Elm Street Condominium
Tower 3
City of Mississauga

Response to City of Mississauga Comments
Pertaining To

Internal Safety Review and Confirmation of Modal Operations

August 2020

Poulos Chung

Elm Street Condominium
Tower 3
City of Mississauga
Response to City of Mississauga Comments
Pertaining To
Internal Safety Review and Confirmation of Modal Operations

Contents

Elm Street Condominium
Tower 3
City of Mississauga
Response to City of Mississauga Comments
Pertaining To
Internal Safety Review and Confirmation of Modal Operations

1.0 Introduction

The Elm Street development by Solmar Development Corp. consists of three residential condominium towers. The first two towers have been approved and the third and final tower is going through the development application review process.

The City of Mississauga has provided comments with respect to the Tower 3 submission. To respond to the transportation comments, Poulos & Chung Limited has submitted in July 2020 the following reports:

- Review and update to the May 2015 Traffic Impact Study;
- Updated Travel Demand Management plan.

In addition to the above, the City of Mississauga has requested a review of internal site modal operations and confirmation that all modal movements can be accommodated in a safe and efficient manner. This request is summarized below.

Safety Analysis

The TIS must include an evaluation and identification of potential safety and/or operations issues associated with the following, as applicable:
• Weaving;
• Merging;
• Sight distance;
• Vehicle-pedestrian conflicts;
• Traffic infiltration;
• Access conflicts;
• Cyclist movements;
• Heavy vehicle movement conflicts;
• Transit operational conflicts.

Where the proposed development is in the vicinity of an intersection or roadway with identified safety problems, existing collision data (available from the City) must be reviewed and an assessment of the impact of the proposed development provided.

This submission documents the response to the above request and confirms the ability to secure satisfactory modal operations in a safe and efficient manner.

2.0 Basis of Analysis

The analysis used to confirm the internal circulation and modal operational capability is based upon the demand numbers contained in the May 2015 Traffic Impact Study updated from the March 2015 submission. For references purposes the key Figures form this updated study are contained in Appendix A. It is noted that the August 2020 review, recently submitted, confirmed the validity of these demand numbers.

The Figures in Appendix A permitted the determination of internal traffic flows resulting from each of the underground ramp terminals. The resultant vehicle flows distributed to the boundary roads was determined for the typical weekday roadway AM and PM peak hours. This vehicle demand therefore permitted the evaluation of ramp / driveway operation performance and allowed the evaluation of driver, pedestrian and bicycle decision making criteria.

Figure 1 identifies the location of the final and third Tower which is located on the far east side of the property. It is noted that a significant change has been made to the underground ramp location for Tower 2, the middle Tower. Initially the underground ramp location for Tower 2 caused an off – set condition to occur with the underground ramp location for Tower 3. As the operational review of the entire site commenced it was realized that the off – set underground ramp locations would potentially cause unnecessary vehicle conflicts and delays on the circulation road leading to Elm Street. As a result, the underground ramp location for Tower 2 was re – located to be directly opposite the Tower 3 underground ramp location.

Figure 2 presents the total ultimate vehicle movements occurring to and form and within thew site during the roadway AM and PM peak hours of a typical weekday. For this analysis the demand volumes form the no LRT scenario were selected. This condition was selected because it represents the most conservative demand condition. In effect, it represents the highest vehicle flow since the benefits of rapid transit have not been applied.

Figure 3 presents the performance summary at each of the internal / external intersection locations. The summary parameters include overall intersection level of service, vehicle delay and volume to capacity ratio. The performance summary is for the roadway AM and PM peak hours in a typical week and was completed for the ultimate condition.

The Synchro Software program was used to complete the calculations. The analysis sheets are presented in Appendix B.

It is evident form this analysis that all intersections secure a very good operating level of service with minimal vehicle delays and high levels of reserved capacity.

Figure 4 identifies the maximum vehicle queue storage condition that arises in either typical weekday roadway peak hour. The 95th percentile length was determined form the Synchro outputs. It is evident that all vehicle queues are very reasonable within the site and no queue affects the internal circulation operation. As expected, the eastbound vehicle queues build on Elm Street respecting the intersection signal cycle. The queues do not extend and do not impede the operation of the main Elm Street entrance. Only in the AM peak hour do the background vehicle queues exdtend past the most easterly site access. This site access is restricted to rights in and rights out vehicle movements only. It is expected that vehicles using this entrance to exit the site will be quite low. Exiting right turn vehicles will incur slight delays but as is the case in urban environments courtesy gaps will facilitate the movement. The entrance causes no other impact to Elm Street traffic flow.

The ability to safely and efficiently accommodate all modal movements is based upon driver / pedestrian / bicyclist's decision - making criteria. The criteria applied in this assessment / evaluation is based upon the methodology, parameters and standards contained in the "Geometric Design Guide for Canadian Roads" published by the Transportation Association of Canada. Specifically, the methodology, charts and figures contained in Section 2.3.3.3 were used as the basis for calculating and assessing decision making criteria.

3.0 Verification of Modal Visibility and Operational Capability

As mentioned above the methodology from the Geometric Design Guide for Canadian Roads was applied to verify the critical decision - making criteria. Specifically Figures 2.3.3.4a and 2.3.3.4b were used to determine the required clear sight distances for turning and stopping. These required clear distances, based on the Design Speeds on the boundary roads is summarized in the following table.

Table 1
Sight Distance for Vehicle and Bicycle Turning Movements from Stop
(TAC Figure 2.3.3.4)

Boundary Road	Design Speed Limits Km/hour	Sight Distance Requirement for Left and Right Turns	Minimum Stopping Sight Distance (2 seconds Reaction Time)
Hurontario Street	70	200m	58m
Elm Drive	60	160m	50m
Kariya Gate	60	160m	50m
Internal Road	30	60m	33m

Figure 5 presents the clear distances secured by vehicles and bicyclists at each of the site driveway intersections.

Upon reviewing the clear distances secured it can be concluded that:

- All ingress / egress movements at the boundary road meet the decision -making distance requirement;
- All Internal intersections achieve the minimum stopping sight distance.
- Bicycles are riding on the road pavement (bike lane is on Elm Drive), hence they are treated as vehicle. Sight line at all egress and ingress meet the vehicle sight line as well as for the bicycle.

4.0 Pedestrian Accommodation

As a vehicle approaches a boundary road sidewalk it will be travelling at a low speed (< 30 kilometers per hour) on the internal circulation road. The vehicle requires approximately 33 metres or 3 seconds to safely stop if a pedestrian or object is observed. This decision making criteria has been applied to each of the driveways as they approach a boundary road.

Figure 6 illustrates the application of the decision - making criteria at each of the driveways. It is evident that appropriate distances can be secured. It is also evident that no planting can be placed in the area identified as a clear zone to enable the driver to have a clear visual distance. No bushes ort material rising to approximately 1.2 metres should be permitted. Trees with branches above these measurements is permissible.

5.0 Functional Review of Site Circulation and Maneuverability

The ability of service and emergency vehicles to circulate within the site has been examined in detail.

The Auto Turn Software Program was used to simulate the circulate of a standard dual rear axle aerial fire truck and standard dual rear axle garbage truck truck.

Figure 7 demonstrates the circulation capability of the aerial fire truck. The vehicle can satisfactorily enter and leave the site in a straight forward manner.

Figure 8 illustrates the ability of a garbage truck to enter each of the truck loading nays.

Figure 9 illustrates the ability of a garbage truck to reverse out of the truck loading bay and then proceed to exit the site.

6.0 Traffic Control Devices and Signage Plan

The Ontario Traffic Manual Boof 5 – Regulatory Signs was used as the basis for selecting the appropriate traffic control devises to be placed throughout the site.

The selected regulatory signs and their placement is illustrated in Figure 10.

The installation of all signs and poles must conform to these specifications.

7.0 Conclusions and Recommendations

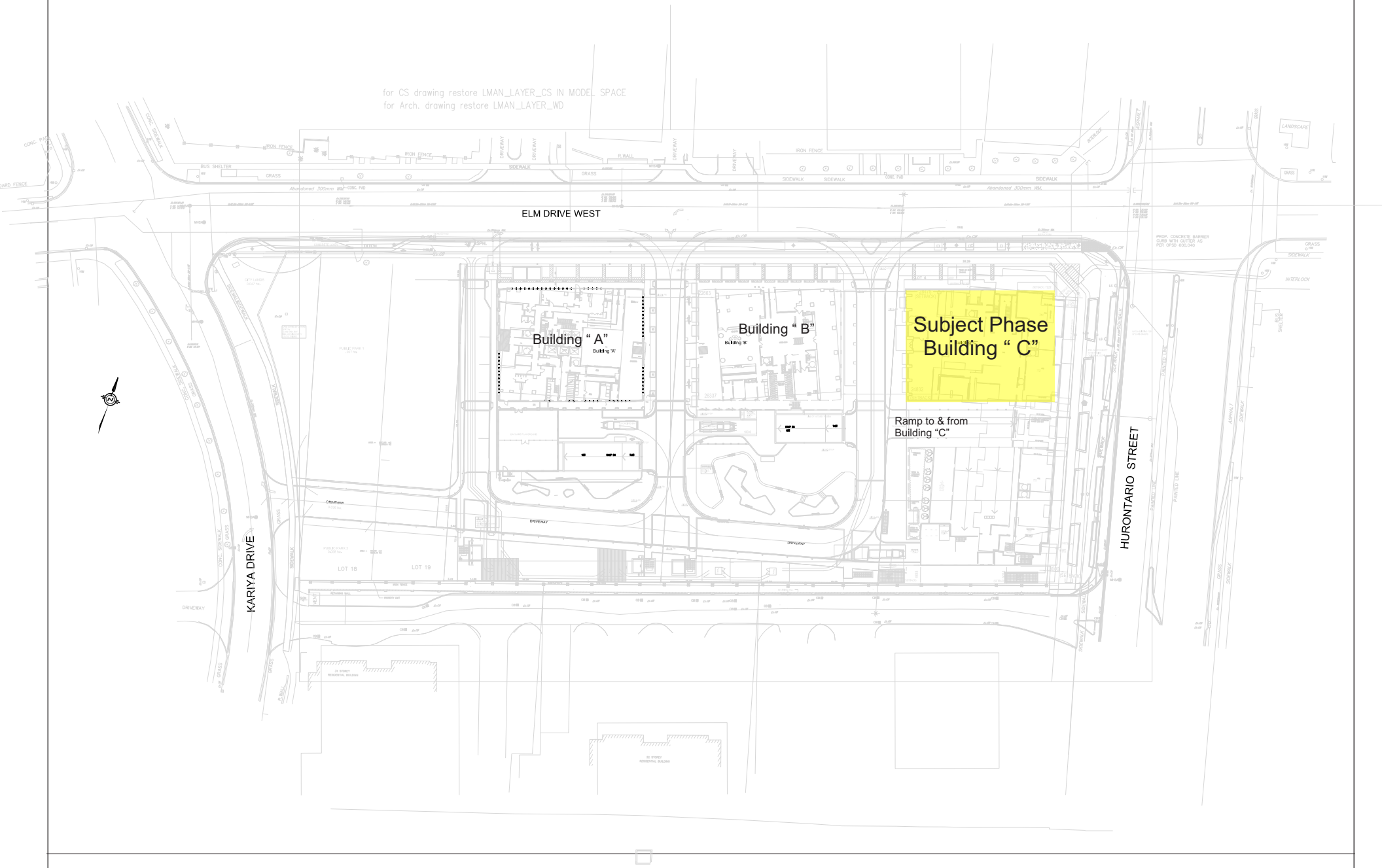
The analysis completed permits the following conclusions to be brought forward:

- All boundary road / driveway intersections can secure very good operating conditions. All vehicle demands are accommodated at very good levels of service. Vehicle delays are minimal and sufficient reserve capacity is evident;
- All internal driveway / underground ramp intersections can secure very good operating conditions. Each driveway can secure excellent driver visibility and decision making can be undertaken in a safe and efficient manner. Very good operating levels of service can be secured with minimal vehicle delays;
- Resultant vehicle queue lengths are provided with satisfactory internal storage and no intrusion occurs onto the boundary roads;
- Satisfactory sight line distances are secured at all driveway locations to permit safe and efficient decision making for vehicles, pedestrians and bicyclists;
- All emergency and service vehicle movements can be satisfactorily accommodated within the site circulation and access system;
- The identified signage plan can provide proper instruction and guidance to all modal movements within the site.

The analysis completed permits the following recommendations to be made:

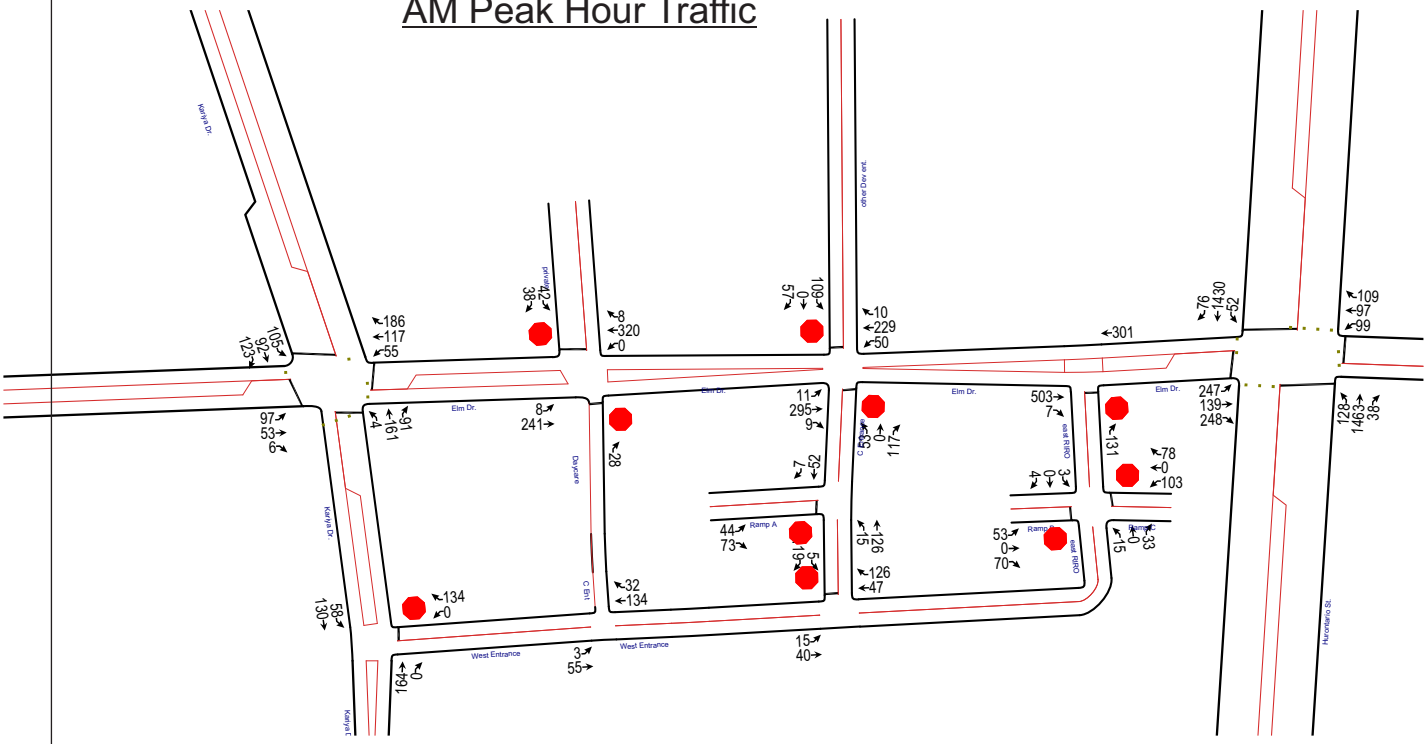
- That the landscape plans incorporate the clear sight line distances required for driver visibility purposes;
- The Site Plan upon incorporating the identified features be approved.

List of Figures

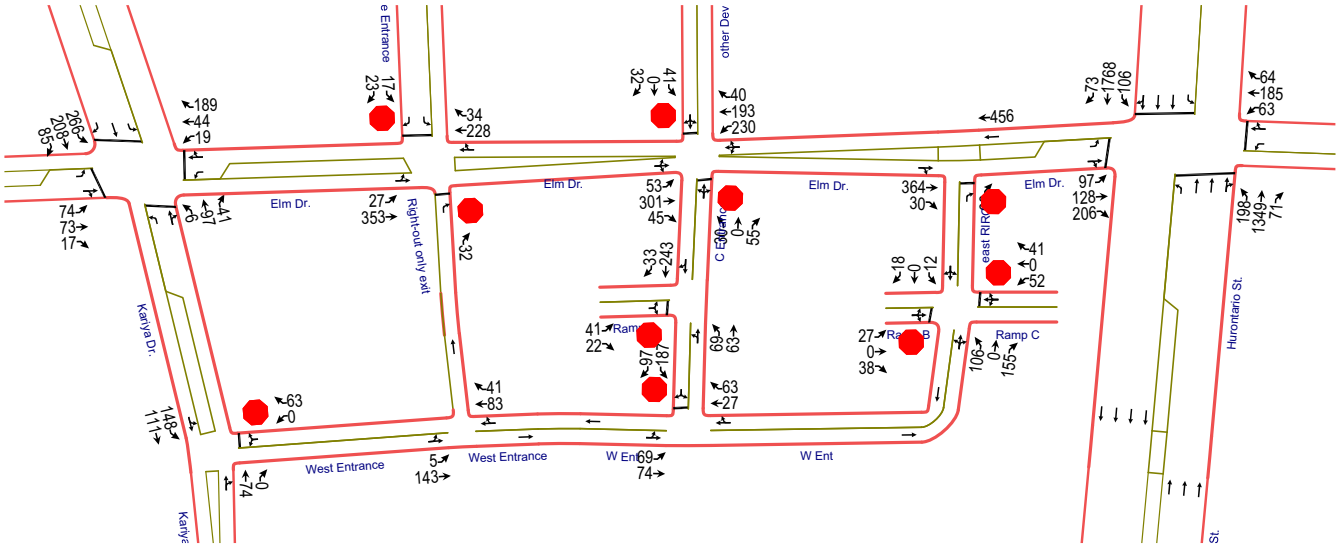


Subject Phase "Building C"
Figure 1

AM Peak Hour Traffic

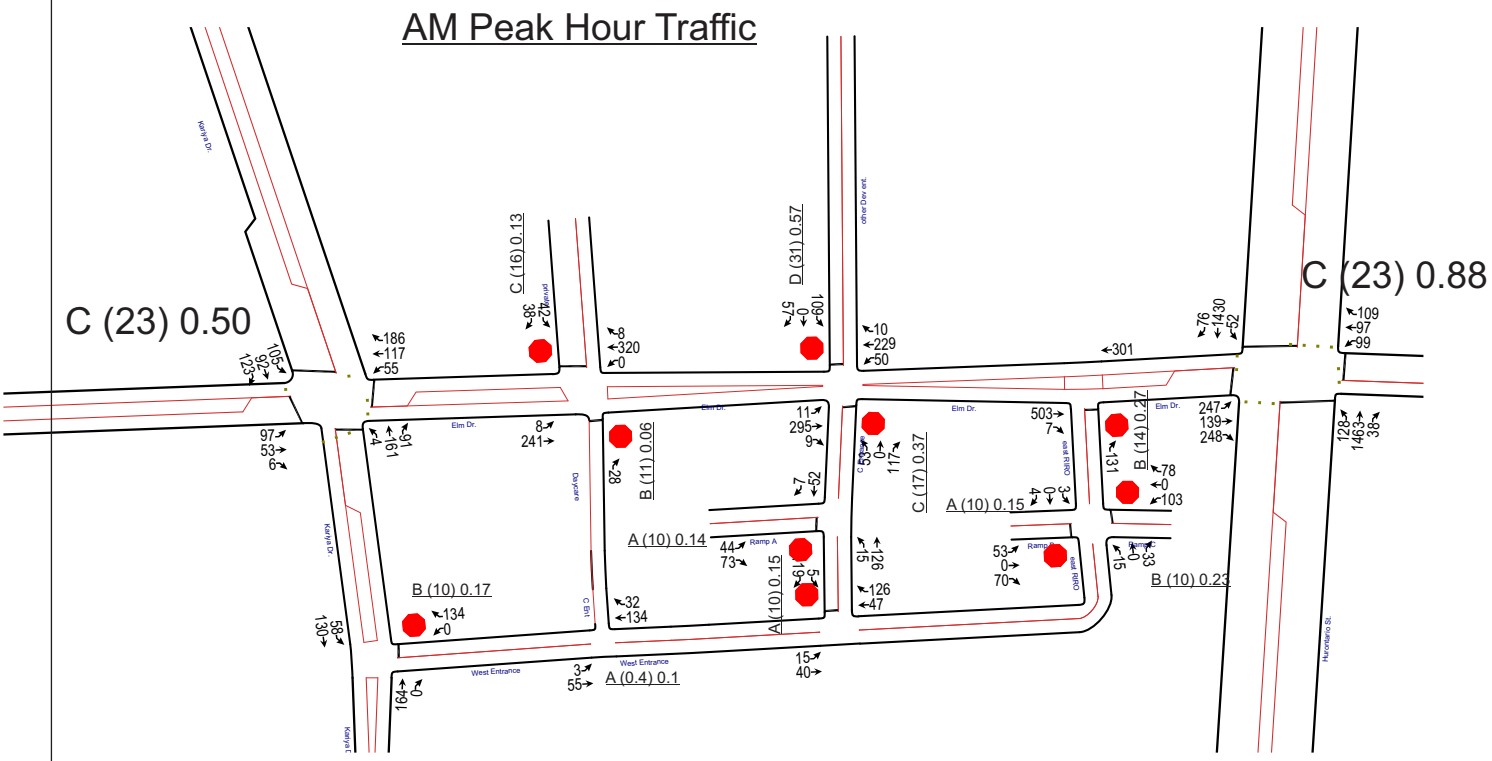


PM Peak Hour Traffic

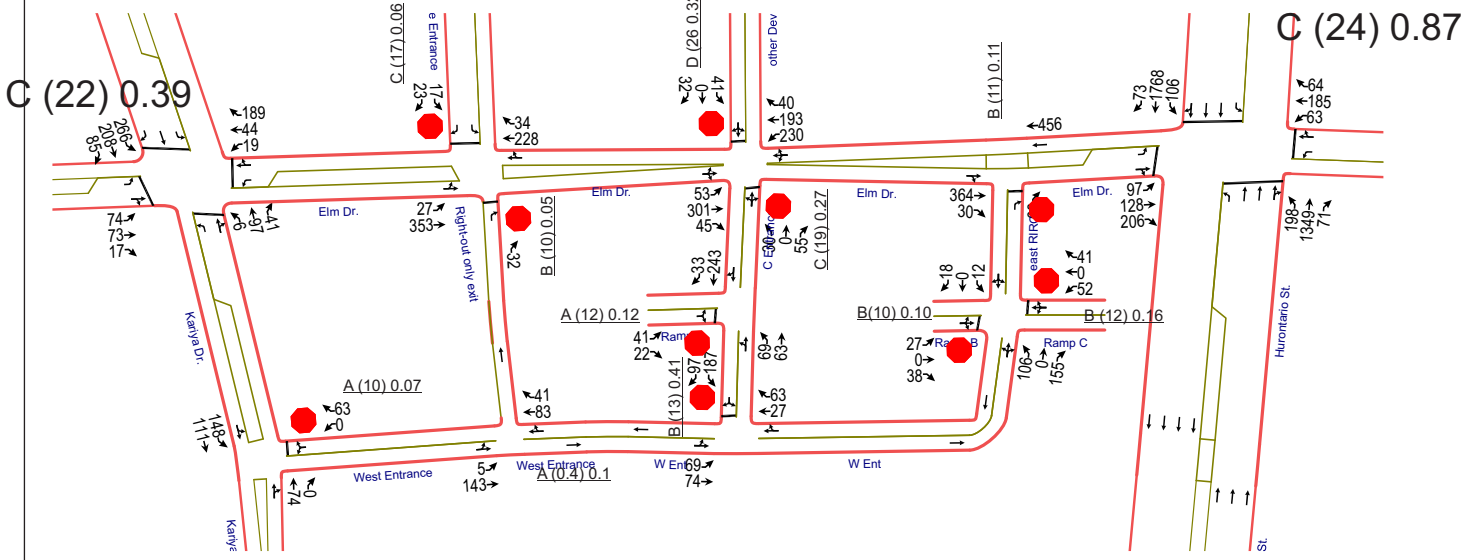


2023 Total Traffic
(Including Internal Intersection Volumes)
Figure 2

AM Peak Hour Traffic



PM Peak Hour Traffic



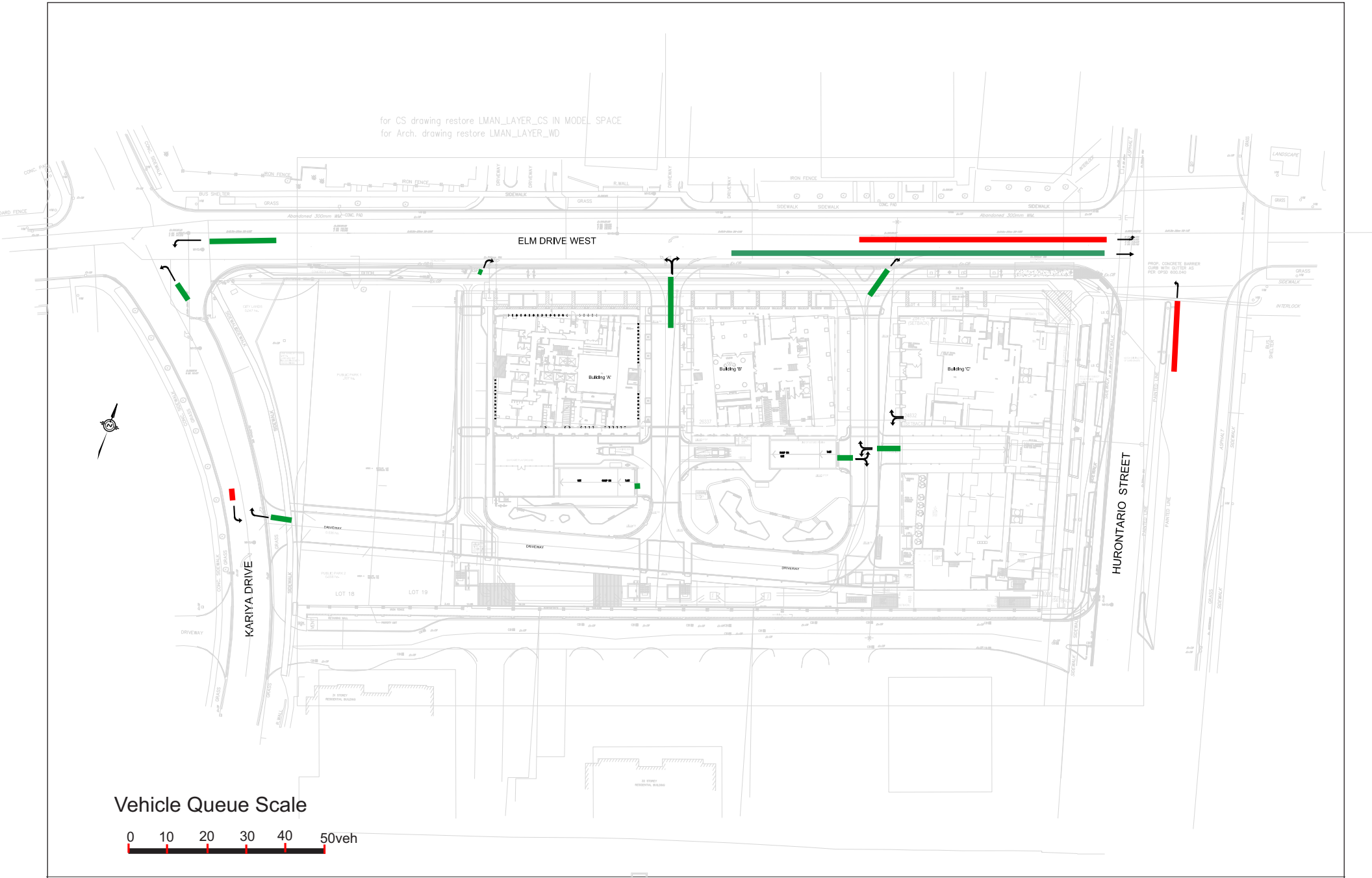
Legend

C (22) 0.39 Signalized Intersection = overall Level of Service (Delays in Seconds) Volume/Capacity Ratio

A (10) 0.07 Unsignalized Intersection Critical Movement: Level of Service (Delays in Seconds) Volume/Capacity Ratio

Poulos Chung

2023 Levels of Service
Figure 3



Poulos Chung

The longer Queue in AM or PM is presented

AM Queue

PM Queue

95th Percentile Queue
(AM or PM Peak Hour)
Figure 4

for CS drawing restore LMAN_LAYER_CS IN MODEL SPACE
for Arch. drawing restore LMAN_LAYER_WD

Sight Line meets 160m Requirement

SL meets 160m requirement

SL =100m meets stopping sight distance

SL exceeds 160m

ELM DRIVE WEST

SL = 125 m meets min.stopping sight distance

SL meets 160m requirement

Sight L
Requir

SL exceed 25m

SL exceeds 25m

SL = 23m

SL exceeds 25m

SL Exceeds 25m

SL EXceeds 25m

KARIYA DRIVE

HURONTARIO STREET

Building 'A'

Building 'B'

Building 'C'

LOT 18

LOT 19

Current is a dead end road.
Sight line to be estimated about 100m which will satisfy the min. Stopping sight distance

Poulos Chung
535 Bur Oak Avenue
Markham, ON L6C 2S5
Tel.: 905-479-7942
Fax.: 905-479-1266

Scale: 1:1000

Project No. 20.205

Date: August 18, 2020

Vehicle and Bicycle Sight Line Plan

Figure 5

for CS drawing restore LMAN_LAYER_CS IN MODEL SPACE
for Arch. drawing restore LMAN_LAYER_WD

ELM DRIVE WEST

Greater than 12 Sec

10.8m (9 Sec)

15.3 m (12.2 Sec)

16.6m (13.3 Sec)

15.5m (12.4 Sec)

13.9 m (11.1 Sec)

33 m (3 Sec)

33 m (3 Sec)

Sufficient Sight Line can be achieved provided that no hedge plants grown along the park property line

Sufficient Sight Line can be achieved provided that no hedge plants grown along the park property line

KARIYA DRIVE

HURONTARIO STREET

Building 'A'

Building 'B'

Building 'C'

LOT 18

LOT 19

Poulos Chung
535 Bur Oak Avenue
Markham, ON L6C 2S5
Tel.: 905-479-7942
Fax.: 905-479-1266

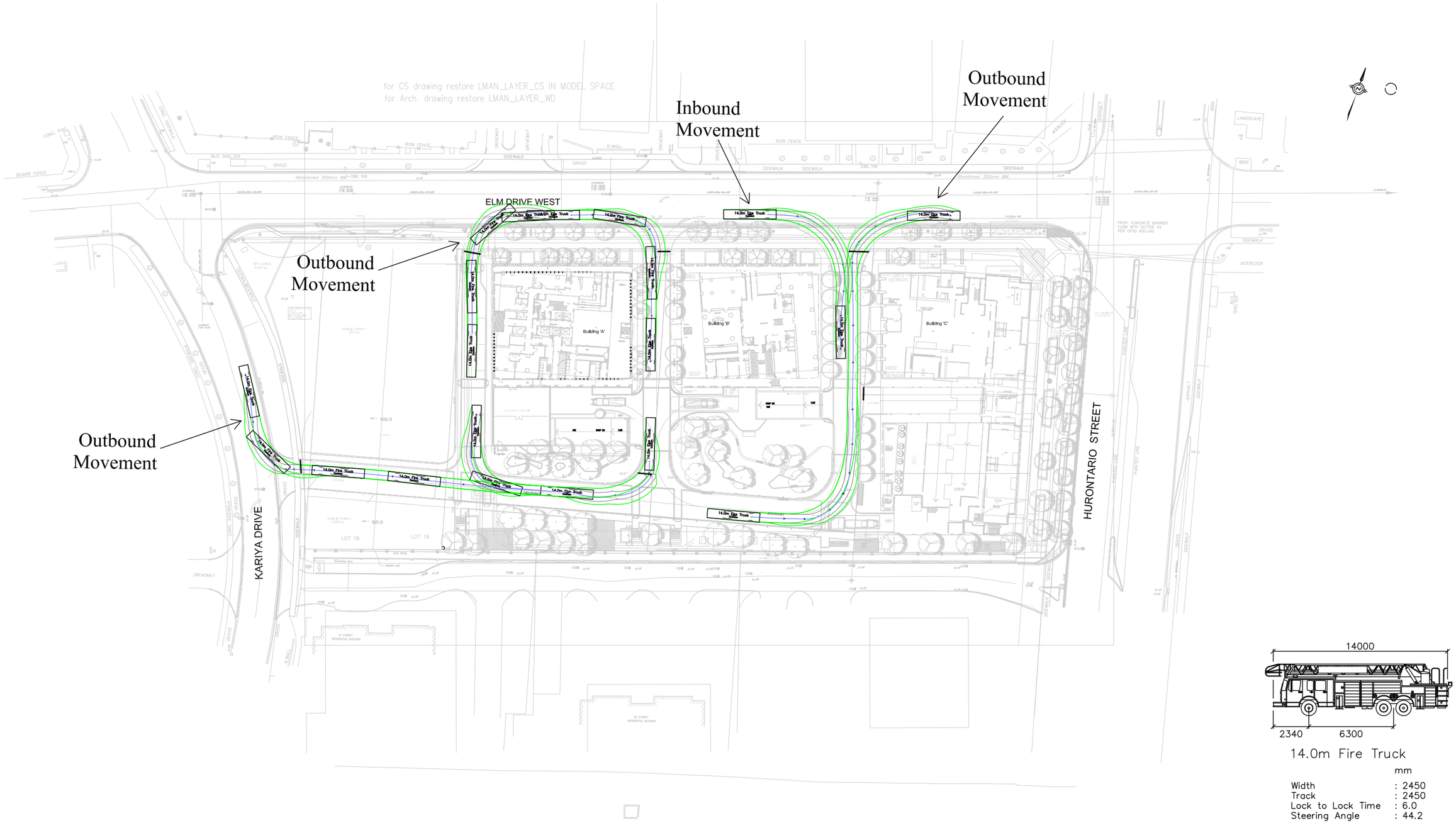
Scale: 1:1000

Project No. 20.205

Date: August 18, 2020

Pedestrian Sight Line Plan

Figure 6



14.0m Fire Truck

	mm
Width	: 2450
Track	: 2450
Lock to Lock Time	: 6.0
Steering Angle	: 44.2

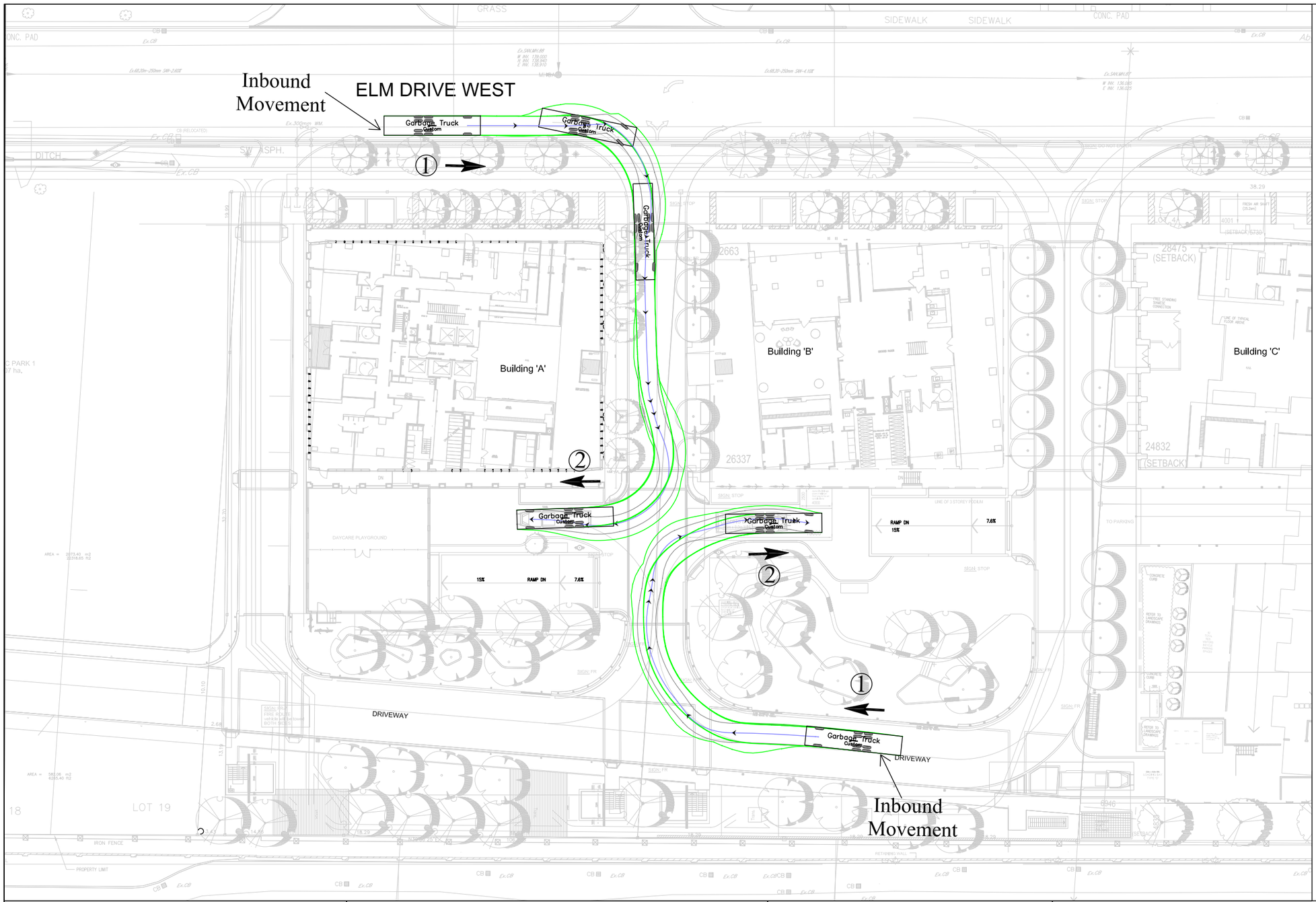
Poulos Chung
535 Bur Oak Avenue
Markham, ON L6C 2S5
Tel.: 905-479-7942
Fax.: 905-479-1266

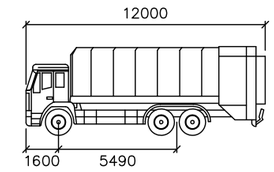
Note:
Confirmation Of Service Vehicle Circulation Does Not Constitute Verification For Construction

Scale: 1:1000
Project No. 20.205
Date: August 18, 2020

Fire Truck Inbound Movements

Figure 7





Garbage Truck

	mm
Width	: 2400
Track	: 2390
Lock to Lock Time	: 6.0
Steering Angle	: 41.8

X → Vehicle Movement

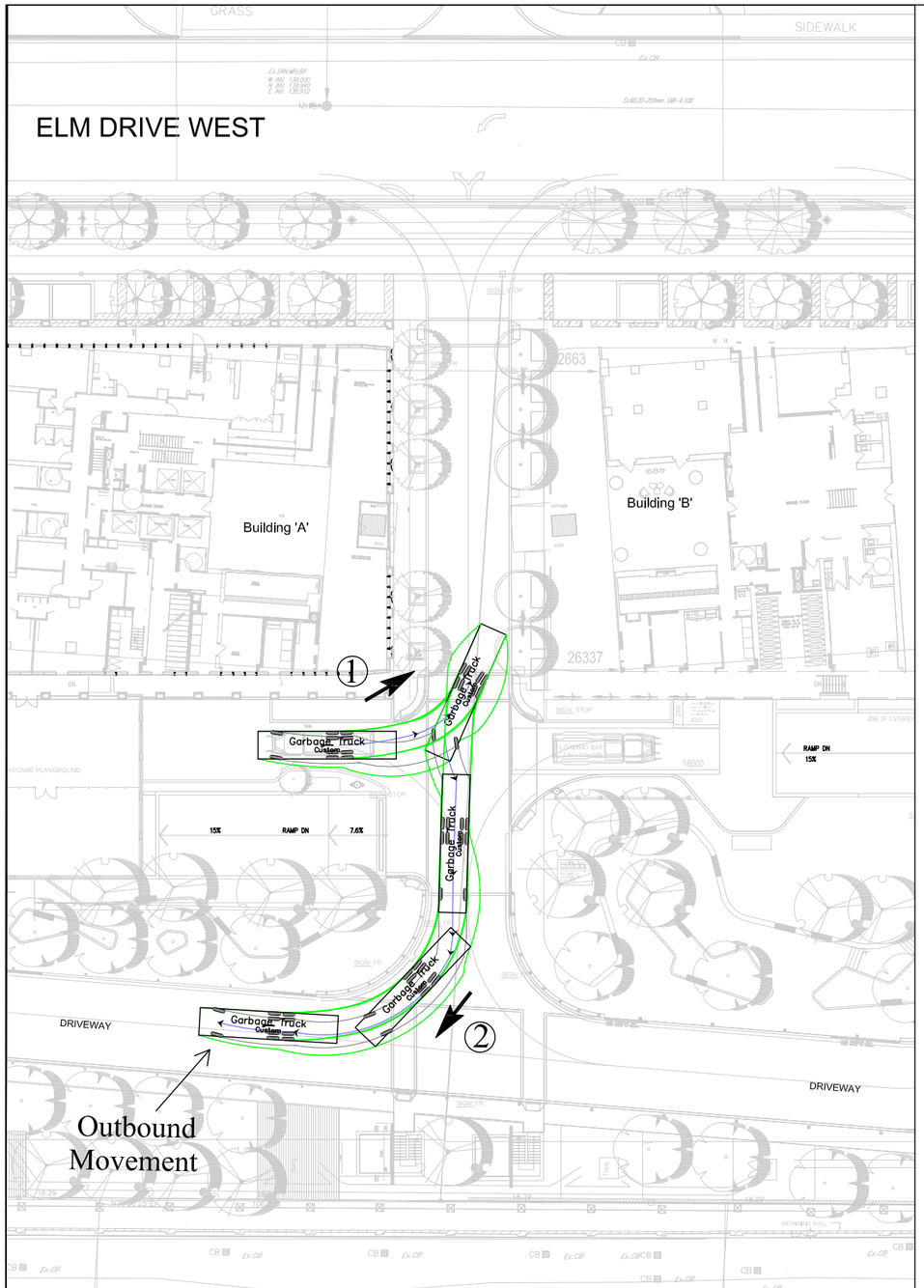
Poulos Chung
535 Bur Oak Avenue
Markham, ON L6C 2S5
Tel.: 905-479-7942
Fax.: 905-479-1266

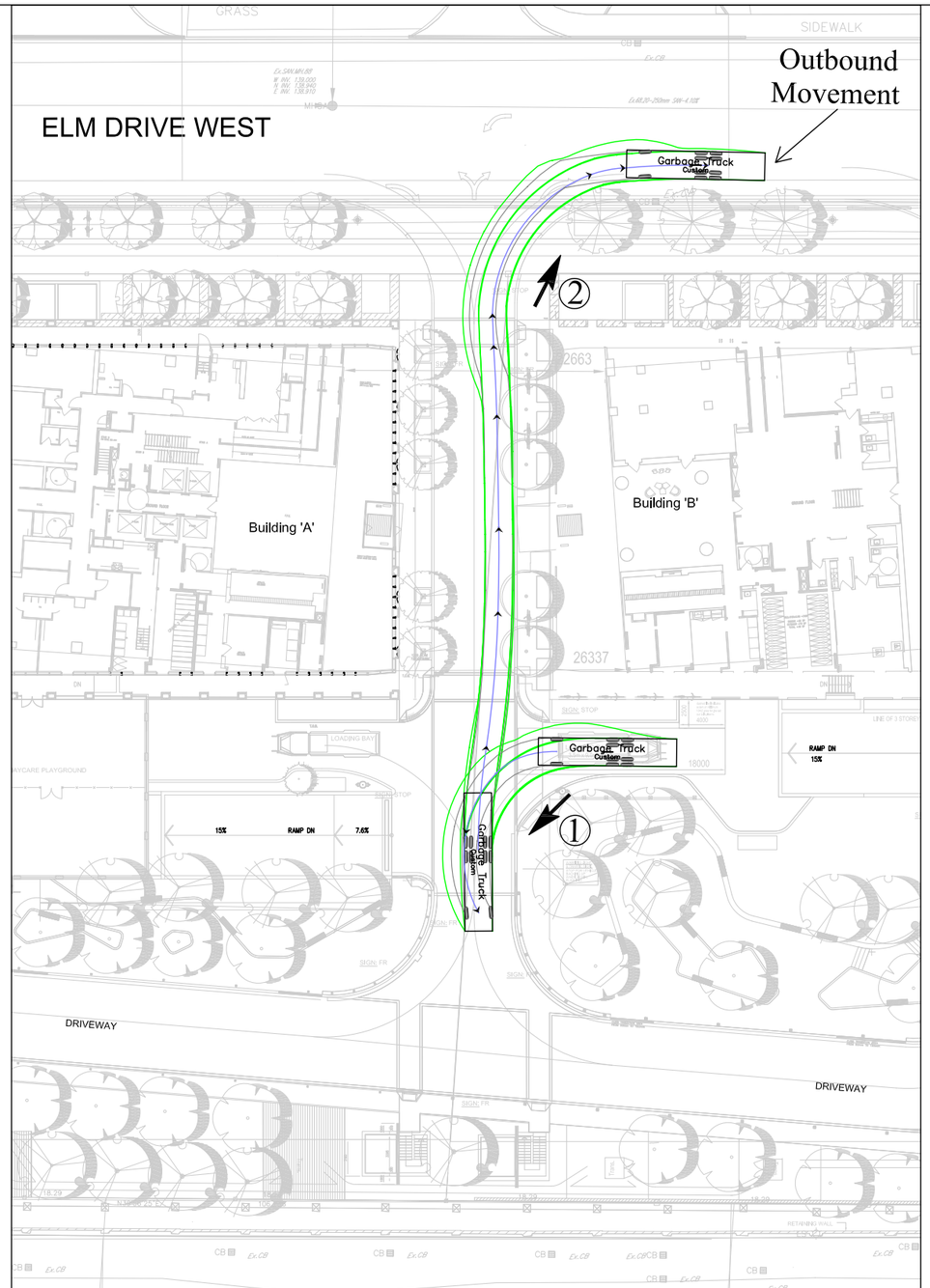
Note:
Confirmation Of Service Vehicle Circulation Does Not Constitute Verification For Construction

Scale: 1:750
Project No. 20.205
Date: August 18, 2020

Garbage Truck Front In

Figure 8





Garbage Truck

	mm
Width	: 2400
Track	: 2390
Lock to Lock Time	: 6.0
Steering Angle	: 41.8

Ⓧ→ Vehicle Movement

Poulos & Chung
535 Bur Oak Avenue
Markham, ON L6C 2S5
Tel.: 905-479-7942
Fax.: 905-479-1266

Note:
Confirmation Of Service Vehicle Circulation Does Not Constitute Verification For Construction

Scale: 1:750
Project No. 20.205
Date: August 18, 2020

Garbage Truck Back Out

Figure 9

for CS drawing restore LMAN_LAYER_CS IN MODEL SPACE
for Arch. drawing restore LMAN_LAYER_WD

ELM DRIVE WEST

KARIYA DRIVE

HURONTARIO STREET

Rb-19
Rb-12
Ra-1
Rb-21
FR
Parking for
Day Care Only

LEGEND:

- Ra-1
- Rb-19
- Rb-21
- Rb-12
- FR
- Stop Bar
- "Sign" Parking for Day Care Only

Poulos Chung
535 Bur Oak Avenue
Markham, ON L6C 2S5
Tel.: 905-479-7942
Fax.: 905-479-1266

Scale: 1:1000
Project No. 20.205
Date: August 18, 2020

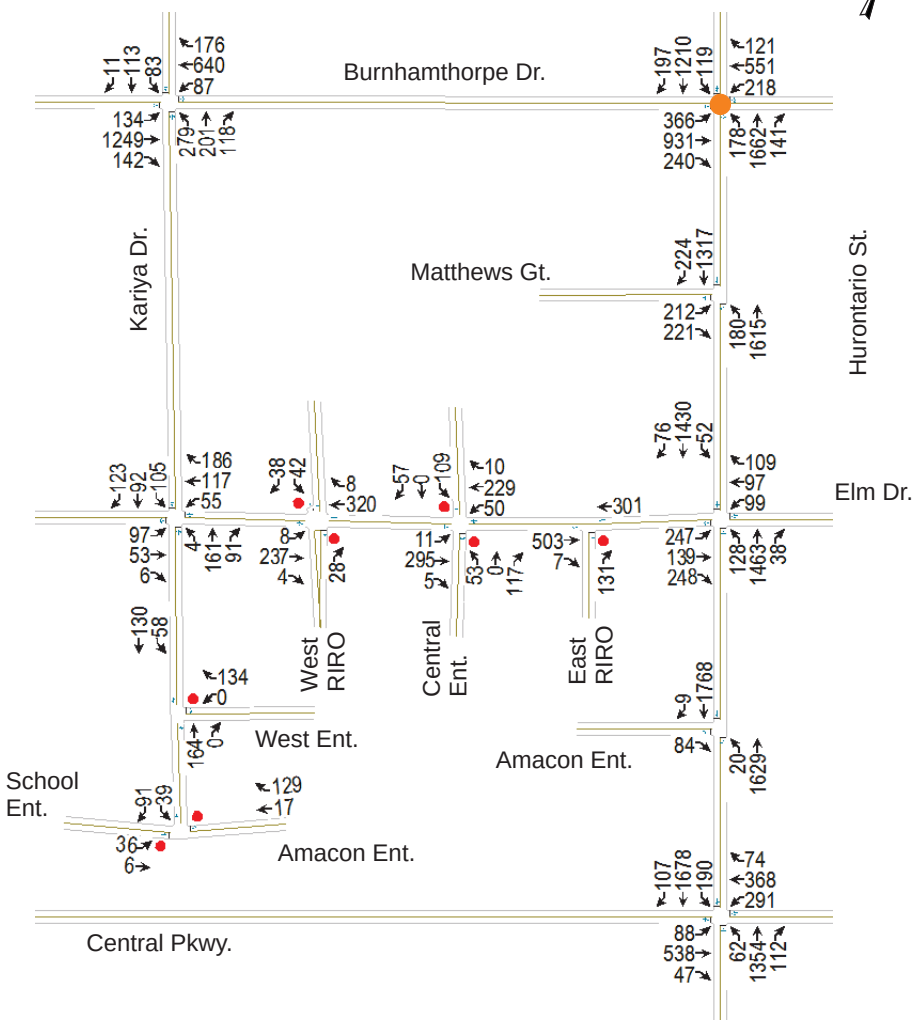
Traffic Control Devices and Signage Plan

Figure 10

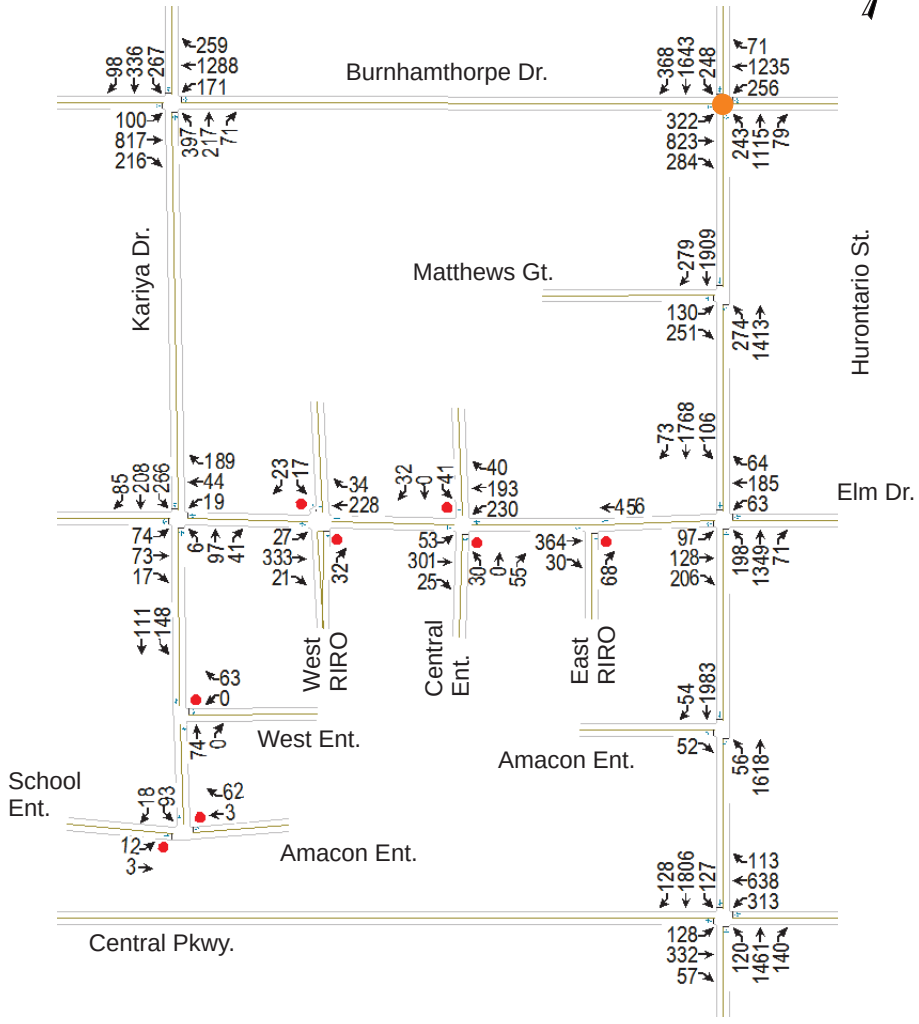
Appendix A

Key Figures from the Update May 2015 Traffic Impact Study

AM Peak

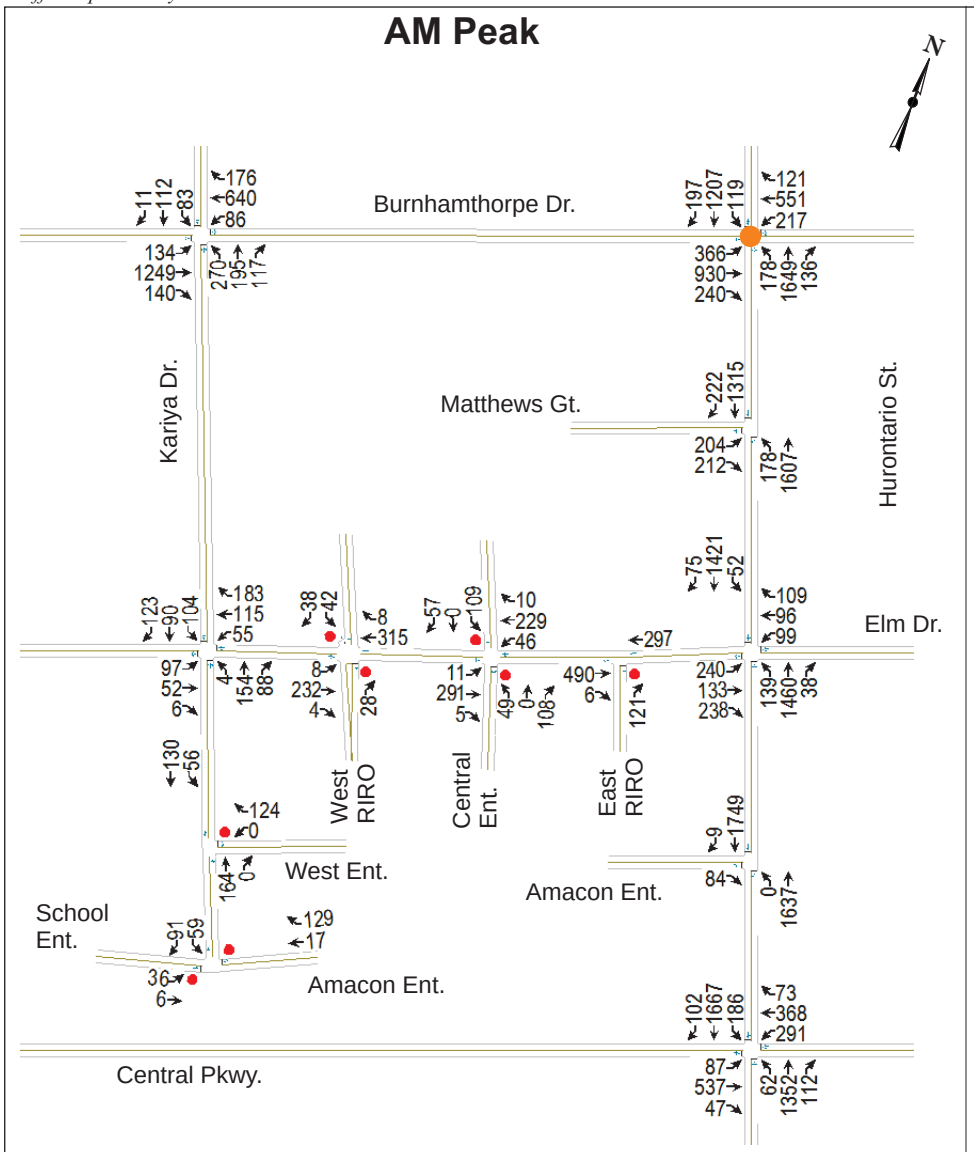


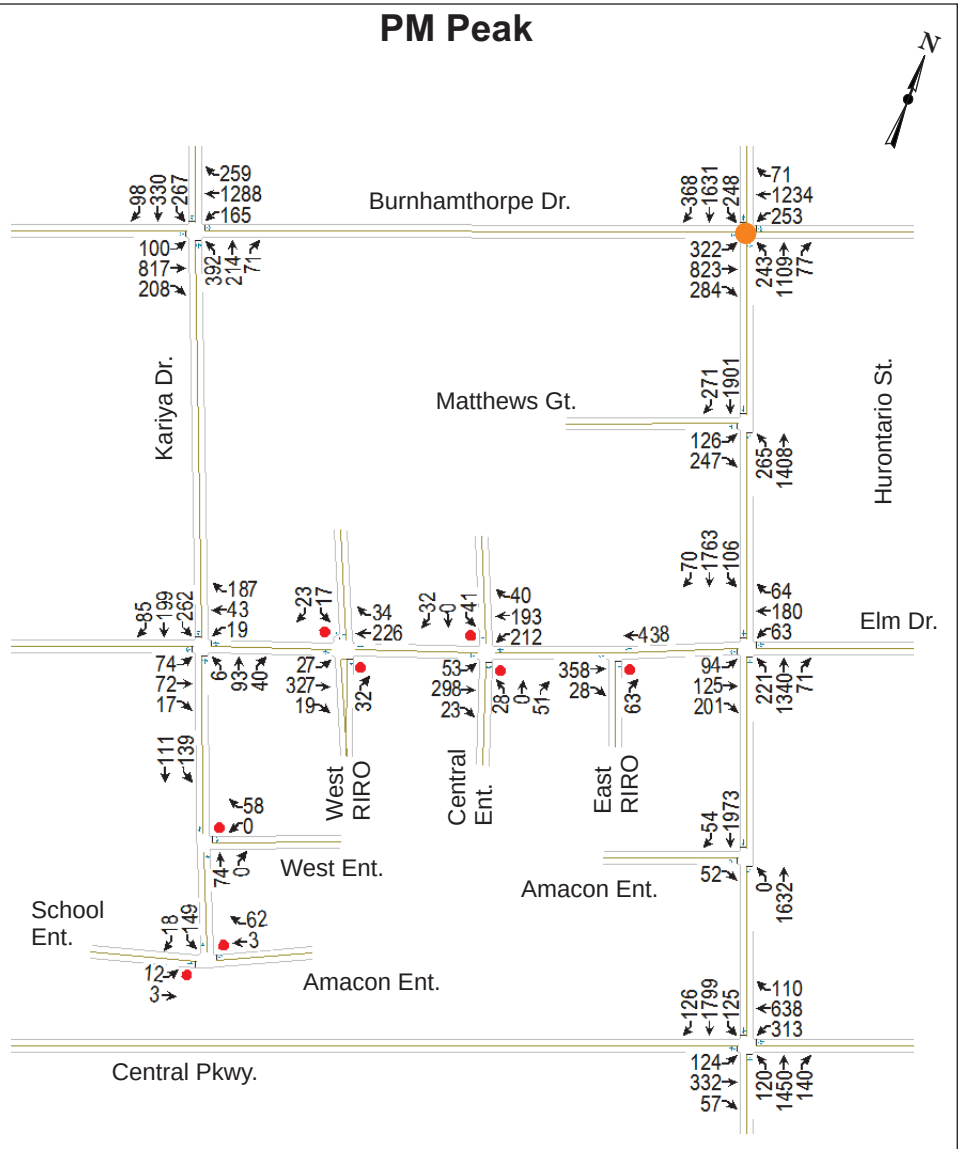
PM Peak



Poulos Chung

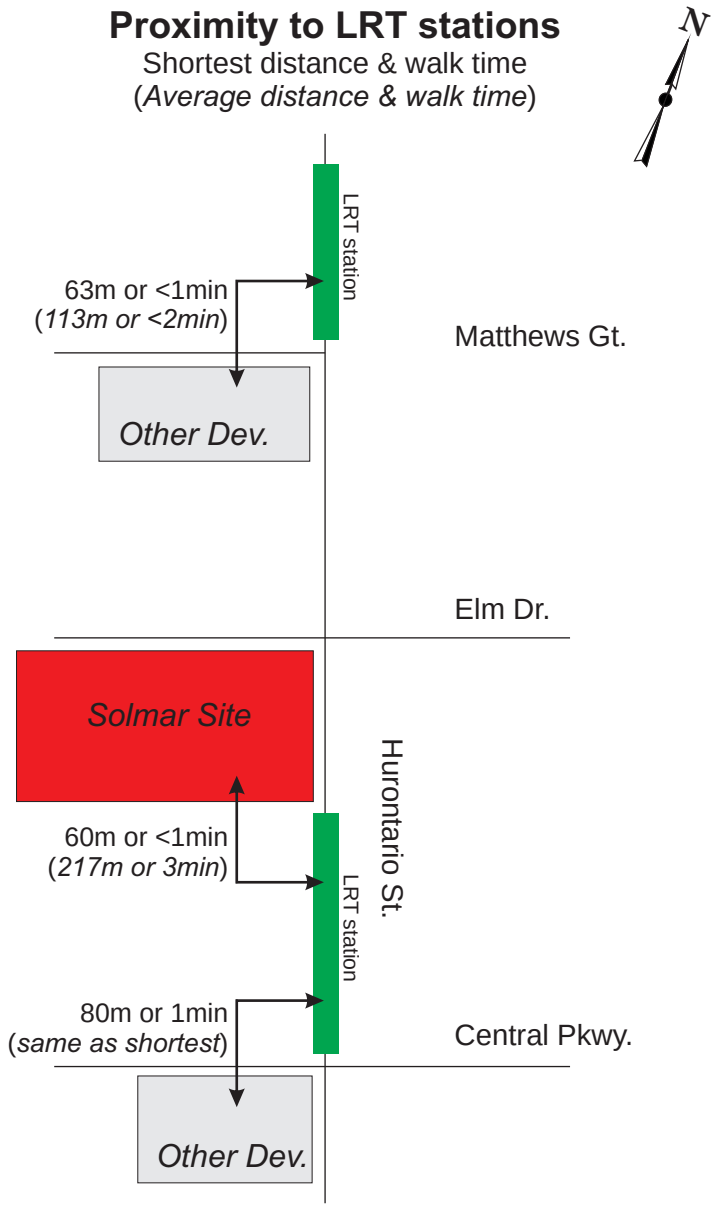
Total 2023 Traffic
(No LRT scenario)
Figure 19

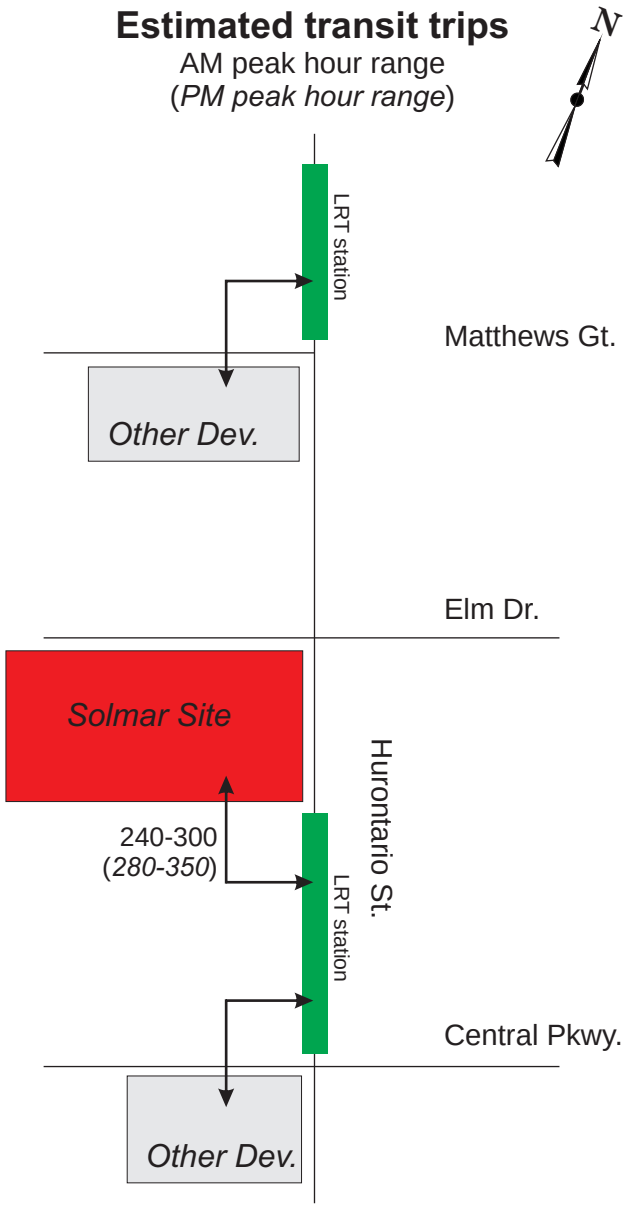




Poulos Chung

Total 2023 Traffic
(Yes LRT scenario)
Figure 20





Poulos Chung

Note: The shortest distance was measured as the walk path from the closest site entrance to the LRT station. The average distance was measured as the walk path from the centre of the development to the closest LRT station. Walk times are approximate and assumed a walking speed of 1.2 metres/second.

Relationship to
Future Light Rail Transit (LRT)
Figure 21

Intersection	AM Peak Hour							
		2023 Background Traffic				2023 Total Traffic			
		No LRT		Yes LRT		No LRT		Yes LRT	
	Existing Traffic	Existing Timings	Optimized Timings	Existing Timings	Optimized Timings	Existing Timings	Optimized Timings	Existing Timings	Optimized Timings
Central Parkway & Hurontario Street	**D (41) 0.91** *wbl- 0.89* *nbl- 1.03*	**D (44) 1.03** *wbl- 0.90* *nbl- 1.26* *sbl- 0.96*	**D (48) 0.81** *wbl- 0.87* *nbt- 0.85* *sbt- 0.86*	**E (69) 1.13** *wbl- 0.99* *nbl- 1.37* *nbt- 1.13* *sbt- 0.92*	**E (70) 0.97** *wbl- 0.96* *nbt- 1.09* *sbt- 1.07*	**D (45) 1.04** *wbl- 0.90* *nbl- 1.26* *sbl- 1.07*	**D (48) 0.83** *wbl- 0.87* *nbt- 0.88* *sbl- 0.87* *sbt- 0.92*	**E (72) 1.14** *wbl- 0.99* *nbl- 1.37* *nbt- 1.15* *sbt- 0.97*	**E (79) 1.00** *wbl- 0.96* *nbt- 1.11* *sbt- 1.13*
Elm Drive & Hurontario Street	**A (10) 0.65**	**B (13) 0.72**	**B (12) 0.72**	**B (20) 0.80**	**C (28) 0.75**	**C (25) 1.15** *ebl- 0.97* *wbl- 0.87* *nbl- 1.24*	**C (24) 0.77** *ebt- 0.88*	**D (36) 1.31** *ebl- 1.00* *wbl- 0.89* *nbl- 1.45*	**D (39) 0.88** *ebt- 0.93* *sbt- 0.93*
Burnhamthorpe Road & Hurontario Street	**E (57) 0.93** *ebl- 0.98* *wbl- 1.05* *nbt- 0.98* *sbt- 0.86*	**E (65) 0.99** *ebl- 1.07* *wbl- 1.25* *nbt- 0.93*	**E (60) 0.86** *ebl- 0.97* *ebt- 0.91* *wbl- 0.99* *nbl- 0.85* *nbt- 0.88* *sbl- 0.92*	**F (103) 1.18** *ebl- 1.17* *ebt- 0.86* *wbl- 1.42* *nbt- 1.26* *sbt- 1.04*	**F (99) 1.08** *ebl- 1.08* *ebt- 0.98* *wbl- 1.06* *nbt- 1.28* *sbt- 1.03*	**E (66) 1.02** *ebl- 1.07* *wbl- 1.26* *nbt- 0.99*	**D (50) 0.97** *ebl- 0.92* *ebt- 0.99* *wbl- 0.85* *nbl- 0.93* *sbl- 0.92*	**F (114) 1.28** *ebl- 1.17* *ebt- 0.86* *wbl- 1.43* *nbt- 1.33* *sbt- 1.06*	**F (109) 1.11** *ebl- 1.08* *ebt- 0.99* *wbl- 1.06* *nbt- 1.35* *sbt- 1.04*
Kariya Drive & Burnhamthorpe Road	**C (33) 0.49** *ebt- 0.98*	**C (28) 0.53**	**C (26) 0.53**	**C (31) 0.66**	**C (31) 0.66**	**C (341) 0.61**	**C (31) 0.61**	**C (34) 0.75**	**C (34) 0.75**
Kariya Drive & Elm Drive	**B (19) 0.33**	**B (19) 0.33**	**B (19) 0.33**	**B (19) 0.33**	**B (19) 0.33**	**C (24) 0.50**	**C (24) 0.50**	**C (23) 0.49**	**C (23) 0.49**
Matthews Gate & Hurontario Street	**B (14) 0.55**	**B (17) 0.69**	**B (18) 0.69**	**B (18) 0.72**	**C (34) 0.72**	**B (17) 0.69**	**C (23) 0.69**	**B (18) 0.73**	**C (34) 0.73**
Central full-moves Entrance & Elm Drive	**B (15) 0.33**	**B (15) 0.33**	**B (15) 0.33**	**B (15) 0.33**	**B (15) 0.32**	**D (34) 0.60**	**D (34) 0.60**	**D (31) 0.57**	**D (31) 0.57**
Full-moves Entrance & Kariya Drive	--	--	--	--	--	**B (10) 0.17**	**B (10) 0.17**	**A (10) 0.16**	**A (10) 0.16**
School/Amacon Entrances & Kariya Drive	**B (12) 0.08**	**B (12) 0.08**	**B (12) 0.08**	**B (13) 0.09**	**B (13) 0.09**	**B (12) 0.08**	**B (12) 0.08**	**B (13) 0.09**	**B (13) 0.09**
Eastern RIRO site Entrance & Elm Drive	--	--	--	--	--	**B (15) 0.27**	**B (15) 0.27**	**B (14) 0.24**	**B (14) 0.24**
Western RIRO site Entrance & Elm Drive	**B (13) 0.09**	**B (14) 0.09**	**B (14) 0.09**	**C (14) 0.09**	**B (14) 0.09**	**C (17) 0.13**	**C (17) 0.13**	**C (17) 0.12**	**C (17) 0.12**
Amacon & Hurontario Street	**B (13) 0.04**	**B (14) 0.05**	**B (14) 0.05**	**A (10) 0.10**	**B (11) 0.12**	**B (15) 0.05**	**B (14) 0.05**	**A (10) 0.11**	**B (12) 0.13**

Poulos Chung

Legend:
Level of Service (Delay in seconds) Volume over capacity Ratio
Movements with a V/C ≥ 0.85 → **B (15) 0.13** *EBR: 0.85*

Summary of Intersection Performance (AM peak hour)
Figure 22

Intersection	PM Peak Hour								
		2023 Background Traffic				2023 Total Traffic			
		No LRT		Yes LRT		No LRT		Yes LRT	
	Existing Traffic	Existing Timings	Optimized Timings	Existing Timings	Optimized Timings	Existing Timings	Optimized Timings	Existing Timings	Optimized Timings
Central Parkway & Hurontario Street	**D (42) 0.87** *wbl- 0.93* *sbt- 0.88*	**D (43) 0.87** *wbl- 0.92* *sbt- 0.92*	**D (41) 0.87** *wbl- 0.92* *sbt- 0.92*	**E (73) 1.05** *wbl- 1.01* *nbt- 0.90* *sbt- 1.17*	**F (93) 1.09** *wbl- 1.01* *nbt- 1.00* *sbt- 1.25*	**D (45) 0.86** *wbl- 0.91* *sbt- 0.95*	**D (42) 0.86** *wbl- 0.91* *sbt- 0.95*	**F (86) 1.04** *wbl- 0.99* *nbt- 1.00* *sbt- 1.23*	**F (115) 1.09** *wbl- 0.99* *nbt- 1.10* *sbt- 1.33*
Elm Drive & Hurontario Street	**B (11) 0.78** *nbl- 0.94*	**B (13) 0.87** *nbl- 1.06* *sbl- 0.86*	**B (16) 0.72** *sbl- 0.86*	**D (37) 1.72** *nbl- 2.27* *sbl- 0.86* *sbt- 0.85*	**C (23) 0.83** *sbl- 0.86* *sbt- 0.99*	**E (65) 2.47** *nbl- 3.36*	**C (24) 0.83** *nbl- 0.95* *sbl- 0.86*	**F (95) 3.28** *nbl- 4.39* *sbl- 0.88* *sbt- 0.86*	**E (57) 0.95** *sbl- 0.88* *sbt- 1.16*
Burnhamthorpe Road & Hurontario Street	**F (93) 1.27** *ebl- 1.32* *wbl- 0.87* *wbt- 1.05* *nbl- 1.15* *sbl- 1.43* *sbt- 1.16*	**F (100) 1.29** *ebl- 1.32* *wbl- 1.04* *wbt- 1.05* *nbl- 1.15* *sbl- 1.48* *sbt- 1.21*	**F (107) 1.12** *ebl- 1.11* *wbl- 0.99* *wbt- 1.14* *nbl- 0.99* *nbt- 0.90* *sbl- 1.02* *sbt- 1.32*	**F (187) 1.40** *ebl- 1.42* *wbl- 1.19* *wbt- 1.13* *nbt- 1.16* *sbl- 0.92* *sbt- 1.87*	**F (221) 1.21** *ebl- 1.91* *wbl- 1.12* *wbt- 1.23* *nbt- 1.40* *sbt- 2.02*	**F (109) 1.30** *ebl- 1.32* *wbl- 1.05* *wbt- 1.07* *nbl- 1.16* *sbl- 1.52* *sbt- 1.28*	**F (118) 1.14** *ebl- 1.11* *wbl- 1.00* *wbt- 1.17* *nbl- 1.00* *nbt- 0.94* *sbl- 1.02* *sbt- 1.39*	**F (207) 1.43** *ebl- 1.42* *wbl- 1.21* *wbt- 1.16* *nbt- 1.22* *sbl- 0.92* *sbt- 1.98*	**F (245) 1.24** *ebl- 1.19* *wbl- 1.14* *wbt- 1.26* *nbt- 1.46* *sbt- 2.15*
Kariya Drive & Burnhamthorpe Road	**D (42) 0.83** *wbt- 0.86* *nbl- 0.88*	**D (44) 0.87** *wbt- 0.86* *nbl- 0.97*	**D (43) 0.83** *wbt- 0.89* *nbl- 0.86*	**F (88) 1.04** *wbt- 1.24* *nbl- 0.96*	**E (62) 0.95** *ebl- 0.95* *wbt- 1.06* *nbl- 1.01*	**D (49) 0.91** *wbl- 0.87* *nbt- 0.86* *nbl- 1.11*	**D (46) 0.86** *wbl- 0.91* *wbt- 0.89* *nbl- 0.98*	**F (95) 1.07** *wbl- 1.14* *wbt- 1.24* *nbl- 1.11*	**E (76) 1.03** *ebl- 0.95* *ebt- 0.85* *wbl- 0.87* *wbt- 1.12* *nbt- 1.13*
Kariya Drive & Elm Drive	**B (20) 0.30**	**B (20) 0.30**	**B (20) 0.30**	**B (20) 0.30**	**B (20) 0.30**	**C (21) 0.36**	**C (22) 0.36**	**C (22) 0.36**	**C (22) 0.36**
Matthews Gate & Hurontario Street	**B (17) 0.65** *nbl- 0.89*	**D (37) 1.14** *nbl- 1.56* *sbt- 0.89*	**C (21) 0.81** *nbl- 0.98* *sbt- 0.88*	**E (57) 0.88** *nbl- 0.95* *sbt- 1.18*	**D (48) 0.88** *sbt- 1.14*	**D (37) 1.14** *nbl- 1.56* *sbt- 0.92*	**C (22) 0.81** *nbl- 0.98* *sbt- 0.91*	**E (69) 0.92** *nbl- 0.98* *sbt- 1.23*	**E (64) 0.92** *sbt- 1.22*
Central full-moves Entrance & Elm Drive	**B (13) 0.13**	**B (13) 0.14**	**B (13) 0.14**	**B (13) 0.15**	**B (13) 0.15**	**D (27) 0.33**	**D (27) 0.33**	**D (27) 0.33**	**D (27) 0.99**
Full-moves Entrance & Kariya Drive	--	--	--	--	--	**A (9) 0.07**	**A (9) 0.07**	**A (9) 0.07**	**A (9) 0.07**
School/Amacon Entrances & Kariya Drive	**B (12) 0.03**	**B (12) 0.03**	**B (12) 0.03**	**B (13) 0.03**	**B (13) 0.03**	**B (12) 0.03**	**B (12) 0.03**	**B (12) 0.03**	**B (12) 0.03**
Eastern RIRO site Entrance & Elm Drive	--	--	--	--	--	**B (12) 0.12**	**B (12) 0.12**	**B (12) 0.12**	**B (12) 0.12**
Western RIRO site Entrance & Elm Drive	**B (13) 0.04**	**B (14) 0.04**	**B (13) 0.04**	**B (14) 0.04**	**B (14) 0.04**	**C (17) 0.06**	**C (17) 0.06**	**C (17) 0.06**	**C (17) 0.06**
Amacon & Hurontario Street	**C (16) 0.15**	**C (17) 0.16**	**B (15) 0.14**	**B (12) 0.10**	**B (13) 0.11**	**C (18) 0.17**	**B (11) 0.08**	**D (27) 0.26**	**D (27) 0.27**

Poulos Chung

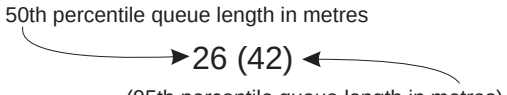
Legend:
Level of Service (Delay in seconds) Volume over capacity Ratio
Movements with a V/C ≥ 0.85 → **B (15) 0.13** *EBR: 0.85*

Summary of Intersection Performance (PM peak hour)
Figure 23

Intersection	Movement	Storage (m)	Existing		Assumed Existing Timings			
					2023 Total Traffic (Ultimate development)			
					no LRT		yes LRT	
			AM	PM	AM	PM	AM	PM
Central Pkwy & Hurontario St	EBL	89	15 (29)	18 (35)	22 (40)	40 (76)	25 (42)	40 (76)
	WBL	90	59 (90)	71 (121)	59 (93)	79 (129)	68 (442)	49 (129)
	NBL	120	20 (51)	16 (38)	24 (55)	21 (44)	27 (60)	21 (44)
	SBL	72	33 (63)	20 (36)	49 (95)	26 (44)	43 (64)	26 (34)
Elm Dr & Hurontario St	EBL	15	35 (59)	9 (19)	72 (127)	27 (17)	79 (138)	27 (47)
	WBL	40	24 (42)	15 (28)	28 (64)	18 (35)	32 (69)	18 (35)
	NBL	29	5 (12)	11 (41)	49 (73)	112 (152)	80 (61)	118 (125)
	SBL	35	1 (2)	4 (8)	3 (5)	13 (15)	4 (8)	15 (12)
Burnhamthorpe Rd & Hurontario St	EBL	145	97 (162)	110 (170)	99 (164)	125 (188)	91 (154)	125 (188)
	WBL	135	38 (91)	35 (68)	61 (111)	65 (122)	44 (131)	65 (122)
	NBL	105	39 (70)	70 (126)	42 (75)	56 (94)	45 (60)	58 (96)
	SBL	97	22 (49)	80 (136)	20 (52)	64 (117)	22 (45)	64 (117)
Burnhamthorpe Rd & Kariya Dr	EBL	88	19 (31)	16 (40)	16 (25)	16 (40)	16 (25)	16 (40)
	WBL	106	14 (24)	22 (24)	17 (26)	29 (60)	10 (24)	39 (88)
	NBL	53	35 (53)	70 (112)	70 (106)	94 (172)	67 (99)	94 (172)
	SBL	103	16 (28)	51 (74)	18 (32)	51 (74)	18 (32)	51 (74)
Elm Dr & Kariya Dr	EBL	9	7 (17)	6 (15)	8 (18)	7 (16)	8 (18)	7 (16)
	WBL	9	5 (13)	1 (4)	7 (17)	3 (9)	7 (17)	3 (9)
	NBL	20	1 (4)	1 (5)	1 (4)	2 (5)	1 (4)	2 (5)
	SBL	20	11 (22)	26 (45)	12 (24)	34 (56)	12 (24)	34 (56)
Matthews Gt & Hurontario St	EBL	70	26 (42)	18 (31)	53 (79)	35 (54)	57 (84)	35 (54)
	--	--						
	NBL	50	31 (53)	34 (73)	39 (63)	80 (130)	35 (51)	74 (130)
	--	--						

Poulos Chung

Legend:



Estimated Left-turn Queue Lengths (Assuming Existing Timings)
Figure 24

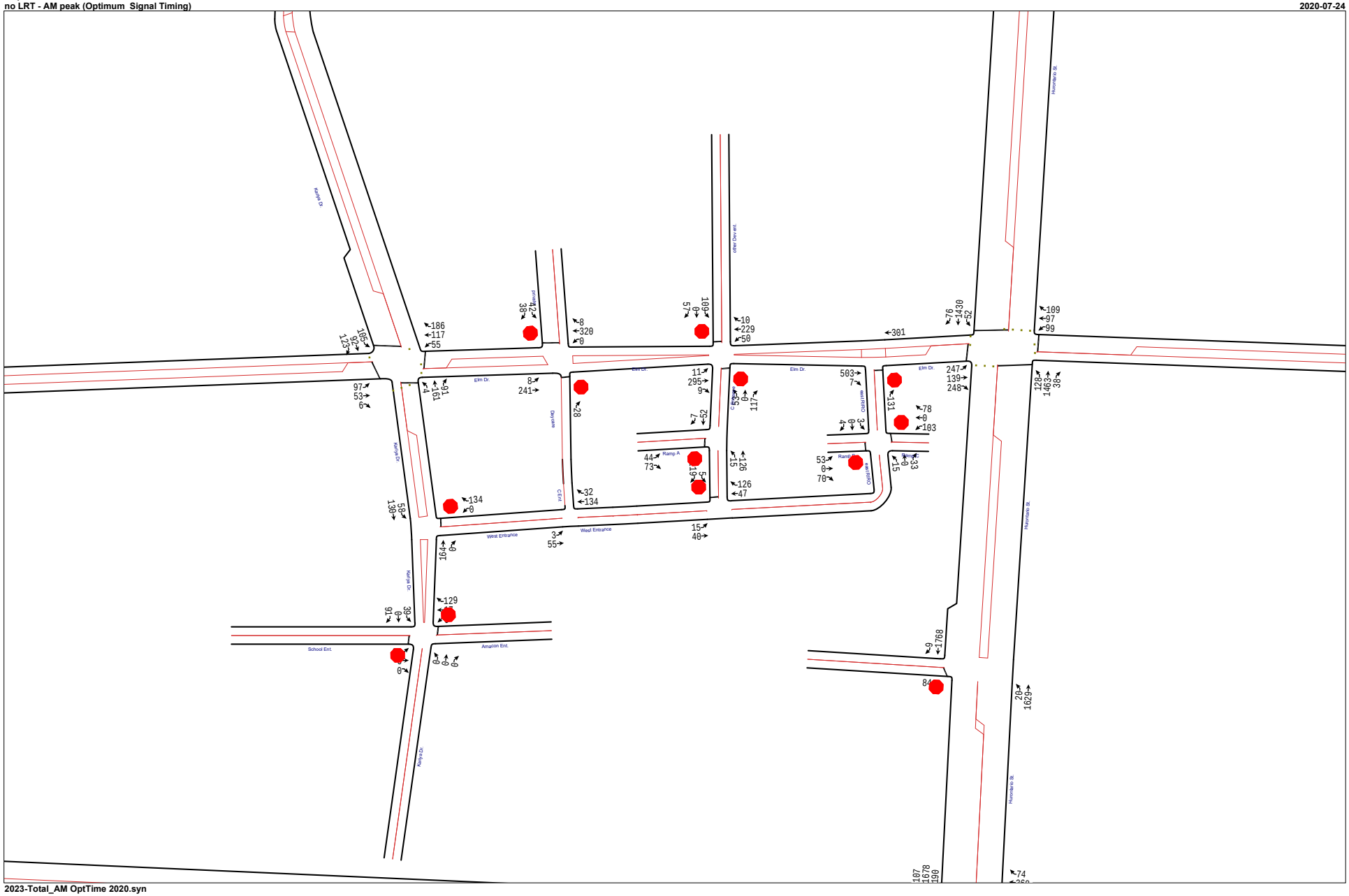
Appendix B

Capacity Analysis and Vehicle Queue

2023 Capacity Analysis (AM Peak Hour)

Map - 13.212 - 2023 Total AM Traffic
no LRT - AM peak (Optimum Signal Timing)

2020-07-24



2023-Total_AM OptTime 2020.syn

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	105	65	60	329	4	274	114	100	134
v/c Ratio	0.20	0.07	0.12	0.49	0.02	0.77	0.31	0.17	0.24
Control Delay	11.5	11.5	21.7	20.1	31.0	47.2	19.7	20.2	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	11.5	21.7	20.1	31.0	47.2	19.7	20.2	5.0
Queue Length 50th (m)	8.0	4.8	6.6	31.1	0.5	39.2	11.8	11.0	0.0
Queue Length 95th (m)	17.2	12.0	16.8	63.4	3.4	#87.4	23.7	22.5	11.1
Internal Link Dist (m)		376.1		42.0		44.8		130.9	
Turn Bay Length (m)	9.0		9.0		20.0		20.0		40.0
Base Capacity (vph)	599	1070	484	665	258	371	509	892	758
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.06	0.12	0.49	0.02	0.74	0.22	0.11	0.18

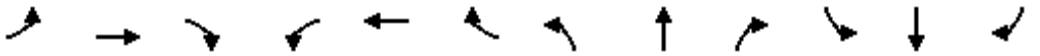
Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	230	240	196	1755	1675
v/c Ratio	0.48	0.45	0.81	0.56	0.68
Control Delay	45.3	20.2	59.9	20.4	14.1
Queue Delay	0.0	0.0	0.0	0.1	0.0
Total Delay	45.3	20.2	59.9	20.5	14.1
Queue Length 50th (m)	52.8	22.5	39.5	97.1	48.9
Queue Length 95th (m)	78.6	47.6	#67.7	99.0	m63.9
Internal Link Dist (m)	86.2			208.3	179.4
Turn Bay Length (m)		20.0	50.0		
Base Capacity (vph)	484	530	259	3121	2479
Starvation Cap Reductn	0	0	0	141	18
Spillback Cap Reductn	0	0	0	318	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.45	0.76	0.63	0.68

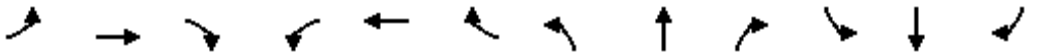
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



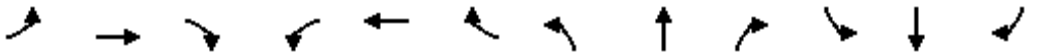
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	538	47	291	368	74	62	1354	112	190	1678	107
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Total Lost time (s)	7.0	7.0	7.0	3.0	7.0	7.0	3.0	7.0		3.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	3579	1382	1752	3579	1382	1752	5083		1752	5096	
Flt Permitted	0.52	1.00	1.00	0.25	1.00	1.00	0.08	1.00		0.08	1.00	
Satd. Flow (perm)	952	3579	1382	452	3579	1382	148	5083		140	5096	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	585	51	316	400	80	67	1472	122	207	1824	116
RTOR Reduction (vph)	0	0	38	0	0	47	0	6	0	0	5	0
Lane Group Flow (vph)	96	585	13	316	400	33	67	1588	0	207	1935	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	37.0	37.0	37.0	58.6	58.6	58.6	56.0	49.7		67.4	58.1	
Effective Green, g (s)	37.0	37.0	37.0	58.6	58.6	58.6	56.0	49.7		67.4	58.1	
Actuated g/C Ratio	0.26	0.26	0.26	0.42	0.42	0.42	0.40	0.36		0.48	0.42	
Clearance Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	3.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	251	945	365	361	1498	578	131	1804		236	2114	
v/s Ratio Prot		0.16		c0.12	0.11		0.02	0.31		c0.09	c0.38	
v/s Ratio Perm	0.10		0.01	c0.25		0.02	0.18			0.33		
v/c Ratio	0.38	0.62	0.04	0.88	0.27	0.06	0.51	0.88		0.88	0.92	
Uniform Delay, d1	42.1	45.3	38.3	30.6	26.6	24.3	32.0	42.4		39.7	38.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.54	1.07	
Incremental Delay, d2	1.0	1.2	0.0	20.3	0.1	0.0	3.3	6.5		23.7	6.2	
Delay (s)	43.1	46.5	38.3	51.0	26.7	24.3	35.3	48.9		85.0	47.7	
Level of Service	D	D	D	D	C	C	D	D		F	D	
Approach Delay (s)		45.5			36.1			48.3			51.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	125.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



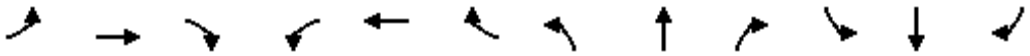
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	139	248	99	97	109	128	1463	38	52	1430	76
Ideal Flow (vphpl)	1800	1800	1640	1800	1800	1640	1860	1900	1640	1860	1900	1640
Total Lost time (s)	3.0	8.0		7.0	8.0		3.0	7.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.90		1.00	0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1695	1613		1695	1643		1752	5122		1752	5103	
Flt Permitted	0.40	1.00		0.22	1.00		0.07	1.00		0.11	1.00	
Satd. Flow (perm)	722	1613		387	1643		122	5122		211	5103	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	151	270	108	105	118	139	1590	41	57	1554	83
RTOR Reduction (vph)	0	46	0	0	29	0	0	2	0	0	4	0
Lane Group Flow (vph)	268	375	0	108	194	0	139	1629	0	57	1633	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	48.7	35.7		34.2	28.2		76.3	76.3		68.6	68.6	
Effective Green, g (s)	48.7	35.7		34.2	28.2		76.3	76.3		68.6	68.6	
Actuated g/C Ratio	0.35	0.26		0.24	0.20		0.54	0.54		0.49	0.49	
Clearance Time (s)	3.0	8.0		7.0	8.0		3.0	7.0		3.0	3.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	372	411		150	330		167	2791		103	2500	
v/s Ratio Prot	c0.09	c0.23		0.03	0.12		c0.05	0.32			0.32	
v/s Ratio Perm	0.16			0.14			c0.40			0.27		
v/c Ratio	0.72	0.91		0.72	0.59		0.83	0.58		0.55	0.65	
Uniform Delay, d1	35.9	50.6		46.2	50.6		29.4	21.3		25.0	26.8	
Progression Factor	1.00	1.00		1.00	1.00		2.34	0.39		0.37	0.29	
Incremental Delay, d2	6.7	24.1		15.2	2.7		19.8	0.6		15.5	1.0	
Delay (s)	42.6	74.8		61.4	53.3		88.7	8.9		24.6	8.8	
Level of Service	D	E		E	D		F	A		C	A	
Approach Delay (s)		62.3			56.0			15.1			9.3	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



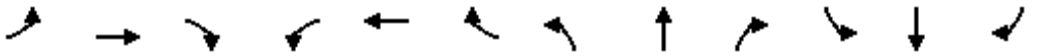
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	366	931	240	218	551	121	178	1662	141	119	1210	197
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Total Lost time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3579	1382	1752	3579	1382	1752	5142	1382	1752	5142	1382
Flt Permitted	0.20	1.00	1.00	0.12	1.00	1.00	0.08	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	366	3579	1382	223	3579	1382	147	5142	1382	160	5142	1382
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	398	1012	261	237	599	132	193	1807	153	129	1315	214
RTOR Reduction (vph)	0	0	136	0	0	101	0	0	78	0	0	124
Lane Group Flow (vph)	398	1012	125	237	599	31	193	1807	75	129	1315	90
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	62.0	43.0	43.0	48.0	33.0	33.0	64.0	53.0	53.0	53.1	46.1	46.1
Effective Green, g (s)	62.0	43.0	43.0	48.0	33.0	33.0	64.0	53.0	53.0	53.1	46.1	46.1
Actuated g/C Ratio	0.44	0.31	0.31	0.34	0.24	0.24	0.46	0.38	0.38	0.38	0.33	0.33
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	409	1099	424	240	843	325	226	1946	523	140	1693	455
v/s Ratio Prot	c0.17	0.28		0.11	0.17		c0.08	c0.35		0.05	0.26	
v/s Ratio Perm	c0.26		0.09	0.23		0.02	0.30		0.05	0.30		0.07
v/c Ratio	0.97	0.92	0.30	0.99	0.71	0.10	0.85	0.93	0.14	0.92	0.78	0.20
Uniform Delay, d1	33.0	46.9	37.0	39.3	49.1	41.8	36.9	41.7	28.6	34.9	42.3	33.7
Progression Factor	1.25	0.67	0.16	1.00	1.00	1.00	1.00	1.04	0.96	1.00	1.00	1.00
Incremental Delay, d2	34.5	11.1	0.3	54.1	2.8	0.1	22.9	8.3	0.5	52.8	3.6	1.0
Delay (s)	75.6	42.5	6.4	93.3	52.0	42.0	59.9	51.9	28.1	87.6	45.9	34.7
Level of Service	E	D	A	F	D	D	E	D	C	F	D	C
Approach Delay (s)		44.7			60.7			50.9			47.7	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	49.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	107.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



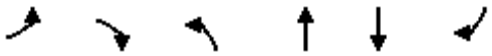
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	1249	142	87	640	176	279	201	118	83	113	11
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1800	1800	1640	1800	1800	1640
Total Lost time (s)	3.0	7.0		3.0	7.0		3.0	7.0		3.0	7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.97		1.00	0.94		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	5063		1752	4976		1695	3202		1695	3345	
Flt Permitted	0.27	1.00		0.11	1.00		0.65	1.00		0.45	1.00	
Satd. Flow (perm)	494	5063		209	4976		1156	3202		807	3345	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	1358	154	95	696	191	303	218	128	90	123	12
RTOR Reduction (vph)	0	9	0	0	30	0	0	67	0	0	6	0
Lane Group Flow (vph)	146	1503	0	95	857	0	303	279	0	90	129	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	83.6	73.4		80.4	71.8		38.8	28.8		37.2	28.0	
Effective Green, g (s)	83.6	73.4		80.4	71.8		38.8	28.8		37.2	28.0	
Actuated g/C Ratio	0.60	0.52		0.57	0.51		0.28	0.21		0.27	0.20	
Clearance Time (s)	3.0	7.0		3.0	7.0		3.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	386	2654		214	2551		358	658		272	669	
v/s Ratio Prot	c0.03	c0.30		c0.03	0.17		c0.06	0.09		0.02	0.04	
v/s Ratio Perm	0.20			0.23			c0.17			0.07		
v/c Ratio	0.38	0.57		0.44	0.34		0.85	0.42		0.33	0.19	
Uniform Delay, d1	12.8	22.5		15.7	20.1		46.3	48.4		39.9	46.6	
Progression Factor	1.00	1.00		2.54	1.21		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.9		1.1	0.3		16.6	0.4		0.7	0.1	
Delay (s)	13.5	23.4		41.0	24.6		62.9	48.8		40.7	46.7	
Level of Service	B	C		D	C		E	D		D	D	
Approach Delay (s)		22.5			26.2			55.4			44.3	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



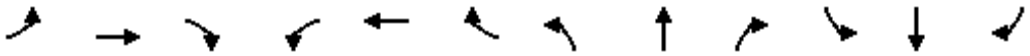
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	53	6	55	117	186	4	161	91	105	92	123
Ideal Flow (vphpl)	1800	1800	1640	1800	1800	1640	1800	1800	1640	1800	1800	1640
Total Lost time (s)	3.0	7.0		7.0	7.0		6.5	6.5		3.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1695	1755		1695	1620		1695	1688		1695	1784	1382
Flt Permitted	0.44	1.00		0.71	1.00		0.69	1.00		0.33	1.00	1.00
Satd. Flow (perm)	780	1755		1275	1620		1235	1688		594	1784	1382
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	58	7	60	127	202	4	175	99	114	100	134
RTOR Reduction (vph)	0	4	0	0	51	0	0	19	0	0	0	89
Lane Group Flow (vph)	105	61	0	60	278	0	4	255	0	114	100	45
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	41.0	41.0		30.9	30.9		16.2	16.2		27.9	27.9	27.9
Effective Green, g (s)	41.0	41.0		30.9	30.9		16.2	16.2		27.9	27.9	27.9
Actuated g/C Ratio	0.50	0.50		0.37	0.37		0.20	0.20		0.34	0.34	0.34
Clearance Time (s)	3.0	7.0		7.0	7.0		6.5	6.5		3.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	466	873		478	607		242	331		317	604	467
v/s Ratio Prot	c0.02	0.04			c0.17			c0.15		c0.04	0.06	
v/s Ratio Perm	0.09			0.05			0.00			0.08		0.03
v/c Ratio	0.23	0.07		0.13	0.46		0.02	0.77		0.36	0.17	0.10
Uniform Delay, d1	11.5	10.8		16.9	19.4		26.7	31.3		19.8	19.1	18.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0		0.1	0.6		0.0	10.3		0.7	0.1	0.1
Delay (s)	11.7	10.8		17.0	20.0		26.7	41.6		20.5	19.2	18.7
Level of Service	B	B		B	B		C	D		C	B	B
Approach Delay (s)		11.4			19.5			41.4			19.5	
Approach LOS		B			B			D			B	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	19.5
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	212	221	180	1615	1317	224
Ideal Flow (vphpl)	1800	1800	1860	1900	1900	1640
Total Lost time (s)	8.0	8.0	3.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1695	1517	1752	5142	5030	
Flt Permitted	0.95	1.00	0.07	1.00	1.00	
Satd. Flow (perm)	1695	1517	134	5142	5030	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	230	240	196	1755	1432	243
RTOR Reduction (vph)	0	97	0	0	16	0
Lane Group Flow (vph)	230	143	196	1755	1659	0
Turn Type	Perm	Perm	pm+pt	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4	2			
Actuated Green, G (s)	40.0	40.0	85.0	85.0	68.6	
Effective Green, g (s)	40.0	40.0	85.0	85.0	68.6	
Actuated g/C Ratio	0.29	0.29	0.61	0.61	0.49	
Clearance Time (s)	8.0	8.0	3.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	484	433	236	3121	2464	
v/s Ratio Prot			c0.08	0.34	0.33	
v/s Ratio Perm	c0.14	0.09	c0.42			
v/c Ratio	0.48	0.33	0.83	0.56	0.67	
Uniform Delay, d1	41.3	39.4	34.0	16.4	27.2	
Progression Factor	1.00	1.00	1.40	1.20	0.49	
Incremental Delay, d2	0.7	0.4	17.8	0.6	0.9	
Delay (s)	42.1	39.9	65.3	20.2	14.2	
Level of Service	D	D	E	C	B	
Approach Delay (s)	40.9			24.8	14.2	
Approach LOS	D			C	B	

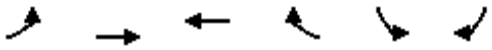
Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	295	9	50	229	10	53	0	117	109	0	57
Sign Control		Free			Free			Stop			Stop	
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	321	10	54	249	11	58	0	127	118	0	62
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		137			121							
pX, platoon unblocked	0.97			0.98			0.98	0.98	0.98	0.98	0.98	0.97
vC, conflicting volume	260			330			774	718	326	840	717	254
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	223			312			723	665	307	790	665	218
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			81	100	82	50	100	92
cM capacity (veh/h)	1307			1229			296	353	722	238	353	799

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	342	314	185	180
Volume Left	12	54	58	118
Volume Right	10	11	127	62
cSH	1307	1229	498	314
Volume to Capacity	0.01	0.04	0.37	0.57
Queue Length 95th (m)	0.2	1.1	12.9	25.6
Control Delay (s)	0.4	1.7	16.4	30.8
Lane LOS	A	A	C	D
Approach Delay (s)	0.4	1.7	16.4	30.8
Approach LOS			C	D

Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	40	47	126	5	119
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)	16	43	51	137	5	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)			98			
pX, platoon unblocked						
vC, conflicting volume	188				196	120
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	188				196	120
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	86
cM capacity (veh/h)	1386				784	932

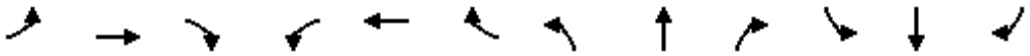
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	60	188	135
Volume Left	16	0	5
Volume Right	0	137	129
cSH	1386	1700	925
Volume to Capacity	0.01	0.11	0.15
Queue Length 95th (m)	0.3	0.0	3.9
Control Delay (s)	2.1	0.0	9.6
Lane LOS	A		A
Approach Delay (s)	2.1	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	134	164	0	58	130
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	146	178	0	63	141
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						69
pX, platoon unblocked	0.97					
vC, conflicting volume	446	178			178	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	408	178			178	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	83			95	
cM capacity (veh/h)	553	865			1398	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	146	178	204
Volume Left	0	0	63
Volume Right	146	0	0
cSH	865	1700	1398
Volume to Capacity	0.17	0.10	0.05
Queue Length 95th (m)	4.6	0.0	1.1
Control Delay (s)	10.0	0.0	2.6
Lane LOS	B		A
Approach Delay (s)	10.0	0.0	2.6
Approach LOS	B		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	6	0	0	17	129	0	0	0	39	0	91
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)	39	7	0	0	18	140	0	0	0	42	0	99
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											117	
pX, platoon unblocked												
vC, conflicting volume	284	134	49	138	184	0	99			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	284	134	49	138	184	0	99			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 %	93	99	100	100	97	87	100			97		
cM capacity (veh/h)	559	737	1019	811	692	1085	1494			1623		

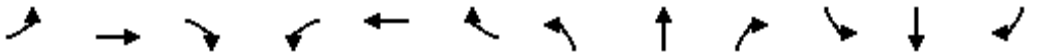
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	46	159	0	141
Volume Left	39	0	0	42
Volume Right	0	140	0	99
cSH	579	1018	1700	1623
Volume to Capacity	0.08	0.16	0.00	0.03
Queue Length 95th (m)	1.9	4.2	0.0	0.6
Control Delay (s)	11.7	9.2	0.0	2.3
Lane LOS	B	A		A
Approach Delay (s)	11.7	9.2	0.0	2.3
Approach LOS	B	A		

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	30.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	503	7	0	301	0	131
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)	547	8	0	327	0	142
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	202			56		
pX, platoon unblocked					0.96	
vC, conflicting volume			554		878	551
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			554		854	551
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	73
cM capacity (veh/h)			1016		317	534

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	554	327	142
Volume Left	0	0	0
Volume Right	8	0	142
cSH	1700	1700	534
Volume to Capacity	0.33	0.19	0.27
Queue Length 95th (m)	0.0	0.0	8.1
Control Delay (s)	0.0	0.0	14.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.2
Approach LOS			B

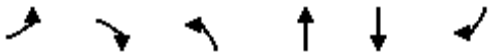
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	241	0	0	320	8	0	0	28	42	0	38
Sign Control		Free			Free			Stop			Stop	
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	262	0	0	348	9	0	0	30	46	0	41
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		66			192							
pX, platoon unblocked				0.96			0.96	0.96	0.96	0.96	0.96	
vC, conflicting volume	357			262			673	636	262	662	632	352
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	357			213			640	602	213	629	597	352
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	96	87	100	94
cM capacity (veh/h)	1202			1306			349	395	795	363	397	691

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	271	357	30	46	41
Volume Left	9	0	0	46	0
Volume Right	0	9	30	0	41
cSH	1202	1306	795	363	691
Volume to Capacity	0.01	0.00	0.04	0.13	0.06
Queue Length 95th (m)	0.2	0.0	0.9	3.2	1.4
Control Delay (s)	0.3	0.0	9.7	16.3	10.5
Lane LOS	A		A	C	B
Approach Delay (s)	0.3	0.0	9.7	13.6	
Approach LOS			A	B	

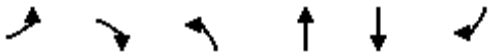
Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	29.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	84	20	1629	1768	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	91	22	1771	1922	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)				110	139	
pX, platoon unblocked	0.83	0.76	0.76			
vC, conflicting volume	2555	641	1932			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	219	0	1130			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	89	95			
cM capacity (veh/h)	593	826	468			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	91	22	590	590	590	641	641	641	10
Volume Left	0	22	0	0	0	0	0	0	0
Volume Right	91	0	0	0	0	0	0	0	10
cSH	826	468	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.11	0.05	0.35	0.35	0.35	0.38	0.38	0.38	0.01
Queue Length 95th (m)	2.8	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.9	13.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	B							
Approach Delay (s)	9.9	0.2				0.0			
Approach LOS	A								

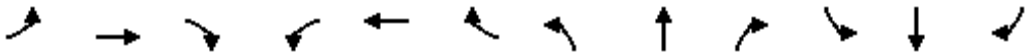
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	44	73	15	126	52	7
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)	48	79	16	137	57	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)				29		
pX, platoon unblocked						
vC, conflicting volume	230	60	64			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	230	60	64			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	92	99			
cM capacity (veh/h)	750	1005	1538			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	127	153	64
Volume Left	48	16	0
Volume Right	79	0	8
cSH	891	1538	1700
Volume to Capacity	0.14	0.01	0.04
Queue Length 95th (m)	3.8	0.2	0.0
Control Delay (s)	9.7	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	9.7	0.9	0.0
Approach LOS	A		

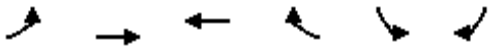
Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	53	0	70	103	0	78	15	0	33	3	0	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)	58	0	76	112	0	85	16	0	36	3	0	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	144	77	2	135	61	18	4			36		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	144	77	2	135	61	18	4			36		
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	100	93	85	100	92	99			100		
cM capacity (veh/h)	752	803	1082	770	819	1061	1617			1575		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	134	197	52	8
Volume Left	58	112	16	3
Volume Right	76	85	36	4
cSH	910	873	1617	1575
Volume to Capacity	0.15	0.23	0.01	0.00
Queue Length 95th (m)	3.9	6.6	0.2	0.0
Control Delay (s)	9.6	10.3	2.3	3.1
Lane LOS	A	B	A	A
Approach Delay (s)	9.6	10.3	2.3	3.1
Approach LOS	A	B		

Intersection Summary				
Average Delay	8.9			
Intersection Capacity Utilization	25.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	3	55	134	32	0	0
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)	3	60	146	35	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			162			
pX, platoon unblocked						
vC, conflicting volume	180				229	163
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	180				229	163
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1395				757	882

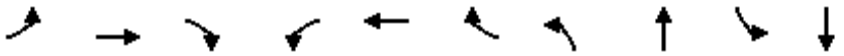
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	63	180	0
Volume Left	3	0	0
Volume Right	0	35	0
cSH	1395	1700	1700
Volume to Capacity	0.00	0.11	0.15
Queue Length 95th (m)	0.1	0.0	0.0
Control Delay (s)	0.4	0.0	0.0
Lane LOS	A		A
Approach Delay (s)	0.4	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	12.3%	ICU Level of Service	A
Analysis Period (min)	15		

2023 Vehicle Queues (AM Peak Hour)

Queues
1: Hurontario St. & Central Pkwy.

2020-07-24

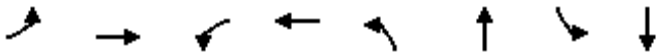


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	585	51	316	400	80	67	1594	207	1940
v/c Ratio	0.38	0.62	0.12	0.84	0.27	0.13	0.45	0.88	0.86	0.91
Control Delay	47.6	48.7	0.5	47.9	27.2	5.4	28.5	49.1	76.8	46.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	48.7	0.5	47.9	27.2	5.4	28.5	49.1	76.8	46.9
Queue Length 50th (m)	21.9	75.3	0.0	57.8	37.5	0.0	9.3	153.4	46.9	186.3
Queue Length 95th (m)	39.4	95.1	0.0	#89.0	49.5	10.0	17.5	173.9	m#77.9	#208.9
Internal Link Dist (m)		613.4			694.5			499.7		85.8
Turn Bay Length (m)	89.0		56.0	90.0		86.0	120.0		72.0	
Base Capacity (vph)	251	945	439	378	1508	628	157	1811	255	2143
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.62	0.12	0.84	0.27	0.13	0.43	0.88	0.81	0.91

Intersection Summary

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

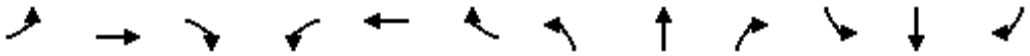
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	268	421	108	223	139	1631	57	1637
v/c Ratio	0.67	0.92	0.71	0.62	0.82	0.58	0.55	0.65
Control Delay	40.9	69.8	60.1	50.8	75.6	9.0	27.0	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	69.8	60.1	50.8	75.6	9.0	27.0	8.8
Queue Length 50th (m)	53.1	98.5	20.2	47.5	28.1	28.5	2.3	22.6
Queue Length 95th (m)	77.6	#157.7	#40.7	75.3	m#38.2	47.1	m4.8	32.8
Internal Link Dist (m)		31.9		641.4		115.4		208.3
Turn Bay Length (m)	15.0		40.0		29.0		35.0	
Base Capacity (vph)	402	471	153	368	170	2793	103	2504
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	0.67	0.89	0.71	0.61	0.82	0.58	0.55	0.65

Intersection Summary

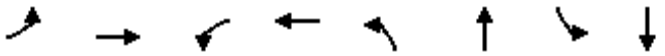
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	398	1012	261	237	599	132	193	1807	153	129	1315	214
v/c Ratio	0.95	0.92	0.47	0.97	0.71	0.30	0.84	0.93	0.26	0.90	0.78	0.37
Control Delay	68.1	44.3	4.2	87.7	54.5	5.4	59.4	52.0	8.1	81.3	46.4	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	68.1	44.3	4.2	87.7	54.5	5.4	59.4	52.5	8.1	81.3	46.4	9.0
Queue Length 50th (m)	53.7	145.1	3.8	49.3	80.7	0.0	27.5	183.2	6.4	19.8	121.6	5.6
Queue Length 95th (m)	#135.9	#182.2	4.5	#102.4	101.6	10.8	#72.2	#199.5	15.9	#59.4	139.7	25.1
Internal Link Dist (m)		302.4			599.7			179.4			535.5	
Turn Bay Length (m)	145.0			135.0		52.0	105.0		83.0	97.0		
Base Capacity (vph)	417	1099	560	245	843	444	242	1946	600	143	1693	578
Starvation Cap Reductn	0	0	0	0	0	0	0	22	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.92	0.47	0.97	0.71	0.30	0.80	0.94	0.26	0.90	0.78	0.37

Intersection Summary

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	146	1512	95	887	303	346	90	135
v/c Ratio	0.36	0.57	0.43	0.34	0.77	0.48	0.30	0.20
Control Delay	12.8	23.5	30.3	23.2	56.8	39.4	37.2	45.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	23.5	30.3	23.2	56.8	39.4	37.2	45.1
Queue Length 50th (m)	15.2	99.4	15.3	42.4	69.3	33.9	17.9	15.6
Queue Length 95th (m)	24.2	119.1	m27.2	63.6	#105.8	49.6	31.4	25.3
Internal Link Dist (m)		353.8		302.4		271.5		541.8
Turn Bay Length (m)	88.0		106.0		53.0		103.0	
Base Capacity (vph)	422	2663	232	2583	391	953	305	937
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	0.35	0.57	0.41	0.34	0.77	0.36	0.30	0.14

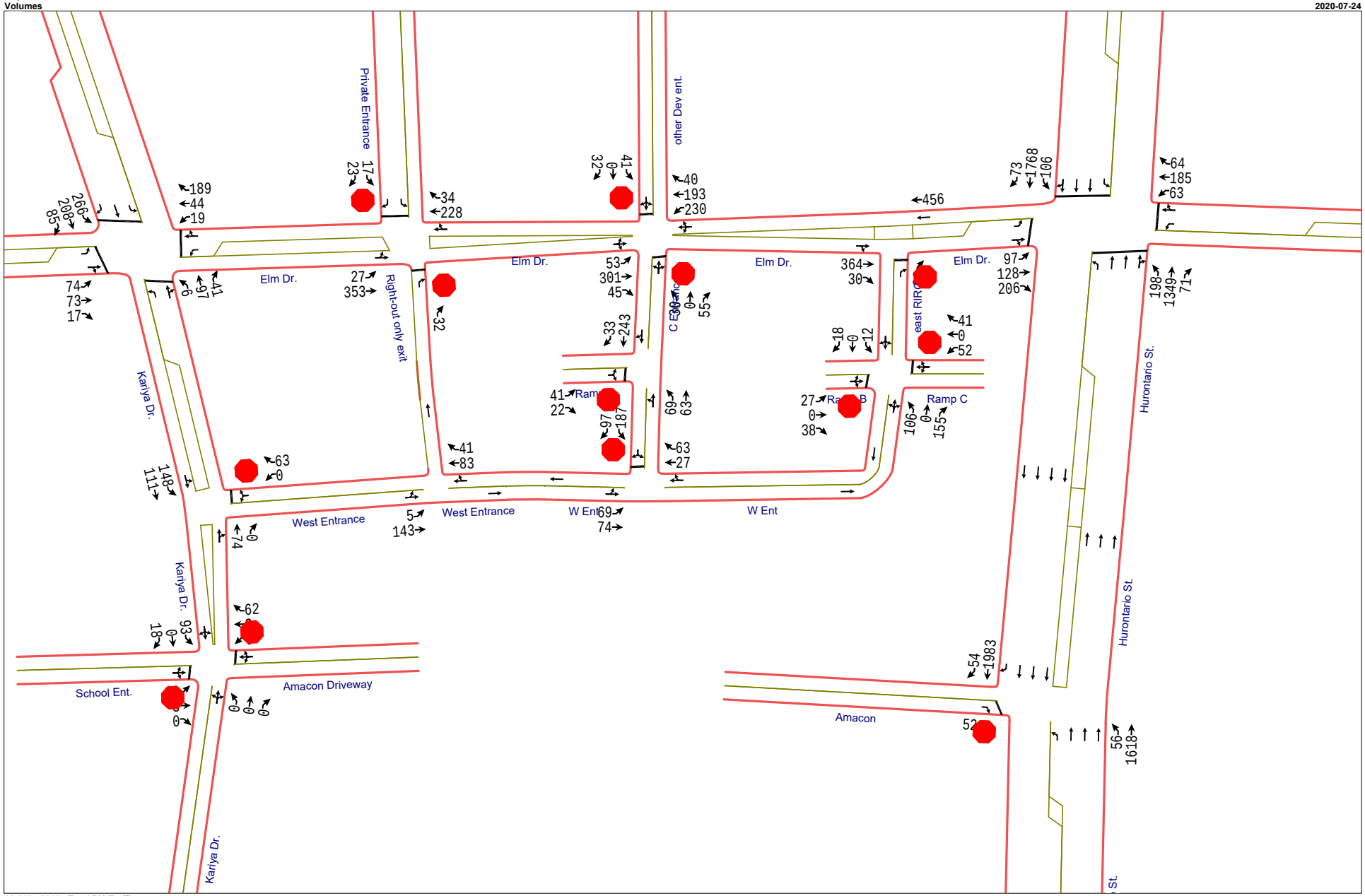
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

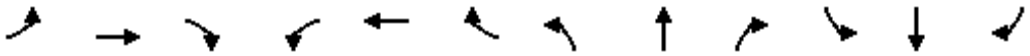
2023 Capacity Analysis (PM Peak Hour)

Map - 13.212 - 2023 Total PM Traffic Volumes

2020-07-24

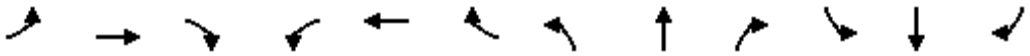


13.212 - 2023 Total PM Traffic
no LRT - PM peak (Optimum Signal Timing) (right-out)



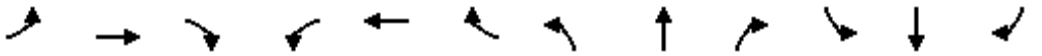
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	332	57	313	638	113	120	1461	140	127	1806	128
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Total Lost time (s)	7.0	7.0	7.0	3.0	7.0	7.0	3.0	7.0		3.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	3579	1382	1752	3579	1382	1752	5074		1752	5091	
Flt Permitted	0.38	1.00	1.00	0.43	1.00	1.00	0.07	1.00		0.07	1.00	
Satd. Flow (perm)	693	3579	1382	799	3579	1382	124	5074		122	5091	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	361	62	340	693	123	130	1588	152	138	1963	139
RTOR Reduction (vph)	0	0	45	0	0	77	0	7	0	0	6	0
Lane Group Flow (vph)	139	361	17	340	693	46	130	1733	0	138	2096	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	38.6	38.6	38.6	52.6	52.6	52.6	69.5	59.6		71.3	60.5	
Effective Green, g (s)	38.6	38.6	38.6	52.6	52.6	52.6	69.5	59.6		71.3	60.5	
Actuated g/C Ratio	0.28	0.28	0.28	0.38	0.38	0.38	0.50	0.43		0.51	0.43	
Clearance Time (s)	7.0	7.0	7.0	3.0	7.0	7.0	3.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	191	986	381	375	1344	519	176	2160		187	2200	
v/s Ratio Prot		0.10		c0.07	0.19		0.05	0.34		c0.06	c0.41	
v/s Ratio Perm	0.20		0.01	c0.27		0.03	0.31			0.32		
v/c Ratio	0.73	0.37	0.04	0.91	0.52	0.09	0.74	0.80		0.74	0.95	
Uniform Delay, d1	45.9	40.8	37.2	39.6	33.8	28.2	31.8	35.1		30.8	38.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.84	0.88	
Incremental Delay, d2	12.9	0.2	0.0	24.7	0.3	0.1	14.9	3.3		9.1	7.6	
Delay (s)	58.9	41.1	37.2	64.3	34.2	28.3	46.7	38.3		65.8	41.3	
Level of Service	E	D	D	E	C	C	D	D		E	D	
Approach Delay (s)		45.1			42.4			38.9			42.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	138.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



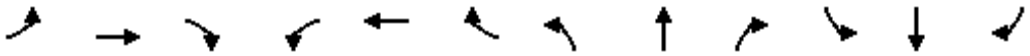
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	128	206	63	185	64	198	1349	71	106	1768	73
Ideal Flow (vphpl)	1800	1800	1640	1800	1800	1640	1860	1900	1640	1860	1900	1640
Total Lost time (s)	8.0	8.0		8.0	8.0		3.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.91		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1695	1619		1695	1715		1752	5103		1752	5111	
Flt Permitted	0.45	1.00		0.32	1.00		0.06	1.00		0.15	1.00	
Satd. Flow (perm)	811	1619		569	1715		105	5103		279	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	139	224	68	201	70	215	1466	77	115	1922	79
RTOR Reduction (vph)	0	42	0	0	9	0	0	4	0	0	3	0
Lane Group Flow (vph)	105	321	0	68	262	0	215	1539	0	115	1998	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	41.0	41.0		41.0	41.0		84.0	84.0		67.0	67.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0		84.0	84.0		67.0	67.0	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.60	0.60		0.48	0.48	
Clearance Time (s)	8.0	8.0		8.0	8.0		3.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	237	474		166	502		227	3061		133	2445	
v/s Ratio Prot		c0.20			0.15		c0.09	0.30			0.39	
v/s Ratio Perm	0.13			0.12			c0.47			0.41		
v/c Ratio	0.44	0.68		0.41	0.52		0.95	0.50		0.86	0.82	
Uniform Delay, d1	40.2	43.7		39.8	41.3		44.3	16.0		32.5	31.3	
Progression Factor	1.00	1.00		1.00	1.00		1.82	0.26		0.59	0.55	
Incremental Delay, d2	1.3	3.8		1.6	1.0		33.8	0.4		27.8	1.5	
Delay (s)	41.5	47.5		41.4	42.3		114.5	4.5		46.8	18.7	
Level of Service	D	D		D	D		F	A		D	B	
Approach Delay (s)		46.2			42.1			18.0			20.2	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	207.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



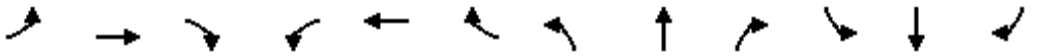
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	322	823	284	256	1235	71	243	1115	79	248	1643	368
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1860	1900	1640	1860	1900	1640
Total Lost time (s)	4.0	7.0	4.0	4.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3579	1382	1752	3579	1382	1752	5142	1382	1752	5142	1382
Flt Permitted	0.08	1.00	1.00	0.22	1.00	1.00	0.11	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	151	3579	1382	398	3579	1382	211	5142	1382	211	5142	1382
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	350	895	309	278	1342	77	264	1212	86	270	1786	400
RTOR Reduction (vph)	0	0	31	0	0	52	0	0	0	0	0	0
Lane Group Flow (vph)	350	895	278	278	1342	25	264	1212	86	270	1786	400
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		Free
Actuated Green, G (s)	70.0	54.0	71.0	57.0	45.0	45.0	52.0	35.0	140.0	52.0	35.0	140.0
Effective Green, g (s)	70.0	54.0	71.0	57.0	45.0	45.0	52.0	35.0	140.0	52.0	35.0	140.0
Actuated g/C Ratio	0.50	0.39	0.51	0.41	0.32	0.32	0.37	0.25	1.00	0.37	0.25	1.00
Clearance Time (s)	4.0	7.0	4.0	4.0	7.0	7.0	4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	315	1380	700	278	1150	444	265	1285	1382	265	1285	1382
v/s Ratio Prot	c0.17	0.25	0.05	0.09	0.38		0.12	0.24		c0.12	c0.35	
v/s Ratio Perm	c0.39		0.15	0.32		0.02	0.25		0.06	0.25		0.29
v/c Ratio	1.11	0.65	0.40	1.00	1.17	0.06	1.00	0.94	0.06	1.02	1.39	0.29
Uniform Delay, d1	45.7	35.2	21.3	35.4	47.5	32.8	41.8	51.5	0.0	41.5	52.5	0.0
Progression Factor	0.70	0.94	1.32	1.00	1.00	1.00	1.23	1.30	1.00	1.00	1.00	1.00
Incremental Delay, d2	81.4	1.0	0.3	54.0	84.8	0.1	51.6	13.8	0.1	60.2	180.3	0.5
Delay (s)	113.3	34.0	28.5	89.4	132.3	32.9	102.8	80.8	0.1	101.8	232.8	0.5
Level of Service	F	C	C	F	F	C	F	F	A	F	F	A
Approach Delay (s)		50.8			120.8			80.1			180.6	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	117.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	126.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



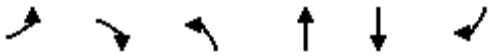
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	817	216	171	1288	259	397	217	71	267	336	98
Ideal Flow (vphpl)	1860	1900	1640	1860	1900	1640	1800	1800	1640	1800	1800	1640
Total Lost time (s)	3.0	7.0		3.0	7.0		3.0	7.0		3.0	7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.97		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	4980		1752	5012		1695	3265		1695	3275	
Flt Permitted	0.08	1.00		0.15	1.00		0.34	1.00		0.56	1.00	
Satd. Flow (perm)	142	4980		281	5012		601	3265		1002	3275	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	888	235	186	1400	282	432	236	77	290	365	107
RTOR Reduction (vph)	0	34	0	0	22	0	0	23	0	0	20	0
Lane Group Flow (vph)	109	1089	0	186	1660	0	432	290	0	290	452	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	59.9	52.0		60.1	52.1		63.0	47.0		51.0	38.0	
Effective Green, g (s)	59.9	52.0		60.1	52.1		63.0	47.0		51.0	38.0	
Actuated g/C Ratio	0.43	0.37		0.43	0.37		0.45	0.34		0.36	0.27	
Clearance Time (s)	3.0	7.0		3.0	7.0		3.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	151	1849		204	1865		442	1096		429	888	
v/s Ratio Prot	0.04	0.22		c0.05	0.33		c0.15	0.09		0.06	0.14	
v/s Ratio Perm	0.27			c0.34			c0.29			0.18		
v/c Ratio	0.72	0.59		0.91	0.89		0.98	0.26		0.68	0.51	
Uniform Delay, d1	31.1	35.4		31.1	41.3		32.1	33.9		34.6	43.1	
Progression Factor	1.00	1.00		1.24	1.12		1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.6	1.4		16.1	2.2		36.5	0.6		4.2	2.1	
Delay (s)	46.7	36.8		54.7	48.6		68.7	34.5		38.8	45.2	
Level of Service	D	D		D	D		E	C		D	D	
Approach Delay (s)		37.7			49.2			54.3			42.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	122.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



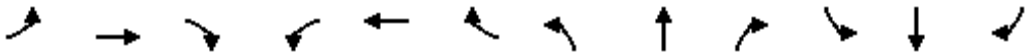
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	73	17	19	44	189	6	97	41	266	208	85
Ideal Flow (vphpl)	1800	1800	1640	1800	1800	1640	1800	1800	1640	1800	1800	1640
Total Lost time (s)	3.0	7.0		7.0	7.0		6.5	6.5		3.0	6.5	6.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.88		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1695	1735		1695	1567		1695	1704		1695	1784	1382
Flt Permitted	0.51	1.00		0.69	1.00		0.62	1.00		0.52	1.00	1.00
Satd. Flow (perm)	913	1735		1239	1567		1102	1704		927	1784	1382
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	79	18	21	48	205	7	105	45	289	226	92
RTOR Reduction (vph)	0	8	0	0	132	0	0	15	0	0	0	58
Lane Group Flow (vph)	80	89	0	21	121	0	7	135	0	289	226	34
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	40.3	40.3		30.6	30.6		12.0	12.0		32.1	32.1	32.1
Effective Green, g (s)	40.3	40.3		30.6	30.6		12.0	12.0		32.1	32.1	32.1
Actuated g/C Ratio	0.47	0.47		0.36	0.36		0.14	0.14		0.37	0.37	0.37
Clearance Time (s)	3.0	7.0		7.0	7.0		6.5	6.5		3.0	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	489	813		441	558		153	238		499	666	516
v/s Ratio Prot	c0.01	0.05			c0.08			0.08		c0.12	0.13	
v/s Ratio Perm	0.06			0.02			0.01			c0.10		0.02
v/c Ratio	0.16	0.11		0.05	0.22		0.05	0.57		0.58	0.34	0.07
Uniform Delay, d1	12.9	12.8		18.1	19.3		32.0	34.5		20.4	19.3	17.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1		0.0	0.2		0.1	3.1		1.6	0.3	0.1
Delay (s)	13.0	12.8		18.2	19.5		32.1	37.6		22.0	19.6	17.3
Level of Service	B	B		B	B		C	D		C	B	B
Approach Delay (s)		12.9			19.4			37.3			20.4	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	19.5
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	130	251	274	1413	1909	279
Ideal Flow (vphpl)	1800	1800	1860	1900	1900	1640
Total Lost time (s)	8.0	8.0	3.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1695	1517	1752	5142	5044	
Flt Permitted	0.95	1.00	0.05	1.00	1.00	
Satd. Flow (perm)	1695	1517	98	5142	5044	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	273	298	1536	2075	303
RTOR Reduction (vph)	0	181	0	0	14	0
Lane Group Flow (vph)	141	92	298	1536	2364	0
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	30.0	30.0	95.0	95.0	72.0	
Effective Green, g (s)	30.0	30.0	95.0	95.0	72.0	
Actuated g/C Ratio	0.21	0.21	0.68	0.68	0.51	
Clearance Time (s)	8.0	8.0	3.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	363	325	302	3489	2594	
v/s Ratio Prot	c0.08		c0.14	0.30	0.47	
v/s Ratio Perm		0.06	c0.53			
v/c Ratio	0.39	0.28	0.99	0.44	0.91	
Uniform Delay, d1	47.1	46.0	48.8	10.3	31.1	
Progression Factor	1.00	1.00	1.40	0.60	0.45	
Incremental Delay, d2	0.7	0.5	45.4	0.4	0.6	
Delay (s)	47.8	46.5	113.5	6.5	14.7	
Level of Service	D	D	F	A	B	
Approach Delay (s)	47.0			23.9	14.7	
Approach LOS	D			C	B	

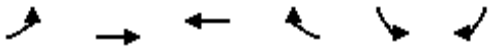
Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	115.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	53	301	45	230	193	40	30	0	55	41	0	32
Sign Control		Free			Free			Stop			Stop	
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)	58	327	49	250	210	43	33	0	60	45	0	35
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		137			121							
pX, platoon unblocked	0.84			0.89			0.90	0.90	0.89	0.90	0.90	0.84
vC, conflicting volume	253			376			1233	1220	352	1258	1223	232
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	21			237			928	913	210	955	916	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			79			81	100	92	72	100	96
cM capacity (veh/h)	1344			1184			174	185	739	159	185	915

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	434	503	92	79
Volume Left	58	250	33	45
Volume Right	49	43	60	35
cSH	1344	1184	345	250
Volume to Capacity	0.04	0.21	0.27	0.32
Queue Length 95th (m)	1.0	6.1	8.1	10.0
Control Delay (s)	1.4	5.5	19.2	26.0
Lane LOS	A	A	C	D
Approach Delay (s)	1.4	5.5	19.2	26.0
Approach LOS			C	D

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	69	74	27	63	187	97
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)	75	80	29	68	203	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)			85			
pX, platoon unblocked						
vC, conflicting volume	98				294	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98				294	64
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				69	89
cM capacity (veh/h)	1495				662	1001

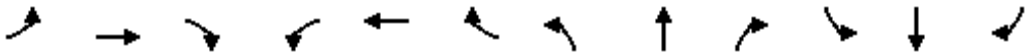
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	155	98	309
Volume Left	75	0	203
Volume Right	0	68	105
cSH	1495	1700	749
Volume to Capacity	0.05	0.06	0.41
Queue Length 95th (m)	1.2	0.0	15.4
Control Delay (s)	3.8	0.0	13.1
Lane LOS	A		B
Approach Delay (s)	3.8	0.0	13.1
Approach LOS			B

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	63	74	0	148	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)	0	68	80	0	161	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)						69
pX, platoon unblocked	0.91					
vC, conflicting volume	523	80			80	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	429	80			80	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			89	
cM capacity (veh/h)	476	980			1517	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	68	80	282
Volume Left	0	0	161
Volume Right	68	0	0
cSH	980	1700	1517
Volume to Capacity	0.07	0.05	0.11
Queue Length 95th (m)	1.7	0.0	2.7
Control Delay (s)	9.0	0.0	4.7
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	4.7
Approach LOS	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	3	0	0	3	62	0	0	0	93	0	18
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	3	0	0	3	67	0	0	0	101	0	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)											113	
pX, platoon unblocked												
vC, conflicting volume	281	212	10	214	222	0	20			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	281	212	10	214	222	0	20			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 %	98	99	100	100	99	94	100			94		
cM capacity (veh/h)	597	643	1072	705	635	1085	1597			1623		

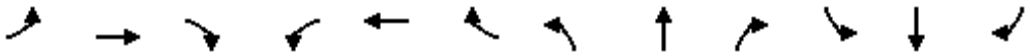
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	16	71	0	121
Volume Left	13	0	0	101
Volume Right	0	67	0	20
cSH	606	1051	1700	1623
Volume to Capacity	0.03	0.07	0.00	0.06
Queue Length 95th (m)	0.6	1.6	0.0	1.5
Control Delay (s)	11.1	8.7	0.0	6.2
Lane LOS	B	A		A
Approach Delay (s)	11.1	8.7	0.0	6.2
Approach LOS	B	A		

Intersection Summary				
Average Delay	7.5			
Intersection Capacity Utilization	20.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	364	30	0	456	0	68
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)	396	33	0	496	0	74
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	202			56		
pX, platoon unblocked			0.97		0.84	0.97
vC, conflicting volume			428		908	412
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			397		720	380
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	89
cM capacity (veh/h)			1129		332	648

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	428	496	74
Volume Left	0	0	0
Volume Right	33	0	74
cSH	1700	1700	648
Volume to Capacity	0.25	0.29	0.11
Queue Length 95th (m)	0.0	0.0	2.9
Control Delay (s)	0.0	0.0	11.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.3
Approach LOS			B

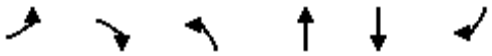
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	27	353	0	0	228	34	0	0	32	17	0	23
Sign Control		Free			Free			Stop			Stop	
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)	29	384	0	0	248	37	0	0	35	18	0	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)		69			188							
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	285			384			734	727	384	743	709	266
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	285			217			619	611	217	630	590	266
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	95	94	100	97
cM capacity (veh/h)	1277			1177			332	347	716	320	357	772

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	413	285	35	18	25
Volume Left	29	0	0	18	0
Volume Right	0	37	35	0	25
cSH	1277	1700	716	320	772
Volume to Capacity	0.02	0.17	0.05	0.06	0.03
Queue Length 95th (m)	0.5	0.0	1.2	1.4	0.8
Control Delay (s)	0.8	0.0	10.3	16.9	9.8
Lane LOS	A		B	C	A
Approach Delay (s)	0.8	0.0	10.3	12.8	
Approach LOS			B	B	

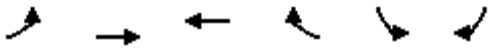
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	47.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	52	56	1618	1983	54
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	57	61	1759	2155	59
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				119	130	
pX, platoon unblocked	0.81	0.67	0.67			
vC, conflicting volume	2863	718	2214			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	55	0	1064			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	86			
cM capacity (veh/h)	660	721	433			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	57	61	586	586	586	718	718	718	59
Volume Left	0	61	0	0	0	0	0	0	0
Volume Right	57	0	0	0	0	0	0	0	59
cSH	721	433	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.14	0.34	0.34	0.34	0.42	0.42	0.42	0.03
Queue Length 95th (m)	1.9	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.4	14.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	B							
Approach Delay (s)	10.4	0.5				0.0			
Approach LOS	B								

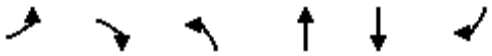
Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	48.3%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	143	83	41	0	0
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)	5	155	90	45	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			57			
pX, platoon unblocked						
vC, conflicting volume	135				279	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	135				279	112
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1450				708	940

Direction, Lane #	EB 1	WB 1
Volume Total	161	135
Volume Left	5	0
Volume Right	0	45
cSH	1450	1700
Volume to Capacity	0.00	0.08
Queue Length 95th (m)	0.1	0.0
Control Delay (s)	0.3	0.0
Lane LOS	A	
Approach Delay (s)	0.3	0.0
Approach LOS		

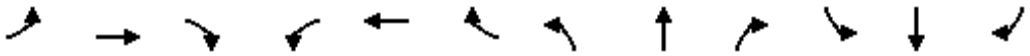
Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	41	22	69	63	243	33
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)	45	24	75	68	264	36
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	501	282	300			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	501	282	300			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	97	94			
cM capacity (veh/h)	498	757	1261			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	68	143	300
Volume Left	45	75	0
Volume Right	24	0	36
cSH	566	1261	1700
Volume to Capacity	0.12	0.06	0.18
Queue Length 95th (m)	3.1	1.4	0.0
Control Delay (s)	12.2	4.4	0.0
Lane LOS	B	A	
Approach Delay (s)	12.2	4.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		

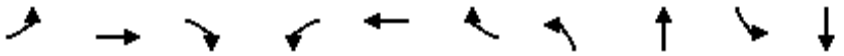


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	27	0	38	52	0	41	106	0	155	12	0	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	0	41	57	0	45	115	0	168	13	0	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	395	435	10	392	360	84	20			168		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	395	435	10	392	360	84	20			168		
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	96	89	100	95	93			99		
cM capacity (veh/h)	506	473	1072	512	521	975	1597			1409		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	71	101	284	33
Volume Left	29	57	115	13
Volume Right	41	45	168	20
cSH	731	647	1597	1409
Volume to Capacity	0.10	0.16	0.07	0.01
Queue Length 95th (m)	2.4	4.2	1.8	0.2
Control Delay (s)	10.4	11.6	3.4	3.1
Lane LOS	B	B	A	A
Approach Delay (s)	10.4	11.6	3.4	3.1
Approach LOS	B	B		

Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	34.5%	ICU Level of Service	A	
Analysis Period (min)	15			

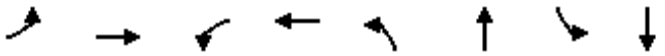
2023 Vehicle Queue (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	139	361	62	340	693	123	130	1740	138	2102
v/c Ratio	0.73	0.37	0.14	0.85	0.52	0.21	0.72	0.80	0.72	0.95
Control Delay	68.6	41.8	5.2	54.8	35.2	5.2	49.1	38.9	61.4	41.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.6	41.8	5.2	54.8	35.2	5.2	49.1	38.9	61.4	41.6
Queue Length 50th (m)	35.6	43.2	0.0	70.4	79.2	0.0	18.1	150.7	28.3	160.8
Queue Length 95th (m)	#62.6	54.9	7.4	#103.3	92.4	12.3	#57.3	178.6	m39.4	#237.9
Internal Link Dist (m)		613.4			694.5			499.7		94.7
Turn Bay Length (m)	89.0			90.0			120.0		72.0	
Base Capacity (vph)	207	1073	469	398	1431	626	180	2166	201	2203
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.34	0.13	0.85	0.48	0.20	0.72	0.80	0.69	0.95

Intersection Summary

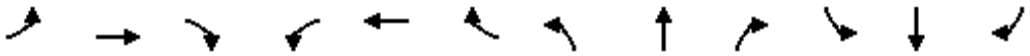
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	363	68	271	215	1543	115	2001
v/c Ratio	0.44	0.70	0.41	0.53	0.93	0.50	0.86	0.82
Control Delay	47.4	45.1	48.9	43.8	97.1	4.5	51.5	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	47.4	45.1	48.9	43.8	97.1	4.5	51.5	19.0
Queue Length 50th (m)	23.7	76.0	15.2	60.0	49.5	20.3	9.1	57.9
Queue Length 95th (m)	42.5	112.7	30.9	88.2	m#77.0	26.3	m17.8	74.7
Internal Link Dist (m)		31.9		641.4		53.4		208.3
Turn Bay Length (m)	15.0		40.0		29.0		35.0	
Base Capacity (vph)	237	515	166	511	230	3067	133	2450
Starvation Cap Reductn	0	0	0	0	0	0	0	82
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.70	0.41	0.53	0.93	0.50	0.86	0.85

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

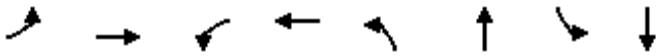


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	350	895	309	278	1342	77	264	1212	86	270	1786	400
v/c Ratio	1.10	0.65	0.39	0.97	1.17	0.15	0.98	0.94	0.06	1.00	1.39	0.29
Control Delay	107.1	35.5	19.6	72.1	127.0	1.3	93.2	80.2	0.1	94.2	219.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Total Delay	107.1	35.5	19.6	72.1	127.0	1.3	93.2	80.2	0.1	94.2	220.1	0.5
Queue Length 50th (m)	~94.1	108.4	53.4	42.6	~231.8	0.0	54.4	130.1	0.0	~59.1	~240.5	0.0
Queue Length 95th (m)	#156.5	139.7	75.8	#91.8	#274.4	1.9	#108.4	#153.1	0.0	#116.7	#269.8	0.0
Internal Link Dist (m)		302.4			599.7			179.4			535.5	
Turn Bay Length (m)	145.0			135.0		52.0	105.0		83.0	97.0		
Base Capacity (vph)	318	1380	797	286	1150	529	269	1285	1382	269	1285	1382
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	2	0	0	0	0	0	0	0	150	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.65	0.39	0.97	1.17	0.15	0.98	0.94	0.06	1.00	1.57	0.29

Intersection Summary

~ 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.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	1123	186	1682	432	313	290	472
v/c Ratio	0.70	0.60	0.88	0.89	0.94	0.28	0.63	0.52
Control Delay	47.7	35.2	45.3	47.9	58.0	31.0	33.1	43.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	35.2	45.3	47.9	58.0	31.0	33.1	43.0
Queue Length 50th (m)	16.4	87.2	43.0	174.7	82.0	29.5	49.5	55.2
Queue Length 95th (m)	#39.4	102.4	m43.0	m159.8	#147.9	41.9	71.4	72.6
Internal Link Dist (m)		353.8		302.4		271.5		541.8
Turn Bay Length (m)	88.0		106.0		53.0		103.0	
Base Capacity (vph)	156	1884	212	1886	459	1118	458	908
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	0.70	0.60	0.88	0.89	0.94	0.28	0.63	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	80	97	21	253	7	150	289	226	92
v/c Ratio	0.15	0.12	0.05	0.37	0.05	0.59	0.54	0.34	0.16
Control Delay	12.8	12.9	22.8	7.9	34.7	42.1	21.9	21.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	12.9	22.8	7.9	34.7	42.1	21.9	21.0	4.9
Queue Length 50th (m)	6.7	7.7	2.4	5.6	1.1	21.5	33.1	26.5	0.0
Queue Length 95th (m)	15.2	17.6	8.2	24.8	4.9	41.6	55.8	45.7	8.9
Internal Link Dist (m)		376.1		45.6		44.5		130.9	
Turn Bay Length (m)	9.0		9.0		20.0		20.0		40.0
Base Capacity (vph)	607	1000	443	693	217	350	570	841	700
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.10	0.05	0.37	0.03	0.43	0.51	0.27	0.13

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	141	273	298	1536	2378
v/c Ratio	0.39	0.54	0.98	0.44	0.91
Control Delay	50.9	13.8	100.7	6.6	14.9
Queue Delay	0.0	0.0	0.0	0.0	45.8
Total Delay	50.9	13.8	100.7	6.6	60.7
Queue Length 50th (m)	33.8	9.7	71.2	28.4	63.8
Queue Length 95th (m)	54.4	36.9	#128.5	43.8	m33.5
Internal Link Dist (m)	86.2			208.3	179.4
Turn Bay Length (m)		20.0	50.0		
Base Capacity (vph)	363	505	305	3489	2607
Starvation Cap Reductn	0	0	0	0	660
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	0.54	0.98	0.44	1.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.