.75	0.75	0.75
v/c Ratio		0.17			0.47		0.02	0.27	0.02	0.14	0.25	0.00
Control Delay		22.6			14.7		2.8	3.6	1.6	3.3	3.4	0.8
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		22.6			14.7		2.8	3.6	1.6	3.3	3.4	0.8
LOS		C			B		A	A	A	A	A	A
Approach Delay		22.6			14.7			3.5			3.3	
Approach LOS		C			B			A			A	
Queue Length 50th (m)		4.0			4.6		0.2	12.8	0.1	2.9	11.3	0.0
Queue Length 95th (m)		12.1			19.2		1.3	23.5	1.3	7.3	20.9	0.5
Internal Link Dist (m)		260.5			840.2			501.4			504.8	
Turn Bay Length (m)							79.0		20.0	74.0		20.0
Base Capacity (vph)		732			715		529	1406	824	696	1420	1210
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		0.06			0.20		0.02	0.27	0.02	0.14	0.25	0.00

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 75

Natural Cycle: 45
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 5.8 Intersection LOS: A
Intersection Capacity Utilization 54.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Hwy 7 & Scugog Line 6

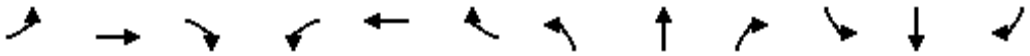




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	65	3	1	320	778	117
Future Volume (Veh/h)	65	3	1	320	778	117
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	3	1	348	846	127
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	1260	910	973			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1220	812	886			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	58	99	100			
cM capacity (veh/h)	171	325	656			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	74	1	348	973
Volume Left	71	1	0	0
Volume Right	3	0	0	127
cSH	174	656	1700	1700
Volume to Capacity	0.43	0.00	0.20	0.57
Queue Length 95th (m)	15.2	0.0	0.0	0.0
Control Delay (s)	40.2	10.5	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	40.2	0.0		0.0
Approach LOS	E			

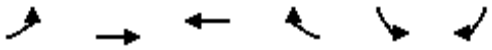
Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	3	23	5	1	3	19	311	14	1	281	21
Future Volume (Veh/h)	28	3	23	5	1	3	19	311	14	1	281	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	3	25	5	1	3	21	338	15	1	305	23
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.82	0.82		0.82	0.82	0.82				0.82		
vC, conflicting volume	710	714	316	721	718	346	328			353		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	542	546	316	555	551	100	328			109		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	99	97	99	100	100	98			100		
cM capacity (veh/h)	365	360	724	345	358	788	1232			1221		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	58	9	374	1	328
Volume Left	30	5	21	1	0
Volume Right	25	3	15	0	23
cSH	464	427	1232	1221	1700
Volume to Capacity	0.13	0.02	0.02	0.00	0.19
Queue Length 95th (m)	3.4	0.5	0.4	0.0	0.0
Control Delay (s)	13.9	13.6	0.6	7.9	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	13.9	13.6	0.6	0.0	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	43.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	112	154	7	2	12
Future Volume (Veh/h)	4	112	154	7	2	12
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)	4	122	167	8	2	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	175				301	171
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	175				301	171
tC, single (s)	4.1				6.4	6.5
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.6
p0 queue free %	100				100	98
cM capacity (veh/h)	1401				689	807

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	126	175	15
Volume Left	4	0	2
Volume Right	0	8	13
cSH	1401	1700	789
Volume to Capacity	0.00	0.10	0.02
Queue Length 95th (m)	0.1	0.0	0.5
Control Delay (s)	0.3	0.0	9.6
Lane LOS	A		A
Approach Delay (s)	0.3	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		19.1%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	356	24	23	281	11	25
Future Volume (Veh/h)	356	24	23	281	11	25
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)	387	26	25	305	12	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			413		755	400
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			413		755	400
tC, single (s)			4.1		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.4
p0 queue free %			98		97	96
cM capacity (veh/h)			1146		348	641

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	413	330	39
Volume Left	0	25	12
Volume Right	26	0	27
cSH	1700	1146	509
Volume to Capacity	0.24	0.02	0.08
Queue Length 95th (m)	0.0	0.5	2.0
Control Delay (s)	0.0	0.8	12.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.8	12.7
Approach LOS			B

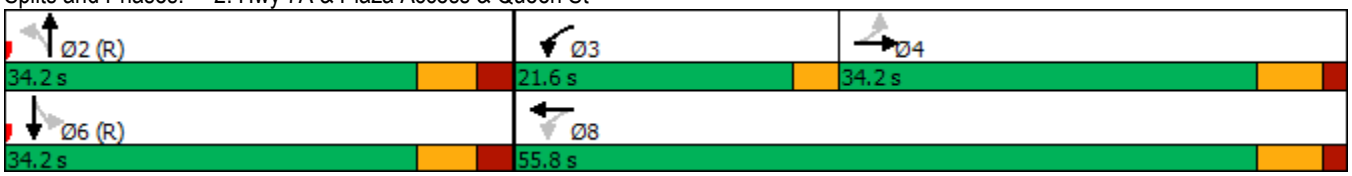
Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	28	3	578	21	14	6	316	45	8	300	1
Future Volume (vph)	4	28	3	578	21	14	6	316	45	8	300	1
Satd. Flow (prot)	0	1853	0	0	1793	0	1789	1848	0	1789	1883	0
Flt Permitted		0.951			0.711		0.437			0.352		
Satd. Flow (perm)	0	1771	0	0	1335	0	823	1848	0	663	1883	0
Satd. Flow (RTOR)		3			2			8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	666	0	7	392	0	9	327	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	34.2	34.2		21.6	55.8		34.2	34.2		34.2	34.2	
Total Split (%)	38.0%	38.0%		24.0%	62.0%		38.0%	38.0%		38.0%	38.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		47.3			47.3		30.0	30.0		30.0	30.0	
Actuated g/C Ratio		0.53			0.53		0.33	0.33		0.33	0.33	
v/c Ratio		0.04			0.95		0.03	0.63		0.04	0.52	
Control Delay		8.9			44.7		22.3	31.2		22.8	28.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.9			44.7		22.3	31.2		22.8	28.8	
LOS		A			D		C	C		C	C	
Approach Delay		8.9			44.7			31.0			28.6	
Approach LOS		A			D			C			C	
Queue Length 50th (m)		2.6			99.7		0.9	60.2		1.1	49.1	
Queue Length 95th (m)		6.9			#179.0		4.1	92.5		4.7	76.3	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		931			738		274	622		221	628	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.04			0.90		0.03	0.63		0.04	0.52	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 36.3 Intersection LOS: D
Intersection Capacity Utilization 70.6% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St



Appendix J

Synchro Reports – Total Volumes

Horizon Year 2034

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	23	6	18	65	109	19	350	73	116	435	6
Future Volume (Veh/h)	4	23	6	18	65	109	19	350	73	116	435	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	25	7	20	71	118	21	380	79	126	473	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1300	1226	473	1166	1154	380	480			459		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1300	1226	473	1166	1154	380	480			459		
tC, single (s)	7.4	6.5	6.7	7.5	6.5	6.4	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.8	4.0	3.8	3.8	4.0	3.5	2.2			2.3		
p0 queue free %	93	84	99	82	58	81	98			88		
cM capacity (veh/h)	59	154	504	114	168	625	1082			1071		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	36	209	21	380	79	126	473	7
Volume Left	4	20	21	0	0	126	0	0
Volume Right	7	118	0	0	79	0	0	7
cSH	148	266	1082	1700	1700	1071	1700	1700
Volume to Capacity	0.24	0.79	0.02	0.22	0.05	0.12	0.28	0.00
Queue Length 95th (m)	7.2	47.3	0.5	0.0	0.0	3.1	0.0	0.0
Control Delay (s)	37.1	54.8	8.4	0.0	0.0	8.8	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s)	37.1	54.8	0.4			1.8		
Approach LOS	E	F						

Intersection Summary				
Average Delay	10.6			
Intersection Capacity Utilization	50.1%	ICU Level of Service	A	
Analysis Period (min)	15			

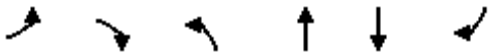
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	23	6	18	65	109	19	350	73	116	435	6
Future Volume (vph)	4	23	6	18	65	109	19	350	73	116	435	6
Satd. Flow (prot)	0	1620	0	0	1502	0	1789	1642	1526	1690	1671	1601
Flt Permitted		0.977			0.972		0.461			0.520		
Satd. Flow (perm)	0	1593	0	0	1468	0	868	1642	1526	925	1671	1601
Satd. Flow (RTOR)		7			79				68			12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	33%	2%	50%	36%	5%	22%	2%	17%	7%	8%	15%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	209	0	21	380	79	126	473	7
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	20.0	20.0		20.0	20.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	Max
Act Effct Green (s)		13.0			13.0		54.9	54.9	54.9	54.9	54.9	54.9
Actuated g/C Ratio		0.17			0.17		0.72	0.72	0.72	0.72	0.72	0.72
v/c Ratio		0.13			0.66		0.03	0.32	0.07	0.19	0.39	0.01
Control Delay		21.8			27.6		4.2	5.2	1.7	4.9	5.8	1.8
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		21.8			27.6		4.2	5.2	1.7	4.9	5.8	1.8
LOS		C			C		A	A	A	A	A	A
Approach Delay		21.8			27.6			4.6			5.6	
Approach LOS		C			C			A			A	
Queue Length 50th (m)		3.5			16.8		0.7	15.0	0.3	4.4	20.1	0.0
Queue Length 95th (m)		10.6			37.1		3.2	36.2	4.5	13.6	47.6	1.0
Internal Link Dist (m)		260.5			838.4			501.4			504.8	
Turn Bay Length (m)							79.0		20.0	74.0		20.0
Base Capacity (vph)		656			647		627	1187	1122	668	1208	1160
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		0.05			0.32		0.03	0.32	0.07	0.19	0.39	0.01

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 75.9

Natural Cycle: 45
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 9.1 Intersection LOS: A
Intersection Capacity Utilization 63.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Hwy 7 & Scugog Line 6

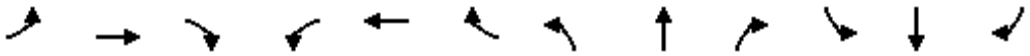




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	76	14	1	140	522	251
Future Volume (Veh/h)	76	14	1	140	522	251
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	83	15	1	152	567	273
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.91	0.91	0.91			
vC, conflicting volume	858	704	840			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	794	625	775			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	73	97	100			
cM capacity (veh/h)	310	441	766			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	98	1	152	840
Volume Left	83	1	0	0
Volume Right	15	0	0	273
cSH	325	766	1700	1700
Volume to Capacity	0.30	0.00	0.09	0.49
Queue Length 95th (m)	9.8	0.0	0.0	0.0
Control Delay (s)	20.8	9.7	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.8	0.1		0.0
Approach LOS	C			

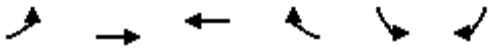
Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	1	7	8	1	16	19	289	1	7	179	6
Future Volume (Veh/h)	13	1	7	8	1	16	19	289	1	7	179	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	1	8	9	1	17	21	314	1	8	195	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.93	0.93		0.93	0.93	0.93				0.93		
vC, conflicting volume	588	572	198	576	574	314	202			315		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	515	497	198	502	500	219	202			220		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	98	100	98	98			99		
cM capacity (veh/h)	418	430	843	432	428	759	1370			1249		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	23	27	336	8	202
Volume Left	14	9	21	8	0
Volume Right	8	17	1	0	7
cSH	507	593	1370	1249	1700
Volume to Capacity	0.05	0.05	0.02	0.01	0.12
Queue Length 95th (m)	1.1	1.1	0.4	0.2	0.0
Control Delay (s)	12.4	11.4	0.6	7.9	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	12.4	11.4	0.6	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	39.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	107	152	76	9	21
Future Volume (Veh/h)	80	107	152	76	9	21
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)	87	116	165	83	10	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	248				496	206
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	248				496	206
tC, single (s)	4.3				6.8	6.7
tC, 2 stage (s)						
tF (s)	2.3				3.8	3.7
p0 queue free %	93				98	97
cM capacity (veh/h)	1240				442	734

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	203	248	33
Volume Left	87	0	10
Volume Right	0	83	23
cSH	1240	1700	612
Volume to Capacity	0.07	0.15	0.05
Queue Length 95th (m)	1.8	0.0	1.3
Control Delay (s)	3.8	0.0	11.2
Lane LOS	A		B
Approach Delay (s)	3.8	0.0	11.2
Approach LOS			B

Intersection Summary			
Average Delay		2.4	
Intersection Capacity Utilization		36.0%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	242	40	100	303	28	35
Future Volume (Veh/h)	242	40	100	303	28	35
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)	263	43	109	329	30	38
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			306		832	284
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			306		832	284
tC, single (s)			4.1		6.7	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.5
p0 queue free %			91		89	95
cM capacity (veh/h)			1238		279	716

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	306	438	68
Volume Left	0	109	30
Volume Right	43	0	38
cSH	1700	1238	423
Volume to Capacity	0.18	0.09	0.16
Queue Length 95th (m)	0.0	2.3	4.5
Control Delay (s)	0.0	2.7	15.1
Lane LOS		A	C
Approach Delay (s)	0.0	2.7	15.1
Approach LOS			C

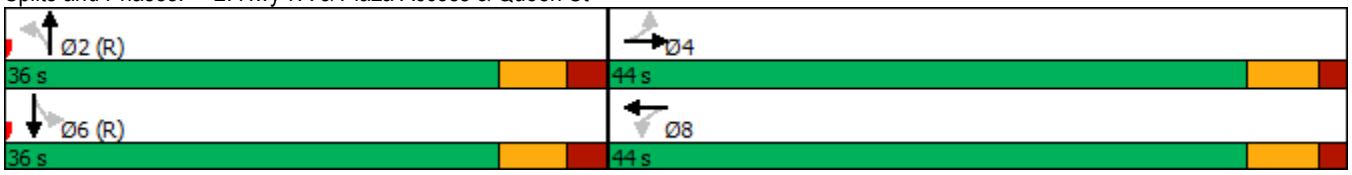
Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

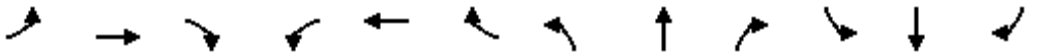
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	4	1	592	1	4	1	150	64	4	218	1
Future Volume (vph)	1	4	1	592	1	4	1	150	64	4	218	1
Satd. Flow (prot)	0	1825	0	0	1759	0	1789	1724	0	1789	1882	0
Flt Permitted		0.949			0.724		0.588			0.594		
Satd. Flow (perm)	0	1746	0	0	1336	0	1107	1724	0	1119	1882	0
Satd. Flow (RTOR)		1			1			31				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	2%	7%	5%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	648	0	1	233	0	4	238	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	29.1	29.1		29.1	29.1		31.6	31.6		31.6	31.6	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Yellow Time (s)	4.3	4.3		4.3	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		37.9			37.9		29.4	29.4		29.4	29.4	
Actuated g/C Ratio		0.47			0.47		0.37	0.37		0.37	0.37	
v/c Ratio		0.01			1.02		0.00	0.36		0.01	0.34	
Control Delay		10.5			65.6		16.0	17.7		16.2	20.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		10.5			65.6		16.0	17.7		16.2	20.1	
LOS		B			E		B	B		B	C	
Approach Delay		10.5			65.6			17.7			20.0	
Approach LOS		B			E			B			C	
Queue Length 50th (m)		0.4			~104.6		0.1	22.4		0.4	26.7	
Queue Length 95th (m)		2.4			#175.0		1.1	40.3		2.3	44.7	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		827			633		406	653		411	691	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.01			1.02		0.00	0.36		0.01	0.34	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 45.7 Intersection LOS: D
Intersection Capacity Utilization 67.0% ICU Level of Service C
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: 2: Hwy 7A & Plaza Access & Queen St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	60	20	91	56	185	7	498	18	104	395	9
Future Volume (Veh/h)	10	60	20	91	56	185	7	498	18	104	395	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	65	22	99	61	201	8	541	20	113	429	10
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1444	1232	429	1266	1222	541	439			561		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1444	1232	429	1266	1222	541	439			561		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.3	4.5			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.4	2.6			2.3		
p0 queue free %	74	58	96	0	61	62	99			88		
cM capacity (veh/h)	43	154	615	85	157	526	946			948		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	98	361	8	541	20	113	429	10
Volume Left	11	99	8	0	0	113	0	0
Volume Right	22	201	0	0	20	0	0	10
cSH	137	186	946	1700	1700	948	1700	1700
Volume to Capacity	0.71	1.94	0.01	0.32	0.01	0.12	0.25	0.01
Queue Length 95th (m)	32.2	212.2	0.2	0.0	0.0	3.2	0.0	0.0
Control Delay (s)	78.8	482.6	8.8	0.0	0.0	9.3	0.0	0.0
Lane LOS	F	F	A			A		
Approach Delay (s)	78.8	482.6	0.1			1.9		
Approach LOS	F	F						

Intersection Summary				
Average Delay	115.9			
Intersection Capacity Utilization	68.0%	ICU Level of Service	C	
Analysis Period (min)	15			

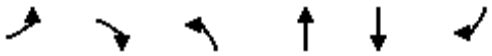
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	60	20	91	56	185	7	498	18	104	395	9
Future Volume (vph)	10	60	20	91	56	185	7	498	18	104	395	9
Satd. Flow (prot)	0	1785	0	0	1637	0	1304	1700	1201	1587	1746	1601
Flt Permitted		0.959			0.894		0.462			0.387		
Satd. Flow (perm)	0	1722	0	0	1485	0	634	1700	1201	646	1746	1601
Satd. Flow (RTOR)		18			77				12			12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	7%	4%	2%	10%	40%	13%	36%	15%	10%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	361	0	8	541	20	113	429	10
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	20.0	20.0		20.0	20.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	Max
Act Effct Green (s)		21.0			21.0		51.6	51.6	51.6	51.6	51.6	51.6
Actuated g/C Ratio		0.26			0.26		0.64	0.64	0.64	0.64	0.64	0.64
v/c Ratio		0.21			0.81		0.02	0.50	0.03	0.27	0.38	0.01
Control Delay		19.4			36.7		7.9	11.1	5.2	10.4	9.5	4.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		19.4			36.7		7.9	11.1	5.2	10.4	9.5	4.0
LOS		B			D		A	B	A	B	A	A
Approach Delay		19.4			36.7			10.8			9.6	
Approach LOS		B			D			B			A	
Queue Length 50th (m)		9.8			42.4		0.4	40.4	0.4	7.0	29.1	0.0
Queue Length 95th (m)		21.0			73.3		2.5	87.3	3.6	21.3	62.9	2.0
Internal Link Dist (m)		260.5			835.6			501.4			504.8	
Turn Bay Length (m)							79.0		20.0	74.0		20.0
Base Capacity (vph)		676			621		405	1087	772	413	1117	1028
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		0.14			0.58		0.02	0.50	0.03	0.27	0.38	0.01

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 80.7

Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 16.8	Intersection LOS: B
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Hwy 7 & Scugog Line 6

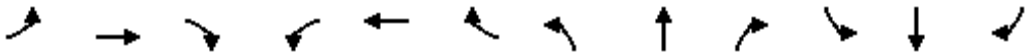




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	119	20	6	388	700	128
Future Volume (Veh/h)	119	20	6	388	700	128
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	129	22	7	422	761	139
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.85	0.85	0.85			
vC, conflicting volume	1266	830	900			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1224	708	790			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	22	94	99			
cM capacity (veh/h)	165	351	701			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	151	7	422	900
Volume Left	129	7	0	0
Volume Right	22	0	0	139
cSH	179	701	1700	1700
Volume to Capacity	0.85	0.01	0.25	0.53
Queue Length 95th (m)	47.4	0.2	0.0	0.0
Control Delay (s)	84.7	10.2	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	84.7	0.2		0.0
Approach LOS	F			

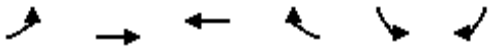
Intersection Summary			
Average Delay	8.7		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	11	3	1	15	8	281	9	18	409	4
Future Volume (Veh/h)	7	1	11	3	1	15	8	281	9	18	409	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	1	12	3	1	16	9	305	10	20	445	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.79	0.79		0.79	0.79	0.79				0.79		
vC, conflicting volume	832	820	447	826	817	310	449			315		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	654	639	447	646	635	0	449			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	98	99	100	98	99			98		
cM capacity (veh/h)	289	304	612	292	305	857	1111			1282		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	21	20	324	20	449
Volume Left	8	3	9	20	0
Volume Right	12	16	10	0	4
cSH	415	621	1111	1282	1700
Volume to Capacity	0.05	0.03	0.01	0.02	0.26
Queue Length 95th (m)	1.3	0.8	0.2	0.4	0.0
Control Delay (s)	14.1	11.0	0.3	7.9	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	14.1	11.0	0.3	0.3	
Approach LOS	B	B			

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	31.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	194	223	19	33	71
Future Volume (Veh/h)	20	194	223	19	33	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	211	242	21	36	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)						
pX, platoon unblocked						
vC, conflicting volume	263				508	252
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	263				508	252
tC, single (s)	4.6				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.6				3.5	3.4
p0 queue free %	98				93	90
cM capacity (veh/h)	1080				509	769

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	233	263	113
Volume Left	22	0	36
Volume Right	0	21	77
cSH	1080	1700	662
Volume to Capacity	0.02	0.15	0.17
Queue Length 95th (m)	0.5	0.0	4.8
Control Delay (s)	1.0	0.0	11.6
Lane LOS	A		B
Approach Delay (s)	1.0	0.0	11.6
Approach LOS			B

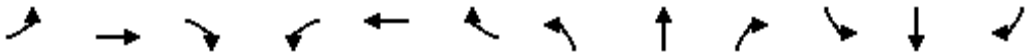
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	467	48	42	362	58	159
Future Volume (Veh/h)	467	48	42	362	58	159
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)	508	52	46	393	63	173
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			560		1019	534
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			560		1019	534
tC, single (s)			4.3		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.4		3.6	3.3
p0 queue free %			95		74	68
cM capacity (veh/h)			923		238	546

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	560	439	236
Volume Left	0	46	63
Volume Right	52	0	173
cSH	1700	923	406
Volume to Capacity	0.33	0.05	0.58
Queue Length 95th (m)	0.0	1.2	28.2
Control Delay (s)	0.0	1.5	25.5
Lane LOS		A	D
Approach Delay (s)	0.0	1.5	25.5
Approach LOS			D

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

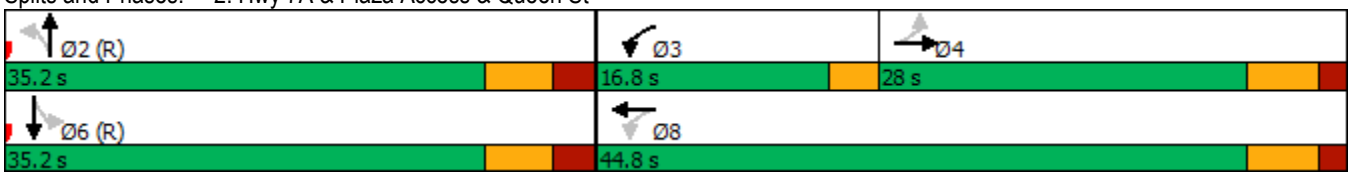


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	48	1	499	19	5	3	363	108	15	341	1
Future Volume (vph)	5	48	1	499	19	5	3	363	108	15	341	1
Satd. Flow (prot)	0	1872	0	0	1743	0	1789	1819	0	1789	1865	0
Flt Permitted		0.960			0.693		0.429			0.271		
Satd. Flow (perm)	0	1804	0	0	1266	0	808	1819	0	510	1865	0
Satd. Flow (RTOR)		1			1			21				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	5%	7%	2%	2%	2%	2%	2%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	568	0	3	512	0	16	372	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	28.0	28.0		16.8	44.8		35.2	35.2		35.2	35.2	
Total Split (%)	35.0%	35.0%		21.0%	56.0%		44.0%	44.0%		44.0%	44.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		36.8			36.8		30.5	30.5		30.5	30.5	
Actuated g/C Ratio		0.46			0.46		0.38	0.38		0.38	0.38	
v/c Ratio		0.07			0.98		0.01	0.73		0.08	0.52	
Control Delay		11.3			54.7		17.0	28.5		18.6	23.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		11.3			54.7		17.0	28.5		18.6	23.2	
LOS		B			D		B	C		B	C	
Approach Delay		11.3			54.7			28.4			23.0	
Approach LOS		B			D			C			C	
Queue Length 50th (m)		4.6			79.6		0.3	67.8		1.7	46.3	
Queue Length 95th (m)		10.6			#148.5		2.0	#116.0		6.0	73.1	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		830			612		307	706		194	710	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.07			0.93		0.01	0.73		0.08	0.52	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 36.1 Intersection LOS: D
Intersection Capacity Utilization 71.9% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hwy 7A & Plaza Access & Queen St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	30	12	8	28	109	8	385	15	98	349	5
Future Volume (Veh/h)	3	30	12	8	28	109	8	385	15	98	349	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	33	13	9	30	118	9	418	16	107	379	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)												
pX, platoon unblocked												
vC, conflicting volume	1162	1045	379	1058	1034	418	384			434		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1162	1045	379	1058	1034	418	384			434		
tC, single (s)	7.1	6.5	6.3	7.3	6.6	6.3	4.6			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.7	4.1	3.4	2.7			2.3		
p0 queue free %	97	84	98	94	85	81	99			90		
cM capacity (veh/h)	114	204	648	148	200	624	955			1089		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	157	9	418	16	107	379	5
Volume Left	3	9	9	0	0	107	0	0
Volume Right	13	118	0	0	16	0	0	5
cSH	236	393	955	1700	1700	1089	1700	1700
Volume to Capacity	0.21	0.40	0.01	0.25	0.01	0.10	0.22	0.00
Queue Length 95th (m)	6.0	14.8	0.2	0.0	0.0	2.6	0.0	0.0
Control Delay (s)	24.3	20.1	8.8	0.0	0.0	8.7	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	24.3	20.1	0.2			1.9		
Approach LOS	C	C						

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	46.4%	ICU Level of Service		A
Analysis Period (min)	15			

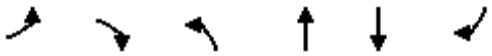
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	30	12	8	28	109	8	385	15	98	349	5
Future Volume (vph)	3	30	12	8	28	109	8	385	15	98	349	5
Satd. Flow (prot)	0	1769	0	0	1587	0	1217	1865	1089	1674	1883	1601
Flt Permitted		0.988			0.984		0.528			0.503		
Satd. Flow (perm)	0	1753	0	0	1566	0	676	1865	1089	887	1883	1601
Satd. Flow (RTOR)		13			118				12			12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	11%	20%	11%	7%	50%	3%	50%	9%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	157	0	9	418	16	107	379	5
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	20.0	20.0		20.0	20.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0		35.0	35.0		55.0	55.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%		38.9%	38.9%		61.1%	61.1%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	Max
Act Effct Green (s)		10.5			10.5		56.0	56.0	56.0	56.0	56.0	56.0
Actuated g/C Ratio		0.14			0.14		0.75	0.75	0.75	0.75	0.75	0.75
v/c Ratio		0.19			0.49		0.02	0.30	0.02	0.16	0.27	0.00
Control Delay		22.8			14.8		2.8	3.7	1.7	3.5	3.6	1.0
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		22.8			14.8		2.8	3.7	1.7	3.5	3.6	1.0
LOS		C			B		A	A	A	A	A	A
Approach Delay		22.8			14.8			3.7			3.5	
Approach LOS		C			B			A			A	
Queue Length 50th (m)		4.5			4.9		0.2	14.2	0.2	3.2	12.5	0.0
Queue Length 95th (m)		13.0			20.2		1.3	26.7	1.5	8.2	23.7	0.5
Internal Link Dist (m)		260.5			840.2			501.4			504.8	
Turn Bay Length (m)							79.0		20.0	74.0		20.0
Base Capacity (vph)		741			723		507	1401	821	666	1414	1206
Starvation Cap Reductn		0			0		0	0	0	0	0	0
Spillback Cap Reductn		0			0		0	0	0	0	0	0
Storage Cap Reductn		0			0		0	0	0	0	0	0
Reduced v/c Ratio		0.07			0.22		0.02	0.30	0.02	0.16	0.27	0.00

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 74.5

Natural Cycle: 45	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Hwy 7 & Scugog Line 6

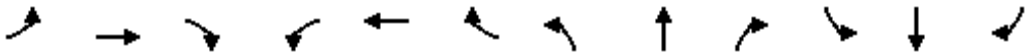




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	3	1	348	846	126
Future Volume (Veh/h)	70	3	1	348	846	126
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	3	1	378	920	137
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					45	
pX, platoon unblocked	0.84	0.84	0.84			
vC, conflicting volume	1368	988	1057			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1343	891	973			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	46	99	100			
cM capacity (veh/h)	140	287	595			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	79	1	378	1057
Volume Left	76	1	0	0
Volume Right	3	0	0	137
cSH	143	595	1700	1700
Volume to Capacity	0.55	0.00	0.22	0.62
Queue Length 95th (m)	21.7	0.0	0.0	0.0
Control Delay (s)	57.4	11.1	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	57.4	0.0		0.0
Approach LOS	F			

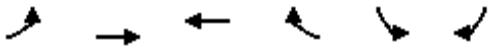
Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	3	25	5	1	3	20	338	15	1	305	23
Future Volume (Veh/h)	30	3	25	5	1	3	20	338	15	1	305	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	3	27	5	1	3	22	367	16	1	332	25
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								40				
pX, platoon unblocked	0.80	0.80		0.80	0.80	0.80				0.80		
vC, conflicting volume	769	774	344	782	778	375	357			383		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	586	591	344	601	597	93	357			103		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	99	96	98	100	100	98			100		
cM capacity (veh/h)	330	329	698	310	326	771	1202			1190		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	63	9	405	1	357
Volume Left	33	5	22	1	0
Volume Right	27	3	16	0	25
cSH	427	390	1202	1190	1700
Volume to Capacity	0.15	0.02	0.02	0.00	0.21
Queue Length 95th (m)	4.1	0.6	0.4	0.0	0.0
Control Delay (s)	14.9	14.5	0.6	8.0	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	14.9	14.5	0.6	0.0	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	45.8%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	122	167	7	2	12
Future Volume (Veh/h)	4	122	167	7	2	12
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)	4	133	182	8	2	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	190				327	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190				327	186
tC, single (s)	4.1				6.4	6.5
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.6
p0 queue free %	100				100	98
cM capacity (veh/h)	1384				665	791

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	137	190	15
Volume Left	4	0	2
Volume Right	0	8	13
cSH	1384	1700	772
Volume to Capacity	0.00	0.11	0.02
Queue Length 95th (m)	0.1	0.0	0.5
Control Delay (s)	0.2	0.0	9.8
Lane LOS	A		A
Approach Delay (s)	0.2	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		19.7%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	388	24	23	306	11	25
Future Volume (Veh/h)	388	24	23	306	11	25
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)	422	26	25	333	12	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			448		818	435
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			448		818	435
tC, single (s)			4.1		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.4
p0 queue free %			98		96	96
cM capacity (veh/h)			1112		319	613

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	448	358	39
Volume Left	0	25	12
Volume Right	26	0	27
cSH	1700	1112	477
Volume to Capacity	0.26	0.02	0.08
Queue Length 95th (m)	0.0	0.5	2.1
Control Delay (s)	0.0	0.8	13.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.8	13.2
Approach LOS			B

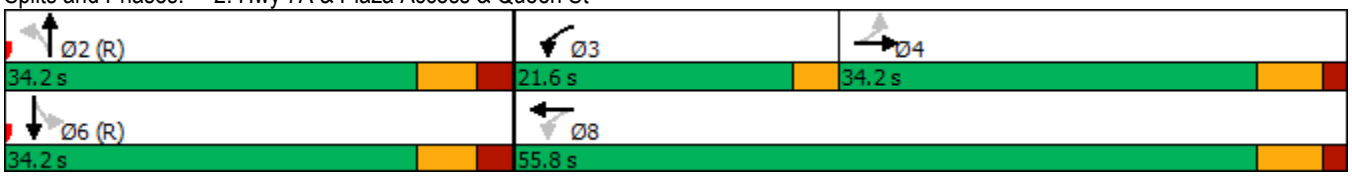
Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		45.0%	ICU Level of Service
Analysis Period (min)		15	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	30	3	629	23	15	7	343	49	8	326	1
Future Volume (vph)	4	30	3	629	23	15	7	343	49	8	326	1
Satd. Flow (prot)	0	1855	0	0	1793	0	1789	1848	0	1789	1883	0
Flt Permitted		0.952			0.709		0.386			0.291		
Satd. Flow (perm)	0	1775	0	0	1331	0	727	1848	0	548	1883	0
Satd. Flow (RTOR)		3			2			8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	725	0	8	426	0	9	355	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.1	23.1		9.0	23.1		29.0	29.0		29.0	29.0	
Total Split (s)	34.2	34.2		21.6	55.8		34.2	34.2		34.2	34.2	
Total Split (%)	38.0%	38.0%		24.0%	62.0%		38.0%	38.0%		38.0%	38.0%	
Yellow Time (s)	4.3	4.3		3.0	4.3		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		0.0	1.8		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.1			6.1		6.6	6.6		6.6	6.6	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		48.7			48.7		28.6	28.6		28.6	28.6	
Actuated g/C Ratio		0.54			0.54		0.32	0.32		0.32	0.32	
v/c Ratio		0.04			1.01		0.03	0.72		0.05	0.59	
Control Delay		8.9			57.5		22.6	35.2		23.2	31.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.9			57.5		22.6	35.2		23.2	31.2	
LOS		A			E		C	D		C	C	
Approach Delay		8.9			57.5			35.0			31.0	
Approach LOS		A			E			D			C	
Queue Length 50th (m)		2.9			119.5		1.0	67.1		1.1	54.1	
Queue Length 95th (m)		7.3			#204.1		4.3	#103.7		4.8	83.4	
Internal Link Dist (m)		194.8			932.6			20.9			16.1	
Turn Bay Length (m)												
Base Capacity (vph)		961			735		230	593		174	598	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.04			0.99		0.03	0.72		0.05	0.59	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 43.8 Intersection LOS: D
Intersection Capacity Utilization 75.2% 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: 2: Hwy 7A & Plaza Access & Queen St



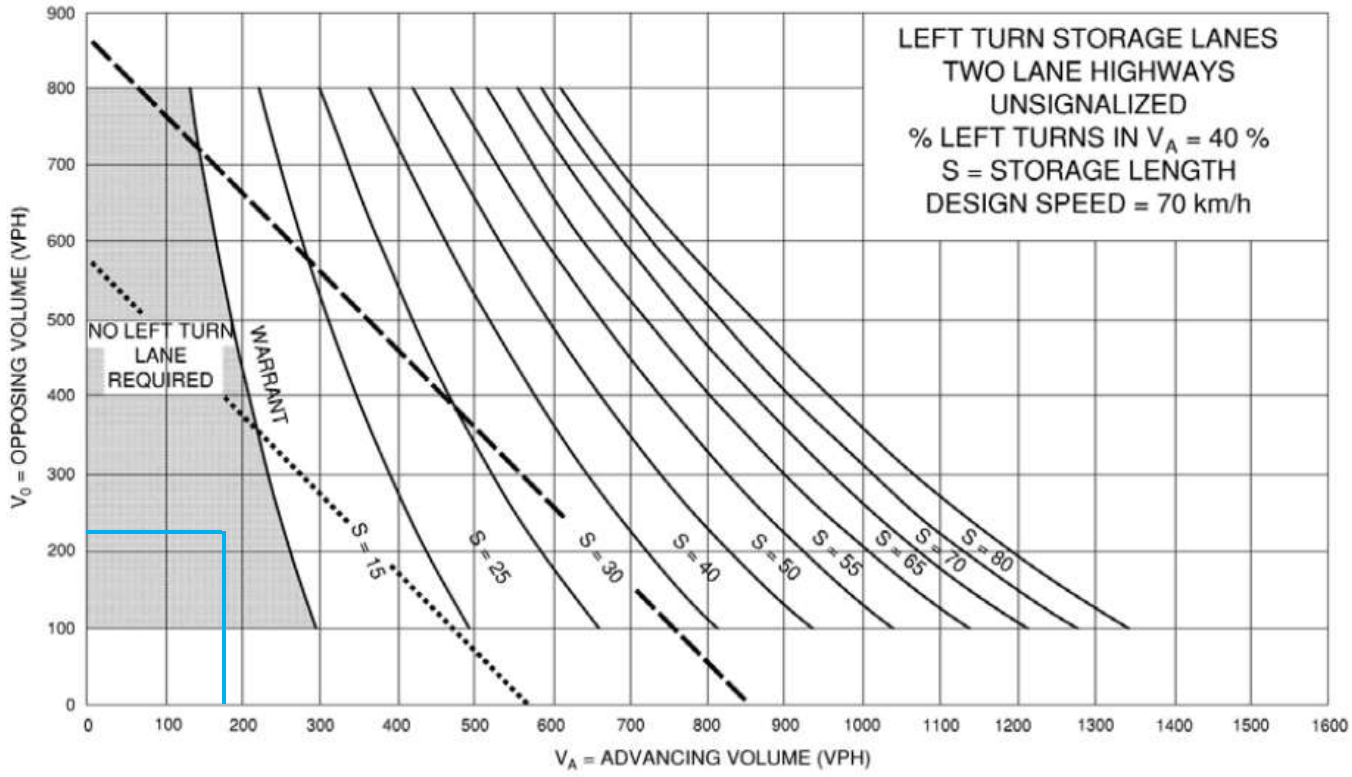
Appendix K

Left Turn Lane Warrants

Site Entrance at Scugog Line 6 - 2034 (70 km/h Tables)

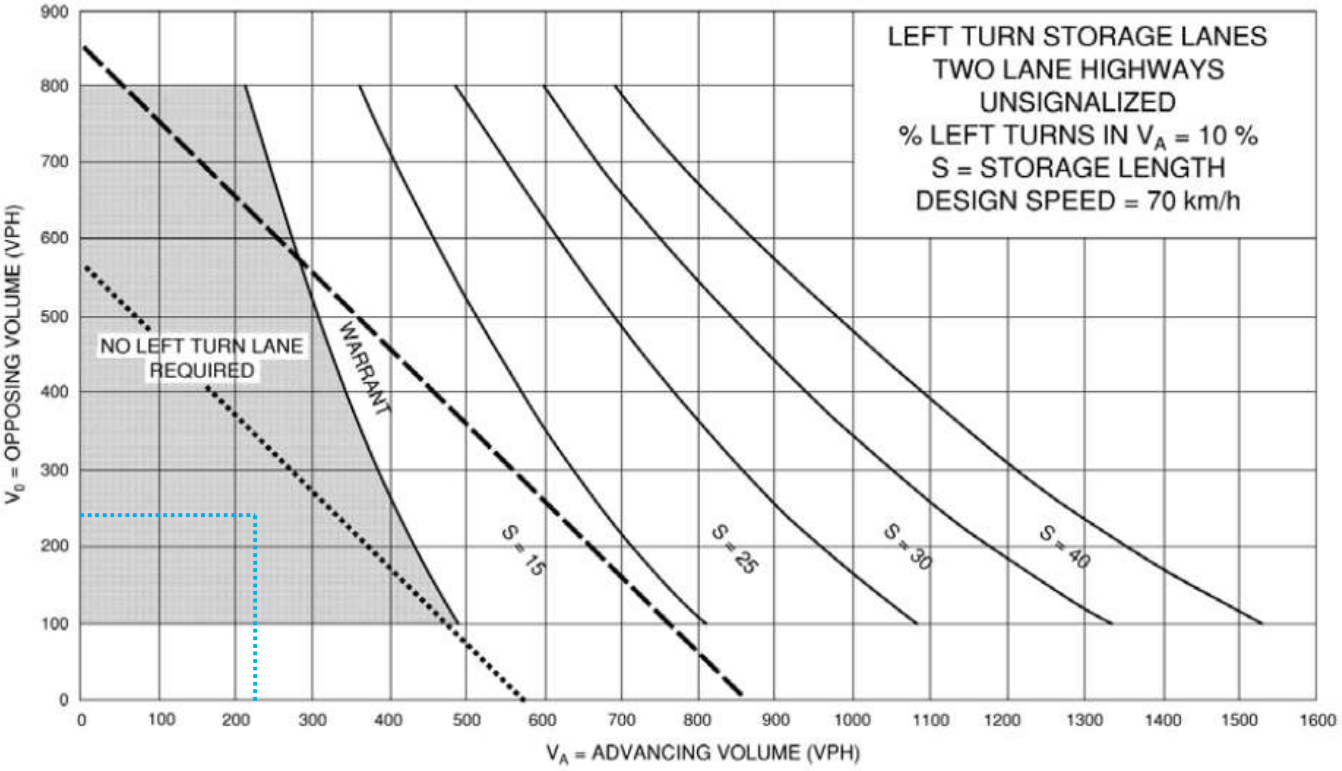
	Access at Scugog Line 6		
Total Volumes 2034	AM	PM	SAT
Opposing Volume (V_O)	228	242	174
Advance Volume (V_a)	187	214	126
Left Turn Traffic Volume (V_L)	80	20	4
% Left Turns in V_a	40% (42.7%)	10% (9.3%)	5% (3.17%)
	———	·····	———

AM Peak Hour

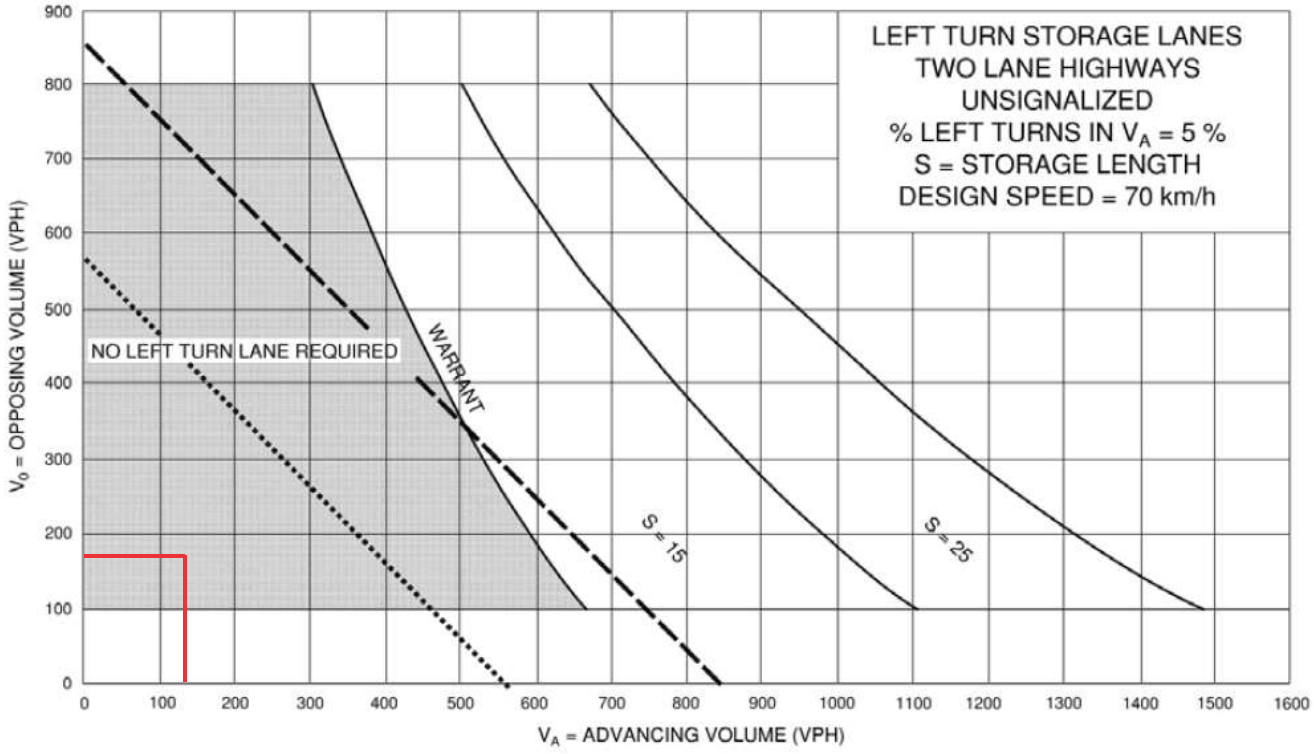


Site Entrance at Scugog Line 6 - 2034 (70 km/h Tables)

PM Peak Hour



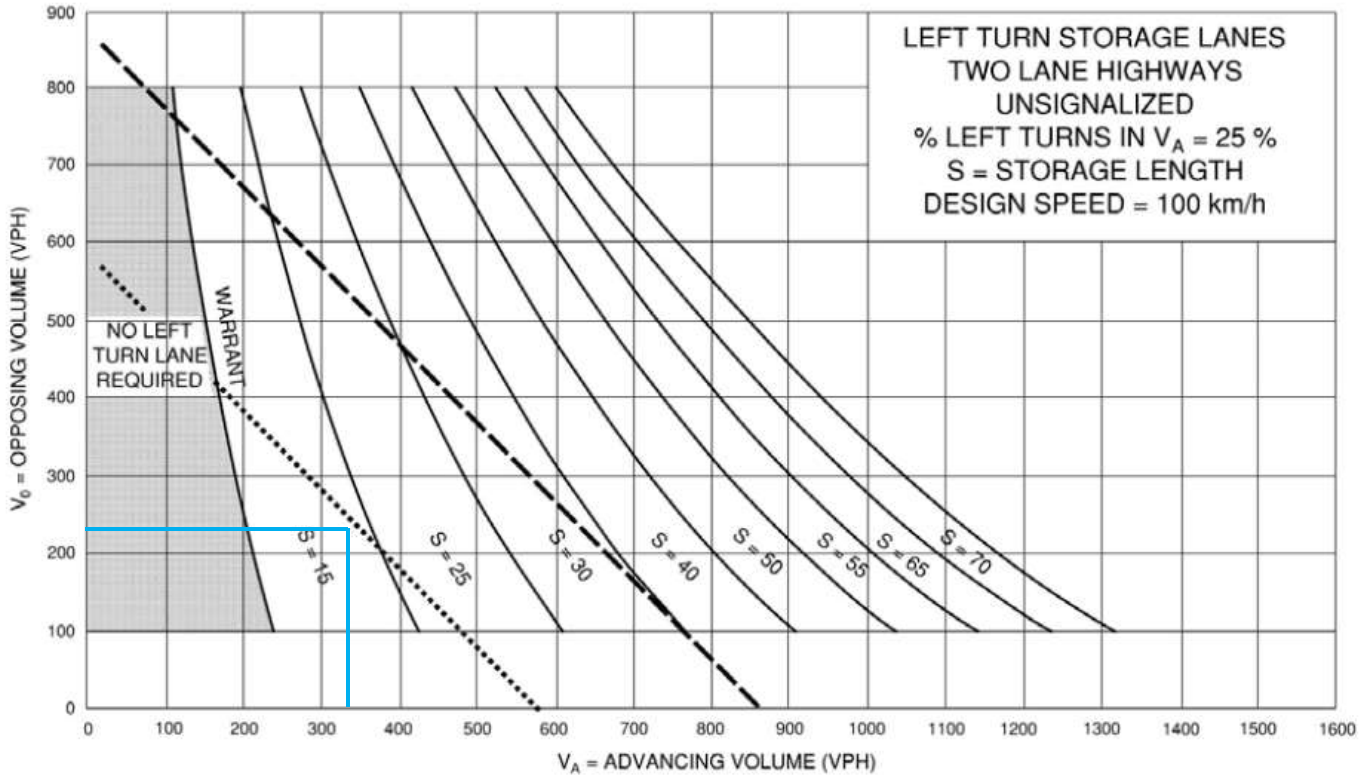
SAT Peak Hour



Site Entrance at Reach St/N. Port Rd Intersection
Existing Volumes 2022 (100 km/h Tables)

	Reach St/N. Port Rd. Intersection		
Existing Volumes 2022	AM	PM	SAT
Opposing Volume (V_o)	222	426	340
Advance Volume (V_a)	320	327	269
Left Turn Traffic Volume (V_L)	72	31	19
% Left Turns in V_a	25% (22.5%)	10% (9.5%)	10% (7.1%)

AM Peak Hour



Site Entrance at Reach St/N. Port Rd Intersection
Existing Volumes 2022 (100 km/h Tables)

PM & SAT Peak Hour

